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FOURTH FIVE-YEAR REVIEW REPORT FOR PENTA WOOD PRODUCTS SUPERFUND SITE BURNETT COUNTY, WISCONSIN

Prepared by

U.S. Environmental Protection Agency
Region 5
Chicago, Illinois

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LIST OF ABBREVIATIONS & ACRONYMS

BTEX	Benzene, Toluene, Ethyl Benzene, and Xylene
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CAMU	Corrective Action Management Unit
CFR	Code of Federal Regulations
CO	Continuing Obligation
COC	Contaminant of Concern
COPC	Constituents of Potential Concern
EPA	United States Environmental Protection Agency
EVO	Emulsified Vegetable Oil
ES	Enforcement Standard
FSP	Field Sampling Plan
FYR	Five-year Review
GAC	Granulated Activated Carbon
GHD	GHD Services, Inc.
GIS	Geographical Information System
ICs	Institutional Controls
ICIAP	Institutional Controls Implementation and Action Plan
LNAPL	Light Nonaqueous Phase Liquid
MCL	Maximum Contaminant Level
µg/L	Micrograms per Liter
MNA	Monitored Natural Attenuation
NCP	National Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
OU	Operable Unit
PALs	Preventive Action Limits
PCP	Pentachlorophenol
PRG	Preliminary Remedial Goal
QAPP	Quality Assurance Project Plan
RAO	Remedial Action Objectives
RCL	Residual Contaminant Level
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation and Feasibility Study
ROD	Record of Decision
SSC	Superfund State Contract
SVOC	Semi-volatile Organic Compound
UU/UE	Unlimited Use and Unrestricted Exposure
WAC	Wisconsin Administrative Code
WDNR	Wisconsin Department of Natural Resources

I. INTRODUCTION

The purpose of a Five-Year Review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The United States Environmental Protection Agency (EPA) is preparing this FYR pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP) (40 Code of Federal Regulations (CFR) Section 300.430(f)(4)(ii)) and considering EPA policy.

This is the fourth FYR for the Penta Wood Products Superfund Site (Site). The triggering action for this statutory review is the completion date of the previous FYR. The FYR has been prepared due to the fact that hazardous substances, pollutants, or contaminants remain at the Site above levels that allow for unlimited use and unrestricted exposure (UU/UE).

This Site consists of one sitewide operable unit (OU), which is addressed in this FYR.

The Penta Wood Products Superfund Site FYR was led by Stephanie Linebaugh, EPA Remedial Project Manager for the Site. The Wisconsin Department of Natural Resources (WDNR) project manager, Phil Richard, assisted in the review. WDNR was notified of the initiation of the FYR on April 3, 2019.

Site Background

The Penta Wood Products Site is a former wood treating facility on 82 acres located along Daniels 70 (former State Route 70) in Burnett County, Wisconsin. It is approximately 78 miles northeast of Minneapolis, Minnesota, and 60 miles south of Duluth, Minnesota. The Village of Siren, Wisconsin, is approximately two miles east of the Site.

The property is in a rural agricultural and residential setting and is bordered to the east, west, and north by forested areas; some of these areas are classified by WDNR as wetlands. Forested and wetland areas border the property to the north/northwest. Four private residences are within 1000 feet of the Site and have potable wells.

The Site is situated on a plateau with a 110-foot drop in elevation from the southern boundary to the northern boundary. The Site stratigraphy consists of three layers: an upper sand, a glacial till that is not continuous throughout the Site, and a lower sand. The depth to groundwater is over 100 feet on the plateau. Groundwater occurs both in a thin unconfined (upper) aquifer and within a multilayered semiconfined (lower) aquifer system. The regional groundwater flow direction is to the north.

Contaminants were released to the subsurface during operation from 1953 to 1992. Raw timber was cut into posts and telephone poles and treated with a 5 to 7 percent pentachlorophenol (PCP) solution in a fuel oil carrier or with a waterborne salt treatment chemical. The facility discharged wastewater from an oil/water separator down a gully into a lagoon on the northeast corner of the property. Process wastes were discharged onto a wood-chip pile in the northwestern portion of the property. The Site was listed on the National Priorities List (NPL) in June 1996.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Penta Wood Products		
EPA ID: WID006176945		
Region: 5	**State:** WI	**City/County:** Daniels/Burnett

SITE STATUS	
NPL Status: Final	
Multiple OUs? No	**Has the site achieved construction completion?** Yes

REVIEW STATUS
Lead agency: State ***[If "Other Federal Agency", enter Agency name]*:**
Author name (Federal or State Project Manager): Stephanie Linebaugh
Author affiliation: EPA
Review period: 4/3/2019 - 3/31/2020
Date of site inspection: 9/30/2019
Type of review: Statutory
Review number: 4
Triggering action date: 1/23/2015
Due date *(five years after triggering action date)*: 1/23/2020

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

A Focused Human Health Risk Assessment Report (Ecology & Environment, 1997) and a Screening Level Ecological Risk Assessment Report (CH2M Hill, 1998) were prepared and evaluated potential risks from contaminant exposure at the Site. The risk assessments concluded there were risks to human health and the environment via soil, sediment, and surface water exposures and potential risks for future human health risks associated with exposure to groundwater.

For human health, the risk assessment identified potential exposure to contaminated soils and groundwater through ingestion and dermal contact for residential and incidental ingestion and dermal contact to soils for typical worker and construction/excavation worker. The ecological risk assessment identified the following receptors: deer mouse, short-tailed shrew, raccoon, and American robin. Exposure routes and potential receptors assessed in the risk assessments are summarized in Table 3 and Table 4 of the ROD and in Appendix C of this report.

Contaminants of Concern (COCs) for both soils and groundwater at the Site consist of the following: PCP; Naphthalene; Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX); Chloride; and Metals – Arsenic, Copper, Iron, Manganese, and Zinc. PCP and arsenic are the primary risk drivers at the Site. PCP is present in soils down to groundwater, is a major component of the Light Nonaqueous Phase Liquid (LNAPL) and is present in the groundwater plume. Arsenic is present primarily in surface soils and in wetland sediments.

Response Actions

On August 12, 1993, EPA issued a unilateral administrative order to Penta Wood pursuant to Section 106(a) of CERCLA. The order required Penta Wood to perform certain removal activities at the Site. In an August 23, 1993 letter, Penta Wood's attorney advised EPA that Penta Wood did not have the financial ability to comply with the requirements of the order. EPA and Penta Wood subsequently entered a consent decree requiring, among other things, that Penta Wood pay EPA $37,400 in partial reimbursement of its past response costs. The consent decree was entered by the United States District Court for the Western District of Wisconsin on April 11, 1996. EPA conducted a removal action during 1994 through 1996, which included the following:

- Buildings were demolished and remaining chemicals and sludge were disposed off-Site;
- Highly contaminated soil was excavated and disposed off-Site; and
- Metals-contaminated soils were excavated and mixed with cement on-Site to form a 3-acre concrete biopad.

A Remedial Investigation/Feasibility Study (RI/FS) was conducted by EPA in 1997 through 1998, culminating with the issuance of the Record of Decision (ROD) on September 29, 1998. The 1998 ROD selected Alternative 3: Soil Consolidation and Cover, Bioventing, Groundwater and LNAPL Collection and Treatment, and Monitored Natural Attenuation (MNA) of Groundwater, which included the following remedy components:

Soil Remedial Components	Groundwater/LNAPL Remedial Components
• Building demolition of existing buildings including former PCP treatment and oil/water separator buildings; • Segregation, select solidification, and placement of all arsenic contaminated soils in an on-Site Corrective Action Management Unit (CAMU); • Consolidation of PCP/fuel oil soils and wood chips in the CAMU under a soil cover. A fence will be erected around the soil cover areas; • Bioventing PCP/fuel of contaminated material;	• LNAPL removal via an LNAPL recovery system; • Containment collection, treatment, and discharge of grossly contaminated groundwater (exceeding 1000 µg/L PCP); • MNA of groundwater contamination for treatment of PCP in and at the perimeter of the ground-water plume. Alternative remedial technology will be considered if monitoring data indicate that the remedial objectives will not be met within 30-40 years; • Long-term environmental monitoring/maintenance;

Soil Remedial Components	Groundwater/LNAPL Remedial Components
• Biopad removal and disposal on-Site. The biopad will be broken up and use as backfill to support the lagoon wall; • Erosion control measures and plan; • Re-vegetation plan will be developed and implemented in conjunction with the Erosion Control Plan; and • Institutional controls (ICs) in the form of land use restrictions will be implemented to restrict activities in the fenced soil cover area and metals disposal area.	• Point-of-use carbon treatment or well replacement for residential wells bordering the Site, if necessary; and • ICs in the form of groundwater use restrictions will be implemented to prohibit Site groundwater use.

The ROD identified the following remedial action objectives (RAOs):

- Remove the ongoing source of PCP to groundwater;
- Reduce the PCP content in soils and groundwater to achieve compliance with Ch. NR-720, Wisconsin Administrative Code;
- Reduce residual PCP/oil concentrations in the smear zone and vadose soils;
- Eliminate the exposure pathway to PCP/oil-contaminated soils and sediments while they are biodegrading;
- Immobilize the metals-contaminated soils;
- Highly contaminated arsenic soils will be immobilized and consolidated with other arsenic contaminated soils (above background), and secured, to achieve compliance with Ch. NR 720;
- Eliminate the exposure pathway to the metals contaminated soils; and
- Eliminate overland flow of contaminated materials to the wetland.

WDNR Preventive Action Limits (PALs) identified in Ch. NR 140, Wisconsin Administrative Code (WAC) were selected as cleanup goals for the Site groundwater to the extent practicable. The cleanup levels for soils are based on varying preliminary remedial goals (PRGs) dependent on specific COCs. The PRGs considered for soils and groundwater are shown in Table 1 and Table 2, respectively, of the ROD and included in Appendix C of this report.

Status of Implementation

The Site cleanup was a fund-financed Remedial Action (RA) to accomplish the RAOs of the ROD. The RA includes a construction phase and a Long-Term Remedial Action (LTRA) phase. Remedial construction activities in support of the RA began in December 1999 with actual construction starting on March 6, 2000. These implemented construction activities included the following:

- Demolition of 17 buildings and foundations, and the off-Site disposal of demolition material, debris piles, and laboratory chemicals;

- Excavation and consolidation of contaminated soils into the CAMU;
- Construction of an infiltration basin for discharging treated groundwater;
- Placing a soil cover over the CAMU with 6-inches of sand followed by 6-inches of topsoil, and then seeding and mulching the cover. Installing a gated 6-foot high fence encircling the perimeter of the CAMU to restrict access;
- Erosion control structures including gabion basket down chutes, velocity control check dams, and rip-rapped drainage ditches were constructed to protect the integrity of the CAMU;
- Seeding and mulching all barren areas and establishing a vegetative cover over all exposed areas of the Site;
- Drilling operations included abandonment of existing wells and the installation of the multi-purpose biovent and groundwater extraction wells, soil gas wells, a monitoring well, and the groundwater and LNAPL recovery pumps; and
- Construction of a treatment building housing the biovent blower system, LNAPL recovery tanks, and a groundwater treatment system.

The original remedial construction was completed in September 2000, but the groundwater treatment system was unable to achieve the required discharge limits for the treated groundwater. The groundwater treatment system could not be operated without almost immediately clogging the oil bag filter, activated clay treatment, and granular activated carbon units with emulsified oil. To address the operational challenges of the treatment plant the following steps were taken:

- Construction of a building to house the treatment plant addition;
- Installing additional treatment equipment; and
- Installing a well to obtain potable water.

A final inspection of the remedial action was conducted on May 5, 2004, and EPA certified the treatment plant operational and functional on August 12, 2004. This began the 10-year LTRA period.

In May 2010, EPA completed a remedial action optimization evaluation to identify options for optimizing the remedial action being implemented at the Site and the following action items were identified:

- Addition of three new LNAPL recovery wells;
- Continued operation of LNAPL and groundwater recovery and treatment system at full capacity for two years;
- Reducing operation to the four to six warm weather months after two years of full operation;
- Shutdown of the LNAPL and groundwater treatment system and removal from operation when LNAPL recovery is no longer sufficiently productive, to be restarted if plume expansion threatens off-site migration;
- Semiannual groundwater monitoring until shut down, and then annual monitoring thereafter; and
- Continued bioventing operation during the summer.

The additional LNAPL wells identified in the optimization evaluation were installed by EPA and began operating as part of the treatment system in the spring of 2011.

EPA completed a new remedial action optimization evaluation in March 2014. The purpose was to determine if long term operating costs could be lowered, while continuing to protect human health and the environment at the Site. The document presented an evaluation of scenarios that would maintain Site cleanup and reduce long term operation and maintenance (O&M) costs associated with continued operation.

In September 2014, WDNR assumed financial responsibility and oversight for the LTRA at the Site. WDNR considered EPA's optimization scenarios and proposed another option to operate the remediation system that would not deviate from the requirements of the 1998 ROD. Following discussions between WDNR and EPA, modifications to the operation of the treatment system were made as follows:

- LNAPL and groundwater extraction pumps were turned off and removed from the upper aquifer, eliminating the need to run the oil-water separator and the need to process influent water through the pretreatment process; therefore allowing for the reduction in hazardous waste generated from the remediation system as a whole;

- LNAPL was monitored in wells and removed by manual bailing and/or pumping on a monthly basis and placed in the Free Product Storage Tank for off-Site disposal; and

- Groundwater was continued to be pumped from the lower aquifer. However, instead of moving through the on-Site plant pretreatment process as before, it was pumped directly to the bag filters, granulated activated carbon (GAC) pre-filter, and finally into the infiltration system for discharge.

The modifications were consistent with the RAOs of the 1998 ROD issued for the Site. In October 2015, WDNR proposed additional optimization through the implementation of a remediation system shutdown pilot study to support the transition from active remedation to MNA. WDNR submitted their proposal, which was prepared by their contractor, GHD Services Inc. (GHD), to EPA and submitted the *Remediation System Shutdown Pilot Study Work Plan* (GHD, November 2015). EPA reviewed the proposal and approved the Pilot Study Work Plan on December 16, 2015. Appendix F includes EPA's January 25, 2016 memo to the file documenting its approval of the Pilot Study along with the November 2015 Final Pilot Study Work Plan.

The purpose of the Pilot Study is to monitor how the Site reacts without active remediation and develop lines of evidence to support MNA at the Site. Lines of evidence identified in the Pilot Study Work Plan include the following:

- LNAPL body and dissolved plume limits are not expanding;
- Dissolved concentrations are stable or decreasing; and
- Degradation of contaminants is occurring through aerobic and/or anaerobic natural processes.

The Pilot Study includes temporary shutdown of the remediation system, a Pilot Study monitoring plan, and a contingency plan.

In November/December 2015, WDNR shutdown the remediation system. All equipment remains at the Site. If a contingency plan is implemented and a restart of the system is required, the system could be

restarted within 60 days. Following shutdown of the remediation system, groundwater monitoring, and sampling was conducted in April 2016 at all groundwater monitoring and extraction wells to determine baseline conditions at the Site, dissolved plume size and extent, and concentration distribution.

The Pilot Study monitoring plan included the installation of new monitoring wells to further define the LNAPL body and dissolved plume limits; a microcosm study to evaluate biodegradation rates within the dissolved plume; a bio-trap study to quantify microbial populations and confirm biodegradation; groundwater and LNAPL level monitoring; groundwater sampling; and residential well sampling.

LNAPL Body and Dissolved Plume Limits: Three new monitoring wells (MW29, MW30, and MW31) were installed in November and December 2015 to confirm the LNAPL body and dissolved plume limits.

Microcosm Study: To support successful implementation of MNA, a microcosm study was conducted to demonstrate lines of evidence that the degradation of the Site contaminants is occurring at rates sufficient to be protective of human health and the environment. The objective of the microcosm study is to gather data necessary to determine whether natural attenuation of PCP is occurring at the Site; determine whether natural attenuation is occurring under aerobic conditions, anaerobic conditions, or both; and determine a Site-specific biodegradation rate for PCP. The microcosm study was conducted on the soil and groundwater samples in the laboratory from December 2015 through May 2017 at 0, 3, 6, and 12 months from the time of sample collection.

Bio-trap Study: To support successful implementation of MNA, a bio-trap study was conducted to demonstrate line of evidence that degradation of the Site hydrocarbons is occurring at rates sufficient to be protective of human health and the environment. The objective of the bio-trap study is to gather data necessary to determine whether bacteria capable of degrading PCP are present at the Site and demonstrate in-situ biodegradation of PCP using a bio-trap. Bio-traps were installed in wells during April and May 2016 for 32 days and then submitted for laboratory analysis.

Groundwater/LNAPL Level Monitoring: During the Pilot Study, groundwater and LNAPL levels were measured in all monitoring and extraction wells at the Site on a quarterly basis to assess groundwater flow direction; hydraulic gradient; and LNAPL thickness, extent, and trends to confirm that LNAPL migration does not occur.

Groundwater Sampling: The purpose of the groundwater sampling is to confirm that there is a statistically significant stable or decreasing trend in dissolved plume size and concentrations. The network of monitoring wells includes sample collection both in the source area and surrounding the source area.

Residential Well Sampling: Water samples were collected from residential wells (RW1, RW2, RW3, RW4, RW5, RW6, and RW6 Shop) located near the Site and the on-Site water supply well (DW01) on a semiannual basis through 2019. After each residential well sampling event, WDNR sends letters to the property owners of residential wells with sampling results.

The on-Site water supply well (DW01) is used for sanitary facilities in the remediation equipment building and maintaining the remediation equipment but is not ingested by workers.

Contingency Plan: The Pilot Study monitoring plan is designed to determine whether MNA is a feasible remedy at the Site and to monitor changes in Site conditions that could potentially increase risk of exposures to receptors. The primary contingency plan decision point identified in the Pilot Study Work Plan is if dissolved PCP, naphthalene, and/or BTEX are detected at concentrations exceeding the respective Wisconsin Enforcement Standards (ESs) in monitoring wells MW1, MW3, MW13, MW21, and MW22 located between the source area and potential receptors. Other criteria to be considered are changes in LNAPL presence, LNAPL thickness, and aerobic/anaerobic conditions.

The Pilot Study ran during a four-year period from December 2015 to December 2019. EPA is reviewing the data submitted by WDNR in March 2020 on the Pilot Study to determine if MNA is supported.

Institutional Controls

As required by the 1998 ROD, Site use is being controlled by using ICs in the form of Continuing Obligations (COs) for the Site (see Table 1 below).

Table 1: Summary of Implemented ICs

Media, engineered controls, and areas that do not support UU/UE based on current conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date (or planned)
Soil (property area and CAMU – approx. 82 acres)	Yes	Yes	8671 Daniels 70 PCL W1/2 NE NE	Land use restrictions; prohibit residential development; prohibit interference with the CAMU and consolidation areas; prohibit exposure	State of Wisconsin Continuing Obligations WDNR GIS registry July 6, 2015
Groundwater at the Site above Wisconsin PALs	Yes	Yes	8671 Daniels 70 PCL W1/2 NE NE	Groundwater use restrictions; Prohibit well installation except as approved by the agencies and prohibit groundwater consumption.	State of Wisconsin Continuing Obligations WDNR GIS registry July 6, 2015

A map showing the area in which the ICs apply is included in Appendix G, Figure 2.

Current Compliance: There are no responsible parties for the Site. The Site has been abandoned since 1992 and there are no current owners. The 1998 ROD includes ICs in the form of groundwater use restrictions and land use restrictions to be implemented in the fenced soil cover area and the metal

disposal area. WDNR has implemented ICs in the form of COs, which have been placed in the State's Geographic Information System (GIS) Registry. COs are legal requirements designed to protect public health and the environment regarding contamination that remains on a property and are legally enforceable by the State. These COs meet the intent of the ICs required by the ROD for the Site.

Long-Term Stewardship: In order to ensure long-term stewardship of ICs, WDNR amended the *Long-Term Response Action Operation & Maintenance Plan* (O&M Plan), November 9, 2015, to include an Institutional Controls Implementation and Action Plan (ICIAP). The ICIAP establishes and documents the activities associated with implementing and ensuring long-term stewardship of ICs and identifies the persons and/or organizations that are responsible for conducting these activities. Long-term protectiveness requires continued compliance with land and groundwater use restrictions to ensure that the remedy continues to function as intended. Long-term stewardship will ensure that the ICs are maintained, monitored, and enforced.

CO maintenance consists of periodic monitoring and reporting to confirm that Site security is in place and providing protection as intended and that use of the land is restricted to maintain the integrity and functional effectiveness of the Site remedy. Maintenance activities consist of periodic review of the property and COs by WDNR, notifications to new landowners or lessees, and continuing education for landowners and property users through annual updates and information. An inspection of COs items was completed on October 2, 2019 by WDNR.

Systems Operations/Operation & Maintenance

O&M at the Site includes semiannual groundwater monitoring and sampling; semiannual residential well and on-Site supply well sampling; and CO maintenance and Site inspection.

COs are on a semiannual basis. Maintenance of COs consists of periodic monitoring and reporting to confirm that Site security is in place and providing protection as intended and that use of the land is restricted to maintain the integrity and functional effectiveness of the Site remedy. Maintenance activities consist of periodic review of the property and COs by WDNR, notifications to new land owners or lessees, and continuing education for land owners and property users through annual updates and information.

Additional inspections required by the O&M Plan (GHD; July 22, 2015) are conducted semiannually and included the following: inspection of the CAMU area fence, that it is in satisfactory condition and does not require repairs; the CAMU fence gates remain closed and locked when GHD and/or WDNR are not at the Site; and the CAMU area surface soils/vegetation are in good condition and do not require repairs and erosion, subsidence, and ponding water are not occurring on the CAMU. A site well inspection is also completed semiannually.

III. PROGRESS SINCE THE LAST REVIEW

This section includes the protectiveness determinations and statements from the last FYR as well as the recommendations from the last FYR and the current status of those recommendations.

Table 2: Protectiveness Determinations/Statements from the 2015 FYR

OU #	Protectiveness Determination	Protectiveness Statement
01/Sitewide	Short-term Protective	The remedy at the Site is currently protective of human health and the environment in the short term because exposure pathways that could result in unacceptable risks are being controlled. Based upon the review of the annual groundwater monitoring data and other data, and the August 21, 2014 Site inspection conducted for this FYR, there are no current exposures to human health and the environment. However, for the remedy to be protective in the long-term, the following actions need to be taken effective ICs should be implemented; and an ICIAP should be prepared and implemented. Protectiveness will be ensured by implementing, maintaining, monitoring, and enforcing ICs as well as by maintaining the Site remedy components.

Table 3: Status of Recommendations from the 2015 FYR

OU #	Issue	Recommendations	Current Status	Current Implementation Status Description	Completion Date (if applicable)
01 (Sitewide)	ICs are not in place	Develop and implement ICs	Completed	WDNR implemented ICs in the form of Continuing Obligations (see ICs section above)	7/6/2015
01 (Sitewide)	There is no Site-specific plan to address long-term stewardship of ICs	Revise the O&M Plan to add an ICIAP section	Completed	WDNR amended the O&M plan to include an ICIAP (see ICs section above)	11/9/2015

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

A notice was published in the local newspaper (See Appendix D), the "Inter-County Leader", on November 6, 2019, stating that there was a FYR and inviting the public to submit any comments to EPA. No comments were received. No interviews were conducted during this review. The results of the review and the final FYR report will be made available at the Site information repository located at the Burnett Community Library located at 7451 W. Main Street, Webster, Wisconsin. Site information can also be found on EPA's website for the Penta Wood Site: http://www.epa.gov/superfund/pentawood-products.

Data Review

Data obtained during the Pilot Study was reviewed during this five-year review period from monitoring reports submitted April, July, October and January 2016 – October 2019.

LNAPL Body and Dissolved PCP Plume Extent

The areal extent of LNAPL based on measured in-well thicknesses is less than 2 acres in size within the property boundaries and limited to within the immediate vicinity of the onsite CAMU. The LNAPL remained stable (i.e., not expanding or migrating) from the time prior to implementing the remedy through more than 11 years of remediation system operation. The LNAPL is present within the unconfined aquifer at depths ranging between approximately 80 and 115 feet below ground surface. Based on historical groundwater level monitoring data and the observed groundwater level fluctuations, the LNAPL smear zone is approximately 7 feet thick and is located exclusively in the unconfined (upper) aquifer at the groundwater table.

The dissolved PCP plume has been reduced at the Site through operation of the remediation system. The dissolved PCP plume with concentrations exceeding 1,000 micrograms per liter (µg/L) is approximately 3 acres in the unconfined (upper) aquifer and approximately 1 acre in the semiconfined (lower) aquifer and is limited to the immediate vicinity of the LNAPL. The dissolved PCP plume with concentrations exceeding 1 µg/L is currently approximately 7 acres in the unconfined (upper) aquifer and approximately 9 acres in the semiconfined (lower) aquifer. The plume size has remained consistent since 2015.

Approximately 242 million gallons of groundwater were extracted, treated, and discharged through operation of the remediation system in 2004 through shutdown in 2015. Approximately 42,000 gallons of LNAPL were reportedly recovered from the subsurface (Long-Term Remedial Action Report, CH2M HILL, November 2014) through 2014. Bioventing contributed to the degradation of contaminants in the vadose zone. LNAPL remediation was effective at reducing the mobility/recoverability of the LNAPL to de minimis levels and has accomplished the goal for remediation of reducing the principal threat to groundwater to the extent practicable.

PCP concentration contours shown in Appendix B, Figures 7.1 – 7.4, indicate that the plume did not migrate during the remediation system shutdown period and indicate overall plume stability. Once an LNAPL body stabilizes, it will typically remain so even if significant in-well LNAPL thicknesses are observed within the areal extent of LNAPL impacts. LNAPL limits shown on Figure 7.5 indicate that the LNAPL did not migrate during the remediation system shutdown period and indicate overall stability of the LNAPL body.

Microcosm and Bio-Trap Study

Microcosm and bio-trap studies were conducted in accordance with the Remediation System Shutdown Pilot Study Work Plan (GHD, November 13, 2015).

The microcosm study was conducted using samples of soil and groundwater collected from the Site during drilling and well installation activities in November and December 2015. Four gallons of groundwater from the aerobic zone and 4 gallons of groundwater from the anaerobic zone were collected separately along with 5 pounds of soil from the aerobic zone and 5 pounds of soil from the anaerobic zone. An additional four gallons of groundwater from the anaerobic zone were received on April 22, 2016.

During April and May 2016, bio-traps baited with ^{13}C labelled PCP were installed in two wells in the source area (MW20 and MW29) and two wells in the downgradient area (MW9 and EW11S). The Bio-

traps were left in place for 32 days. After 32 days, the bio-traps were retrieved and analyzed for the ^{13}C PCP concentration, phospholipid fatty acids, stable isotope probing, and dissolved ^{13}C inorganic carbon.

The results from the microcosm tests indicate that PCP and diesel range petroleum hydrocarbons (TPH(C_9-C_{36})) are readily degradable under aerobic conditions and that PCP and TPH(C_9-C_{36}) are also degradable under anaerobic conditions; however, the anaerobic process is much slower. The addition of emulsified vegetable oil (EVO) to optimize anaerobic conditions appears to increase the biodegradation rate of PCP. Based on the half-lives measured in the microcosms, the cleanup time for the aerobic area under aerobic conditions would be 6.3 months. The cleanup time for the anaerobic area without EVO enhancement would be 66 months (5.5 years). These estimated cleanup times assume that LNAPL is not present and there is no ongoing source of contamination.

These conclusions are supported by the data from the bio-traps. In the bio-traps deployed in the downgradient area in wells MW9 and EW11S, the dominant class of organisms, the Proteobacteria degraded PCP and incorporated it into the biomass at a moderate rate. In the source area in wells MW20 and MW29, the bio-trap data appears to indicate that well MW20 may be in a transitional zone where some aerobic and some anaerobic processes are occurring. Although the bio-trap from MW20 contained the anaerobic Firmicutes, which were the dominant class of organisms in MW29, Proteobacteria were the dominant class of organisms in MW20, and the rate of incorporation of PCP into biomass was similar to the aerobic wells. In MW29, which was likely highly anaerobic, the Firmicutes dominated, and slower incorporation of PCP into biomass was observed.

No mineralization of PCP (i.e., degradation into carbon dioxide) was observed in the bio-trap study; however, the bio-traps were deployed for only 32 days, which may not be long enough for mineralization of PCP to occur.

Overall, the data suggests that MNA would be an effective treatment for the downgradient area, and biodegradation of PCP and TPH(C_9-C_{36}) is expected to occur at a moderate rate. MNA may be effective for the source area. The bio-trap and amended microcosm data show that PCP degradation does occur under anaerobic conditions; however, slower biodegradation rates are expected.

Groundwater/LNAPL Level Monitoring

Groundwater and LNAPL levels were measured in 33 monitoring wells and 22 extraction well casings at the Site. The groundwater flow direction in both aquifers is primarily toward the west/northwest. During the July 2019 event, LNAPL was present in monitoring wells MW18 and MW20 at measurable thicknesses, and LNAPL was not present in monitoring wells MW10S, MW19, or MW29. LNAPL was present in extraction wells EW06S, EW10S, EW12S, and EW14S with casings screened in the unconfined (upper) aquifer during the July 2019 monitoring event. During the October 2019 event, LNAPL was present in monitoring wells MW18, MW19, and MW20 at measurable thicknesses, and LNAPL was not present in monitoring wells MW10S or MW29. LNAPL was present in extraction wells EW03S, EW05S, EW06S, EW10S, EW12S, and EW14S with casings screened in the unconfined (upper) aquifer during the October 2019 monitoring event. The general location of LNAPL is consistent with recent monitoring. See Appendix B, Figure 4.6.

Groundwater at the Site flows from the unconfined aquifer downward to the semiconfined aquifer. The vertical gradients at the Site range from 0.002 ft/ft (MW10/MW10S) to 0.009 ft/ft (MW23/MW9). These values are consistent with recent monitoring events and represent non-pumping conditions.

Groundwater Sampling

In spring of 2019, monitoring wells MW4 and MW14 were subsequently added to the sampling scope to assess lower aquifer groundwater quality southeast of the LNAPL source area. Wells MW2 and MW5 were also added to the sampling scope to assess the groundwater quality in the vicinity of well MW30. A new well (MW32) was installed in May 2019 and added to the sampling scope to assess groundwater quality along the eastern property boundary. See Appendix B, Figure 1.2.

Following shutdown of the remediation system in November 2015 and after allowing the subsurface conditions to stabilize, groundwater monitoring and sampling was conducted in April 2016 at all groundwater monitoring and extraction wells to determine baseline conditions at the Site. Subsequent quarterly and semiannual groundwater monitoring and sampling was conducted at selected wells through 2019 during the Pilot Study period.

A groundwater statistical evaluation was completed for the PCP concentration data obtained during the Pilot Study. The purpose of the evaluation was to assess whether PCP concentrations were stable or decreasing over the shutdown period as a line of evidence to support MNA at the Site.

The PCP concentration trends for the monitoring locations regularly sampled during Pilot Study, including wells in the unconfined (upper) aquifer, semiconfined (lower) aquifer, and residential/water supply wells are shown on the plots in Appendix H. In the plots, all available sample data are illustrated (including those collected prior to and during treatment system operation), and the post-shutdown sample data are highlighted using blue coloring. Additionally, the presence of censored results (non-detects) is indicated by plotting such data at their detection limit using an empty circle symbol (filled circles are detected values).

The trend test results are somewhat mixed in terms of changes in groundwater PCP concentrations following remediation system shutdown in November 2015. In the unconfined (upper) aquifer, wells in the aerobic zone (PCP concentrations below 1 µg/L) appear to have consistent decreasing concentration patterns, which is reflected in the overall area group tests results. In the mixed (1 to1,000 µg/L) and anaerobic (>1000 µg/L) zones, some wells have exhibited increasing trends in PCP concentrations (EW13S, MW30), although concentrations may be stabilizing recently into morsteady-state conditions. See Appendix H, Groundwater Concentration Trend Plots.

In the semiconfined (lower) aquifer, PCP concentrations in groundwater post shutdown have appeared stable or decreasing in all the wells sampled except MW12. Notably, PCP concentrations at MW10 (the lower aquifer well with highest PCP concentrations) appear to have stabilized at a level similar to that immediately following system shutdown. Considering the results overall, it appears that shutdown of the remediation system has not had any major impact on PCP concentrations in groundwater within the semiconfined (lower) aquifer. See Appendix H, Groundwater Concentration Trend Plots.

Overall, evaluation of the statistical trend tests considering PCP concentrations in groundwater following shutdown of the treatment system at the end of 2015 provide mixed results.
PCP concentrations have been stable or decreasing at most of the wells included in pilot study sampling but have increased at some wells. The wells with groundwater having the highest PCP concentrations (MW5, MW10S, EW13S, and MW10) do appear to be somewhat stable or decreasing.

Residential Well Sampling

Residential well sampling was conducted on a semi-annual basis. Samples were collected from seven residential wells (RW1, RW2, RW3, RW4, RW5, RW6, and RW6 Shop) and the on-Site water supply well (DW01) in accordance with the field sampling plan (FSP) and quality assurance project plan (QAPP). Residential well locations are identified in Appendix B, Figure 4.11.

In January 2018, the building heater malfunctioned, and the water supply pipes were damaged due to freezing. The water supply piping was subsequently disconnected at the building. The on-Site water supply well no longer provides a water supply to the building and is currently only used as a supply for sampling equipment decontamination water. The samples were analyzed for PCP, benzene, toluene, ethyl benzene, xylene (BTEX), and naphthalene. There have been no exceedances of State drinking water standards for the compounds sampled in the residential wells.

PCP, BTEX, and naphthalene were not detected at concentrations in the residential wells or on-Site water supply well that exceed the respective PALs. Semi-annual sampling will continue at all residential wells to identify and track potential PCP concentration trends.

Soil Excavation and Consolidation

Soil, wood chips, sediment, biopad debris, and other selected debris throughout the Site were excavated and consolidated into a CAMU in 2000, which will remain at the Site. Confirmation sampling documented residual soil contaminant concentrations met the target limits as reported in the Remedial Action Report, CH2M HILL, September 2000. However, subsequent review of the confirmation sampling data and follow-up sampling performed by WDNR in 2017 indicates that PCP concentrations in the wetland northeast of the Site property exceed applicable criteria. In cooperation with EPA, WDNR is planning to excavate this area and place the material within an expanded portion of the CAMU to ensure that the criteria are met (See Appendix I for more details).

Surface Debris Mitigation

Subsequent soil sampling in 2017 by WDNR under the surface debris confirmed that contaminants at concentrations exceeding direct contact and groundwater protection residual contaminant level (RCLs) for arsenic, PCP, and other semi-volatile organic compound (SVOCs) were identified in surface debris located along the west and north Site property boundaries meet the groundwater protection RCLs. ICs are currently effective in mitigating the direct contact exposure; however, WDNR, in cooperation with EPA, is planning to cover the impacted debris in place with clean borrow soil from the Site. See Appendix I.

Additional Work Performed

WDNR removed two suspected underground storage tanks (USTs) from the Site during August 2019. Upon removal of the overburden soil, it was determined that the suspected USTs were dry wells with piping between the structures, typical of older septic systems. The bottom of each structure was approximately 7 to 8 feet below ground surface. No staining or odors were observed in the soils beneath each structure. A soil sample was collected from the base of each structure and submitted for laboratory analysis of PCP, volatile organic compounds, polynuclear aromatic compounds, and diesel range organics. Diesel range organics were detected at concentrations of 2.7 milligrams per kilogram (mg/kg)

and 1.3 mg/kg. Both concentrations were estimated between the limit of detection and limit of quantitation; therefore, requiring no further action.

Site Inspection

The inspection of the Site was conducted on September 30, 2019. In attendance were Stephanie Linebaugh, EPA; Phil Richard, WDNR; Tim Ree, GHD; and Ryan Aamot, GHD. The purpose of the inspection was to assess current Site conditions and the protectiveness of the remedy; including the presence of fencing to restrict access, the integrity of the CAMU, condition of the monitoring wells, and general conditions of the LNAPL/groundwater collection system. The Site visit included a visual inspection of the remedy components and a review of documents related to O&M at the Site. The Site inspection checklist is included in Appendix E.

The physical components of the remedy, including the fencing, CAMU, monitoring wells, and the LNAPL/groundwater collection system appeared to be in good condition. There were no signs of cracking or deterioration of the CAMU cover and the fencing was well maintained.

Photo 1: Picture of CAMU Cover, September 30, 2019	Photo 2: Picture of Monitoring Well, September 30, 2019
	

V. TECHNICAL ASSESSMENT

QUESTION A: Is the remedy functioning as intended by the decision documents?

Yes, the remedy is functioning as intended by the ROD. The ROD included active groundwater remediation in addition to MNA. The LNAPL remained stable (i.e., not expanding or migrating) from the time prior to implementing the remedy through more than 11 years of remediation system operation. The PCP plume size has remained consistent since 2015. The CAMU area fence is in satisfactory condition and does not require repairs; the CAMU fence gates remain closed and locked when GHD

and/or WDNR are not at the Site. The CAMU area surface soils/vegetation remained in good condition during this FYR period and did not require repairs; erosion, subsidence, and ponding water were not observed on the CAMU.

Effective ICs are in place in the form of COs, which have been placed in the State's GIS Registry. WDNR amended the *Long-Term Response Action Operation & Maintenance Plan* (O&M Plan), November 9, 2015, to include procedures for long-term stewardship to ensure that the ICs are maintained, monitored, and enforced.

Since 2010, EPA and WDNR have evaluated optimization options, including implementation of WDNR's Remediation System Pilot Study, which initiated in December 2015 and concluded December 2019. The purpose of the Pilot Study was to monitor how the Site reacts without active remediation and develop lines of evidence to support MNA at the Site. WDNR and EPA are currently reviewing the data from the Pilot Study to see if lines of evidence identified in the Pilot Study Work Plan, LNAPL body and dissolved plume limits are not expanding; dissolved concentrations are stable or decreasing; and degradation of contaminants is occurring through aerobic and/or anaerobic natural processes support MNA.

QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?

Yes. However, WDNR is recommending modifying the performance standards from the Wisconsin PALs to the ESs as identified in Ch. NR 140, Wis. Adm. Code. This section of the Code establishes two types of groundwater quality standards to serve as basis for site closure: PALs and ESs. PALs are the promulgated cleanup goals applicable to all Wisconsin cleanup sites, to the extent technically and economically feasible. The ESs are generally numerically equivalent to the maximum contaminant levels (MCLs) under the federal Safe Drinking Water Act.

Sampling performed by WDNR in 2017 indicates that PCP concentrations in the wetland northeast of the Site property exceed applicable criteria. WDNR, in cooperation with EPA, is planning to excavate this area and place the material within an expanded portion of the CAMU to ensure that the criteria are met. ICs are currently effective in mitigating the direct contact exposure.

Surface debris located along the west and north Site property boundaries contains contaminants at concentrations exceeding the direct contact and groundwater protection RCLs for arsenic, PCP, and other SVOCs. Subsequent soil sampling in 2017 by WDNR under the surface debris confirmed that contaminant concentrations meet the groundwater protection RCLs. ICs are currently effective in mitigating the direct contact exposure; however, WDNR, in cooperation with EPA, is planning to cover the impacted debris in place with clean borrow soil from the Site.

QUESTION C: Has any other information come to light that could call into question the protectiveness of the remedy?

No. Impacts from climate change have not been noted at the Site.

VI. ISSUES/RECOMMENDATIONS

Issues and Recommendations Identified in the Five-Year Review:				
OU(s): OU1 (Sitewide)	**Issue Category: Changed Site Conditions**			
	Issue: PCP concentrations in the wetland northeast of the Site property exceed applicable criteria.			
	Recommendation: Remove contaminated soil/sediment located in a wetland adjacent to the Site and place the material within an expanded portion of the CAMU.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	EPA/State	EPA	6/30/2022
OU(s): OU1 (Sitewide)	**Issue Category: Changed Site Conditions**			
	Issue: Surface debris located along the west and north Site property boundaries contains contaminants at concentrations exceeding the direct contact and groundwater protection residual contaminant level (RCLs) for arsenic, PCP, and other semi-volatile organic compound (SVOCs).			
	Recommendation: Cover contaminated surface debris along the west and north Site property boundaries with clean borrow soil.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	EPA/State	EPA	6/30/2022

VII. PROTECTIVENESS STATEMENT

OU1 & Sitewide Protectiveness Statement
Protectiveness Determination: Short-term Protective
Protectiveness Statement: The remedy at the Penta Wood Products Superfund Site currently protects human health and the environment because exposure pathways that could result in unacceptable risks are being controlled. Based upon the review of monitoring data and the September 30, 2019 Site inspection conducted for this FYR, there are no current exposures to human health and the environment. However, in order for the remedy to be protective in the long-term, the following actions need to be taken to ensure protectiveness: remove contaminated soil/sediment located in a wetland adjacent to the Site and place the material within an expanded portion of the CAMU, and cover contaminated surface debris along the west and north Site property boundaries with clean borrow soil.

VIII. NEXT REVIEW

The next FYR report for the Penta Wood Products Superfund Site is required five years from the completion date of this review.

APPENDIX A – REFERENCE LIST

1. Comprehensive Five-Year Review Guidance, EPA, June 2001
2. Five Year Review Report for the Penta Wood Products Superfund Site, Town of Daniels, Burnett County, Wisconsin, EPA, January 23, 2015
3. Record of Decision: Penta Wood Products Inc., Daniels, WI, EPA, September 29, 1998
4. Long-Term Response Action Operation & Maintenance Plan- Addendum No. 1, November 9, 2015
5. Memo to File: Penta Wood Products Superfund Site, Siren WI, Remediation System Shutdown Pilot Study Implementation, January 25, 2016
6. Quarterly Report, January - March 2016, GHD
7. Quarterly Report, April – June 2016, GHD
8. Quarterly Report, July – September 2016, GHD
9. Quarterly Report, October – December 2016, GHD
10. Quarterly Report January – March 2017, GHD
11. Quarterly Report, April – June 2017, GHD
12. Semiannual Report, July – December 2017, GHD
13. Semiannual Report, January – June 2018, GHD
14. Semiannual Report, July – December 2018, GHD
15. Semiannual Report January – June 2019, GHD

APPENDIX B – FIGURES

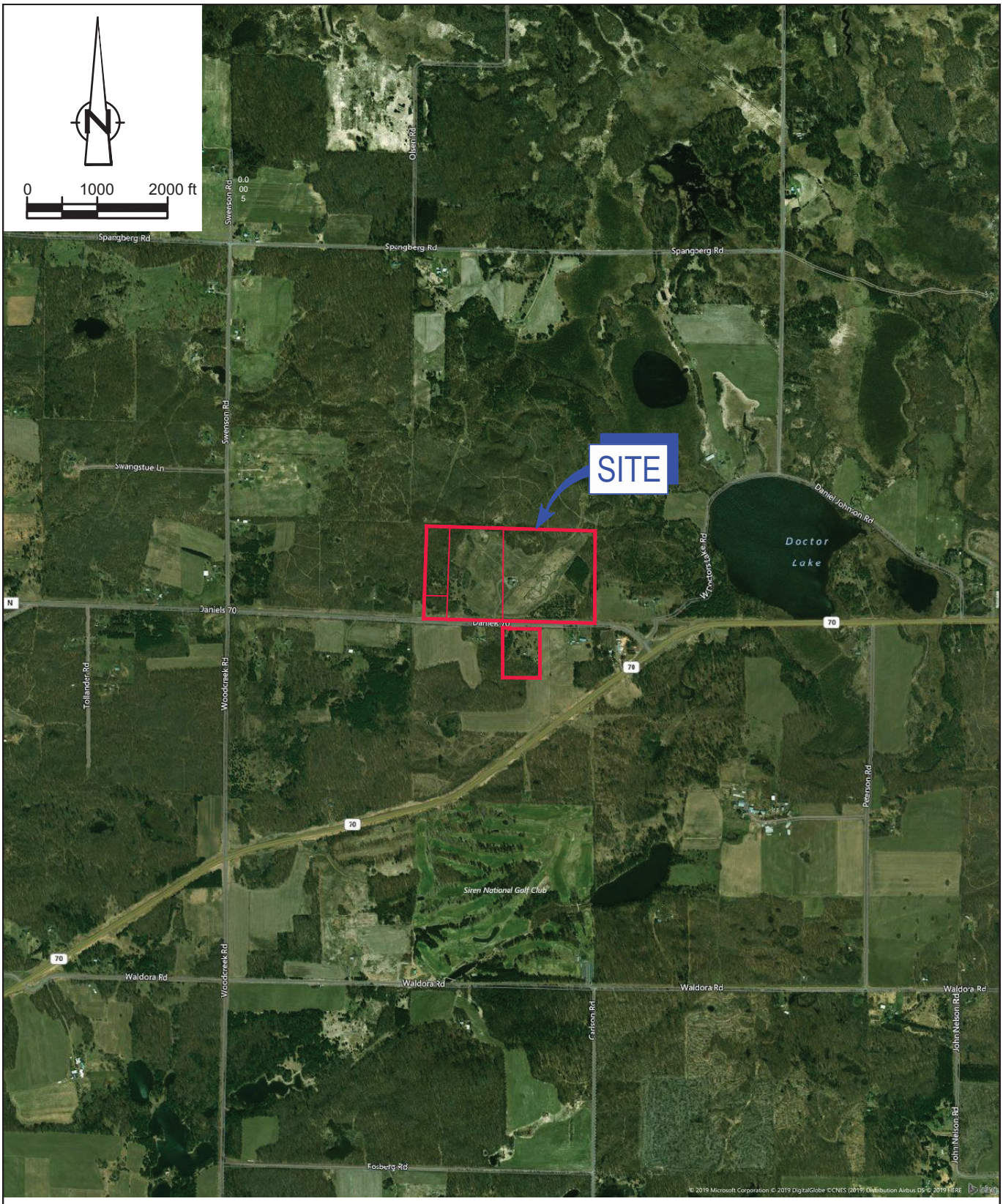


figure 1.1

SITE LOCATION
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin

N:\CA\Waterloo\Legacy\CAD\drawings\86000s\86165\86165-REPORTS\86165-06(020)\86165-06(020)GN\86165-06(020)GN-WA0014.DWG Plot Date: FEB 19, 2020

SOURCE: KEMPER AND ASSOCIATES, INC. SURVEY DATED MAY 2016 (WISCONSIN BURNETT COUNTY COORDINATE SYSTEM NAD83, 1996). & Microsoft Corporation; Burnett County

figure 1.2

SITE PLAN
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin

N:\CA\Waterloo\Legacy\CAD\drawings\86000s\86165\86165-REPORTS\86165-06(020)\86165-06(020)GN\86165-06(020)GN-WA0015.DWG Plot Date: FEB 19, 2020

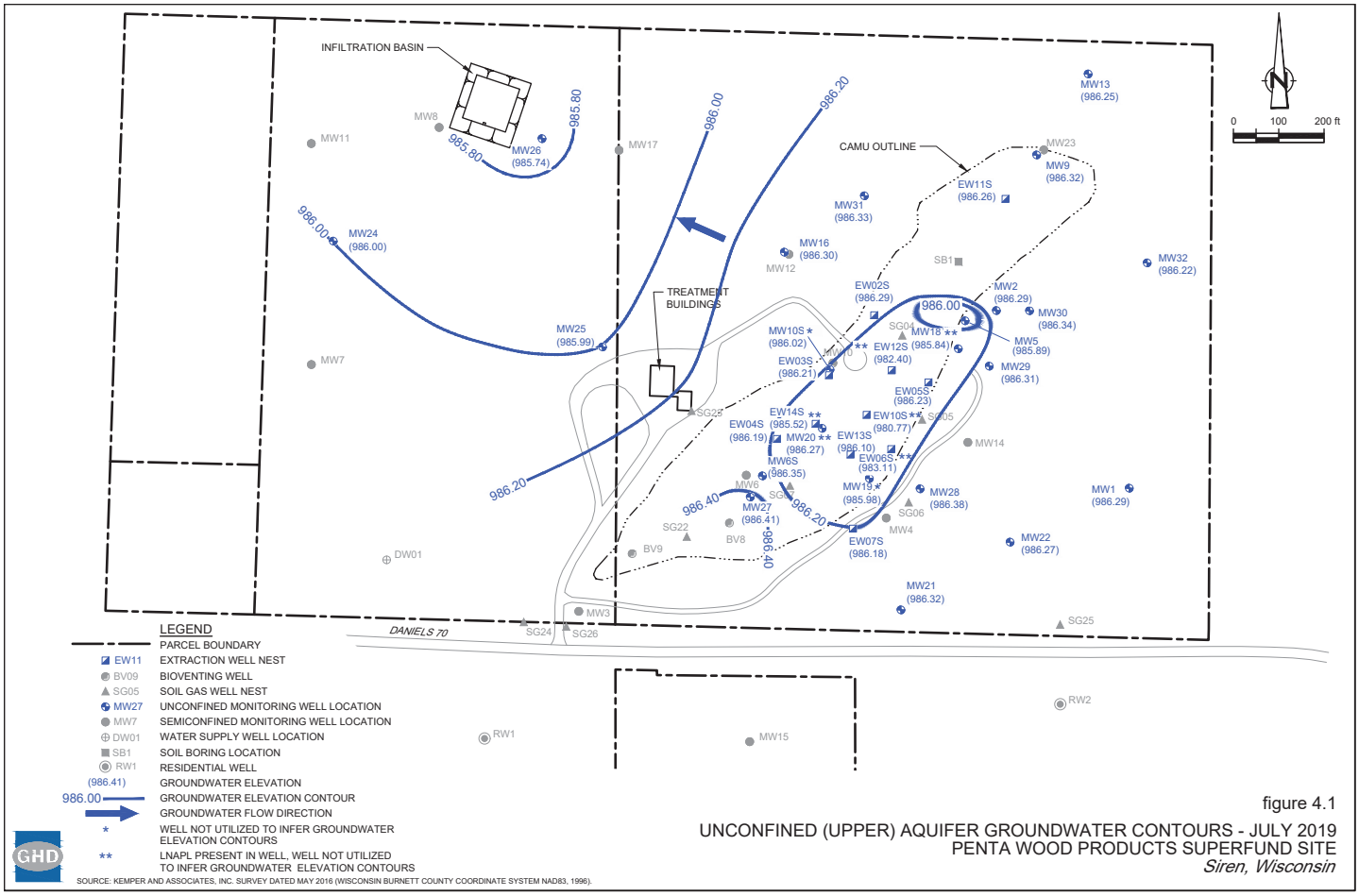


figure 4.1

UNCONFINED (UPPER) AQUIFER GROUNDWATER CONTOURS - JULY 2019
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin

N:\CA\Waterloo\Legacy\CAD\drawings\86000s\86165\86165-REPORTS\86165-06(020)\86165-06(020)GN\86165-06(020)GN-WA001.DWG Plot Date: FEB 21, 2020

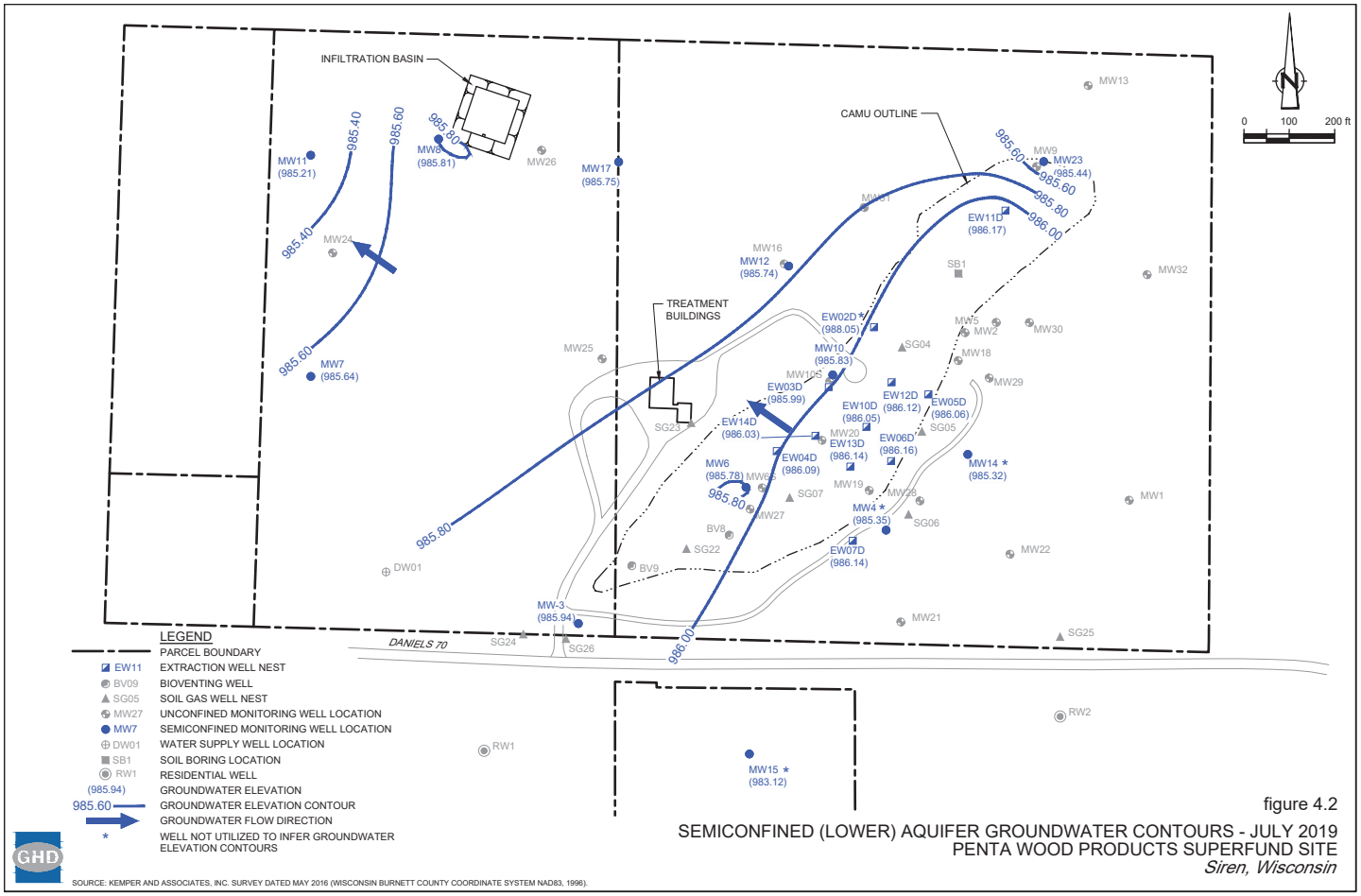


figure 4.2

SEMICONFINED (LOWER) AQUIFER GROUNDWATER CONTOURS - JULY 2019
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin

SOURCE: KEMPER AND ASSOCIATES, INC. SURVEY DATED MAY 2016 (WISCONSIN BURNETT COUNTY COORDINATE SYSTEM NAD83, 1996).

N:\CA\Waterloo\Legacy\CAD\drawings\86000s\86165\86165-REPORTS\86165-06(020)\86165-06(020)GN\86165-06(020)GN-WA002.DWG Plot Date: FEB 21, 2020

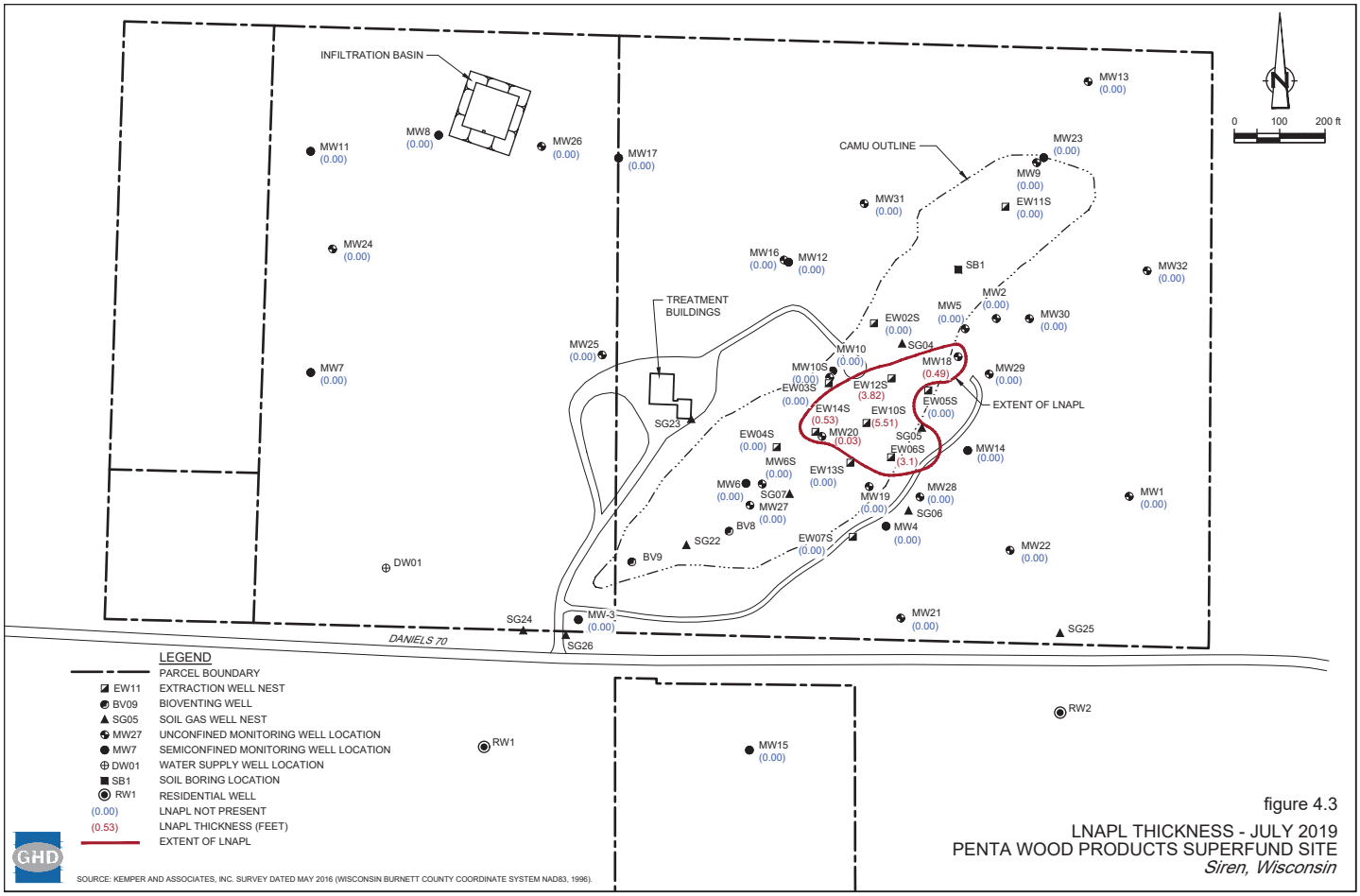


figure 4.3

LNAPL THICKNESS - JULY 2019
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin

N:\CA\Waterloo\Legacy\CAD\drawings\86000s\86165\86165-REPORTS\86165-06(020)\86165-06(020)GN\86165-06(020)GN-WA003.DWG Plot Date: FEB 21, 2020

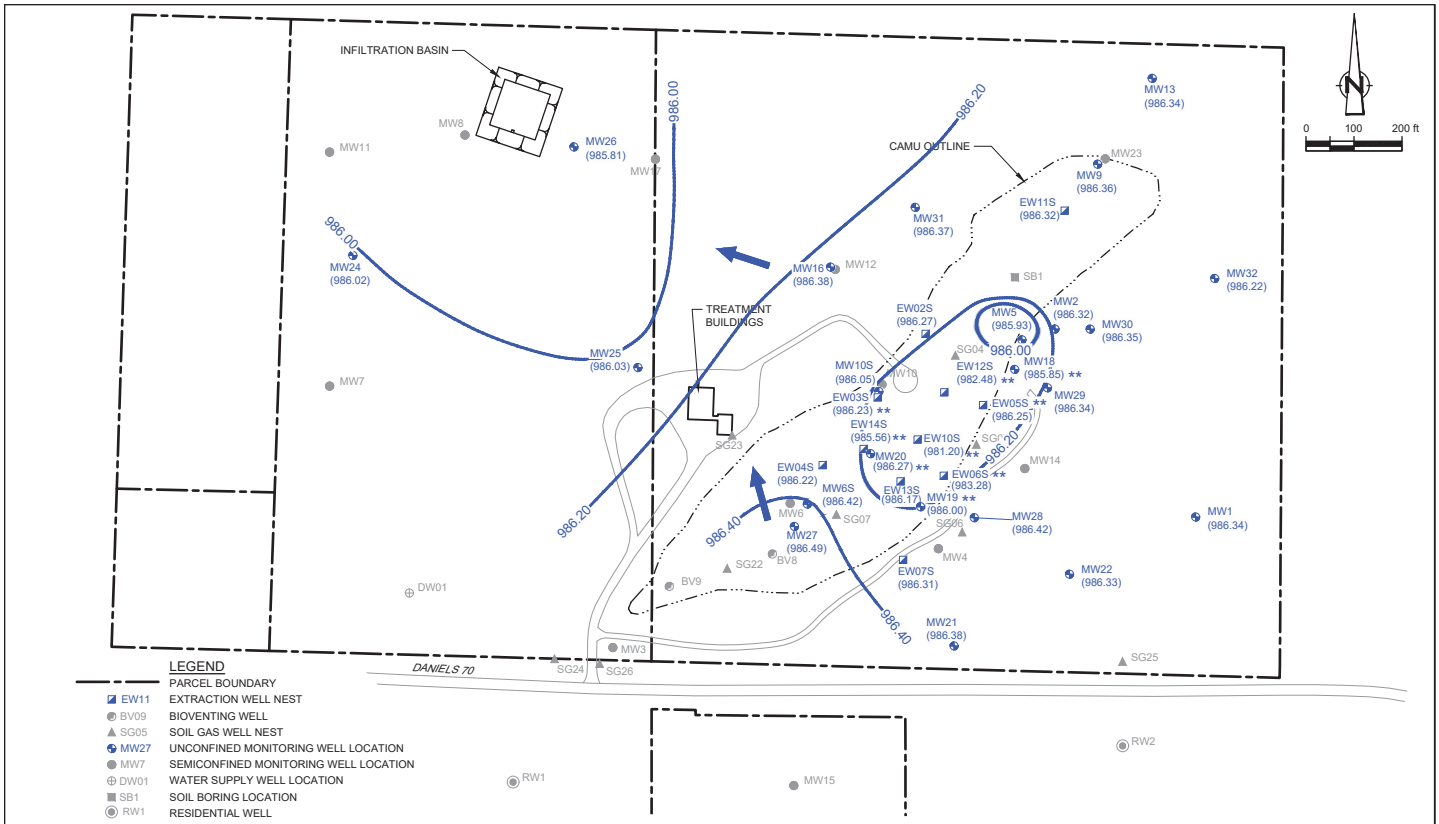


figure 4.4

UNCONFINED (UPPER) AQUIFER GROUNDWATER CONTOURS - OCTOBER 2019
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin

N:\CA\Waterloo\Legacy\CAD\drawings\86000s\86165\86165-REPORTS\86165-06(020)\86165-06(020)GN\86165-06(020)GN-WA004.DWG Plot Date: FEB 21, 2020

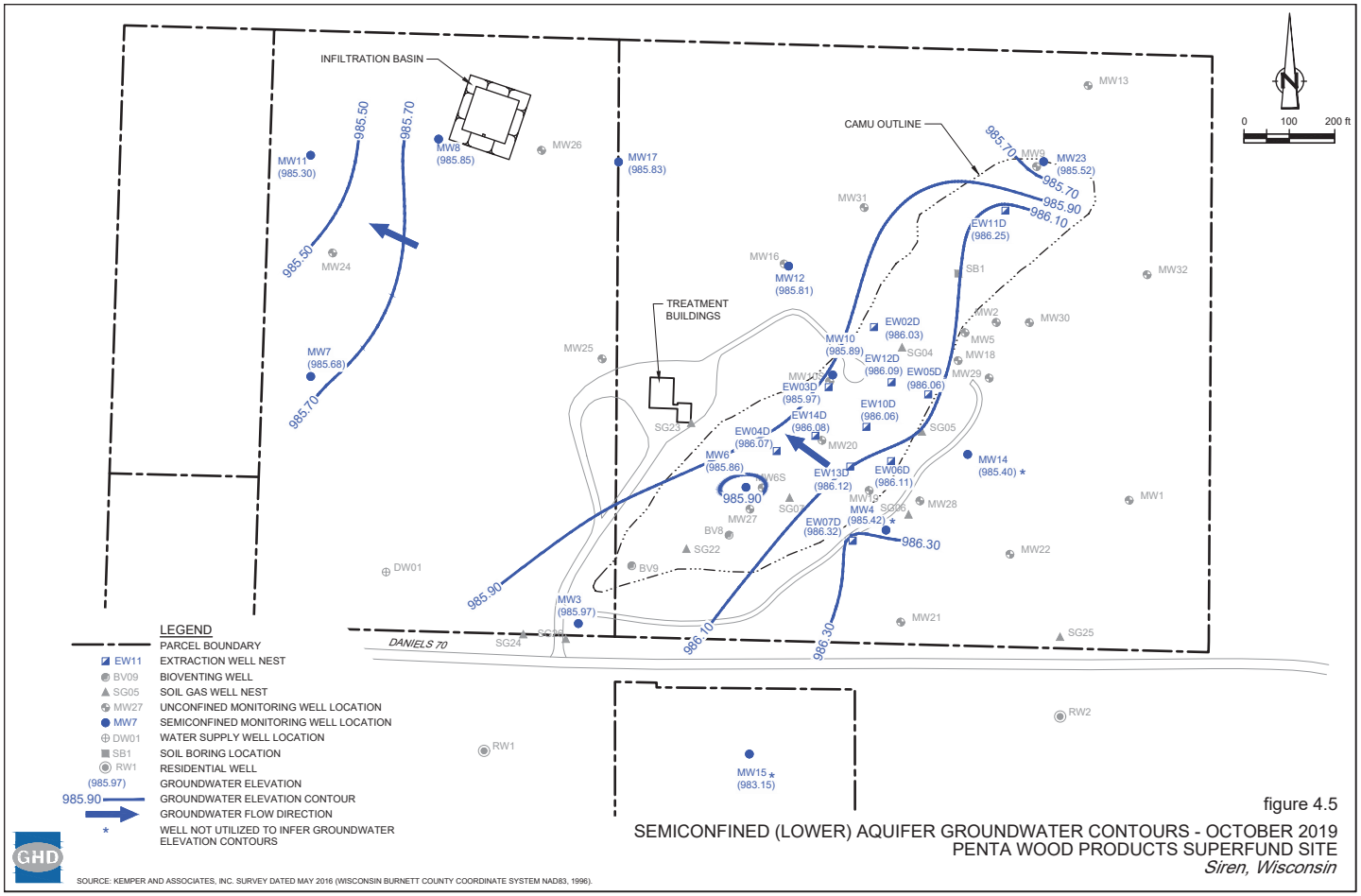


figure 4.5

SEMICONFINED (LOWER) AQUIFER GROUNDWATER CONTOURS - OCTOBER 2019
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin

SOURCE: KEMPER AND ASSOCIATES, INC. SURVEY DATED MAY 2016 (WISCONSIN BURNETT COUNTY COORDINATE SYSTEM NAD83, 1996).

N:\CA\Waterloo\Legacy\CAD\drawings\86000s\86165\86165-REPORTS\86165-06(020)\86165-06(020)GN\86165-06(020)GN-WA005.DWG Plot Date: FEB 21, 2020

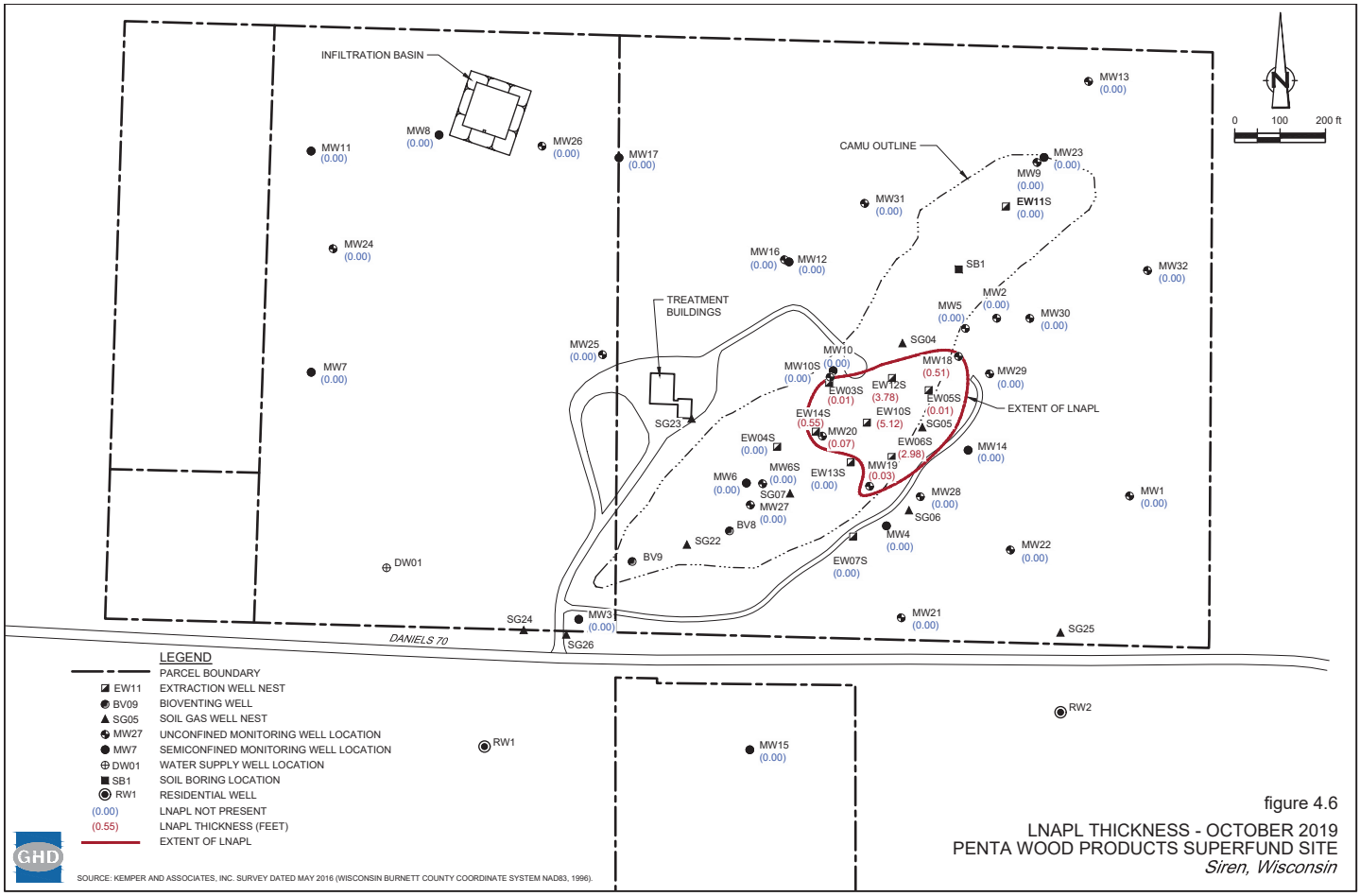
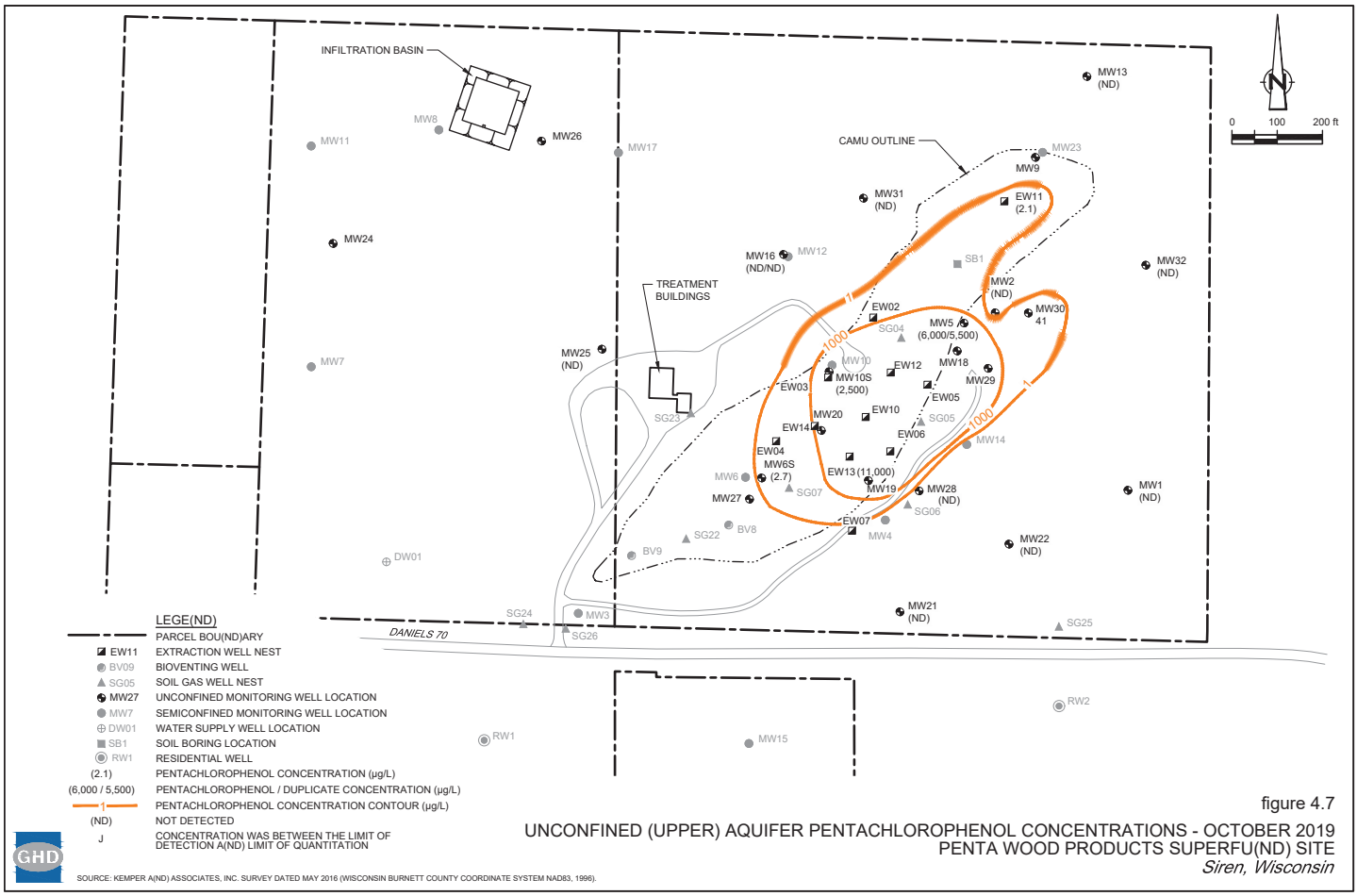


figure 4.6

LNAPL THICKNESS - OCTOBER 2019
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin

N:\CA\Waterloo\Legacy\CAD\drawings\86000s\86165\86165-REPORTS\86165-06(020)\86165-06(020)GN\86165-06(020)GN-WA006.DWG Plot Date: FEB 19, 2020

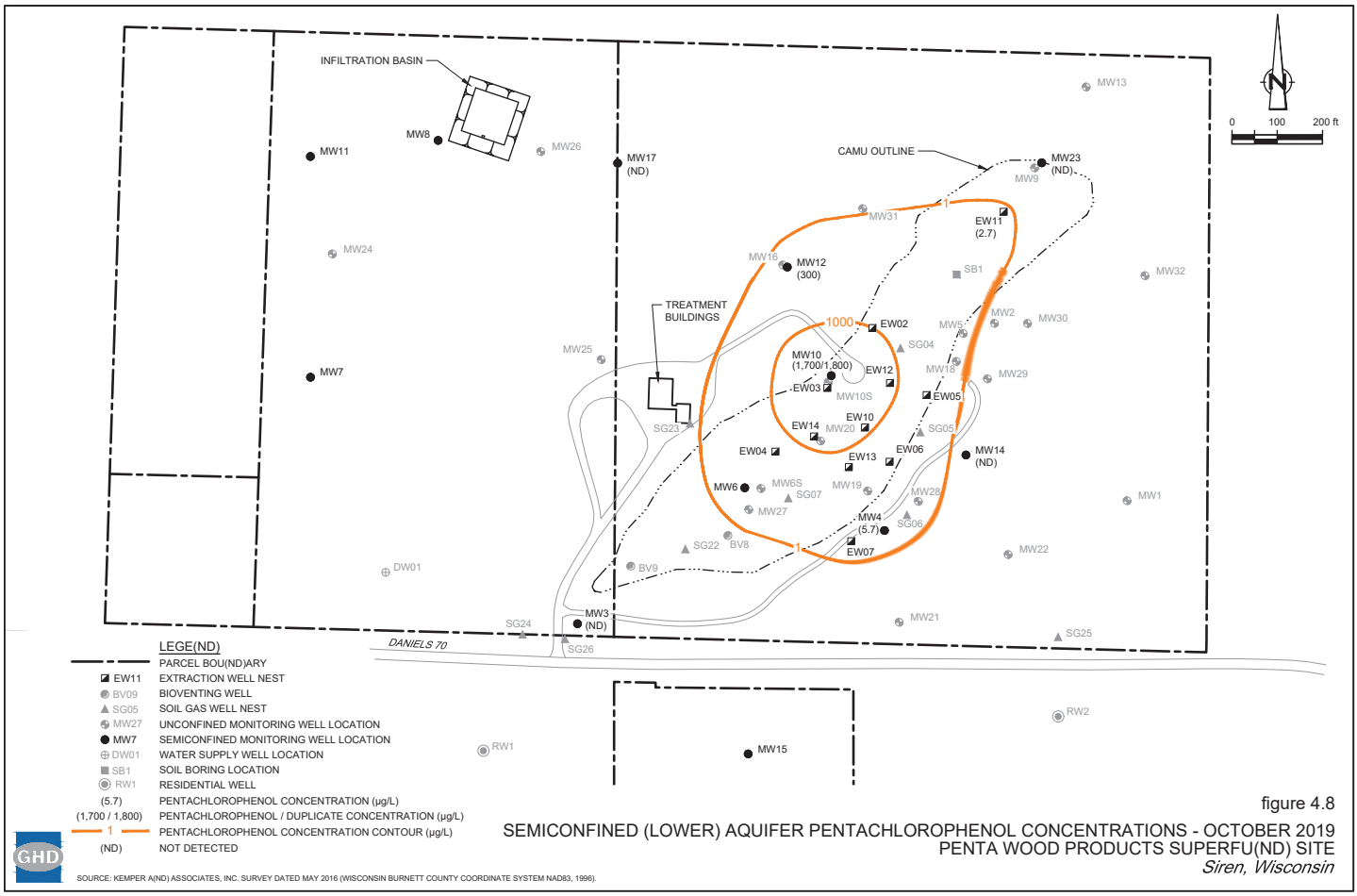


SOURCE: KEMPER A(ND) ASSOCIATES, INC. SURVEY DATED MAY 2016 (WISCONSIN BURNETT COUNTY COORDINATE SYSTEM NAD83, 1996).

figure 4.7

UNCONFINED (UPPER) AQUIFER PENTACHLOROPHENOL CONCENTRATIONS - OCTOBER 2019
PENTA WOOD PRODUCTS SUPERFU(ND) SITE
Siren, Wisconsin

N:\CA\Waterloo\Legacy\CAD\drawings\86000s\86165\86165-REPORTS\86165-06(020)\86165-06(020)GN\86165-06(020)GN-WA007.DWG Plot Date: FEB 19, 2020

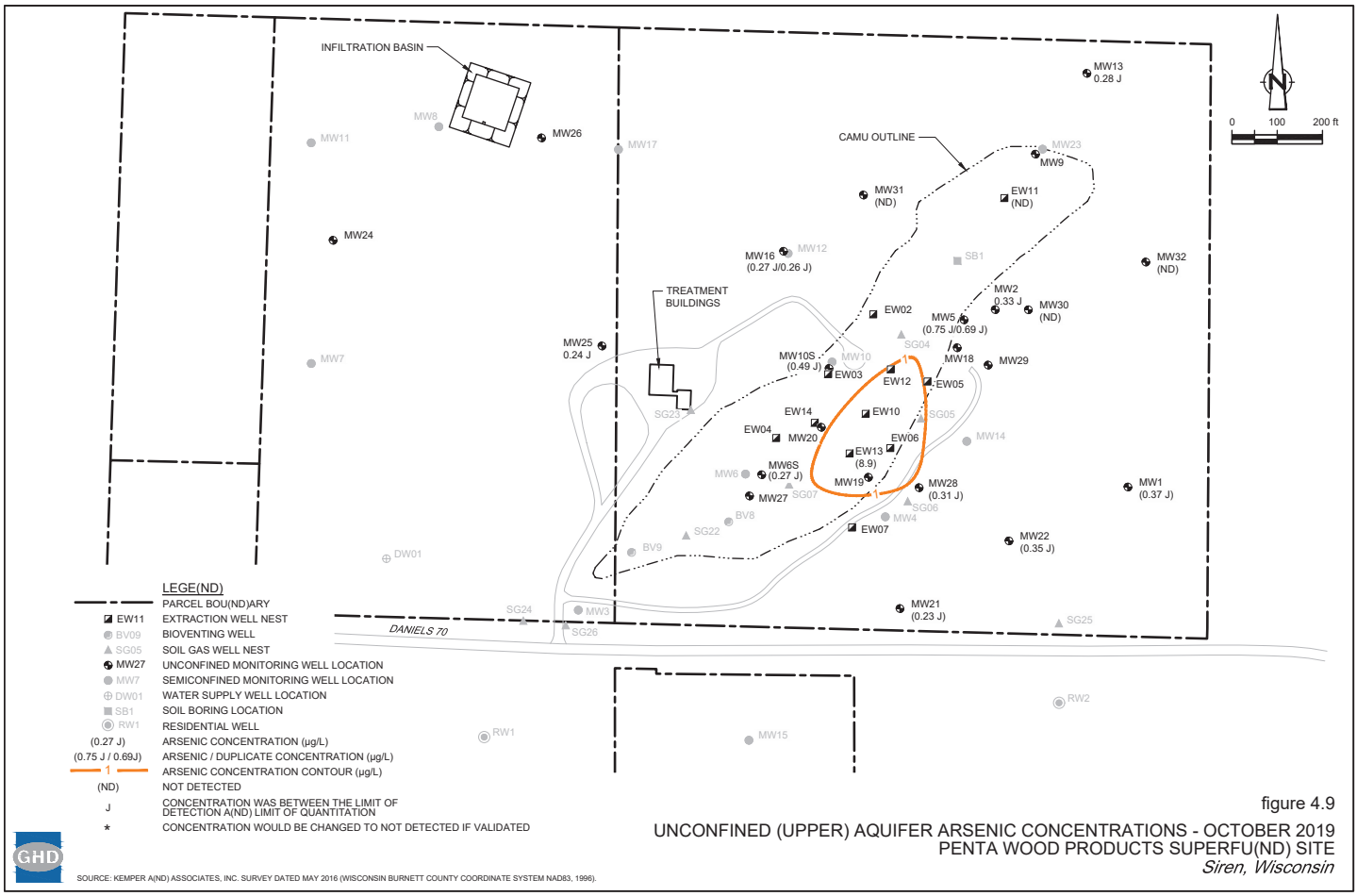


SOURCE: KEMPER A(ND) ASSOCIATES, INC. SURVEY DATED MAY 2016 (WISCONSIN BURNETT COUNTY COORDINATE SYSTEM NAD83, 1996).

figure 4.8

SEMICONFINED (LOWER) AQUIFER PENTACHLOROPHENOL CONCENTRATIONS - OCTOBER 2019
PENTA WOOD PRODUCTS SUPERFU(ND) SITE
Siren, Wisconsin

N:\CA\Waterloo\Legacy\CAD\drawings\86000s\86165\86165-REPORTS\86165-06(020)\86165-06(020)GN\86165-06(020)GN-WA008.DWG Plot Date: FEB 19, 2020

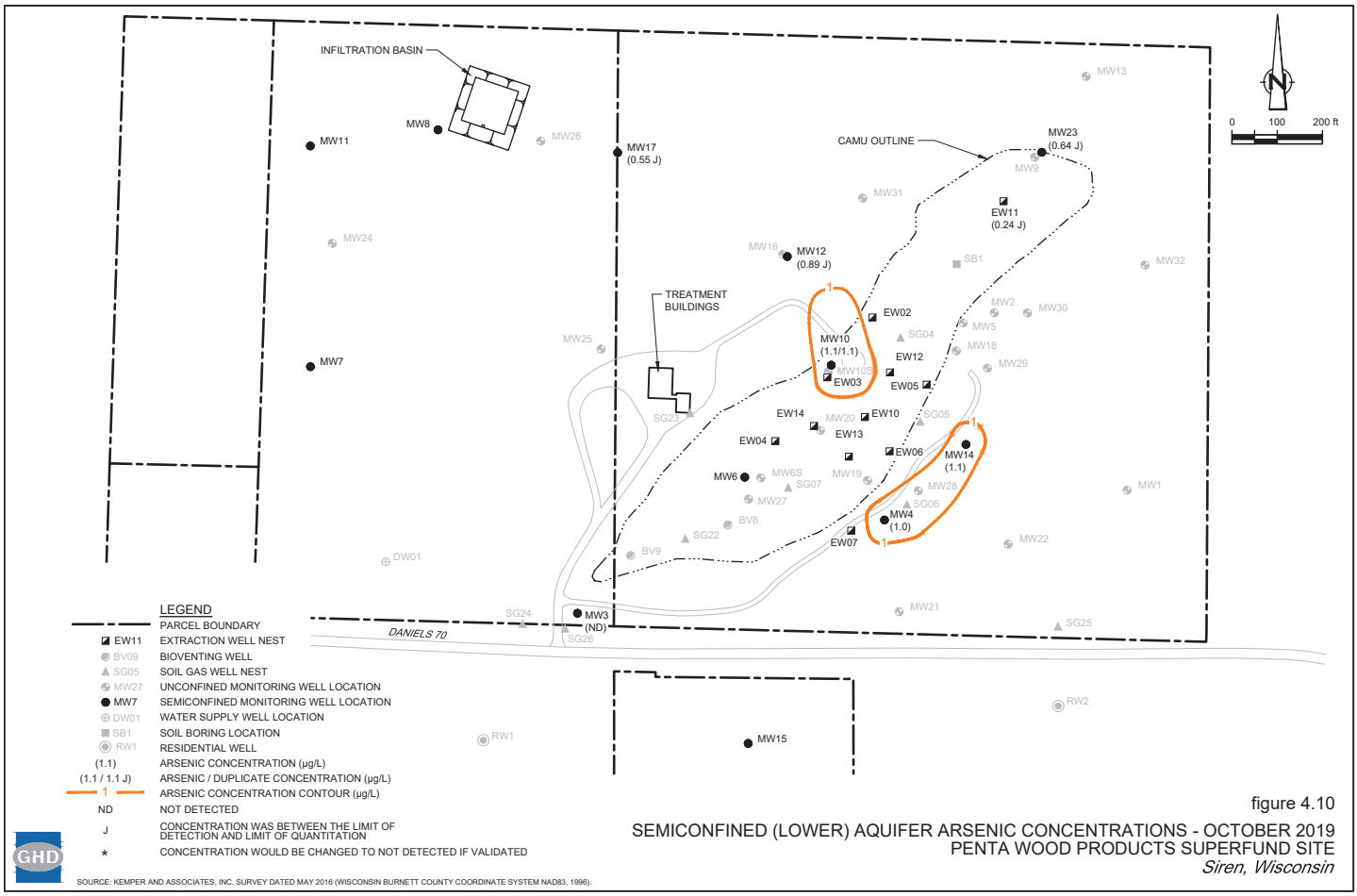


SOURCE: KEMPER A(ND) ASSOCIATES, INC. SURVEY DATED MAY 2016 (WISCONSIN BURNETT COUNTY COORDINATE SYSTEM NAD83, 1996).

figure 4.9

UNCONFINED (UPPER) AQUIFER ARSENIC CONCENTRATIONS - OCTOBER 2019
PENTA WOOD PRODUCTS SUPERFU(ND) SITE
Siren, Wisconsin

N:\CA\Waterloo\Legacy\CAD\drawings\86000s\86165\86165-REPORTS\86165-06(020)\86165-06(020)GN\86165-06(020)GN-WA009.DWG Plot Date: FEB 19, 2020

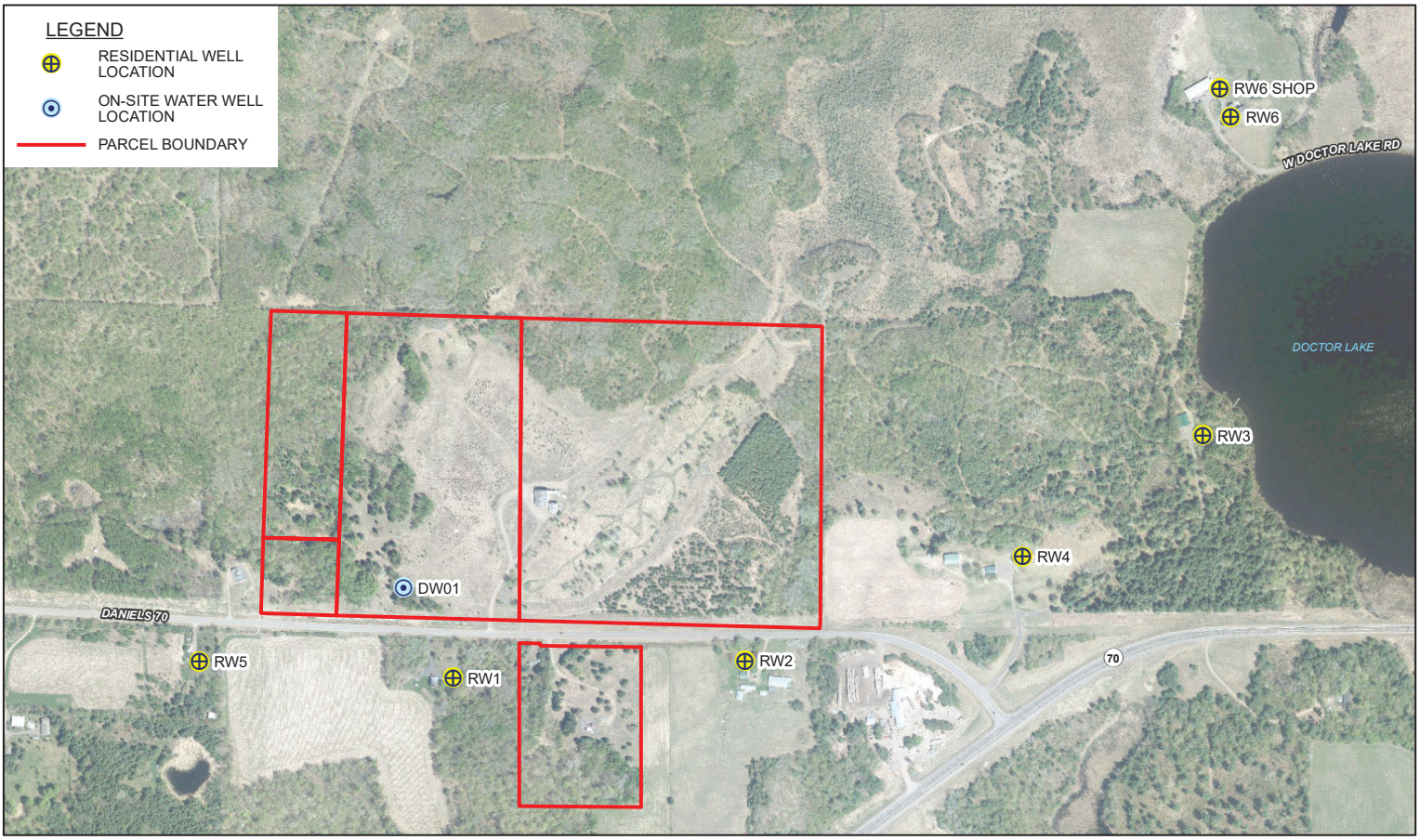


SOURCE: KEMPER AND ASSOCIATES, INC. SURVEY DATED MAY 2016 (WISCONSIN BURNETT COUNTY COORDINATE SYSTEM NAD83, 1996).

figure 4.10

SEMICONFINED (LOWER) AQUIFER ARSENIC CONCENTRATIONS - OCTOBER 2019
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin

N:\CA\Waterloo\Legacy\CAD\drawings\86000s\86165\86165-REPORTS\86165-06(020)\86165-06(020)GN\86165-06(020)GN-WA010.DWG Plot Date: FEB 19, 2020



Source: Burnett County

0 200 400 600 ft

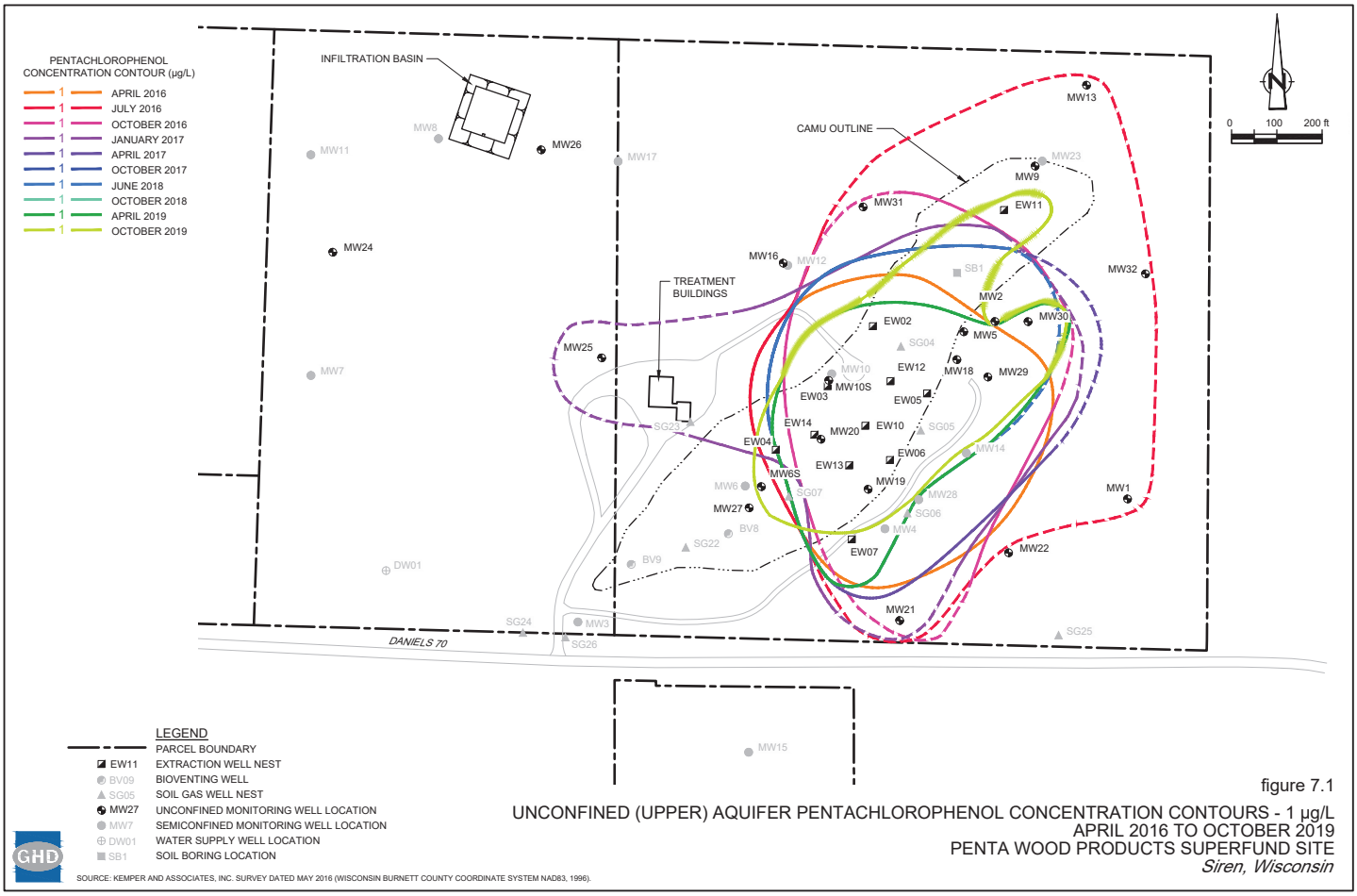
PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN
SEMIANNUAL REPORT

086165-06-11
Jan 29, 2020

RESIDENTIAL WELL LOCATIONS

FIGURE 4.11

GIS File: I:\GIS\Projects\6-chars\08----\0861--\086165\086165-REPORTS\086165-06(020)\086165-06(020)GIS-SP003.mxd



LEGEND

- PARCEL BOUNDARY
- EW11 EXTRACTION WELL NEST
- BV09 BIOVENTING WELL
- SG05 SOIL GAS WELL NEST
- MW27 UNCONFINED MONITORING WELL LOCATION
- MW7 SEMICONFINED MONITORING WELL LOCATION
- DW01 WATER SUPPLY WELL LOCATION
- SB1 SOIL BORING LOCATION

SOURCE: KEMPER AND ASSOCIATES, INC. SURVEY DATED MAY 2016 (WISCONSIN BURNETT COUNTY COORDINATE SYSTEM NAD83, 1996).

figure 7.1

UNCONFINED (UPPER) AQUIFER PENTACHLOROPHENOL CONCENTRATION CONTOURS - 1 µg/L
APRIL 2016 TO OCTOBER 2019
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin

N:\CA\Waterloo\Legacy\CAD\drawings\86000s\86165\86165-REPORTS\86165-06(020)\86165-06(020)GN\86165-06(020)GN-WA011.DWG Plot Date: FEB 21, 2020

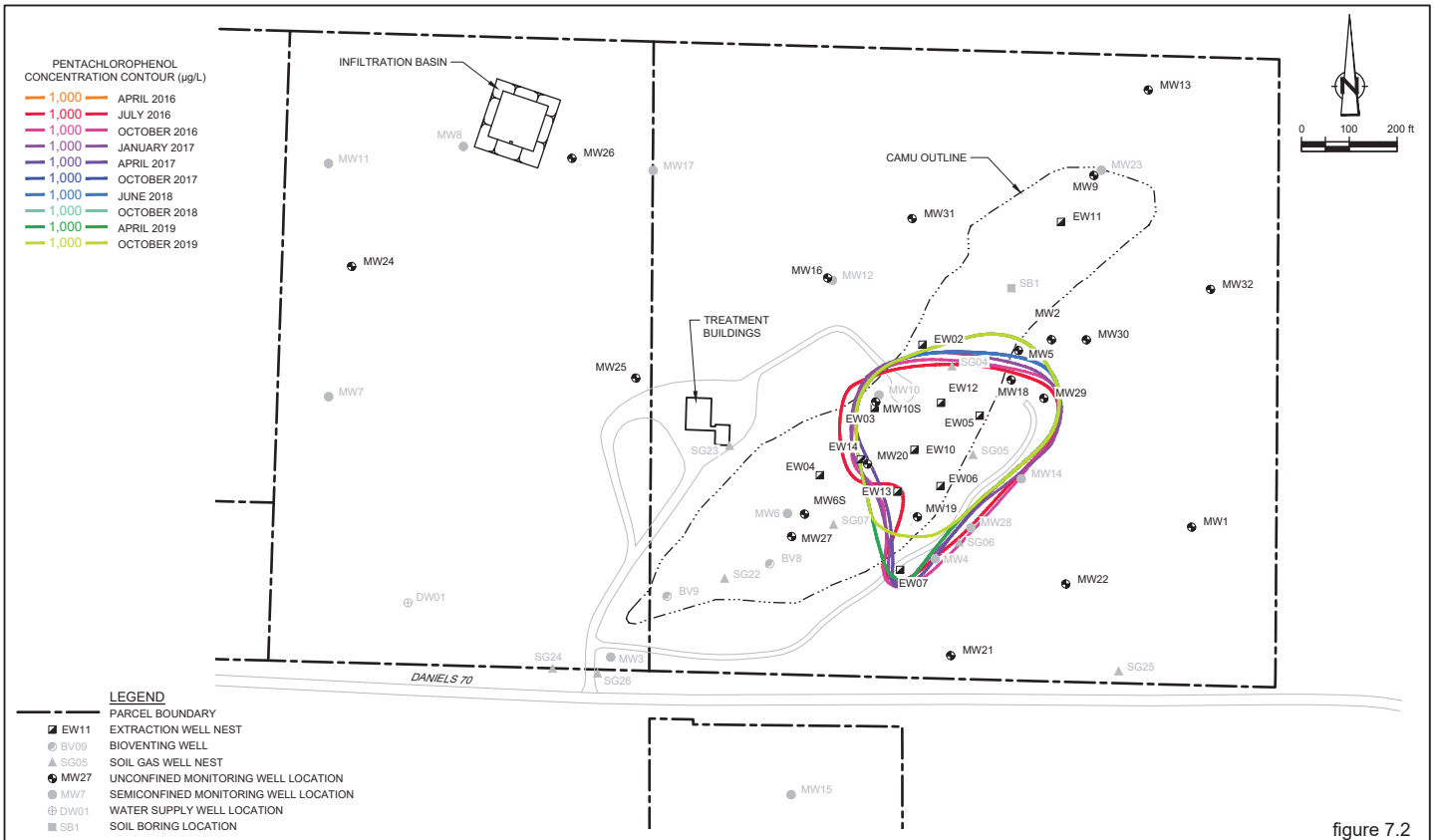
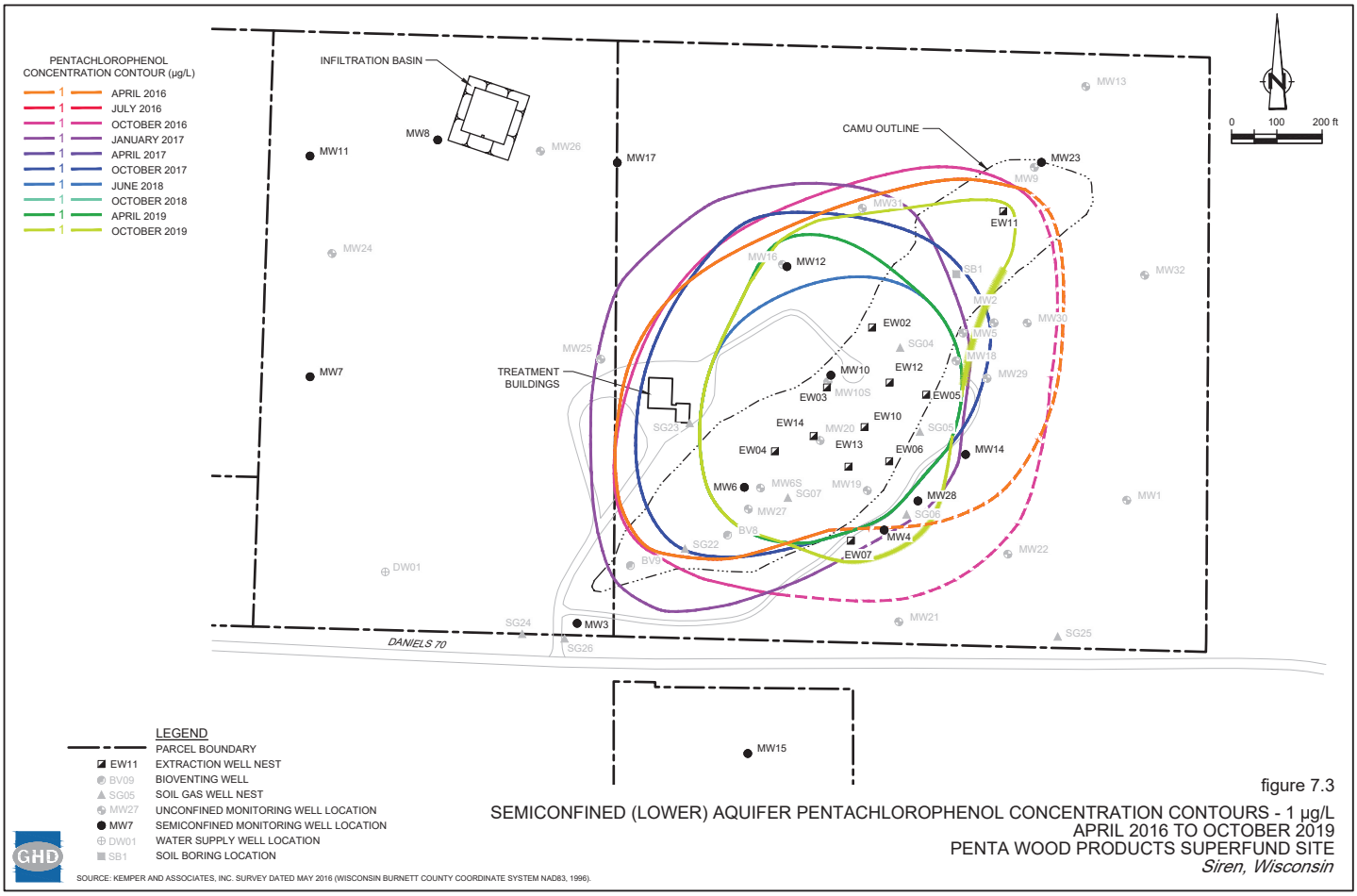


figure 7.2

UNCONFINED (UPPER) AQUIFER PENTACHLOROPHENOL CONCENTRATION CONTOURS - 1,000 µg/L
APRIL 2016 TO OCTOBER 2019
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin

SOURCE: KEMPER AND ASSOCIATES, INC. SURVEY DATED MAY 2016 (WISCONSIN BURNETT COUNTY COORDINATE SYSTEM NAD83, 1996).

N:\CA\Waterloo\Legacy\CAD\drawings\86000s\86165\86165-REPORTS\86165-06(020)\86165-06(020)GN\86165-06(020)GN-WA016.DWG Plot Date: FEB 21, 2020



SOURCE: KEMPER AND ASSOCIATES, INC. SURVEY DATED MAY 2016 (WISCONSIN BURNETT COUNTY COORDINATE SYSTEM NAD83, 1996).

figure 7.3

SEMICONFINED (LOWER) AQUIFER PENTACHLOROPHENOL CONCENTRATION CONTOURS - 1 µg/L
APRIL 2016 TO OCTOBER 2019
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin

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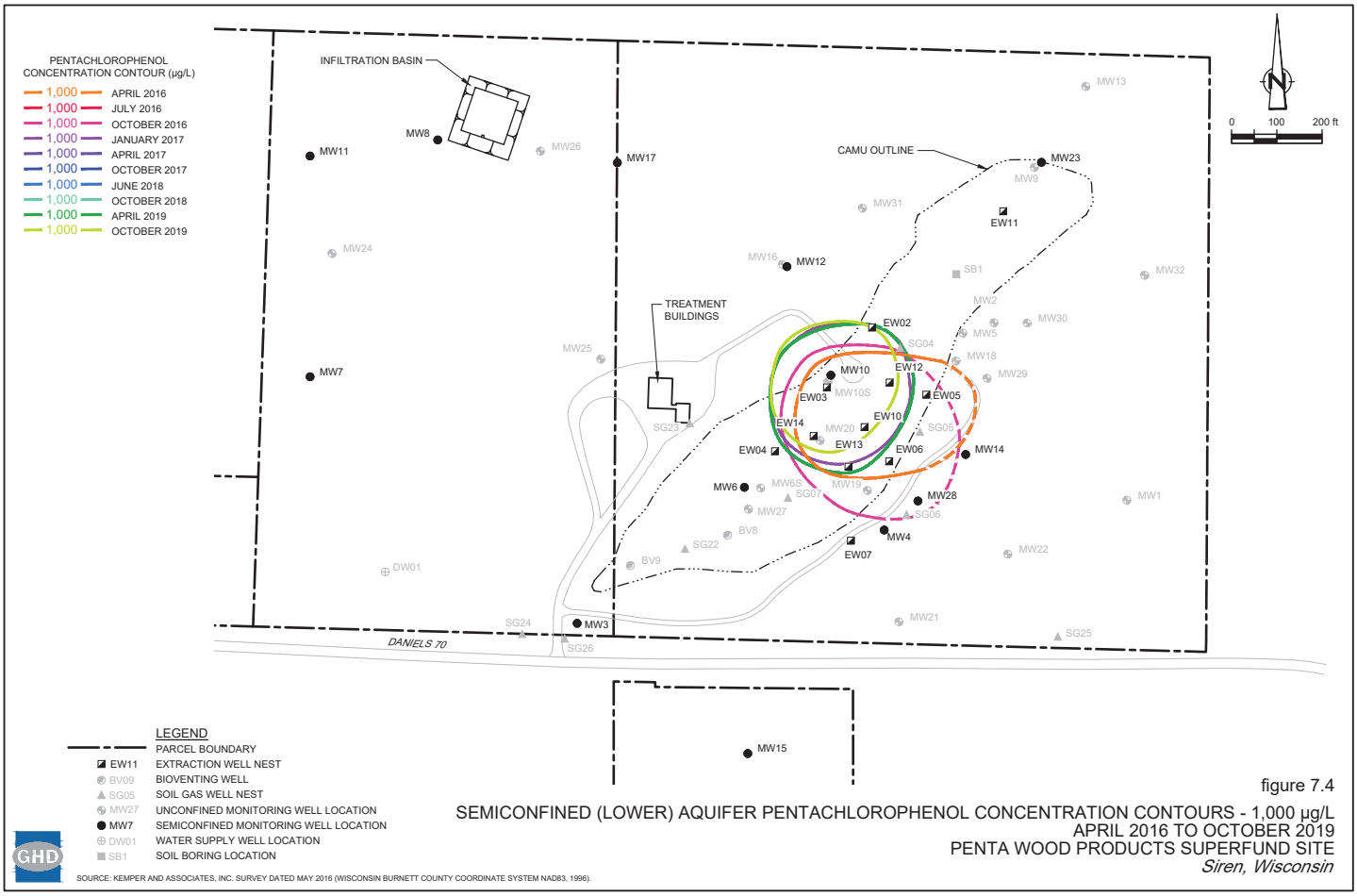
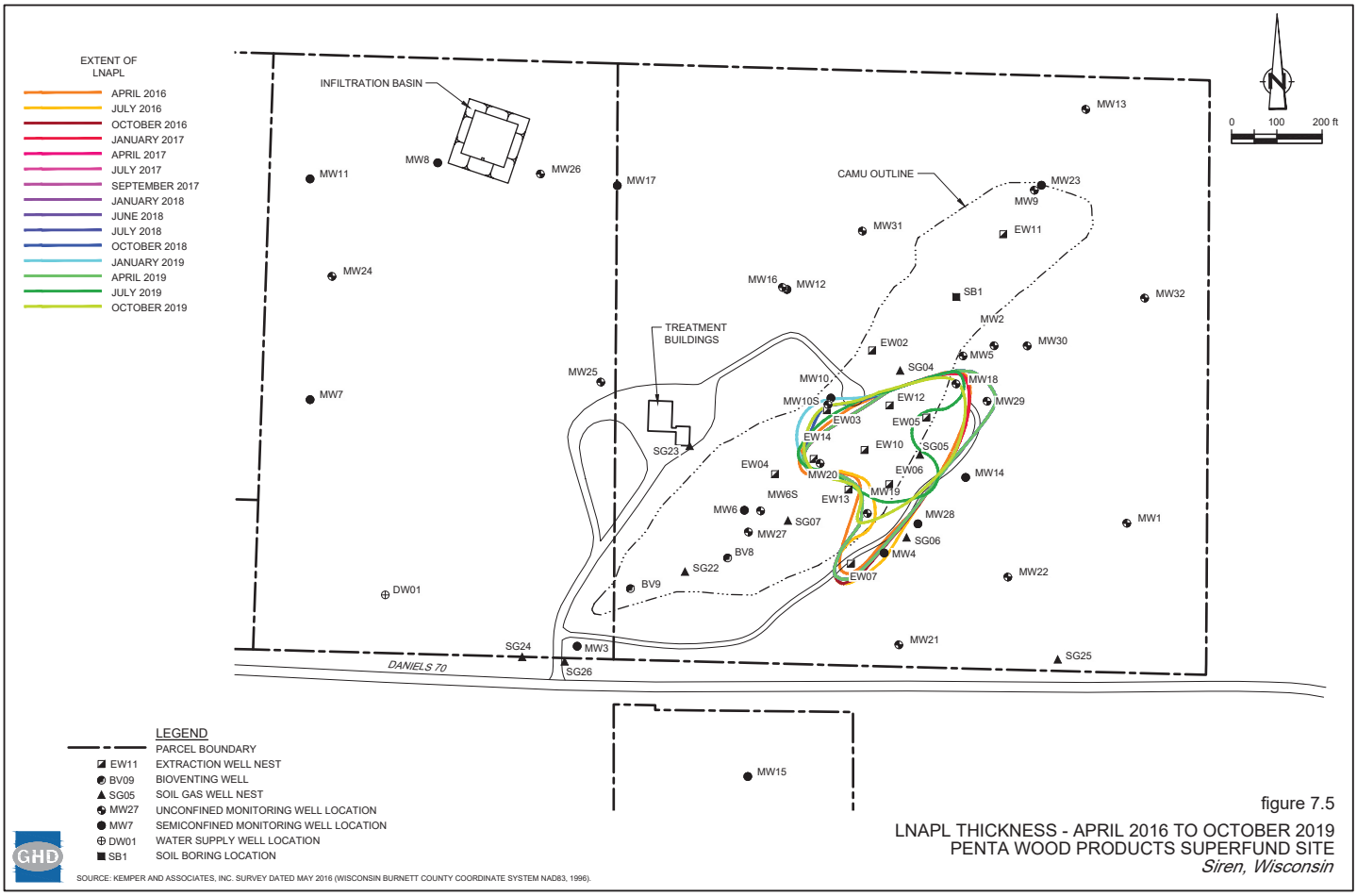


figure 7.4

SEMICONFINED (LOWER) AQUIFER PENTACHLOROPHENOL CONCENTRATION CONTOURS - 1,000 µg/L
APRIL 2016 TO OCTOBER 2019
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin

N:\CA\Waterloo\Legacy\CAD\drawings\86000s\86165\86165-REPORTS\86165-06(020)\86165-06(020)GN\86165-06(020)GN-WA017.DWG Plot Date: FEB 21, 2020



SOURCE: KEMPER AND ASSOCIATES, INC. SURVEY DATED MAY 2016 (WISCONSIN BURNETT COUNTY COORDINATE SYSTEM NAD83, 1996).

figure 7.5

LNAPL THICKNESS - APRIL 2016 TO OCTOBER 2019
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin

N:\CA\Waterloo\Legacy\CAD\drawings\86000s\86165\86165-REPORTS\86165-06(020)\86165-06(020)GN\86165-06(020)GN-WA013.DWG Plot Date: FEB 21, 2020

APPENDIX C – TABLES

TABLE 1
PRELIMINARY REMEDIAL GOALS AND CLEAN UP GOALS FOR CONSTITUENTS OF POTENTIAL CONCERN IN SOIL

RECORD OF DECISION
PENTA WOOD PRODUCTS SITE
TOWN OF DANIELS, WISCONSIN

	Clean up Goals			Parameters Considered in Setting Preliminary Remedial Goals for Soil												
	Shallow Soil		Subsurface Soil	Industrial Site Worker[a]			Industrial Excavation Worker[a]		Residential Adult[a]			Wisconsin ARAR NR 720.11 RCL for Direct Contact[b]		Ecological PRGs		
Compound	Onsite PRG (mg/kg)	Offsite PRG (mg/kg)	Soil Concentration Protective of Groundwater (mg/kg)	Cancer Risks 10^{-6} (mg/kg)	Cancer Risks 10^{-4} (mg/kg)	Noncancer Risks HI=1 (mg/kg)	Cancer Risks 10^{-6} (mg/kg)	Noncancer Risks HI=1 (mg/kg)	Cancer Risks 10^{-6} (mg/kg)	Cancer Risks 10^{-4} (mg/kg)	Noncancer Risks HI=1 (mg/kg)	Nonresidential RCL (mg/kg)	Residential RCL (mg/kg)	Onsite (mg/kg)	Offsite (mg/kg)	Background[c] (mg/kg)
Arsenic	5.2[d]	5.2[d]	NA	1.1	106	171	14	87	0.414	41	80	1.9	0.425	0.25–17.4	0.25–52.2	5.2
Benzene	0.0055[e]	0.0055[e]	0.0055[f]	1.3	129	25	53	43	0.75	75	17.5	98.7	22	--	--	--
Copper	100	100	347	--	--	40,660	--	12,552	--	--	17,095	37,814	2,894	25–115	25–347	17
Ethylbenzene	2.9[e]	2.9[e]	2.9[f]	--	--	4,787	--	6,917	--	--	3,126	102,195	7,821	--	--	--
Fluorene	100[e]	100[e]	100[g]	--	--	8,517	--	7,799	--	--	4,294	40,830	3,129	--	--	--
Isophorone	628	264	--	628	62,754	42,583	14,367	38,996	264	26,367	21,471	3,012	672	--	--	--
Methylnaphthalene	--	--	--	--	--	--	--	--	--		--	--	--	--	--	--
Naphthalene	0.4[e]	0.4[e]	0.4[g]	--	--	8,517	--	7,799	--	--	4,294	40,880	3,129	--	--	--
Pentachlorophenol	2.1	0.9	4.6[h]	2.1	212	2,725	67	3,423	0.92	92	1,413	23.8	5.3	0.037–15.1	0.037–45.5	--
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	1.5[e]	1.5[e]	1.5[f]	--	--	2,656	--	4,367	--	--	1,849	204,346	15,643	--	--	--
Zinc	320	320	8,692	--	--	329,677	--	101,777	--	--	138,608	--	156,429	15–2,897	11–8,692	48
Xylene, Mixture	4.1[e]	4.1[e]	4.1[f]	--	--	425,833	--	389,957	--	--	214,706	306,600	23,464	--	--	--

NA = Not Applicable.

[a] PRGs for industrial workers, excavation workers and residential exposures are based on Region IX PRG approach assuming ingestion, inhalation and dermal exposure routes. See Appendix E, Tables E-1 to E-3.

[b] Wisconsin direct contact PRGs based on EPA RAGS Part B multiple pathway approach for soil ingestion and inhalation and default exposure assumptions presented in NR 720.19.
RCLs for PAHs based on WDNR Guidance Soil Cleanup Levels for PAHs Interim Guidance.

[c] Background not determined for site. Background value is based on the mean of concentrations in soils of the United States.
(Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States, U.S.G.S. Professional Paper 1270, Shacklette and Boerngen, 1984). Background to be determined during pre-design investigations.

[d] Arsenic PRG is background because residential and industrial PRGs are below background. Site specific arsenic background will be determined as part of pre-design studies.

[e] Soil concentration protective of groundwater is the lowest of all the parameters considered.

[f] Soil concentrations protective of groundwater are Wisconsin NR 720.09 Table 1 values for the BTEXs.

[g] Soil concentrations protective of groundwater are based on Wisconsin DNR guidance *Soil Cleanup Levels for PAHs Interim Guidance, April 1997*.

[h] Based on Sommers Model methodology, as presented in the *Draft Report Preliminary Hydrogeologic Investigation Penta Wood Products Site, Roy F. Weston, December 1994*.
Value to be revised based on additional site investigation and treatability study data.

TABLE 2
PRELIMINARY REMEDIAL GOALS AND CLEAN UP GOALS FOR CONSTITUENTS OF POTENTIAL CONCERN IN GROUNDWATER

RECORD OF DECISION
PENTA WOOD PRODUCTS SITE
TOWN OF DANIELS, WISCONSIN

		Parameters Considered in Setting PRGs for Groundwater						
		Federal MCLs		Residential Adult[a]			Wisconsin Groundwater Quality Standards	
Compound	Clean Up Goals (µg/L)	Primary MCL (µg/L)	Secondary MCL[b] (µg/L)	Cancer Risks 10^{-6} (µg/L)	Cancer Risks 10^{-4} (µg/L)	Noncancer Risks HI=1 (µg/L)	Enforcement Standard (µg/L)	Preventive Action Limit (µg/L)
Arsenic	5	50	--	0.045	4	11	50	5
Benzene	0.5	5	--	0.30	30	12.5	5	0.5
Chloride	125,000[b]	--	250,000	--	--	--	250,000[b]	125,000[b]
Copper	130	--	1,000	--	--	1,351	1,300	130
Ethylbenzene	140	700	--	--	--	1,327	700	140
Iron	150[b]	--	300	--	--	--	300[b]	150[b]
Manganese	25[b]	--	50	--	--	5,110	50[b]	25[b]
Naphthalene	8	--	--	--	--	1,460	40	8
Pentachlorophenol	0.1	1.0	--	0.56	56	1,095	1.0	0.1
Toluene	69	1,000	--	--	--	749	343	68.6
Xylene, mixture	124	10,000	--	--	--	73,000	620	124
Zinc	2,500[b]	--	5,000	--	--	10,950	5,000[b]	2,500[b]

" -- " = No criteria.

[a] PRGs for residential exposures are based on ingestion and inhaltion using U.S. EPA Region IX approach for tap water.

[b] Criteria is for public welfare concerns (taste or odor aesthetics).

TABLE 3
SUMMARY OF SITE RISK TO HUMAN HEALTH
POTENTIAL FUTURE SCENARIOS

RECORD OF DECISION
PENTA WOOD PRODUCTS SITE
TOWN OF DANIELS, WISCONSIN

Exposure Scenario	Exposure Route	Medium	Cancer Risks				Hazard Indices			
			Sitewide		Treatment Area		Sitewide		Treatment Area	
			RME	Average	RME	Average	RME	Average	RME	Average
Residential (unconfined wells)	Incidental ingestion	Soil	1.7E-04	1.6E-05	1.3E-02	1.3E-02	0.60	0.23	65	19
	Dermal contact	Soil	1.1E-04	4.9E-06	3.0E-03	1.4E-04	0.07	0.01	2	0.3
	Ingestion	Homegrown produce	5.5E-06	1.0E-06	3.0E-03	5.6E-04	0.19	0.12	13	8.3
	Inhalation	Outdoor air	5.4E-06	1.3E-06	4.4E-06	1.0E-06	--	--	--	--
	Ingestion	Groundwater (MW-10s)[a]	1.4E-01	2.5E-02	1.4E-01	2.5E-02	100	56	100	56
	Dermal contact	Groundwater (MW-10s)[a]	9.1E-01	4.1E-01	9.1E-01	4.1E-01	1,700	1,100	1,700	1,100
TOTAL			1.1E+00	4.4E-01	1.1E+00	4.5E-01	1,900	1,200	1,900	1,200
Residential (semiconfined wells)	Incidental ingestion	Soil	1.7E-04	1.6E-05	1.3E-02	1.3E-02	0.6	0.23	65	19
	Dermal contact	Soil	1.1E-04	4.9E-06	3.0E-03	1.4E-04	0.07	0.01	2	0.3
	Ingestion	Homegrown produce	5.5E-06	1.0E-06	3.0E-03	5.6E-04	0.19	0.12	13	8.3
	Inhalation	Outdoor air	5.4E-06	1.3E-06	4.4E-06	1.0E-06	--	--	--	--
	Ingestion	Groundwater (MW-10s)[a]	2.4E-02	4.0E-03	2.4E-02	4.0E-03	16	8.8	16	8.8
	Dermal contact	Groundwater (MW-10s)[a]	3.4E-01	4.8E-02	3.4E-01	4.8E-02	270	170	270	170
TOTAL			3.6E-01	5.2E-02	3.8E-01	6.6E-02	290	180	370	210
Typical Worker	Incidental ingestion	Soil	1.9E-06	--	1.5E-03	--	0.11	--	8.8	--
	Dermal contact	Soil	3.4E-06	--	9.6E-04	--	0.03	--	0.76	--
	Inhalation	Outdoor Air	3.2E-06	--	2.6E-06	--	--	--	--	--
TOTAL			5.3E-06	--	2.5E-03	--	0.14	--	9.6	--
Construction/Excavation Worker	Incidental ingestion	Soil	3.8E-06	--	--	--	0.56	--	--	--
	Dermal contact	Soil	3.6E-07	--	--	--	0.01	--	--	--
	Inhalation	Outdoor Air	4.2E-06	--	--	--	--	--	--	--
TOTAL			8.4E-06	--	--	--	0.57	--	--	--

Key:
[a]Exposure to groundwater assumes that domestic water is derived from a maximally contaminated well.
-- = Not evaluated.
RME = Reasonable maximum exposure.
BOLD = Indicates calculated risk exceeds 1E-6 or HI exceeds 1.

TABLE 4
SUMMARY OF SITE RISK TO ECOLOGICAL RECEPTORS

RECORD OF DECISION
PENTA WOOD PRODUCTS SITE
TOWN OF DANIELS, WISCONSIN

Receptor	General Location	Contaminant of Concern			
		Pentachlorophenol	Arsenic	Copper	Zinc
Deer Mouse	Onsite Treatment Area	9,750	1,055	1,139	50
	Onsite Nontreatment Area	25	266	0.06	0.34
	Offsite Wooded Area	163	219	6.8	0.34
	Offsite Wetland Area	2.0	47.5	0.8	0.08
Short-tailed Shrew	Onsite Treatment Area	319,100	2,712	2,932	126
	Onsite Nontreatment Area	824	680	1.5	0.09
	Offsite Wooded Area	5,318	561	17.5	0.09
	Offsite Wetland Area	66.5	118.6	2.0	0.20
Raccoon	Onsite Treatment Area	5,238	249	3,993	83
	Onsite Nontreatment Area	13.5	63	2.05	0.06
	Offsite Wooded Area	87.3	52	24	0.06
	Offsite Wetland Area	33.3	11.5	2.79	0.14
American Robin	Onsite Treatment Area	47,409	462	2,597	4,341
	Onsite Nontreatment Area	122	116	1.3	3.3
	Offsite Wooded Area	790	95	16	3.3
	Offsite Wetland Area	10.0	19.8	1.8	7.5

TABLE 5
PRELIMINARY REMEDIAL GOALS FOR CONSTITUENTS OF POTENTIAL CONCERN IN SEDIMENT

RECORD OF DECISION
PENTA WOOD PRODUCTS SITE
TOWN OF DANIELS, WISCONSIN

Compound	Preliminary Remediation Goal (mg/kg)	Parameters Considered in Setting PRGs for Sediment					
		Summary of Concentrations Related to Effects to Benthic Organisms From Four Guidelines[a]		Ecological PRGs Based on Toxicity Reference Values[b]	Washington Sediment Quality Value[c] (mg/kg)	Site-Specific Background (mg/kg)	95% of the Mean Regional Background[d] (mg/kg)
		Lowest Effect Level Median Value (mg/kg)	Severe Effects Level Median Value (mg/kg)				
Arsenic	9.6	9.6	40.5	0.25–52.1	--	1.8	1.77
Pentachlorophenol	0.4	--	--	0.037–1.6	0.36	--	--
Copper	31	31	154	25–347	--	9.6	15.5
Zinc	120	120	428	11.5–8,692	--	31	65

" -- " = No criteria.

[a] Sediment Quality Objectives provided by Tom Janisch/WDNR for Penta Wood Site (WDNR 1998). Guideline sources are Ontario Sediment Quality Guidelines, NOAA Potential for Biological Effects (Long and Morgan), Ingersoll et al. Calculation of Sediment Effect Concentrations, and Smith et al. Sediment Quality Assessment Values.

[b] Ecological PRGs prepared by CH2M HILL, see Appendix E of the FS.

[c] State of Washington criteria.

[d] "Statistical Summary for Stream Sediments of the Rice Lake Quadrangle," USDOE, 1978, National Uranium Resource Evaluation Program.

TABLE 6
PRELIMINARY REMEDIAL GOALS FOR CONSTITUENTS OF POTENTIAL CONCERN IN SURFACE WATER

RECORD OF DECISION
PENTA WOOD PRODUCTS SITE
TOWN OF DANIELS, WISCONSIN

Compound	Preliminary Remediation Goal (µg/L)	Parameters Considered in Setting PRGs for Surface Water						
		Federal Water Quality Criteria		Wisconsin Water Quality Criteria				Great Lakes Water Quality Initiative Chronic Criteria (µg/L)
		Acute Criteria (µg/L)	Chronic Criteria (µg/L)	Threshold Concentration for Taste and Odor (µg/L)	Acute Toxicity Criteria (µg/L)	Chronic Toxicity Criteria (µg/L)	Human Cancer Criteria[a] (µg/L)	
Arsenic	50	360	190	--	340	152	50	1,800
Iron	1,000	--	1,000	--	--	--	--	--
Manganese	--	--	--	--	--	--	--	--
Copper	43[b]	105[b]	57[b]	--	105[b]	57[b]	--	43[b]
Zinc	524[b]	579[b]	524[b]	--	579[b]	524[b]	--	580
Chloride	230,000	860,000	230,000	--	--	--	--	--
Pentachlorophenol	1.8[c]	--	1.8[c]	30	2.1[d]	2.1[e]	--	1.8[c]
Ammonia	--	--	--	--	[f]	--	--	--

" -- " = No criteria.

[a] Human threshold cancer criteria for nonpublic water supply.

[b] Hardness dependent, criterion based on 660 mg/L hardness.

[c] pH dependent, pH 5.68 assumed.

[d] PCP acute toxicity criteria = e (1.0054(pH)-4.877); at pH = 5.68, ATC= 2.1 µg/L (NR 105).

[e] PCP chronic toxicity criteria = e (1.0054(pH)-4.9617); at pH = 5.68, CTC= 2.1 µg/L (NR 105).

[f] Ammonia surface water quality criteria are set for specific discharges based on temperature and pH of the receiving water. NR 104.20 requires ammonia to be less than 3 mg/L in surface water.

APPENDIX D – NOTIFICATION LETTER

Public notices | Employment opportunities

CUSTOMER SERVICE BOOKKEEPER

Starting Pay: $13-15/hour based upon related experience.
20-24 hours per week with flexible schedule.

Attitude and aptitude for learning and retaining information is vital in a confidential environment. Demonstrate a genuine desire to help people through financial management skills.

Responsibilities include: Answering the phone, email and mail. Working with local, state and federal agencies regarding member benefits. **Software used:** Quickbooks, Excel, Word and internet.

Resume and cover letter due by Monday, Nov. 18, 2019.

AVION ACCOUNTING INC
P.O. Box 71 • Siren WI 54872 • rochelle@avion.ws

704144 13-14r,L 3-4a,b

INSTITUTIONAL EFFECTIVENESS TECHNICIAN - FT

WISCONSIN INDIANHEAD TECHNICAL COLLEGE NEW RICHMOND CAMPUS

WITC is seeking applications from qualified candidates for a full-time Institutional Effectiveness Technician. This position will be scheduled 1,950 hours per year and will report to the Institutional Research Analyst and provide direct support for the day-to-day functions for the Institutional Effectiveness Team.

For a complete job description, list of qualifications and to apply, visit our website at: **https://www.witc.edu/about-witc/employment**

Deadline to apply: November 8, 2019

WITC is an Equal Opportunity/Access/Affirmative Action/Veterans/ Disability Employer and Educator

TTY 711

703583 1-2a,c,d,e 12-13L

WISCONSIN INDIANHEAD TECHNICAL COLLEGE

FAMILY FRIENDLY WORKPLACE

Experience. Success.

NOW HIRING

BURNETT DAIRY COOPERATIVE

MAINTENANCE ENGINEER 2ND SHIFT

Burnett Dairy Cooperative is looking to add a full-time member to its maintenance team. This position performs maintenance for the cheese factory buildings, equipment and some grounds work. Employees are required to perform welding, electrical, fabricating and mechanical duties. Must be reliable and able to troubleshoot and work independently in a fast-paced working environment. This is for a PM shift Maintenance Engineer. Hours will vary, may include holidays and weekends. The right person for this position has strong attention to detail, excellent problem-solving skills and takes initiative to get things done. Experience in welding, electrical, fabrication or mechanical troubleshooting is required, experience in all is preferred. If you are diligent and thorough in your work, able to work independently, are self-motivated and have a positive attitude, please apply today!

Must be 18 years old to apply

All positions require drug screen and pre-employment testing.

Apply in person at the Burnett Dairy office, 11631 State Road 70, Grantsburg, WI 54840.

Apply online at Burnettdairy.com or call 715-689-2010 for more information

703423 52-2a-e 11-13L

BURNETT COUNTY EMPLOYMENT OPPORTUNITIES

CUSTODIAN (FILL-IN) **$15.94/HOUR**

Burnett County is accepting applications for a fill-in Custodian with the Maintenance and Grounds Department to fill shifts on an as-needed basis. Individual may be scheduled for 6 a.m. - 2 p.m. or 2 p.m. - 10 p.m. Generally, the schedule is known weeks in advance, occasionally there may be short notice, but the department is flexible. *Applications reviewed upon receipt. Open until filled.*

DEPUTY SHERIFF - MINIMUM HOURLY RATE: $22.50

Full-time benefit-eligible position available with the Burnett County Sheriff's Department. Please visit the Burnett County website for additional details and required application. *Applications reviewed upon receipt. Open until filled.*

LEGAL SECRETARY: **$15.94/HOUR**

Burnett County is accepting applications for a full-time Legal Secretary position with the Burnett County District Attorney's Office. This position assists the District Attorney's Office in clerical operations and duties, with the ability to operate and manage the office unassisted if necessary. *Deadline to apply is November 18, 2019.*

MEAL SITE COOK - RESERVE **$10.50/HOUR**

The Aging and Disability Resource Center of Northwest Wisconsin (ADRC) is currently seeking applications for Reserve Cooks at the Senior Citizen Congregate Dining Sites located in Burnett County. More information can be found on the County's website. *Applications reviewed upon receipt. Open until filled.*

MEAL SITE LEAD COOK **13.50/HOUR**

The Aging and Disability Resource Center of Northwest Wisconsin (ADRC) is currently seeking applications for a lead cook at the Siren Senior Citizen Congregate Dining Site. More information can be found on the County's website. *Applications reviewed upon receipt. Open until filled.*

Burnett County Offers an Incredible Benefit Package! Health, Dental, LTD, Flex Spending, Group and Supplemental Life Insurances, Paid Time Off, Holidays, Deferred Compensation Plans, Wisconsin Retirement, Employee Recognition Program, Employee Achievement Program, Telecommuting Options, Paid Maternity/Paternity Leave, Educational and Tuition Reimbursements, as well as a number of incentives offered through Group Health Trust.

Contact Burnett County Human Resources at 715-349-2181 for more information or visit www.burnettcounty.com for position details and required application - Click on Employment Opportunities!

Burnett County is an Equal Opportunity Employer. 704149 13L

(Nov. 6, 13, 20)

STATE OF WISCONSIN
CIRCUIT COURT
POLK COUNTY

IN THE MATTER OF THE ESTATE OF
David Roy Edling

Notice to Creditors
(Informal Administration)

Case No. 19PR75

PLEASE TAKE NOTICE:

1. An application for informal administration was filed.

2. The decedent, with date of birth June 18, 1957, and date of death December 24, 2017, was domiciled in Dona Ana County, State of New Mexico, with a mailing address of 455 Ithaca Ct., Apt. 401, Las Cruces, NM 88011.

3. All interested persons waived notice.

4. The deadline for filing a claim against the decedent's estate is February 10, 2020.

5. A claim may be filed at the Polk County Courthouse, 1005 W. Main St., Balsam Lake, Wisconsin, Room 500.

Jenell Anderson
Probate Registrar
October 28, 2019

Andrea Edling
4239 Madison Avenue
Trumbull, CT 06611
715-222-9948

704147 WNAXLP

(Nov. 6)

STATE OF WISCONSIN
CIRCUIT COURT
POLK COUNTY

LVNV FUNDING LLC,
C/O Messerli & Kramer P.A.
3033 Campus Drive
Suite 250
Plymouth, MN 55441
Plaintiff(s),

vs.

MARY K. MERRILL,
207 1st W. Ave.
Balsam Lake, WI 54810-9101
Defendant(s),

Publication Summons and Notice
(Small Claims)
Case No. 19SC497

PUBLICATION SUMMONS AND NOTICE OF FILING

TO THE PERSON(S) NAMED ABOVE AS DEFENDANT(S):

You are being sued by the person(s) named above as Plaintiff(s). A copy of the claim has been sent to you at your address as stated in the caption above. The lawsuit will be heard in the following Small Claims court: Polk County Courthouse, 715-485-9299, 1005 West Main Street, Suite 300, Balsam Lake, WI 54810, on the following date and time: November 18, 2019 at 1:30 p.m.

If you do not attend the hearing, the court may enter a judgment against you in favor of the person suing you. A copy of the claim has been sent to you at your address as stated in the caption above. A judgment may be enforced as provided by law. A judgment awarding money may become a lien against any real estate (property) you own now or in the future, and may also be enforced by garnishment or seizure of property.

You may have the option to Answer without appearing in court on the court date by filing a written Answer with the clerk of court before the court date. You must send a copy of your Answer to the Plaintiff(s) named above at their address. You may contact the clerk of court at the telephone number above to determine if there are other methods to answer a Small Claims complaint in that county.

If you require reasonable accommodation due to a disability to participate in the court process, please call at least 10 working days prior to the scheduled court date. Please note that the court does not provide transportation.

Dated October 25, 2019.

Messerli & Kramer PA
Samuel J. Olson
Plaintiff/Attorney
3033 Campus Drive, Suite 250
Plymouth, MN 55441
763-548-7900
Bar No.: 1104219

704018 WNAXLP

YOUTH SERVICES LIBRARIAN

In Milltown

Part Time (29 Hours Per Week), Mon.-Fri., Rotate Sat. For 4 Hrs.

Develops and implements program services to children and adults. Experience working with children; prior library systems preferred. Excellent computer, technology and interpersonal skills. Proficient on social media.

For full job description send email and/or resume to: bonnie@milltownpubliclibrary.org.

704132 13-14L 3-4a,d

(Nov. 6, 13, 20)

STATE OF WISCONSIN
CIRCUIT COURT
POLK COUNTY

Nicholas V. Davis
d/b/a The Law Firm of Williams & Davis
314 Keller Ave. N.
Centuria, WI 54824
Plaintiff,

vs.

Christopher L. Larson
624 Milltown Ave. N.
Milltown, WI 54858
Defendant.

Case No. 19 SC 401

PUBLICATION SUMMONS, MOTION & ORDER FOR HEARING ON CONTEMPT

TO THE PERSON NAMED ABOVE AS DEFENDANT:

You are hereby notified that on August 20, 2019, the Plaintiff filed a Motion & Request for Hearing on Contempt as follows;

1. The creditor was awarded a judgment for money damages under Ch. 799, Wis. Stats., against Christopher L. Larson (D.O.B. 05/18/83) as judgment debtor.

2. A copy of the order for Financial Disclosure Statement was mailed or delivered to the judgment debtor.

3. More than 15 days have elapsed from the date of entry of judgment and the judgment debtor has failed to comply with the order and has given no reason for failure to comply.

THE COURT HAS ISSUED THE FOLLOWING ORDER:

1. The judgment debtor shall appear in person as stated below to answer why the judgment debtor has failed to comply with the Order for Financial Disclosure Statement.

Date & Time: December 9, 2019, at 9:30 a.m.

Location: Polk County Justice Center, Branch 3, 1005 W. Main Street, #300, Balsam Lake, WI 54810, 715-485-9299

2. The judgment creditor must serve the motion and request for hearing on contempt, and this Order for hearing on contempt on the judgment debtor by personal service, unless otherwise authorized by law

3. If the creditor does not appear at this hearing, the Motion may be dismissed.

4. The judgment debtor may avoid appearing at this hearing only by, prior to the hearing date, either paying the judgment in full, including costs and accrued interest, OR delivering an accurate and complete Financial Disclosure Statement to the judgment creditor.

A finding of contempt for nonappearance or failure to comply with the court's order may result in any or all of the following penalties: Imprisonment for up to 6 months, forfeiture of not more than $2,000 per day, any other order necessary to ensure your compliance.

Dated this 31st day of October, 2019.

Nicholas V. Davis, SBN 1078967
Attorney for Plaintiff
The Law Firm of Williams & Davis
314 Keller Ave. N.
Amery, WI 54001

704105 WNAXLP

NOTICE OF MEETING
Village of Frederic

The regular Monthly Village Board Meeting will be held on Monday, November 11, 2019, at 6:30 p.m., at the Village Hall, 110 Oak Street East. Agenda will be posted at the Village Hall.

Janice Schott
Clerk

703994 13L

LR leaderregister.com

PRODUCTION WORKERS WANTED

BURNETT DAIRY COOPERATIVE

Burnett Dairy Cooperative is currently looking to hire full-time employees in the Production plant in our cheese production facility. We are hiring for 1st, 2nd and 3rd shift. All full-time employees are eligible for our full benefits package including health, vision, dental, long-term/short-term disability, paid vacation/sick time, 401(k) with generous company match, profit sharing, employee bonus referrals and discounts!

Must be 17 years old to apply.
All positions require drug screen and pre-employment testing.

Apply in person at the Burnett Dairy office, 11631 State Road 70, Grantsburg, WI 54840

Apply online at Burnettdairy.com, or call 715-689-2010 for more information

703695 1-2a-e 12-13L

ASSOCIATE DEGREE NURSING INSTRUCTOR - FULL TIME

WISCONSIN INDIANHEAD TECHNICAL COLLEGE SUPERIOR CAMPUS

Wisconsin Indianhead Technical College is seeking a learning-focused, creative and dynamic individual for a full-time Associate Degree Nursing Instructor at our Superior Campus. The ideal candidates will demonstrate interest in and potential for excellence in facilitating student learning and development.

WITC Instructors teach in a discipline area in which they have specific training and competence. Instructors are expected to foster learner success, assess learner achievement and continually improve learning opportunities. Instructors teach in a variety of learning environments including face-to-face, online, web conferencing and hybrid classrooms. Instructors are expected to continually improve the overall quality and delivery of learning, including the support of program and collegewide initiatives.

For a complete job description, list of qualifications and to apply visit our website at: https://www.witc.edu/about-witc/employment

Deadline to apply: November 11, 2019

WITC is an Equal Opportunity/Access/Affirmative Action/Veterans/ Disability Employer and Educator

TTY 711

703973 2a,b 13r,L

WISCONSIN INDIANHEAD TECHNICAL COLLEGE

Experience. Success.

EPA

EPA Begins Review
Penta Wood Products Superfund Site
Town of Daniels, Wisconsin

The U.S. Environmental Protection Agency is conducting a five-year review of the PentaWood Products Superfund site on Daniels 70 (formerly state Route 70), about 2 miles west of Siren. The Superfund law requires regular checkups of sites that have been cleaned up – with waste managed on-site – to make sure the cleanup continues to protect people and the environment. This is the fourth five-year review of this site.

EPA's cleanup of pentachlorophenol and arsenic at the former wood treatment facility consisted of:

- installing groundwater extraction wells and a water treatment system
- excavating and moving pentachlorophenol- and arsenic-contaminated soil to an on-site disposal area
- demolishing all buildings and equipment
- stabilizing arsenic-contaminated soil and placing it under a 7-acre cover
- erecting a fence around the cover area.

More information is available at the Larsen Family Public Library, 7401 W. Main St., Webster, Grantsburg Public Library, 415 S. Robert St., and www.epa.gov/superfund/pentawood-products. The review should be completed by January 2020.

The five-year-review report is an opportunity for you to tell EPA about site conditions and any concerns you have. Contact:

Susan Pastor
Community Involvement Coordinator
312-353-1325
pastor.susan@epa.gov

Stephanie Linebaugh
Remedial Project Manager
312-353-2315
linebaugh.stephanie@epa.gov

You may call Region 5 toll-free at 800-621-8431, 8:30 a.m. to 4:30 p.m., weekdays.

704062 13Lp

APPENDIX E – FIVE-YEAR REVIEW SITE INSPECTION CHECKLIST

Site Inspection Checklist

I. SITE INFORMATION	
Site name: **Penta Wood Superfund Site**	**Date of inspection:** **9/30/2019**
Location and Region: **Siren, WI / Region 5**	**EPA ID:** **WID006176946**
Agency, office, or company leading the FYR: EPA	**Weather/temperature:** Raining & Overcast/ 61 Degrees

Remedy Includes: (Check all that apply)

☒ Landfill cover/containment	☐ Monitored natural attenuation
☒ Access controls	☒ Groundwater containment
☒ Institutional controls	☐ Vertical barrier walls
☐ Groundwater pump and treatment	☐ Other: Click or tap here to enter text.
☐ Surface water collection and treatment	

Attachments:

☐ Inspection team roster attached	☐ Site map attached

Site Inspection Checklist

II. INTERVIEWS (Check all that apply)
1. **O&M Site Manager** Name , Title , Click or tap to enter a date. Interviewed: ☐ at site ☐ at office ☐ by phone Phone Number: Click here to enter text. Problems, suggestions: ☐ Report attached Click or tap here to enter text.
2. **O&M Staff** Name , Title , Click or tap to enter a date. Interviewed: ☒ at site ☐ at office ☐ by phone Phone Number: Click here to enter text. Problems, suggestions: ☐ Report attached Click or tap here to enter text.
3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. Agency: WDNR Contact: Phil Richards , Project Manager, 9/30/2019, P: Phone Number Problems, suggestions: ☐ Report attached None Agency: GHD Contact: Tim Ree, Title , 9/30/2019, P: Phone Number Problems, suggestions: ☐ Report attached None Agency: GHD Contact: Ryan Aamot, Title , 9/30/2019, P: Phone Number Problems, suggestions: ☐ Report attached Click or tap here to enter text. Agency: Click or tap here to enter text. Contact: Name , Title , Click or tap to enter a date., P: Phone Number Problems, suggestions: Click or tap here to enter text.
4. **Other Interviews (optional):** ☐ Report attached Click or tap here to enter text.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)			
1. O&M Documents			
☐ O&M manual	☐ Readily available	☒ Up to date	☐ N/A
☐ As-built drawings	☐ Readily available	☐ Up to date	☒ N/A
☐ Maintenance logs	☐ Readily available	☐ Up to date	☒ N/A
Remarks: Click or tap here to enter text.			
2. Site-Specific Health and Safety Plan		☐ Readily available	
☐ Contingency Plan/Emergency Response Plan		☐ Readily available	
Remarks: Click or tap here to enter text.			
3. O&M and OSHA Training Records			
	☐ Readily available	☐ Up to date	☒ N/A
Remarks: Click or tap here to enter text.			
4. Permits and Service Agreements			
☐ Air discharge permit	☐ Readily available	☐ Up to date	☒ N/A
☐ Effluent discharge	☐ Readily available	☐ Up to date	☒ N/A
☐ Waste disposal, POTW	☐ Readily available	☐ Up to date	☒ N/A
☐ Other permits: Click or tap here to enter text.			
Remarks: Click or tap here to enter text.			
5. Gas Generation Records			
	☐ Readily available	☐ Up to date	☒ N/A
Remarks: Click or tap here to enter text.			
6. Settlement Monument Records			
	☐ Readily available	☐ Up to date	☒ N/A
Remarks: Click or tap here to enter text.			
7. Groundwater Monitoring Records			
	☐ Readily available	☒ Up to date	☐ N/A
Remarks: Click or tap here to enter text.			
8. Leachate Extraction Records			
	☐ Readily available	☐ Up to date	☒ N/A
Remarks: Click or tap here to enter text.			

9. Discharge Compliance Records

☐ Air ☐ Readily available ☐ Up to date ☒ N/A

☐Water (effluent) ☐ Readily available ☐ Up to date ☒ N/A

Remarks: Click or tap here to enter text.

10. Daily Access/Security Logs

☐ Readily available ☐ Up to date ☒ N/A

Remarks: The Site is fenced and locked and not normally manned.

IV. O&M COSTS

1. O&M Organization

☐ State in-house ☒ Contractor for State

☐ PRP in-house ☐ Contractor for PRP

☐ Federal Facility in-house ☐ Contractor for Federal Facility

Remarks: Click or tap here to enter text.

2. O&M Cost Records

☐Readily available ☐ Up to date ☐ Funding mechanism/agreement in place

Original O&M cost estimate Click or tap here to enter text. ☐ Breakdown attached

Total annual cost by year for review period if available

From	To	Total cost	
Click or tap to enter a date.	Click or tap to enter a date.	Click or tap here to enter text.	☐ Breakdown attached
From	To	Total cost	
Click or tap to enter a date.	Click or tap to enter a date.	Click or tap here to enter text.	☐ Breakdown attached
From	To	Total cost	
Click or tap to enter a date.	Click or tap to enter a date.	Click or tap here to enter text.	☐ Breakdown attached
From	To	Total cost	
Click or tap to enter a date.	Click or tap to enter a date.	Click or tap here to enter text.	☐ Breakdown attached
From	To	Total cost	
Click or tap to enter a date.	Click or tap to enter a date.	Click or tap here to enter text.	☐ Breakdown attached

3. Unanticipated or Unusually High O&M Costs During Review Period

Describe costs and reasons:

Click or tap here to enter text.

V. ACCESS AND INSTITUTIONAL CONTROLS

☐ Applicable ☐ N/A

1. Fencing Damaged ☒ Location shown on site map ☒ Gates secured ☐ N/A

Remarks: Site inspection identified 2 locations in fence that need repair along Mississippi River where trees had fallen on the fence

2. Other Access Restrictions ☐ Location shown on site map ☒ Gates secured

Remarks: Click or tap here to enter text.

3. Institutional Controls (ICs)

A. Implementation and Enforcement

Site conditions imply ICs not properly implemented	☐ Yes	☒ No	☐ N/A
Site conditions imply ICs not being fully enforced	☐ Yes	☒ No	☐ N/A
Type of monitoring (*e.g.*, self-reporting, drive by)	In accordance with O&M Plan		
Frequency	In accordance with O&M Plan		
Responsible party/agency	State		
Contact: Name , Title , Click or tap to enter a date., P: Phone Number			
Reporting is up-to-date	☐ Yes	☐ No	☐ N/A
Reports are verified by the lead agency	☐ Yes	☐ No	☐ N/A
Specific requirements in deed or decision documents have been met	☐ Yes	☐ No	☐ N/A
Violations have been reported	☐ Yes	☐ No	☐ N/A

Other problems or suggestions:

Click or tap here to enter text.

B. Adequacy ☒ ICs are adequate ☐ ICs are inadequate ☐ N/A

Remarks: Click or tap here to enter text.

4. General

A. Vandalism/Trespassing ☐ Location shown on site map ☒ No vandalism evident

Remarks: Click or tap here to enter text.

B. Land use changes on site ☒ N/A

Remarks: Click or tap here to enter text.

C. Land use changes off site ☒ N/A

Remarks: Click or tap here to enter text.

VI. GENERAL SITE CONDITIONS

1. Roads ☐ Applicable ☒ N/A

A. Roads damaged ☐ Location shown on site map ☐ Roads adequate ☐ N/A

Remarks: Click or tap here to enter text.

B. Other Site Conditions

Remarks: Click or tap here to enter text.

VII. LANDFILL COVERS

1. Landfill Surface ☒ Applicable ☐ N/A

A. Settlement (Low Spots) ☐ Location Shown on Site Map ☒ Settlement Not Evident

Areal Extent: Click or tap here to enter text. Depth: Click or tap here to enter text.

Remarks: Click or tap here to enter text.

B. Cracks ☐ Location Shown on Site Map ☒ Cracking Not Evident

Lengths: Click or tap here to enter text. Widths: Click or tap here to enter text. Depths: Click or tap here to enter text.

Remarks: Click or tap here to enter text.

C. Erosion ☐ Location Shown on Site Map ☒ Erosion Not Evident

Areal Extent: Click or tap here to enter text. Depth: Click or tap here to enter text.

Remarks: Click or tap here to enter text.

D. Holes ☐ Location Shown on Site Map ☒ Holes Not Evident

Areal Extent: Click or tap here to enter text. Depth: Click or tap here to enter text.

Remarks: Click or tap here to enter text.

E. Vegetative Cover ☒ Grass ☒ Cover Properly Established

☒ Tress/Shrubs (indicate size and locations on a diagram ☒ No Signs of Stress

Remarks: Click or tap here to enter text.

F. Alternative Cover (armored rock, concrete, etc.) ☐ N/A

Remarks: Click or tap here to enter text.

G. Bulges ☐ Location Shown on Site Map ☒ Bulges Not Evident

Areal Extent: Click or tap here to enter text. Height: Click or tap here to enter text.

Remarks: Click or tap here to enter text.

H. Wet Areas/Water Damage ☒ Wet Areas/Water Damage Not Evident

☐ Wet Areas	☐ Location Shown on Site Map	Areal Extent: Click or tap here to enter text.
☐ Ponding	☐ Location Shown on Site Map	Areal Extent: Click or tap here to enter text.
☐ Seeps	☐ Location Shown on Site Map	Areal Extent: Click or tap here to enter text.
☐ Soft Subgrade	☐ Location Shown on Site Map	Areal Extent: Click or tap here to enter text.

Remarks: Click or tap here to enter text.

I. Slope Instability ☐ Location Shown on Site Map ☒ Slope Instability Not Evident

☐ Slides Areal Extent: Click or tap here to enter text.

Remarks: Click or tap here to enter text.

2. Benches ☐ Applicable ☒ N/A

(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)

A. Flows Bypass Bench ☐ Location Shown on Site Map ☐ N/A or Okay

Remarks: Click or tap here to enter text.

B. Bench Breached ☐ Location Shown on Site Map ☐ N/A or Okay

Remarks: Click or tap here to enter text.

C. Bench Overtopped ☐ Location Shown on Site Map ☐ N/A or Okay

Remarks: Click or tap here to enter text.

3. Letdown Channels ☒ Applicable ☒ N/A

(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)

A. Settlement ☐ Location Shown on Site Map ☒ Settlement Not Evident

Areal Extent: Click or tap here to enter text. Depth: Click or tap here to enter text.

Remarks: Click or tap here to enter text.

B. Material Degradation ☐ Location Shown on Site Map ☒ Degradation Not Evident

Material Type: Click or tap here to enter text. Areal Extent: Click or tap here to enter text.

Remarks: Click or tap here to enter text.

C. Erosion ☐ Location Shown on Site Map ☒ Erosion Not Evident

Areal Extent: Click or tap here to enter text. Depth: Click or tap here to enter text.

Remarks: Click or tap here to enter text.

D. Undercutting ☐ Location Shown on Site Map ☒ Undercutting Not Evident

Areal Extent: Click or tap here to enter text. Depth: Click or tap here to enter text.

Remarks: Click or tap here to enter text.

E. Obstructions ☐ Location Shown on Site Map ☒ Undercutting Not Evident

Type: Click or tap here to enter text.

Areal Extent: Click or tap here to enter text. Size: Click or tap here to enter text.

Remarks: Click or tap here to enter text.

F. Excessive Vegetative Growth ☐ Location Shown on Site Map ☒ Excessive Growth Not Evident

Areal Extent: Click or tap here to enter text. ☐ Vegetation in channels does not obstruct flow

Remarks: Click or tap here to enter text.

4. Cover Penetrations ☒ Applicable ☐ N/A

A. Gas Vents ☐ Active ☐ Passive

☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled

☐ Good condition ☐ Evidence of leakage at penetration

☐ Needs Maintenance ☐ N/A

Remarks: Click or tap here to enter text.

B. Gas Monitoring Probes

☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled

☐ Good condition ☐ Evidence of leakage at penetration

☐ Needs Maintenance ☐ N/A

Remarks: Click or tap here to enter text.

C. Monitoring Wells

☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled

☒ Good condition ☐ Evidence of leakage at penetration

☐ Needs Maintenance ☐ N/A

Remarks: Click or tap here to enter text.

D. Leachate Extraction Wells

☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled

☐ Good condition ☐ Evidence of leakage at penetration

☐ Needs Maintenance ☒ N/A

Remarks: Click or tap here to enter text.

E. Settlement Monuments ☐ Located ☐ Routinely Surveyed ☒ N/A

Remarks: Click or tap here to enter text.

5. Gas Collection and Treatment ☐ Applicable ☒ N/A

A. Gas Treatment Facilities

☐ Flaring ☐ Thermal Destruction ☐ Collection for Reuse

☐ Good condition ☐ Needs Maintenance

Remarks: Click or tap here to enter text.

B. Gas Collection Wells, Manifolds, and Piping

☐ Good condition ☐ Needs Maintenance ☐ N/A

Remarks: Click or tap here to enter text.

C. Gas Monitoring Facilities (e.g. gas monitoring of adjacent homes or buildings)

☐ Good condition ☐ Needs Maintenance ☐ N/A

Remarks: Click or tap here to enter text.

6. Cover Drainage Layer ☐ Applicable ☐ N/A

A. Outlet Pipes Inspected ☐ Functioning ☐ N/A

Remarks: Click or tap here to enter text.

B. Outlet Rock Inspected ☐ Functioning ☐ N/A

Remarks: Click or tap here to enter text.

7. Detention/Sediment Ponds ☐ Applicable ☐ N/A

A. Siltation ☐ Siltation Not Evident ☐ N/A

Areal Extent: Click or tap here to enter text. Depth: Click or tap here to enter text.

Remarks: Click or tap here to enter text.

B. Erosion ☐ Erosion Not Evident

Areal Extent: Click or tap here to enter text. Depth: Click or tap here to enter text.

Remarks: Click or tap here to enter text.

C. Outlet Works ☐ Functioning ☐ N/A

Remarks: Click or tap here to enter text.

D. Dam ☐ Functioning ☐ N/A

Remarks: Click or tap here to enter text.

8. Retaining Walls ☐ Applicable ☒ N/A

A. Deformations ☐ Location Shown on Site Map ☐ Deformation Not Evident

Horizontal Displacement: Click or tap here to enter text.

Vertical Displacement: Click or tap here to enter text.

Rotational Displacement: Click or tap here to enter text.

Remarks: Click or tap here to enter text.

B. Degradation ☐ Location Shown on Site Map ☐ Deformation Not Evident

Remarks: Click or tap here to enter text.

9. Perimeter Ditches/Off-Site Discharge ☐ Applicable ☒ N/A

A. Siltation ☐ Location Shown on Site Map ☐ Siltation Not Evident

Areal Extent: Click or tap here to enter text. Depth: Click or tap here to enter text.

Remarks: Click or tap here to enter text.

B. Vegetative Growth ☐ Location Shown on Site Map ☐ N/A

☐ Vegetation Does Not Impede Flow

Areal Extent: Click or tap here to enter text. Type: Click or tap here to enter text.

Remarks: Click or tap here to enter text.

C. Erosion ☐ Location Shown on Site Map ☐ Erosion Not Evident

Areal Extent: Click or tap here to enter text. Depth: Click or tap here to enter text.

Remarks: Click or tap here to enter text.

D. Discharge Structure ☐ Functioning ☐ N/A

Remarks: Click or tap here to enter text.

VIII. VERTICAL BARRIER WALLS

☐ Applicable ☒ N/A

1. Settlement ☐ Location Shown on Site Map ☐ Settlement Not Evident

Areal Extent: Click or tap here to enter text. Depth: Click or tap here to enter text.

Remarks: Click or tap here to enter text.

2. Performance Monitoring Type of Monitoring: Groundwater, Surface water and Sediments

☐ Performance Not Monitored ☐ Evidence of Breaching

Frequency: In accordance with O&M Plan Head Differential: **Varies with river stage**

Remarks: Click or tap here to enter text.

IX. GROUNDWATER/SURFACE WATER REMEDIES

☐ Applicable ☒ N/A

1. Groundwater Extraction Wells, Pumps, and Pipelines ☐ Applicable ☐ N/A

A. Pumps, Wellhead Plumbing, and Electrical ☐ N/A

☐ Good Condition ☐ All Required Wells Properly Operating ☐ Needs Maintenance

Remarks: Click or tap here to enter text.

B. Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances

☐ Good Condition ☐ Needs Maintenance

Remarks: Click or tap here to enter text.

C. Spare Parts and Equipment ☐ Needs to be Provided

☐ Readily Available ☐ Good Condition ☐ Requires Upgrade

Remarks: Click or tap here to enter text.

2. Surface Water Collection Structures, Pumps, and Pipelines ☐ Applicable ☐ N/A

A. Collection Structures, Pumps, and Electrical

☐ Good Condition ☐ Needs Maintenance

Remarks: Click or tap here to enter text.

B. Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances

☐ Good Condition ☐ Needs Maintenance

Remarks: Click or tap here to enter text.

C. Spare Parts and Equipment ☐ Needs to be Provided

☐ Readily Available ☐ Good Condition ☐ Requires Upgrade

Remarks: Click or tap here to enter text.

3. Treatment System ☐ Applicable ☐ N/A

A. Treatment Train (Check components that apply)

☐ Metals removal ☐ Oil/Water Separation ☐ Bioremediation

☐ Air Stripping ☐ Carbon Absorbers

☐ Filters Click or tap here to enter text.

☐ Additive (e.g. chelation agent, flocculent) Click or tap here to enter text.

☐ Others Click or tap here to enter text.

☐ Good Condition ☐ Needs Maintenance

☐ Sampling ports properly marked and functional

☐ Sampling/maintenance log displayed and up to date

☐ Equipment properly identified

☐ Quantity of groundwater treated annually Click or tap here to enter text.

☐ Quantity of surface water treated annually Click or tap here to enter text.

Remarks: Click or tap here to enter text.

B. Electrical Enclosures and Panels (properly rated and functional)

☐ N/A ☐ Good Condition ☐ Needs Maintenance

Remarks: Click or tap here to enter text.

C. Tanks, Vaults, Storage Vessels ☐ N/A

☐ Proper Secondary Containment ☐ Good Condition ☐ Needs Maintenance

Remarks: Click or tap here to enter text.

D. Discharge Structure and Appurtenances

☐ N/A ☐ Good Condition ☐ Needs Maintenance

Remarks: Click or tap here to enter text.

E. Treatment Building(s)

☐ N/A ☐ Good condition (esp. roof and doorways)

☐ Needs repair ☐ Chemicals and equipment properly stored

Remarks Click or tap here to enter text.

F. Monitoring Wells (Pump and Treatment Remedy) ☐ N/A

☐ Properly secured/locked ☐ Functioning

☐ Routinely sampled ☐ All required wells located

☐ Good condition ☐ Needs Maintenance

Remarks Click or tap here to enter text.

4. Monitoring Data

A. Monitoring Data:

☐ Is Routinely Submitted on Time ☐ Is of Acceptable Quality

B. Monitoring Data Suggests:

☐ Groundwater plume is effectively contained ☐ Contaminant concentrations are declining

5. Monitored Natural Attenuation

A. Monitoring Wells (natural attenuation remedy) ☐ N/A

☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled

☐ All required wells located ☐ Needs Maintenance ☐ Good condition

Remarks: Click or tap here to enter text.

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

1. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

Click or tap here to enter text.

2. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

Click or tap here to enter text.

3. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future.

Click or tap here to enter text.

4. Early Indicators of Potential Remedy Problems

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

Click or tap here to enter text.

APPENDIX F – MEMO TO FILE: REMEDIATION SYSTEM SHUTDOWN PILOT STUDY IMPLEMENTATION

United States Environmental Protection Agency
Region V

Date: JAN 25 2016

Subject: Memo to the File.
Penta Wood Products Superfund Site (the Site); Siren, WI
Remediation System Shutdown Pilot Study Implementation

From: Linda Martin
Remedial Project Manager

Through: Donald Bruce
Chief, Remedial Response Section #6

Joan Tanaka, Chief
Remedial Response Branch #1

Richard Karl, Director
Superfund Division

To: Project File

CC: Phil Richard
WDNR Project Manager

The U.S. EPA conducted a $2 million short-term action at the Site between April 1994 and June 1996. The Remedial Investigation and Feasibility Study was completed in May 1998. The Record of Decision (ROD) was signed on September 29, 1998. The Remedial Design (RD) was completed in November 1999. The Remedial Action (RA) was completed in September 2000. The RA consisted of the demolition of buildings, consolidation of pentachlorophenol (PCP) and arsenic-contaminated soils in a corrective action management unit (CAMU) protective of human health, installation of a groundwater pump and treatment system, and installation of bio-vent wells and capping of the CAMU. The treatment system was later upgraded and became operational in May 2004. The total cost of fund-financed remedial actions at the site amounted to $12.7 million. The site was in the operations, maintenance and monitoring phase until September 2014. In September 2014, WDNR assumed financial responsibility and oversight for the long-term remedial actions at the site.

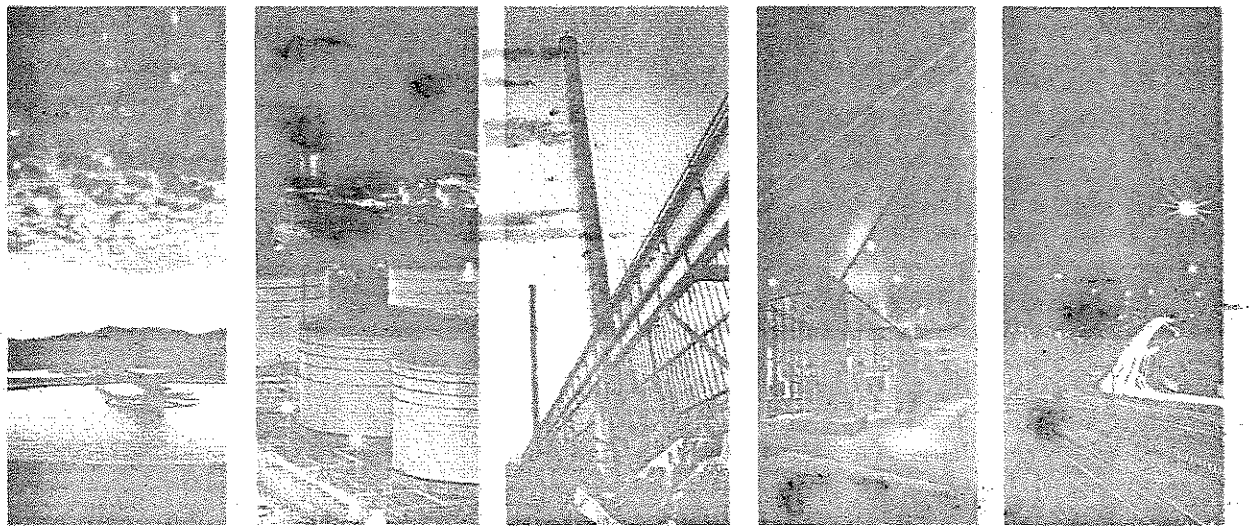
In 2015, WDNR prepared a proposal for the implementation of a Remediation System Shutdown Pilot Study to support an alternate long term remedy of monitored natural attenuation (MNA). The pilot study includes the temporary shutdown of the groundwater and LNAPL remediation system, microcosm study, Bio-trap study and long term monitoring with quarterly groundwater sampling.

Following the review of the proposed study work plan, EPA approved the pilot study on December 16, 2015. A copy of the approved work plan is attached for reference. The study is expected to run during a four years period while data is collected to determine if MNA will address the remaining dissolved contaminations plume confined to the Site property.

Following the completion of the pilot study, EPA will review the data to determine if the pump and treat system should be turned back on and continue to run or if a remedy change is warranted.

attachment

Final



Remediation System Shutdown Pilot Study Work Plan

Penta Wood Products Superfund Site
Siren, Wisconsin

Wisconsin Department of Natural Resources

1801 Old Highway 8 Northwest, Suite 114 St. Paul Minnesota 55112
086166 | 02 | 20 | Report No 8 | November 12 2015

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1. Introduction

GHD Services Inc. (GHD) prepared this Remediation System Shutdown Pilot Study Work Plan for the Penta Wood Products Superfund Site (Site) in Siren, Wisconsin on behalf of Wisconsin Department of Natural Resources (WDNR). The Site location is shown on Figure 1.1; the Site plan is shown on Figure 1.2; and residential well locations are shown on Figure 1.3.

1.1 Purpose

The purpose of this work plan is to temporarily shut down the remediation system during a pilot study and confirm lines of evidence to support an alternate long-term remedy of monitored natural attenuation for the Site. Lines of evidence that would be confirmed include:

- Light non-aqueous phase liquid (LNAPL) body and dissolved plume limits are not expanding
- Dissolved concentrations are stable or decreasing
- Degradation of contaminants is occurring through aerobic and/or anaerobic natural processes

This work plan proposes:

- Temporary shutdown of the remediation system
- New monitoring wells to further define the LNAPL and dissolved plume limits
- Baseline groundwater monitoring and sampling following shutdown of the remediation system
- Microcosm and bio-trap studies
- Groundwater and LNAPL level monitoring during the pilot study
- Groundwater monitoring well sampling during the pilot study
- Residential well sampling
- Contingency plan

Following United States Environmental Protection Agency (USEPA) concurrence with work plan, the remediation system will be immediately shut down. The system will remain temporarily shut down during the entire proposed monitoring period. The system will be shut down in November 2015 and remain off through at least December 2019. If monitoring results are not favorable, a contingency plan would be implemented.

2. Background

A detailed background and history of the Site and associated actions is provided in the Five-Year Review Report (USEPA, January 2015). Historical pentachlorophenol (PCP) concentrations and LNAPL thickness data are presented in Appendix A of this work plan.

2.1 Site Setting

The Site is a former wood treatment facility on an 82-acre property. The property is located in a rural and agricultural setting with residences located to the east, west, and south. Forested and

wetland areas border the property to the north/northeast. The residential properties contain drinking water wells. The Site is situated on a hill with approximately 110 feet of drop in elevation toward the north/northeast. The Site layout and residential well locations are shown on Figures 1.2 and 1.3, respectively.

Site use is controlled by continuing obligations and institutional controls (WDNR letter dated July 6, 2015).

2.2 Release History

Contaminants were released to the subsurface during operation from 1953 to 1992. Raw timber was treated with a 5 to 7 percent PCP solution in a fuel oil carrier or with a waterborne salt treatment chemical. The facility discharged wastewater from an oil/water separator through a gully into a lagoon located at the northeast corner of the property. Process wastes were discharged onto a wood-chip pile in the northwestern portion of the property. Beginning in the 1970s, the WDNR observed several large spills, stained soils, fires, and poor operating practices. The USEPA conducted a removal action during 1994 through 1996. Buildings were demolished and the remaining chemicals and sludge were disposed offsite. Highly contaminated soil was excavated and disposed offsite. Erosion control measures were implemented in 1998 to reduce washout of the contaminated wood debris from the lagoon into the wetlands. Thus, a substantial portion of the contaminant source was removed.

2.3 Compounds of Concern and Cleanup Goals

The Record of Decision (ROD) (USEPA, November 1998) identifies the following as compounds of concern (COCs):

- PCP
- Naphthalene
- Benzene, toluene, ethylbenzene, and xylenes (BTEX)
- Chloride
- Metals – arsenic, copper, iron, manganese, and zinc

The ROD also specifies the groundwater cleanup goals as the Preventative Action Limits (PALs) identified in Ch. NR 140, Wis. Adm. Code. Following completion of this pilot study, WNDR may request a ROD amendment to modify the cleanup goals from the PALs to the Enforcement Standards (ESs) as identified in Ch. NR 140 Wis. Adm. Code. The COCs and respective cleanup goals are summarized in Table 2.1.

2.4 Remedial History

Extensive remedial actions have been conducted at the Site since the USEPA issued the ROD in November 1998, including the following:

- Soil and sediment excavation and consolidation in an onsite corrective management unit (CAMU)
- Bioventing
- Groundwater extraction and treatment

- LNAPL recovery
- Monitored natural attenuation of the remaining dissolved contaminant plume outside of the groundwater capture area

Initial operation of the remediation system started in October 2000. Due to the presence of emulsified oil in the extracted groundwater, additional pretreatment studies, design, and facility construction were conducted. The full treatment system operation, including additional pretreatment, began in March 2004 and operated through August 2014. In 2010, three additional dual phase extraction wells were installed in an effort to accelerate cleanup activities.

The WDNR took over remediation system operations at the Site on September 1, 2014. During October 2014, the remediation system operation was modified to exclude the pretreatment portion of the system. In addition, LNAPL recovery was performed manually on a periodic basis.

2.5 Hydrogeology

The subsurface at the Site consists of unconsolidated soil and has been characterized with two aquifers, the unconfined aquifer (upper portion) and semiconfined aquifer (lower portion). The upper aquifer consists of sand and gravel with silt and clay to depths of 90 to 120 feet below ground surface. A glacial till separates the upper aquifer from the lower aquifer and consists of silt, silty sand, and sandy silts with gravel with thickness ranging between 3 to 45 feet. The till is present under most of the Site. The lower aquifer consists of sand and gravel. A cross-section location is shown on Figures 2.1 and 2.2. A general cross-section of the subsurface stratigraphy is shown on Figure 2.3.

The general groundwater flow direction appears to be toward the east-northeast based on measured groundwater elevations in wells at the Site and the dissolved PCP concentration distribution. The general horizontal hydraulic gradient across the source area is estimated to be approximately 0.0006 foot per foot (ft/ft), under non-pumping conditions.

2.6 LNAPL Body and Dissolved PCP Plume Extent

The areal extent of LNAPL based on measured in-well thicknesses is less than 2 acres in size within the property boundaries and limited to within the immediate vicinity of the onsite CAMU as shown on Figure 2.1. The LNAPL has remained stable (i.e., not expanding or migrating) from the time prior to implementing the remedy through more than 10 years of remediation system operation. The LNAPL extent may not be fully defined at the northeast portion of the source area. The LNAPL is present within the unconfined aquifer at depths ranging between approximately 80 and 115 feet below ground surface. Based on historical groundwater level monitoring data and the observed groundwater level fluctuations, the LNAPL smear zone is approximately 7 feet thick and is located exclusively in the unconfined (upper) aquifer at the groundwater table. The plots of the well gauging data over time (Charts 1 and 2, Long-Term Remedial Action Report, CH2M HILL, November 2014) indicate that the predominant LNAPL behavior (i.e., how LNAPL thickness in wells changes with fluctuations in water table depth) is consistent with unconfined conditions in that in-well LNAPL thickness decreases with a rising water table and vice versa.

Recently, LNAPL was present in two monitoring wells (MW18 and MW19). Historically, four monitoring wells (MW10S, MW18, MW19, and MW20) have contained measurable LNAPL at thicknesses of less than 1 foot. Since September 2014, LNAPL has been present in five extraction wells (EW05, EW06, EW10, EW12, and EW14). Three of these extraction wells (EW05, EW12, and

EW14) currently contain LNAPL thicknesses less than 1 foot. Two of these extraction wells (EW06 and EW10) currently contain LNAPL thicknesses greater than 1 foot. Historical LNAPL thickness data prior to September 2014 are not available for the extraction wells.

The dissolved PCP plume has been reduced at the Site. The dissolved PCP plume with concentrations exceeding 1,000 micrograms per liter (µg/L) is currently approximately 2 acres in the unconfined (upper) aquifer and appears to be limited to the immediate vicinity of the LNAPL as shown on Figure 2.1. PCP is no longer present in the semiconfined (lower) aquifer at concentrations exceeding 1,000 µg/L. The dissolved PCP plume with concentrations exceeding 1 µg/L encompasses approximately 7 acres in the unconfined (upper) aquifer and approximately 4 acres in size in the semiconfined (lower) aquifer as shown on Figures 2.1 and 2.2, respectively.

3. Proposed Temporary Remediation System Shutdown Pilot Study and Monitoring Plan

This section provides a discussion of the proposed monitoring plan during the temporary remediation system shutdown pilot study.

Following USEPA concurrence with this work plan, the remediation system will be immediately shut down. The system will remain temporarily shut down during the entire proposed monitoring period for this pilot study. The system will be shut down in November 2015 and is expected to remain off through December 2019. LNAPL recovery (i.e., bailing and pumping) will not be conducted during the shutdown. The temporary system shutdown will be conducted in general accordance with the Site Shutdown Plan (CH2M HILL). The primary shutdown tasks would include:

- Turning off the groundwater extraction pumps in all extraction wells
- Removing all LNAPL and groundwater extraction pumps from the extraction well casings
- Draining all piping
- Draining and cleaning all system tanks, sumps, vessels, and pumps
- Removing, profiling, and disposing spent activated carbon and recovered LNAPL
- Profiling and disposing sludge and liquid removed from system components

All equipment, water treatment chemicals, and supplies will remain at the Site during the temporary system shutdown and pilot study if a contingency plan is implemented and a restart of the system is required (refer to Section 4.). The system could be restarted within 30 days.

The following sections discuss the proposed monitoring plan including:

- New monitoring wells to further define the LNAPL body and dissolved plume limits
- Microcosm study to evaluate biodegradation rates within the dissolved plume
- Bio-trap study to quantify microbial populations and confirm biodegradation
- Groundwater and LNAPL level monitoring
- Groundwater sampling
- Residential well sampling

- Reporting

The proposed pilot study schedule is provided in Table 3.1. The work would be conducted in general accordance with the Field Sampling Plan (FSP) (CH2M HILL, November 1999 and November 2010) and Quality Assurance Project Plan (QAPP) (CH2M HILL, February 2005) with subsequent addendums (most recent is Addendum No. 6 dated July 2014). The FSP and QAPP with addendums will be updated, as necessary, to include the work associated with the microcosm and bio-trap studies.

3.1 Proposed New Monitoring Wells

Three new wells (MW29, MW30, and MW31) are proposed to confirm the LNAPL body and dissolved plume limits. Drilling and well installation work would be conducted in general accordance with State of Wisconsin Administrative Code (WAC) ch. NR 141 requirements.

Existing monitoring wells MW2, MW5, and MW18 are located near the presumed downgradient limit of the source area. However, the screen intervals for these wells are below the groundwater table surface. A new well, MW29, is proposed in the vicinity of these wells. The purpose of well MW29 is to potentially define the LNAPL body limit and provide soil and groundwater samples close to the LNAPL limits and elevated PCP concentrations for the microcosm study (refer to Section 3.2). Two new wells, MW30 and MW31, are also proposed to provide delineation of the northwest and southeast sides of the dissolved downgradient plume. The proposed well locations are shown on Figure 2.1. Drilling and well installation work will be conducted during November and December 2015. The proposed drilling and well installation schedule is provided in Table 3.1.

3.1.1 Drilling Protocol

A driller, licensed by the State of Wisconsin, would utilize a sonic drilling rig to advance the boreholes for the new monitoring wells (MW29, MW30, and MW31). In addition, another borehole would be advanced at location SB1 to collect soil and groundwater samples for the microcosm study (refer to Section 3.2). The boreholes would be approximately 6 inches in diameter and advanced to approximately 10 feet below the groundwater table. The drilling equipment would be decontaminated prior to use at each borehole location.

3.1.2 Well Installation

Monitoring wells would be installed in boreholes MW29, MW30, and MW31. Each well would consist of 2-inch diameter, Schedule 80, polyvinyl chloride (PVC) casing. The PVC screen interval would consist of casing with 0.010-inch slots installed between approximately 975 and 995 feet above mean sea level (ft msl) (10 feet above and below the groundwater table). Solid casing will extend from the top of the screened interval to approximately 2 feet above ground surface. The proposed well screen intervals are illustrated on Figure 2.3.

The annular space around the screened interval would be backfilled with a silica sand filter pack. The sand would extend from the bottom of the borehole to approximately 2 feet above the top of the screen. A 2-foot thick fine sand filter pack seal would be placed above the top of the filter pack. A neat cement grout would be installed, via a tremie pipe, in the annular space immediately above the filter pack seal to ground surface. A lockable steel protective casing (6-inch diameter, steel) would be installed around the above ground well casing and set in concrete.

Following installation, each well would be developed by surging and purging groundwater until the turbidity of the water is reduced.

A neat cement grout would be placed, via a tremie pipe, in the annular space to abandon and seal borehole SB1.

The drilling and well installation work would be completed within 60 days of receiving USEPA approval of this work plan.

3.1.3 Soil Cuttings and Water Management and Disposal

Soil cuttings removed from the boreholes for monitoring wells MW29, MW30, and MW31 above an elevation of approximately 970 ft msl, which is approximately 15 feet above the current groundwater table would be segregated placed into a stockpile. Soil cuttings removed below this elevation would be placed in a separate stockpile at the Site. Because borehole SB1 would be advanced through the CAMU at the Site, all cuttings from this location would be placed in a separate stockpile at the Site.

Each stockpile would be lined and covered with plastic sheeting. A composite soil sample would be collected from each stockpile for laboratory analysis of PCP, BTEX, and naphthalene and other parameters if required for profiling and offsite disposal.

If the soil sample results meet the State of Wisconsin standards, the drill cuttings would be thinspread at the Site. If the results exceed the standards, a waste profile will be developed for authorized disposal at an offsite facility. Disposal would be completed within 90 days of generating the soil cuttings.

Development/decontamination water would be discharged to the ground surface within the CAMU limits at the Site, and the quantity will be documented. Any LNAPL recovered during the drilling or well development activities would be stored in a drum at the Site and subsequently profiled and disposed at an authorized offsite facility.

3.2 Proposed Microcosm Study

Monitored natural attenuation (MNA) is a remedial approach that relies on natural subsurface mechanisms that are classified as either destructive or nondestructive. Biodegradation is the most important in situ destructive mechanism, while nondestructive mechanisms include sorption, dispersion, dilution, and volatilization. To support successful implementation of MNA, a microcosm study is proposed as a line of evidence to demonstrate that the degradation of the Site contaminants is occurring at rates sufficient to be protective of human health and the environment. The objectives of this proposed laboratory study are to gather the data necessary to:

- Determine whether natural attenuation of PCP is occurring at the Site
- Determine whether natural attenuation is occurring under aerobic conditions, anaerobic conditions, or both
- Determine a Site-specific biodegradation rate for PCP

Soil and groundwater samples will be collected at borehole locations SB1 and MW29. Location SB1 is located downgradient from the LNAPL where the groundwater is expected within the aerobic (i.e., oxygen rich) zone. MW29 is located closer to the LNAPL and elevated PCP concentrations

where the groundwater is within the anaerobic (i.e., oxygen poor) zone. Approximately 4 gallons of groundwater and 5 pounds of soil will be collected from each zone. The soil samples would be collected from the interval immediately above the groundwater table. The samples would be submitted to the GHD Innovative Technology Group (ITG) laboratory located in Niagara Falls, New York. The samples would be subjected to the testing described below.

The proposed microcosm study schedule is provided in Table 3.1

3.2.1 Initial Characterization

Upon arrival at the laboratory, the soil and groundwater samples would be analyzed for the following parameters to provide a characterization of baseline conditions for the study:

- pH
- PCP
- Diesel range organics
- Ammonia-nitrogen
- Orthophosphate-phosphorus
- Total and dissolved iron and manganese (groundwater)
- Total iron and manganese (soil)

3.2.2 Aerobic Microcosm Testing

Microcosms would be set up to assess the potential for natural attenuation of PCP under aerobic conditions using soil and groundwater samples collected from the aerobic zone at the Site. Soil will be placed in serum bottles with groundwater, and the following treatments will be performed:

- Soil and groundwater only (biotic control)
- Soil, groundwater, and oxygen
- Soil, groundwater, oxygen, and sodium azide (abiotic control)

After 0, 3, 6, and 12 months, duplicate microcosms for each treatment would be sacrificed and the soil and groundwater samples would be analyzed for PCP. Depending on the results, additional testing may be conducted at extended durations.

3.2.3 Anaerobic Microcosm Testing

Microcosms would be set up to assess the potential for natural attenuation of PCP under anaerobic conditions using soil and groundwater samples collected from the anaerobic zone at the Site. Soil will be placed in serum bottles with groundwater, and the following treatments will be performed:

- Soil and groundwater only (biotic control)
- Soil, groundwater, and emulsified vegetable oil (EVO)
- Soil, groundwater, and sodium azide (abiotic control)

After 0, 3, 6, and 12 months, duplicate microcosms for each treatment would be sacrificed and the soil and groundwater samples would be analyzed for PCP. Depending on the results, additional testing may be conducted at extended durations.

3.2.4 Data Assessment

Following completion of microcosm study, the data will be compiled and evaluated. An assessment would be made of the potential for natural attenuation with estimated degradation rates of PCP at the Site, which can be used to project groundwater cleanup times.

3.3 Proposed Bio-Trap Study

MNA is a remedial approach that relies on natural subsurface mechanisms that are classified as either destructive or nondestructive. In certain circumstances, MNA can be sufficiently protective of human health and the environment. Biodegradation is the most important in situ destructive mechanism, while non-destructive mechanisms include sorption, dispersion, dilution, and volatilization. However, MNA has its inherent limitations and can be slow, making the time frame for completion relatively long. To support successful implementation of MNA, a bio-trap study is proposed as a line of evidence to demonstrate that the degradation of the site hydrocarbons is occurring at rates sufficient to be protective of human health and the environment. The objectives of this proposed laboratory study are to gather the data necessary to:

- Determine whether bacteria capable of degrading PCP are present at the Site
- Demonstrate in-situ biodegradation of PCP using a bio-trap

3.3.1 Bio-Trap Testing

Bio-traps baited with 13C labelled PCP would be obtained from Microbial Insights. They would be installed in wells MW20 and MW29 located within the source area and wells MW9 and EW11 (upper screened casing) located downgradient of the source area. The bio-traps would be left in place for 90 days. After 90 days the bio-traps would be retrieved and submitted to Microbial Insights located in Knoxville, Tennessee. The samples would be analyzed for the following:

- ^{13}C Pentachlorophenol concentration
- Phospholipid Fatty Acids (PLFA)
- Stable Isotope Probing
- Dissolved ^{13}C Inorganic Carbon

The proposed BioTrap study schedule is provided in Table 3.1.

3.3.2 Data Assessment

Following completion of the bio-trap study, the data will be compiled and evaluated. An assessment would be made of the potential for natural attenuation of PCP at the Site.

3.4 Proposed Monitoring Plan

3.4.1 Baseline Monitoring and Sampling

Following shutdown of the remediation system in November/December 2015 and after allowing the subsurface conditions to stabilize, groundwater monitoring and sampling will be conducted in April 2016 at all groundwater monitoring and extraction wells to determine baseline conditions at the Site. The proposed baseline monitoring and sampling schedule is provided in Table 3.1. The proposed baseline groundwater monitoring and sampling plan is summarized in Table 3.2.

Groundwater and LNAPL levels would be measured to assess groundwater flow direction, hydraulic gradient, and LNAPL thickness and extent. Groundwater elevation contours would be inferred from the measurement data and submitted in a subsequent report to the USEPA.

Groundwater sampling would be conducted during one baseline event to confirm that the dissolved plume size and extent and concentration distribution at the Site. Groundwater samples would be collected using low flow purge and sample protocol, in general accordance with the FSP. As part of the well stabilization process, the groundwater would be measured in the field for the following parameters: pH, temperature, specific conductance, dissolved oxygen (DO), oxidation-reduction potential (ORP), iron, and sulfide. Groundwater samples would not be collected from well casings containing LNAPL.

The groundwater samples would be submitted for laboratory analysis, in general accordance with the QAPP, of the following parameters: PCP, naphthalene, BTEX, natural attenuation parameters, and select dissolved metals. The natural attenuation parameters would include alkalinity, chloride, hardness, nitrate, sulfate, total organic carbon, and methane. The select dissolved metals would include arsenic, copper, iron, manganese, and zinc. The metals samples would be filtered in the field through a 0.45 micron filter.

Purge/decontamination water would be discharged to the ground surface within the CAMU limits, and the quantity will be documented. Any LNAPL recovered during the monitoring and sampling would be stored in a drum at the Site and subsequently profiled and disposed at an authorized offsite facility.

3.4.2 Pilot Study Groundwater/LNAPL Level Monitoring

During the pilot study, groundwater and LNAPL levels would be measured in all monitoring wells and all extraction wells at the Site on a quarterly basis through 2019 to assess:

- Groundwater flow direction
- Hydraulic gradient
- LNAPL thickness, extent, and trends to confirm that LNAPL migration does not occur (e.g., the appearance of LNAPL in a well that never previously contained LNAPL)

Groundwater elevation contours would be inferred from the measurement data and submitted in reports to the USEPA. The proposed groundwater and LNAPL monitoring schedule is provided in Table 3.1. The proposed groundwater and LNAPL level sampling plan is summarized in Table 3.2

3.4.3 Pilot Study Groundwater Sampling

During the pilot study, groundwater sampling would be conducted on a quarterly basis for at least the first four consecutive quarters. If the quarterly sampling results are favorable and the dissolved plume is not increasing in size or concentration, the sampling frequency would be proposed for reduction to a semiannual basis. Groundwater sampling would be conducted through 2019. The proposed groundwater sampling schedule is provided in Table 3.1. The purpose of the groundwater sampling is to confirm that there is a statistically significant stable or decreasing trend in dissolved plume size and concentrations. The groundwater sample analytical data would be evaluated using methods and tools in general accordance with the Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance (EPA 530/R-09-007, March 2009).

Groundwater samples would be collected from the following wells:

- Unconfined (upper) aquifer – monitoring wells MW1, MW6S, MW10S, MW13, MW16, MW20, MW21, MW22, MW29, MW30, and MW31 and the extraction well EW11 casing screened in the unconfined (upper) aquifer
- Semiconfined (lower) aquifer – monitoring wells MW3, MW10, MW12, MW17, and MW28 and the extraction well EW11 casing screened in the semiconfined (lower) aquifer

This network of monitoring wells includes sample collection both in the source area and surrounding the source area. The proposed groundwater sampling plan is summarized in Table 3.2. The proposed unconfined (upper) aquifer wells and semiconfined (lower) aquifer wells to be sampled are shown on Figures 2.1 and 2.2, respectively.

Groundwater samples would be collected using low flow purge and sample protocol, in general accordance with the FSP. As part of the well stabilization process, the groundwater would be measured in the field for the following parameters: pH, temperature, specific conductance, dissolved oxygen (DO), oxidation-reduction potential (ORP), iron, and sulfide. Groundwater samples would not be collected from well casings containing LNAPL.

The groundwater samples would be submitted for laboratory analysis, in general accordance with the QAPP, of the following parameters: PCP, naphthalene, BTEX, natural attenuation parameters, and select dissolved metals. The natural attenuation parameters would include alkalinity, chloride, hardness, nitrate, sulfate, total organic carbon, and methane. The results of the natural attenuation parameters would be evaluated to confirm the groundwater reduction-oxidation conditions at the Site and if the groundwater conditions are favorable for biodegradation. The select dissolved metals would include arsenic, copper, iron, manganese, and zinc. The metals samples would be filtered in the field through a 0.45 micron filter.

Purge/decontamination water would be discharged to the ground surface within the CAMU limits at the Site, and the quantity will be documented. Any LNAPL recovered during the monitoring and sampling would be stored in a drum at the Site and subsequently profiled and disposed at an authorized offsite facility.

3.4.4 Residential Well Sampling

Water samples would be collected from six residential wells located near the Site and the onsite water supply well (DW01) on a semiannual basis through 2019. The proposed residential well sampling schedule is provided in Table 3.1. The six residential wells include:

- 8713 Daniels 70 (RW1)
- 8627 Daniels 70 (RW2)
- 8454 Daniels 70 (RW3)
- 8526 Daniels 70 (RW4)
- 8783 Daniels 70 (RW5)
- 8542 West Doctor Lake Road (RW6)

The onsite water supply well serves the remediation equipment building. The water is used for sanitary facilities in the building and maintaining the remediation equipment but is not ingested by workers. The residential well and onsite water supply well locations are shown on Figure 1.3. The samples would be analyzed for PCP, BTEX, and naphthalene.

3.5 Reporting

Quarterly reports would be submitted to document the results of the monitoring work. The reports would include figures showing:

- Groundwater elevations and contours
- LNAPL thicknesses and LNAPL body limits
- Groundwater sample analytical results and dissolved plume limits (PCP)
- Residential well sample analytical results

The reports would also include tables summarizing the following data:

- Current and historical groundwater and LNAPL level elevations
- Current groundwater purging and sampling data
- Current and historical groundwater sample analytical data (PCP, BTEX, naphthalene, dissolved metals, and natural attenuation parameters) with comparison to the WAC ch. NR 140 Enforcement Standards (ESs) and Preventative Action Limits (PALs)
- Current and historical residential well sample analytical data (PCP, BTEX, and naphthalene)

The reports would be submitted based on the following schedule and as provided in Table 3.1:

- April 30 – covering work and results during January through March
- July 30 – covering work and results during April through June
- October 30 – covering work and results during July through September
- January 30 – covering work and results during October through December

4. Pilot Study Contingency Plan

This section provides a contingency plan for potential future action should monitoring results not be favorable during the temporary remediation system shutdown pilot study. The proposed monitoring plan (refer to Section 3.) is designed to determine whether MNA is a feasible alternate remedy for the Site and to monitor changes in the Site conditions that could potentially increase the risk of

exposure to receptors. The primary contingency plan decision point during the pilot study would be if dissolved PCP, naphthalene, and/or BTEX are detected at concentrations exceeding the respective Wisconsin Enforcement Standards (refer to Table 2.1) in wells MW1, MW3, MW13, MW21, and MW22 located between the source area and potential receptors. Other criteria will be considered as part of the data evaluation including changes in LNAPL presence, LNAPL thickness, and aerobic/anaerobic conditions.

Following each monitoring period, a report will be prepared and submitted to USEPA. A statement would be included in each report certifying that the current actions at the Site remain protective of human health and the environment based on an evaluation of the current data.

If Site conditions and data indicate that the current remedy is not protective of human health and the environment or that there is an increased risk to potential offsite receptors, a proposed plan would be developed and submitted to USEPA with the associated monitoring report. The plan could include additional monitoring, implementation of additional institutional controls, restart of the groundwater extraction/treatment and/or biovent systems, LNAPL recovery, or a combination of corrective actions.

Effective institutional controls have been implemented for the Site property. The WDNR remedial action approval letter with continuing obligations (WDNR; July 6, 2015; WDNR BRRTS Activity #02-07-000532, FID #: 807050310) meets the intent of the institutional controls required by the ROD (USEPA, November 1998). The Long-Term Response Action Operation and Maintenance Plan (O&M Plan) (GHD; July 22, 2015) with Addendum No. 1 (GHD; November 9, 2015) effectively serves as an Institutional Control Implementation and Assurance Plan (ICIAP).

The intent of the temporary system shutdown and pilot study is to monitor how the Site reacts without active remedial actions and develop lines of evidence to support MNA as a future Site remedy. Implementing an active remedial action prior to completing the full pilot study and associated monitoring should only be conducted when there is convincing evidence that monitored natural attenuation is not a feasible alternative for this Site and that the current actions are no longer protective.

5. References

The following key Site documents were referenced in preparation of this report:

- Record of Decision (USEPA, November 1998)
- Remedial Action Report (CH2M HILL, September 2000)
- Long-Term Remedial Action Report (CH2M HILL, November 2014)
- LNAPL Mobility and Recoverability Report (CH2M HILL, October 2014)
- Semiannual Report – September through December 2014 (CRA, February 2015)
- Semiannual Report – January through June 2015 (GHD, September 2015)
- Alternate Remedy Recommendation (GHD, July 2015)
- Long-Term Response Action Operation and Maintenance Plan (GHD, July 2015)

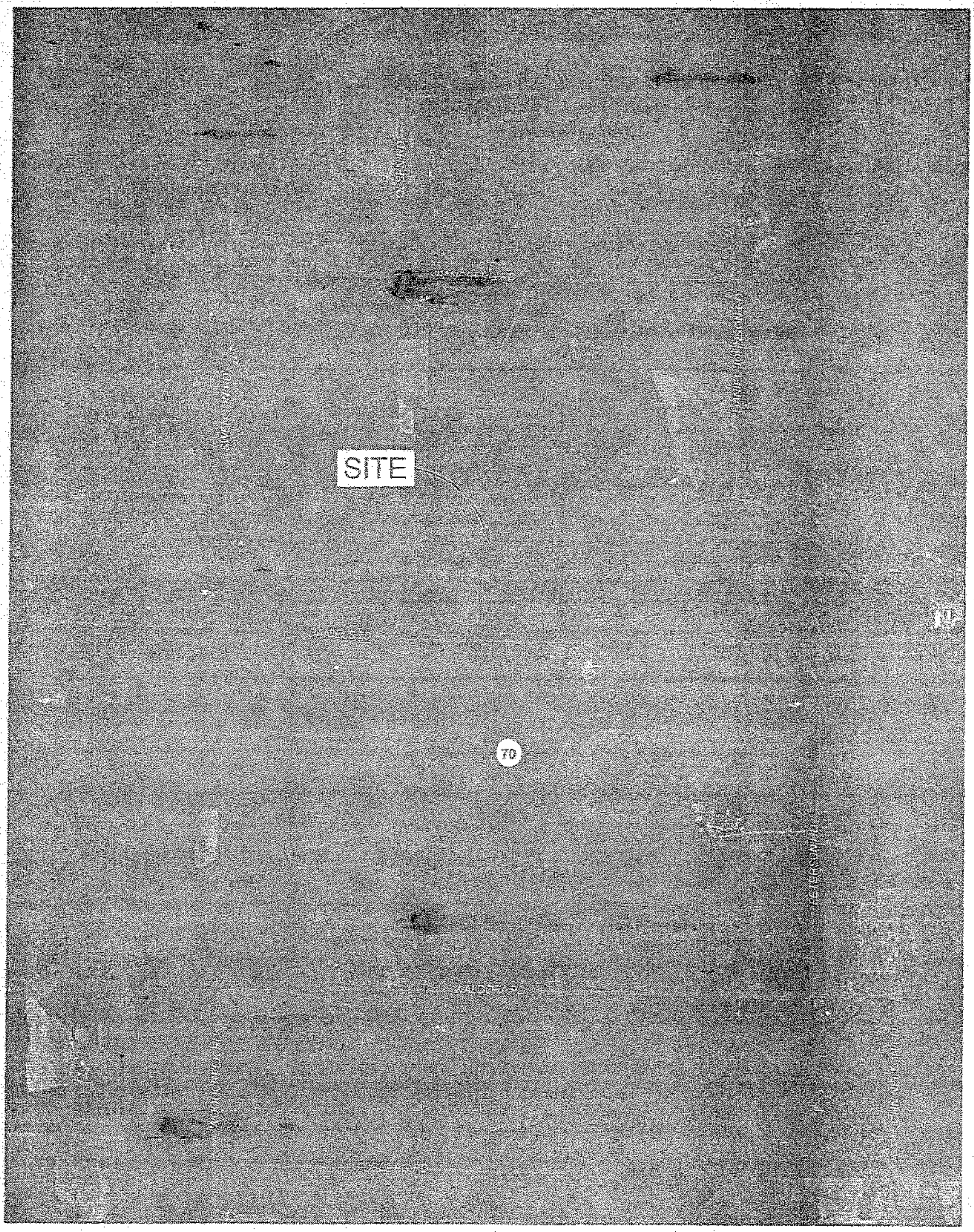
- Long-Term Response Action Operation and Maintenance Plan Addendum No. 1 (GHD, November 2015)

Compounds of Concern and Cleanup Goals
Penta Wood Products Superfund Site
Siren, Wisconsin

Compound of Concern	Wisconsin Preventive Action Limit [1] (ug/L)	Wisconsin Enforcement Standard [1] (ug/L)
Pentachlorophenol	1.0	0.1
Naphthalene	40	8
Benzene	5	0.5
Toluene	343	68.6
Ethylbenzene	700	140
Xylenes	620	124
Chloride [2]	250000	125000
Arsenic	50	5
Copper	1300	130
Iron [2]	300	150
Manganese [2]	50	25
Zinc [2]	5000	2500

Note:

1. Cleanup goals adapted from Table 2 of the ROD (USEPA, 1998)
2. Criteria is for public welfare concerns (taste or odor aesthetics)



Source: DigitalGlobe 2011

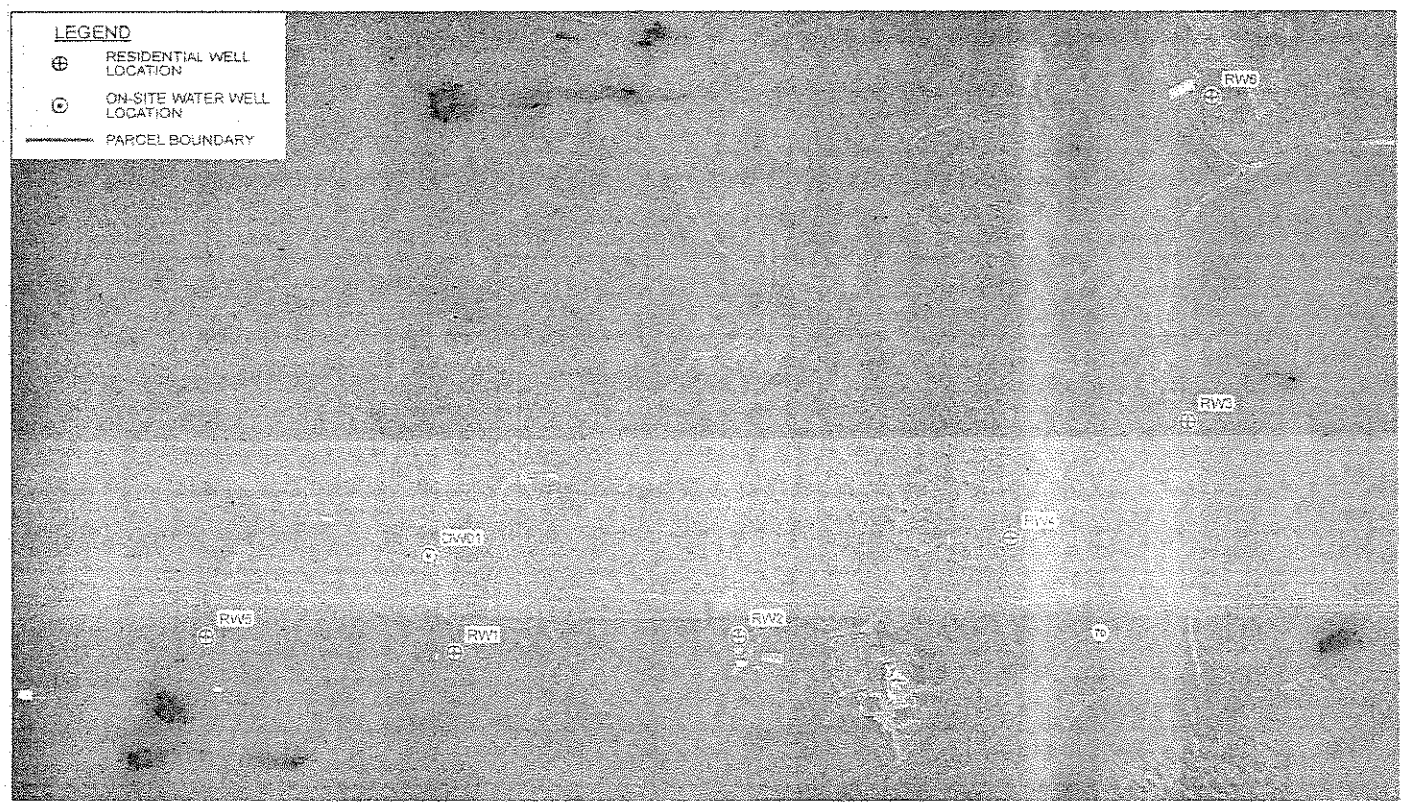
0 1,000 2,000ft

PENTA WOOD PRODUCTS
SUPERFUND SITE
SIREN, WISCONSIN

086165-02-20
Oct 9, 2015

SITE LOCATION

FIGURE 1.1



0 200 400 600 ft

PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN
REMEDIATION SYSTEM SHUTDOWN PILOT STUDY WORK PLAN

086165-02-20
Oct 16, 2015

RESIDENTIAL WELL LOCATIONS

FIGURE 1.3

Table 3.2

Proposed Monitoring and Sampling Plan
Penta Wood Products Superfund Site
Siren, Wisconsin

Well ID	TOC Elevation (ft MSL)	Top of Screen Elevation [1] (ft MSL)	Bottom of Screen Elevation [1] (ft MSL)	Groundwater Elevation March 2015 (ft MSL)	Baseline		Pilot Study	
					Groundwater/ LNAPL Level Monitoring	Groundwater Sampling [2, 3]	Groundwater/ LNAPL Level Monitoring	Groundwater Sampling [2, 3]
Unconfined (Upper) Aquifer								
MW1	1072.32	978.93	973.93	985.61	X	X	X	X
MW2	1064.85	984.05	979.05	985.26	X	X	X	
MW5	1071.73	958.72	953.72	985.13	X	X	X	
MW6S	1108.63	999.72	979.72	986.59	X	X	X	X
MW9	1020.71	973.69	963.69	988.78	X	X	X	
MW10S	1090.43	995.49	975.49	985.55	X	X	X	X
MW13	1006.10	986.15	977.15	985.28	X	X	X	X
MW16	1081.92	991.97	976.97	985.79	X	X	X	X
MW18	1072.44	978.74	958.74	985.39	X	X	X	
MW19	1088.17	993.30	973.30	984.63	X	X	X	
MW20	1097.76	988.29	978.29	985.51	X	X	X	X
MW21	1095.70	991.13	981.13	985.44	X	X	X	X
MW22	1084.70	990.84	980.84	985.56	X	X	X	X
MW24	1084.10	985.42	975.42	985.97	X	X	X	
MW25	1095.24	987.34	977.34	985.75	X	X	X	
MW26	1087.07	959.07	944.07	985.22	X	X	X	
MW27	1111.00	996.00	976.00	985.69	X	X	X	
MW29	NA	995.00	970.00	NA	X	X	X	X
MW30	NA	995.00	970.00	NA	X	X	X	X
MW31	NA	995.00	976.00	NA	X	X	X	X
EW02	NA	12.00	115.00	NA	X	X		
EW03	NA	12.00	123.00	NA	X	X		
EW04	NA	13.00	135.00	NA	X	X		
EW05	NA	12.00	111.00	NA	X	X		
EW06	NA	12.00	116.00	NA	X	X		
EW07	NA	12.00	120.00	NA	X	X		
EW10	NA	12.00	123.00	NA	X	X		
EW11	NA	20.00	80.00	NA	X	X	X	X
EW12	NA	95.00	125.00	NA	X	X		
EW13	NA	95.00	125.00	NA	X	X		
EW14	NA	98.00	128.00	NA	X	X		

Proposed Monitoring and Sampling Plan
Penta Wood Products Superfund Site
Siren, Wisconsin

Well ID	TOC Elevation (ft MSL)	Top of Screen Elevation [1] (ft MSL)	Bottom of Screen Elevation [1] (ft MSL)	Groundwater Elevation March 2015 (ft MSL)	Baseline		Pilot Study	
					Groundwater/ LNAPL Level Monitoring	Groundwater Sampling [2, 3]	Groundwater/ LNAPL Level Monitoring	Groundwater Sampling [2, 3]
Semiconfined (Lower) Aquifer								
MW3	1129.50	950.87	945.87	985.32	X	X	X	X
MW4	1087.81	906.28	901.28	984.81	X	X	X	
MW6	1095.13	950.54	945.54	970.66	X	X	X	
MW7	1096.39	931.07	926.07	985.42	X	X	X	
MW8	1091.28	934.28	929.28	985.46	X	X	X	
MW10	1089.74	956.49	951.49	984.69	X	X	X	X
MW11	1085.58	943.51	928.51	985.00	X	X	X	
MW12	1081.99	959.24	945.24	984.95	X	X	X	X
MW14	1076.50	917.27	902.27	984.54	X	X	X	
MW15	1127.22	971.09	956.09	985.50	X	X	X	
MW17	1084.50	957.43	947.43	985.20	X	X	X	X
MW23	1017.57	900.45	890.45	984.95	X	X	X	
MW28	1083.10	968.10	948.10	984.85	X	X	X	X
EW02	NA	125.00	145.00	NA	X	X		
EW03	NA	133.00	153.00	NA	X	X		
EW04	NA	145.00	165.00	NA	X	X		
EW05	NA	121.00	141.00	NA	X	X		
EW06	NA	126.00	146.00	NA	X	X		
EW07	NA	130.00	150.00	NA	X	X		
EW10	NA	133.00	153.00	NA	X	X		
EW11	NA	90.00	110.00	NA	X	X	X	X
EW12	NA	130.00	150.00	NA	X	X		
EW13	NA	135.00	155.00	NA	X	X		
EW14	NA	133.00	153.00	NA	X	X		

Note:

1. Well screen information for all extraction wells is reported as depth (ft) below ground surface rather than as elevation (ft MSL).

2. Groundwater sample laboratory analyses include the following parameters: Pentachlorophenol (PCP); naphthalene; benzene, toluene, ethylbenzene, and xylenes (BTEX); natural attenuation parameters (alkalinity, chloride, hardness, nitrate, sulfate, total organic carbon, and methane); and select dissolved metals (arsenic, copper, iron, manganese, and zinc). Field parameter measurements include the following parameters: pH, temperature, specific conductance, dissolved oxygen (DO), oxidation-reduction potential (ORP), iron, and sulfide.

3. Groundwater samples will not be collected if LNAPL is present in the well casing.

Appendix A
Historical Pentachlorophenol Concentration and LNAPL Thickness Data

Appendix A.1

Historical Pentachlorophenol Concentrations
Penta Wood Products Superfund Site
Siren, Wisconsin

MW1		MW2		MW3		MW4		MW5		MW6S	
10/9/1997	2	10/9/1997	< 1	10/8/1997	< 1	10/9/1997	< 1	10/10/1997	31000	10/9/1997	< 1
4/24/2001	< 0.1	4/5/2000	< 0.5	4/4/2000	< 0.5	4/4/2000	< 0.5	4/7/2000	20600	4/26/2001	2.5
9/11/2001	0.5	6/18/2001	< 0.1	4/25/2001	< 0.11			4/26/2001	20600	9/12/2001	1.1
8/6/2002	0.067	9/12/2001	0.51	9/13/2001	J 0.092			9/13/2001	6300	8/7/2002	88
4/29/2003	< 0.1	8/6/2002	0.12	8/7/2002	0.11			8/7/2002	510	9/25/2003	0.33
9/24/2003	0.13	9/24/2003	0.28	9/23/2003	0.31			9/25/2003	1100	9/27/2006	0.21
5/4/2004	1.05	9/21/2004	1.26	9/21/2004	0.367			9/22/2004	214	9/20/2007	0.14
9/21/2004	0.442	9/28/2005	2.2	9/28/2005	0.20			9/28/2005	1100	10/25/2008	2.65
5/10/2005	0.12	9/26/2006	2.3	10/21/2008	< 0.10			9/26/2006	460	10/7/2010	< 0.1
9/29/2005	0.12	9/19/2007	3.7	10/7/2009	< 0.1			9/20/2007	31	10/19/2011	0.10
5/31/2006	J 0.049	10/21/2008	1.60	10/5/2010	< 0.1			10/22/2008	206	10/17/2012	0.10
5/8/2007	0.11	10/6/2009	2.21	10/18/2011	0.58			10/7/2009	33.3	10/9/2013	0.52
9/18/2007	< 0.093	10/6/2010	< 0.1	10/18/2012	0.46			10/6/2010	39.8	9/24/2014	0.27
10/21/2008	0.42	10/19/2011	0.097	10/8/2013	0.38			10/19/2011	0.97		
		10/16/2012	0.33	9/25/2014	0.35			10/17/2012	0.59		
		10/9/2013	0.64					10/10/2013	0.60		
		9/24/2014	0.32					9/24/2014	12.00		

Historical Pentachlorophenol Concentrations
Penta Wood Products Superfund Site
Siren, Wisconsin

MW7		MW8		MW9		MW10		MW10S		MW11	
10/14/1997	< 1	10/14/1997	< 1	10/8/1997	< 1	10/15/1997	8200	10/15/1997	30000	10/15/1997	< 1
4/4/2000	< 0.5	4/5/2000	< 0.5	4/5/2000	0.6	4/6/2000	12900	4/7/2000	J 56100	4/4/2000	< 0.6
4/25/2001	< 0.1	4/25/2001	0.2	4/23/2001	0.12	4/26/2001	22800	12/6/2000	3810	4/24/2001	< 0.11
9/11/2001	J 0.13	9/11/2001	J 0.062	9/12/2001	0.76	9/12/2001	21000	4/25/2001	49000	9/10/2001	J 0.091
8/7/2002	J 0.03	8/8/2002	< 0.04	8/6/2002	0.54	8/7/2002	22000	9/12/2001	82000	8/6/2002	< 0.04
9/24/2003	J 0.044	9/25/2003	< 0.11	9/25/2003	2.3	10/1/2003	9000	8/7/2002	390	9/23/2003	< 0.11
9/22/2004	0.18	9/23/2004	1.94	9/22/2004	2.92	9/23/2004	38000	9/25/2003	2200	9/21/2004	J 0.0656
9/27/2005	< 0.12	9/28/2005	< 0.12	10/18/2005	0.57	9/27/2006	23000	9/22/2004	9490	9/29/2005	< 740
9/26/2006	J 0.087	9/20/2007	< 0.093	9/21/2007	0.37	9/21/2007	1700	9/29/2005	< 0.11	9/27/2006	< 0.11
9/20/2007	< 0.093	10/22/2008	< 0.1	10/22/2008	< 0.1	10/23/2008	1720	9/26/2006	2700	9/20/2007	< 0.093
10/22/2008	< 0.1			5/18/2010	J 0.073	10/7/2009	220	9/21/2007	24	10/22/2008	0.27
10/7/2009	0.403			10/6/2010	< 0.1	10/7/2010	92.4				
10/5/2010	< 0.1			10/19/2011	0.098	10/20/2011	21				
10/19/2011	< 0.098			10/16/2012	0.39	10/17/2012	14				
10/17/2012	< 0.095			10/9/2013	0.41	10/10/2013	17				
10/9/2013	< 0.094			9/24/2014	1.6	9/25/2014	37				
9/23/2014	J 0.034										

Historical Pentachlorophenol Concentrations
Penta Wood Products Superfund Site
Siren, Wisconsin

MW12		MW13		MW14		MW15		MW16		MW17	
10/15/1997	13000	10/8/1997	J 0.7	10/9/1997	< 1	10/16/1997	< 1	10/14/1997	< 1	10/15/1997	< 1
4/6/2000	15000	4/5/2000	0.6	4/6/2000	< 0.5	4/4/2000	< 0.5	4/5/2000	< 0.5	10/28/1997	5
4/26/2001	1500	4/23/2001	0.18	5/19/2001	0.96	4/25/2001	< 0.11	4/23/2001	< 0.11	4/6/2000	< 0.5
9/13/2001	18000	6/19/2001	< 0.11			9/12/2001	J 0.077	9/10/2001	0.17	4/26/2001	0.72
5/14/2002	4300	9/10/2001	0.69			8/6/2002	< 0.04	8/6/2002	J 0.035	9/11/2001	< 0.059
8/8/2002	6400	8/5/2002	0.64			9/23/2003	< 0.1	9/23/2003	J 0.089	8/8/2002	J 0.032
4/29/2003	3000	9/23/2003	2.9			9/21/2004	0.275	9/21/2004	J 0.0962	9/25/2003	0.46
9/23/2003	10000	9/21/2004	4.67			9/29/2005	< 0.11	9/29/2005	< 0.11	9/22/2004	2.82
5/4/2004	11200	9/27/2005	0.85			9/27/2006	< 0.11	9/27/2006	< 0.045	9/27/2005	J 0.054
9/22/2004	9060	9/18/2007	0.53			9/19/2007	< 0.10	9/18/2007	0.20	9/26/2006	< 0.11
5/10/2005	8300	10/21/2008	0.31			5/20/2008	0.18	10/22/2008	J 0.05	9/19/2007	< 0.099
9/27/2005	8500	10/7/2009	0.16			10/21/2008	< 0.10	10/6/2009	< 0.1	10/22/2008	0.1
6/7/2006	6100					9/2/2009	< 0.1	10/5/2010	< 0.1	10/6/2009	< 0.1
9/26/2006	3100					10/7/2009	< 0.1	10/19/2011	J 0.095	10/5/2010	< 0.1
5/9/2007	3000					5/18/2010	< 0.1	10/16/2012	J 0.099	10/18/2011	< 0.095
9/19/2007	1100					10/7/2010	2.32	10/8/2013	J 0.029	10/16/2012	< 0.095
5/29/2008	2200					8/26/2011	< 0.1	9/23/2014	J 0.036	10/8/2013	< 0.095
10/21/2008	1670					10/18/2011	< 0.10			9/24/2014	< 0.087
9/2/2009	521					5/22/2012	J 0.024				
10/6/2009	295					10/16/2012	< 0.094				
5/19/2010	81.9					5/21/2013	J 0.025				
10/5/2010	43.7					10/8/2013	< 0.095				
5/29/2011	37					5/13/2014	< 0.095				
10/18/2011	37					9/23/2014	J 0.054				
5/22/2012	21					4/20/2015	< 0.054				
10/16/2012	26										
5/22/2013	24										
10/8/2013	28										
5/14/2014	19										
9/23/2014	24										
4/20/2015	16										

Historical Pentachlorophenol Concentrations
Penta Wood Products Superfund Site
Siren, Wisconsin

MW18		MW19		MW20		MW21		MW22		MW23	
10/10/1997	27000	10/16/1997	19000	10/15/1997	29000	2/9/1998	< 1	2/9/1998	< 1	2/26/1998	< 1
6/19/2001	27400	4/7/2000	11800	4/26/2001	36600	8/6/2002	J 0.035	8/6/2002	0.078	9/11/2001	0.49
		4/26/2001	25600	9/12/2001	83000	4/29/2003	0.16	9/24/2003	0.34		
		9/12/2001	400000	8/7/2002	30000	9/24/2003	J 0.055	9/21/2004	0.220		
		5/13/2002	14000	9/25/2003	13000	5/4/2004	0.135	9/26/2005	0.16		
		8/8/2002	11000	9/22/2004	133000	9/21/2004	0.474	9/18/2007	0.13		
		4/29/2003	4900	10/25/2005	63000	5/10/2005	0.33	5/20/2008	0.77		
		9/25/2003	15000	9/27/2006	44000	9/27/2005	J 0.046	10/21/2008	J 0.09		
		5/4/2004	70000	9/21/2007	9500	5/1/2006	J 0.023	6/2/2009	< 0.1		
		9/22/2004	111000	10/23/2008	41000	5/8/2007	< 0.098	10/6/2009	< 0.1		
		5/10/2005	45000			9/18/2007	0.13	5/18/2010	< 0.1		
		9/29/2005	13000			10/21/2008	< 0.10	10/6/2010	0.13		
		5/7/2006	17000					6/29/2011	< 0.1		
		9/27/2006	8200					10/18/2011	0.096		
		5/9/2007	11000					5/22/2012	J 0.084		
		9/21/2007	3500					10/16/2012	0.096		
		5/20/2008	23000					5/22/2013	0.11		
		10/24/2008	27900					10/8/2013	0.14		
		5/2/2009	18600					5/14/2014	J 0.095		
		10/7/2009	31800					9/24/2014	0.27		
		5/20/2010	25000					4/21/2015	J 0.072		
		10/7/2010	4470								
		6/29/2011	8880								
		10/20/2011	13000								
		5/22/2012	5300								
		10/17/2012	8100								
		5/22/2013	5800								
		10/10/2013	7900								
		5/14/2014	18000								

Historical Pentachlorophenol Concentrations
Penta Wood Products Superfund Site
Siren, Wisconsin

MW24		MW25		MW26		MW27		MW28		DW1	
2/8/1998	< 4	2/9/1998	1	4/24/2001	< 0.1	10/20/2011	0.17	10/20/2011	690	9/24/2003	J 0.05
4/24/2001	0.11			6/15/2001	1			10/17/2012	0.095	5/4/2004	0.102
				9/10/2001	J 0.16			10/9/2013	J 0.049	9/28/2004	1.08
				5/14/2002	0.1			9/25/2014	0.099	11/1/2004	< 0.0962
				8/5/2002	J 0.035					5/11/2005	J 0.033
				4/29/2003	< 0.11					9/27/2005	J 0.040
				9/23/2003	< 0.11					5/31/2006	J 0.039
				5/4/2004	0.242					9/25/2006	< 0.11
				9/23/2004	5.97					5/10/2007	J 0.074
				5/10/2005	< 0.11					9/19/2007	< 0.093
				9/27/2005	J 0.027					5/20/2008	< 0.094
				6/7/2005	< 0.11					10/23/2008	< 0.1
				9/26/2006	< 0.11					6/3/2009	< 0.1
				5/8/2007	< 0.095					10/8/2009	< 0.1
				9/19/2007	< 0.095					5/19/2010	< 0.1
				5/20/2008	< 0.096					10/7/2010	< 0.1
				10/22/2008	< 0.1					6/30/2011	< 0.1
				6/2/2009	< 0.1					10/18/2011	J 0.032
				10/6/2009	< 0.1					5/23/2012	J 0.028
				5/19/2010	0.13					10/15/2012	J 0.032
				10/5/2010	< 0.1					5/21/2013	J 0.029
				6/29/2011	< 0.1					10/8/2013	J 0.027
				10/19/2011	< 0.099					5/13/2014	J 0.057
				5/22/2012	< 0.10					9/25/2014	J 0.54
				10/16/2012	< 0.098					4/21/2015	J 0.023
				5/22/2013	< 0.094						
				10/8/2013	< 0.096						
				5/14/2014	< 0.095						
				9/24/2014	< 0.095						
				4/21/2015	< 0.094						
				4/21/2015	< 0.094						

Historical Pentachlorophenol Concentrations
Penta Wood Products Superfund Site
Siren, Wisconsin

RW1		RW2		RW3		RW4		RW5		RW6	
4/23/2001	< 0.1	4/24/2001	< 0.1	9/11/2001	J 0.1	4/23/2001	< 0.1	5/4/2004	< 0.0935	9/25/2014	< 0.095
9/11/2001	J 0.071	9/11/2001	9.6	9/28/2001	< 0.1	9/11/2001	J 0.073	9/22/2004	0.293	4/21/2015	< 0.095
9/28/2001	< 0.1	9/28/2001	< 0.1	5/14/2002	J 0.094	9/28/2001	< 0.1	11/1/2004	< 0.0962		
5/14/2002	0.23	5/14/2002	0.1	8/6/2002	< 0.04	5/14/2002	0.13	5/10/2005	< 0.11		
8/6/2002	0.04	8/6/2002	< 0.04	4/29/2003	< 0.11	8/6/2002	< 0.04	9/27/2005	< 0.11		
4/29/2003	J 0.1	4/29/2003	< 0.11	9/23/2003	< 0.11	4/29/2003	< 0.11	5/31/2006	< 0.11		
9/23/2003	0.28	9/24/2003	< 0.11	5/4/2004	< 0.0952	9/23/2003	< 0.11	9/25/2006	< 0.11		
11/20/2003	0.24	5/4/2004	J 0.0252	9/22/2004	2.18	5/4/2004	< 0.100	5/9/2007	< 0.092		
5/4/2004	0.140	9/22/2004	0.398	11/1/2004	< 0.0962	9/22/2004	0.266	9/18/2007	< 0.093		
9/22/2004	1.51	11/1/2004	< 0.0962	5/10/2005	< 0.11	10/1/2004	< 0.0962	5/20/2008	< 0.095		
11/1/2004	< 0.0952	5/10/2005	< 0.11	9/27/2005	< 0.11	5/10/2005	< 0.11	12/10/2008	< 0.1		
5/10/2005	J 0.068	9/27/2005	< 0.11	5/31/2006	< 0.11	9/27/2005	< 0.11	6/2/2009	< 0.1		
7/7/2005	J 0.043	5/31/2006	< 0.11	9/25/2006	< 0.11	5/31/2006	< 0.11	10/7/2009	< 0.1		
9/27/2005	J 0.050	9/25/2006	< 0.11	5/9/2007	< 0.092	9/25/2006	< 0.11	5/19/2010	< 0.1		
5/31/2006	J 0.055	5/9/2007	< 0.092	9/18/2007	< 0.093	5/9/2007	< 0.093	10/5/2010	< 0.1		
9/25/2006	< 0.11	9/18/2007	< 0.093	5/20/2008	< 0.097	9/18/2007	< 0.093	6/30/2011	< 0.1		
5/9/2007	J 0.048	5/20/2008	< 0.095	12/10/2008	< 0.1	5/20/2008	< 0.093	10/20/2011	< 0.095		
9/18/2007	0.27	12/10/2008	< 0.1	6/2/2009	< 0.1	12/10/2008	< 0.1	5/23/2012	< 0.095		
5/20/2008	J 0.056	6/2/2009	< 0.1	10/7/2009	< 0.1	6/2/2009	< 0.1	10/17/2012	J 0.030		
12/11/2008	< 0.1	10/7/2009	< 0.1	5/19/2010	< 0.1	10/7/2009	0.15	12/4/2012	< 0.095		
6/2/2009	< 0.1	5/19/2010	< 0.1	10/5/2010	< 0.1	10/20/2009	< 0.1	5/21/2013	< 0.095		
10/7/2009	< 0.1	10/5/2010	< 0.1	6/30/2011	< 0.1	5/19/2010	< 0.1	10/8/2013	< 0.098		
5/19/2010	< 0.1	6/30/2011	< 0.1	10/20/2011	< 0.095	10/5/2010	< 0.1	5/13/2014	< 0.095		
10/5/2010	< 0.1	10/20/2011	< 0.095	5/23/2012	< 0.097	6/30/2011	< 0.1	9/25/2014	< 0.096		
6/30/2011	< 0.1	5/23/2012	< 0.097	10/17/2012	J 0.015	10/20/2011	< 0.095	4/21/2015	< 0.095		
10/20/2011	J 0.040	10/17/2012	< 0.094	12/3/2012	< 0.095	5/23/2012	< 0.094				
12/16/2011	< 0.096	12/3/2012	< 0.095	5/21/2013	J 0.053	10/17/2012	J 0.071				
5/23/2012	J 0.019	5/21/2013	< 0.097	10/8/2013	< 0.096	12/3/2012	< 0.095				
7/11/2012	J 0.035	10/8/2013	< 0.094	5/13/2014	< 0.095	5/21/2013	< 0.094				
10/17/2012	J 0.045	5/13/2014	< 0.095	9/25/2014	< 0.095	10/8/2013	< 0.095				
12/3/2012	< 0.095	9/25/2014	< 0.096	9/25/2014	< 0.095	5/13/2014	J 0.023				
5/21/2013	J 0.031	4/21/2015	< 0.095	4/21/2015	< 0.097	9/25/2014	< 0.096				
10/8/2013	< 0.097					4/21/2015	< 0.094				
5/13/2014	J 0.051										
9/25/2014	J 0.043										
4/21/2015	< 0.095										

Appendix A.2

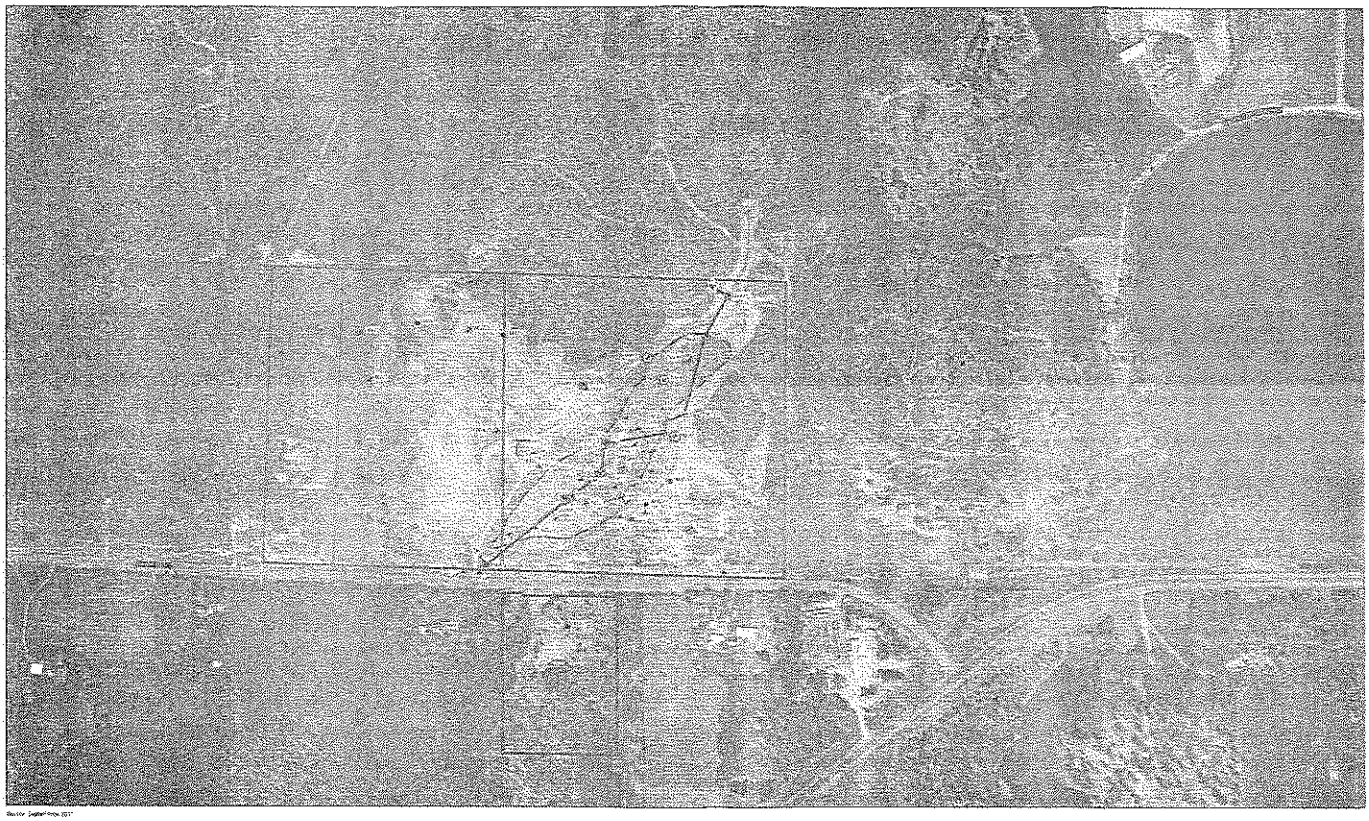
Historical LNAPL Thickness - Monitoring Wells
Penta Wood Products Superfund Site
Siren, Wisconsin

	Monitoring Well			LNAPL
	Thickness (feet)			
Date	MW10S	MW18	MW19	MW20
Sep-01	0.01	0.27	0.51	0.11
May-02	0.00	0.29	0.23	0.00
Aug-02	0.00	0.33	0.22	0.00
May-03	0.00	0.00	0.00	0.00
Sep-03	0.00	0.32	0.24	0.04
May-04	0.00	0.45	0.36	0.35
Sep-04	0.21	0.54	0.67	0.52
May-05	0.29	0.48	0.63	0.36
Sep-05	0.87	0.06	0.83	1.15
May-06	0.00	0.00	0.29	0.00
Sep-06	0.00	0.05	0.80	0.69
Apr-07	0.58	0.04	0.74	1.22
May-07	0.58	0.03	0.54	1.20
Sep-07	0.04	0.16	1.07	0.00
May-08	0.40	1.19	0.90	1.71
Oct-08	0.14	0.04	0.00	0.00
Jun-09	0.54	1.58	1.60	1.45
Oct-09	0.63	1.92	1.45	1.02
May-10	0.51	2.01	1.10	0.85
Oct-10	0.00	0.57	0.59	0.00
Jun-11	0.00	0.42	0.79	0.00
Oct-11	0.00	0.53	1.07	0.00
May-12	0.69	0.79	0.80	2.17
Aug-12	0.04	0.43	0.89	0.30
Oct-12	0.00	0.45	0.91	0.88
Dec-12	0.02	0.44	1.06	0.95
May-13	0.17	0.53	0.94	1.08
Oct-13	0.00	0.70	1.25	0.81
May-14	0.00	0.79	0.22	0.22
Sep-14	0.00	0.56	0.30	0.00
2/13/15	0.00	0.56	0.24	0.00
2/20/15	0.00	0.53	0.23	0.00
3/24/15	0.00	0.34	0.52	0.00
4/16/15	0.00	0.58	NM	0.00
5/14/15	0.00	0.57	NM	0.00

Notes:

NM - Not Measured

www.ghd.com



Source: Digital Globe, 2017

LEGEND

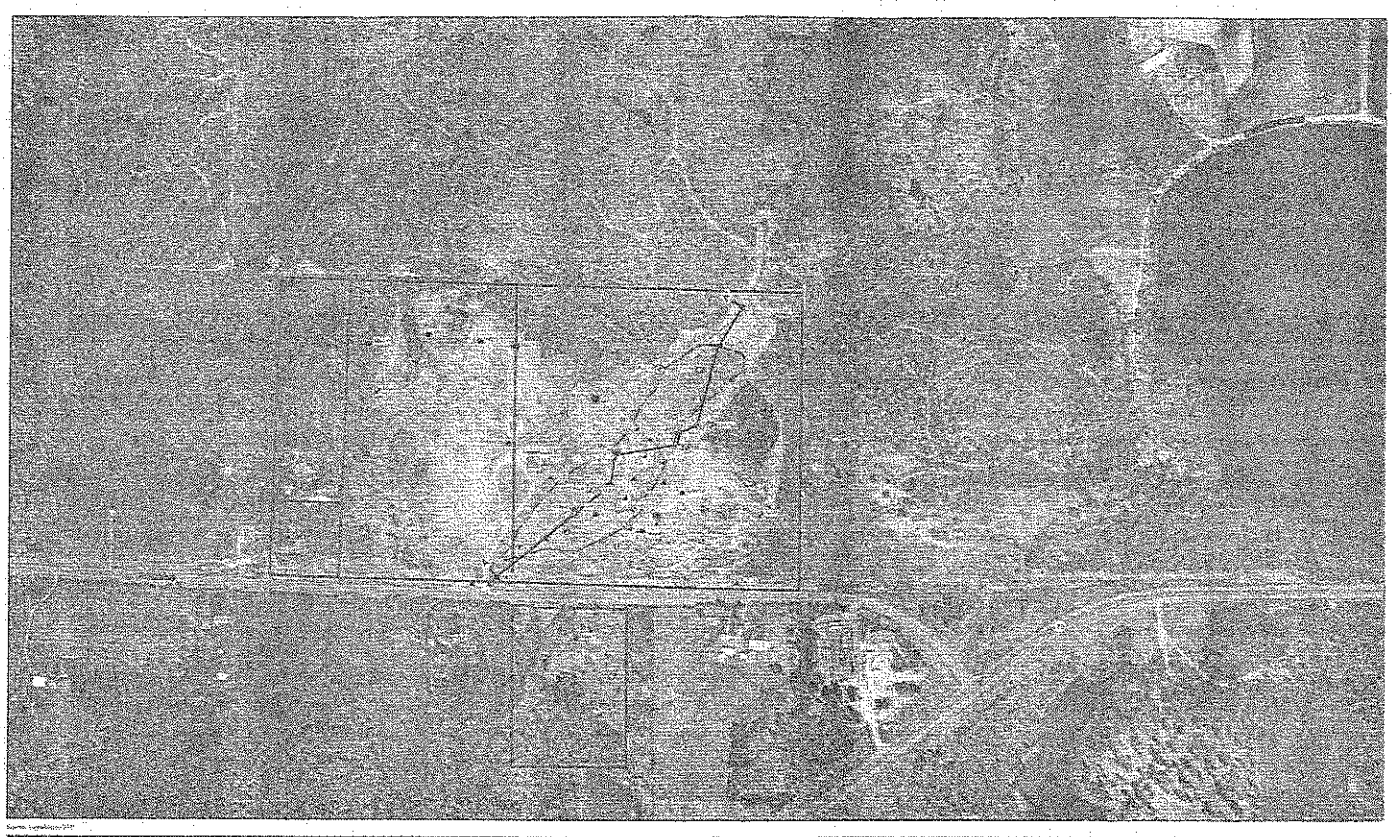
- EXTRACTION WELL NEST
- SOIL GAS WELL NEST
- UNCONFINED MONITORING WELL LOCATION
- PROPOSED UNCONFINED MONITORING WELL LOCATION
- SEMICONFINED MONITORING WELL LOCATION
- PROPOSED SOIL BORING LOCATION
- WATER SUPPLY WELL LOCATION
- RESIDENTIAL WELL LOCATION
- POT CONCENTRATION CONTOUR (ug/L)
- APPROXIMATE LIMIT LINE
- PROPOSED GROUNDWATER MONITORING WELL SAMPLE LOCATION

PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN
REMEDIATION SYSTEM SHUTDOWN PILOT STUDY WORK PLAN

065165-02-20
Oct 25, 2019

UNCONFINED (UPPER) AQUIFER MONITORING PLAN

FIGURE 2.1



LEGEND

- EXTRACTION WELL NEST
- SEMICONFINED MONITORING WELL LOCATION
- SOIL GAS WELL NEST
- WATER SUPPLY WELL LOCATION
- UNCONFINED MONITORING WELL LOCATION
- RESIDENTIAL WELL LOCATION
- PCP CONCENTRATION CONTOUR (µg/L)
- PROPOSED UNCONFINED MONITORING WELL LOCATION
- PROPOSED GROUNDWATER MONITORING WELL SAMPLE LOCATION

PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN
REMEDIATION SYSTEM SHUTDOWN PILOT STUDY WORK PLAN

SEMICONFINED (LOWER) AQUIFER MONITORING PLAN

FIGURE 2.2

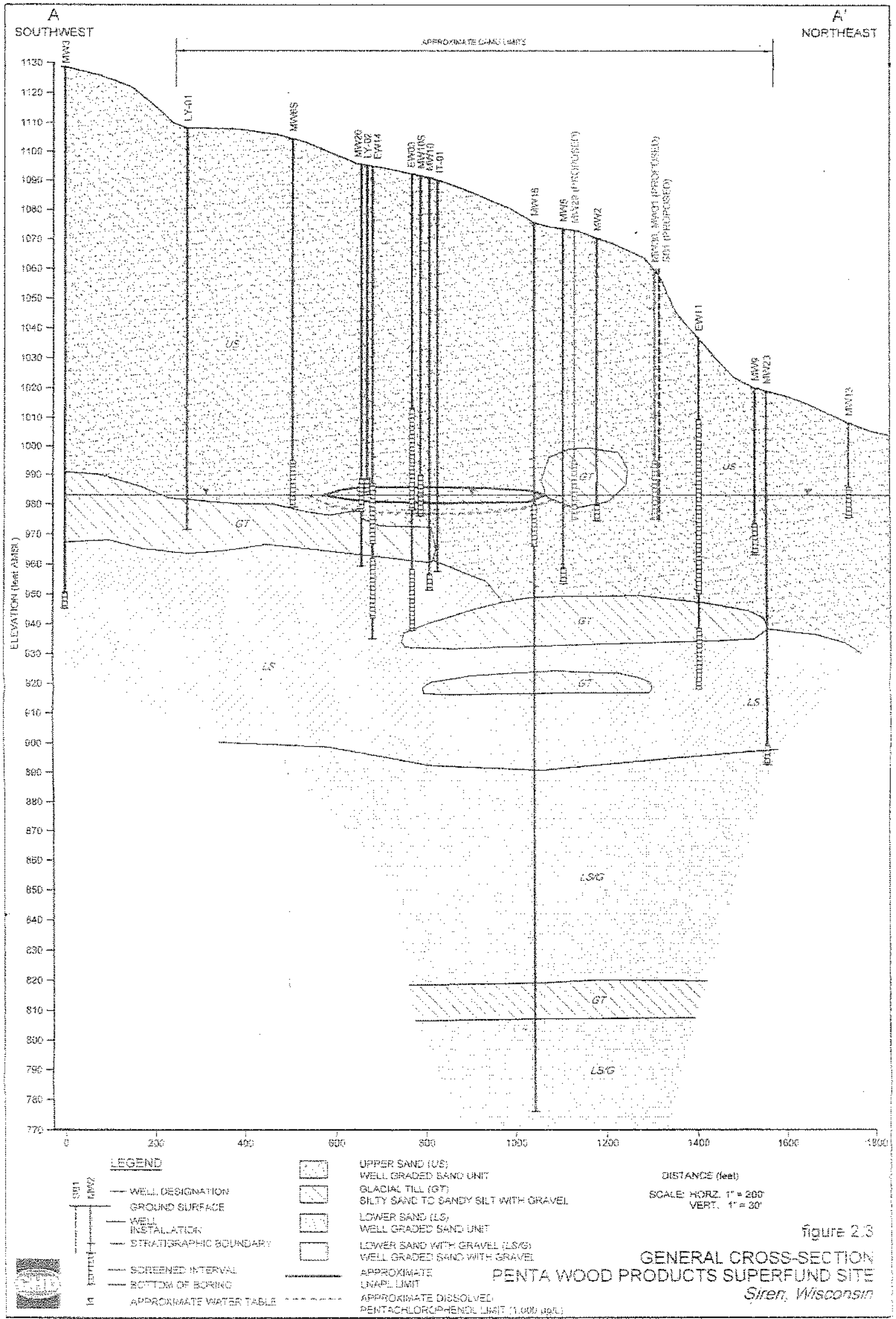


figure 2.3

GENERAL CROSS-SECTION
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin

38165-02(006)GN-WA002 OCT 23, 2015

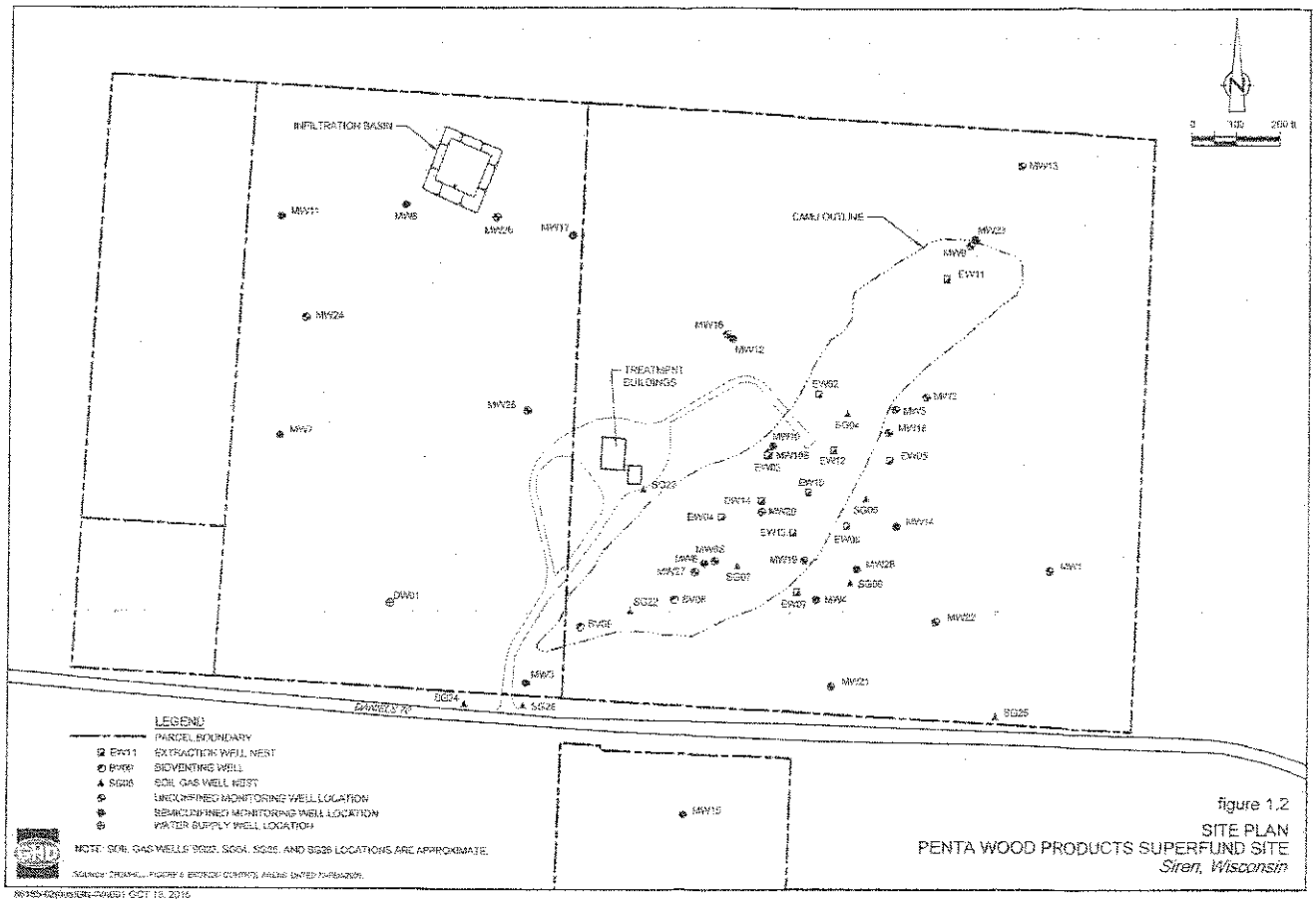
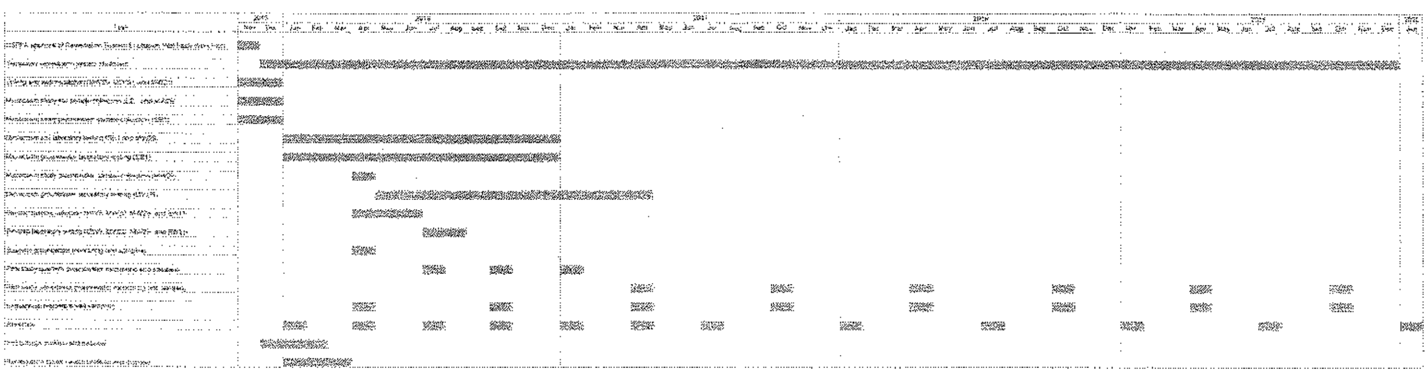


figure 1.2
SITE PLAN
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin



APPENDIX G – ICIAP & CONTINUING OBLIGATIONS LETTER

November 9, 2015 Reference No. 086165-02-01

Mr. Phil Richard
Wisconsin Department of Natural Resources
875 S 4th Avenue
Park Falls, Wisconsin 54552

Dear Phil:

Re: Long-Term Response Action Operation and Maintenance Plan – Addendum No. 1
Penta Wood Products Superfund Site
Siren, Wisconsin

The Wisconsin Department of Natural Resources (WDNR) has implemented Institutional Controls (ICs) at the Penta Wood Products Superfund Site (Site) in the form of Continuing Obligations (COs). On July 6, 2015, the WDNR provided a letter approving the Remedial Actions with Continuing Obligations (WDNR BRRRTS Activity #02-07-000532, FID #:807050310).

GHD Services Inc. (GHD) has prepared this letter providing Addendum No. 1 for the Long-Term Response Action Operation and Maintenance Plan (O&M Plan) (GHD; July 22, 2015) to document required ICs and COs for the Site. This portion of the O&M Plan effectively serves as an Institutional Control Implementation and Assurance Plan (ICIAP). The language in Attachment A of this letter is incorporated into the O&M Plan as Addendum No. 1.

Should you have questions, please do not hesitate to contact us.

Sincerely,

GHD

Tim Ree

TR/sb/18
Encl.

cc: Judy Fassbender, WDNR Madison (via email)
John Robinson, WDNR Wausau (via email)
Tim Panzer, WDNR Madison (via email)
Ron Frehner, GHD (via email)
Brian Sandberg, GHD (via email)
Pete Storlie, GHD (via email)
Linda Martin, USEPA (via email)

GHD Services Inc.
1801 Old Highway 8 Northwest Suite 114 St. Paul Minnesota 55112 USA
T 651 639 0913 F 651 639 0923 W www.ghd.com

Attachment A
Long-Term Response Action Operation and Maintenance Plan – Addendum No. 1

The Wisconsin Department of Natural Resources (WDNR) has implemented Institutional Controls (ICs) at the Site in the form of Continuing Obligations (COs). COs are legal requirements designed to protect public health and the environment in regard to contamination that remains on a property, and COs still apply after a property is sold. This portion of the Long-Term Response Action Operation and Maintenance Plan (O&M Plan) (GHD Services Inc.; July 22, 2015) effectively serves as an Institutional Control Implementation and Assurance Plan (ICIAP). The language below is incorporated into the O&M Plan as Addendum No. 1.

A. Institutional Control and Continuing Obligations

On July 6, 2015, the Wisconsin Department of Natural Resources (WDNR) provided a letter approving the Remedial Actions with Continuing Obligations (WDNR BRRTS Activity #02-07-000532, FID #: 807050310). That letter (included herein as Attachment 1) approved the remedies which have been implemented at the Site and specified the condition with which any current or future owner of the property must comply to ensure that the Site does not pose a threat. These conditions or "Continuing Obligations" (COs) meet the intent of the Institutional Controls (ICs) required by the Record of Decision for the Site.

B. Continuing Obligation Maintenance

CO maintenance consists of periodic monitoring and reporting to confirm that Site security is in place and providing protection as intended and that use of the land is restricted to maintain the integrity and functional effectiveness of the Site remedy.

Maintenance activities consist of periodic review of the property and COs by WDNR, notifications to new land owners or lessees, and continuing education for land owners and property users through annual updates and information. In the event of a transfer of ownership, it is the transferor's responsibility to ensure that the new owner or tenant is informed of the restrictions on the use of the property. In the event of property transfer, the intended use of the property may need to be evaluated to determine if the existing restrictions in place are sufficient to protect the public from exposure.

To facilitate monitoring of the COs, roles and responsibilities, schedules, corrective actions, and reporting requirements are performed as follows:

1. Periodic monitoring consists of at least yearly investigations and more frequently whenever WDNR or its contractors or other representatives are present at the Site.
2. Prohibition of use of the Site real estate is evaluated and updated on an annual basis (minimum frequency). This routine and critical evaluation assesses:

a. Whether the operating remedy remains in place and remains effective

b. Whether Site security remains effective and real estate use meets the stated objectives and performance goals and provides protection required by the response. In the event of a property transfer or change of use, more frequent monitoring may be necessary

3. Evidence of improper use of the real estate comprising the Site may include (but is not limited to) the following:

a. Removal of the existing barrier or cover

b. Replacement with another barrier or cover

c. Excavating or grading of the land surface

d. Filling on covered or paved areas

e. Plowing for agricultural cultivation

f. Construction or placement of a building or other structure

g. Changing the use or occupancy of the property to a residential exposure setting, which may include certain uses, such as single or multiple family residences, a school, day care, senior center, hospital, or similar residential exposure setting

C. Continuing Obligation Enforcement

Generally, enforcement at the Site will be the responsibility of WDNR with consultation and assistance from the United States Environmental Protection Agency (U.S. EPA). In the event that enforcement is not properly implemented, U.S. EPA has the authority to request compliance, and if necessary impose penalties for lack of compliance or in cases of ongoing noncompliance. At the Site, enforcement of the requirements of the July 6, 2015 Continuing Obligations letter is an administrative process that can be supported by legal action if necessary. If the property owner or party responsible for maintaining the integrity of the Site remedy has failed to maintain the written restrictions, legal action may be used to ensure the COs are implemented as designed. The most effective method of enforcement is early problem identification and communication such as the task in Section B above. This can include issuing letters or notices to provide documentation of the problem and the communication of violations. Enforcement may include (but is not limited to) the following tasks:

1. If during any Site visit WDNR or its Contractor or other representative notices unacceptable use of the real estate, the following personnel shall be contacted immediately:

a. Phil Richard
WDNR
875 South 4th Avenue
Park Falls, Wisconsin 54552
Phone: (715) 762-1352
Email: Philip.richard@wisonsin.gov

WDNR personnel shall determine whether immediate action is required by public safety professionals (such as the police or fire departments), and shall contact those agencies if/when appropriate and as

soon as is possible or feasible. WDNR shall then follow up with notices of violation and/or other appropriate action to the extent needed.

1. If during any Site visit WDNR or its Contractor or other representative notices unacceptable use of the real estate, U.S. EPA shall be contacted. The U.S. EPA Points of Contact are:

   a. Linda Martin
   Remedial Project Manager
   U.S. EPA Region 5 – Superfund Division
   77 West Jackson Blvd. (Mail Code: SR-6J)
   Chicago, Il 60604
   Phone: 312-886-3854
   Email: martin.lindab@epa.gov

   b. Terry Stanuch
   Attorney - Office of Regional Council
   U.S. EPA Region 5
   77 West Jackson Blvd. (Mail Code: C-14J)
   Phone: 312- 886-8044
   Email: stanuch.terry@epa.gov

2. Contact information at the Site gate and along perimeter fencing has been made visible to passers-by to report possible improper real estate use at the Site. This serves as an additional method of reporting in the event a member of the public identifies a potential issue at the Site. Both WDNR and U.S. EPA are available to the community to respond to concerns and provide information and guidance.

D. Institutional Control Modification and Termination

At the Site, modification of ICs may be required in the event of a change in land use or ownership. If an event occurs that could lead to a modification that is more or less stringent than the requirements under the current COs, this plan should be reviewed and revised accordingly to ensure ICs and security measures at the Site are removed to a level below that which poses a risk to health and the environment. The WDNR is responsible for determining the modification of these restrictions and/or this chapter of the O&M Plan, with consultation and review by U.S. EPA. WDNR and U.S. EPA are responsible for termination of COs for this Site.

Attachment A1
WDNR Letter – Approval of Remedial Actions with Continuing Obligations (July 6, 2015)

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
Wausau Service Center
5301 Rib Mountain Drive
Wausau WI 54401

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

July 6, 2015

Penta Wood Products, Inc.
8682 STH 70
Siren, WI 54872

KEEP THIS DOCUMENT WITH YOUR PROPERTY RECORDS

SUBJECT: Approval of Remedial Actions with Continuing Obligations
Penta Wood Products Superfund Site, 8682 Daniels 70, Siren, WI
DNR BRRTS Activity #: 02-07-000532
FID #: 807050310
EPA WID006176945

Dear Property Owner:

Penta Wood Products (PWP), an inactive wood treatment facility, operated on your property from 1953-1992. This property is located two miles west of the town of Siren, Burnett County, Wisconsin, in the unincorporated town of Daniels as shown on the attached map, figure 1, Site Location, prepared by Conestoga-Rovers & Associates (CRA), March 2015. The wood treatment facility operated on approximately 80 acres of a 120-acre property. PWP ceased operations in 1992, due to the inability of the facility to comply with Resource Conversation and Recovery Act (RCRA) drip track regulations and the inability to comply with Wisconsin Department of Natural Resources requirements. The site has been listed on the United States Environmental Protection Agency's (EPA) National Priorities List as a Superfund site since 1996.

The EPA conducted a $2-million short-term action between April 1994 and June 1996. The remedial investigation and feasibility study was completed in May 1998. The record of decision (ROD) was signed on September 29, 1998. The remedial design (RD) was completed in November 1999. The remedial action (RA) was completed in September 2000. The RA consisted of the demolition of buildings, consolidation of pentachlorophenol (PCP) and arsenic-contaminated soils in a corrective action management unit (CAMU) protective of human health, installation of a groundwater pump and treatment system, and installation of bio-vent wells and capping of the CAMU. The treatment system was later upgraded, and became operational in May 2004. The total cost of fund-financed remedial actions at the site amounted to $12.7 million. The site is now in the operations, maintenance and monitoring phase which will last until cleanup standards spelled out in the ROD are achieved. In September 2014, the Wisconsin Department of Natural Resources ("Department") assumed financial responsibility and oversight for the long-term remedial actions at the site.

In accordance with the ROD, institutional controls in the form of groundwater use restrictions and land use restrictions must be implemented in order to prohibit site groundwater use and restrict activities in areas of impacted soil. In approving remedial actions, the Department has authority under Wis. Stat. § 292.12(2), to impose limitations on a property to ensure that conditions at the site remain protective of public health, safety and welfare, and the environment. The Department considers the remedies which have been implemented at the site to be approved. This letter specifies the conditions with which any current or future owner of the property must comply to ensure that the site does not pose a threat. These conditions or "continuing obligations" are intended to

meet the intent of the Institutional Control Implementation and Assurance Plan required by EPA at Superfund sites. The continuing obligations outlined in this letter apply to 71.5 acres of the property, comprised of the following three parcels: 07-006-2-38-17-11-4-03-000-011000, 07-006-2-38-17-11-4-04-000-011000 and 07-006-2-38-17-11-4-03-000-012000 (see attached map, figure 2, Parcel Boundaries, Penta Wood Products Superfund Site, prepared by CRA, March 2015). There are two other parcels 07-006-2-38-17-14-1-01-000-013000 (south of Daniels Road) and 07-006-2-38-17-11-4-03-000-014000 (smallest parcel included in the map) that were part of the historic Penta Wood Products which are included in figures 1 and 2 (Site Map and Parcel Boundaries) which are subject to a lien filed by the Department to recover past costs associated with the clean-up but which do not have any continuing obligations imposed upon them.

You, future property owners, and occupants of the property must comply with the continuing obligations, conditions and other on-going requirements as explained in this letter. Provide this letter and all attachments to anyone who purchases, rents or leases this property from you. The continuing obligations placed on the property are based on the property being used for industrial purposes.

Continuing Obligations

The continuing obligations for this site are summarized below. Further details on actions required are found in the section Remedial Action Approval Conditions. The Operations and Maintenance (O&M) Plan for the site will be updated to specify the long term stewardship requirements for maintaining and monitoring the continuing obligations at the property.

- Groundwater contamination is present above ch. NR 140, Wis. Adm. Code enforcement standards. Prior Department approval is required before a new well can be constructed.
- Continued groundwater treatment, Light Non-Aqueous Phase Liquids (LNAPL) removal, and bioventing are required in accordance with the ROD.
- Continued environmental monitoring is required.
- Discharge of the treatment system effluent must continue to be done in accordance with the Substantive Requirements of A Wisconsin Pollutant Discharge Elimination System (WPDES) Permit for the Penta Wood site.
- Residual soil contamination exists that must be properly managed should it be excavated or removed.
- PCP and arsenic-contaminated soils are consolidated in the on-site CAMU and the soil cover overlying the contaminated soil must be maintained. Any proposed changes to this barrier must have prior written approval from the Department.
- Site-specific soil standards for PCP and arsenic were applied during the remedial action, based on current and anticipated land use (industrial). Industrial zoning is required. Before the land use may be changed from industrial to non-industrial, additional environmental work must be completed.
- Access to the soil cover area (CAMU) must continue to be restricted through the use of the existing fencing, which must be maintained.
- The CAMU must be maintained in accordance with the long-term care requirements specified in NR 664.0551(5)(2)(d), Wis. Adm. Code.

The DNR fact sheet, "Continuing Obligations for Environmental Protection", RR-819, helps to explain a property owner's responsibility for continuing obligations on their property. The fact sheet is attached and may be obtained at http://dnr.wi.gov/files/PDF/pubs/rr/RR819.pdf.

GIS Registry

This site will be included on the Bureau for Remediation and Redevelopment Tracking System (BRRTS on the Web) at http://dnr.wi.gov/topic/Brownfields/clean.html, as an informational institutional control in order to

provide public notice of residual contamination and of any continuing obligations. The site can also be viewed on the Remediation and Redevelopment Sites Map (RRSM), under the Geographic Information System (GIS) Registry layer, at the same web address.

Department approval prior to well construction or reconstruction is required for all sites shown on the GIS Registry, in accordance with s. NR 812.09 (4) (w), Wis. Adm. Code. This requirement applies to private drinking water wells and high capacity wells. To obtain approval, complete and submit Form 3300-254 to the DNR Drinking and Groundwater program's regional water supply specialist. This form can be obtained on-line at http://dnr.wi.gov/topic/wells/documents/3300254.pdf.

All site information is also on file at the Northern Region Park Falls DNR office, at 875 S 4th Ave, Park Falls, WI 54552-1130. This letter and other site information can be found as a Portable Document Format (PDF) in BRRTS on the Web.

Prohibited Activities

Certain activities are prohibited at this property to maintain the barrier intended to prevent contact with contaminated soil contained within the site CAMU. You are required to notify the Department before disturbing or modifying the barrier, in order to determine if further action is needed to maintain the protectiveness of the remedy employed. The location of the CAMU is shown on the attached map, figure 3, Site Plan, prepared by CRA March 2015. The following activities are prohibited on any portion of the property where the soil cover is required unless prior written approval has been obtained from the DNR:

- removal of the existing barrier or cover;
- replacement with another barrier or cover;
- excavating or grading of the land surface;
- filling on covered or paved areas;
- plowing for agricultural cultivation;
- construction or placement of a building or other structure;
- changing the use or occupancy of the property to a residential exposure setting, which may include certain uses, such as single or multiple family residences, a school, day care, senior center, hospital, or similar residential exposure settings.

Remedial Action Approval Conditions

Compliance with the requirements of this letter is a responsibility to which you and any subsequent property owners must adhere. Department staff will conduct periodic prearranged inspections to ensure that the conditions included in this letter are met. If these requirements are not followed, the Department may take enforcement action under s. 292.11, Wis. Stats. to ensure compliance with the specified requirements, limitations or other conditions related to the property. Details of how the environmental systems are to be operated and maintained, as well as required environmental monitoring, are contained in the site O&M Plan. Information on the inspection and maintenance requirements for the site continuing obligations and institutional controls is included in the site O&M Plan, in order to ensure the long-term effectiveness of the remedy. Any deviation from the O&M Plan must be approved in writing by the Department.

Residual Groundwater Contamination (ch. NR 140, 812, Wis. Adm. Code)
Groundwater contamination greater than enforcement standards is present on this contaminated property, as shown on the attached map, figure 4, Groundwater Pentachlorophenol Concentrations, prepared by CRA, March, 2015. If you intend to construct a new well, or reconstruct an existing well, you'll need prior Department approval.

Site-Specific Condition (s. NR 726.05 (9), NR 726.15 (2) (m), s. NR 727.07 (7), Wis. Adm. Code)
As part of the approved remedial action, continued groundwater treatment, LNAPL removal, and bioventing are required in accordance with the ROD. Any potential modifications to the remedy must be approved by the Department and documented in a decision document amendment, such as a ROD amendment or an explanation of significant differences (ESD), and approved by EPA.

Site-Specific Condition (s. NR 726.05 (9), NR 726.15 (2) (m), s. NR 727.07 (7), Wis. Adm. Code)
Continued environmental monitoring is required, as specified in the site O&M Plan. Sampling results must be submitted to the Department within 10 business days of receipt of the results. An annual inspection of the wells is required to verify the integrity of the monitoring well construction. The inspection log shall be submitted with the sampling results report. You may be held liable for any problems associated with the monitoring wells if they create a conduit for contaminants to enter groundwater.

Site-Specific Condition (s. NR 726.05 (9), NR 726.15 (2) (m), s. NR 727.07 (7), Wis. Adm. Code)
Discharge of the treatment system effluent must continue to be done in accordance with the Substantive Requirements of the Wisconsin Pollutant Discharge Elimination System (WPDES) Permit for the Penta Wood site.

Residual Soil Contamination (ch. NR 718, chs. 500 to 536, Wis. Adm. Code or ch. 289, Wis. Stats.)
The estimated extent of remaining soil contamination is shown on the attached map, figure 5, Soil Pentachlorophenol Concentrations-Residual Standard Exceedances, prepared by CRA, March 2015. If soil is excavated in the future, the property owner at the time of excavation must sample and analyze the excavated soil to determine if contamination remains. If sampling confirms that contamination is present, the property owner or right-of-way holder at the time of excavation will need to determine whether the material is considered solid or hazardous waste and ensure that any storage, treatment or disposal is in compliance with applicable standards and rules. Contaminated soil may be managed in accordance with ch. NR 718, Wis. Adm. Code, with prior Department approval.

In addition, all current and future owners and occupants of the property need to be aware that excavation of the contaminated soil may pose an inhalation or other direct contact hazard and as a result special precautions may need to be taken to prevent a direct contact health threat to humans.

Depending on site-specific conditions, construction over contaminated soils or groundwater may result in vapor migration of contaminants into enclosed structures or migration along newly placed underground utility lines. The potential for vapor inhalation and means of mitigation should be evaluated when planning any future redevelopment, and measures should be taken to ensure the continued protection of public health, safety, welfare and the environment at the site.

Cover or Barrier (s. 292.12 (2) (a), Wis. Stats., s. NR 726.15, s. NR 727.07 Wis. Adm. Code)
The soil cover that exists in the location identified as the 'CAMU Outline' on the attached map, figure 3 Site Plan, CRA, March 2015, shall be maintained in compliance with the O&M Plan in order to prevent direct contact with residual soil contamination that might otherwise pose a threat to human health.

The cover approved for this closure was designed to be protective for an industrial use setting. Before using the property for non-industrial purposes, you must notify the Department at least 45 days before taking an action, to determine if additional response actions are warranted. A cover or barrier for industrial land uses may not be protective if the use of the property were to change such that a residential exposure would apply. This may include, but is not limited to single or multiple family residences, a school, day care, senior center, hospital or similar settings.

A request may be made to modify or replace a cover or barrier. The replacement or modified cover or barrier must be protective of the revised use of the property, and must be approved in writing by the Department prior to implementation.

Industrial Soil Standards (s. NR 726.15, s. NR 727.07, Wis. Adm. Code)
Site-specific industrial soil standards were developed for this site. The soil contaminants of concern included arsenic (site-specific cleanup level of 1.2 ppm) and PCP (site-specific cleanup level of 2.1 ppm). The estimated extent of soil contamination exceeding the site-specific cleanup levels remains as shown on the attached map, figure 6, Soil Pentachlorophenol Concentrations-Industrial Standard Exceedances, prepared by CRA, March 2015.

This property may not be used or developed for a residential, commercial, agricultural or other non-industrial use, unless prior written approval has been obtained from the Department. The property owner shall notify the Department at least 45 days before changing the use. An investigation and remedial action to meet applicable soil cleanup standards may be required at that time.

Site-Specific Condition (s. NR 726.05 (9), NR 726.15 (2) (m), s. NR 727.07 (7), Wis. Adm. Code)
Access to the CAMU must continue to be restricted through the use of the existing fencing, which must be maintained. The fencing is required in order to prohibit interference with the CAMU and consolidation areas and to prohibit unnecessary exposure.

Site-Specific Condition (s. NR 726.05 (9), NR 726.15 (2) (m), s. NR 727.07 (7), Wis. Adm. Code)
The CAMU must be maintained in accordance with the long-term care requirements specified in NR 664.0551(5)(2)(d), Wis. Adm. Code. This includes any monitoring or maintenance activities necessary to protect human health and the environment by ensuring the integrity of the cover over the long term.

In Closing

Please be aware that the Department may impose additional conditions, if additional information regarding site conditions indicates that contamination on or from the site poses a threat to public health, safety, welfare or to the environment.

If you have any questions regarding the continuing obligations for this site, or anything outlined in this letter, please contact Phil Richard at 715-762-1352, or at Philip.Richard@wisconsin.gov.

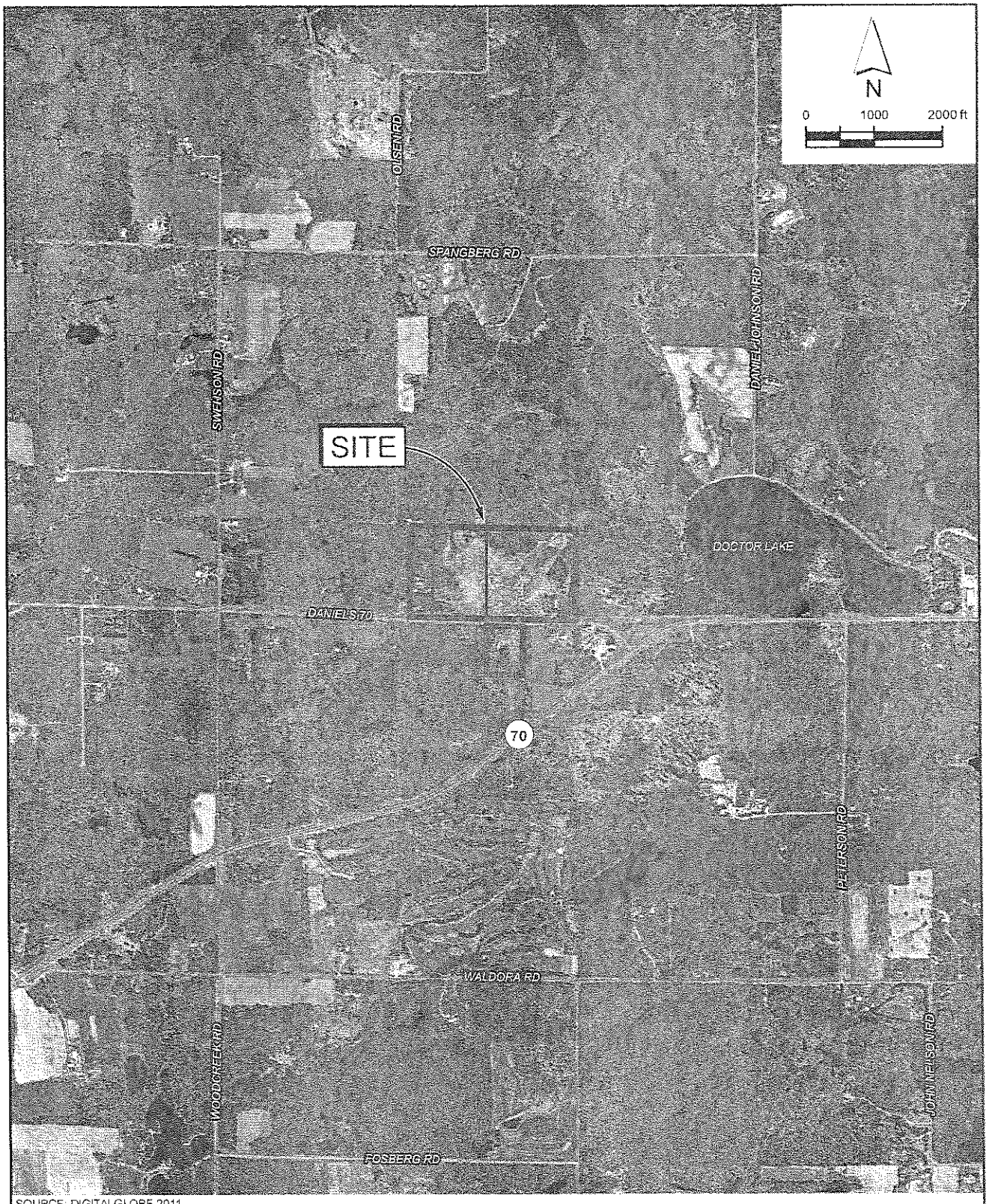
Sincerely,

John Robinson
Northern Region Team Supervisor
Remediation & Redevelopment Program

Attachments:

- Figure 1, Site Location, CRA, March 2015
- Figure 2, Parcel Boundaries, CRA, March 2015
- Figure 3, Site Plan, CRA March, 2015
- Figure 4, Groundwater Pentachlorophenol Concentrations, CRA, March 2015
- Figure 5, Soil Pentachlorophenol Concentrations-Residual Standard Exceedances, CRA, March 2015
- Figure 6, Soil Pentachlorophenol Concentrations-Industrial Standard Exceedances, CRA, March 2015
- RR-819 Continuing Obligations for Environmental Protection

cc: Linda Martin, EPA Region 5, 77 West Jackson Boulevard SR-6J, Chicago, IL 60604-3507
Terry Stanuch, EPA Region 5, 77 West Jackson Boulevard C-14J, Chicago, IL 60604-3507
Phil Richard, DNR Park Falls
Judy Fassbender, DNR Madison RR/5
Tim Ree, CRA, 1801 Old Highway 8 NW, Suite 114, St Paul, MN 55112
Ron Frehner, CRA, 1801 Old Highway 8 NW, Suite 114, St Paul, MN 55112
Nathan Ehalt, Burnett County Administrator, 7410 County Road K #116, Siren, WI 54872
Liz Simonsen, Town Clerk Town of Daniels, 8851 Waldora Road, Siren, Wisconsin 55872



SOURCE: DIGITALGLOBE 2011

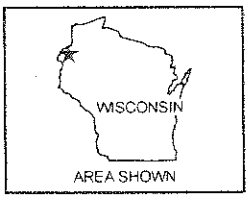


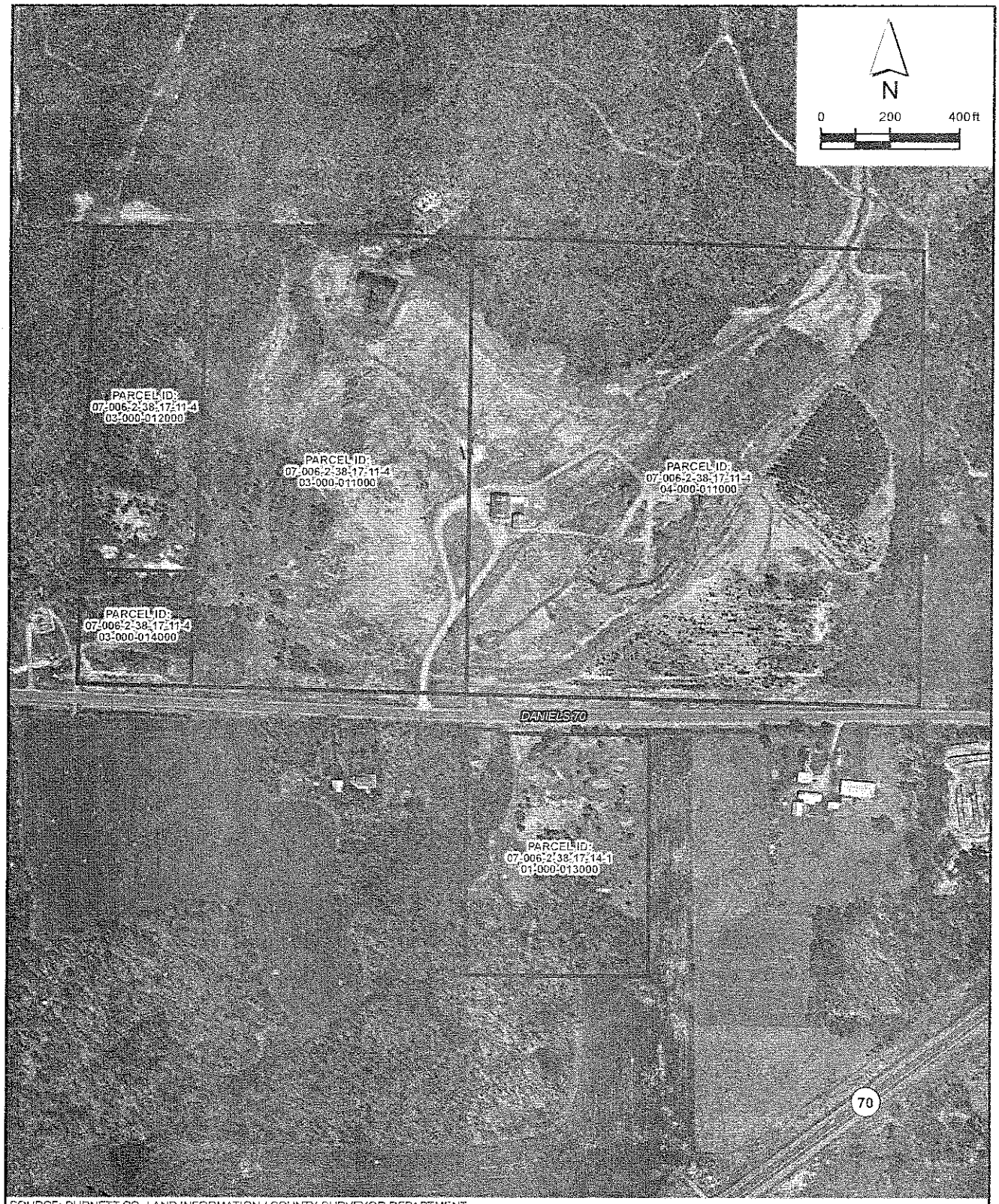
figure 1

SITE LOCATION

PENTA WOOD PRODUCTS SUPERFUND SITE

Siren, Wisconsin

086165-01(MISC002)GIS-SP001 MAR 17/2015



SOURCE: BURNETT CO. LAND INFORMATION / COUNTY SURVEYOR DEPARTMENT

LEGEND

PARCEL BOUNDARY

figure 2

PARCEL BOUNDARIES
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin

086165-01(MISC002)GIS-SP002 MAR 17/2015

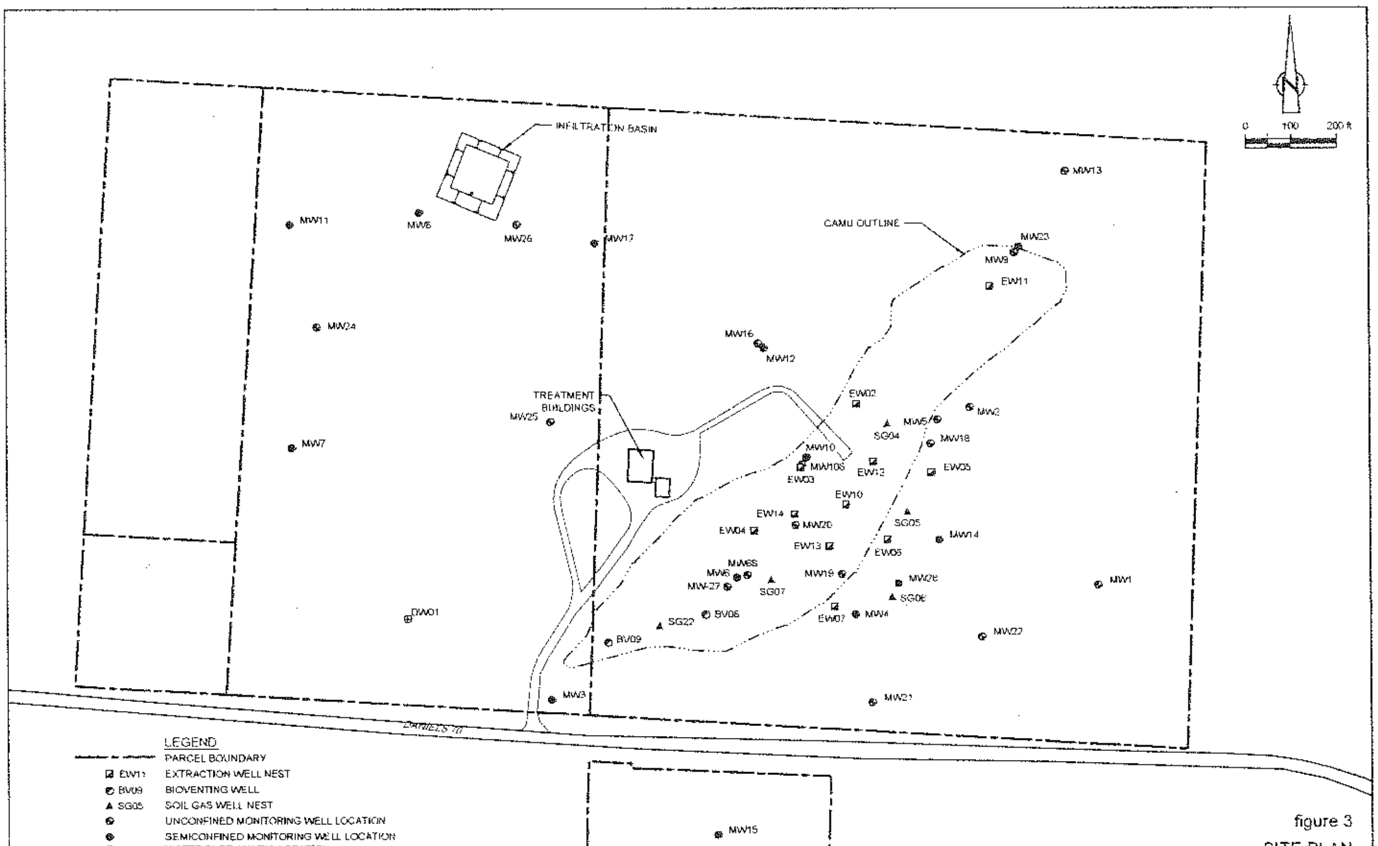

INFILTRATION BASIN
0 100 200 ft
MW13
MW11
MW8
MW26
MW17
CAMU OUTLINE
MW23
MW9
EW11
MW24
MW16
MW12
TREATMENT BUILDINGS
MW25
EW02
MW5
MW2
SG04
MW18
MW7
MW10
MW10S
EW03
EW12
EW05
EW10
EW14
SG05
EW04
MW20
MW14
EW13
EW06
MW6S
MW6
MW-27
SG07
MW19
MW28
MW1
SG06
DW01
SV06
EW07
MW4
SG22
BV09
MW22
MW3
MW21
LEGEND
PARCEL BOUNDARY
EW11 EXTRACTION WELL NEST
BV09 BIOVENTING WELL
SG05 SOIL GAS WELL NEST
UNCONFINED MONITORING WELL LOCATION
SEMICONFINED MONITORING WELL LOCATION
WATER SUPPLY WELL LOCATION
MW15

figure 3
SITE PLAN
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin

86165-00(MISC001)CI-BU006 MAR 20/2015

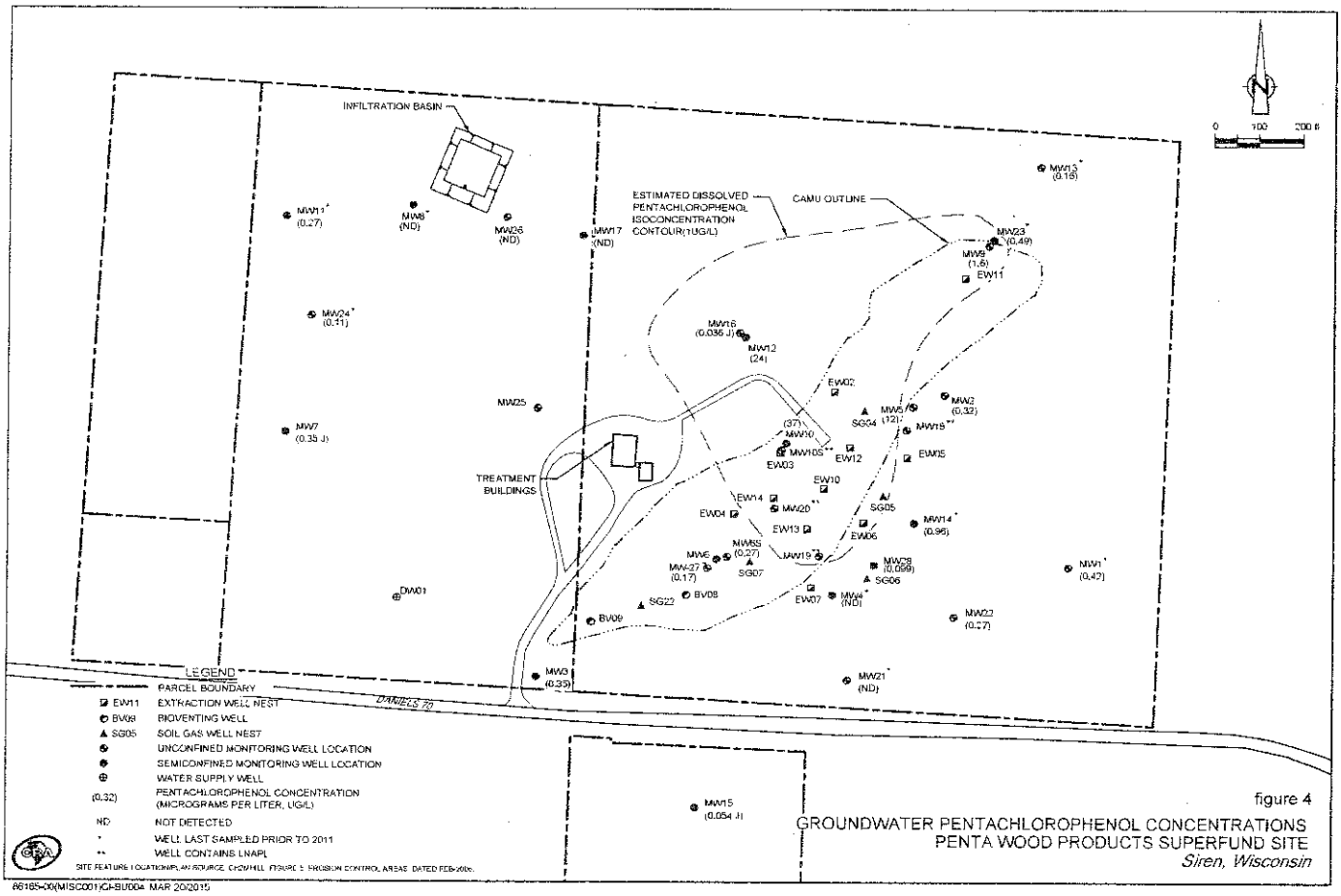


figure 4

GROUNDWATER PENTACHLOROPHENOL CONCENTRATIONS
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin

86185-00(MISC001)GN-SU004 MAR 20/2015

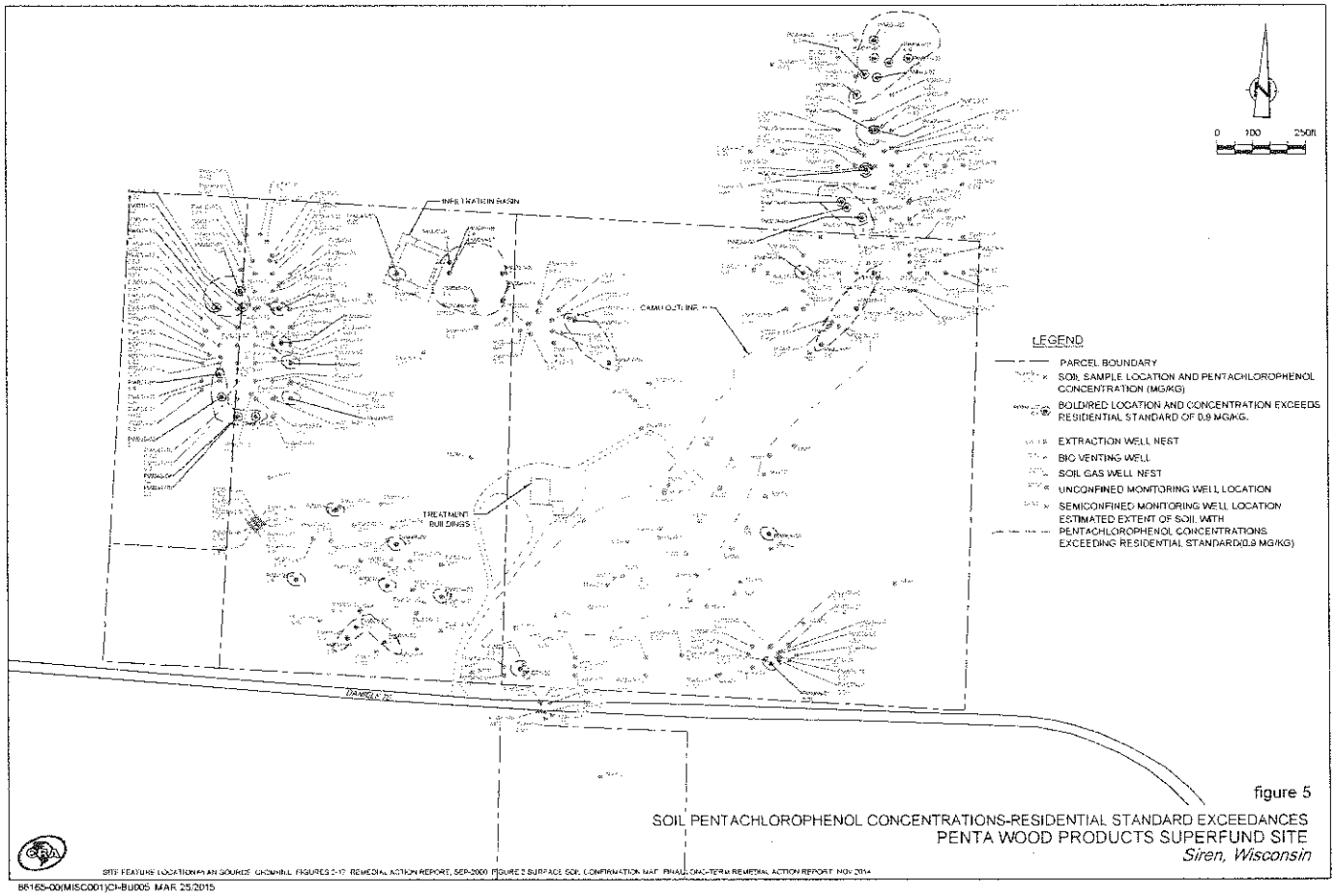


figure 5

SOIL PENTACHLOROPHENOL CONCENTRATIONS-RESIDENTIAL STANDARD EXCEEDANCES
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin

SITE FEATURE LOCATIONS AN SOURCE: GROUNDIL FIGURES 2-17 REMEDIAL ACTION REPORT, SEP-2000 FIGURE 2 SURFACE SOIL CONFIRMATION MAP, FINAL LONG-TERM REMEDIAL ACTION REPORT, NOV-2014

B81655-00(MISC001)CH-BU005 MAR 25/2015

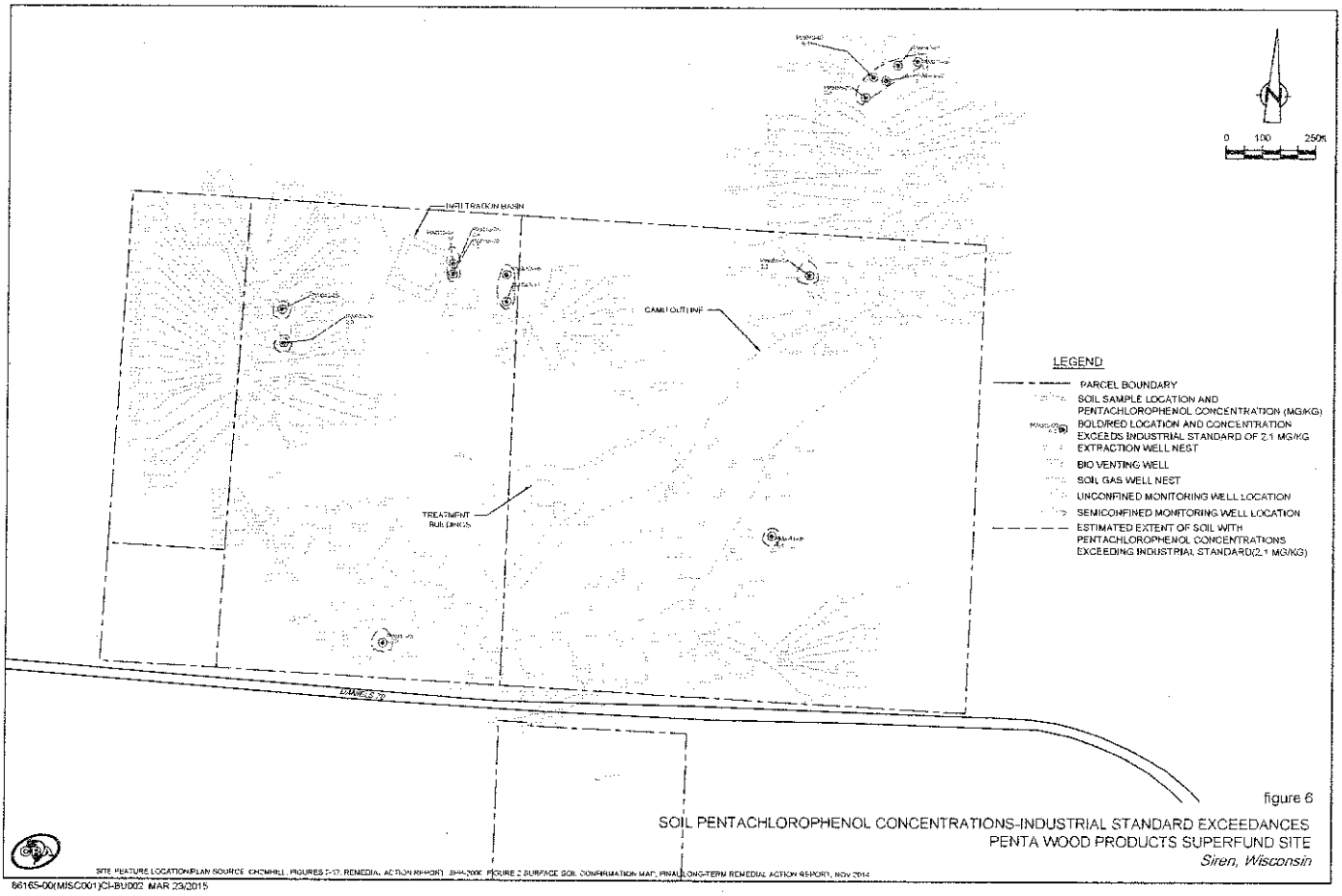


figure 6

SOIL PENTACHLOROPHENOL CONCENTRATIONS-INDUSTRIAL STANDARD EXCEEDANCES
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin

SITE FEATURE LOCATION/PLAN SOURCE: EMCHILL, FIGURES 7-17, REMEDIAL ACTION REPORT, 2004; 2006, FIGURE 2 SURFACE SOIL CONFIRMATION MAP, FINAL LONG-TERM REMEDIAL ACTION REPORT, NOV 2014

86165-00(MISC001)CI-BU002 MAR 23/2015

Continuing Obligations for Environmental Protection

Responsibilities of Wisconsin Property Owners

PUB-RR-819 November 2013

This fact sheet is intended to help property owners understand their legal requirements under s. 292.12, Wis. Stats., regarding continuing obligations that arise due to the environmental condition of their property.

The term "continuing obligations" refers to certain actions for which property owners are responsible following a completed environmental cleanup. They are sometimes called environmental land use controls or institutional controls. These legal obligations, such as a requirement to maintain pavement over contaminated soil, are most often found in a cleanup approval letter from the state.

Less commonly, a continuing obligation may apply where a cleanup is not yet completed but a cleanup plan has been approved, or at a property owned by a local government that is exempt from certain cleanup requirements.

What Are Continuing Obligations?

Continuing obligations are legal requirements designed to protect public health and the environment in regard to contamination that remains on a property.

Continuing obligations still apply after a property is sold. Each new owner is responsible for complying with the continuing obligations.

Background

Wisconsin, like most states, allows some contamination to remain after cleanup of soil or groundwater contamination (residual contamination). This minimizes the transportation of contamination and reduces cleanup costs while still ensuring that public health and the environment are protected.

The Department of Natural Resources (DNR), through its Remediation and Redevelopment (RR) Program, places sites or properties with residual contamination on a public database in order to provide notice to interested parties about the residual contamination and any associated continuing obligations. Please see the "Public Information" section on page 3 to learn more about the database. (Prior to June 3, 2006, the state used deed restrictions recorded at county courthouses to establish continuing obligations, and those deed restrictions have also been added into the database.)

Types of Continuing Obligations

1. **Manage Contaminated Soil that is Excavated**
   If the property owner intends to dig up an area with contaminated soil, the owner must ensure that proper soil sampling, followed by appropriate treatment or disposal, takes place. Managing contaminated soil must be done in compliance with state law and is usually done under the guidance of a private environmental professional.

2. **Manage Construction of Water Supply Wells**
   If there is soil or groundwater contamination and the property owner plans to construct or reconstruct a water supply well, the owner must obtain prior DNR approval to ensure that well construction is designed to protect the water supply from contamination.

Other Types of Continuing Obligations
Some continuing obligations are designed specifically for conditions on individual properties. Examples include:

- keeping clean soil and vegetation over contaminated soil;
- keeping an asphalt "cover" over contaminated soil or groundwater;
- maintaining a vapor venting system; and
- notifying the state if a structural impediment (e.g. building) that restricted the cleanup is removed. The owner may then need to conduct additional state-approved environmental work.

It is common for properties with approved cleanups to have continuing obligations because the DNR generally does not require removal of all contamination.

Property owners with the types of continuing obligations described above will find these requirements described in the state's cleanup approval letter or cleanup plan approval, and *must*:

- comply with these property-specific requirements; and
- obtain the state's permission before changing portions of the property where these requirements apply.

The requirements apply whether or not the person owned the property at the time that the continuing obligations were placed on the property.

Changing a Continuing Obligation

A property owner has the option to modify a continuing obligation if environmental conditions change. For example, petroleum contamination can degrade over time and property owners may collect new samples showing that residual contamination is gone. They may then request that DNR modify or remove a continuing obligation. Fees are required for DNR's review of this request and for processing the change to the database ($1050 review fee, $300/$350 database fee). Fees are subject to change; current fees are found in Chapter NR 749, Wis. Adm. Code, on the web at www.legis.state.wi.us/rsb/code/nr/nr749.pdf.

Public Information

The DNR provides public information about continuing obligations on the Internet. This information helps property owners, purchasers, lessees and lenders understand legal requirements that apply to a property. DNR has a comprehensive database of contaminated and cleaned up sites, *BRRTS on the Web*. This database shows all contamination activities known to DNR. Site specific documents are found under the *Documents* section. The information includes maps, deeds, contaminant data and the state's closure letter. The closure letter states that no additional environmental cleanup is needed for past contamination and includes information on property-specific continuing obligations. If a cleanup has not been completed, the state's approval of the remedial action plan will contain the information about continuing obligations.

Properties with continuing obligations can generally be located in DNR's *GIS Registry*, part of the *RR Sites Map*. RR Sites Map provides a map view of contaminated and cleaned up sites, and links to BRRTS on the Web.

If a completed cleanup is shown in *BRRTS on the Web* but the site documents cannot be found in the Documents section, DNR's closure letter can still be obtained from a regional office. For assistance, please contact a DNR Environmental Program Associate (see the RR Program's Staff Contact web page at dnr.wi.gov/topic/Brownfields/Contact.html).

BRRTS on the Web and
RR Sites Map are part of
CLEAN
(the Contaminated Lands
Environmental Action Network) at
dnr.wi.gov/topic/Brownfields/clean.html

Off-Site Contamination: When Continuing Obligations Cross the Property Line

An off-site property owner is someone who owns property that has been affected by contamination that moved through soil, sediment or groundwater from another property. Wisconsin law, s. 292.13, Wis. Stats., provides an exemption from environmental cleanup requirements for owners of "off-site" properties. The DNR will generally not ask off-site property owners to investigate or clean up contamination that came from a different property, as long as the property owner allows access to his or her property so that others who are responsible for the contamination may complete the cleanup.

However, off-site property owners are legally obligated to comply with continuing obligations on their property, even though they did not cause the contamination. For example, if the state approved a cleanup where the person responsible for the contamination placed clean soil over contamination on an off-site property, the owner of the off-site property must either keep that soil in place or obtain state approval before disturbing it.

Property owners and others should check the *Public Information* section above if they need to:

- determine whether and where continuing obligations exist on a property;
- review the inspection, maintenance and reporting requirements, and
- contact the DNR regarding changing that portion of the property. The person to contact is the person that approved the closure or remedial action plan.

Option for an Off-Site Liability Exemption Letter

In general, owners of off-site properties have a legal exemption from environmental cleanup requirements. This exemption does not require a state approval letter. Nonetheless, they may request a property-specific liability exemption letter from DNR if they have enough information to show that the source of the contamination is not on their property. This letter may be helpful in real estate transactions. The fee for this letter is $700 under Chapter NR 749, Wis. Adm. Code. For more information about this option, please see the RR Program's Liability web page at dnr.wi.gov/topic/Brownfields/Liability.html.

Legal Obligations of Off-Site Property Owners

- Allow access so the person cleaning up the contamination may work on the off-site property (unless the off-site owner completes the cleanup independently).
- Comply with any required continuing obligations on the off-site property.

Required Notifications to Off-Site Property Owners

1. The person responsible for cleaning up contamination must notify affected property owners of any proposed continuing obligations on their off-site property **before** asking the DNR to approve the cleanup. This is required by law and allows the off-site owners to provide the DNR with any technical information that may be relevant to the cleanup approval.

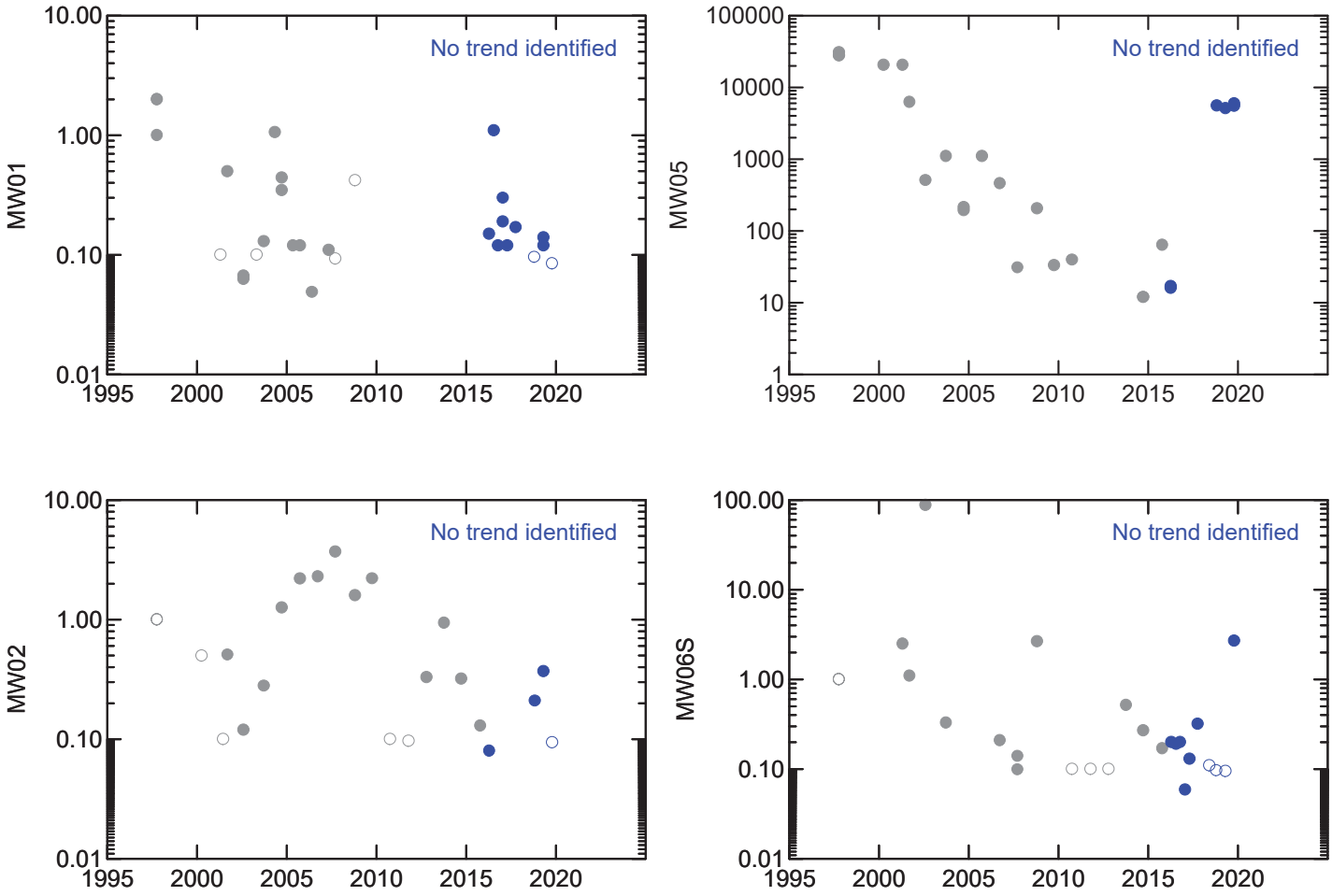
   When circumstances are appropriate, an off-site neighbor and the person responsible for the cleanup may enter into a "legally enforceable agreement" (i.e. a contract). Under this type of private agreement, the person responsible for the contamination may also take responsibility for maintaining a continuing obligation on an off-site property. This agreement would not automatically transfer to future owners of the off-site property. The state is not a party to the agreement and can not enforce it.

2. If a cleanup proposal that includes off-site continuing obligations is approved, DNR will send a letter to the off-site owners detailing the continuing obligations that are required for their property. Property owners should inform anyone interested in buying their property about maintaining these continuing obligations. For residential property, this would be part of the real estate disclosure obligation.

More Information

For more information, please visit the RR Program's Continuing Obligations web site at dnr.wi.gov/topic/Brownfields/Residual.html.

APPENDIX H – GROUNDWATER CONCENTRATION TREND PLOTS

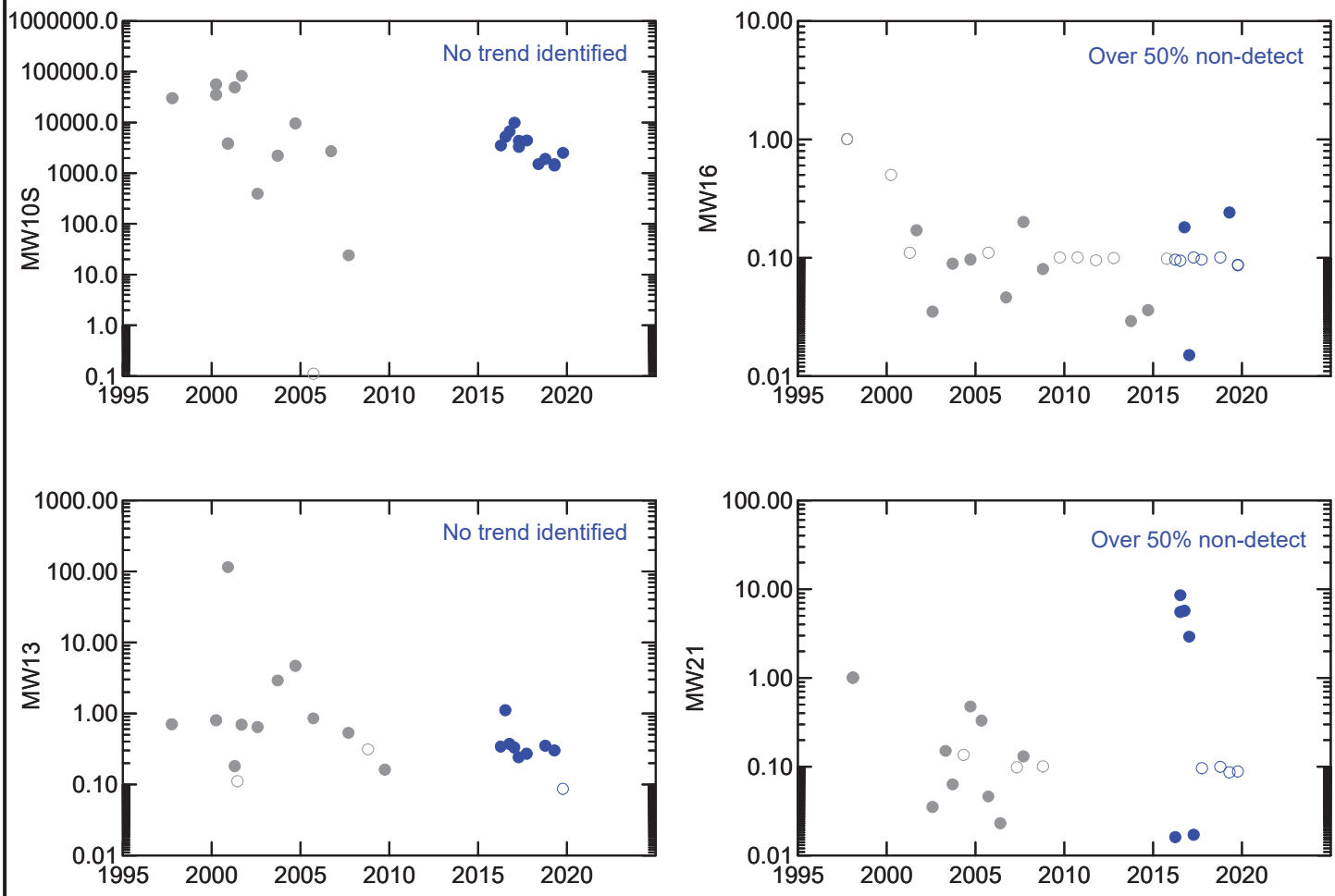


Legend:
- Detected result (Historical period)
- Non-detect (plotted at detection limit)
- Detected result (Post-shutdown period)
- Non-detect (plotted at detection limit)

Notes:
1) Non-detects with detection limits above detected values were excluded from trends.
2) Trend analysis results are reported for the post-shutdown period.

figure 1

UNCONFINED (UPPER) AQUIFER
PENTACHLOROPHENOL (µg/L) vs. TIME
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin



Legend:
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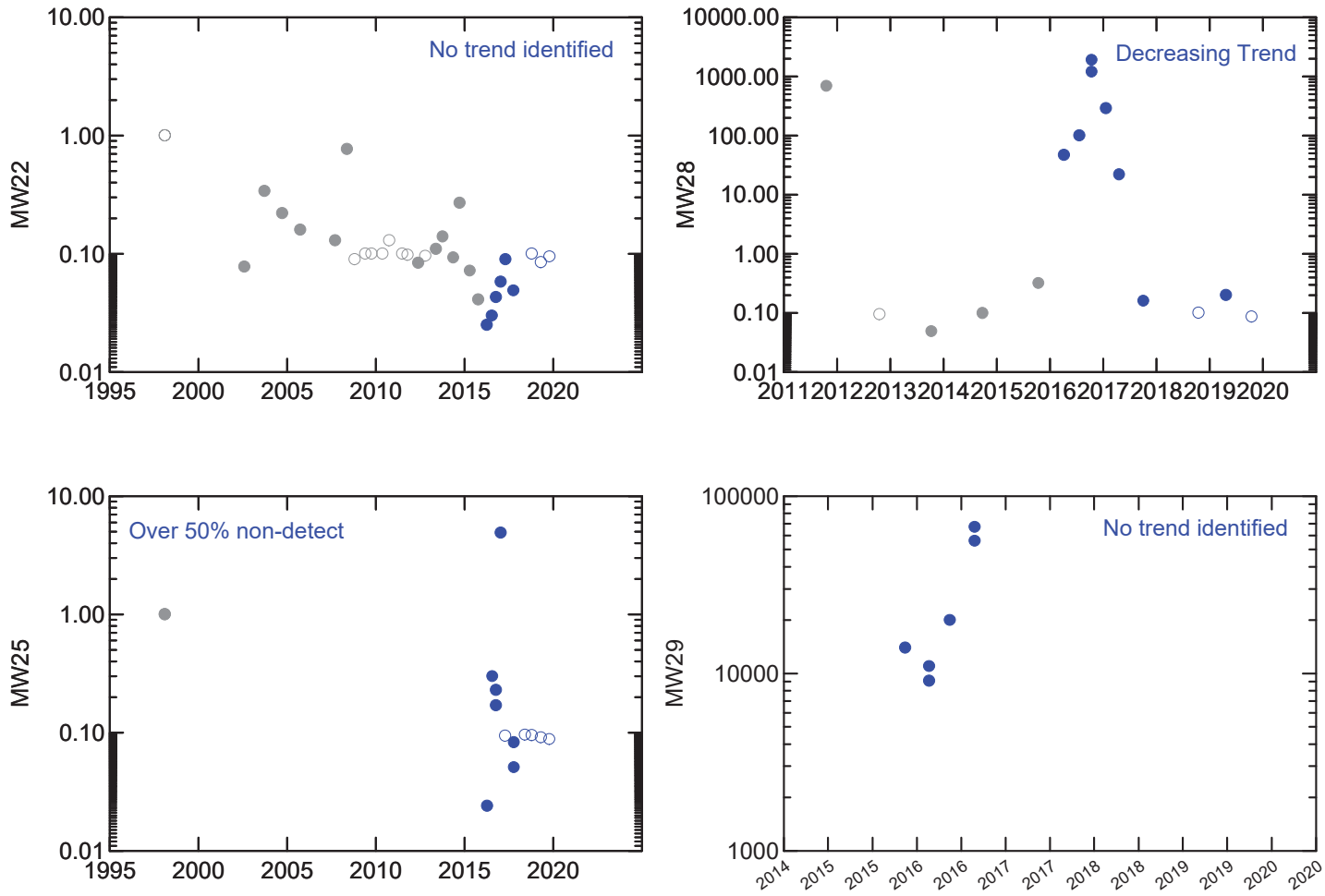
- Detected result (Post-shutdown period)
- Non-detect (plotted at detection limit)

Notes:
1) Non-detects with detection limits above detected values were excluded from trends.
2) Trend analysis results are reported for the post-shutdown period.

figure 2

UNCONFINED (UPPER) AQUIFER
PENTACHLOROPHENOL (µg/L) vs. TIME
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin



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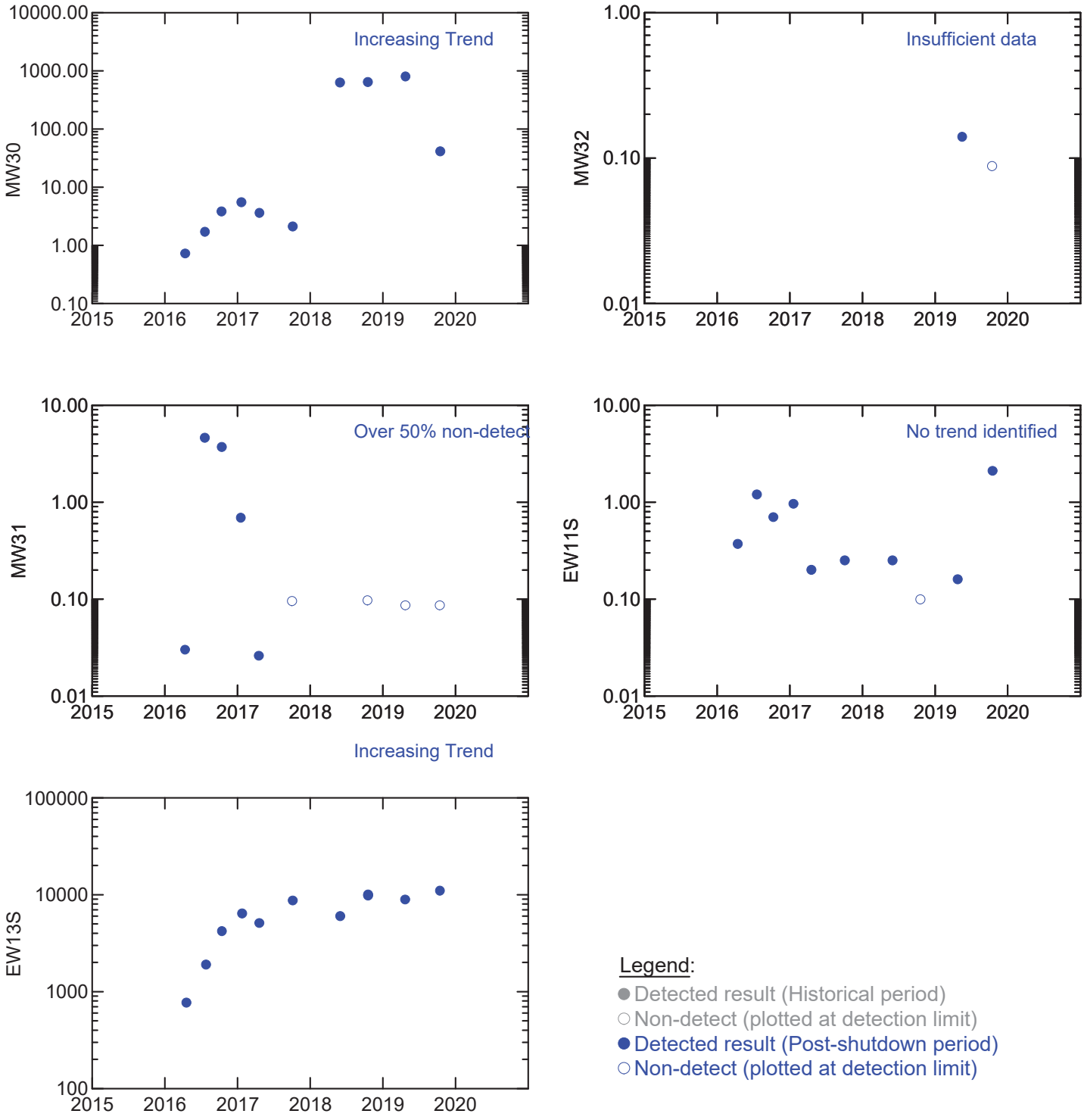
- Non-detect (plotted at detection limit)

Notes:

1) Non-detects with detection limits above detected values were excluded from trends.
2) Trend analysis results are reported for the post-shutdown period.

figure 3

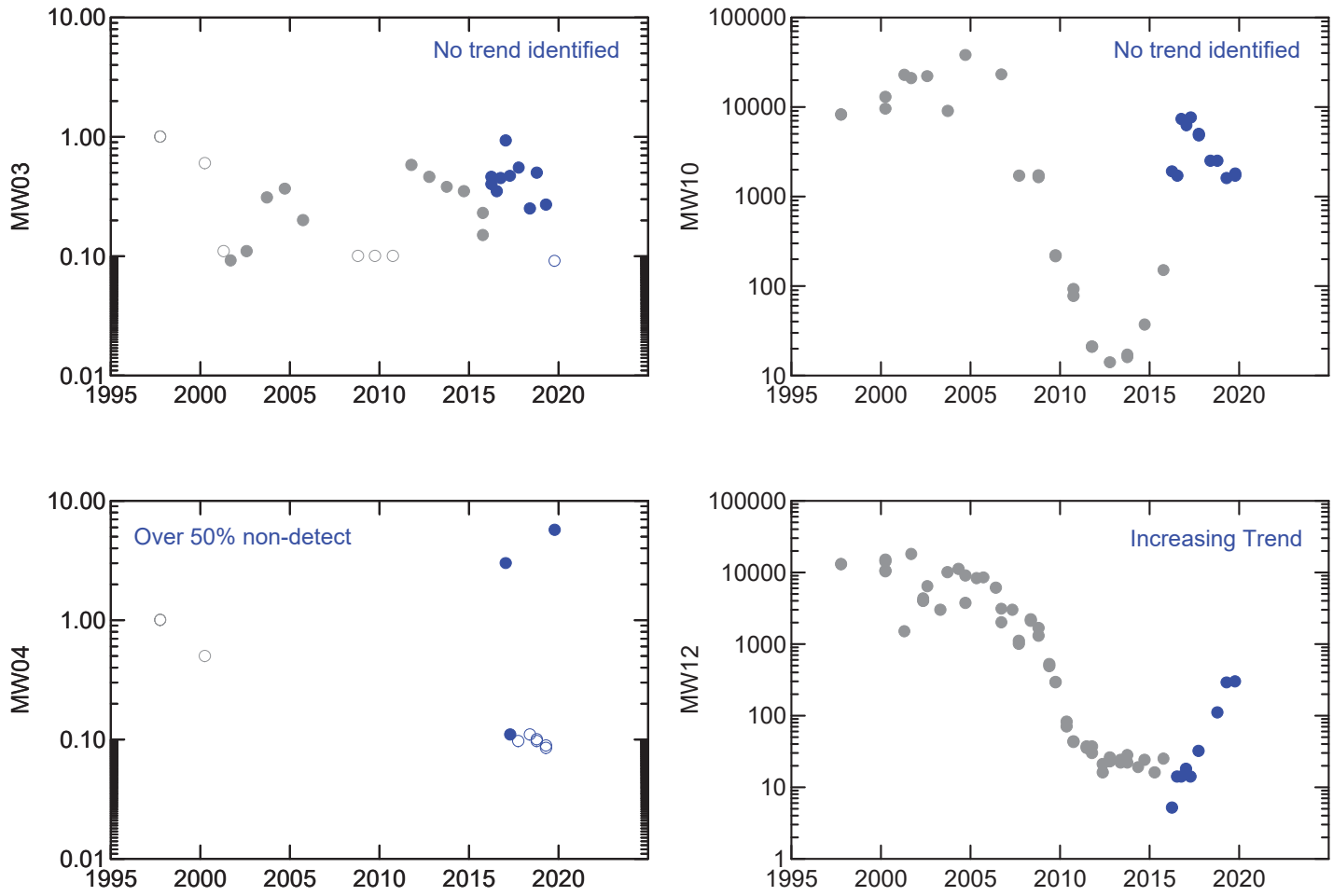
UNCONFINED (UPPER) AQUIFER
PENTACHLOROPHENOL (µg/L) vs. TIME
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin



Notes:
1) Non-detects with detection limits above detected values were excluded from trends.
2) Trend analysis results are reported for the post-shutdown period.

figure 4

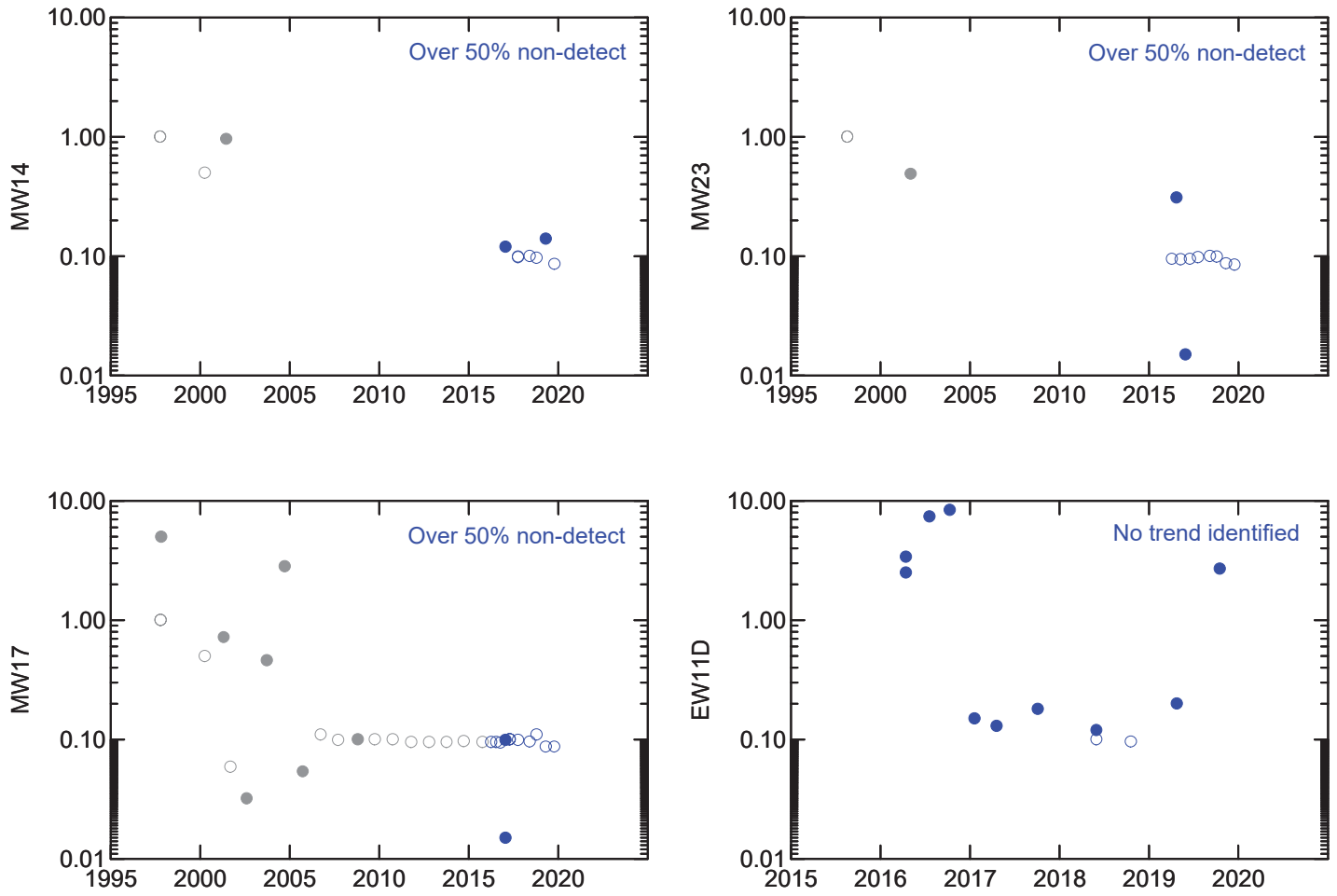
UNCONFINED (UPPER) AQUIFER
PENTACHLOROPHENOL (µg/L) vs. TIME
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin



Notes:
1) Non-detects with detection limits above detected values were excluded from trends.
2) Trend analysis results are reported for the post-shutdown period.

figure 5

SEMICONFINED (LOWER) AQUIFER
PENTACHLOROPHENOL (µg/L) vs. TIME
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin



Legend:
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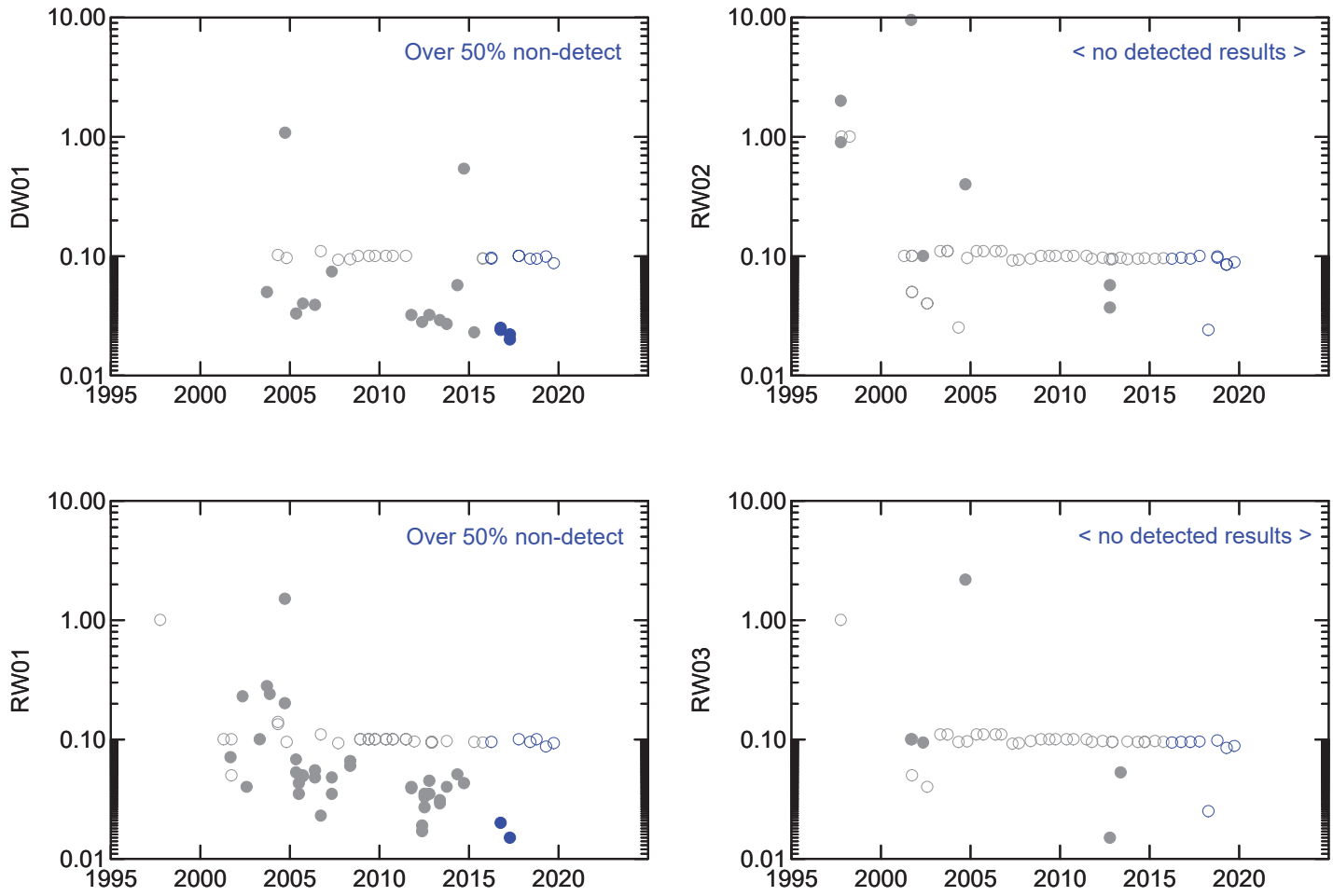
- Non-detect (plotted at detection limit)
- Detected result (Post-shutdown period)
- Non-detect (plotted at detection limit)

Notes:
1) Non-detects with detection limits above detected values were excluded from trends.
2) Trend analysis results are reported for the post-shutdown period.

figure 6

SEMICONFINED (LOWER) AQUIFER
PENTACHLOROPHENOL (µg/L) vs. TIME
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin

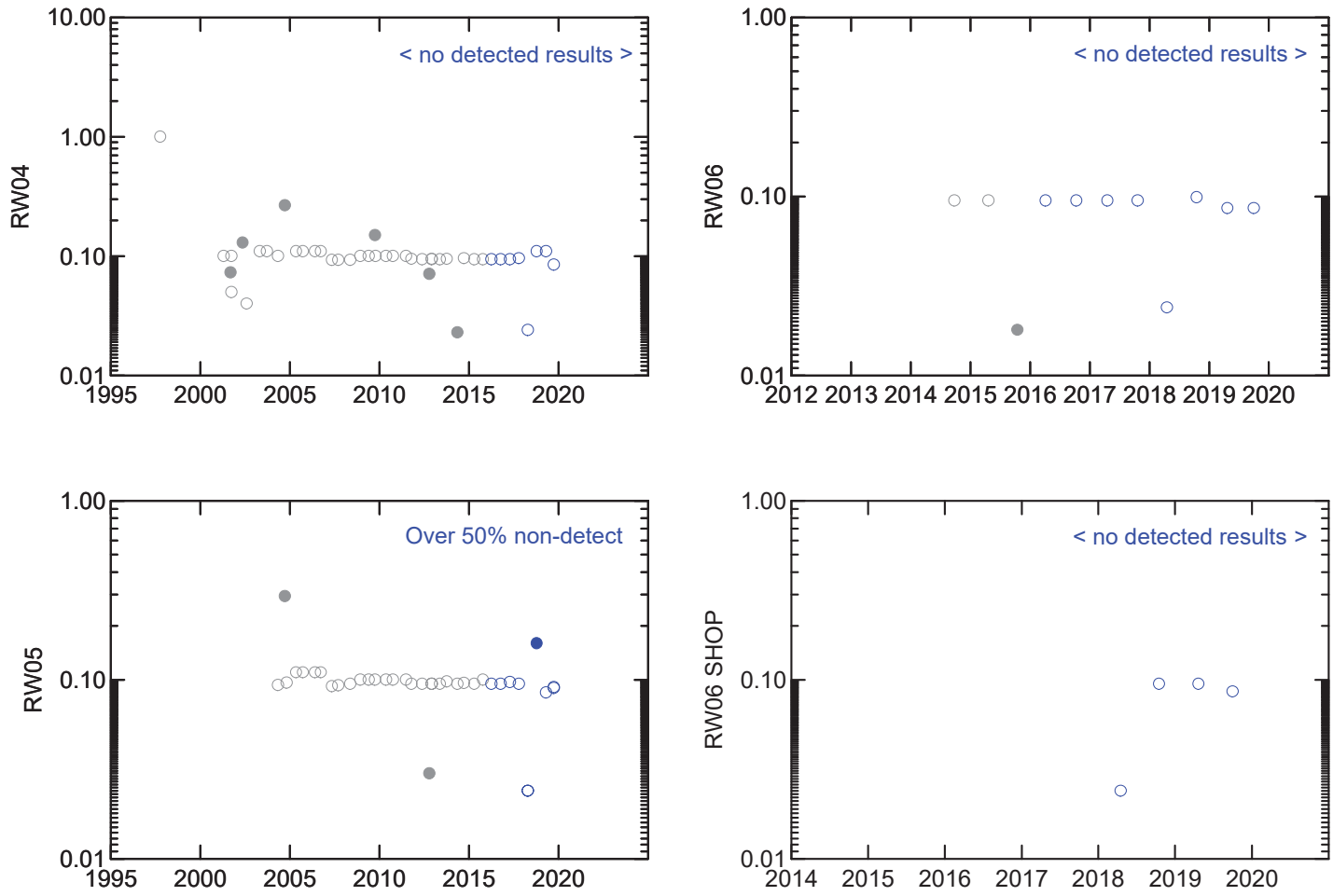


Legend:
- Detected result (Historical period)
- Non-detect (plotted at detection limit)
- Detected result (Post-shutdown period)
- Non-detect (plotted at detection limit)

Notes:
1) Non-detects with detection limits above detected values were excluded from trends.
2) Trend analysis results are reported for the post-shutdown period.

figure 7

WATER SUPPLY AND RESIDENTIAL WELLS
PENTACHLOROPHENOL (µg/L) vs. TIME
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin



Legend:
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- Non-detect (plotted at detection limit)
- Detected result (Post-shutdown period)
- Non-detect (plotted at detection limit)

Notes:
1) Non-detects with detection limits above detected values were excluded from trends.
2) Trend analysis results are reported for the post-shutdown period.

figure 8

WATER SUPPLY AND RESIDENTIAL WELLS
PENTACHLOROPHENOL (µg/L) vs. TIME
PENTA WOOD PRODUCTS SUPERFUND SITE
Siren, Wisconsin

APPENDIX I – WETLAND EXCAVATION AND SURFACE DEBRIS AREAS

PIN: 07-006-2-38-17-11-4 02-000-011000

PIN: 07-006-2-38-17-11-4 01-000-011000

PIN: 07-006-2-38-17-12-3 02-000-011000

PIN: 07-006-2-38-17-12-3 03-000-011000

W DOCTOR LAKE RD

DOCTOR LAKE

DANIELS 70

70

APPROXIMATE INFILTRATION BASIN LIMITS

APPROXIMATE CAMU LIMITS

MW11 MW8 MW26 MW17 MW24 MW7 MW25 MW16 MW12 MW13 MW9 MW23 MW31 EW11 EW02 MW2 MW30 MW5 SG04 MW18 MW29 MW10 MW10S EW03 EW12 EW05 SG23 EW14 EW10 SG05 EW04 MW20 EW13 EW06 MW14 MW6 MW6S SG07 MW19 MW28 MW1 MW27 SG06 BV08 EW07 MW4 MW22 DW01 BV09 SG22 MW21 SG25 MW3 SG24 SG26 MW15

0 200 400 ft

N

LEGEND

- EXTRACTION WELL NEST
- UNCONFINED MONITORING WELL
- SEMICONFINED MONITORING WELL
- WATER SUPPLY WELL
- BIOVENTING WELL
- SOIL GAS WELL NEST
- DRUM REMNANT LOCATION
- APPROXIMATE WETLAND LIMIT
- APPROXIMATE EXCAVATION EXTENT
- APPROXIMATE EXTENT OF SAWDUST
- APPROXIMATE EXTENT OF WOOD DEBRIS
- SITE PARCEL BOUNDARY

Source: DigitalGlobe 2011

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PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN
WORK PLAN - WETLAND EXCAVATION AND SURFACE DEBRIS MITIGATION

086165-06-13

Jun 28, 2019

WETLAND EXCAVATION AND SURFACE DEBRIS AREAS

FIGURE 2.1