



230 W Monroe St., Suite 1840
Chicago, IL 60606

T 312.578.0870
TRCcompanies.com

January 25, 2023

Ms. Sarah Krueger, P.G.
Contaminated Sediment Specialist
Wisconsin Department of Natural Resources
2984 Shawano Avenue
Green Bay, WI 54313-6727

Sent Electronically

Subject: Response to WDNR Conditions (November 28, 2022) Natural Recovery Monitoring Plan for Surface Water and Sediment
HARP Long-Term Natural Recovery Monitoring
BRRTS #02-08-587669

Dear Ms. Krueger:

Thank you for the Department's comments and conditions on the above as contained in its letter dated November 28, 2022. On behalf of Tecumseh, enclosed is the Natural Recovery Monitoring Plan for Surface Water and Sediment, January 2023, Revision 4. We have also enclosed the appropriate form.

If you have any questions, please contact me at (312) 909-0043 or via e-mail at charvey@trccompanies.com.

Sincerely,

TRC Environmental Corporation

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

Chris Harvey, P.E.
Vice President – Complex Projects

Attachments: Natural Recovery Monitoring Plan for Surface Water and Sediment – Revision 4

cc: William Nelson/WDNR – Madison, WI
S. Jason Smith/Tecumseh Products Co. – Paris, TN
Curtis Toll/Greenberg Traurig LLP – Philadelphia, PA
Marc Faecher/TRC – New Providence, NJ
John Rice/TRC – Madison, WI
David Crass/Michael Best & Friedrich LLP – Madison, WI

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

Definitions

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

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

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

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

Select the Correct Form

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

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

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

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

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

Instructions

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

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

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

Form 4400-237 (R 12/18)

Page 2 of 6

Section 1. Contact and Recipient Information

Requester Information

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

Last Name Smith	First Jason	MI	Organization/ Business Name Tecumseh Products Company LLC
Mailing Address 5683 Hines Drive			City Ann Arbor
			State MI
			ZIP Code 48108
Phone # (include area code) (731) 707-2889	Fax # (include area code) (734) 352-3745	Email jason.smith@tecumseh.com	

The requester listed above: (select all that apply)

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

Responsible Party

Contact Information (to be contacted with questions about this request) Select if same as requester

Contact Last Name Smith	First Jason	MI	Organization/ Business Name Tecumseh Products Company LLC
Mailing Address 5683 Hines Drive			City Ann Arbor
			State MI
			ZIP Code 48108
Phone # (include area code) (731) 707-2889	Fax # (include area code) (734) 352-3745	Email jason.smith@tecumseh.com	

Environmental Consultant (if applicable)

Contact Last Name Harvey	First Chris	MI	Organization/ Business Name TRC Environmental Corporation
Mailing Address 230 West Monroe St., Suite 1840			City Chicago
			State IL
			ZIP Code 60606
Phone # (include area code) (312) 800-5910	Fax # (include area code) (312) 578-0877	Email charvey@trccompanies.com	

Property Owner (if different from requester)

Contact Last Name NA	First	MI	Organization/ Business Name
Mailing Address			City
			State
			ZIP Code
Phone # (include area code)	Fax # (include area code)	Email	

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 Downstream of Hayton Mill Pond Dam		FID No. (if known) WID006116529	
BRRTS No. (if known) 02-08-587108	Parcel Identification Number		
Street Address 3755 Weeks Road	City Chilton	State WI	ZIP Code 53014
County Calumet	Municipality where the Property is located <input type="radio"/> City <input checked="" type="radio"/> Town <input type="radio"/> Village of Charlestown	Property is composed of: <input type="radio"/> Single tax parcel <input checked="" type="radio"/> Multiple tax parcels	Property Size Acres 266

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/lgu.html#tabx4.

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

Section 6. Other Information Submitted

Identify all materials that are included with this request.

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

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

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

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

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

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

Section 7. Certification by the Person who completed this form

- I am the person submitting this request (requester)
- I prepared this request for: Tecumseh Products Company LLC
Requester Name

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

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

Form 4400-237 (R 12/18)

Page 5 of 6



1/25/2023

Signature

Date Signed

Vice President

(312) 909-0043

Title

Telephone Number (include area code)

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

Form 4400-237 (R 12/18)

Page 6 of 6

Section 8. DNR Contacts and Addresses for Request Submittals

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

DNR NORTHERN REGION

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

DNR NORTHEAST REGION

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

DNR SOUTH CENTRAL REGION

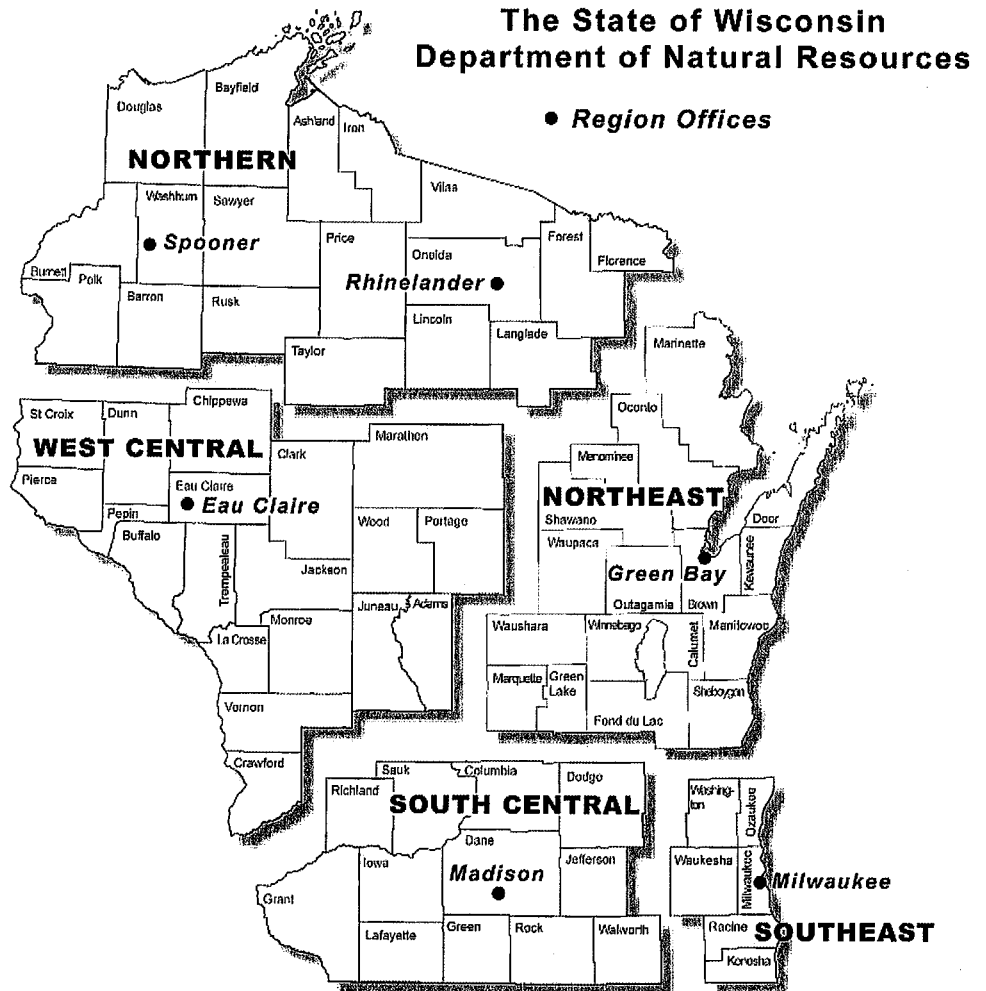
Attn: RR Program Assistant
Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg WI 53711

DNR SOUTHEAST REGION

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

DNR WEST CENTRAL REGION

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



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

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



Natural Recovery Monitoring Plan for Surface Water and Sediment

Hayton Area Remediation Project Chilton, Wisconsin

January 2023
Revision 4

BRRTS No. 02-08-587669

Prepared For:

Tecumseh Products Company LLC

Prepared By:

TRC Environmental Corporation
230 W. Monroe Street, Suite 1840
Chicago, IL 60606



TABLE OF CONTENTS

1.0	PROFESSIONAL CERTIFICATION	1
2.0	PROJECT MANAGEMENT PLAN	2
3.0	INTRODUCTION	3
3.1	Overview	3
3.2	Site History and Background	3
3.3	Purpose	4
4.0	SAMPLING AND ANALYSIS PLAN	5
4.1	Scope of Work.....	5
4.2	Sample Location Rationale	6
4.3	Sampling Locations.....	6
4.4	Surface Water Sample Collection	7
4.5	In-Channel Sediment Sample Collection	7
4.5.1	Rod-Probe Survey	8
4.5.2	Sediment Sample Collection.....	8
4.5.3	Sediment Sample Processing.....	9
4.6	Surface Water and Sediment Sample Identification	10
4.6.1	Monitoring program.....	10
4.6.2	Sample Location	10
4.6.3	Sample Type	11
4.6.4	Channel Position	11
4.6.5	Sample Date	11
4.6.6	Example Sample Names	11
4.7	Surface Water and Sediment Sample Shipment and Laboratory Analysis	11
4.8	Surface Water and Sediment Quality Control (QC) Samples.....	12
4.9	Equipment Decontamination.....	12
4.9.1	Single-Use Sampling Equipment	12
4.9.2	Non-dedicated Sampling Equipment	13
4.10	Surface Water and Sediment Sampling Investigation Derived Waste (IDW)	14
4.11	Sediment and Soil Sample Results, Data Management, and Validation	14
4.12	Other Procedures for Site Management - HASP	14
5.0	MONITORING SCHEDULE AND REPORTING	15
5.1	Schedule	15
5.2	Reporting.....	15
5.2.1	Surface Water	16
5.2.2	Sediment	16
6.0	TECHNICAL REVIEW REQUEST	18
7.0	REFERENCES	19

FIGURES

Figure 1: Site Location Map

Figure 2: Surface Water and Sediment Monitoring Locations

1.0 Professional Certification

Consistent with NR 712.09(1) Wis. Adm. Code that submittals prepared by, or under the supervision of, a professional engineer, a hydrogeologist or a scientist shall be dated and certified by the professional engineer, hydrogeologist or scientist using the appropriate certification:

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



Meredith Westover, P.G. #1205



(SEAL)

2.0 Project Management Plan

Consistent with NR 724.05(2)(e) Wis. Adm. Code, the following information is provided:

1. Site Address and Location:

- Street Address: 3755 Weeks Road, Chilton, Wisconsin 53014
- Quarter-Quarter Section, Township, Range, and County: SE ¼ of SW ¼ of Section 16, SW ¼ and SE ¼ and NE ¼ of SE ¼ of Section 16, SE ¼ of NE ¼ of Section 16, SW ¼ and SE ¼ of NW ¼ of Section 15 of Township 18 North, Range 20 East, Calumet County
- NR 716.15 (5) (d) Location Information: Refer to **Figure 1**
- Latitude and Longitude: 88°07'06.40"W, 44°01'29.00"N
- Wisconsin Transverse Mercator (WTM) Coordinates: 1,300,324.49342 U.S. ft. N, 2,200,751.36494 U.S. ft. E

2. Responsible Party:

- Tecumseh Products Company LLC
5683 Hines Drive
Ann Arbor, MI 48108

Mr. Stan Gilhool, General Counsel
(734) 585-9616 direct
Stan.gilhool@tecumseh.com

3. Name of the Consultant Involved with the Project:

- TRC Environmental Corporation
230 West Monroe Street, Suite 1840
Chicago, IL 60606

Mr. Chris Harvey, P.E.
charvey@trccompanies.com
(312) 909-0043 cell

3.0 Introduction

Consistent with NR 724.05(2)(e) Wis. Adm. Code, the following applicable information is provided.

3.1 Overview

The purpose of this Natural Recovery Monitoring Plan for Surface Water and Sediment (NRMP) for the Hayton Area Remediation Project (HARP) is to present the proposed approach to perform long-term natural recovery monitoring of the Site via surface water and sediment consistent with and as required by Sec. III(M) of the 2018 Negotiated Agreement (BRRTS #02-08-281506) (Negotiated Agreement).

3.2 Site History and Background

The area subject to this NRMP is located just north of New Holstein and east of Chilton, Wisconsin, and includes the HARP and areas downstream of the dam at the Hayton Millpond (WDNR, Tecumseh Products, and TRC, 2018)¹.

From 1956 to 2006, Tecumseh previously owned and operated a small engine manufacturing facility located at 1604 Michigan Avenue, New Holstein, Wisconsin (TRC, 2023). The property consists of approximately 39 acres (8 total parcels) that includes a developed section and an undeveloped lot. The former manufacturing building occupies approximately 404,700 square feet, and there are several outbuildings along the western portion of the property (TRC, 2023). Immediately north of the property is the storm water drainage ditch/outfall and agricultural fields. The storm sewer discharges to drainage ditches adjacent to the facility, which flow into Jordan Creek, Pine Creek, the Hayton Millpond, and the South Branch Manitowoc River (downstream of the dam).

HARP is divided into four Operable Units (OU): OU1, OU2, OU3, and OU4. Figure 1 shows the extent of HARP and each Operable Unit. OU1 and OU2 Upper (OU2/Upper) extend from drainage ditches feeding into Jordan Creek northeast of New Holstein down to the intersection of Pine Creek and Danes Road. OU2/Lower and OU3 extend from Danes Road to Quarry Road. OU4/Upper is defined as Quarry Road to a point approximately 750 feet upstream from the farm bridge south of Calumet Street (U.S. Route 151) (see Figure 1). OU4/Lower includes the Millpond and the backwater effected area of Pine Creek that is created by the Hayton Dam. The south branch of the Manitowoc River enters the Millpond from the northwest, and Pine Creek enters from the south. The south branch of the Manitowoc River extends downstream of the Hayton Dam.

Significant risk reduction has been achieved by the remedial activities completed in HARP. The remediation activities resulted in significant PCB source removal (greater than 96% mass removal) and restoration efforts have been completed in HARP OU1 through OU4/Lower between 2001 and 2020. The WDNR-approved remedial actions were completed by removing in-channel sediment and overbank soil in the dry. The excavated material was stabilized and disposed at a nearby landfill. More than 140,000 tons of sediment and soil were removed and disposed. All

¹ Although this NRMP addressed both HARP and the area downstream of the millpond dam, pursuant to the Negotiated Agreement WDNR has assigned separate BRRTS numbers for HARP and the downstream area. Those BRRTS numbers are: 02-08-587669 and 02-08-587108.

operable units have received No Further Action (“NFA”) letters. The remediation areas were successfully restored to approximately pre-existing conditions.

In November 2018, Wisconsin Department of Natural Resources (WDNR), Tecumseh, and TRC executed a Negotiated Agreement (BRRS #02-08-281506) (Negotiated Agreement), in which Tecumseh agreed to certain response actions and obligations (WDNR, Tecumseh Products, and TRC, 2018). This NRMP was prepared in accordance with Sec. III (M) of the Negotiated Agreement.

3.3 Purpose

As required by the Negotiated Agreement, Tecumseh will complete natural recovery monitoring of surface water, sediment, and fish tissue at HARP, including areas downstream of the Millpond dam. The focus of this NRMP is to address the Wis. Adm. Code NR 724 requirements to submit a long-term monitoring plan to conduct the WDNR requested natural recovery monitoring for surface water and sediment. Fish tissue monitoring will be addressed in a separate long-term monitoring plan as required by Sec. III.L and Exhibit G of the Negotiated Agreement.

The goal of the NRMP for the HARP is to present the approach to perform long-term natural recovery monitoring of the Site via surface water and sediment consistent with and as required by Sec. III(M) of the 2018 Negotiated Agreement. The specific goals of the NRMP are as follows:

- To document the effects of the sediment and wetland soil removal in sediment and surface water.
- To evaluate the long-term effect of the remedial action by determining if there is a decline in the concentrations of PCBs in sediment and surface water over time; sampling will be performed annually over a three-year period. After the first three-year period, sampling will be performed every three years. Based on the results of the data evaluation, the need for more frequent monitoring will be assessed.
- To propose additional sampling locations be evaluated if concentrations do not show a declining trend or show an upward trend, additional sampling locations may be evaluated.

In consideration of the above information and with acknowledgement that the monitoring will be an iterative process, the overall objective of this NRMP is to assess the overall remedy effectiveness, the status of monitored natural recovery, and the attainment of Negotiated Agreement clean-up standards for surface water and sediment.

The sampling and analysis discussed in Section 4 are being conducted to develop a compilation of data to address the NRMP goals as outlined above and justified by the current knowledge/data and the comprehensive remedial actions completed for HARP. Initially, this data collection will provide a baseline of data post-remediation. The results of the data collection will be evaluated following each sampling event by comparing concentrations and analyzing trends at each individual sampling point, within each operable unit (OU) for sediment, and across the whole system over time. Based on this evaluation, we will assess next steps, including the need for further evaluation, analysis, monitoring or data collection, if any.

4.0 Sampling and Analysis Plan

Consistent with NR 724.17(2)(a) through (d) Wis. Adm. Code, this section provides information on the proposed sampling and analysis strategy. Samples will be collected and analyzed in accordance with the Quality Assurance Project Plan (QAPP) developed for this Site. Where there is any conflict between this NRMP and the QAPP, this plan shall govern.

4.1 Scope of Work

Pursuant to the Negotiated Agreement, the monitoring program in this NRMP includes the following tasks:

- **Surface Water Sampling**

- One surface water sample will be collected at each of the eight sampling locations shown on Figure 2 in May, July, and September. An evaluation of the data will be performed to assess the need for further triannual analysis and data collection during the sampling events.
- At each sampling location, the surface water sample will be collected from the approximate midpoint of the water column in the thalweg of the creek/river.
- A total of eight surface water samples will be processed for laboratory analysis, one from each of the sampling locations shown on Figure 2.

- **In-Channel Sediment Sampling**

- During the initial monitoring event, a rod-probe survey will be conducted at each of the 10 sampling locations and seven targeted sediment poling survey areas shown on Figure 2 to determine the location of the thickest soft sediment deposits in close proximity to the sampling location. The 10 sampling locations will be field adjusted to sample the thickest soft sediment deposits in the locations discussed in Section 4.2.
- One sediment core will be collected from each of the 10 sampling locations at the point determined to have the greatest thickness of soft sediment during the rod-probe survey. At each of the 10 sampling locations, shallow (i.e., 0-6 inches) samples will be collected with a Ponar, Ekman, or equivalent sampler. The sediment will be physically logged.
- The deeper sample interval (e.g., 6-18 inches and 18-30 inches, if available) will be collected from the core. The 0-6 inch interval of the core will be processed and held for future analysis, if needed. Each recovered sediment core will be physically logged.
- A total of up to 30 sediment samples will be processed for laboratory analysis, up to three from each of the 10 sampling locations shown on Figure 2.

Surface water and sediment monitoring will be conducted annually for the first three years, as described in Section 5. The rationale for sample locations is described in Section 4.2.

4.2 Sample Location Rationale

The surface water and sediment sampling locations were selected to generally coincide with the fish tissue monitoring locations specified in the Negotiated Agreement (Exhibit G) as well as historic WDNR fish tissue sampling locations where appropriate (TRC, 2017). Additionally, post-remedial sediment monitoring locations were also considered in selecting the sample locations. The sampling locations are shown on Figure 2 and are defined as follows:

- One surface water location within each HARP Operable Unit (OU1, OU2, OU3, and OU4, including the Hayton Millpond).
- Two sediment locations within each HARP Operable Unit (OU1, OU2, OU3, and OU4, including the Hayton Millpond).
- South Branch of the Manitowoc River downstream of the Hayton Dam near the Bonlander Farm.
- South Branch of the Manitowoc River at Lemke Road.
- Background surface water samples will be collected on the South Branch of the Manitowoc River near Chilton and on Pine Creek above HARP.

The locations in the South Branch of the Manitowoc River are not technically within the HARP Site and are located in BRRTS #02-08-587108 (downstream of Hayton Millpond Dam). The following sections describe the surface water and in-channel sediment sampling methods in more detail.

4.3 Sampling Locations

Prior to mobilizing to the field for each event, the Site will be cleared through Digger's Hotline and the Site will be marked to indicate identified underground utilities that cross the river. Riparian landowners whose land will be accessed along the investigation area will be contacted prior to the initiation of field activities.

For the initial monitoring event, the locations of the proposed surface water and sediment sampling locations will be pre-loaded into a global positioning system (GPS) receiver capable of sub-meter accuracy (Trimble Geoexplorer handheld GPS unit, Juniper Geode bluetooth GPS, or equivalent). The GPS unit will be used to navigate as close as practicable to each target sampling location. The field technician will access the sampling locations either by wading or by boat, depending on field conditions. Surface water sampling will be conducted in the thalweg of the creek/river prior to performing a rod-probe survey or collecting sediment samples in order to minimize the mobilization of particulate matter in the water column.

The locations of the sediment cores selected for laboratory analysis during the initial monitoring event will be used as target locations for each subsequent monitoring event. The sediment sampling locations may be adjusted with concurrence from WDNR based on depositional rates and sediment thicknesses determined from the poling surveys. The sampler will make a reasonable effort to find a sediment deposit of at least 1 foot thick. If a deposit of 1 foot thickness is not present at the designated sampling location, the sampler will probe the sediment 20 feet upstream and downstream and collect a sample from the thickest sediment deposit. The final location of each sample core collected will be recorded with the GPS unit.

When surface water and sediment sampling locations are co-located and sampled at the same time, the location will be approached from downstream and the surface water sample will be collected first.

4.4 Surface Water Sample Collection

This section describes the sampling equipment and methodology for the collection of surface water samples.

Surface water samples will be collected in May, July, and September to account for any variations in the summer season. Surface water samples will be collected from the approximate midpoint of the water column in the thalweg of the creek/river channel at each sampling location. Turbidity of the surface water and an approximate measurement of flow will be recorded at each sampling location. The surface water sample will be collected prior to rod probing or sediment sampling. Surface water samples will be collected either by direct filling of the sample container (for unpreserved aliquots only); direct filling a transfer container (e.g., a new, unpreserved laboratory sample container) to use to fill laboratory sample containers (preserved or unpreserved); or by peristaltic pump, depending on the field conditions at the sampling location. The sample collection method will be recorded in the field notes. To collect the sample by direct filling of the sample container (or transfer container), the field technician will invert the sample container, lower it to the sampling depth, right the container, and seal the container with the lid prior to removing the bottle from the water column. If used, the transfer container will be filled as many times as necessary to fill the required sample containers. Each laboratory sample container will be filled completely prior to filling the next container. Field duplicates will be collected by alternately filling containers for each analyte group. The sample aliquot for PCB analysis will be collected first.

If the surface water sample is to be collected with a peristaltic pump, as may be necessary when sampling from a boat, a weighted piece of low density polyethylene (LDPE) tubing (or equivalent), weighted as needed, will be lowered to the approximate midpoint of the water column. The sample will then be pumped directly into the laboratory sample containers using an in-line filter to field filter aliquots for dissolved phase analysis.

The sample containers will be placed on ice and shipped to Pace Analytical Laboratories in Minneapolis, Minnesota for PCB analysis (PCB congeners using EPA Method 1668, revision C). Separate aliquots of surface water samples will be placed on ice and shipped to Pace Analytical Laboratories in Green Bay, Wisconsin for total organic carbon (TOC), dissolved organic carbon (DOC), and total suspended solids (TSS) analyses. Water temperature at the sample collection point will be obtained, recorded, and reported with the sample results.

Excess surface water from transfer containers, if any, will be returned to the creek, discharged to the ground surface adjacent to the creek, or combined with decontamination fluids and managed as investigation-derived waste (IDW) as described in Section 4.10.

4.5 In-Channel Sediment Sample Collection

This section describes the sampling equipment and methodology for the collection of sediment samples from the locations described above.

4.5.1 Rod-Probe Survey

Based on an agreed upon approach with WDNR, depositional areas have been identified and indicated on Figure 2 along with each sediment sampling location to show targeted sediment poling locations that will be representative of the full 10 miles of the waterway. During the initial monitoring event, at these survey locations, a rod-probe survey will be conducted across the cross-section to identify the area of thickest sediment. At the targeted survey areas, the sampler will assess visually and with a rod-probe every 50 to 100 feet to identify areas of preferential deposition (e.g., eddy pools) and thickest sediment deposit. At the sampling locations, the sampler will assess visually and with a rod-probe 20 feet upstream and 20 feet downstream to identify areas of preferential deposition (e.g., eddy pools) and sample the thickest sediment deposit. The rod-probe will consist of a length of core tube, pipe, conduit, or grounding rod made of polyvinyl chloride (PVC), aluminum, galvanized steel, or other equivalent material that has been measured and marked in increments of feet and tenths of feet. The material and size of the rod will be determined based on field conditions (e.g., water depth, mode of access, and sediment type). At each probe location, the probe will be lowered through the water column until in contact with the sediment surface, and the water depth, estimated to the nearest 0.1 foot, will be recorded. The probe will then be pushed by hand through the thickness of soft sediment until refusal is encountered. The penetration depth will be recorded. At the location with greatest thickness of soft sediment, one sediment core will be collected. The final locations of each sediment core will be recorded with the GPS unit.

4.5.2 Sediment Sample Collection

The shallow (i.e., 0-6 inches) samples will be collected with a Ponar, Ekman or equivalent dredge sampler. The sample from the ponar will be placed in a Ziploc baggie and double bagged prior to processing.

The deeper sample interval (i.e., 6-18 inches and 18-30 inches) will be collected from the core using a manually driven coring device such as a piston core sampler, or a push tube. To the extent practicable, the same type of sediment sampling device will be used to collect each sample for consistency. The 18- to 30-inch interval will also be collected if the soft sediment contains three or more inches in this interval. The 0-6 inch interval of the core will be processed and held for future analysis, if needed, based on the sample results from deeper intervals. Cores will be collected in clear plastic (PVC, lexan, polycarbonate, or equivalent) core tubes approximately 2-inches in diameter. The actual diameter of the core may vary between 1.5 inches and 2.75 inches in diameter, depending on the device employed. At each location, the core tube will be lowered through the water column until in contact with the sediment surface, and the water depth, estimated to the nearest 0.1 foot, will be recorded. The coring device will then be pushed by hand through the entire thickness of soft sediment and into the underlying soil until refusal is encountered, or to a maximum of 3 feet below the sediment/surface water interface. The penetration depth will be recorded. The sample core will be extracted from the sediment, capped, labeled, maintained in a vertical orientation, and transported to the shore for processing. The sediment will be allowed to visually settle prior to dewatering and the settling time will be noted on the field notes/data. The top of the sediment core tube will be marked on the outside of the tube for reference. If the core recovery ratio is less than 75%, up to three attempts may be made to collect a representative core sample at the sample location. If suspended sediment solids are observed in the core, the core will be allowed to settle for one minute before the recovery is measured. The core tube will be cut off no less than 2 inches above the top of sediment to

increase the flocculent and fine-grained material collected and to minimize discharge of suspended sediment to the river.

Physical data collected at each location will include the following:

- The water depth;
- The distance that the core is pushed into the sediment (penetration depth);
- The thickness of soft sediment;
- The conditions of refusal (physical impediment or resistance);
- Sediment core recovery ratios;
- The visual description of the deposit
- Texture and sediment classification; and
- The recovery length.

Photographic documentation of the core sample will be completed.

4.5.3 Sediment Sample Processing

Sediment cores will be processed at a designated location on shore, at the Millpond Building, or at the TRC office in Madison, Wisconsin. If sediment cores are transported offsite for processing, they will be kept in an upright position in a cooler. Care will be taken to pack the cores inside the cooler with bubble wrap or similar packing material, so as to minimize disturbance during transport. Standing water in the core tubes will be carefully removed once visual observation indicates that particulates in the water column have settled and fines will not be discharged by draining the water. Standing water in the core tubes will be carefully removed using a suction pump equipped with LDPE tubing. New, clean tubing will be used for each core, and care will be taken to preserve any fine material at the top of the sediment surface. Alternatively, a drilled hole or saw cut in the tube above the sediment water interface may be used to remove overlying water, taking care to preserve the fine material at the top of the sediment column. After removing the standing water, each core tube will be cut lengthwise and the core will be split to allow for visual logging and sample preparation. The cores will be described in accordance with the Unified Soil Classification System (USCS) and core logs will be prepared. The USCS soil texture, color, moisture, root content, mottling, and other features (such as odor, presence of shell fragments, or sand or gravel lenses) will be recorded. Descriptions will be completed of the material recovered at each of the sampling locations on WDNR boring log forms.

After the cores from a given sampling location have been logged, one core from the sampling location will be selected for the collection of analytical samples. Up to three samples will be processed, one surficial sample representing the 0- to 6-inch interval (collected by a ponar sampler), and a second and third from the 6- to 18-inch interval and 18- to 30-inch interval, if adequate sample material is recovered. The 0-6 inch interval of the core will be processed and held for future analysis, if needed, based on the sample results from deeper intervals. Sediment from the targeted intervals will be segregated and placed in separate homogenization vessels (e.g., steel bowl, foil pan, or equivalent). At a minimum, one surficial sample will be collected at

each location using a ponar or equivalent sampler. A sample from the 6- to 18-inch interval will be processed if at least three inches of sediment are recovered in that interval (i.e., a minimum soft sediment recovery of 9 inches in the full core). If the soft sediment contains three or more inches in the 18- to - 30-inch interval, this interval will also be processed for analysis. Once the sample material has been selected and segregated, each sample will be thoroughly homogenized and placed into the laboratory sample containers. The sample containers will be placed on ice and shipped to Pace Analytical Laboratories in Green Bay, Wisconsin for PCB analysis (USEPA Method 8082-WIS). Up to six samples of soft sediment will also be submitted for TOC analysis (Lloyd Kahn method). Samples will be selected to represent a range of materials encountered.

Excess sediment material, if any, will be placed in 5-gallon buckets, sealed, and managed as IDW in accordance with Section 4.10. Sample processing equipment may be new, single-use, and disposable; or may be re-used at the discretion of the field crew, if these materials can be adequately decontaminated following use. All non-dedicated, non-disposable sampling equipment will be decontaminated in accordance with Section 4.9 prior to collecting or processing the next sample.

4.6 Surface Water and Sediment Sample Identification

The sample identification format for the natural recovery monitoring program has been designed to uniquely identify each sample from each sampling event. Samples will be assigned a unique alpha-numeric sample descriptor identifying the program, sample location, and media type. Each sample will be labeled as follows:

[program] – [sample type] – [sample location][channel position (if applicable)] – [date]

The following sections describe the numbering system in greater detail and include examples of sample identification (ID) numbers for representative sample types.

4.6.1 Monitoring program

All samples collected for natural recovery monitoring will be given the program designation of “NR”.

4.6.2 Sample Location

The sample location code will correspond to the sample locations indicated on Figure 2, and include the following:

- Operable Unit samples OU1, OU2, OU3, and OU4;
- Downstream samples DS1 (South Branch Manitowoc River near the Bonlander Farm) and DS2 (South Branch Manitowoc River at Lemke Road);
- Background surface water samples BKG1 (South Branch of the Manitowoc River near Chilton) and BKG2 (Pine Creek above HARP);
- Field duplicate samples (for surface water) will have a location identifier “DUP”;
- Replicate samples (for sediment) will have a location identifier “REP”;

- Field blanks, if applicable, will have a location identifier “FB”; and
- Equipment blanks, if applicable, will have a location identifier “EB”.

4.6.3 Sample Type

The sample type code identifies the sample media. For the purposes of this NRMP, the media types are as follows:

- IC = in-channel sediment sample
- SW = surface water sample

For field Quality Control (QC) samples such as field duplicates and field blanks, the type code of the media associated with the blank or duplicate will be assigned. For example, a duplicate surface water sample will use “SW”, and an equipment blank collected from a mixing bowl used during sediment sampling will use “IC”.

4.6.4 Channel Position

For samples collected within the creek channel, an additional modifier will be added to identify the relative position of the sample within the channel. A “C” will be added for the center of the channel, “L” will be added for the left side of the channel (looking downstream), and “R” will be added for the right side of the channel.

4.6.5 Sample Date

The sample date (month and year) will be appended to every sample collected. The date will be added with the format “yyymm”.

4.6.6 Example Sample Names

The following are examples of sample IDs generated for natural recovery monitoring samples:

- “NR-IC-OU3R-202208” represents an in-channel sediment sample collected from the right bank at the OU3 location in August 2022.
- “NR-SW-DS1-202208” represents a surface water sample collected at the downstream location DS1 in August 2022.
- “NR-SW-DUP1-202208” represents a duplicate surface water sample collected in August 2022.
- “NR-IC-EB1-202208” represents an equipment blank sample collected during sediment sampling in August 2022.

4.7 Surface Water and Sediment Sample Shipment and Laboratory Analysis

Samples for chemical analysis will be placed on ice immediately after collection for transport to Pace Analytical Laboratories in Green Bay, Wisconsin or Minneapolis, Minnesota, as applicable.

The analytical methods, sample containers, and preservation requirements are summarized in the companion QAPP.

4.8 Surface Water and Sediment Quality Control (QC) Samples

In accordance with NR 724.17(2), the following QC samples will be collected:

- **Field Duplicates:** Blind field duplicate samples, prepared by splitting a single sample into two separate containers, will be used to evaluate sampling precision. Duplicates of surface water will be direct filled into separate sample containers at the sampling location. Points where duplicate samples are to be collected will be selected by the field technician and the samples will be submitted as single-blind duplicates to the laboratory. Field duplicates will be collected at a rate of one for every 10 (or fewer) primary samples for the surface water matrix. No duplicate samples will be collected for the sediment matrix.
- **Replicates:** Replicate samples, prepared by splitting the same sample material into two sample containers after processing, will be collected for solid matrix samples (sediment samples). Replicate samples will be collected at a rate of one for every 10 (or fewer) primary samples.
- **Equipment Blanks:** Equipment (rinsate) blanks are analyzed to check for contamination related to equipment decontamination procedures. Equipment blanks are collected by rinsing a piece of field-cleaned equipment with deionized water and collecting the rinsate in the sample container. In general, equipment blanks will only be collected if non-disposable, non-dedicated sampling equipment is used. For the proposed scope of work, equipment blanks will be collected from disposable tubing and transfer containers if they are used for collection of surface water samples for PCB congener analysis. If applicable, equipment blanks will be collected at a frequency of one for every 10 (or fewer) primary samples that are collected with the non-dedicated, non-disposable equipment.
- **Field Blanks:** Field blanks are analyzed to check for contamination from ambient air. Field blanks are collected by transferring clean water (supplied by the laboratory) from one container to another in the area of the site being sampled. For the proposed scope of work, field blanks will be used for collection of surface water samples for PCB congener analysis. Field blanks will be collected at a frequency of one per day when surface water sampling is performed.
- **Temperature Blanks:** The condition of each cooler will be evaluated upon receipt at the laboratory. Samples received on ice are considered preserved at the correct temperature (0-6°C). Temperature blanks may also be analyzed to assess whether the sample temperature was maintained during sample transport, especially in the case that the ice has all melted. Temperature blanks consist of a sample container, generally polyethylene, filled with tap water. One temperature blank will be transported with each cooler containing sample containers.

4.9 Equipment Decontamination

4.9.1 Single-Use Sampling Equipment

To the extent practicable, single-use sampling equipment and materials will be used for the collection of samples. The materials used will be new and clean, and will be placed in plastic for

transport to the site. Once used, single-use equipment will be placed in plastic bags and managed as IDW material. Single-use equipment may include, but is not limited to, the following:

- Disposable foil pans
- PVC, polycarbonate, acrylic (or similar material) core barrel liners
- Polyethylene (or similar) core tube caps
- Polyethylene and silicone tubing
- Glass laboratory sample container (transfer container)
- Disposable nitrile or latex gloves

4.9.2 Non-dedicated Sampling Equipment

Non-dedicated equipment used for sample collection or sample processing will be new or cleaned before its initial use in the field and cleaned again before use at each subsequent sampling site (and between sample intervals). Equipment subject to this decontamination procedure includes, but is not limited to, the following:

- Coring tools (e.g., ponars, pistons or core barrels)
- Dredges
- Shovels
- Augers
- Scoops, spatulas, and mixing bowls (if re-used)

The general procedure for decontaminating field equipment is as follows:

- Scrape off as much loose material as possible.
- Disassemble the equipment, as appropriate.
- Wash with detergent/potable water solution.
- Rinse thoroughly with distilled or deionized (DI) water.
- Allow equipment to air dry prior to next use.
- Wrap equipment for transport with inert material (aluminum foil or plastic wrap) to prevent direct contact with potentially contaminated material.

Field decontamination of sampling equipment will take place at a designated location on-site. Decontamination will be performed in 5-gallon buckets and managed as IDW (Section 4.10). Decontamination water will be changed out for new, clean solutions at a minimum of once per sampling day.

4.10 Surface Water and Sediment Sampling Investigation Derived Waste (IDW)

IDW streams generated during this investigation are expected to include excess sediment sample material, decontamination fluids, and general refuse (e.g., used personal protective equipment, single-use sampling equipment, and trash). If sediment sample processing occurs at the site, excess sample material and decontamination water will be sealed in 5-gallon buckets, labeled with the date and contents, and left on site for future characterization and disposal.

If processing is performed at the TRC office, excess sample material will be sealed in 5-gallon buckets, labeled, and held in a secure location at the TRC office until they are transported back to the site for storage and future disposal. Decontamination fluid generated at the Madison office will be discharged to the sanitary sewer. General refuse will be collected in sealed trash bags and placed in a waste dumpster at the TRC office.

4.11 Sediment and Soil Sample Results, Data Management, and Validation

Laboratory data generated under the sampling described in this NRMP will be subject to Level II data reporting, which includes the following:

- Cover letter
- Analytical results
- Analytical QC results (e.g., surrogate recoveries, method blanks, laboratory control samples, MS/MSDs, as appropriate)
- Summary of nonconformances
- Laboratory copies of the Chain-of-Custody forms

TRC will maintain the analytical data in a project database. Prior to importing the laboratory data into the database, TRC will review the analytical data reports for usability. If data completeness or usability is uncertain, TRC will attempt to resolve conflicts with the laboratory and obtain a revised analytical report.

4.12 Other Procedures for Site Management - HASP

The sampling activities will adhere to the Health and Safety Plan (HASP) that was developed by TRC for sediment sampling activities (TRC, 2015). The HASP includes safety precaution information and emergency procedures. The HASP is updated as needed based on the work to be performed. The HASP is incorporated into this NRMP by reference.

5.0 Monitoring Schedule and Reporting

Consistent with NR 724.17(3m) Wis. Adm. Code, this section provides information on the proposed schedule and reporting, as follows:

5.1 Schedule

According to the Negotiated Agreement, “beginning the year following completion of the OU4 Lower SOW and receipt of the Department’s no further action letters specified in this Agreement, Tecumseh shall perform or cause to be performed fish tissue monitoring on an every three-year basis until the Wis. Admin. Code ch. NR 726 and the Fish Consumption Response Action Goal is met for the Site.” The fish tissue monitoring plan will be submitted under a separate document per the Negotiated Agreement (Section III.L). The surface water and sediment sampling will be completed annually for the first three years. After which, Tecumseh proposes to complete the surface water and sediment sampling at the time of the fish sampling every three years. The surface water and sediment monitoring will be timed within the year to occur during periods representative of typical flow conditions (e.g., not during or immediately after a flooding event, or during a drought or low-flow) and warmer water temperatures in May, July and September.

Pending WDNR approval of this NRMP, the investigation activities are scheduled to start in 2023 at the time of the fish sampling.

5.2 Reporting

In accordance with NR 724.17(2)(3m), sample results will be reported to the WDNR within 10 business days of receiving the sample results.

Within six months of completing the first- and second-year long-term monitoring and receipt of laboratory analytical results, the data will be compiled, analyzed, and incorporated into an interim technical memorandum. These two interim reports will document the long-term monitoring activities conducted during the first and second years. Each interim report will include a base map that shows sampling locations, describe the methods employed during the sampling, an evaluation of QC data, and present analytical and physical results on figures and tables. The report will include data previously gathered at the sampling locations and the results will be included in any trend evaluation. The logs for sediment sampling locations, as well as laboratory analytical reports, will be appended to the report. Sediment core recovery ratios will be included in the monitoring report. In addition, other appropriate data collected during the long-term monitoring will be appended to document the quality of work performed.

After the third sampling event, a final report will be prepared. This report will include data collected during the third sampling, a summary and evaluation of long-term trends, and an evaluation of QC data including results of field duplicates and analytical results for precision, accuracy, and completeness. The report will include a detailed narrative of the results of the investigation, referencing and including the appropriate summary data tables and maps, figures, and photographs.

With respect to project screening criteria identified in the associated QAPP, these are matrix-specific screening levels that end-users of data may need to provide a conservative assessment of site conditions (including presence or absence) and determine if further evaluation or action is

warranted. For this evaluation, specific screening criteria will not be used; instead trends in the data will be evaluated.

Using Sen's slope estimate (other statistical methods may also be applied as dictated by the number of data points and data distribution), increasing or decreasing trends (rate and magnitude) will be evaluated, using maximum and mean concentrations, across each OU and for the entire site. If concentrations of total PCBs in sediment and surface water are decreasing over time with a significance level of 0.95, this will indicate a positive effect of the prior remedial action performed. If concentrations of total PCBs in sediment and surface water do not show a declining trend or show an ascending trend over time, this will indicate the potential presence of a previously unidentified continuing source of PCBs that could require mitigation; additional sampling locations will be evaluated.

5.2.1 Surface Water

The surface water and sediment data will be evaluated in conjunction with the fish tissue monitoring data to monitor the long-term reduction in PCB concentrations and improvement in the HARP natural recovery. The surface water sampling data, from representative locations, will be compared to background levels and previous surface water sample concentrations. The surface water concentrations of PCBs at each sampling location will be tabulated and summarized. Results will be plotted against time. The trend in the data will be evaluated by fitting the data using the least squares method. Different trend line methods (e.g., linear, log, and/or exponential) will be evaluated to determine the best fit for illustrating the trend in surface water concentrations. Using Sen's slope estimate (other statistical methods may also be applied as dictated by the number of data points), increasing or decreasing trends (rate and magnitude) will be evaluated, using maximum and mean concentrations, across each location, each OU and for the entire site. If concentrations of total PCBs in surface water are decreasing over time with a significance level of 0.95, this will indicate a positive effect of the prior remedial action performed. A declining trend is defined as when the most recent concentration is lower than the start (baseline concentration), with a negative slope with a significance level of 0.95 (or $p < 0.05$). The concentration of each downstream sampling location will also be compared against the upstream locations.

5.2.2 Sediment

The sediment sampling data will be compared to previous sample results and 1 mg/Kg (based on Negotiated Agreement Sec. III(H)(ii)). The sediment concentrations of PCBs at each sampling location will be tabulated and summarized. The trend in the data will be evaluated and the concentration of each downstream sampling location will also be compared against the upstream locations. Using Sen's slope estimate (other statistical methods may also be applied as dictated by the number of data points), increasing or decreasing trends (rate and magnitude) will be evaluated, using maximum and mean concentrations, across each location, each OU and for the entire site. If concentrations of total PCBs in sediment are decreasing over time with a significance level of 0.95, this will indicate a positive effect of the prior remedial action performed. A declining trend is defined as when the most recent concentration is lower than the start (baseline concentration), with a negative slope with a significance level of 0.95 (or $p < 0.05$). If concentrations of total PCBs in sediment do not show a declining trend or show an ascending trend over time, this could indicate the potential presence of a previously unidentified continuing

source of PCBs. Depending on the results and the strength and direction (ascending or declining) of the trend, Tecumseh and WDNR will implement one or more of the following:

- 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;
- an additional round of sediment sampling will be appropriate to re-affirm the effectiveness of the remedial construction and restoration;
- any discrete locations may require additional investigation;
- submit for and request closure in accordance with Wis. Admin. Code NR 726;
- other or additional alternatives, including additional remedial actions, agreed to by parties, are appropriate.

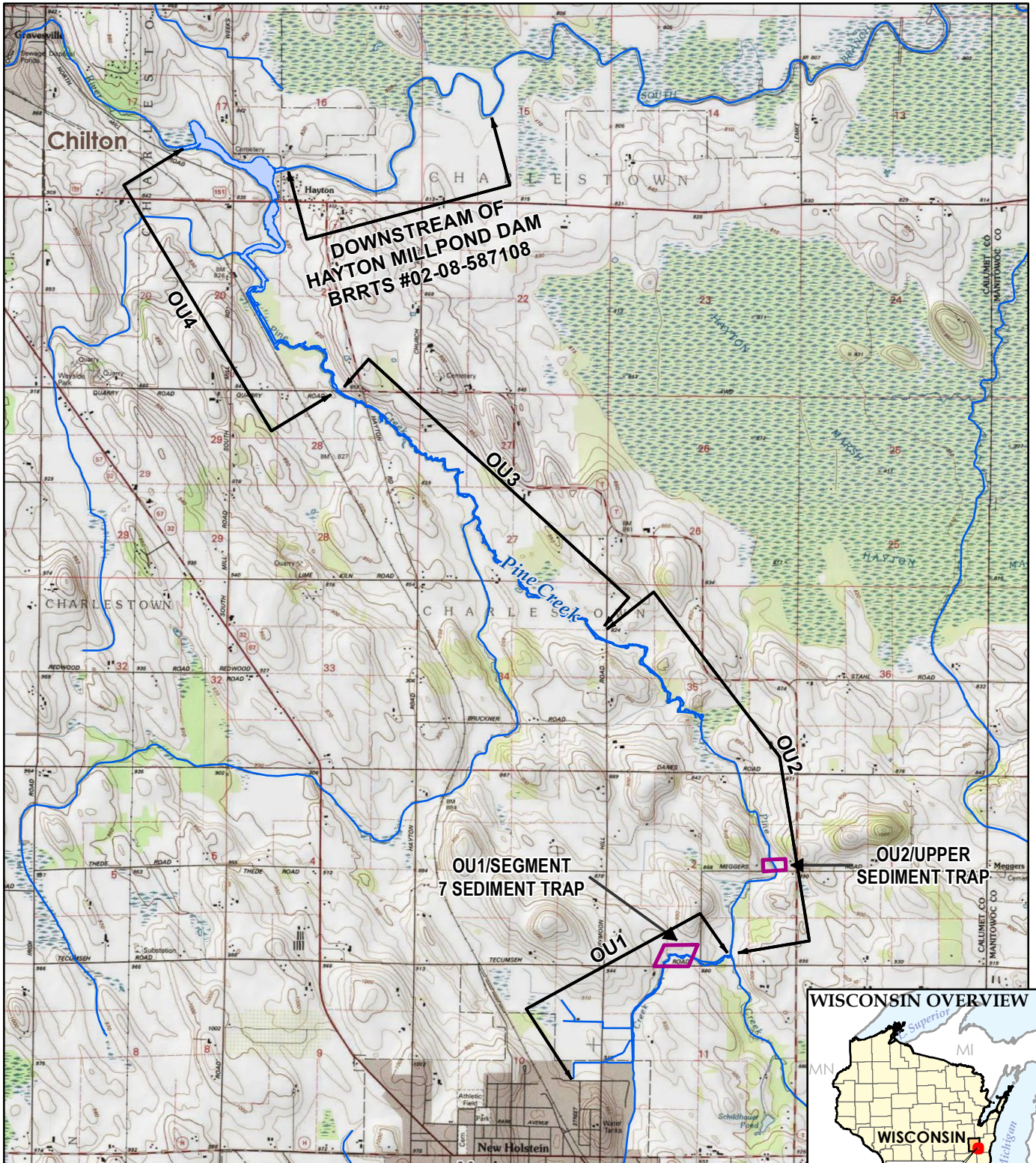
All data will be evaluated in accordance with the Negotiated Agreement.

6.0 Technical Review Request

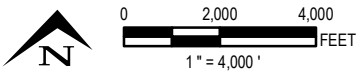
Pursuant to NR 749.02, Wis. Adm. Code, TRC requests a technical review response from WDNR of this NRMP. TRC will provide a \$425 review fee.

7.0 References

- TRC. 2015. Site-Specific Health and Safety Plan. Sediment Investigations. South Branch of the Manitowoc River, Downstream of the Hayton Millpond, Calumet County, Wisconsin. June 2015.
- TRC. 2017. Natural Recovery Monitoring Scope of Work. Hayton Area Remediation Project. August 25, 2017.
- TRC. 2023. Site Investigation Work Plan. Additional Investigation Sampling Plan, Downstream Hayton Millpond Dam, Chilton, Wisconsin. January 2023.
- WDNR, Tecumseh Products, and TRC. 2018. Negotiated Agreement; BRRTS #02-08-281506.



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



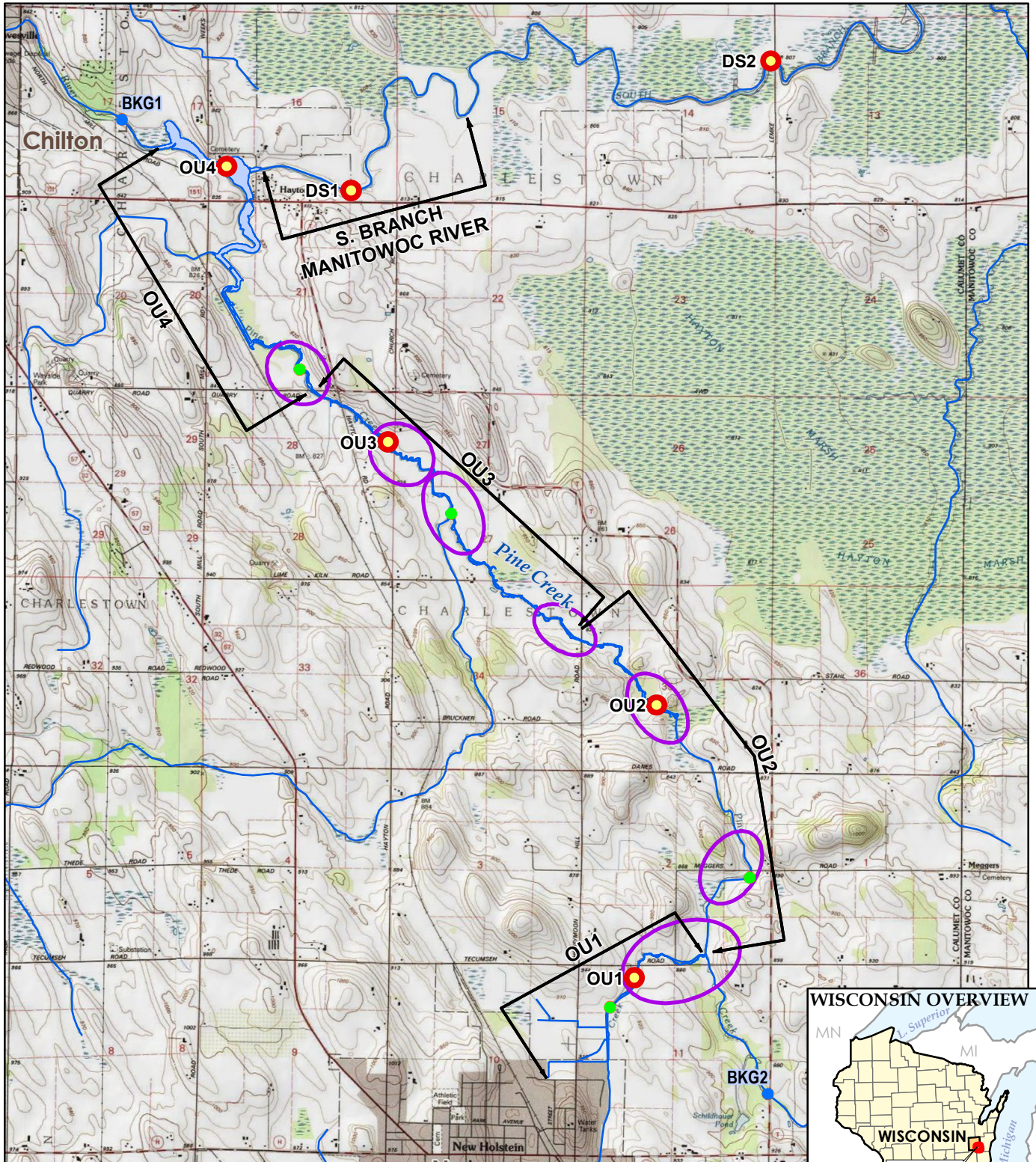
230 West Monroe St.
 Suite 630
 Chicago, IL 60606
 Phone: 312.578.0870

**HARP POST-REMEDATION
 NATURAL RECOVERY MONITORING PLAN**

SITE LOCATION MAP





DRAWN BY:	R. SUENICHT
APPROVED BY:	C. HARVEY
PROJECT NO:	471202
FILE NO.	471202-9300-037bt.mxd
DATE:	JANUARY 2023

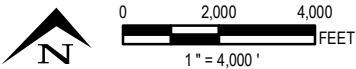
FIGURE 1



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

LEGEND

-  TARGETED SEDIMENT POLING SURVEY AREAS
-  SURFACE WATER AND SEDIMENT SAMPLING LOCATION
-  SEDIMENT SAMPLING LOCATION
-  BACKGROUND/REFERENCE SURFACE WATER SAMPLING LOCATION



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

**HARP POST-REMEDIAL
NATURAL RECOVERY MONITORING PLAN**

**SURFACE WATER AND SEDIMENT
MONITORING LOCATIONS**

DRAWN BY:	R. SUEMNICHT
APPROVED BY:	C. HARVEY
PROJECT NO:	107927-9300
FILE NO.	197927-9300-038bt.mxd
DATE:	JANUARY 2023

FIGURE 2