

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

Form 4400-237 (R 12/18)

Page 3 of 6

## Section 2. Property Information

Property Name Hayton Area Remediation Project - OU3/Lower		FID No. (if known) WID006116529	
BRRTS No. (if known) 02-08-281506	Parcel Identification Number NA		
Street Address		City New Holstein	State WI
		ZIP Code 53061	
County Calumet	Municipality where the Property is located <input checked="" type="radio"/> City <input type="radio"/> Town <input type="radio"/> Village of New Holstein	Property is composed of: <input type="radio"/> Single tax parcel <input type="radio"/> Multiple tax parcels	Property Size Acres

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).

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

Form 4400-237 (R 12/18)

Page 4 of 6

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/igu.html#tabx4](http://dnr.wi.gov/topic/Brownfields/igu.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: OU3/Lower Closure Documentation Sampling Results Report

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](http://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: Tecumseh Products Company  
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.



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December 19, 2018

Mr. Bill Fitzpatrick  
Water Resources Engineer  
State of Wisconsin  
Department of Natural Resources  
101 S. Webster Street  
Madison, WI 53703

**Subject: Hayton Area Remediation Project (HARP)  
OU3/Lower Closure Documentation Sampling Results Report- Two  
Additional Sampling Events  
OU4/Upper Closure Documentation Sampling Results Report**

Dear Bill:

Enclosed please find the *OU3/Lower Closure Documentation Sampling Results Report – Two Additional Sampling Events* and the *OU4/ Upper Closure Documentation Sampling Results Report*. These reports present the results of the Spring 2018 and November 2018 sediment samples collected in OU3/Lower Reaches M through P and the November 2018 sediment samples collected in OU4/Upper.

The sampling results indicate the remediation actions were successful in OU3 and OU4/Upper. Starting in November 2017, three rounds of closure documentation samples have been collected in OU3/Lower Reaches M through P. Results reveal a decreasing trend observed over the sampling events and a calculated surface-area weighted average concentration (SWAC) all within "Tier 2" of the Three Tier Closure Process. The results indicate a continuous decline measuring 34% in SWAC in one year, over the 3-round sampling period.

The results in OU4/Upper have a calculated surface-area weighted average concentration (SWAC) of 0.88 mg/kg, which is below 1 mg/kg within the "Tier 1" of the Three Tier Closure Process.

Pursuant to Sec. III (I) of the Negotiated Agreement (Agreement), Tecumseh successfully completed the post-removal closure sampling of OU3/Lower (Reaches M-P) and OU4/Upper. Consistent with The Three Tier Closure Process of Exhibit D of the Agreement, these sampling results indicate no further action letters issued by the Department pursuant to Sec. (IV)(B) of the Agreement are now required.

Mr. Bill Fitzpatrick  
State of Wisconsin  
December 19, 2018  
Page 2 of 2

In addition, pursuant to Sec. (IV)(B) of the Agreement, a no further action letter for OU3, Reaches K-L was to have been issued by the Department by no later than December 13, 2018. Please issue that letter forthwith.

If you have any questions, please contact me at (312) 800-5910.

Sincerely,



A handwritten signature in black ink, appearing to read "CH", with a long horizontal flourish extending to the right.

Chris Harvey, PE

Enclosure: OU3/Lower Closure Documentation Sampling Results Report- Two  
Additional Sampling Events  
OU4/Upper Closure Documentation Sampling Results Report

cc: Darsi Foss/WDNR - Madison  
S. Jason Smith/Tecumseh Products Co.-Paris,TN (electronic copy)  
Curtis Toll/Greenberg Traurig LLP- Philadelphia (electronic copy)  
Jean Greensley/USEPA - Chicago  
Marc Faecher/TRC- New Providence, NJ (electronic copy)  
Ronald Bock/TRC -Irvine (electronic copy)  
Stacy McAnulty/TRC- Madison (electronic copy)  
David Crass/Michael Best & Friedrich LLP - Madison

# **OU3/Lower Closure Documentation Sampling Results Report – Two Additional Sampling Events**



## **Hayton Area Remediation Project December 2018**

Prepared by:



Chicago, Illinois

# **OU3/Lower Closure Documentation Sampling Results Report – Two Additional Sampling Events**

Prepared by:



**230 West Monroe Street, Suite 630  
Chicago, Illinois 60606**

**TRC Project No. 107927**

**December 2018**

## TABLE OF CONTENTS

	<b>Page</b>
1.0 INTRODUCTION .....	1-1
1.1 Background.....	1-1
1.2 Purpose and Scope .....	1-2
2.0 FIELD AND ANALYTICAL METHODS .....	2-1
2.1 Field Locations.....	2-1
2.2 Sediment Core Collection.....	2-2
2.3 Sample Processing and Laboratory Analysis.....	2-2
2.4 Quality Assurance/Quality Control.....	2-3
2.5 Equipment Decontamination .....	2-3
2.6 Investigation Derived Waste (IDW) Management .....	2-4
3.0 INVESTIGATION RESULTS .....	3-1
3.1 Sediment Type and Distribution .....	3-1
3.2 Individual Sediment Sample Analytical Results.....	3-1
3.3 Surface-Area Weighted Average Concentration (SWAC) .....	3-2
4.0 CONCLUSIONS AND RECOMMENDATIONS .....	4-1
4.1 Conclusions.....	4-1
4.2 Recommendations.....	4-2
5.0 REFERENCES .....	5-1

## **LIST OF TABLES**

- Table 1. Physical Field Measurements – OU3/Lower Reaches M - P  
Table 2. Summary of Sediment Analytical Results – OU3/Lower Reaches M - P

## **LIST OF FIGURES**

- Figure 1. HARP Overview  
Figure 2. OU3/Lower Reaches M – P Closure Documentation - November 2018

## **LIST OF APPENDICES**

- APPENDIX A SEDIMENT CORE LOGS  
APPENDIX B LABORATORY REPORTS



## LIST OF ACRONYMS AND ABBREVIATIONS

DI	Deionized Water
GPS	Global Positioning System
HARP	Hayton Area Remediation Project
IDW	Investigation Derived Waste
LPDE	Low-Density Polyethylene
OUs	Operable Units
PCB	Polychlorinated Biphenyl
PPE	Personal Protective Equipment
PRV	Post Remedial Verification
PVC	Polyvinyl Chloride
QC	Quality Control
RALs	Remedial Action Levels
SWAC	Surface-Area Weighted Average Concentration
TRC	TRC Environmental Corporation
USCS	Unified Soil Classification System
USEPA	United States Environmental Protection Agency
TRC	TRC Environmental Corporation
WDNR	Wisconsin Department of Natural Resources

## 1.0 INTRODUCTION

### 1.1 Background

The Hayton Area Remediation Project (HARP) is located in Calumet County, Wisconsin, and has been divided into four operable units (OUs). An overview of HARP and the OUs is shown in Figure 1. The Site includes HARP and areas downstream of the dam at the Hayton Millpond where hazardous substances attributable to the former Tecumseh manufacturing facility may have migrated (WDNR, 2018). This report deals solely with OU3/Lower of HARP and does not address the Site as a whole.

In November 2018, WDNR, Tecumseh and TRC Environmental Corporation (TRC) executed a Negotiated Agreement (BRRTS #02-08-281506) (Agreement) to cover the remaining known response actions and containing a schedule to conduct non-emergency actions under Wis. Stats. Section 292.11(3) (WDNR, 2018). This Agreement terminated the 2004 Consent Order for HARP.

OU3/Lower was previously characterized for polychlorinated biphenols (PCBs) during multiple sampling events that preceded and followed sediment removal activities. Sediment was removed from OU3/Lower in 2011 and 2013 – 2016. In 2016, remediation of sediments and soils was completed through the end of Reach P, the terminus of OU3/Lower, except for one small overbank soil area in Reach P. The small overbank soil area in Reach P was excavated and restored in August 2017. All of the above-referenced work was performed under the oversight and approval of Wisconsin Department of Natural Resources (WDNR) and the United States Environmental Protection Agency (USEPA).

The in-channel sediment in OU3/Lower was excavated in the dry to hardpan (e.g., native clay), after flow diversion and dewatering sections of the stream. In addition, extensive bank soil areas were excavated to achieve the established Remedial Action Levels (RALs), backfilled with clean soil, and stabilized with vegetative matting and seeding to restore the bank areas and wetlands. Results from post remediation verification (PRV) samples were consistent with the implementation of a successful remediation program in OU3/Lower. In addition, extensive sediment and overbank soil removal activities have been completed in upstream OUs, and post-remediation sediment sampling results indicate a very low risk of exposure to PCBs throughout OUs 1 through OU3/Upper. No further action letters have either been received or are due pursuant to the Negotiated Agreement entered in November 2018 for all upstream OUs (1 & 2) and reaches of OU3/Upper.

In November 2017, to confirm the effectiveness of remediation activities and to evaluate closure of OU3/Lower, post-remediation soft sediment samples were collected in

OU3/Lower (Reaches M – P) and evaluated consistent with the Three-Tier Closure Process agreed to among the parties (TRC, 2011; WDNR, 2012; Exhibit D, Negotiated Agreement, 2018). Based on these soft sediment sample results two additional soft sediment sample events were completed and evaluated consistent with the Three-Tier Closure Process. The purpose of this sampling was to provide additional data to:

- Evaluate the PCB surface-area weighted average concentration (SWAC) in surficial sediment in comparison to the November 2017 closure documentation sampling event (SWAC of 2.17 mg/kg).
- Determine if closure of OU3/Lower Reaches M-P is appropriate based on the SWAC results, risk reduction achieved, and the Three-Tier Closure Process.

The HARP Three-Tier Closure Process focuses on evaluating the risk reduction achieved by the remediation and is based on a SWAC for PCBs within the applicable OU/Reach (TRC, 2011; WDNR, 2012; Exhibit D, Negotiated Agreement, 2018).

## 1.2 Purpose and Scope

In December 2017, TRC submitted its “OU3 Reach M-P Remedial Documentation Report” (TRC, 2017d). The purpose of that report was to document the methods used to characterize and confirm the complete removal of soft sediments containing PCBs and the removal of bank soils with PCB concentrations above the RAL in Reaches M-P of OU3.

On May 12, 2017, TRC submitted the *OU3/L Closure Post-Remediation Closure Sampling and Analysis Plan* (OU3/Lower SAP) (TRC, 2017a), which proposed post-remediation sediment sampling locations in sediment depositional areas. In a letter dated July 21, 2017, the WDNR provided conditional approval of the OU3/L SAP requesting that only soft sediment material be sampled and relocating two sediment sampling locations (S11 and S12). TRC responded to the conditional approval in a letter dated July 25, 2017, clarifying procedures and data collection and relocating the two sediment sample locations.

The first round of post-remediation closure sediment samples from OU3/Lower Reaches M - P were collected on November 6, 2017 following a 1-inch rainfall event in accordance with the methods described in the WDNR-approved OU3/Lower SAP and under the oversight of the WDNR. Results of the November 2017 closure sediment sampling were evaluated in accordance with the methods and closure criteria described in the OU3/L SAP. The results were reported to the WDNR in the “OU3/Lower Closure Documentation Sampling Results Report” (TRC, 2018). The calculated SWAC for OU3/Lower Reaches M – P fell within the “Tier 2” level (between 1 and 3 mg/kg). The

calculated SWAC for OU3/Lower confirmed that only low-level residual concentrations of PCBs are present and are within the “Tier 2” criteria.

In the “OU3/Lower Closure Documentation Sampling Results Report” TRC recommended OU3/Lower Reaches M - P be sampled two additional times to evaluate and document that closure of OU3/Lower is appropriate in accordance with the Three-Tier Closure Process (TRC, 2018). TRC sampled the same 8 locations that were sampled in November 2017 in accordance with the approved OU3/Lower SAP (TRC, 2017a) and the response to conditional approval (TRC, 2017b). The first round of additional sampling was performed on May 2, 2018, and June 28, 2018. The second round of additional sampling was performed on November 13, 2018. Both rounds followed significant rainfall events. All of the sediment sampling was performed pursuant to WDNR oversight.

The balance of this report presents the results of the two additional sediment sampling events; quantifies the SWAC of PCBs in these Reaches; and provides recommendations in accordance with the Three-Tier Closure Process.

The report is organized as follows:

- Section 1 describes the background, purpose and scope of the investigation
- Section 2 describes the field and analytical methods
- Section 3 presents the investigation results
- Section 4 provides conclusions and recommendations
- Section 5 lists the references

## 2.0 FIELD AND ANALYTICAL METHODS

Field and analytical methods were completed in accordance with the methods described in the OU3/Lower SAP (TRC, 2017a) and Response to Conditional Approval (TRC, 2017b).

### 2.1 Field Locations

During the initial round of closure documentation sampling of OU3/Lower Reaches M - P on November 6, 2017, each of the sample locations was located in the field using a high-resolution global positioning system (GPS) unit, which was pre-programmed with the approved sample location coordinates. The GPS unit was used in the field to navigate to and to get as close as practicable to the approved sample coordinates. The estimated level of accuracy was within 3 feet (+/-) based on the GPS unit (with sub-foot to sub-meter accuracy). During the sample activities, WDNR and TRC conducted a field reconnaissance of each targeted area and selected eight specific locations for sediment core collection. The core samples were collected from the thicker deposits of soft sediment that were found by probing the creek bottom at various locations, conservatively biasing the sample results for purposes of a representative SWAC. The final sample locations were precisely located using the GPS unit. The sediment sample locations are shown on Figure 2.

The subsequent sampling events (Spring 2018 and November 2018) targeted the same 8 sample locations that were sampled in November 2017. Each of those subsequent sample locations was similarly located in the field using the GPS unit, which was pre-programmed with the November 2017 sample location coordinates. The GPS unit was used in the field to navigate to the previous sample location and to get as close as practicable to the previous sample coordinates. Once the location was determined in the creek, a sediment sample was collected from the target location. The final location of each sediment sample that was collected for laboratory analysis was recorded using the GPS unit. The sediment sample locations are identified on the sediment core logs (Appendix A) and are shown on Figure 2.

In Spring 2018, the initial sediment sampling was completed on May 2, 2018. These sampling locations were accessed by wading in the creek and hiking overland. The site conditions were difficult with high water and flooding. Due to these site conditions, TRC was not able to collect the two sample locations in Reach P. On June 28, 2018, TRC used a shallow draft row boat to access the two sediment sample locations and collect soft sediment in Reach P when site conditions had improved. The boat was operated with a battery-powered trolling motor and canoe paddles.

In November 2018, TRC accessed the soft sediment sampling locations and collected the sediment samples in OU3/Lower Reaches M – P from a shallow draft row

boat. Similarly, the boat was operated with a battery-powered trolling motor and canoe paddles.

## **2.2 Sediment Core Collection**

Sediment cores were collected using a new, clean, 4-foot long, 2-inch diameter clear Polyvinyl Chloride (PVC) tube, pre-marked in depth increments of 0.1 feet. At each sampling location, the tube was lowered through the water column until it contacted the sediment surface, and the water depth, estimated to the nearest 0.05 foot, was recorded in the field notebook. The core tube was then pushed by hand into the soft sediment until refusal was encountered and the new water level on the tube was recorded. The penetration depth (i.e., soft sediment thickness) was calculated as the difference between the two water level measurements. General notes regarding the conditions of refusal (e.g., the presence of coarse material or a hard surface) were recorded in the field notebook.

To retrieve the sediment sample, the top of the tube was capped and the core tube gently extracted from the sediment. Upon retrieval, the bottom of the sample tube was immediately capped and sealed. The recovery length at the time of retrieval (to the nearest 0.05 foot) was recorded in the field notebook. The location of the collected sediment core was recorded at the time of sampling using the GPS unit.

After the sample was collected, each of the core tubes was cut down to a transportable length (approximately 1.5 feet, or to just above the standing water surface), and re-capped. The core tubes were then placed on ice in a cooler, kept in an upright position, and transported to the TRC Madison office for sample processing.

## **2.3 Sample Processing and Laboratory Analysis**

The WDNR was invited to observe the processing of all collected samples. Standing water in the core tubes above the sediment surface was removed using a suction pump equipped with low-density polyethylene (LDPE) tubing. New, clean tubing was used to remove water from each sample core. After removing the standing water, the core tubes were cut lengthwise and the sediment core was split to allow for visual logging and sample preparation. A detailed visual description of each core was prepared in accordance with the Unified Soil Classification System (USCS). Sediment core logs are included in Appendix A.

During the November 2017 sampling event, the soft sediment core sample thickness that was recovered at the eight sampling locations ranged from 7.2 to 14.4 inches. During the Spring 2018 sampling event, the soft sediment core sample thickness that was recovered at the eight sampling locations ranged from 8.4 to 16.6 inches. During the

November 2018 sampling event, the soft sediment core sample thickness that was recovered at the eight sampling locations ranged from 6.6 to 11.4 inches.

In accordance with the OU3/Lower SAP (TRC, 2017a), the top 6 inches of sediment was removed from the core tube for sample processing. The soft sediment was placed in a stainless-steel bowl and thoroughly homogenized. The homogenized sediment was placed in a 4-ounce clear, glass laboratory sample container, placed on ice, and transported to Pace Analytical Services, Inc., for PCB analysis (EPA 8082).

## **2.4 Quality Assurance/Quality Control**

Quality assurance and quality control samples were collected during sample processing of the OU3/Lower samples in general accordance with the OU3/L SAP (TRC, 2017a). An equipment blank consisting of analyte-free water was collected and submitted to the laboratory to check for procedural contamination that may cause sample contamination. Equipment blanks are collected following the decontamination of non-dedicated sampling equipment. One equipment blank, consisting of rinsate water from a stainless-steel mixing bowl, from each sampling event was submitted for laboratory analysis. In addition, one duplicate sample from each sampling event was submitted for laboratory analysis.

All non-dedicated, non-disposable field equipment was decontaminated as described in Subsection 2.5.

## **2.5 Equipment Decontamination**

For the sediment sampling in the field, TRC used dedicated and disposable sampling equipment and supplies.

For sample processing, TRC used non-dedicated and non-disposable equipment, including stainless-steel bowls and spatula. In accordance with the OU3/Lower SAP and consistent with the QUAPP (TRC, 2017c), all non-dedicated and non-disposable sampling equipment was decontaminated prior to its initial use, between sample processing, and at the end of sample processing using the following steps:

- Wash the equipment in a non-phosphate detergent and potable water solution.
- Triple-rinse with deionized (DI) water.
- Air dry the equipment on a clean plastic sheet.

Investigation derived waste (IDW) was containerized in plastic bags, and managed as described in Subsection 2.6.

## 2.6 Investigation Derived Waste (IDW) Management

IDW was properly managed or disposed. Excess sediment generated during sampling activities was placed in a sealed 5-gallon bucket, labeled with the material contents and generation date and transported to the Millpond building for storage until the next construction season. The excess sediment will be disposed of with the sediment removed during the next construction season.

All surface water that was drained from the sediment core tubes and all decontamination fluids generated during sample processing was contained in sealed 5-gallon buckets at the Millpond building for storage. The wastewater will be disposed of with IDW generated during the next construction activities.

Used personal protective equipment (PPE), disposable sampling equipment (e.g., used core tubes and tubing), IDW and general uncontaminated debris or waste materials produced during the field work were collected in sealed plastic bags, and transported to the TRC office dumpster. This waste was disposed of by a commercial disposal contractor.



### **3.0 INVESTIGATION RESULTS**

#### **3.1 Sediment Type and Distribution**

Each of the sediment cores was described according to the USCS and detailed core logs were prepared. The sediment core logs for the Spring 2018 and November 2018 sediment sampling events are included in Appendix A. The sediment encountered during this investigation was primarily soft organic silt with varying amounts of fine sand and fibrous plant material, with occasional zones of clayey silt or silty lean clay. The sediments were typically soft to very soft, wet, and dark gray or brown in color.

Table 1 summarizes the physical field measurements (water depth and soft sediment thickness) collected during the sediment sampling events. The water depths measured at the sampling locations varied from 0.30 to 2.40 feet (1.1 to 2.2 feet in November 2018). Soft sediment was encountered at all eight (8) of the WDNR-selected sample locations, with soft sediment thicknesses ranging from 0.7 to 1.8 feet in Spring 2018 and from 0.8 to 1.5 feet in November 2018. The soft sediment core lengths recovered at the eight sampling locations ranged from 8.4 to 16.6 inches in Spring 2018 and from 6.6 to 11.4 inches in November 2018; all of the cores recovered 6 inches or more of soft sediment.

#### **3.2 Individual Sediment Sample Analytical Results**

Table 2 presents a summary of the laboratory analytical results for each individual sediment sample for each sediment sampling event. Laboratory data sheets for the Spring 2018 and November 2018 sediment sampling events are included in Appendix B. Figure 2 shows the sample locations and total PCB concentration associated with each sample. The eight individual sample results for the three sampling events ranged between 0.234 and 5.01 mg/kg. Four sample results were below 1 mg/kg, and seven of the eight sample results were below 2 mg/kg. Five of the sample results were lower than their Spring 2018 results, and seven of the sample results were lower than their November 2017 sample results. These results clearly indicate a downward trend. The distribution of results confirms low level residual PCBs with no identified “hot spots”. The core sampling method did not “dilute” any sample results or otherwise bias the results toward closure. At all sample locations, only soft, fine-grained organic-rich sediments were sampled and analyzed. The analytical results and SWAC evaluation are discussed further in Subsection 3.3.

One equipment blank was collected from each sampling event from the sample processing equipment during the processing of the OU3/Lower sediment samples. No

PCBs were detected in the equipment blank, indicating proper equipment decontamination procedures in the field.

One duplicate sample (OU3-IC-S8-L) was collected from the OU3/Lower sediment sample Spring 2018 sampling event. The field duplicate sample relative percent difference (RPD) of 7.5% was within the Quality Control (QC) target limit of 50%.

One duplicate sample (OU3-IC-S11-R) was collected from the OU3/Lower sediment sample November 2018 sampling event. The field duplicate sample RPD of 69.7% was above the QC target limit of 50%. Given the variable nature of sediment matrices, the low concentrations associated with this sample and the duplicate, the data is considered accurate and usable.

### **3.3 Surface-Area Weighted Average Concentration (SWAC)**

SWAC is a method of computing an area-weighted concentration to evaluate risk and exposure associated with a particular constituent of concern. The SWAC approach has been used to evaluate the risks posed by sediment in the stream channel and to confirm closure for OU1, OU2 and upstream portions of OU3/Upper. The methodology for the calculation is presented in the OU3/Lower SAP (TRC, 2017a).

Using the actual stream widths (as requested by WDNR), the SWAC calculated for the OU3/Lower Reaches M - P was 2.17 mg/kg in November 2017, 1.73 in Spring 2018, and 1.43 in November 2018, which clearly demonstrates a decreasing trend in the SWAC. The SWAC calculations are shown on Figure 2.

The OU3/Lower Reaches M – P SWAC sampling was performed a year after remedy completion, and after storm events and/or spring runoff that would “rework the stream bed” as proposed by TRC (TRC, 2018). The Spring 2018 sampling event was collected after the 2018 spring snow melt runoff, which is not reflected in the rainfall record (NOAA, 2018). The November 2018 sampling event was collected after fall rains, which is reflected in the rainfall record (NOAA, 2018). As a result, the surficial sediment concentrations reflect the effects of mixing and re-deposition during and after high flow events. Further, only soft, organic-rich fine-grained sediments were sampled at these locations, which tend to absorb PCBs and as such reflect “worst case” concentrations. Therefore, the SWAC results are biased high and reflect a worst-case or conservative condition.

## 4.0 CONCLUSIONS AND RECOMMENDATIONS

### 4.1 Conclusions

In summary, significant risk reduction has been achieved and to the extent practicable within OU3/Lower. In addition, extensive habitat restoration, preservation and enhancement both in-channel and along the bank areas is successful and complete.

The OU3/Lower Reaches M - P SWAC results are characterized by low-level residual concentrations of PCBs in the bioactive sediment layer. The results also confirm that the low-level residual concentrations of PCBs are within the Tier 2 of the Three-Tier Closure Process criteria (closer to 1 mg/kg) and are trending down (TRC, 2011; WDNR, 2012; Exhibit D, Negotiated Agreement, 2018).

A SWAC in this Tier 2 range indicates a very low risk of exposure to PCBs in the bioactive sediment layer throughout OU3. The SWAC confirms that significant risk reduction has been achieved by the remedial activities completed in OU3 and verifies a declining trend in the SWAC in the three sampling events from November 2017 through November 2018 (from 2.17 mg/kg to 1.43 mg/kg). Furthermore, the samples collected for the SWAC analysis contained only fine-grained, organic-rich silt and were sampled following significant events sufficient to rework the depositional bed. These results and the record demonstrate that:

- The removal of PCB-impacted sediments and overbank material was successfully completed in OU3/Lower, in accordance with the WDNR and USEPA approved Scopes of Work and Addenda.
- PRV sample results demonstrated successful removal to project RALs.
- Habitat restoration of OU3 was completed with successful vegetative stabilization of the floodplain and bank areas. The restored and recovered environment has significantly improved the natural habitat, indicating that the overall system is recovering.
- The OU3 remedial action has been conducted to the extent practicable, as the term is defined in 292.11(3), Wis. Stats and NR 700.03(45), Wis. Admin. Code and as referenced in the project Consent Order.
- OU1 (closed), OU2 (closed), and OU3/Upper – Reaches H, I, and J (closed) and K and L (pending closure letter from WDNR) do not serve as on-going sources to OU3/Lower Reaches M - P.

- OU3 does not serve as an on-going source of concern to the downstream reaches of Pine Creek. No “hot spots” or areas of uncharacteristically high PCB concentrations were identified during the closure documentation sampling. The closure documentation sampling confirms the thoroughness of the removal actions in the subject Reaches and upstream.
- Given the above, additional natural recovery will occur over time.
- No discrete locations require additional investigation, since only low-level residual PCB concentrations are evident throughout OU3/Lower.
- Additional removal within OU3/Lower Reaches M - P is not necessary and furthermore would not provide a net environmental benefit (i.e., the trade-off between a small reduction in PCB concentrations as compared to the loss of restored habitat). As stated in the Consent Order, habitat preservation and enhancement is a performance standard that requires the protection and enhancement of listed species, and the protection and restoration of critical freshwater habitats.

## 4.2 Recommendations

The results of the additional closure documentation sampling address the agencies’ stated concerns and support the finding that closure of OU3/Lower Reaches M - P is appropriate. Based on these results (trending down over three sampling events) and field observations, TRC recommends OU3/Lower Reaches M - P be closed in accordance with the Tier 2 criteria. Pursuant to Sec. III (I) of the Agreement, Tecumseh successfully completed the post-removal closure sampling of OU3 Lower Reaches M – P (WDNR, 2018). Consistent with The Three Tier Closure Process of Exhibit D of the Agreement, results indicate a no further action letter issued by the Department pursuant to Sec. (IV)(B) of the Agreement is now required (WDNR, 2018).

## 5.0 REFERENCES

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- TRC. 2011. *Proposed Site Execution and Closure Process. HARP.* TRC Environmental Corporation. Chicago, IL. August 2011.
- TRC. 2017a. *OU3/L Post-Remediation Closure Sampling and Analysis Plan. HARP.* TRC Environmental Corporation. Chicago, IL. May 2017.
- TRC. 2017b. Letter from TRC to WDNR. *OU3/L Post-Remediation Closure Sampling and Analysis Plan. Response to Conditional Approval. HARP.* TRC Environmental Corporation. Chicago, IL. July 25, 2017.
- TRC. 2017c. *Quality Assurance Project Plan. Hayton Area Remediation Project, Operable Unit 3/Lower and Operable Unit 4. Chilton, Calumet County, Wisconsin. Revision 3.* TRC Environmental Corporation. October 2017.
- TRC. 2017d. *OU3 Reach M-P Remedial Documentation Report. HARP.* TRC Environmental Corporation. Chicago, IL. December 2017.
- TRC. 2018. *OU3/Lower Closure Documentation Sampling Results Report. HARP.* TRC Environmental Corporation. Chicago, IL. February 14, 2018.
- WDNR. Tecumseh Products, and TRC. 2004. Consent Order No. 2004-COEE-010; Facility ID No. WID006116529.
- WDNR 2012. Letter from WDNR to TRC, *Hayton Area Remediation Project Path to Closure.* August 2, 2012.
- WDNR. 2017. Letter from WDNR to TRC. *Conditional Approval, OU3/L Post-Remediation Closure Sampling and Analysis Plan. HARP.* July 12, 2017.
- WDNR. Tecumseh Products and TRC. 2018. Negotiated Agreement; BRRTS #02-08-281506.

## TABLES

Table 1  
Physical Field Measurements - OU3/Lower Reaches M - P

SAMPLE LOCATION	IN-CHANNEL AREA <sup>(1)</sup>	NOVEMBER 6, 2017			MAY 2, 2018			JUNE 28, 2018			NOVEMBER 13, 2018		
		WATER DEPTH (ft)	SEDIMENT THICKNES S	CORE RECOVERY (inches, at processing)	WATER DEPTH (ft)	SEDIMENT THICKNES S	CORE RECOVERY (inches, at processing)	WATER DEPTH (ft)	SEDIMENT THICKNES S	CORE RECOVERY (inches, at processing)	WATER DEPTH (ft)	SEDIMENT THICKNES S	CORE RECOVERY (inches, at processing)
S05	Right	0.3	1.9	7.2	2.7	1.2	9.0	-( <sup>3</sup> )	-( <sup>3</sup> )	-( <sup>3</sup> )	1.8	1.1	8.4
S06	Left	1.0	2.8	9.6	2.6	1.8	9.6	-( <sup>3</sup> )	-( <sup>3</sup> )	-( <sup>3</sup> )	2.2	1.2	10.2
S07	Left	0.5	1.8	8.4	2.0	1.2	8.4	-( <sup>3</sup> )	-( <sup>3</sup> )	-( <sup>3</sup> )	1.1	1.4	8.4
S08	Left	0.7	2.4	14.4	2.3	1.6	12.6	-( <sup>3</sup> )	-( <sup>3</sup> )	-( <sup>3</sup> )	1.4	1.2	7.2
S09	Left	1.6	2.4	9.6	3.3	0.7	8.4	-( <sup>3</sup> )	-( <sup>3</sup> )	-( <sup>3</sup> )	1.3	1.4	6.6
S10	Left	1.2	2.7	9.6	3.0	1.7	13.2	-( <sup>3</sup> )	-( <sup>3</sup> )	-( <sup>3</sup> )	1.8	1.5	11.4
S11	Right	2.4	4.0	12.0	-( <sup>2</sup> )	-( <sup>2</sup> )	-( <sup>2</sup> )	3.37	1.5	12.0	2.1	1.3	8.4
S12	Left	2.4	3.4	12.0	-( <sup>2</sup> )	-( <sup>2</sup> )	-( <sup>2</sup> )	2.61	0.7	16.6	1.7	0.8	7.2

Footnotes:

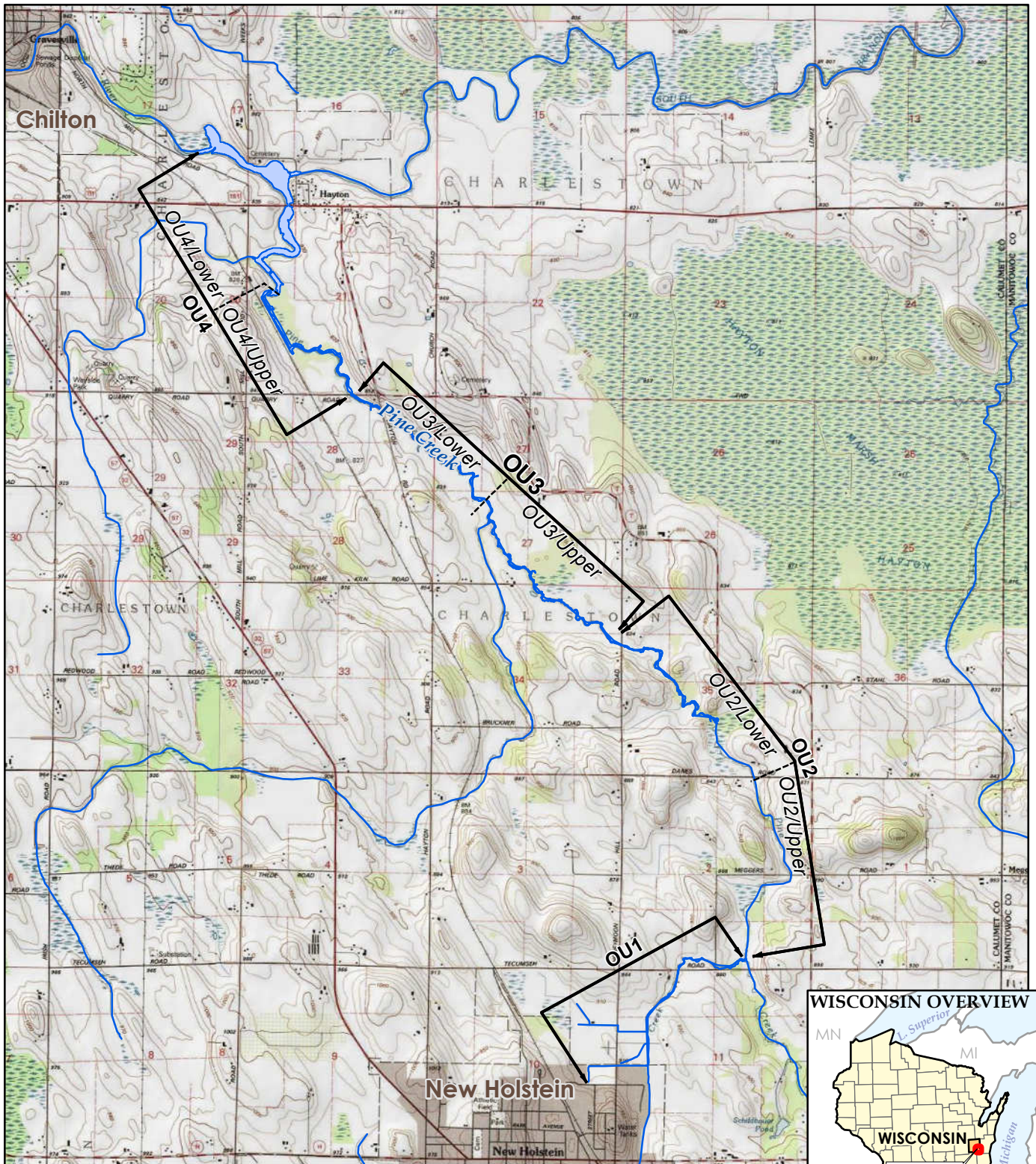
- <sup>(1)</sup> General area of creek cross-section where the sediment core was collected, relative to downstream flow direction (i.e., looking downstream).
- <sup>(2)</sup> Samples were unable to be collected at these points in May due to high water levels. Second sampling event in July was scheduled to collect missed samples.
- <sup>(3)</sup> These samples were not collected in June because they had already been collected in May.

Table 2  
Summary of Sediment Analytical Results - OU3/Lower Reaches M - P

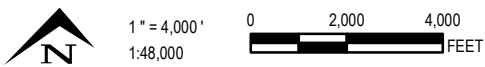
SAMPLE LOCATION	SAMPLE ID	SAMPLE DATE	TOTAL PCB CONCENTRATION (mg/kg)	SAMPLE ID	SAMPLE DATE	TOTAL PCB CONCENTRATION (mg/kg)	SAMPLE ID	SAMPLE DATE	TOTAL PCB CONCENTRATION (mg/kg)
S05	OU3-IC-S5-R	11/6/2017	1.610	OU3-IC-S5-R	5/2/2018	1.210	OU3-IC-S5-R	11/13/2018	0.626
S06	OU3-IC-S6-L	11/6/2017	1.180	OU3-IC-S6-L	5/2/2018	1.060	OU3-IC-S6-L	11/13/2018	0.877
S07	OU3-IC-S7-L	11/6/2017	2.050	OU3-IC-S7-L	5/2/2018	0.983	OU3-IC-S7-L	11/13/2018	1.490
S08	OU3-IC-S8-L	11/6/2017	2.180	OU3-IC-S8-L	5/2/2018	3.210	OU3-IC-S8-L	11/13/2018	1.940
S09	OU3-IC-S9-L	11/6/2017	2.810	OU3-IC-S9-L	5/2/2018	1.740	OU3-IC-S9-L	11/13/2018	5.010
S10	OU3-IC-S10-L	11/6/2017	1.930	OU3-IC-S10-L	5/2/2018	2.660	OU3-IC-S10-L	11/13/2018	0.706
S11	OU3-IC-S11-R	11/6/2017	2.490	OU3-IC-S11-R	6/28/2018	2.230	OU3-IC-S11-R	11/13/2018	0.234
S12	OU3-IC-S12-L	11/6/2017	3.040	OU3-IC-S12-L	6/28/2018	1.030	OU3-IC-S12-L	11/13/2018	1.740



## FIGURES



BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES (1992-1993).



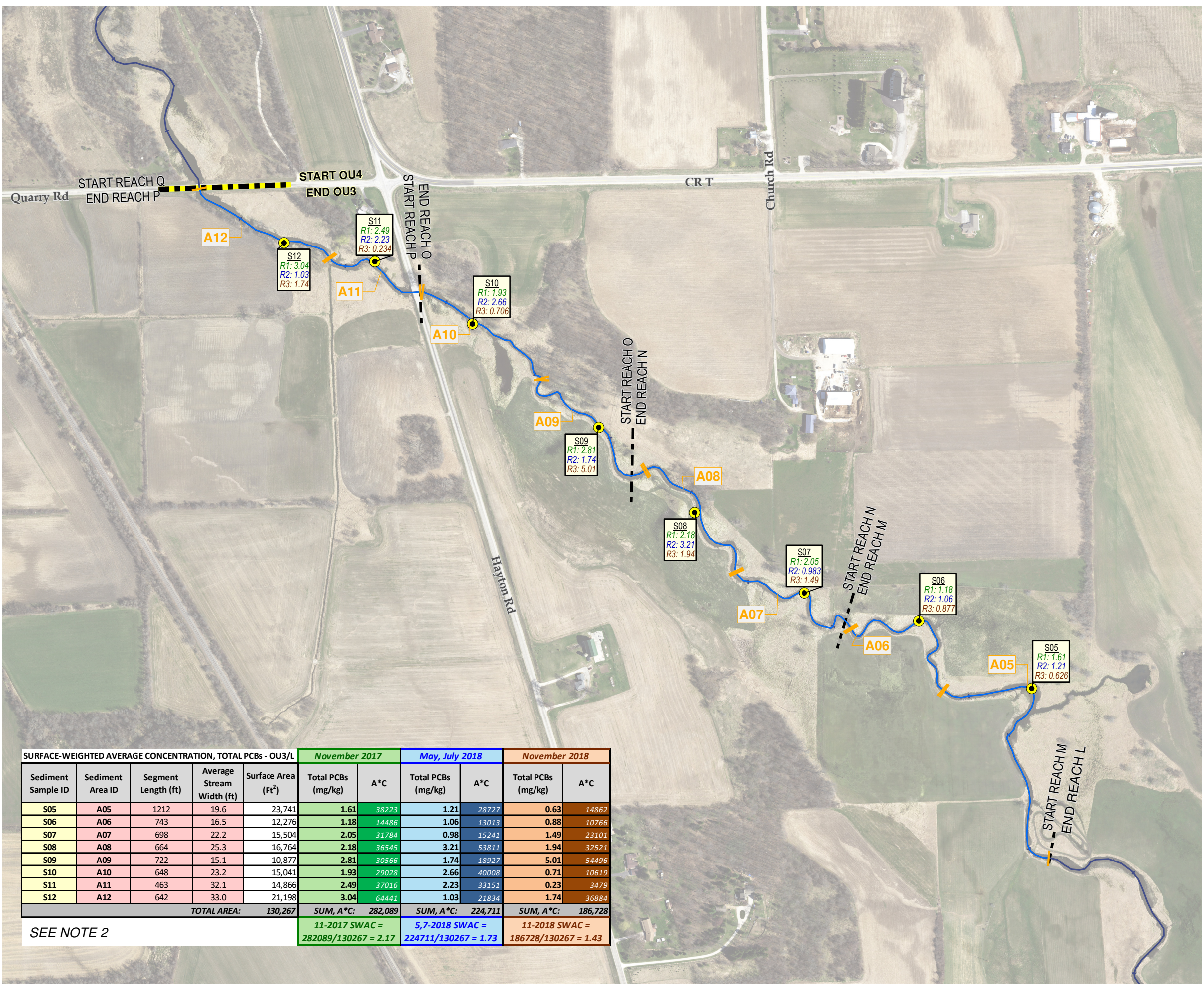
230 West Monroe St.  
 Suite 630  
 Chicago, IL 60606  
 Phone: 312.578.0870

**HARP OU3/LOWER (REACHES M-P)  
 CLOSURE DOCUMENTATION**

**SITE LOCATION MAP**

DRAWN BY:	J. PAPEZ
APPROVED BY:	C. HARVEY
PROJECT NO:	107927-9300
FILE NO.	197927-9300-033Bslm.mxd
DATE:	DECEMBER 2018

FIGURE 1



**LEGEND**

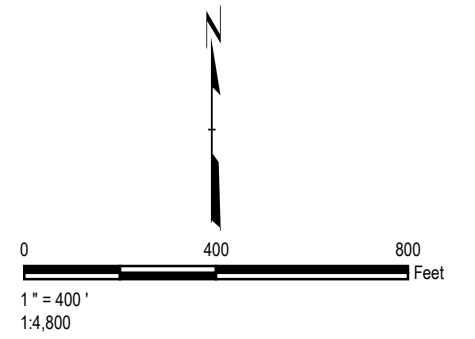
- SEDIMENT SAMPLING/TRANSECT LOCATION
- SWAC ANALYSIS AREA

**LABEL FORMAT**

**SAMPLE ID**  
 NOVEMBER 2017 PCB RESULT [mg/kg]  
 MAY, JULY 2018 PCB RESULT [mg/kg]  
 NOVEMBER 2018 PCB RESULT [mg/kg]

**NOTES**

1. BASE MAP IMAGERY PROVIDED BY CALUMET COUNTY PLANNING, ZONING, & LAND INFORMATION DEPARTMENT, 2014.
2. AREAS USED FOR SWAC CALCULATION ARE BASED ON VISUAL INTERPRETATION OF THE WATER SURFACE IN THE RIVER, THESE MEASUREMENTS ARE APPROXIMATE.



SURFACE-WEIGHTED AVERAGE CONCENTRATION, TOTAL PCBs - OU3/L					November 2017		May, July 2018		November 2018	
Sediment Sample ID	Sediment Area ID	Segment Length (ft)	Average Stream Width (ft)	Surface Area (Ft <sup>2</sup> )	Total PCBs (mg/kg)	A* <sup>c</sup>	Total PCBs (mg/kg)	A* <sup>c</sup>	Total PCBs (mg/kg)	A* <sup>c</sup>
S05	A05	1212	19.6	23,741	1.61	38223	1.21	28727	0.63	14862
S06	A06	743	16.5	12,276	1.18	14486	1.06	13013	0.88	10766
S07	A07	698	22.2	15,504	2.05	31784	0.98	15241	1.49	23101
S08	A08	664	25.3	16,764	2.18	36545	3.21	53811	1.94	32521
S09	A09	722	15.1	10,877	2.81	30566	1.74	18927	5.01	54496
S10	A10	648	23.2	15,041	1.93	29028	2.66	40008	0.71	10619
S11	A11	463	32.1	14,866	2.49	37016	2.23	33151	0.23	3479
S12	A12	642	33.0	21,198	3.04	64441	1.03	21834	1.74	36884
<b>TOTAL AREA:</b>				<b>130,267</b>	<b>SUM, A*<sup>c</sup>:</b>	<b>282,089</b>	<b>SUM, A*<sup>c</sup>:</b>	<b>224,711</b>	<b>SUM, A*<sup>c</sup>:</b>	<b>186,728</b>
<b>SEE NOTE 2</b>					<b>11-2017 SWAC =</b>	<b>282089/130267 = 2.17</b>	<b>5,7-2018 SWAC =</b>	<b>224711/130267 = 1.73</b>	<b>11-2018 SWAC =</b>	<b>186728/130267 = 1.43</b>

PROJECT: **OU3/LOWER REACHES M - P**

TITLE: **OU3/LOWER REACHES M - P CLOSURE DOCUMENTATION NOVEMBER 2018**

DRAWN BY: J PAPEZ PROJ NO: 107927-9300

CHECKED BY: B WACHHOLZ

APPROVED BY: C HARVEY

DATE: DECEMBER 2018

**FIGURE 2**

**TRC** 708 Heartland Trail, Suite 3000  
Madison, WI 53717  
Phone: 608.826.3600  
www.trcsolutions.com

FILE NO: 197927-9300-034C.mxd

**APPENDIX A**  
**SEDIMENT CORE LOGS**



# SEDIMENT CORE LOG

**BORING NO. OU3 S-05 May 2018**

Facility/Project Name: <b>Hayton Area Remediation Project Closure Documentation</b>		Date Drilling Started: <b>5/2/18</b>	Date Drilling Completed: <b>5/2/18</b>	Project Number: <b>107927.0000</b>
Drilling Firm: <b>TRC Environmental Corp.</b>	Drilling Method: <b>Push tube</b>	Surface Elev. (ft) <b>---</b>	TOC Elevation (ft) <b>---</b>	Total Depth (in bgs) <b>9.0</b>
Boring Location: <b>Pine Creek, Reach M</b>		Personnel Logged By - <b>M. Westover</b> Driller - <b>M. Westover</b>		Drilling Equipment: <b>2" PVC Core Tube</b>
State Plane N: <b>735427.73</b> E: <b>2468793.42</b>				
Civil Town/City/or Village: <b>New Holstein</b>	County: <b>Calumet</b>	State: <b>Wisconsin</b>	Water Level Observations: While Drilling:      Date/Time After Drilling:      Date/Time	
			Depth (ft bgs)	Depth (ft bgs)

SAMPLE	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
NUMBER AND TYPE				
RECOVERY (%)				
BLOW COUNTS				
DEPTH IN INCHES				
CS	<p><b>ORGANIC SILT (OL)</b>, trace fine sand, brown, wet, soft, occasional pieces of decaying plant material (roots or fine fibers).</p>	OL		<p>0" to 6" interval collected for analytical sample.</p>
	<p><b>SANDY LEAN CLAY (CL)</b>, plastic, gray.</p>	CL		
	<p><b>End of core at 9 inches.</b></p>			

SOIL CORE LOG (INCHES) W/PHOTO\_HARP\_HAYTONWI\_169240.GPJ\_107927.0000\_8/10/18



# SEDIMENT CORE LOG

**BORING NO. OU3 S-06 May 2018**

Facility/Project Name: <b>Hayton Area Remediation Project Closure Documentation</b>		Date Drilling Started: <b>5/2/18</b>	Date Drilling Completed: <b>5/2/18</b>	Project Number: <b>107927.0000</b>
Drilling Firm: <b>TRC Environmental Corp.</b>	Drilling Method: <b>Push tube</b>	Surface Elev. (ft) <b>---</b>	TOC Elevation (ft) <b>---</b>	Total Depth (in bgs) <b>9.6</b>
Boring Location: <b>Pine Creek, Reach M</b>		Personnel Logged By - <b>M. Westover</b> Driller - <b>M. Westover</b>		Drilling Equipment: <b>2" PVC Core Tube</b>
State Plane N: <b>735709.02</b> E: <b>2468320.06</b>				
Civil Town/City/or Village: <b>New Holstein</b>	County: <b>Calumet</b>	State: <b>Wisconsin</b>	Water Level Observations: While Drilling:      Date/Time After Drilling:      Date/Time	
			Depth (ft bgs) Depth (ft bgs)	

SAMPLE	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
NUMBER AND TYPE				
RECOVERY (%)				
BLOW COUNTS				
DEPTH IN INCHES				
<b>CS</b>	<p><b>ORGANIC SILT (OL)</b>, trace fine sand, non-cohesive, brown, wet, decaying grasses.</p> <p style="text-align: center;">Same as above, more cohesive, no decaying grass, fine white shells throughout.</p> <p><b>End of core at 9.6 inches.</b></p>	<b>OL</b>		<p>0" to 6" interval collected for analytical sample.</p>

SOIL CORE LOG (INCHES) W/PHOTO\_HARP\_HAYTONWI\_169240.GPJ\_107927.0000\_8/10/18



# SEDIMENT CORE LOG

**BORING NO. OU3 S-07 May 2018**

Page 1 of 1

Facility/Project Name: <b>Hayton Area Remediation Project Closure Documentation</b>		Date Drilling Started: <b>5/2/18</b>	Date Drilling Completed: <b>5/2/18</b>	Project Number: <b>107927.0000</b>	
Drilling Firm: <b>TRC Environmental Corp.</b>	Drilling Method: <b>Push tube</b>	Surface Elev. (ft) <b>---</b>	TOC Elevation (ft) <b>---</b>	Total Depth (in bgs) <b>8.4</b>	Borehole Dia. (in) <b>2</b>
Boring Location: <b>Pine Creek, Reach N</b>		Personnel Logged By - <b>M. Westover</b> Driller - <b>M. Westover</b>		Drilling Equipment: <b>2" PVC Core Tube</b>	
State Plane N: <b>735826.44</b> E: <b>2467842.15</b>					
Civil Town/City/or Village: <b>New Holstein</b>	County: <b>Calumet</b>	State: <b>Wisconsin</b>	Water Level Observations: While Drilling:      Date/Time After Drilling:      Date/Time		
			Depth (ft bgs) Depth (ft bgs)		

SAMPLE		BLOW COUNTS	DEPTH IN INCHES	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
NUMBER AND TYPE	RECOVERY (%)						
CS			0	<b>ORGANIC SILT (OL)</b> , trace fine sand, decaying leaves and twigs, non-cohesive, wet.	OL		0" to 5.4" interval collected for analytical sample.
			2				
			4				
			6	<b>SILTY LEAN CLAY (CL)</b> , slightly plastic, grayish brown, mottled, appears reworked.	CL		
			8	<b>End of core at 8.4 inches.</b>			
			10				
			12				
			14				

SOIL CORE LOG (INCHES) W/PHOTO\_HARP\_HAYTONWI\_169240.GPJ\_107927.0000\_8/10/18

Signature:	Firm: <b>TRC Environmental Corp.</b> 708 Heartland Trail, Suite 3000 Madison, WI 53717	(608) 826-3600 Fax (608) 826-3941
------------	---	--------------------------------------



# SEDIMENT CORE LOG

**BORING NO. OU3 S-08 May 2018**

Page 1 of 1

Facility/Project Name: <b>Hayton Area Remediation Project Closure Documentation</b>		Date Drilling Started: <b>5/2/18</b>	Date Drilling Completed: <b>5/2/18</b>	Project Number: <b>107927.0000</b>	
Drilling Firm: <b>TRC Environmental Corp.</b>	Drilling Method: <b>Push tube</b>	Surface Elev. (ft) <b>---</b>	TOC Elevation (ft) <b>---</b>	Total Depth (in bgs) <b>12.6</b>	Borehole Dia. (in) <b>2</b>
Boring Location: <b>Pine Creek, Reach N</b>		Personnel Logged By - <b>M. Westover</b> Driller - <b>M. Westover</b>		Drilling Equipment: <b>2" PVC Core Tube</b>	
State Plane N: <b>736162.18</b> E: <b>2467383.78</b>					
Civil Town/City/or Village: <b>New Holstein</b>	County: <b>Calumet</b>	State: <b>Wisconsin</b>	Water Level Observations: While Drilling:      Date/Time After Drilling:      Date/Time		
			Depth (ft bgs) Depth (ft bgs)		

SAMPLE	NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN INCHES	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
	CS			2	<b>ORGANIC SILT (OL)</b> , trace fine sand, slightly cohesive, brown, soft.	OL		0" to 6" interval collected for analytical sample.
				4				
				6	Same as above, some fine mm-scale layers of gray fine silty sand within organic silt.	OL		
				8				
				10	<b>SILTY LEAN CLAY (CL)</b> , plastic, gray, soft, appears reworked.	CL		
				12				
				14	<b>End of core at 12.6 inches.</b>			

SOIL CORE LOG (INCHES) W/PHOTO\_HARP\_HAYTONWI\_169240.GPJ\_107927.0000\_8/10/18





# SEDIMENT CORE LOG

**BORING NO. OU3 S-09 May 2018**

Facility/Project Name: <b>Hayton Area Remediation Project Closure Documentation</b>		Date Drilling Started: <b>5/2/18</b>	Date Drilling Completed: <b>5/2/18</b>	Project Number: <b>107927.0000</b>	
Drilling Firm: <b>TRC Environmental Corp.</b>	Drilling Method: <b>Push tube</b>	Surface Elev. (ft) <b>---</b>	TOC Elevation (ft) <b>---</b>	Total Depth (in bgs) <b>7.8</b>	Borehole Dia. (in) <b>2</b>
Boring Location: <b>Pine Creek, Reach O</b>		Personnel Logged By - <b>M. Westover</b> Driller - <b>M. Westover</b>		Drilling Equipment: <b>2" PVC Core Tube</b>	
State Plane N: <b>736516.70</b> E: <b>2466982.64</b>					
Civil Town/City/or Village: <b>New Holstein</b>	County: <b>Calumet</b>	State: <b>Wisconsin</b>	Water Level Observations: While Drilling:      Date/Time After Drilling:      Date/Time		
			Depth (ft bgs) Depth (ft bgs)		

SAMPLE	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
NUMBER AND TYPE				
RECOVERY (%)				
BLOW COUNTS				
DEPTH IN INCHES				
CS	<b>ORGANIC SILT (OL)</b> , trace fine sand, occasional fibrous roots, brown, slightly cohesive, wet, soft.	OL		0" to 4.8" interval collected for analytical sample.
	<b>SILTY LEAN CLAY (CL)</b> , slightly plastic, brownish gray, soft.	CL		
	<b>End of core at 7.8 inches.</b>			

SOIL CORE LOG (INCHES) W/PHOTO\_HARP\_HAYTONWI\_169240.GPJ\_107927.0000\_8/10/18



**SEDIMENT CORE LOG**

**BORING NO. OU3 S-10 May 2018**

Facility/Project Name: <b>Hayton Area Remediation Project Closure Documentation</b>		Date Drilling Started: <b>5/2/18</b>	Date Drilling Completed: <b>5/2/18</b>	Project Number: <b>107927.0000</b>	
Drilling Firm: <b>TRC Environmental Corp.</b>	Drilling Method: <b>Push tube</b>	Surface Elev. (ft) <b>---</b>	TOC Elevation (ft) <b>---</b>	Total Depth (in bgs) <b>13.8</b>	Borehole Dia. (in) <b>2</b>
Boring Location: <b>Pine Creek, Reach O</b>		Personnel Logged By - <b>M. Westover</b> Driller - <b>M. Westover</b>		Drilling Equipment: <b>2" PVC Core Tube</b>	
State Plane N: <b>736950.71</b> E: <b>2466453.53</b>					
Civil Town/City/or Village: <b>New Holstein</b>	County: <b>Calumet</b>	State: <b>Wisconsin</b>	Water Level Observations: While Drilling:      Date/Time After Drilling:      Date/Time		
			Depth (ft bgs) Depth (ft bgs)		

SAMPLE		BLOW COUNTS	DEPTH IN INCHES	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS	
NUMBER AND TYPE	RECOVERY (%)							
CS				<b>ORGANIC SILT (OL)</b> , trace fine sand, brown, wet. Upper 0.5 inch non-cohesive, then slightly cohesive with occasional fine roots, sulfur odor.			0" to 6" interval collected for analytical sample.	
			2					
			4					
			6		0.5 inch peaty material, dark brown from 5.5" to 6". Wood fragments in OL below peat.			
			8					
			10		Same as above (OL), becoming mixed with silty lean clay, more decaying wood (mostly sticks).			
			12					
			14		<b>End of core at 13.8 inches.</b>			

SOIL CORE LOG (INCHES) W/PHOTO\_HARP\_HAYTONWI\_169240.GPJ\_107927.0000\_8/10/18



# SEDIMENT CORE LOG

**BORING NO. OU3 S-11R June 2018**

Facility/Project Name: <b>Hayton Area Remediation Project Closure Documentation</b>		Date Drilling Started: <b>6/28/18</b>	Date Drilling Completed: <b>6/28/18</b>	Project Number: <b>107927.0000</b>
Drilling Firm: <b>TRC Environmental Corp.</b>	Drilling Method: <b>Piston Core</b>	Surface Elev. (ft) <b>---</b>	TOC Elevation (ft) <b>---</b>	Total Depth (in bgs) <b>15.6</b>
Boring Location: Pine Creek, Reach P		Personnel Logged By - M. Westover Driller - M. Westover		Drilling Equipment: <b>2.75" Piston Core</b>
State Plane N: 737207.17 E: 2466043.80		Water Level Observations: While Drilling:      Date/Time After Drilling:      Date/Time		
Civil Town/City/or Village: <b>New Holstein</b>	County: <b>Calumet</b>	State: <b>Wisconsin</b>	Depth (ft bgs) Depth (ft bgs)	

SAMPLE	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
NUMBER AND TYPE				
RECOVERY (%)				
BLOW COUNTS				
DEPTH IN INCHES				
	<b>ORGANIC SILT (OL)</b> , trace fine sand, non-cohesive, decaying plant fibers (grasses), dark grayish brown, no odor, wet.	OL		
	<b>SILTY LEAN CLAY (CL)</b> , trace fine sand, plastic, gray, stiff.	CL		
	<b>End of core at 15.6 inches.</b>			

SOIL CORE LOG (INCHES) W/PHOTO\_HARP\_HAYTONWI\_169240.GPJ\_107927.0000\_8/10/18



**SEDIMENT CORE LOG**

**BORING NO. OU3 S-12L (A) June 2018**

Facility/Project Name: <b>Hayton Area Remediation Project Closure Documentation</b>		Date Drilling Started: <b>6/28/18</b>	Date Drilling Completed: <b>6/28/18</b>	Project Number: <b>107927.0000</b>	
Drilling Firm: <b>TRC Environmental Corp.</b>	Drilling Method: <b>Push tube</b>	Surface Elev. (ft) <b>---</b>	TOC Elevation (ft) <b>---</b>	Total Depth (in bgs) <b>7.8</b>	Borehole Dia. (in) <b>2</b>
Boring Location: <b>Pine Creek, Reach P</b>		Personnel Logged By - <b>M. Westover</b> Driller - <b>M. Westover</b>		Drilling Equipment: <b>2" PVC Core Tube</b>	
State Plane N: <b>737289.72</b> E: <b>2465669.39</b>		Water Level Observations: While Drilling:      Date/Time After Drilling:      Date/Time		Depth (ft bgs) Depth (ft bgs)	
Civil Town/City/or Village: <b>New Holstein</b>	County: <b>Calumet</b>	State: <b>Wisconsin</b>			

SAMPLE		BLOW COUNTS	DEPTH IN INCHES	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
NUMBER AND TYPE	RECOVERY (%)						
			2	<b>ORGANIC SILT (OL)</b> , trace fine sand, non-cohesive, dark grayish brown.	OL		"A" core collected slightly closer to mid-channel than original core (middle of boat vs. back end of boat; boat perpendicular to flow). Analytical sample collected from this core.
			4	<b>SILTY LEAN CLAY (CL)</b> , trace fine sand, plastic, gray, stiff.	CL		
			8	<b>End of core at 7.8 inches.</b>			
			10				
			12				
			14				
			16				
			18				

SOIL CORE LOG (INCHES) W/PHOTO\_HARP\_HAYTONWI\_169240.GPJ\_107927.0000\_8/10/18

Signature:	Firm: <b>TRC Environmental Corp.</b> 708 Heartland Trail, Suite 3000 Madison, WI 53717	(608) 826-3600 Fax (608) 826-3941
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# SEDIMENT CORE LOG

**BORING NO. OU3 S-12L June 2018**

Facility/Project Name: <b>Hayton Area Remediation Project Closure Documentation</b>		Date Drilling Started: <b>6/28/18</b>	Date Drilling Completed: <b>6/28/18</b>	Project Number: <b>107927.0000</b>
Drilling Firm: <b>TRC Environmental Corp.</b>	Drilling Method: <b>Piston Core</b>	Surface Elev. (ft) <b>---</b>	TOC Elevation (ft) <b>---</b>	Total Depth (in bgs) <b>10.8</b>
Boring Location: Pine Creek, Reach P		Personnel Logged By - M. Westover Driller - M. Westover		Drilling Equipment: <b>2.75" Piston Core</b>
State Plane N: 737285.86 E: 2465666.16		Water Level Observations: While Drilling:      Date/Time After Drilling:      Date/Time		
Civil Town/City/or Village: <b>New Holstein</b>	County: <b>Calumet</b>	State: <b>Wisconsin</b>	Depth (ft bgs) Depth (ft bgs)	

SAMPLE	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
NUMBER AND TYPE				
RECOVERY (%)				
BLOW COUNTS				
DEPTH IN INCHES				
	<b>ORGANIC SILT (OL)</b> , non-cohesive, grayish brown, loose.	OL		
2	<b>SILTY LEAN CLAY (CL)</b> , non-plastic, brownish gray, soft, soupy, appears reworked (disturbed native material).	CL		
4				
6	<b>SILTY LEAN CLAY (CL)</b> , few fine to coarse sand, cohesive, slightly plastic, mottled gray.	CL		
8				
10	<b>End of core at 10.8 inches.</b>			
12				
14				
16				
18				

SOIL CORE LOG (INCHES) W/PHOTO\_HARP\_HAYTONWI\_169240.GPJ\_107927.0000\_8/10/18

Signature:	Firm: TRC Environmental Corp. 708 Heartland Trail, Suite 3000 Madison, WI 53717	(608) 826-3600 Fax (608) 826-3941
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# SEDIMENT CORE LOG

**BORING NO. OU3 S-05R Nov 2018**

Facility/Project Name: <b>Hayton Area Remediation Project Closure Documentation</b>		Date Drilling Started: <b>11/13/18</b>	Date Drilling Completed: <b>11/13/18</b>	Project Number: <b>107927.0000</b>	
Drilling Firm: <b>TRC Environmental Corp.</b>	Drilling Method: <b>Push tube</b>	Surface Elev. (ft) <b>---</b>	TOC Elevation (ft) <b>---</b>	Total Depth (in bgs) <b>8.4</b>	Borehole Dia. (in) <b>2</b>
Boring Location: <b>Pine Creek, Reach M</b>		Personnel Logged By - <b>M. Westover</b> Driller - <b>M. Westover/B. Wachholz</b>		Drilling Equipment: <b>2" PVC Core Tube</b>	
State Plane N: <b>735426.54</b> E: <b>2468798.37</b>					
Civil Town/City/or Village: <b>New Holstein</b>	County: <b>Calumet</b>	State: <b>Wisconsin</b>	Water Level Observations: While Drilling:      Date/Time After Drilling:      Date/Time		
			Depth (ft bgs)		Depth (ft bgs)

SAMPLE	NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN INCHES	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
	CS			2 4 6 8 10 12 14	<p><b>ORGANIC SILT (OL)</b>, trace very fine sand, 10YR 3/1 very dark gray, upper 0.2 ft non-cohesive, loose, becoming cohesive, non-plastic, soft.</p> <p style="text-align: center;"><b>End of core at 8.4 inches.</b></p>	OL		<p>0 to 6 inch interval collected for analytical sample.</p>

SOIL CORE LOG (INCHES) W/PHOTO\_HARP\_HAYTONWI\_169240.GPJ\_107927.0000\_12/12/18



# SEDIMENT CORE LOG

**BORING NO. OU3 S-06L Nov 2018**

Facility/Project Name: <b>Hayton Area Remediation Project Closure Documentation</b>		Date Drilling Started: <b>11/13/18</b>	Date Drilling Completed: <b>11/13/18</b>	Project Number: <b>107927.0000</b>
Drilling Firm: <b>TRC Environmental Corp.</b>	Drilling Method: <b>Push tube</b>	Surface Elev. (ft) <b>---</b>	TOC Elevation (ft) <b>---</b>	Total Depth (in bgs) <b>8.4</b>
Boring Location: <b>Pine Creek, Reach M</b>		Personnel Logged By - <b>M. Westover</b> Driller - <b>M. Westover/B. Wachholz</b>		Drilling Equipment: <b>2" PVC Core Tube</b>
State Plane N: <b>735704.75</b> E: <b>2468322.82</b>		Water Level Observations: While Drilling:      Date/Time After Drilling:      Date/Time		
Civil Town/City/or Village: <b>New Holstein</b>	County: <b>Calumet</b>	State: <b>Wisconsin</b>	Depth (ft bgs) Depth (ft bgs)	

SAMPLE	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
NUMBER AND TYPE				
RECOVERY (%)				
BLOW COUNTS				
DEPTH IN INCHES				
CS	<p><b>ORGANIC SILT (OL)</b>, trace very fine sand, 10YR 3/1 very dark gray, non-cohesive, loose.</p> <p style="text-align: center;">2</p> <p style="text-align: center;">4</p> <p style="text-align: center;">6</p> <p style="text-align: center;">8</p> <p style="text-align: center;">10</p> <p style="text-align: center;">12</p> <p style="text-align: center;">14</p> <p>Same as above, becoming cohesive, non-plastic, soft, with small white shells.</p> <p><b>End of core at 8.4 inches.</b></p>	OL		<p>0 to 6 inch interval collected for analytical sample.</p> <p>Recovered level to 0.85 feet; 0.15 ft fell out bottom and left air gap. New "surface" at 0.7 ft.</p>

SOIL CORE LOG (INCHES) W/PHOTO\_HARP\_HAYTONWI\_169240.GPJ\_107927.0000\_12/12/18



# SEDIMENT CORE LOG

**BORING NO. OU3 S-07L Nov 2018**

Facility/Project Name: <b>Hayton Area Remediation Project Closure Documentation</b>		Date Drilling Started: <b>11/13/18</b>	Date Drilling Completed: <b>11/13/18</b>	Project Number: <b>107927.0000</b>	
Drilling Firm: <b>TRC Environmental Corp.</b>	Drilling Method: <b>Push tube</b>	Surface Elev. (ft) <b>---</b>	TOC Elevation (ft) <b>---</b>	Total Depth (in bgs) <b>8.4</b>	Borehole Dia. (in) <b>2</b>
Boring Location: <b>Pine Creek, Reach N</b>		Personnel Logged By - <b>M. Westover</b> Driller - <b>M. Westover/B. Wachholz</b>		Drilling Equipment: <b>2" PVC Core Tube</b>	
State Plane N: <b>735823.47</b> E: <b>2467848.65</b>					
Civil Town/City/or Village: <b>New Holstein</b>	County: <b>Calumet</b>	State: <b>Wisconsin</b>	Water Level Observations: While Drilling:      Date/Time After Drilling:      Date/Time		
			Depth (ft bgs) Depth (ft bgs)		

SAMPLE	NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN INCHES	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
	CS			2	<b>ORGANIC SILT (OL)</b> , trace very fine sand, 10YR 3/1 very dark gray, non-cohesive, becoming more cohesive with depth, chunk of decomposing wood (2x4?), increasing sand near base (few to little fine sand).	OL		0 to 4.8 interval collected for analytical sample.
				4				Decomposing wood removed from sample for lab analysis.
				6	<b>SILTY LEAN CLAY (CL)</b> , plastic, 10YR 5/1 gray, stiff.	CL		
				8	<b>End of core at 8.4 inches.</b>			
				10				
				12				
				14				

SOIL CORE LOG (INCHES) W/PHOTO\_HARP\_HAYTONWI\_169240.GPJ\_107927.0000\_12/12/18





# SEDIMENT CORE LOG

**BORING NO. OU3 S-08L Nov 2018**

Facility/Project Name: <b>Hayton Area Remediation Project Closure Documentation</b>		Date Drilling Started: <b>11/13/18</b>	Date Drilling Completed: <b>11/13/18</b>	Project Number: <b>107927.0000</b>
Drilling Firm: <b>TRC Environmental Corp.</b>	Drilling Method: <b>Push tube</b>	Surface Elev. (ft) <b>---</b>	TOC Elevation (ft) <b>---</b>	Total Depth (in bgs) <b>7.2</b>
Boring Location: <b>Pine Creek, Reach N</b>		Personnel Logged By - <b>M. Westover</b> Driller - <b>M. Westover/B. Wachholz</b>		Drilling Equipment: <b>2" PVC Core Tube</b>
State Plane N: <b>736156.96</b> E: <b>2467386.00</b>		Water Level Observations: While Drilling:      Date/Time After Drilling:      Date/Time		
Civil Town/City/or Village: <b>New Holstein</b>	County: <b>Calumet</b>	State: <b>Wisconsin</b>	Depth (ft bgs) Depth (ft bgs)	

SAMPLE	NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN INCHES	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
	CS			2 4 6 8 10 12 14	<p><b>ORGANIC SILT (OL)</b>, trace very fine sand, 10YR 3/1 very dark gray, upper 0.4 ft non-cohesive, loose, then cohesive, non-plastic, soft.</p> <p><b>End of core at 7.2 inches.</b></p>	OL		<p>0 to 6 inch interval collected for analytical sample.</p>

SOIL CORE LOG (INCHES) W/PHOTO\_HARP\_HAYTONWI\_169240.GPJ\_107927.0000\_12/12/18



# SEDIMENT CORE LOG

**BORING NO. OU3 S-09L Nov 2018**

Facility/Project Name: <b>Hayton Area Remediation Project Closure Documentation</b>		Date Drilling Started: <b>11/13/18</b>	Date Drilling Completed: <b>11/13/18</b>	Project Number: <b>107927.0000</b>	
Drilling Firm: <b>TRC Environmental Corp.</b>	Drilling Method: <b>Push tube</b>	Surface Elev. (ft) <b>---</b>	TOC Elevation (ft) <b>---</b>	Total Depth (in bgs) <b>6.6</b>	Borehole Dia. (in) <b>2</b>
Boring Location: <b>Pine Creek, Reach O</b>		Personnel Logged By - <b>M. Westover</b> Driller - <b>M. Westover/B. Wachholz</b>		Drilling Equipment: <b>2" PVC Core Tube</b>	
State Plane N: <b>736513.11</b> E: <b>2466981.67</b>					
Civil Town/City/or Village: <b>New Holstein</b>	County: <b>Calumet</b>	State: <b>Wisconsin</b>	Water Level Observations: While Drilling:      Date/Time After Drilling:      Date/Time		Depth (ft bgs) Depth (ft bgs)

SAMPLE	NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN INCHES	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
	CS			2	<b>ORGANIC SILT (OL)</b> , trace very fine sand, 10YR 3/1 very dark gray, roots throughout, non-cohesive, becoming mixed with gray clay at 0.4 feet (still mostly organic silt).	OL		0 to 4.8 interval collected for analytical sample.
				6		<b>SILTY LEAN CLAY (CL)</b> , gray.	CL	
				8	<b>End of core at 6.6 inches.</b>			
				10				
				12				
				14				

SOIL CORE LOG (INCHES) W/PHOTO\_HARP\_HAYTONWI\_169240.GPJ\_107927.0000\_12/12/18



# SEDIMENT CORE LOG

**BORING NO. OU3 S-10L Nov 2018**

Facility/Project Name: <b>Hayton Area Remediation Project Closure Documentation</b>		Date Drilling Started: <b>11/13/18</b>	Date Drilling Completed: <b>11/13/18</b>	Project Number: <b>107927.0000</b>
Drilling Firm: <b>TRC Environmental Corp.</b>	Drilling Method: <b>Push tube</b>	Surface Elev. (ft) <b>---</b>	TOC Elevation (ft) <b>---</b>	Total Depth (in bgs) <b>11.4</b>
Boring Location: <b>Pine Creek, Reach O</b>		Personnel Logged By - <b>M. Westover</b> Driller - <b>M. Westover/B. Wachholz</b>		Drilling Equipment: <b>2" PVC Core Tube</b>
State Plane N: <b>736947.83</b> E: <b>2466457.73</b>		Water Level Observations: While Drilling:      Date/Time After Drilling:      Date/Time		
Civil Town/City/or Village: <b>New Holstein</b>	County: <b>Calumet</b>	State: <b>Wisconsin</b>	Depth (ft bgs) Depth (ft bgs)	

SAMPLE	NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN INCHES	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
	CS			2	<b>ORGANIC SILT (OL)</b> , trace very fine sand, 10YR 3/1 very dark gray, non-cohesive.	OL		0 to 6 interval collected for analytical sample.
				4	Same as above, becoming darker (almost black).			
				6				
				8	<b>SANDY SILT (ML)</b> , high organic content, few to little fine sand, 10YR 3/1 very dark gray.	ML		
				10				
				12	<b>End of core at 11.4 inches.</b>			
				14				

SOIL CORE LOG (INCHES) W/PHOTO HARP\_HAYTONWI\_169240.GPJ\_107927.0000\_12/12/18



# SEDIMENT CORE LOG

**BORING NO. OU3 S-11R Nov 2018**

Facility/Project Name: <b>Hayton Area Remediation Project Closure Documentation</b>		Date Drilling Started: <b>11/13/18</b>	Date Drilling Completed: <b>11/13/18</b>	Project Number: <b>107927.0000</b>	
Drilling Firm: <b>TRC Environmental Corp.</b>	Drilling Method: <b>Push tube</b>	Surface Elev. (ft) <b>---</b>	TOC Elevation (ft) <b>---</b>	Total Depth (in bgs) <b>8.4</b>	Borehole Dia. (in) <b>2</b>
Boring Location: <b>Pine Creek, Reach P</b>		Personnel Logged By - <b>M. Westover</b> Driller - <b>M. Westover/B. Wachholz</b>		Drilling Equipment: <b>2" PVC Core Tube</b>	
State Plane N: <b>737208.51</b> E: <b>2466047.68</b>					
Civil Town/City/or Village: <b>New Holstein</b>	County: <b>Calumet</b>	State: <b>Wisconsin</b>	Water Level Observations: While Drilling:      Date/Time After Drilling:      Date/Time		
			Depth (ft bgs)		Depth (ft bgs)

SAMPLE	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
NUMBER AND TYPE				
RECOVERY (%)				
BLOW COUNTS				
DEPTH IN INCHES				
CS	<p><b>ORGANIC SILT (OL)</b>, trace very fine sand, 10YR 3/1 very dark gray, non-cohesive.</p> <p style="text-align: center;">2</p> <p style="text-align: center;">4</p> <p>Same as above, becoming cohesive at 0.3 feet, non-plastic, trace to few fine sand, decaying plant material, soft.</p> <p style="text-align: center;">6</p> <p style="text-align: center;">8</p> <p><b>End of core at 8.4 inches.</b></p> <p style="text-align: center;">10</p> <p style="text-align: center;">12</p> <p style="text-align: center;">14</p>	OL		<p>0 to 6 interval collected for analytical sample.</p> <p>DUP-01 collected.</p>

SOIL CORE LOG (INCHES) W/PHOTO\_HARP\_HAYTONWI\_169240.GPJ\_107927.0000\_12/12/18



# SEDIMENT CORE LOG

**BORING NO. OU3 S-12L Nov 2018**

Facility/Project Name: <b>Hayton Area Remediation Project Closure Documentation</b>		Date Drilling Started: <b>11/13/18</b>	Date Drilling Completed: <b>11/13/18</b>	Project Number: <b>107927.0000</b>
Drilling Firm: <b>TRC Environmental Corp.</b>	Drilling Method: <b>Push tube</b>	Surface Elev. (ft) <b>---</b>	TOC Elevation (ft) <b>---</b>	Total Depth (in bgs) <b>7.2</b>
Boring Location: <b>Pine Creek, Reach P</b>		Personnel Logged By - <b>M. Westover</b> Driller - <b>M. Westover/B. Wachholz</b>		Drilling Equipment: <b>2" PVC Core Tube</b>
State Plane N: <b>737280.64</b> E: <b>2465670.51</b>		Water Level Observations:		
Civil Town/City/or Village: <b>New Holstein</b>	County: <b>Calumet</b>	State: <b>Wisconsin</b>	While Drilling: Date/Time	Depth (ft bgs)
			After Drilling: Date/Time	Depth (ft bgs)

SAMPLE	NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN INCHES	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
	CS			2	<b>ORGANIC SILT (OL)</b> , trace very fine sand, 10YR 3/1 very dark gray, non-cohesive.	OL		0 to 3.6 interval collected for analytical sample.
				4	<b>SANDY SILTY LEAN CLAY (CL)</b> , plastic, 10YR 5/1 gray and 10YR 3/1 very dark gray, reworked.	CL		
				8	<b>End of core at 7.2 inches.</b>			

SOIL CORE LOG (INCHES) W/PHOTO\_HARP\_HAYTONWI\_169240.GPJ\_107927.0000\_12/12/18

**APPENDIX B**  
**LABORATORY REPORTS**

May 11, 2018

Chris Harvey  
TRC Environmental  
230 W. Monroe St  
Suite 630  
Chicago, IL 60606

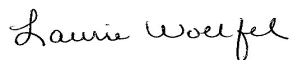
RE: Project: 107927.0000.100.9300 HARP OU3  
Pace Project No.: 40168642

Dear Chris Harvey:

Enclosed are the analytical results for sample(s) received by the laboratory on May 05, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Laurie Woelfel  
laurie.woelfel@pacelabs.com  
(920)469-2436  
Project Manager

Enclosures

cc: Tanner Hess, TRC  
Ted O'Connell, TRC - Madison  
Jesse Papez, TRC - Madison  
Peggy Popp, TRC - Madison  
James Robinson, TRC Environmental  
Ben Wachholz, TRC  
Meredith Westover, TRC Environmental



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 107927.0000.100.9300 HARP OU3

Pace Project No.: 40168642

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### Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302

Florida/NELAP Certification #: E87948

Illinois Certification #: 200050

Kentucky UST Certification #: 82

Louisiana Certification #: 04168

Minnesota Certification #: 055-999-334

New York Certification #: 12064

North Dakota Certification #: R-150

Virginia VELAP ID: 460263

South Carolina Certification #: 83006001

Texas Certification #: T104704529-14-1

Wisconsin Certification #: 405132750

Wisconsin DATCP Certification #: 105-444

USDA Soil Permit #: P330-16-00157

Federal Fish & Wildlife Permit #: LE51774A-0

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: 107927.0000.100.9300 HARP OU3

Pace Project No.: 40168642

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40168642001	OU3-IC-S5-R	Solid	05/03/18 12:05	05/05/18 07:35
40168642002	OU3-IC-S6-L	Solid	05/03/18 12:10	05/05/18 07:35
40168642003	OU3-IC-S7-L	Solid	05/03/18 12:15	05/05/18 07:35
40168642004	OU3-IC-S8-L	Solid	05/03/18 12:20	05/05/18 07:35
40168642005	OU3-IC-S9-L	Solid	05/03/18 12:25	05/05/18 07:35
40168642006	OU3-IC-S10-L	Solid	05/03/18 12:30	05/05/18 07:35
40168642007	OU3-IC-DUP01	Solid	05/03/18 00:00	05/05/18 07:35
40168642008	OU3-FB01	Water	05/03/18 12:45	05/05/18 07:35

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 107927.0000.100.9300 HARP OU3

Pace Project No.: 40168642

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40168642001	OU3-IC-S5-R	EPA 8082	BLM	10	PASI-G
		ASTM D2974-87	SKW	1	PASI-G
40168642002	OU3-IC-S6-L	EPA 8082	BLM	10	PASI-G
		ASTM D2974-87	SKW	1	PASI-G
40168642003	OU3-IC-S7-L	EPA 8082	BLM	10	PASI-G
		ASTM D2974-87	SKW	1	PASI-G
40168642004	OU3-IC-S8-L	EPA 8082	BLM	10	PASI-G
		ASTM D2974-87	SKW	1	PASI-G
40168642005	OU3-IC-S9-L	EPA 8082	BLM	10	PASI-G
		ASTM D2974-87	SKW	1	PASI-G
40168642006	OU3-IC-S10-L	EPA 8082	BLM	10	PASI-G
		ASTM D2974-87	SKW	1	PASI-G
40168642007	OU3-IC-DUP01	EPA 8082	BLM	10	PASI-G
		ASTM D2974-87	SKW	1	PASI-G
40168642008	OU3-FB01	EPA 8082	BLM	10	PASI-G

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## ANALYTICAL RESULTS

Project: 107927.0000.100.9300 HARP OU3

Pace Project No.: 40168642

**Sample: OU3-IC-S5-R**      **Lab ID: 40168642001**      Collected: 05/03/18 12:05      Received: 05/05/18 07:35      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>8082 GCS PCB</b>									
Analytical Method: EPA 8082    Preparation Method: EPA 3541									
PCB-1016 (Aroclor 1016)	<127	ug/kg	255	127	2	05/07/18 15:40	05/09/18 05:16	12674-11-2	
PCB-1221 (Aroclor 1221)	<127	ug/kg	255	127	2	05/07/18 15:40	05/09/18 05:16	11104-28-2	
PCB-1232 (Aroclor 1232)	<127	ug/kg	255	127	2	05/07/18 15:40	05/09/18 05:16	11141-16-5	
PCB-1242 (Aroclor 1242)	<127	ug/kg	255	127	2	05/07/18 15:40	05/09/18 05:16	53469-21-9	
PCB-1248 (Aroclor 1248)	<127	ug/kg	255	127	2	05/07/18 15:40	05/09/18 05:16	12672-29-6	
PCB-1254 (Aroclor 1254)	951	ug/kg	255	127	2	05/07/18 15:40	05/09/18 05:16	11097-69-1	
PCB-1260 (Aroclor 1260)	256	ug/kg	255	127	2	05/07/18 15:40	05/09/18 05:16	11096-82-5	
PCB, Total	1210	ug/kg	255	127	2	05/07/18 15:40	05/09/18 05:16	1336-36-3	
<b>Surrogates</b>									
Tetrachloro-m-xylene (S)	86	%	56-98		2	05/07/18 15:40	05/09/18 05:16	877-09-8	
Decachlorobiphenyl (S)	81	%	49-104		2	05/07/18 15:40	05/09/18 05:16	2051-24-3	
<b>Percent Moisture</b>									
Analytical Method: ASTM D2974-87									
Percent Moisture	60.7	%	0.10	0.10	1		05/10/18 18:17		

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## ANALYTICAL RESULTS

Project: 107927.0000.100.9300 HARP OU3

Pace Project No.: 40168642

**Sample: OU3-IC-S6-L**      **Lab ID: 40168642002**      Collected: 05/03/18 12:10      Received: 05/05/18 07:35      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>8082 GCS PCB</b>									
Analytical Method: EPA 8082    Preparation Method: EPA 3541									
PCB-1016 (Aroclor 1016)	<118	ug/kg	236	118	2	05/07/18 15:40	05/09/18 05:38	12674-11-2	
PCB-1221 (Aroclor 1221)	<118	ug/kg	236	118	2	05/07/18 15:40	05/09/18 05:38	11104-28-2	
PCB-1232 (Aroclor 1232)	<118	ug/kg	236	118	2	05/07/18 15:40	05/09/18 05:38	11141-16-5	
PCB-1242 (Aroclor 1242)	<118	ug/kg	236	118	2	05/07/18 15:40	05/09/18 05:38	53469-21-9	
PCB-1248 (Aroclor 1248)	<118	ug/kg	236	118	2	05/07/18 15:40	05/09/18 05:38	12672-29-6	
PCB-1254 (Aroclor 1254)	842	ug/kg	236	118	2	05/07/18 15:40	05/09/18 05:38	11097-69-1	
PCB-1260 (Aroclor 1260)	223J	ug/kg	236	118	2	05/07/18 15:40	05/09/18 05:38	11096-82-5	
PCB, Total	1060	ug/kg	236	118	2	05/07/18 15:40	05/09/18 05:38	1336-36-3	
<b>Surrogates</b>									
Tetrachloro-m-xylene (S)	84	%	56-98		2	05/07/18 15:40	05/09/18 05:38	877-09-8	
Decachlorobiphenyl (S)	78	%	49-104		2	05/07/18 15:40	05/09/18 05:38	2051-24-3	
<b>Percent Moisture</b>									
Analytical Method: ASTM D2974-87									
Percent Moisture	57.7	%	0.10	0.10	1		05/10/18 18:17		

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## ANALYTICAL RESULTS

Project: 107927.0000.100.9300 HARP OU3

Pace Project No.: 40168642

**Sample: OU3-IC-S7-L**      **Lab ID: 40168642003**      Collected: 05/03/18 12:15      Received: 05/05/18 07:35      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>8082 GCS PCB</b>									
Analytical Method: EPA 8082    Preparation Method: EPA 3541									
PCB-1016 (Aroclor 1016)	<49.8	ug/kg	99.5	49.8	1	05/07/18 15:40	05/09/18 05:59	12674-11-2	
PCB-1221 (Aroclor 1221)	<49.8	ug/kg	99.5	49.8	1	05/07/18 15:40	05/09/18 05:59	11104-28-2	
PCB-1232 (Aroclor 1232)	<49.8	ug/kg	99.5	49.8	1	05/07/18 15:40	05/09/18 05:59	11141-16-5	
PCB-1242 (Aroclor 1242)	<49.8	ug/kg	99.5	49.8	1	05/07/18 15:40	05/09/18 05:59	53469-21-9	
PCB-1248 (Aroclor 1248)	<49.8	ug/kg	99.5	49.8	1	05/07/18 15:40	05/09/18 05:59	12672-29-6	
PCB-1254 (Aroclor 1254)	793	ug/kg	99.5	49.8	1	05/07/18 15:40	05/09/18 05:59	11097-69-1	
PCB-1260 (Aroclor 1260)	190	ug/kg	99.5	49.8	1	05/07/18 15:40	05/09/18 05:59	11096-82-5	
PCB, Total	983	ug/kg	99.5	49.8	1	05/07/18 15:40	05/09/18 05:59	1336-36-3	
<b>Surrogates</b>									
Tetrachloro-m-xylene (S)	85	%	56-98		1	05/07/18 15:40	05/09/18 05:59	877-09-8	
Decachlorobiphenyl (S)	81	%	49-104		1	05/07/18 15:40	05/09/18 05:59	2051-24-3	
<b>Percent Moisture</b>									
Analytical Method: ASTM D2974-87									
Percent Moisture	49.8	%	0.10	0.10	1		05/10/18 18:17		

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## ANALYTICAL RESULTS

Project: 107927.0000.100.9300 HARP OU3

Pace Project No.: 40168642

**Sample: OU3-IC-S8-L**      **Lab ID: 40168642004**      Collected: 05/03/18 12:20      Received: 05/05/18 07:35      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>8082 GCS PCB</b>									
Analytical Method: EPA 8082    Preparation Method: EPA 3541									
PCB-1016 (Aroclor 1016)	<176	ug/kg	353	176	3	05/07/18 15:40	05/09/18 06:21	12674-11-2	
PCB-1221 (Aroclor 1221)	<176	ug/kg	353	176	3	05/07/18 15:40	05/09/18 06:21	11104-28-2	
PCB-1232 (Aroclor 1232)	<176	ug/kg	353	176	3	05/07/18 15:40	05/09/18 06:21	11141-16-5	
PCB-1242 (Aroclor 1242)	<176	ug/kg	353	176	3	05/07/18 15:40	05/09/18 06:21	53469-21-9	
PCB-1248 (Aroclor 1248)	<176	ug/kg	353	176	3	05/07/18 15:40	05/09/18 06:21	12672-29-6	
PCB-1254 (Aroclor 1254)	2560	ug/kg	353	176	3	05/07/18 15:40	05/09/18 06:21	11097-69-1	
PCB-1260 (Aroclor 1260)	648	ug/kg	353	176	3	05/07/18 15:40	05/09/18 06:21	11096-82-5	
PCB, Total	3210	ug/kg	353	176	3	05/07/18 15:40	05/09/18 06:21	1336-36-3	
<b>Surrogates</b>									
Tetrachloro-m-xylene (S)	87	%	56-98		3	05/07/18 15:40	05/09/18 06:21	877-09-8	
Decachlorobiphenyl (S)	74	%	49-104		3	05/07/18 15:40	05/09/18 06:21	2051-24-3	
<b>Percent Moisture</b>									
Analytical Method: ASTM D2974-87									
Percent Moisture	57.5	%	0.10	0.10	1		05/10/18 18:17		

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## ANALYTICAL RESULTS

Project: 107927.0000.100.9300 HARP OU3

Pace Project No.: 40168642

**Sample: OU3-IC-S9-L**      **Lab ID: 40168642005**      Collected: 05/03/18 12:25      Received: 05/05/18 07:35      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>8082 GCS PCB</b>									
Analytical Method: EPA 8082    Preparation Method: EPA 3541									
PCB-1016 (Aroclor 1016)	<139	ug/kg	277	139	2	05/07/18 15:40	05/09/18 06:43	12674-11-2	
PCB-1221 (Aroclor 1221)	<139	ug/kg	277	139	2	05/07/18 15:40	05/09/18 06:43	11104-28-2	
PCB-1232 (Aroclor 1232)	<139	ug/kg	277	139	2	05/07/18 15:40	05/09/18 06:43	11141-16-5	
PCB-1242 (Aroclor 1242)	<139	ug/kg	277	139	2	05/07/18 15:40	05/09/18 06:43	53469-21-9	
PCB-1248 (Aroclor 1248)	<139	ug/kg	277	139	2	05/07/18 15:40	05/09/18 06:43	12672-29-6	
PCB-1254 (Aroclor 1254)	1380	ug/kg	277	139	2	05/07/18 15:40	05/09/18 06:43	11097-69-1	
PCB-1260 (Aroclor 1260)	357	ug/kg	277	139	2	05/07/18 15:40	05/09/18 06:43	11096-82-5	
PCB, Total	1740	ug/kg	277	139	2	05/07/18 15:40	05/09/18 06:43	1336-36-3	
<b>Surrogates</b>									
Tetrachloro-m-xylene (S)	75	%	56-98		2	05/07/18 15:40	05/09/18 06:43	877-09-8	
Decachlorobiphenyl (S)	71	%	49-104		2	05/07/18 15:40	05/09/18 06:43	2051-24-3	
<b>Percent Moisture</b>									
Analytical Method: ASTM D2974-87									
Percent Moisture	63.9	%	0.10	0.10	1		05/10/18 18:18		

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## ANALYTICAL RESULTS

Project: 107927.0000.100.9300 HARP OU3

Pace Project No.: 40168642

**Sample: OU3-IC-S10-L**      **Lab ID: 40168642006**      Collected: 05/03/18 12:30      Received: 05/05/18 07:35      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>8082 GCS PCB</b>									
Analytical Method: EPA 8082    Preparation Method: EPA 3541									
PCB-1016 (Aroclor 1016)	<250	ug/kg	500	250	3	05/07/18 15:40	05/09/18 07:05	12674-11-2	
PCB-1221 (Aroclor 1221)	<250	ug/kg	500	250	3	05/07/18 15:40	05/09/18 07:05	11104-28-2	
PCB-1232 (Aroclor 1232)	<250	ug/kg	500	250	3	05/07/18 15:40	05/09/18 07:05	11141-16-5	
PCB-1242 (Aroclor 1242)	<250	ug/kg	500	250	3	05/07/18 15:40	05/09/18 07:05	53469-21-9	
PCB-1248 (Aroclor 1248)	<250	ug/kg	500	250	3	05/07/18 15:40	05/09/18 07:05	12672-29-6	
PCB-1254 (Aroclor 1254)	2130	ug/kg	500	250	3	05/07/18 15:40	05/09/18 07:05	11097-69-1	
PCB-1260 (Aroclor 1260)	530	ug/kg	500	250	3	05/07/18 15:40	05/09/18 07:05	11096-82-5	
PCB, Total	2660	ug/kg	500	250	3	05/07/18 15:40	05/09/18 07:05	1336-36-3	
<b>Surrogates</b>									
Tetrachloro-m-xylene (S)	82	%	56-98		3	05/07/18 15:40	05/09/18 07:05	877-09-8	
Decachlorobiphenyl (S)	71	%	49-104		3	05/07/18 15:40	05/09/18 07:05	2051-24-3	
<b>Percent Moisture</b>									
Analytical Method: ASTM D2974-87									
Percent Moisture	70.0	%	0.10	0.10	1		05/10/18 18:18		

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### ANALYTICAL RESULTS

Project: 107927.0000.100.9300 HARP OU3

Pace Project No.: 40168642

**Sample: OU3-IC-DUP01**      **Lab ID: 40168642007**      Collected: 05/03/18 00:00      Received: 05/05/18 07:35      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>8082 GCS PCB</b>									
Analytical Method: EPA 8082 Preparation Method: EPA 3541									
PCB-1016 (Aroclor 1016)	<174	ug/kg	348	174	3	05/07/18 15:40	05/09/18 07:27	12674-11-2	
PCB-1221 (Aroclor 1221)	<174	ug/kg	348	174	3	05/07/18 15:40	05/09/18 07:27	11104-28-2	
PCB-1232 (Aroclor 1232)	<174	ug/kg	348	174	3	05/07/18 15:40	05/09/18 07:27	11141-16-5	
PCB-1242 (Aroclor 1242)	<174	ug/kg	348	174	3	05/07/18 15:40	05/09/18 07:27	53469-21-9	
PCB-1248 (Aroclor 1248)	<174	ug/kg	348	174	3	05/07/18 15:40	05/09/18 07:27	12672-29-6	
PCB-1254 (Aroclor 1254)	2760	ug/kg	348	174	3	05/07/18 15:40	05/09/18 07:27	11097-69-1	
PCB-1260 (Aroclor 1260)	700	ug/kg	348	174	3	05/07/18 15:40	05/09/18 07:27	11096-82-5	
PCB, Total	3460	ug/kg	348	174	3	05/07/18 15:40	05/09/18 07:27	1336-36-3	
<b>Surrogates</b>									
Tetrachloro-m-xylene (S)	84	%	56-98		3	05/07/18 15:40	05/09/18 07:27	877-09-8	
Decachlorobiphenyl (S)	69	%	49-104		3	05/07/18 15:40	05/09/18 07:27	2051-24-3	
<b>Percent Moisture</b>									
Analytical Method: ASTM D2974-87									
Percent Moisture	56.9	%	0.10	0.10	1		05/10/18 18:18		

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### ANALYTICAL RESULTS

Project: 107927.0000.100.9300 HARP OU3

Pace Project No.: 40168642

**Sample: OU3-FB01**      **Lab ID: 40168642008**      Collected: 05/03/18 12:45      Received: 05/05/18 07:35      Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>8082 GCS PCB</b>		Analytical Method: EPA 8082    Preparation Method: EPA 3510							
PCB-1016 (Aroclor 1016)	<0.24	ug/L	0.48	0.24	1	05/07/18 08:15	05/09/18 00:55	12674-11-2	
PCB-1221 (Aroclor 1221)	<0.24	ug/L	0.48	0.24	1	05/07/18 08:15	05/09/18 00:55	11104-28-2	
PCB-1232 (Aroclor 1232)	<0.24	ug/L	0.48	0.24	1	05/07/18 08:15	05/09/18 00:55	11141-16-5	
PCB-1242 (Aroclor 1242)	<0.24	ug/L	0.48	0.24	1	05/07/18 08:15	05/09/18 00:55	53469-21-9	
PCB-1248 (Aroclor 1248)	<0.24	ug/L	0.48	0.24	1	05/07/18 08:15	05/09/18 00:55	12672-29-6	
PCB-1254 (Aroclor 1254)	<0.24	ug/L	0.48	0.24	1	05/07/18 08:15	05/09/18 00:55	11097-69-1	
PCB-1260 (Aroclor 1260)	<0.24	ug/L	0.48	0.24	1	05/07/18 08:15	05/09/18 00:55	11096-82-5	
PCB, Total	<0.24	ug/L	0.48	0.24	1	05/07/18 08:15	05/09/18 00:55	1336-36-3	
<b>Surrogates</b>									
Tetrachloro-m-xylene (S)	84	%	44-121		1	05/07/18 08:15	05/09/18 00:55	877-09-8	
Decachlorobiphenyl (S)	67	%	10-119		1	05/07/18 08:15	05/09/18 00:55	2051-24-3	

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### QUALITY CONTROL DATA

Project: 107927.0000.100.9300 HARP OU3

Pace Project No.: 40168642

QC Batch: 288117 Analysis Method: EPA 8082  
 QC Batch Method: EPA 3541 Analysis Description: 8082 GCS PCB  
 Associated Lab Samples: 40168642001, 40168642002, 40168642003, 40168642004, 40168642005, 40168642006, 40168642007

METHOD BLANK: 1685829 Matrix: Solid  
 Associated Lab Samples: 40168642001, 40168642002, 40168642003, 40168642004, 40168642005, 40168642006, 40168642007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	<25.0	50.0	05/09/18 02:00	
PCB-1221 (Aroclor 1221)	ug/kg	<25.0	50.0	05/09/18 02:00	
PCB-1232 (Aroclor 1232)	ug/kg	<25.0	50.0	05/09/18 02:00	
PCB-1242 (Aroclor 1242)	ug/kg	<25.0	50.0	05/09/18 02:00	
PCB-1248 (Aroclor 1248)	ug/kg	<25.0	50.0	05/09/18 02:00	
PCB-1254 (Aroclor 1254)	ug/kg	<25.0	50.0	05/09/18 02:00	
PCB-1260 (Aroclor 1260)	ug/kg	<25.0	50.0	05/09/18 02:00	
Decachlorobiphenyl (S)	%	86	49-104	05/09/18 02:00	
Tetrachloro-m-xylene (S)	%	89	56-98	05/09/18 02:00	

LABORATORY CONTROL SAMPLE: 1685830

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg		<25.0			
PCB-1221 (Aroclor 1221)	ug/kg		<25.0			
PCB-1232 (Aroclor 1232)	ug/kg		<25.0			
PCB-1242 (Aroclor 1242)	ug/kg		<25.0			
PCB-1248 (Aroclor 1248)	ug/kg		<25.0			
PCB-1254 (Aroclor 1254)	ug/kg		<25.0			
PCB-1260 (Aroclor 1260)	ug/kg	500	427	85	61-105	
Decachlorobiphenyl (S)	%			86	49-104	
Tetrachloro-m-xylene (S)	%			93	56-98	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1685831 1685832

Parameter	Units	40168642001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	<127			<127	<127					20	
PCB-1221 (Aroclor 1221)	ug/kg	<127			<127	<127					20	
PCB-1232 (Aroclor 1232)	ug/kg	<127			<127	<127					20	
PCB-1242 (Aroclor 1242)	ug/kg	<127			<127	<127					20	
PCB-1248 (Aroclor 1248)	ug/kg	<127			<127	<127					20	
PCB-1254 (Aroclor 1254)	ug/kg	951			1420	1410				1	20	
PCB-1260 (Aroclor 1260)	ug/kg	256	1270	1270	1380	1340	88	85	35-125	3	20	
Decachlorobiphenyl (S)	%						82	78	49-104			
Tetrachloro-m-xylene (S)	%						89	84	56-98			

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: 107927.0000.100.9300 HARP OU3  
Pace Project No.: 40168642

QC Batch: 288010 Analysis Method: EPA 8082  
QC Batch Method: EPA 3510 Analysis Description: 8082 GCS PCB  
Associated Lab Samples: 40168642008

METHOD BLANK: 1685318 Matrix: Water  
Associated Lab Samples: 40168642008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	<0.12	0.25	05/08/18 22:22	
PCB-1221 (Aroclor 1221)	ug/L	<0.12	0.25	05/08/18 22:22	
PCB-1232 (Aroclor 1232)	ug/L	<0.12	0.25	05/08/18 22:22	
PCB-1242 (Aroclor 1242)	ug/L	<0.12	0.25	05/08/18 22:22	
PCB-1248 (Aroclor 1248)	ug/L	<0.12	0.25	05/08/18 22:22	
PCB-1254 (Aroclor 1254)	ug/L	<0.12	0.25	05/08/18 22:22	
PCB-1260 (Aroclor 1260)	ug/L	<0.12	0.25	05/08/18 22:22	
Decachlorobiphenyl (S)	%	69	10-119	05/08/18 22:22	
Tetrachloro-m-xylene (S)	%	82	44-121	05/08/18 22:22	

LABORATORY CONTROL SAMPLE & LCSD: 1685319

Parameter	Units	1685320		LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
		Spike Conc.	LCS Result						
PCB-1016 (Aroclor 1016)	ug/L		<0.12					20	
PCB-1221 (Aroclor 1221)	ug/L		<0.12					20	
PCB-1232 (Aroclor 1232)	ug/L		<0.12					20	
PCB-1242 (Aroclor 1242)	ug/L		<0.12					20	
PCB-1248 (Aroclor 1248)	ug/L		<0.12					20	
PCB-1254 (Aroclor 1254)	ug/L		<0.12					20	
PCB-1260 (Aroclor 1260)	ug/L	2.5	2.2	2.1	86	82	63-116	5	20
Decachlorobiphenyl (S)	%				73	63	10-119		
Tetrachloro-m-xylene (S)	%				85	85	44-121		

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

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### QUALITY CONTROL DATA

Project: 107927.0000.100.9300 HARP OU3

Pace Project No.: 40168642

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QC Batch:	288532	Analysis Method:	ASTM D2974-87
QC Batch Method:	ASTM D2974-87	Analysis Description:	Dry Weight/Percent Moisture
Associated Lab Samples:	40168642001, 40168642002, 40168642003, 40168642004, 40168642005, 40168642006, 40168642007		

---

SAMPLE DUPLICATE: 1688618

Parameter	Units	40168859001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	7.9	7.8	1	10	

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

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## QUALIFIERS

Project: 107927.0000.100.9300 HARP OU3

Pace Project No.: 40168642

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### DEFINITIONS

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

ND - Not Detected at or above LOD.

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

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-G Pace Analytical Services - Green Bay

### BATCH QUALIFIERS

Batch: 288089

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 107927.0000.100.9300 HARP OU3

Pace Project No.: 40168642

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40168642001	OU3-IC-S5-R	EPA 3541	288117	EPA 8082	288119
40168642002	OU3-IC-S6-L	EPA 3541	288117	EPA 8082	288119
40168642003	OU3-IC-S7-L	EPA 3541	288117	EPA 8082	288119
40168642004	OU3-IC-S8-L	EPA 3541	288117	EPA 8082	288119
40168642005	OU3-IC-S9-L	EPA 3541	288117	EPA 8082	288119
40168642006	OU3-IC-S10-L	EPA 3541	288117	EPA 8082	288119
40168642007	OU3-IC-DUP01	EPA 3541	288117	EPA 8082	288119
40168642008	OU3-FB01	EPA 3510	288010	EPA 8082	288089
40168642001	OU3-IC-S5-R	ASTM D2974-87	288532		
40168642002	OU3-IC-S6-L	ASTM D2974-87	288532		
40168642003	OU3-IC-S7-L	ASTM D2974-87	288532		
40168642004	OU3-IC-S8-L	ASTM D2974-87	288532		
40168642005	OU3-IC-S9-L	ASTM D2974-87	288532		
40168642006	OU3-IC-S10-L	ASTM D2974-87	288532		
40168642007	OU3-IC-DUP01	ASTM D2974-87	288532		

### REPORT OF LABORATORY ANALYSIS

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### Sample Preservation Receipt Form

Client Name: TRE Project # 40168642

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

Lab Lot# of pH paper: \_\_\_\_\_

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

Initial when completed: \_\_\_\_\_

Date/Time: \_\_\_\_\_


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

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

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

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

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

Project #: \_\_\_\_\_  
**WO# : 40168642**  
  
**40168642**

**Tracking #:** 1705882-1  
**Custody Seal on Cooler/Box Present:**  yes  no Seals intact:  yes  no  
**Custody Seal on Samples Present:**  yes  no Seals intact:  yes  no  
**Packing Material:**  Bubble Wrap  Bubble Bags  None  Other  
**Thermometer Used** SR - N/A **Type of Ice:** Wet Blue Dry None  Samples on ice, cooling process has begun  
**Cooler Temperature** Uncorr: Refr Corr: \_\_\_\_\_

**Temp Blank Present:**  yes  no **Biological Tissue is Frozen:**  yes  no  
Temp should be above freezing to 6°C.  
Biota Samples may be received at ≤ 0°C.

**Person examining contents:**  
Date: 5/5/18  
Initials: [Signature]

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: _____
<b>Short Hold Time Analysis (&lt;72hr):</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
<b>Rush Turn Around Time Requested:</b>	<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 checked="" type="checkbox"/> Yes <input 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>Stw</u>		
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased): _____		

**Client Notification/ Resolution:** \_\_\_\_\_  
Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Comments/ Resolution: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Project Manager Review:** [Signature] **Date:** 5/7/18

July 11, 2018

Chris Harvey  
TRC Environmental  
230 W. Monroe St  
Suite 630  
Chicago, IL 60606

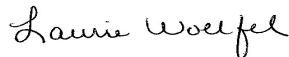
RE: Project: 107927.0000.100.9300 HARP  
Pace Project No.: 40171904

Dear Chris Harvey:

Enclosed are the analytical results for sample(s) received by the laboratory on July 03, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Laurie Woelfel  
laurie.woelfel@pacelabs.com  
(920)469-2436  
Project Manager

Enclosures

cc: Tanner Hess, TRC  
Ted O'Connell, TRC - Madison  
Jesse Papez, TRC - Madison  
Peggy Popp, TRC - Madison  
James Robinson, TRC Environmental  
Ben Wachholz, TRC  
Meredith Westover, TRC Environmental



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 107927.0000.100.9300 HARP

Pace Project No.: 40171904

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### Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302

Florida/NELAP Certification #: E87948

Illinois Certification #: 200050

Kentucky UST Certification #: 82

Louisiana Certification #: 04168

Minnesota Certification #: 055-999-334

New York Certification #: 12064

North Dakota Certification #: R-150

Virginia VELAP ID: 460263

South Carolina Certification #: 83006001

Texas Certification #: T104704529-14-1

Wisconsin Certification #: 405132750

Wisconsin DATCP Certification #: 105-444

USDA Soil Permit #: P330-16-00157

Federal Fish & Wildlife Permit #: LE51774A-0

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: 107927.0000.100.9300 HARP

Pace Project No.: 40171904

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Lab ID	Sample ID	Matrix	Date Collected	Date Received
40171904001	OU3-IC-S11-R	Solid	06/29/18 11:15	07/03/18 09:05
40171904002	OU3-IC-S12-L	Solid	06/29/18 11:30	07/03/18 09:05

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### SAMPLE ANALYTE COUNT

Project: 107927.0000.100.9300 HARP

Pace Project No.: 40171904

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40171904001	OU3-IC-S11-R	EPA 8082	BLM	10	PASI-G
		ASTM D2974-87	TEL	1	PASI-G
40171904002	OU3-IC-S12-L	EPA 8082	BLM	10	PASI-G
		ASTM D2974-87	TEL	1	PASI-G

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 107927.0000.100.9300 HARP

Pace Project No.: 40171904

**Sample: OU3-IC-S11-R**      **Lab ID: 40171904001**      Collected: 06/29/18 11:15      Received: 07/03/18 09:05      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>8082 GCS PCB</b>									
Analytical Method: EPA 8082    Preparation Method: EPA 3541									
PCB-1016 (Aroclor 1016)	<144	ug/kg	288	144	2	07/10/18 13:16	07/11/18 08:42	12674-11-2	
PCB-1221 (Aroclor 1221)	<144	ug/kg	288	144	2	07/10/18 13:16	07/11/18 08:42	11104-28-2	
PCB-1232 (Aroclor 1232)	<144	ug/kg	288	144	2	07/10/18 13:16	07/11/18 08:42	11141-16-5	
PCB-1242 (Aroclor 1242)	<144	ug/kg	288	144	2	07/10/18 13:16	07/11/18 08:42	53469-21-9	
PCB-1248 (Aroclor 1248)	<144	ug/kg	288	144	2	07/10/18 13:16	07/11/18 08:42	12672-29-6	
PCB-1254 (Aroclor 1254)	2230	ug/kg	288	144	2	07/10/18 13:16	07/11/18 08:42	11097-69-1	
PCB-1260 (Aroclor 1260)	<144	ug/kg	288	144	2	07/10/18 13:16	07/11/18 08:42	11096-82-5	
PCB, Total	2230	ug/kg	288	144	2	07/10/18 13:16	07/11/18 08:42	1336-36-3	
<b>Surrogates</b>									
Tetrachloro-m-xylene (S)	86	%	56-98		2	07/10/18 13:16	07/11/18 08:42	877-09-8	
Decachlorobiphenyl (S)	83	%	49-104		2	07/10/18 13:16	07/11/18 08:42	2051-24-3	
<b>Percent Moisture</b>									
Analytical Method: ASTM D2974-87									
Percent Moisture	65.3	%	0.10	0.10	1		07/09/18 11:29		

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 107927.0000.100.9300 HARP

Pace Project No.: 40171904

**Sample: OU3-IC-S12-L**      **Lab ID: 40171904002**      Collected: 06/29/18 11:30      Received: 07/03/18 09:05      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>8082 GCS PCB</b>									
Analytical Method: EPA 8082    Preparation Method: EPA 3541									
PCB-1016 (Aroclor 1016)	<62.6	ug/kg	125	62.6	1	07/10/18 13:16	07/11/18 09:01	12674-11-2	
PCB-1221 (Aroclor 1221)	<62.6	ug/kg	125	62.6	1	07/10/18 13:16	07/11/18 09:01	11104-28-2	
PCB-1232 (Aroclor 1232)	<62.6	ug/kg	125	62.6	1	07/10/18 13:16	07/11/18 09:01	11141-16-5	
PCB-1242 (Aroclor 1242)	<62.6	ug/kg	125	62.6	1	07/10/18 13:16	07/11/18 09:01	53469-21-9	
PCB-1248 (Aroclor 1248)	<62.6	ug/kg	125	62.6	1	07/10/18 13:16	07/11/18 09:01	12672-29-6	
PCB-1254 (Aroclor 1254)	821	ug/kg	125	62.6	1	07/10/18 13:16	07/11/18 09:01	11097-69-1	
PCB-1260 (Aroclor 1260)	209	ug/kg	125	62.6	1	07/10/18 13:16	07/11/18 09:01	11096-82-5	
PCB, Total	1030	ug/kg	125	62.6	1	07/10/18 13:16	07/11/18 09:01	1336-36-3	
<b>Surrogates</b>									
Tetrachloro-m-xylene (S)	84	%	56-98		1	07/10/18 13:16	07/11/18 09:01	877-09-8	
Decachlorobiphenyl (S)	81	%	49-104		1	07/10/18 13:16	07/11/18 09:01	2051-24-3	
<b>Percent Moisture</b>									
Analytical Method: ASTM D2974-87									
Percent Moisture	60.1	%	0.10	0.10	1		07/09/18 11:30		

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### QUALITY CONTROL DATA

Project: 107927.0000.100.9300 HARP  
Pace Project No.: 40171904

QC Batch: 294108 Analysis Method: EPA 8082  
QC Batch Method: EPA 3541 Analysis Description: 8082 GCS PCB  
Associated Lab Samples: 40171904001, 40171904002

METHOD BLANK: 1719594 Matrix: Solid  
Associated Lab Samples: 40171904001, 40171904002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	<25.0	50.0	07/11/18 06:31	
PCB-1221 (Aroclor 1221)	ug/kg	<25.0	50.0	07/11/18 06:31	
PCB-1232 (Aroclor 1232)	ug/kg	<25.0	50.0	07/11/18 06:31	
PCB-1242 (Aroclor 1242)	ug/kg	<25.0	50.0	07/11/18 06:31	
PCB-1248 (Aroclor 1248)	ug/kg	<25.0	50.0	07/11/18 06:31	
PCB-1254 (Aroclor 1254)	ug/kg	<25.0	50.0	07/11/18 06:31	
PCB-1260 (Aroclor 1260)	ug/kg	<25.0	50.0	07/11/18 06:31	
Decachlorobiphenyl (S)	%	89	49-104	07/11/18 06:31	
Tetrachloro-m-xylene (S)	%	82	56-98	07/11/18 06:31	

LABORATORY CONTROL SAMPLE: 1719595

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg		<25.0			
PCB-1221 (Aroclor 1221)	ug/kg		<25.0			
PCB-1232 (Aroclor 1232)	ug/kg		<25.0			
PCB-1242 (Aroclor 1242)	ug/kg		<25.0			
PCB-1248 (Aroclor 1248)	ug/kg		<25.0			
PCB-1254 (Aroclor 1254)	ug/kg		<25.0			
PCB-1260 (Aroclor 1260)	ug/kg	500	411	82	61-105	
Decachlorobiphenyl (S)	%			88	49-104	
Tetrachloro-m-xylene (S)	%			84	56-98	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1719596 1719597

Parameter	Units	40171910001		1719596		1719597		% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
PCB-1016 (Aroclor 1016)	ug/kg	<0.031 mg/kg		<31.1	<31.1					20	
PCB-1221 (Aroclor 1221)	ug/kg	<0.031 mg/kg		<31.1	<31.1					20	
PCB-1232 (Aroclor 1232)	ug/kg	<0.031 mg/kg		<31.1	<31.1					20	
PCB-1242 (Aroclor 1242)	ug/kg	<0.031 mg/kg		<31.1	<31.1					20	
PCB-1248 (Aroclor 1248)	ug/kg	<0.031 mg/kg		<31.1	<31.1					20	
PCB-1254 (Aroclor 1254)	ug/kg	<0.031 mg/kg		<31.1	<31.1					20	

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

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: 107927.0000.100.9300 HARP

Pace Project No.: 40171904

Parameter	Units	40171910001		1719596		1719597		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
PCB-1260 (Aroclor 1260)	ug/kg	<0.031 mg/kg	623	623	516	515	83	83	35-125	0	20			
Decachlorobiphenyl (S)	%						87	86	49-104					
Tetrachloro-m-xylene (S)	%						88	91	56-98					

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: 107927.0000.100.9300 HARP

Pace Project No.: 40171904

QC Batch: 293924

Analysis Method: ASTM D2974-87

QC Batch Method: ASTM D2974-87

Analysis Description: Dry Weight/Percent Moisture

Associated Lab Samples: 40171904001, 40171904002

SAMPLE DUPLICATE: 1718916

Parameter	Units	40171798011 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	19.6	19.6	0	10	

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

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## QUALIFIERS

Project: 107927.0000.100.9300 HARP

Pace Project No.: 40171904

---

### DEFINITIONS

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

ND - Not Detected at or above LOD.

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

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-G Pace Analytical Services - Green Bay

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 107927.0000.100.9300 HARP

Pace Project No.: 40171904

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40171904001	OU3-IC-S11-R	EPA 3541	294108	EPA 8082	294109
40171904002	OU3-IC-S12-L	EPA 3541	294108	EPA 8082	294109
40171904001	OU3-IC-S11-R	ASTM D2974-87	293924		
40171904002	OU3-IC-S12-L	ASTM D2974-87	293924		

### REPORT OF LABORATORY ANALYSIS

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(Please Print Clearly)

UPPER MIDWEST REGION

Company Name: TPC  
 Branch/Location: Madison  
 Project Contact: M. Westover  
 Phone: 608 358 5035  
 Project Number: 107927.0000 ph 100 9300  
 Project Name: HARP  
 Project State: WI  
 Sampled By (Print): M. Westover  
 Sampled By (Sign):  
 PO #: Regulatory Program:



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

40171904

# 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)  
 PRESEVATION  
(CODE)\*

Y/N	NA								

Quote #: 40171904  
 Mail To Contact: M. Westover  
 Mail To Company: TPC  
 Mail To Address: Madison  
 Invoice To Contact: Invoice Processing  
 Invoice To Company: TPC  
 Invoice To Address: Windsor, CT  
 Invoice To Phone:

Data Package Options (billable):  
 EPA Level III  
 EPA Level IV  
 MS/MSD:  
 On your sample (billable)  
 NOT needed on your sample  
 Matrix Codes:  
 A = Air W = Water  
 B = Biota DW = Drinking Water  
 C = Charcoal GW = Ground Water  
 O = Oil SW = Surface Water  
 S = Soil WW = Waste Water  
 Sl = Sludge WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION		MATRIX	Analyses Requested
		DATE	TIME		
001	0U3-IC-S11-R	6/27/18	11:15	S	X
002	0U3-IC-S12-L	↓	11:30	S	X

Rush Turnaround Time Requested - Prelims (Rush TAT subject to approval/surcharge) Date Needed:	Relinquished By: <i>[Signature]</i> to <i>[Signature]</i> <sup>SVC</sup> Date/Time: 7/2/18 12:00	Received By: <i>[Signature]</i> Date/Time:	PACE Project No. 40171904
Transmit Prelim Rush Results by (complete what you want):	Relinquished By: <i>[Signature]</i> <sup>SVC</sup> Date/Time: 7/3/18 09:05	Received By: <i>[Signature]</i> Date/Time: 7/3/18 09:05	Receipt Temp = <i>[Signature]</i> °C
Email #1:	Relinquished By:	Received By:	Sample Receipt pH OK / Adjusted
Email #2:	Relinquished By:	Received By:	Cooler Custody Seal Present / <u>Not Present</u> Intact / Not Intact
Telephone:	Relinquished By:	Received By:	
Fax:	Relinquished By:	Received By:	

**Sample Preservation Receipt Form**

Client Name: TRC

Project # 40171904

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

Initial when completed:

Date/Time:

Lab Lot# of pH paper:

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

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

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

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



1241 Bellevue Street, Green Bay, WI 54302

Document Name:  
Sample Condition Upon Receipt (SCUR)

Document No.:  
F-GB-C-031-Rev.07

Document Revised: 25Apr2018

Issuing Authority:  
Pace Green Bay Quality Office

### Sample Condition Upon Receipt Form (SCUR)

Client Name: TRC

Project #:

WO#: **40171904**

Courier:  CS Logistics  Fed Ex  Speedee  UPS  Walco

Client  Pace Other: \_\_\_\_\_

Tracking #: 1764068-1



40171904

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

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

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

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

Cooler Temperature Uncorr: 39 / Corr: \_\_\_\_\_

Temp Blank Present:  yes  no

Biological Tissue is Frozen:  yes  no

Person examining contents:

Date: 7/3/18

Initials: [Signature]

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

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	2. <u>Payett</u>
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3. <u>7/3/18</u>
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 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>5</u>	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

#### Client Notification/ Resolution:

If checked, see attached form for additional comments

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: [Signature]

Date: 8/7/18



November 29, 2018

Meredith Westover  
TRC Environmental  
708 Heartland Trail  
Madison, WI 53717

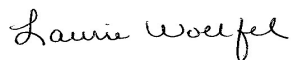
RE: Project: 107927.0000.100.9300 HARP  
Pace Project No.: 40179962

Dear Meredith Westover:

Enclosed are the analytical results for sample(s) received by the laboratory on November 20, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Laurie Woelfel  
laurie.woelfel@pacelabs.com  
(920)469-2436  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 107927.0000.100.9300 HARP

Pace Project No.: 40179962

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### Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302

Florida/NELAP Certification #: E87948

Illinois Certification #: 200050

Kentucky UST Certification #: 82

Louisiana Certification #: 04168

Minnesota Certification #: 055-999-334

New York Certification #: 12064

North Dakota Certification #: R-150

Virginia VELAP ID: 460263

South Carolina Certification #: 83006001

Texas Certification #: T104704529-14-1

Wisconsin Certification #: 405132750

Wisconsin DATCP Certification #: 105-444

USDA Soil Permit #: P330-16-00157

Federal Fish & Wildlife Permit #: LE51774A-0

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: 107927.0000.100.9300 HARP

Pace Project No.: 40179962

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40179962001	OU3-IC-S05-R	Solid	11/16/18 14:00	11/20/18 09:15
40179962002	OU3-IC-S06-L	Solid	11/16/18 14:10	11/20/18 09:15
40179962003	OU3-IC-S07-L	Solid	11/16/18 14:20	11/20/18 09:15
40179962004	OU3-IC-S08-L	Solid	11/16/18 14:30	11/20/18 09:15
40179962005	OU3-IC-S09-L	Solid	11/16/18 14:40	11/20/18 09:15
40179962006	OU3-IC-S10-L	Solid	11/16/18 14:50	11/20/18 09:15
40179962007	OU3-IC-S11-R	Solid	11/16/18 15:00	11/20/18 09:15
40179962008	OU3-IC-S12-L	Solid	11/16/18 15:10	11/20/18 09:15
40179962009	OU3-IC-DUP01	Solid	11/16/18 00:00	11/20/18 09:15
40179962010	OU3-FB01	Water	11/16/18 15:30	11/20/18 09:15

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### SAMPLE ANALYTE COUNT

Project: 107927.0000.100.9300 HARP

Pace Project No.: 40179962

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40179962001	OU3-IC-S05-R	EPA 8082	BDS	10	PASI-G
		ASTM D2974-87	TEL	1	PASI-G
40179962002	OU3-IC-S06-L	EPA 8082	BDS	10	PASI-G
		ASTM D2974-87	TEL	1	PASI-G
40179962003	OU3-IC-S07-L	EPA 8082	BDS	10	PASI-G
		ASTM D2974-87	TEL	1	PASI-G
40179962004	OU3-IC-S08-L	EPA 8082	BDS	10	PASI-G
		ASTM D2974-87	TEL	1	PASI-G
40179962005	OU3-IC-S09-L	EPA 8082	BDS	10	PASI-G
		ASTM D2974-87	TEL	1	PASI-G
40179962006	OU3-IC-S10-L	EPA 8082	BDS	10	PASI-G
		ASTM D2974-87	TEL	1	PASI-G
40179962007	OU3-IC-S11-R	EPA 8082	BDS	10	PASI-G
		ASTM D2974-87	TEL	1	PASI-G
40179962008	OU3-IC-S12-L	EPA 8082	BDS	10	PASI-G
		ASTM D2974-87	TEL	1	PASI-G
40179962009	OU3-IC-DUP01	EPA 8082	BDS	10	PASI-G
		ASTM D2974-87	TEL	1	PASI-G
40179962010	OU3-FB01	EPA 8082	BDS	10	PASI-G

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 107927.0000.100.9300 HARP  
Pace Project No.: 40179962

**Sample: OU3-IC-S05-R**      **Lab ID: 40179962001**      Collected: 11/16/18 14:00      Received: 11/20/18 09:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>8082 GCS PCB</b>									
Analytical Method: EPA 8082    Preparation Method: EPA 3541									
PCB-1016 (Aroclor 1016)	<64.2	ug/kg	128	64.2	1	11/26/18 14:06	11/27/18 16:17	12674-11-2	
PCB-1221 (Aroclor 1221)	<64.2	ug/kg	128	64.2	1	11/26/18 14:06	11/27/18 16:17	11104-28-2	
PCB-1232 (Aroclor 1232)	<64.2	ug/kg	128	64.2	1	11/26/18 14:06	11/27/18 16:17	11141-16-5	
PCB-1242 (Aroclor 1242)	<64.2	ug/kg	128	64.2	1	11/26/18 14:06	11/27/18 16:17	53469-21-9	
PCB-1248 (Aroclor 1248)	<64.2	ug/kg	128	64.2	1	11/26/18 14:06	11/27/18 16:17	12672-29-6	
PCB-1254 (Aroclor 1254)	510	ug/kg	128	64.2	1	11/26/18 14:06	11/27/18 16:17	11097-69-1	
PCB-1260 (Aroclor 1260)	117J	ug/kg	128	64.2	1	11/26/18 14:06	11/27/18 16:17	11096-82-5	
PCB, Total	626	ug/kg	128	64.2	1	11/26/18 14:06	11/27/18 16:17	1336-36-3	
<b>Surrogates</b>									
Tetrachloro-m-xylene (S)	78	%	56-98		1	11/26/18 14:06	11/27/18 16:17	877-09-8	
Decachlorobiphenyl (S)	70	%	49-104		1	11/26/18 14:06	11/27/18 16:17	2051-24-3	
<b>Percent Moisture</b>									
Analytical Method: ASTM D2974-87									
Percent Moisture	61.1	%	0.10	0.10	1		11/27/18 10:45		

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 107927.0000.100.9300 HARP

Pace Project No.: 40179962

**Sample: OU3-IC-S06-L**      **Lab ID: 40179962002**      Collected: 11/16/18 14:10      Received: 11/20/18 09:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>8082 GCS PCB</b>									
Analytical Method: EPA 8082    Preparation Method: EPA 3541									
PCB-1016 (Aroclor 1016)	<89.0	ug/kg	178	89.0	1	11/26/18 14:06	11/27/18 16:39	12674-11-2	
PCB-1221 (Aroclor 1221)	<89.0	ug/kg	178	89.0	1	11/26/18 14:06	11/27/18 16:39	11104-28-2	
PCB-1232 (Aroclor 1232)	<89.0	ug/kg	178	89.0	1	11/26/18 14:06	11/27/18 16:39	11141-16-5	
PCB-1242 (Aroclor 1242)	<89.0	ug/kg	178	89.0	1	11/26/18 14:06	11/27/18 16:39	53469-21-9	
PCB-1248 (Aroclor 1248)	<89.0	ug/kg	178	89.0	1	11/26/18 14:06	11/27/18 16:39	12672-29-6	
PCB-1254 (Aroclor 1254)	721	ug/kg	178	89.0	1	11/26/18 14:06	11/27/18 16:39	11097-69-1	
PCB-1260 (Aroclor 1260)	156J	ug/kg	178	89.0	1	11/26/18 14:06	11/27/18 16:39	11096-82-5	
PCB, Total	877	ug/kg	178	89.0	1	11/26/18 14:06	11/27/18 16:39	1336-36-3	
<b>Surrogates</b>									
Tetrachloro-m-xylene (S)	81	%	56-98		1	11/26/18 14:06	11/27/18 16:39	877-09-8	
Decachlorobiphenyl (S)	70	%	49-104		1	11/26/18 14:06	11/27/18 16:39	2051-24-3	
<b>Percent Moisture</b>									
Analytical Method: ASTM D2974-87									
Percent Moisture	71.9	%	0.10	0.10	1		11/27/18 10:45		

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 107927.0000.100.9300 HARP

Pace Project No.: 40179962

**Sample: OU3-IC-S07-L**      **Lab ID: 40179962003**      Collected: 11/16/18 14:20      Received: 11/20/18 09:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>8082 GCS PCB</b>									
Analytical Method: EPA 8082    Preparation Method: EPA 3541									
PCB-1016 (Aroclor 1016)	<67.0	ug/kg	134	67.0	1	11/26/18 14:06	11/27/18 17:01	12674-11-2	
PCB-1221 (Aroclor 1221)	<67.0	ug/kg	134	67.0	1	11/26/18 14:06	11/27/18 17:01	11104-28-2	
PCB-1232 (Aroclor 1232)	<67.0	ug/kg	134	67.0	1	11/26/18 14:06	11/27/18 17:01	11141-16-5	
PCB-1242 (Aroclor 1242)	<67.0	ug/kg	134	67.0	1	11/26/18 14:06	11/27/18 17:01	53469-21-9	
PCB-1248 (Aroclor 1248)	<67.0	ug/kg	134	67.0	1	11/26/18 14:06	11/27/18 17:01	12672-29-6	
PCB-1254 (Aroclor 1254)	1220	ug/kg	134	67.0	1	11/26/18 14:06	11/27/18 17:01	11097-69-1	
PCB-1260 (Aroclor 1260)	263	ug/kg	134	67.0	1	11/26/18 14:06	11/27/18 17:01	11096-82-5	
PCB, Total	1490	ug/kg	134	67.0	1	11/26/18 14:06	11/27/18 17:01	1336-36-3	
<b>Surrogates</b>									
Tetrachloro-m-xylene (S)	71	%	56-98		1	11/26/18 14:06	11/27/18 17:01	877-09-8	
Decachlorobiphenyl (S)	66	%	49-104		1	11/26/18 14:06	11/27/18 17:01	2051-24-3	
<b>Percent Moisture</b>									
Analytical Method: ASTM D2974-87									
Percent Moisture	62.7	%	0.10	0.10	1		11/27/18 10:45		

## REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: 107927.0000.100.9300 HARP

Pace Project No.: 40179962

**Sample: OU3-IC-S08-L**      **Lab ID: 40179962004**      Collected: 11/16/18 14:30      Received: 11/20/18 09:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>8082 GCS PCB</b>									
Analytical Method: EPA 8082    Preparation Method: EPA 3541									
PCB-1016 (Aroclor 1016)	<65.5	ug/kg	131	65.5	1	11/26/18 14:06	11/27/18 17:23	12674-11-2	
PCB-1221 (Aroclor 1221)	<65.5	ug/kg	131	65.5	1	11/26/18 14:06	11/27/18 17:23	11104-28-2	
PCB-1232 (Aroclor 1232)	<65.5	ug/kg	131	65.5	1	11/26/18 14:06	11/27/18 17:23	11141-16-5	
PCB-1242 (Aroclor 1242)	<65.5	ug/kg	131	65.5	1	11/26/18 14:06	11/27/18 17:23	53469-21-9	
PCB-1248 (Aroclor 1248)	<65.5	ug/kg	131	65.5	1	11/26/18 14:06	11/27/18 17:23	12672-29-6	
PCB-1254 (Aroclor 1254)	1600	ug/kg	131	65.5	1	11/26/18 14:06	11/27/18 17:23	11097-69-1	
PCB-1260 (Aroclor 1260)	342	ug/kg	131	65.5	1	11/26/18 14:06	11/27/18 17:23	11096-82-5	
PCB, Total	1940	ug/kg	131	65.5	1	11/26/18 14:06	11/27/18 17:23	1336-36-3	
<b>Surrogates</b>									
Tetrachloro-m-xylene (S)	75	%	56-98		1	11/26/18 14:06	11/27/18 17:23	877-09-8	
Decachlorobiphenyl (S)	69	%	49-104		1	11/26/18 14:06	11/27/18 17:23	2051-24-3	
<b>Percent Moisture</b>									
Analytical Method: ASTM D2974-87									
Percent Moisture	61.8	%	0.10	0.10	1		11/27/18 10:45		

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## ANALYTICAL RESULTS

Project: 107927.0000.100.9300 HARP

Pace Project No.: 40179962

**Sample:** OU3-IC-S09-L      **Lab ID:** 40179962005      Collected: 11/16/18 14:40      Received: 11/20/18 09:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>8082 GCS PCB</b>									
Analytical Method: EPA 8082 Preparation Method: EPA 3541									
PCB-1016 (Aroclor 1016)	<338	ug/kg	676	338	5	11/26/18 14:06	11/27/18 17:44	12674-11-2	
PCB-1221 (Aroclor 1221)	<338	ug/kg	676	338	5	11/26/18 14:06	11/27/18 17:44	11104-28-2	
PCB-1232 (Aroclor 1232)	<338	ug/kg	676	338	5	11/26/18 14:06	11/27/18 17:44	11141-16-5	
PCB-1242 (Aroclor 1242)	<338	ug/kg	676	338	5	11/26/18 14:06	11/27/18 17:44	53469-21-9	
PCB-1248 (Aroclor 1248)	<338	ug/kg	676	338	5	11/26/18 14:06	11/27/18 17:44	12672-29-6	
PCB-1254 (Aroclor 1254)	4110	ug/kg	676	338	5	11/26/18 14:06	11/27/18 17:44	11097-69-1	
PCB-1260 (Aroclor 1260)	903	ug/kg	676	338	5	11/26/18 14:06	11/27/18 17:44	11096-82-5	
PCB, Total	5010	ug/kg	676	338	5	11/26/18 14:06	11/27/18 17:44	1336-36-3	
<b>Surrogates</b>									
Tetrachloro-m-xylene (S)	75	%	56-98		5	11/26/18 14:06	11/27/18 17:44	877-09-8	
Decachlorobiphenyl (S)	73	%	49-104		5	11/26/18 14:06	11/27/18 17:44	2051-24-3	
<b>Percent Moisture</b>									
Analytical Method: ASTM D2974-87									
Percent Moisture	63.0	%	0.10	0.10	1		11/27/18 10:45		

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## ANALYTICAL RESULTS

Project: 107927.0000.100.9300 HARP

Pace Project No.: 40179962

**Sample: OU3-IC-S10-L**      **Lab ID: 40179962006**      Collected: 11/16/18 14:50      Received: 11/20/18 09:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>8082 GCS PCB</b>									
Analytical Method: EPA 8082    Preparation Method: EPA 3541									
PCB-1016 (Aroclor 1016)	<76.6	ug/kg	153	76.6	1	11/26/18 14:06	11/27/18 18:06	12674-11-2	
PCB-1221 (Aroclor 1221)	<76.6	ug/kg	153	76.6	1	11/26/18 14:06	11/27/18 18:06	11104-28-2	
PCB-1232 (Aroclor 1232)	<76.6	ug/kg	153	76.6	1	11/26/18 14:06	11/27/18 18:06	11141-16-5	
PCB-1242 (Aroclor 1242)	<76.6	ug/kg	153	76.6	1	11/26/18 14:06	11/27/18 18:06	53469-21-9	
PCB-1248 (Aroclor 1248)	<76.6	ug/kg	153	76.6	1	11/26/18 14:06	11/27/18 18:06	12672-29-6	
PCB-1254 (Aroclor 1254)	581	ug/kg	153	76.6	1	11/26/18 14:06	11/27/18 18:06	11097-69-1	
PCB-1260 (Aroclor 1260)	126J	ug/kg	153	76.6	1	11/26/18 14:06	11/27/18 18:06	11096-82-5	
PCB, Total	706	ug/kg	153	76.6	1	11/26/18 14:06	11/27/18 18:06	1336-36-3	
<b>Surrogates</b>									
Tetrachloro-m-xylene (S)	73	%	56-98		1	11/26/18 14:06	11/27/18 18:06	877-09-8	
Decachlorobiphenyl (S)	63	%	49-104		1	11/26/18 14:06	11/27/18 18:06	2051-24-3	
<b>Percent Moisture</b>									
Analytical Method: ASTM D2974-87									
Percent Moisture	67.4	%	0.10	0.10	1		11/27/18 10:45		

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## ANALYTICAL RESULTS

Project: 107927.0000.100.9300 HARP

Pace Project No.: 40179962

**Sample: OU3-IC-S11-R**      **Lab ID: 40179962007**      Collected: 11/16/18 15:00      Received: 11/20/18 09:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>8082 GCS PCB</b>									
Analytical Method: EPA 8082    Preparation Method: EPA 3541									
PCB-1016 (Aroclor 1016)	<77.6	ug/kg	155	77.6	1	11/26/18 14:06	11/27/18 18:28	12674-11-2	
PCB-1221 (Aroclor 1221)	<77.6	ug/kg	155	77.6	1	11/26/18 14:06	11/27/18 18:28	11104-28-2	
PCB-1232 (Aroclor 1232)	<77.6	ug/kg	155	77.6	1	11/26/18 14:06	11/27/18 18:28	11141-16-5	
PCB-1242 (Aroclor 1242)	<77.6	ug/kg	155	77.6	1	11/26/18 14:06	11/27/18 18:28	53469-21-9	
PCB-1248 (Aroclor 1248)	<77.6	ug/kg	155	77.6	1	11/26/18 14:06	11/27/18 18:28	12672-29-6	
PCB-1254 (Aroclor 1254)	234	ug/kg	155	77.6	1	11/26/18 14:06	11/27/18 18:28	11097-69-1	
PCB-1260 (Aroclor 1260)	<77.6	ug/kg	155	77.6	1	11/26/18 14:06	11/27/18 18:28	11096-82-5	
PCB, Total	234	ug/kg	155	77.6	1	11/26/18 14:06	11/27/18 18:28	1336-36-3	
<b>Surrogates</b>									
Tetrachloro-m-xylene (S)	78	%	56-98		1	11/26/18 14:06	11/27/18 18:28	877-09-8	
Decachlorobiphenyl (S)	70	%	49-104		1	11/26/18 14:06	11/27/18 18:28	2051-24-3	
<b>Percent Moisture</b>									
Analytical Method: ASTM D2974-87									
Percent Moisture	67.8	%	0.10	0.10	1		11/27/18 10:45		

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### ANALYTICAL RESULTS

Project: 107927.0000.100.9300 HARP

Pace Project No.: 40179962

**Sample: OU3-IC-S12-L**      **Lab ID: 40179962008**      Collected: 11/16/18 15:10      Received: 11/20/18 09:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>8082 GCS PCB</b>									
Analytical Method: EPA 8082    Preparation Method: EPA 3541									
PCB-1016 (Aroclor 1016)	<74.4	ug/kg	149	74.4	1	11/26/18 14:06	11/27/18 18:50	12674-11-2	
PCB-1221 (Aroclor 1221)	<74.4	ug/kg	149	74.4	1	11/26/18 14:06	11/27/18 18:50	11104-28-2	
PCB-1232 (Aroclor 1232)	<74.4	ug/kg	149	74.4	1	11/26/18 14:06	11/27/18 18:50	11141-16-5	
PCB-1242 (Aroclor 1242)	472	ug/kg	149	74.4	1	11/26/18 14:06	11/27/18 18:50	53469-21-9	
PCB-1248 (Aroclor 1248)	<74.4	ug/kg	149	74.4	1	11/26/18 14:06	11/27/18 18:50	12672-29-6	
PCB-1254 (Aroclor 1254)	981	ug/kg	149	74.4	1	11/26/18 14:06	11/27/18 18:50	11097-69-1	
PCB-1260 (Aroclor 1260)	291	ug/kg	149	74.4	1	11/26/18 14:06	11/27/18 18:50	11096-82-5	
PCB, Total	1740	ug/kg	149	74.4	1	11/26/18 14:06	11/27/18 18:50	1336-36-3	
<b>Surrogates</b>									
Tetrachloro-m-xylene (S)	77	%	56-98		1	11/26/18 14:06	11/27/18 18:50	877-09-8	
Decachlorobiphenyl (S)	67	%	49-104		1	11/26/18 14:06	11/27/18 18:50	2051-24-3	
<b>Percent Moisture</b>									
Analytical Method: ASTM D2974-87									
Percent Moisture	66.4	%	0.10	0.10	1		11/27/18 10:45		

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## ANALYTICAL RESULTS

Project: 107927.0000.100.9300 HARP

Pace Project No.: 40179962

**Sample:** OU3-IC-DUP01      **Lab ID:** 40179962009      Collected: 11/16/18 00:00      Received: 11/20/18 09:15      Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>8082 GCS PCB</b>									
Analytical Method: EPA 8082 Preparation Method: EPA 3541									
PCB-1016 (Aroclor 1016)	<62.1	ug/kg	124	62.1	1	11/26/18 14:06	11/27/18 19:12	12674-11-2	
PCB-1221 (Aroclor 1221)	<62.1	ug/kg	124	62.1	1	11/26/18 14:06	11/27/18 19:12	11104-28-2	
PCB-1232 (Aroclor 1232)	<62.1	ug/kg	124	62.1	1	11/26/18 14:06	11/27/18 19:12	11141-16-5	
PCB-1242 (Aroclor 1242)	<62.1	ug/kg	124	62.1	1	11/26/18 14:06	11/27/18 19:12	53469-21-9	
PCB-1248 (Aroclor 1248)	<62.1	ug/kg	124	62.1	1	11/26/18 14:06	11/27/18 19:12	12672-29-6	
PCB-1254 (Aroclor 1254)	113J	ug/kg	124	62.1	1	11/26/18 14:06	11/27/18 19:12	11097-69-1	
PCB-1260 (Aroclor 1260)	<62.1	ug/kg	124	62.1	1	11/26/18 14:06	11/27/18 19:12	11096-82-5	
PCB, Total	113J	ug/kg	124	62.1	1	11/26/18 14:06	11/27/18 19:12	1336-36-3	
<b>Surrogates</b>									
Tetrachloro-m-xylene (S)	72	%	56-98		1	11/26/18 14:06	11/27/18 19:12	877-09-8	
Decachlorobiphenyl (S)	63	%	49-104		1	11/26/18 14:06	11/27/18 19:12	2051-24-3	
<b>Percent Moisture</b>									
Analytical Method: ASTM D2974-87									
Percent Moisture	59.7	%	0.10	0.10	1		11/27/18 10:45		

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### ANALYTICAL RESULTS

Project: 107927.0000.100.9300 HARP

Pace Project No.: 40179962

**Sample: OU3-FB01**      **Lab ID: 40179962010**      Collected: 11/16/18 15:30      Received: 11/20/18 09:15      Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>8082 GCS PCB</b>		Analytical Method: EPA 8082    Preparation Method: EPA 3510							
PCB-1016 (Aroclor 1016)	<0.25	ug/L	0.50	0.25	1	11/27/18 08:15	11/28/18 10:59	12674-11-2	
PCB-1221 (Aroclor 1221)	<0.25	ug/L	0.50	0.25	1	11/27/18 08:15	11/28/18 10:59	11104-28-2	
PCB-1232 (Aroclor 1232)	<0.25	ug/L	0.50	0.25	1	11/27/18 08:15	11/28/18 10:59	11141-16-5	
PCB-1242 (Aroclor 1242)	<0.25	ug/L	0.50	0.25	1	11/27/18 08:15	11/28/18 10:59	53469-21-9	
PCB-1248 (Aroclor 1248)	<0.25	ug/L	0.50	0.25	1	11/27/18 08:15	11/28/18 10:59	12672-29-6	
PCB-1254 (Aroclor 1254)	<0.25	ug/L	0.50	0.25	1	11/27/18 08:15	11/28/18 10:59	11097-69-1	
PCB-1260 (Aroclor 1260)	<0.25	ug/L	0.50	0.25	1	11/27/18 08:15	11/28/18 10:59	11096-82-5	
PCB, Total	<0.25	ug/L	0.50	0.25	1	11/27/18 08:15	11/28/18 10:59	1336-36-3	
<b>Surrogates</b>									
Tetrachloro-m-xylene (S)	91	%	44-121		1	11/27/18 08:15	11/28/18 10:59	877-09-8	
Decachlorobiphenyl (S)	53	%	10-119		1	11/27/18 08:15	11/28/18 10:59	2051-24-3	

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### QUALITY CONTROL DATA

Project: 107927.0000.100.9300 HARP  
Pace Project No.: 40179962

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QC Batch: 307557 Analysis Method: EPA 8082  
QC Batch Method: EPA 3541 Analysis Description: 8082 GCS PCB  
Associated Lab Samples: 40179962001, 40179962002, 40179962003, 40179962004, 40179962005, 40179962006, 40179962007, 40179962008, 40179962009

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METHOD BLANK: 1797836 Matrix: Solid  
Associated Lab Samples: 40179962001, 40179962002, 40179962003, 40179962004, 40179962005, 40179962006, 40179962007, 40179962008, 40179962009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	<25.0	50.0	11/27/18 11:13	
PCB-1221 (Aroclor 1221)	ug/kg	<25.0	50.0	11/27/18 11:13	
PCB-1232 (Aroclor 1232)	ug/kg	<25.0	50.0	11/27/18 11:13	
PCB-1242 (Aroclor 1242)	ug/kg	<25.0	50.0	11/27/18 11:13	
PCB-1248 (Aroclor 1248)	ug/kg	<25.0	50.0	11/27/18 11:13	
PCB-1254 (Aroclor 1254)	ug/kg	<25.0	50.0	11/27/18 11:13	
PCB-1260 (Aroclor 1260)	ug/kg	<25.0	50.0	11/27/18 11:13	
Decachlorobiphenyl (S)	%	79	49-104	11/27/18 11:13	
Tetrachloro-m-xylene (S)	%	82	56-98	11/27/18 11:13	

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LABORATORY CONTROL SAMPLE: 1797837

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg		<25.0			
PCB-1221 (Aroclor 1221)	ug/kg		<25.0			
PCB-1232 (Aroclor 1232)	ug/kg		<25.0			
PCB-1242 (Aroclor 1242)	ug/kg		<25.0			
PCB-1248 (Aroclor 1248)	ug/kg		<25.0			
PCB-1254 (Aroclor 1254)	ug/kg		<25.0			
PCB-1260 (Aroclor 1260)	ug/kg	500	379	76	61-105	
Decachlorobiphenyl (S)	%			80	49-104	
Tetrachloro-m-xylene (S)	%			82	56-98	

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MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1797838 1797839

Parameter	Units	40179875006		1797839		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
PCB-1016 (Aroclor 1016)	ug/kg	<0.029 mg/kg		<29.3	<29.3						20
PCB-1221 (Aroclor 1221)	ug/kg	<0.029 mg/kg		<29.3	<29.3						20
PCB-1232 (Aroclor 1232)	ug/kg	<0.029 mg/kg		<29.3	<29.3						20
PCB-1242 (Aroclor 1242)	ug/kg	<0.029 mg/kg		<29.3	<29.3						20
PCB-1248 (Aroclor 1248)	ug/kg	0.12 mg/kg		130	137				6	20	

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

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### QUALITY CONTROL DATA

Project: 107927.0000.100.9300 HARP

Pace Project No.: 40179962

Parameter	Units	40179875006		1797838		1797839		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
PCB-1254 (Aroclor 1254)	ug/kg	<0.029 mg/kg			<29.3	<29.3							20	
PCB-1260 (Aroclor 1260)	ug/kg	<0.029 mg/kg	585	585	424	440	73	75	35-125	4	20			
Decachlorobiphenyl (S)	%						74	77	49-104					
Tetrachloro-m-xylene (S)	%						82	86	56-98					

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

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### QUALITY CONTROL DATA

Project: 107927.0000.100.9300 HARP  
Pace Project No.: 40179962

QC Batch: 307615 Analysis Method: EPA 8082  
QC Batch Method: EPA 3510 Analysis Description: 8082 GCS PCB  
Associated Lab Samples: 40179962010

METHOD BLANK: 1798044 Matrix: Water  
Associated Lab Samples: 40179962010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	<0.12	0.25	11/28/18 08:20	
PCB-1221 (Aroclor 1221)	ug/L	<0.12	0.25	11/28/18 08:20	
PCB-1232 (Aroclor 1232)	ug/L	<0.12	0.25	11/28/18 08:20	
PCB-1242 (Aroclor 1242)	ug/L	<0.12	0.25	11/28/18 08:20	
PCB-1248 (Aroclor 1248)	ug/L	<0.12	0.25	11/28/18 08:20	
PCB-1254 (Aroclor 1254)	ug/L	<0.12	0.25	11/28/18 08:20	
PCB-1260 (Aroclor 1260)	ug/L	<0.12	0.25	11/28/18 08:20	
Decachlorobiphenyl (S)	%	73	10-119	11/28/18 08:20	
Tetrachloro-m-xylene (S)	%	87	44-121	11/28/18 08:20	

LABORATORY CONTROL SAMPLE & LCSD: 1798045

Parameter	Units	1798046		LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
		Spike Conc.	LCS Result						
PCB-1016 (Aroclor 1016)	ug/L		<0.12	<0.12				20	
PCB-1221 (Aroclor 1221)	ug/L		<0.12	<0.12				20	
PCB-1232 (Aroclor 1232)	ug/L		<0.12	<0.12				20	
PCB-1242 (Aroclor 1242)	ug/L		<0.12	<0.12				20	
PCB-1248 (Aroclor 1248)	ug/L		<0.12	<0.12				20	
PCB-1254 (Aroclor 1254)	ug/L		<0.12	<0.12				20	
PCB-1260 (Aroclor 1260)	ug/L	2.5	2.1	2.1	84	86	63-116	1	20
Decachlorobiphenyl (S)	%				59	70	10-119		
Tetrachloro-m-xylene (S)	%				91	88	44-121		

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: 107927.0000.100.9300 HARP

Pace Project No.: 40179962

---

QC Batch:	307652	Analysis Method:	ASTM D2974-87
QC Batch Method:	ASTM D2974-87	Analysis Description:	Dry Weight/Percent Moisture
Associated Lab Samples:	40179962001, 40179962002, 40179962003, 40179962004, 40179962005, 40179962006, 40179962007, 40179962008, 40179962009		

---

SAMPLE DUPLICATE: 1798242

Parameter	Units	40180072005 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	4.5	4.6	2	10	

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: 107927.0000.100.9300 HARP  
Pace Project No.: 40179962

---

### 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.

### LABORATORIES

PASI-G Pace Analytical Services - Green Bay

### BATCH QUALIFIERS

Batch: 307703

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 107927.0000.100.9300 HARP

Pace Project No.: 40179962

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40179962001	OU3-IC-S05-R	EPA 3541	307557	EPA 8082	307578
40179962002	OU3-IC-S06-L	EPA 3541	307557	EPA 8082	307578
40179962003	OU3-IC-S07-L	EPA 3541	307557	EPA 8082	307578
40179962004	OU3-IC-S08-L	EPA 3541	307557	EPA 8082	307578
40179962005	OU3-IC-S09-L	EPA 3541	307557	EPA 8082	307578
40179962006	OU3-IC-S10-L	EPA 3541	307557	EPA 8082	307578
40179962007	OU3-IC-S11-R	EPA 3541	307557	EPA 8082	307578
40179962008	OU3-IC-S12-L	EPA 3541	307557	EPA 8082	307578
40179962009	OU3-IC-DUP01	EPA 3541	307557	EPA 8082	307578
40179962010	OU3-FB01	EPA 3510	307615	EPA 8082	307703
40179962001	OU3-IC-S05-R	ASTM D2974-87	307652		
40179962002	OU3-IC-S06-L	ASTM D2974-87	307652		
40179962003	OU3-IC-S07-L	ASTM D2974-87	307652		
40179962004	OU3-IC-S08-L	ASTM D2974-87	307652		
40179962005	OU3-IC-S09-L	ASTM D2974-87	307652		
40179962006	OU3-IC-S10-L	ASTM D2974-87	307652		
40179962007	OU3-IC-S11-R	ASTM D2974-87	307652		
40179962008	OU3-IC-S12-L	ASTM D2974-87	307652		
40179962009	OU3-IC-DUP01	ASTM D2974-87	307652		

### REPORT OF LABORATORY ANALYSIS

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(Please Print Clearly)



UPPER MIDWEST REGION

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

Page 1 of

Page 21 of 23

40179962

Company Name: TPL

Branch/Location: Madison, WI

Project Contact: H. Westover

Phone: 608 358 5035

Project Number: 107927.000 100 9300

Project Name: HARP

Project State: WI

Sampled By (Print): H. Westover

Sampled By (Sign): [Signature]

PO #: \_\_\_\_\_ Regulatory Program: \_\_\_\_\_

### 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	COLLECTION		MATRIX	
			DATE	TIME		
<u>NA</u>	<u>A</u>	<u>PURS</u>				

**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
		DATE	TIME	
	<u>003-S05-R</u>			
	<u>003-S06-L</u>			
	<u>003-S06-L</u>			
<u>001</u>	<u>003-IC-S05-R</u>	<u>11/16/18</u>	<u>1400</u>	<u>SED</u>
<u>002</u>	<u>003-IC-S06-L</u>		<u>1410</u>	
<u>003</u>	<u>003-IC-S07-L</u>		<u>1420</u>	
<u>004</u>	<u>003-IC-S08-L</u>		<u>1430</u>	
<u>005</u>	<u>003-IC-S09-L</u>		<u>1440</u>	
<u>006</u>	<u>003-IC-S10-L</u>		<u>1450</u>	
<u>007</u>	<u>003-IC-S11-R</u>		<u>1500</u>	
<u>008</u>	<u>003-IC-S12-L</u>		<u>1510</u>	
<u>009</u>	<u>003-IC-DUP01</u>			
<u>010</u>	<u>003-FB01</u>		<u>1530</u>	

Quote #: \_\_\_\_\_

Mail To Contact: TPL

Mail To Company: \_\_\_\_\_

Mail To Address: Windsor CT  
Madison, WI

Invoice To Contact: \_\_\_\_\_

Invoice To Company: TPL

Invoice To Address: Windsor, CT

Invoice To Phone: \_\_\_\_\_

CLIENT COMMENTS: \_\_\_\_\_

LAB COMMENTS (Lab Use Only): \_\_\_\_\_

Profile #: \_\_\_\_\_

Rush Turnaround Time Requested - Prelims (Rush TAT subject to approval/surcharge) Date Needed: _____	Relinquished By: <u>[Signature]</u> Date/Time: <u>11/19/18 800</u>	Received By: _____ Date/Time: _____	PACE Project No. <u>40179962</u> Receipt Temp = <u>ROT</u> °C Sample Receipt pH OK / Adjusted Cooler Custody Seal Present / Not Present Intact / Not Intact
	Relinquished By: <u>waitco</u> Date/Time: <u>11/20/18 0915</u>	Received By: <u>[Signature]</u> Date/Time: <u>11/20/18 0915</u>	
	Relinquished By: _____ Date/Time: _____	Received By: _____ Date/Time: _____	
	Relinquished By: _____ Date/Time: _____	Received By: _____ Date/Time: _____	

Client Name: TRC

Sample Preservation Receipt Form

Project # 40179962

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


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

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

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

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

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

**Project #:** \_\_\_\_\_  
**WO# : 40179962**  
  
 40179962

**Tracking #:** 1889096-1  
**Custody Seal on Cooler/Box Present:**  yes  no Seals intact:  yes  no  
**Custody Seal on Samples Present:**  yes  no Seals intact:  yes  no  
**Packing Material:**  Bubble Wrap  Bubble Bags  None  Other  
**Thermometer Used** SR - NA **Type of Ice:**  Wet  Blue Dry  None

Samples on ice, cooling process has begun

**Cooler Temperature** Uncorr: ROI **Temp Blank Present:**  yes  no **Biological Tissue is Frozen:**  yes  no

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

**Person examining contents:**  
 Date: 11-20-18  
 Initials: JK

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 checked="" type="checkbox"/> No <input type="checkbox"/> N/A	2.	<u>No page numbers</u>
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5.	
- VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time:	
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.	
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7.	
Sufficient Volume:		8.	
For Analysis: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No MS/MSD: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A			
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.	
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
-Pace IR Containers Used:	<input type="checkbox"/> Yes <input checked="" 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>S, W</u>			
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):			

**Client Notification/ Resolution:**  
 Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Comments/ Resolution: \_\_\_\_\_

If checked, see attached form for additional comments

**Project Manager Review:** \_\_\_\_\_ Date: 11/20/18

(Please Print Clearly)

Company Name: TPL

Branch/Location: Madison, WI

Project Contact: H. Westover

Phone: 608 358 5035

Project Number: 107927.000 100 9300

Project Name: HARP

Project State: WI

Sampled By (Print): H. Westover

Sampled By (Sign): *[Signature]*

PO #: \_\_\_\_\_ Regulatory Program: \_\_\_\_\_

UPPER MIDWEST REGION

Page 1 of

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



40179962

## 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	MATRIX	DATE	TIME	
MA	A	PUBS				
				11/16/18	1400	
					1410	
					1420	
					1430	
					1440	
					1450	
					1500	
					1510	
					—	
					1530	

Quote #: \_\_\_\_\_

Mail To Contact: TPL

Mail To Company: \_\_\_\_\_

Mail To Address: Windsor CT  
Madison, WI

Invoice To Contact: \_\_\_\_\_

Invoice To Company: TPL

Invoice To Address: Windsor, CT

Invoice To Phone: \_\_\_\_\_

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
		DATE	TIME	
	<del>003-S05-R</del>			
	<del>003-S06-L</del>			
	<del>003-S06-L</del>			
001	003-IC-S05-R	11/16/18	1400	SED
002	003-IC-S06-L		1410	
003	003-IC-S07-L		1420	
004	003-IC-S08-L		1430	
005	003-IC-S09-L		1440	
006	003-IC-S10-L		1450	
007	003-IC-S11-R		1500	
008	003-IC-S12-L		1510	
009	003-IC-DUP01		—	
010	003-FBC1		1530	

Rush Turnaround Time Requested - Prelims (Rush TAT subject to approval/surcharge) Date Needed: _____	Relinquished By: <i>[Signature]</i> Date/Time: <u>11/19/18 800</u>	Received By: _____ Date/Time: _____	PACE Project No. <u>40179962</u>
	Relinquished By: <u>Waltco</u> Date/Time: <u>11/20/18 0915</u>	Received By: <u>[Signature] Pace</u> Date/Time: <u>11/20/18 0915</u>	
Transmit Prelim Rush Results by (complete what you want): Email #1: _____ Email #2: _____ Telephone: _____ Fax: _____	Relinquished By: _____ Date/Time: _____	Received By: _____ Date/Time: _____	Sample Receipt pH OK / Adjusted
Samples on HOLD are subject to special pricing and release of liability	Relinquished By: _____ Date/Time: _____	Received By: _____ Date/Time: _____	Cooler Custody Seal Present / Not Present Intact / Not Intact



### Sample Preservation Receipt Form

Client Name: TRC

Project # 40179962

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

Lab Lot# of pH paper:

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


Initial when completed:

Date/Time:

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

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

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

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

### Sample Condition Upon Receipt Form (SCUR)

**Client Name:** TRC  
**Courier:**  CS Logistics  Fed Ex  Speedee  UPS  Walto  
 Client  Pace Other: \_\_\_\_\_

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

WO#: 40179962



40179962

**Tracking #:** 1889096-1  
**Custody Seal on Cooler/Box Present:**  yes  no    **Seals intact:**  yes  no  
**Custody Seal on Samples Present:**  yes  no    **Seals intact:**  yes  no  
**Packing Material:**  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_  
**Thermometer Used:** SR-NA    **Type of Ice:**  Wet  Blue Dry None  Samples on ice, cooling process has begun  
**Cooler Temperature:** Uncorr: ROE / Corr: \_\_\_\_\_

**Temp Blank Present:**  yes  no    **Biological Tissue is Frozen:**  yes  no  
 Temp should be above freezing to 6°C.  
 Biota Samples may be received at ≤ 0°C.

**Person examining contents:**  
 Date: 11-20-18  
 Initials: TK

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 checked="" type="checkbox"/> No <input type="checkbox"/> N/A	2. <u>No page numbers</u>
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5.
- VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time: _____
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7.
Sufficient Volume:		8.
For Analysis:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No    MS/MSD: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
-Pace IR Containers Used:	<input type="checkbox"/> Yes <input checked="" 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>S, W</u>		
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased): _____		

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

**Project Manager Review:** \_\_\_\_\_ **Date:** 11/20/18