



Semiannual Report

January through June 2023

Penta Wood Products Superfund Site

Wisconsin Department of Natural Resources

September 06, 2023

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1. Introduction

1.1 Purpose of this report

GHD Services Inc. (GHD) prepared this Semiannual Report (Report) 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. This Report presents the results of the activities conducted at the Site during January through June 2023 including:

- Groundwater monitoring and sampling (Section 2)
- Residential well and onsite supply well sampling (Section 3)
- Waste management and disposal (Section 4)
- Continuing obligations and inspections (Section 5)
- Conclusions and recommendations (Section 6)
- Certification (Section 7)

1.2 Scope and limitations

This report has been prepared by GHD for Wisconsin Department of Natural Resources and may only be used and relied on by Wisconsin Department of Natural Resources for the purpose agreed between GHD and Wisconsin Department of Natural Resources.

GHD otherwise disclaims responsibility to any person other than Wisconsin Department of Natural Resources arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

2. Groundwater Monitoring and Sampling

Groundwater monitoring and sampling was conducted at the Site in April 2023 based on the modified scope of work provided in a GHD letter to EPA dated June 30, 2016. Wells MW4 and MW14 were subsequently added to the sampling scope to assess semi confined aquifer (lower portion) 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. In January 2021, USEPA approved modifying the frequency of groundwater monitoring from a quarterly basis to a semiannual basis as recommended in the Semiannual Report – July through December 2020 (GHD; February 10, 2021). The groundwater monitoring and sampling plan is summarized in Table 2.1. Sampling was completed 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 objectives of the groundwater monitoring at the Site include:

- To monitor flow direction and hydraulic gradient through the measurement and assessment of groundwater levels.
- To monitor the natural attenuation of the plume through collection and chemical analysis of groundwater samples from monitoring wells.
- To monitor long term improvement in groundwater quality through the collection and chemical analysis of groundwater samples from monitoring wells.
- To monitor compliance with groundwater cleanup standards for the Site (State of Wisconsin ch. NR 140 Enforcement Standards)
- To monitor potential impact to residential wells through collection and chemical analysis of water samples from targeted residential wells.

2.1 Groundwater and LNAPL level monitoring

Groundwater and Light Non-Aqueous Phase Liquid (LNAPL) levels were measured in thirty-four (34) monitoring wells and twenty-two (22) extraction well casings at the Site on April 24, 2023. The groundwater and LNAPL elevation data along with well survey data are summarized in Table 2.2. Historical LNAPL thickness data are included in Appendix A.

Groundwater elevation contours were inferred from the April 2023 measurement data. Unconfined aquifer (upper portion) contours are shown on Figure 2.1. Semiconfined aquifer (lower portion) groundwater contours are shown on Figure 2.2. The contours indicate that the groundwater gradient is relatively flat at approximately 0.0007 ft/ft (as calculated between wells MW26 and MW27) and represent non pumping conditions following shutdown of the remediation system and groundwater extraction pumps (November 2015). The groundwater flow direction in both aquifers is primarily toward the west/northwest with potential minor radial flow components.

During the April 2023 event, LNAPL was present in monitoring wells MW10S, MW18, MW19, MW20 and MW29 at measurable thicknesses. LNAPL was present in extraction wells EW05S, EW06S, EW07S, EW10S, EW12S, and EW14S with casings screened in the unconfined (upper) aquifer. The general location of LNAPL is consistent with recent monitoring. LNAPL was not detected at any wells in the semiconfined (lower) aquifer during the April 2023 monitoring events. LNAPL thickness measurements are shown on Figure 2.3.

2.1.1 Vertical Gradients

Vertical hydraulic gradients were calculated between the semiconfined and unconfined aquifers to evaluate vertical flow between the two aquifers. The vertical gradient was calculated at monitoring wells MW10/MW10S, MW12/MW16, and MW23/MW9 (see Figures 2.1 and 2.2). The vertical gradient was determined by taking the difference in groundwater elevations divided by the difference in mid screen elevations of the wells listed above.

Groundwater at the Site flows from the unconfined aquifer downward to the semiconfined aquifer. The vertical gradients at the site ranged between 0.008 ft/ft (MW10/MW10S) and 0.014 ft/ft (MW12/MW16), which is generally consistent with recent monitoring events and represents non-pumping conditions.

2.2 Groundwater sampling

This semiannual groundwater sampling event was conducted from April 24 through May 2, 2023 and consisted of collecting groundwater samples from nineteen (19) monitoring wells (MW1, MW2, MW3, MW4, MW5, MW6S, MW10, MW12, MW13, MW14, MW17, MW21, MW22, MW23, MW25, MW28, MW30, MW31, and MW32) and three (3) extraction wells (EW11D, EW11S, and EW13S). Wells MW10S, MW20, and MW29 were not sampled due to the presence of LNAPL in the wells. Well MW16 was not sampled due to insufficient water in the well casing to collect a sample. Groundwater samples were collected using low flow purge and sample protocol. As part of the well stabilization process, the groundwater was measured in the field for the following parameters: pH, temperature, specific conductance, dissolved oxygen (DO), and oxidation reduction potential (ORP), iron, and sulfide. The

parameters DO, ORP, iron, and sulfide are used to help evaluate the groundwater geochemical conditions at the well. The groundwater purging and sampling data are summarized in Table 2.3.

The groundwater samples were collected and analyzed for the following compounds: pentachlorophenol (PCP); naphthalene; benzene, toluene, ethylbenzene, and xylene (BTEX); natural attenuation parameters; and select dissolved and total metals. The natural attenuation parameters included alkalinity, chloride, hardness, nitrate, sulfate, total organic carbon, and methane. The results of the natural attenuation parameters were evaluated to confirm the groundwater reduction oxidation conditions at the Site and if the groundwater conditions are favorable for biodegradation. The select dissolved and total metals included arsenic, copper, iron, manganese, and zinc. The dissolved metals samples were filtered in the field through a 0.45-micron filter. The groundwater sample analytical data are summarized in Table 2.4.

All groundwater samples were shipped via commercial courier under standard chain of custody procedures to Eurofins Environment Testing America (Eurofins) in University Park, Illinois for analysis. Copies of laboratory reports are included in Appendix B.

The following sections present a discussion of the groundwater sample analytical data and the Wisconsin Chapter NR140 enforcement standards (ES). Historical data and PCP concentration charts are included in Appendix A.

2.2.1 Naphthalene and BTEX analytical data

The April 2023 naphthalene and BTEX analytical data are summarized in Table 2.4. Naphthalene and BTEX were not detected at concentrations that exceeded the ESs.

2.2.2 PCP analytical data

The April 2023 PCP analytical data are summarized in Table 2.4. PCP was detected in seven (7) wells (MW5, MW10, MW12, MW30, EW11D, EW11S, and EW13S) at concentrations that exceeded the ES (1.0 µg/L). Figure 2.4 shows the PCP concentrations in the unconfined (upper) aquifer wells. Figure 2.5 shows the PCP concentrations in the semiconfined (lower) aquifer wells.

Consistent with monitoring data since prior to shutdown of the remediation system in 2015, elevated PCP concentrations (i.e., greater than 1,000 µg/L) are primarily limited to the immediate vicinity of the LNAPL area in the unconfined aquifer. During April 2023, PCP was detected in well EW11D at concentrations of 1,600/1,900 µg/L, which are greater than concentrations prior to October 2022.

2.2.3 Arsenic analytical data

The April 2023 dissolved and total arsenic analytical data are summarized in Table 2.4. Total arsenic was detected in one (1) well (EW13S) at a concentration that exceeded the ES (10 µg/L), with dissolved arsenic at that well not exceeding the ES. Both dissolved and total arsenic were not detected in any other wells at concentrations that exceeded the ES (10 µg/L). Figure 2.6 shows the dissolved arsenic concentrations in the unconfined (upper) aquifer wells. Figure 2.7 shows the dissolved arsenic concentrations in the semiconfined (lower) aquifer wells.

Consistent with monitoring data since prior to shutdown of the remediation system in 2015, arsenic concentrations are limited to isolated areas within the Site property boundaries in the unconfined and semiconfined aquifers, which indicates the plume remained stable.

2.2.4 Other metals analytical data

The April 2023 dissolved and total metals analytical data are summarized in Table 2.4. Zinc and copper were not detected at concentrations that exceeded the ESs.

Total iron was detected in ten (10) wells at concentrations exceeding the ES (300 µg/L), with dissolved iron detected at concentrations exceeding the ES in five (5) of those wells. Total manganese was detected in eight (8) wells at

concentrations exceeding the ES (50 µg/L), with dissolved manganese detected in concentrations exceeding the ES in three (3) of those wells. The ES for iron and manganese are considered secondary health-based standards that are based on aesthetics (i.e., odor and taste).

2.2.5 Natural attenuation parameters analytical data

The natural attenuation results are provided in Table 2.4. The results generally show elevated levels of nitrate and sulfate and low concentrations of TOC and methane. These results in combination with the field stabilization parameters of DO, ORP, iron, and sulfide (Table 2.3) show that the groundwater beneath the Site is aerobic to slightly anaerobic because DO values are greater than 1 mg/L and ORP values are positive at the majority of wells outside the immediate vicinity of the LNAPL area in both the unconfined and semiconfined aquifers.

3. Residential Well and Onsite Supply Well Sampling

During April 2023, water samples were collected from six residential wells located near the Site in general accordance with the FSP and QAPP. The 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 and RW6 Shop)
- (DW01)

The onsite water supply well (DW01) serves the remediation equipment building. The water was previously used for sanitary facilities in the building and maintaining the remediation equipment but is not ingested by workers. During 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 onsite water supply well no longer provides a water supply to the building. The pump within the supply well was not functioning and a sample could not be collected during April 2023.

The water from shop well RW6 Shop was not sampled in April 2023, as the outdoor spigot was not operational at the time of sampling and GHD had not obtained prior approval to enter the shop and collect a sample from an indoor tap. GHD will attempt to obtain authorization from the property owner to collect a sample from an interior tap for well MW6 Shop.

The residential well and onsite water supply well locations are shown on Figure 1.3. Residential well water samples were collected on April 24 and 25, 2023 and analyzed for PCP, BTEX, and naphthalene.

3.1 Residential well and onsite supply well sample analytical data

PCP, BTEX, and naphthalene were not detected in the residential wells at concentrations exceeding the ESs, which is similar with historical data. The residential well sample analytical data are summarized in Table 3.1. Copies of the laboratory reports are included in Appendix B, and the data validation memorandum is included in Appendix C.

Historical residential and onsite water supply well PCP data are included in Appendix A. Semiannual sampling will continue at all residential wells to identify and track potential PCP concentration trends.

4. Waste management and disposal

No waste was disposed during January through June, 2023. GHD continues to collect and containerize PPE and other waste produced during sampling events onsite. A composite sample of containerized waste was collected on April 28, 2023 and analyzed for total RCRA VOCs, SVOCs, and metals to characterize the material and develop a waste disposal profile. Historical hazardous waste disposal is summarized in Appendix A. Copies of the laboratory reports are included in Appendix B.

5. Continuing Obligations and Inspections

The 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. The Long-Term Response Action Operation and Maintenance Plan (O&M Plan) – Addendum No. 1 (GHD; November 9, 2015) effectively serves as an Institutional Control Implementation and Assurance Plan (ICIAP). This section documents the COs in addition to inspections required by the O&M Plan (GHD; July 22, 2015).

5.1 Continuing obligations

On July 6, 2015, the WDNR provided a letter approving the Remedial Actions with Continuing Obligations (WDNR BRRTS Activity #02 07 000532, FID #: 807050310). That letter 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 COs meet the intent of the ICs required by the ROD for the Site.

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.

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

1. Periodic monitoring was conducted whenever WDNR or its contractors or other representatives were present at the Site.
2. Prohibition of use of the Site real estate is evaluated and updated on an annual basis (minimum frequency). This evaluation determined:
 - The selected remedy (i.e., remediation system shutdown pilot study and associated monitoring) remains in place and remains effective.
 - Site security remains effective and real estate use meets the stated objectives and performance goals and provides protection required by the response.
3. Evidence was not observed of the following improper uses:
 - 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, or
- 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.

An inspection of continuing obligations items was completed on April 24, 2023 and a copy of the continuing obligations inspection form is included in Appendix D.

5.2 Inspections

Additional inspections required by the O&M Plan (GHD; July 22, 2015) were conducted during this monitoring period. The results of the inspections are as follows:

- 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 were in good condition during this monitoring period and did not require repairs; erosion, subsidence, and ponding water were not observed on the CAMU. Trees and bushes are growing on the CAMU and may require removal.

Site well inspections were completed on April 24, 2023 and a copy of the well inspection form is included in Appendix D. New well identification tags were installed on all wells.

6. Conclusions and Recommendations

Based on the January through June 2023 monitoring and sampling data, the following conclusions are made and represent lines of evidence supporting selection of an alternate remedy:

- LNAPL limits indicate that the LNAPL did not migrate following shutdown of the remediation system in 2015 and indicate overall stability of the LNAPL body.
- NSZD is occurring within the LNAPL body at this Site.
- Dissolved PCP concentrations greater than 1,000 µg/L are primarily limited to the immediate vicinity of the LNAPL area. During April 2023, PCP was detected in well EW11D at concentrations of 1,600/1,900 µg/L, which are greater than concentrations prior to October 2022. Dissolved PCP degrades naturally in the aerobic zone outside of the LNAPL area, which helps stabilize the plume and prevent migration.
- Dissolved PCP degrades in the anaerobic zone (LNAPL source area) at a slow rate.
- The rate that dissolved PCP partitions from the LNAPL is slow enough and the rate of natural degradation is fast enough that migration is limited.

USEPA provided funding to WDNR to complete the wetland excavation and surface debris remedial action as part of a cooperative agreement. WDNR contracted with Rock Leaf Water Environmental to complete the remedial action, and GHD will provide oversight services. The remedial action started at the Site during 2022 and is scheduled to be completed in 2023. The work will be conducted in general accordance with the Final Remedial Design Report (October 27, 2021). Completion of the work will be documented in a separate report submitted to USEPA.

Following USEPA's review of the Semiannual Report and Alternate Remedy Recommendation (GHD; March 17, 2020), USEPA, WDNR, and GHD held discussions regarding potential future remedial actions at the Site. Additional investigation including drilling and groundwater sampling is planned for the Site following USEPA funding.

While future potential actions are assessed, WDNR recommends monitoring and sampling at the Site as summarized in Table 2.1 and as follows:

- Semiannual groundwater and LNAPL level monitoring during April and October.
- Semiannual groundwater sampling during April and October.
- Semiannual residential well sampling during April and October.
- Semiannual report preparation and submittal in January and July.

The recommended contingency remedy includes keeping the existing remediation system infrastructure in place for potential future groundwater and/or LNAPL extraction and treatment while potential future remedial actions are assessed.

7. Certification

The current actions at the Site remain protective of human health and the environment based on an evaluation of the current data. Implementation of the contingency remedy discussed above is not necessary at this time.

Tables

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

Well ID	Semiannual Groundwater/LNAPL Level Monitoring ¹	Semiannual Groundwater Sampling ^{2,3,4}
Unconfined (Upper) Aquifer		
MW1	X	X
MW2	X	X
MW5	X	X
MW6S	X	X
MW9	X	
MW10S	X	X
MW13	X	X
MW16	X	X
MW18	X	
MW19	X	
MW20	X	X
MW21	X	X
MW22	X	X
MW24	X	
MW25	X	X
MW26	X	
MW27	X	
MW28	X	X
MW29	X	X
MW30	X	X
MW31	X	X
MW32	X	X
EW02S	X	
EW03S	X	
Unconfined (Upper) Aquifer		
EW04S	X	
EW05S	X	
EW06S	X	
EW07S	X	

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

Well ID	Semiannual Groundwater/LNAPL Level Monitoring ¹	Semiannual Groundwater Sampling ^{2,3,4}
EW10S	X	
EW11S	X	X
EW12S	X	
EW13S	X	X
EW14S	X	
Semiconfined (Lower) Aquifer		
MW3	X	X
MW4	X	X
MW6	X	
MW7	X	
MW8	X	
MW10	X	X
MW11	X	
MW12	X	X
MW14	X	X
MW15	X	
MW17	X	X
MW23	X	X
EW02D	X	

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

Well ID	Semiannual Groundwater/LNAPL Level Monitoring ¹	Semiannual Groundwater Sampling ^{2, 3, 4}
Semiconfined (Lower) Aquifer		
EW03D	X	
EW04D	X	
EW05D	X	
EW06D	X	
EW07D	X	
EW10D	X	
EW11D	X	X
EW12D	X	
EW13D	X	
EW14D	X	

Notes:

- 1 Groundwater/LNAPL level monitoring conducted on a semiannual basis in April and October.
- 2 Groundwater sampling conducted on an annual basis in April
- 3 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 and total 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.
- 4 Groundwater samples will not be collected if LNAPL is present in the well casing.

Table 2.2

**Groundwater and LNAPL Level Monitoring Data
Penta Wood Products Superfund Site
Siren, Wisconsin**

Well ID	Date	Top of Casing Elevation (feet)	Depth to Groundwater (feet btoc)	Depth to LNAPL (feet btoc)	Groundwater Elevation (feet AMSL)	LNAPL Elevation (feet AMSL)	LNAPL Thickness (feet)
Semiconfined Aquifer (Lower)							
MW3	04/24/2023	1129.44	146.09	ND	983.35	NA	0.00
MW4	04/24/2023	1087.72	104.55	ND	983.17	NA	0.00
MW6	04/24/2023	1109.11	125.81	ND	983.30	NA	0.00
MW7	04/24/2023	1096.25	113.19	ND	983.06	NA	0.00
MW8	04/24/2023	1091.13	107.80	ND	983.33	NA	0.00
MW10	04/24/2023	1089.01	105.62	ND	983.39	NA	0.00
MW11	04/24/2023	1085.48	102.67	ND	982.81	NA	0.00
MW12	04/24/2023	1080.91	97.60	ND	983.31	NA	0.00
MW14	04/24/2023	1078.25	95.02	ND	983.23	NA	0.00
MW15	04/24/2023	1127.09	142.55	ND	984.54	NA	0.00
MW17	04/24/2023	1084.43	101.06	ND	983.37	NA	0.00
MW23	04/24/2023	1017.16	33.74	ND	983.42	NA	0.00
EW02D	04/24/2023	1083.00	99.43	ND	983.57	NA	0.00
EW03D	04/24/2023	1089.48	105.61	ND	983.87	NA	0.00
EW04D	04/24/2023	1101.09	117.43	ND	983.66	NA	0.00
EW05D	04/24/2023	1076.99	93.33	ND	983.66	NA	0.00
EW06D	04/24/2023	1083.39	99.69	ND	983.70	NA	0.00
EW07D	04/24/2023	1087.52	103.73	ND	983.79	NA	0.00
EW10D	04/24/2023	1088.55	104.92	ND	983.63	NA	0.00
EW11D	04/24/2023	1048.19	64.55	ND	983.64	NA	0.00
EW12D	04/24/2023	1086.41	102.79	ND	983.62	NA	0.00
EW13D	04/24/2023	1092.88	109.20	ND	983.68	NA	0.00
EW14D	04/24/2023	1098.28	114.62	ND	983.66	NA	0.00
Unconfined Aquifer (Upper)							
MW1	04/24/2023	1072.27	88.40	ND	983.87	NA	0.00
MW2	04/24/2023	1065.03	81.18	ND	983.85	NA	0.00
MW5	04/24/2023	1071.42	87.93	ND	983.49	NA	0.00
MW6S	04/24/2023	1108.35	124.39	ND	983.96	NA	0.00
MW9	04/24/2023	1019.58	35.72	ND	983.86	NA	0.00
MW10S	04/24/2023	1090.12	107.00	106.67	983.12	983.45	0.33
MW13	04/24/2023	1005.81	21.91	ND	983.90	NA	0.00
MW16	04/24/2023	1081.95	98.17	ND	983.78	NA	0.00
MW18	04/24/2023	1071.96	88.75	88.18	983.21	983.78	0.57
MW19	04/24/2023	1087.96	105.79	105.49	982.17	982.47	0.30
MW20	04/24/2023	1098.16	115.70	114.37	982.46	983.79	1.33
MW21	04/24/2023	1095.82	111.94	ND	983.88	NA	0.00
MW22	04/24/2023	1084.65	100.84	ND	983.81	NA	0.00
MW24	04/24/2023	1084.04	100.75	ND	983.29	NA	0.00
MW25	04/24/2023	1095.25	111.89	ND	983.36	NA	0.00

Table 2.2

**Groundwater and LNAPL Level Monitoring Data
Penta Wood Products Superfund Site
Siren, Wisconsin**

Well ID	Date	Top of Casing Elevation (feet)	Depth to Groundwater (feet btoc)	Depth to LNAPL (feet btoc)	Groundwater Elevation (feet AMSL)	LNAPL Elevation (feet AMSL)	LNAPL Thickness (feet)
Unconfined Aquifer (Upper) continued							
MW26	04/24/2023	1086.87	103.55	ND	983.32	NA	0.00
MW27	04/24/2023	1110.96	126.95	ND	984.01	NA	0.00
MW28	04/24/2023	1083.52	99.60	ND	983.92	NA	0.00
MW29	04/24/2023	1070.24	87.45	86.40	982.79	983.84	1.05
MW30	04/24/2023	1048.98	65.16	ND	983.82	NA	0.00
MW31	04/24/2023	1076.34	92.58	ND	983.76	NA	0.00
MW32	04/24/2023	1021.02	37.20	ND	983.82	NA	0.00
EW02S	04/24/2023	1082.25	98.29	ND	983.96	NA	0.00
EW03S	04/24/2023	1088.66	104.91	ND	983.75	NA	0.00
EW04S	04/24/2023	1101.01	117.20	ND	983.81	NA	0.00
EW05S	04/24/2023	1077.04	94.14	93.33	982.90	983.71	0.81
EW06S	04/24/2023	1083.61	102.89	99.94	980.72	983.67	2.95
EW07S	04/24/2023	1087.49	103.85	Trace	983.64	Trace	Trace
EW10S	04/24/2023	1088.72	110.25	104.97	978.47	983.75	5.28
EW11S	04/24/2023	1047.23	63.65	ND	983.58	NA	0.00
EW12S	04/24/2023	1086.31	106.70	102.6	979.61	983.71	4.10
EW13S	04/24/2023	1092.88	109.14	ND	983.74	NA	0.00
EW14S	04/24/2023	1098.32	115.18	114.81	983.14	983.51	0.37

Notes:

- feet AMSL - Feet above mean sea level
feet btoc - Feet below top of well casing
NA - Not applicable
ND - LNAPL was not detected in a measureable quantity
NM - Not measured

Table 2.3

Groundwater Purging and Sampling Data
Penta Wood Products Superfund Site
Siren, Wisconsin

	Location	Date	Sample Identification	Time	Purge Volume (gallons)	pH	Temperature (°C)	Specific	Turbidity (NTU)	Dissolved	ORP (mV)	Total Iron (mg/L)	Total Sulfide (mg/L)
								Conductance (µS)		Oxygen (mg/L)			
1	EW11D	4/25/2023	W-230425-TS-17	15:34	0.0	0.00	0.00	0	0.0	0.00	0		
2		4/25/2023	Sample Time 15:55	15:37	0.1	6.55	9.18	312	230.0	0.00	-140		
3		4/25/2023	Duplicate W-230425-TS-18	15:40	0.3	6.71	9.10	346	250.0	0.00	-155		
4		4/25/2023		15:43	0.4	6.77	9.06	362	304.0	0.00	-160		
5		4/25/2023		15:46	0.5	6.92	9.05	372	368.0	0.00	-169		
6		4/25/2023		15:49	0.7	6.98	9.03	385	442.0	0.00	-172		
7		4/25/2023		15:53	0.8	7.00	9.02	394	507.0	0.00	-172		
8		4/25/2023		15:57	0.9	6.99	9.06	400	504.0	0.00	-172	NR	NR
9	EW11S	4/26/2023	W-230426-TS-19	9:31	0.0	0.00	0.00	0	0.0	0.00	0		
10		4/26/2023	Sample Time 9:57	9:34	0.1	6.59	8.93	274	78.8	2.66	118		
11		4/26/2023		9:42	0.3	6.39	8.98	223	66.7	5.84	119		
12		4/26/2023		9:46	0.4	6.35	9.10	219	58.5	6.23	120		
13		4/26/2023		9:52	0.5	6.32	9.14	211	56.2	6.19	123		
14		4/26/2023		9:56	0.7	6.33	9.15	216	55.3	5.98	123	5.0	ND
15	EW13S	4/26/2023	W-220426-TS-24	14:30	0.0	6.67	15.57	719	108.0	1.40	-126	10.0	ND
			Sample Time 14:32										
16	MW1	4/25/2023	W-230425-TS-10	10:45	0.0	0.00	0.00	0	0.0	0.00	0		
17		4/25/2023	Sample Time 11:20	10:54	0.1	6.42	9.24	312	63.2	13.01	192		
18		4/25/2023	Duplicate W-230425-TS-11	11:02	0.3	6.60	9.30	312	54.2	12.90	186		
19		4/25/2023		11:07	0.4	6.68	9.36	313	53.0	12.85	183		
20		4/25/2023		11:14	0.5	6.78	9.52	312	52.4	12.85	177	ND	ND
21	MW2	4/27/2023	W-230427-TS-26	10:06	0.0	0.00	0.00	0	0.0	0.00	0	0.4	ND
			Sample Time 10:00										
22	MW3	4/27/2023	W-230427-TS-31	12:41	0.0	0.00	0.00	0	0.0	0.00	0		
23		4/27/2023	Sample Time 13:17	12:45	0.1	7.24	11.93	846	63.2	0.00	-78		
24		4/27/2023		12:50	0.3	7.07	12.40	845	62.2	0.46	-87		
25		4/27/2023		12:53	0.4	6.99	12.58	845	58.1	1.64	-92		
26		4/27/2023		12:56	0.5	6.96	12.66	846	55.9	2.12	-97		
27		4/27/2023		13:02	0.7	6.97	12.82	846	56.4	2.39	-103		
28		4/27/2023		13:07	0.8	6.99	12.81	847	54.6	2.61	-106	2.0	ND

Table 2.3

Groundwater Purging and Sampling Data
Penta Wood Products Superfund Site
Siren, Wisconsin

	Location	Date	Sample Identification	Time	Purge Volume (gallons)	pH	Temperature (°C)	Specific Conductance (µS)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)	Total Iron (mg/L)	Total Sulfide (mg/L)
29	MW4	4/27/2023	W-230427-TS-29	11:58	0.0	0.00	0.00	0	0.0	0.00	0		
30		4/27/2023	Sample Time 12:28	12:03	0.1	8.27	9.89	372	51.5	13.75	-104		
31		4/27/2023	Duplicate W-2304270TS-30	12:08	0.3	8.19	10.70	368	50.9	12.20	-160		
32		4/27/2023		12:13	0.4	8.06	10.87	365	50.7	11.72	-167		
33		4/27/2023		12:16	0.5	7.92	10.95	361	51.0	11.05	-172		
34		4/27/2023		12:20	0.7	7.85	10.97	359	51.3	10.61	-172	0.4	ND
35	MW5	4/26/2023	W-230426-TS-20	10:24	0.0	0.00	0.00	0	0.0	0.00	0		
36		4/26/2023	Sample Time 10:56	10:31	0.1	6.34	11.01	686	66.6	0.00	-92		
37		4/26/2023		10:38	0.3	6.35	11.03	685	64.6	0.00	-93		
38		4/26/2023		10:44	0.4	6.36	11.21	684	62.8	0.00	-94	10.0	0.1
39	MW6S	4/28/2023	W-230428-TS-34	9:08	0.0	0.00	0.00	0	0.0	0.00	0		
40		4/28/2023	Sample Time 10:05	9:21	0.1	6.03	15.54	505	73.1	10.26	134		
41		4/28/2023		9:26	0.3	6.02	15.56	517	63.2	10.43	132		
42		4/28/2023		9:33	0.4	6.02	14.87	520	55.0	10.40	132		
43		4/28/2023		9:40	0.5	6.02	14.27	520	54.7	10.33	132		
44		4/28/2023		9:48	0.7	5.85	16.83	506	64.8	2.85	131		
45		4/28/2023		9:52	0.8	5.87	14.86	502	52.6	2.17	134		
46		4/28/2023		9:55	0.9	5.89	14.26	500	49.4	1.97	136		
47		4/28/2023		9:58	1.1	5.90	14.08	498	48.7	1.82	137	ND	ND
48	MW10	5/2/2023	W-230502-TS-37	9:24	0.0	0.00	0.00	0	0.0	0.00	0		
49		5/2/2023	Sample Time 10:11	9:28	0.1	6.51	12.65	449	26.9	4.23	-105		
50		5/2/2023		9:36	0.3	6.82	12.55	447	29.2	3.54	-139		
51		5/2/2023		9:41	0.4	6.90	12.17	451	9.0	2.95	-143		
52		5/2/2023		9:44	0.5	6.93	12.18	451	6.2	2.52	-143		
53		5/2/2023		9:48	0.7	6.96	12.24	449	3.2	2.09	-144		
54		5/2/2023		9:51	0.8	6.97	12.13	449	3.6	1.87	-143		
55		5/2/2023		9:54	0.9	6.98	12.12	449	1.9	1.71	-143		
56		5/2/2023		9:58	1.1	6.99	12.10	447	3.1	1.81	-144	1.0	ND

Table 2.3

**Groundwater Purging and Sampling Data
Penta Wood Products Superfund Site
Siren, Wisconsin**

	Location	Date	Sample Identification	Time	Purge Volume (gallons)	pH	Temperature (°C)	Specific Conductance (µS)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)	Total Iron (mg/L)	Total Sulfide (mg/L)
57	MW12	4/27/2023	W-230427-TS-33	14:10	0.0	0.00	0.00	0	0.0	0.00	0		
58		4/27/2023	Sample Time 14:47	14:14	0.1	7.50	11.80	353	56.6	2.28	-9		
59		4/27/2023		14:18	0.3	7.39	12.63	371	56.5	0.77	-9		
60		4/27/2023		14:21	0.4	7.34	12.86	396	54.8	0.00	-14		
61		4/27/2023		14:24	0.5	7.34	12.89	422	53.4	0.00	-18		
62		4/27/2023		14:28	0.7	7.32	12.91	442	52.6	0.00	-25		
63		4/27/2023		14:32	0.8	7.28	12.92	450	52.1	0.00	-29		
64		4/27/2023		14:35	0.9	7.25	12.93	457	51.5	0.00	-30		
65		4/27/2023		14:38	1.1	7.23	12.92	461	51.1	0.00	-34		
66		4/27/2023		14:43	1.2	7.24	12.91	466	50.5	0.00	-37	ND	ND
67	MW13	4/25/2023	W-230425-TS-12	13:20	0.0	0.00	0.00	0	0.0	0.00	0		
68		4/25/2023	Sample Time 13:40	13:32	0.1	5.85	8.26	109	54.8	9.53	176		
69		4/25/2023		13:35	0.3	5.78	8.27	112	54.0	9.12	176		
70		4/25/2023		13:38	0.4	5.73	8.29	114	53.8	8.85	173	0.4	ND
71	MW14	4/27/2023	W-230427-TS-28	10:19	0.0	0.00	0.00	0	0.0	0.00	0		
72		4/27/2023	Sample Time 11:10	10:29	0.1	7.43	11.69	350	48.7	12.72	66		
73		4/27/2023		10:42	0.3	7.53	11.91	360	48.8	11.75	45		
74		4/27/2023		10:47	0.4	7.57	11.98	360	48.8	11.45	37		
75		4/27/2023		10:50	0.5	7.62	11.95	358	48.7	11.47	32	ND	ND
76	MW17	5/2/2023	W-230502-TS-38	10:19	0.0	0.00	0.00	0	0.0	0.00	0		
77		5/2/2023	Sample Time 10:39	10:21	0.1	7.37	10.42	516	0.0	11.20	13		
78		5/2/2023		10:24	0.3	7.39	10.57	527	0.0	10.93	22		
79		5/2/2023		10:28	0.4	7.41	10.61	534	0.0	10.82	31		
80		5/2/2023		10:31	0.5	7.42	10.62	536	0.0	10.63	36	ND	ND
81	MW21	4/27/2023	W-230427-TS-25	9:25	0.0	7.17	9.49	115	206.0	10.34	115	0.4	ND
			Sample Time 9:15										
82	MW22	4/26/2023	W-220426-TS-23	13:51	0.0	6.83	13.72	203	109.0	10.98	94	0.3	ND
			Sample Time 13:50										
83	MW23	4/27/2023	W-230427-TS-32	13:30	0.0	0.00	0.00	0	0.0	0.00	0		
84		4/27/2023	Sample Time 13:52	13:35	0.1	7.66	9.17	612	52.6	7.66	-55		
85		4/27/2023		13:42	0.3	7.60	9.33	609	51.9	6.75	-47		
86		4/27/2023		13:45	0.4	7.55	9.63	608	51.2	6.43	-39		
87		4/27/2023		13:48	0.5	7.54	9.68	608	51.2	6.42	-38	0.1	ND

Table 2.3

**Groundwater Purging and Sampling Data
Penta Wood Products Superfund Site
Siren, Wisconsin**

Location	Date	Sample Identification	Time	Purge Volume (gallons)	pH	Temperature (°C)	Specific Conductance (µS)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)	Total Iron (mg/L)	Total Sulfide (mg/L)	
88	MW25	5/2/2023	W-230502-TS-36	10:53	0.0	0.00	0.00	0	0.0	0.00	0		
89		5/2/2023	Sample Time 11:15	10:56	0.1	6.93	11.24	291	10.9	7.67	84		
90		5/2/2023		11:00	0.3	6.55	11.36	291	20.1	7.31	94		
91		5/2/2023		11:04	0.4	6.38	11.56	294	15.7	7.34	102		
92		5/2/2023		11:07	0.5	6.33	11.56	294	14.4	7.24	106		
93		5/2/2023		11:10	0.7	6.28	11.58	294	16.5	7.05	109	ND	ND
94	MW28	4/27/2023	W-230427-TS-27	11:18	0.0	0.00	0.00	0	0.0	0.00	0		
95		4/27/2023	Sample Time 11:45	11:23	0.1	7.67	10.29	359	52.1	9.74	41		
96		4/27/2023		11:29	0.3	7.57	10.99	356	51.8	10.24	37		
97		4/27/2023		11:38	0.4	7.55	13.22	355	51.7	9.73	22		
98		4/27/2023		11:41	0.5	7.59	13.59	356	52.0	9.36	19		
99		4/27/2023		11:44	0.7	7.63	13.69	357	51.5	9.56	16	0.1	ND
100	MW30	4/26/2023	W-220426-TS-21	11:15	0.0	0.00	0.00	0	0.0	0.00	0		
101		4/26/2023	Sample Time 12:08	11:19	0.1	6.51	9.72	200	87.2	4.04	-30		
102		4/26/2023		11:24	0.3	6.40	9.68	199	71.4	3.85	-6		
103		4/26/2023		11:27	0.4	6.33	9.68	198	85.0	3.81	1		
104		4/26/2023		11:33	0.5	6.44	9.75	198	59.1	8.95	9		
105		4/26/2023		11:36	0.7	6.33	9.73	198	56.0	8.53	17		
106		4/26/2023		11:49	0.8	6.31	9.59	199	54.3	4.97	31		
107		4/26/2023		11:53	0.9	6.33	9.61	198	52.7	4.07	33		
108		4/26/2023		11:56	1.1	6.37	9.62	198	52.5	3.87	36		
109		4/26/2023		11:59	1.2	6.36	9.63	198	52.4	3.80	42	0.4	ND
110	MW31	4/25/2023	W-230425-TS-14	14:12	0.0	0.00	0.00	0	0.0	0.00	0		
111		4/25/2023	Sample Time 14:36	14:19	0.1	6.27	10.03	308	62.0	12.00	159		
112		4/25/2023		14:22	0.3	6.33	10.12	307	56.5	10.75	160		
113		4/25/2023		14:25	0.4	6.33	10.17	307	55.1	10.52	159	ND	ND
114	MW32	4/25/2023	W-230425-TS-13	12:15	0.0	0.00	0.00	0	0.0	0.00	0		
115		4/25/2023	Sample Time 13:40	12:21	0.1	5.85	8.32	98	127.0	14.39	194		
116		4/25/2023		12:25	0.3	NR	NR	NR	NR	NR	NR		
117		4/25/2023		12:55	0.4	6.42	8.23	98	108.0	15.99	136	2.0	ND
118	RW01	4/25/2023	W-230425-TS-08	13:52	0.0*	0.00	0.00	0	0.0	0.00	0	NR	NR
			Sample Time 13:52										

Table 2.3

**Groundwater Purging and Sampling Data
Penta Wood Products Superfund Site
Siren, Wisconsin**

	Location	Date	Sample Identification	Time	Purge Volume (gallons)	pH	Temperature (°C)	Specific Conductance (µS)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)	Total Iron (mg/L)	Total Sulfide (mg/L)
119	RW02	4/24/2023	W-230424-TS-07 Sample Time 13:49	13:49	0.0*	7.88	8.89	320	0.0	0.00	0	NR	NR
120	RW03	4/24/2023	W-230424-TS-04 Sample Time 13:15	13:14	0.0*	7.72	12.02	226	0.0	0.00	0	NR	NR
121	RW04	4/24/2023	W-230424-TS-06 Sample Time 13:31	13:30	0.0*	7.54	10.58	623	0.0	0.00	0	NR	NR
122	RW05	4/24/2023	W-230424-TS-01 Sample Time 12:21	11:20	0.0*	8.34	10.56	365	0.0	0.00	0	NR	NR
123 124	RW06	4/24/2023	W-230424-TS-02 Sample Time 12:52 Duplicate W-230424-TS-03	12:51	0.0*	7.93	9.84	226	0.0	0.00	0	NR	NR

Notes:

- °C - Degrees Celcius
- µS - Micro-Siemens
- mg/L - Milligrams per liter
- MS/MSD - Matrix Spike Sample & Matrix Spike Duplicate Sample
- mV - Millivolts
- ND - Not Detected
- NM - Not Measured
- NTU - National Turbidity Units
- ORP - Oxidation Reduction Potential (ORP) reported in millivolts (mV)
- Wells MW10S, MW20, and MW29 were not sampled due to the presence of LNAPL
- Well MW16 was not sampled due to insufficient water for sampling
- Well RW6 Shop was not sampled as the outdoor spigot was not operational at the time of sampling and GHD had not obtained prior approval to enter the shop and collect a sample from an indoor tap
- * - Residential wells are purged for 15-20 minutes at a rate of 6-8 gal/minute prior to sample collection

Table 2.4

Groundwater Analytical Data - Monitoring and Extraction Wells
Penta Wood Products Superfund Site
Siren, Wisconsin

Sample Location	Sample Identification	Sample Date	ES ¹ PAL ²	Hardness, calcium mg/L	Hardness, carbonate mg/L	Chloride ³ mg/L	Nitrate (as N) mg/L	Sulfate ³ mg/L	TOC averages mg/L	Alkalinity, total (as CaCO3) mg/L	Methane (dissolved) ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Pentachlorophenol ug/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L
Semiconfined Aquifer (Lower)						250	10	250	-	-	-	10	10	1300	1300	300	300	50	50	5000	5000	1	100	5	700	800	2000
EW11D	W-230425-TS-17	4/25/2023	4/21/1900	112	1.7	0.71 J	7.4	4.7	187	91	1.0 U	0.93 J	0.75 J	3.4	2230	27900	165	191	20.0 U	67.9	1600	0.68 U	0.50 U	0.50 U	0.50 U	0.50 U	0.44 J
EW11D	(Duplicate) W-230425-TS-18	4/25/2023	4/13/1900	108	1.8	0.73 J	6.9	5.3	196	97	1.0 U	2.7	3.5	7.6	3770	91100	202	326	20.0 U	222	1900	0.75 U	0.50 U	0.50 U	0.50 U	0.50 U	0.30 J
MW3	W-230427-TS-31	4/27/2023	9/7/1900	255	18.7	2.8	5.8	0.90 J	384	41	0.67 J	0.70 J	1.1 J	2.0 U	2030	2450	23.5	23.9	20.0 U	20.0 U	0.22	0.69 U	0.50 U	0.50 U	0.50 U	1.0 U	
MW4	W-230427-TS-29	4/27/2023	4/2/1900	94.6	43.7	0.27 J	13.5	0.90 J	84.5	28	1.4	1.5	2.0 U	2.0 U	100 U	136	30.8	30.4	20.0 U	20.0 U	0.10 U	0.70 U	0.50 U	0.50 U	0.50 U	1.0 U	
MW4	(Duplicate) W-230427-TS-30	4/27/2023	4/2/1900	94.1	41.1	0.30 J	13.2	0.82 J	84.7	23	1.4	1.5	2.0 U	2.0 U	100 U	71.1 J	30.6	30.4	20.0 U	20.0 U	0.097 U	0.68 U	0.50 U	0.50 U	0.50 U	1.0 U	
MW10	W-230502-TS-37	5/2/2023	5/27/1900	153	29.7	1.0 U	12.6	33.1	183	41	1.3	1.3	3.1	8.6	782	1060	1460	1420	20.0 U	20.0 U	8600	11	0.50 U	1.9	1.7	14	
MW12	W-230427-TS-33	4/27/2023	5/6/1900	123	22.5	0.30 J	22.5	20.0	174	0.47 J	1.2	1.2	1.8 J	2.8	100 U	100 U	847	1030	20.0 U	20.0 U	2500	5.8	0.50 U	1.0	0.15 J	5.9	
MW14	W-230427-TS-28	4/27/2023	4/14/1900	107	23.1	1.4	5.9	0.62 J	127	1.0 U	1.3	1.5	2.0 U	2.0 U	100 U	100 U	2.5 U	2.5 U	20.0 U	20.0 U	0.096 U	0.65 U	0.50 U	0.50 U	0.50 U	1.0 U	
MW17	W-230502-TS-38	5/2/2023	6/23/1900	171	8.6	1.2	82.9	0.56 J	196	1.0 U	0.70 J	0.76 J	1.7 J	1.3 J	100 U	100 U	2.5 U	2.5 U	20.0 U	20.0 U	0.098 U	0.66 U	0.50 U	0.50 U	0.50 U	1.0 U	
MW23	W-230427-TS-32	4/27/2023	6/13/1900	166	46.1	1.9	8.2	0.90 J	194	1.0 U	0.98 J	1.0	2.0 U	2.0 U	100 U	100 U	2.5 U	2.5 U	20.0 U	20.0 U	0.096 U	0.67 U	0.50 U	0.50 U	0.50 U	1.0 U	
Unconfined Aquifer (Upper)						250	10	250	-	-	-	10	10	1300	1300	300	300	50	50	5000	5000	1	100	5	700	800	2000
EW11S	W-230426-TS-19	4/26/2023	2/19/1900	47.1	1.2	2.4	10.6	3.3	73.8	1.0 U	0.24 J	0.40 J	3.0	3.2	100 U	153	2.1 J	10.9	20.0 U	20.0 U	250	0.70 U	0.50 U	0.50 U	0.50 U	1.0 U	
EW13S	W-230426-TS-24	4/26/2023	7/7/1900	204	34.9	1.0 U	11.5	30.1	281	6.1	7.8	21.0	3.4	45.6	29000	40100	3670	3580	20.0 U	26.9	12000	13	0.50 U	1.0	0.87	17	
MW1	W-230425-TS-10	4/25/2023	3/24/1900	82.3	17.9	1.7	4.3	0.86 J	111	1.0 U	0.25 J	0.23 J	1.2 J	1.1 J	100 U	100 U	2.5 U	1.5 J	20.0 U	20.0 U	0.21	0.64 U	0.50 U	0.50 U	0.50 U	1.0 U	
MW1	(Duplicate) W-230425-TS-11	4/25/2023	3/24/1900	82.2	17.8	1.7	4.3	0.79 J	110	1.0 U	0.29 J	0.25 J	4.7	1.1 J	100 U	100 U	2.5 U	1.5 J	20.0 U	20.0 U	0.20	0.63 U	0.50 U	0.50 U	0.50 U	1.0 U	
MW2	W-230427-TS-26	4/27/2023	2/10/1900	44.1	0.47 J	0.35 J	1.5	0.73 J	77.4	1.0 U	0.36 J	1.3	0.72 J	17.3	100 U	4590	0.87 J	181	6.9 J	23.6	0.12	0.63 U	0.50 U	0.50 U	0.50 U	1.0 U	
MW5	W-230426-TS-20	4/26/2023	6/25/1900	178	19.6	1.0 U	14.9	22.4	273	39	0.71 J	0.96 J	0.58 J	3.4	15400	19500	6820	6940	20.0 U	20.0 U	3800	7.3	0.50 U	0.61	0.21 J	5.8	
MW6S	W-230428-TS-34	4/28/2023	5/4/1900	126	12.6	1.0 U	9.7	3.0	207	1.0 U	0.35 J	0.62 J	3.5	13.9	100 U	2020	3.0	38.8	20.0 U	9.4 J	0.098 U	0.68 U	0.50 U	0.50 U	0.50 U	0.24 J	
MW13	W-230425-TS-12	4/25/2023	2/1/1900	31.1	0.64	0.51	1.9 J	2.1	52.9	1.0 U	0.23 J	1.0 U	2.1	2.1	100 U	151	2.5 U	4.4	20.0 U	20.0 U	0.32	0.69 U	0.50 U	0.50 U	0.50 U	1.0 U	
MW21	W-230427-TS-25	4/27/2023	2/16/1900	51.2	62.9	1.6	4.4	1.6	70.7	1.0 U	0.47 J	2.1	5.8	33.7	106	7250	4.6	454	20.0 U	19.0 J	0.62	0.70 U	0.50 U	0.50 U	0.50 U	1.0 U	
MW22	W-230426-TS-23	4/26/2023	2/23/1900	54.4	8.2	0.93 J	3.4	0.73 J	83.1	1.0 U	1.0 U	0.61 J	7.2	9.0	100 U	2070	1.9 J	105	13.8 J	9.0 J	0.096 U	0.62 U	0.50 U	0.50 U	0.50 U	1.0 U	
MW25	W-230502-TS-36	5/2/2023	3/26/1900	87.4	24.2	1.5	2.5	1.0	109	2.5	1.0 U	1.0 U	2.5	1.9 J	100 U	281	0.79 J	5.2	20.0 U	20.0 U	0.49	0.72 U	0.50 U	0.50 U	0.50 U	1.0 U	
MW28	W-230427-TS-27	4/27/2023	3/26/1900	89.4	21.0	2.3	4.6	0.90 J	121	1.0 U	0.64 J	0.77 J	0.59 J	0.56 J	100 U	100 U	2.5 U	0.82 J	20.0 U	20.0 U	0.098 U	0.66 U	0.50 U	0.50 U	0.50 U	1.0 U	

Table 2.4
Groundwater Analytical Data - Monitoring and Extraction Wells
Penta Wood Products Superfund Site
Siren, Wisconsin

Sample Location	Sample Identification	Sample Date	ES ¹	Hardness, calcium	Hardness, carbonate	Chloride ³	Nitrate (as N)	Sulfate ³	TOC averages	Alkalinity, total (as CaCO3)	Methane (dissolved)	Arsenic (dissolved)	Arsenic (total)	Copper (dissolved)	Copper (total)	Iron (dissolved)	Iron (total)	Manganese (dissolved)	Manganese (total)	Zinc (dissolved)	Zinc (total)	Pentachlorophenol	Naphthalene	Benzene	Ethylbenzene	Toluene	Xylenes (total)
			PAL ²	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Unconfined Aquifer (Upper) Cont.																											
MW30	W-230426-TS-21	4/26/2023		2/25/1900	57.5	0.43 J	0.41 J	1.5	0.99 J	96.5	1.0 U	1.0 U	1.0 U	0.62 J	1.4 J	100 U	100 U	2.2 J	2.1 J	20.0 U	20.0 U	3.1	0.70 U	0.50 U	0.50 U	0.50 U	1.0 U
MW31	W-230425-TS-14	4/25/2023		4/5/1900	94.7	0.28 J	0.5	1.3 J	0.57 J	148	1.0 U	1.0 U	1.0 U	6.8	1.1 J	100 U	202	1.1 J	6.1	20.0 U	20.0 U	0.27	0.69 U	0.50 U	0.50 U	0.50 U	1.0 U
MW32	W-230425-TS-13	4/25/2023		1/23/1900	24.8	0.56	0.35	2.5	1.1	38.2	1.4	1.0 U	0.44 J	0.70 J	6.4	291	2660	33	37.5	20.0 U	7.6 J	0.3	0.64 U	0.50 U	0.50 U	0.50 U	1.0 U

Notes:

- 1 - Enforcement Standard (ES) criteria adapted from Table 1 referred to and incorporated by NR 140.10 with except of Iron, Manganese, Zinc, Chloride, and Sulfate (see note 3 below)
- 2 - Preventive Action Limit (PAL) criteria adapted from Table 1 referred to and incorporated by NR 140.10 with except of Iron, Manganese, Zinc, Chloride, and Sulfate (see note 3 below)
- 3 - Enforcement Standard (ES) and Preventive Action Limit (PAL) criteria adapted from Table 2 referred to and incorporated by NR 140.12
- mg/L - Concentrations listed with units of milligrams per liter
- ug/L - Concentrations listed with units of micrograms per liter
- J - Concentration was between the limit of detection and the limit of quantitation
- B - Compound was found in the blank and sample
- H - Sample was prepped or analyzed beyond the specified holding time
- U - Compound was not detected
- Concentration exceeds the ES
- Concentration exceeds the PAL

Wells MW10S, MW20, and MW29 were not sampled due to the presence of LNAPL
Wells MW16 was not sampled due to insufficient water for sampling

Table 3.1

**Groundwater Analytical Data - Residential Wells
Penta Wood Products Superfund Site
Siren, Wisconsin**

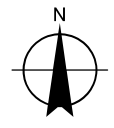
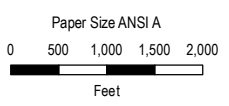
Sample Location	Sample Identification	ES ¹ PAL ² Date	Pentachlorophenol	Naphthalene	Benzene	Ethylbenzene	Toluene	Xylenes (total)
			1 0.1 ug/L	100 10 ug/L	5 0.5 ug/L	700 140 ug/L	800 160 ug/L	2000 400 ug/L
RW01	W-230425-TS-08	4/25/2023	0.10 U	0.78 U	0.50 U	0.50 U	0.50 U	1.0 U
RW02	W-230424-TS-07	4/24/2023	0.10 U	0.70 U	0.50 U	0.50 U	0.50 U	0.35 J
RW03	W-230424-TS-04	4/24/2023	0.10 U	0.62 U	0.50 U	0.50 U	0.50 U	1.0 U
RW04	W-230424-TS-06	4/24/2023	0.10 U	0.67 U	0.50 U	0.50 U	0.50 U	0.46 J
RW05	W-230424-TS-01	4/24/2023	0.10 U	0.65 U	0.50 U	0.50 U	0.50 U	1.0 U
RW06	W-230424-TS-02	4/24/2023	0.10 U	0.65 U	0.50 U	0.50 U	0.50 U	1.0 U
RW06 (Duplicate)	W-230424-TS-03	4/24/2023	0.10 U	0.63 U	0.50 U	0.50 U	0.50 U	0.46 J

Notes:

- ¹ - Enforcement Standard (ES) criteria adapted from Table 1 referred to and incorporated by NR 140.10
- ² - Preventive Action Limit (PAL) criteria adapted from Table 1 referred to and incorporated by NR 140.10
- ug/L - Concentrations listed with units of micrograms per liter
- U - Compound was not detected above the limit of detection
- Dup - Duplicate sample
- J - Concentration was between the limit of detection and the limit of quantitation

Figures

LEGEND
 SITE BOUNDARY



**PENTA WOOD PRODUCTS SUPERFUND SITE
 SIREN, WISCONSIN**

Project No. 11222418-05
 Revision No. -
 Date 09/01/2023

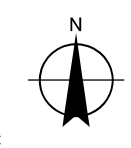
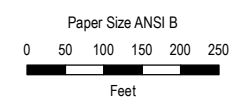
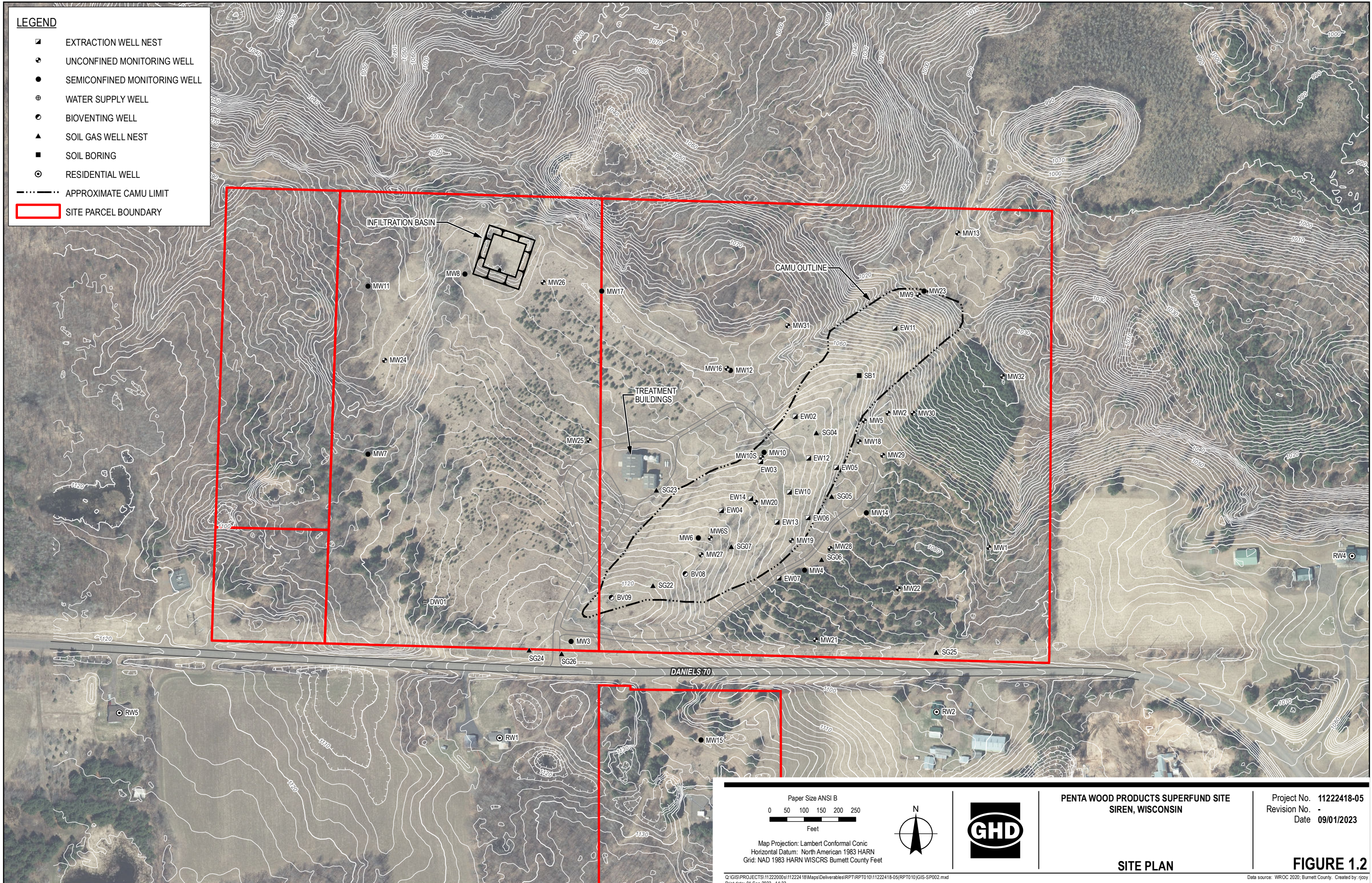
Map Projection: Lambert Conformal Conic
 Horizontal Datum: North American 1983 HARN
 Grid: NAD 1983 HARN WISCRS Burnett County Feet

SITE LOCATION

FIGURE 1.1

LEGEND

- ▣ EXTRACTION WELL NEST
- UNCONFINED MONITORING WELL
- SEMICONFINED MONITORING WELL
- ⊕ WATER SUPPLY WELL
- ⊙ BIOVENTING WELL
- ▲ SOIL GAS WELL NEST
- SOIL BORING
- ⊙ RESIDENTIAL WELL
- APPROXIMATE CAMU LIMIT
- ▭ SITE PARCEL BOUNDARY



Map Projection: Lambert Conformal Conic
 Horizontal Datum: North American 1983 HARN
 Grid: NAD 1983 HARN WISCRS Burnett County Feet

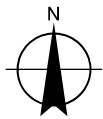
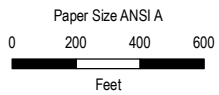
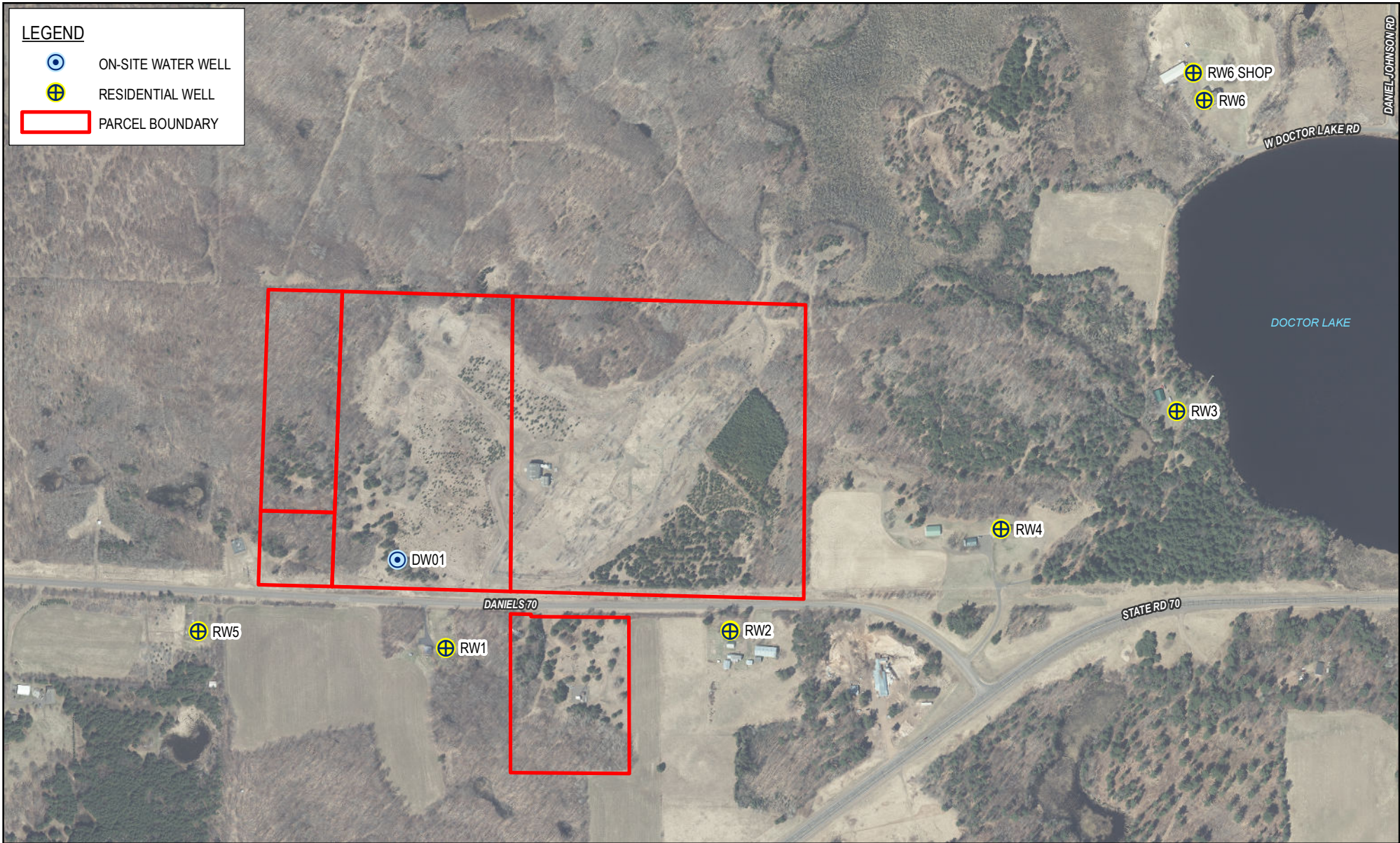


PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

Project No. 11222418-05
 Revision No. -
 Date 09/01/2023

SITE PLAN

FIGURE 1.2



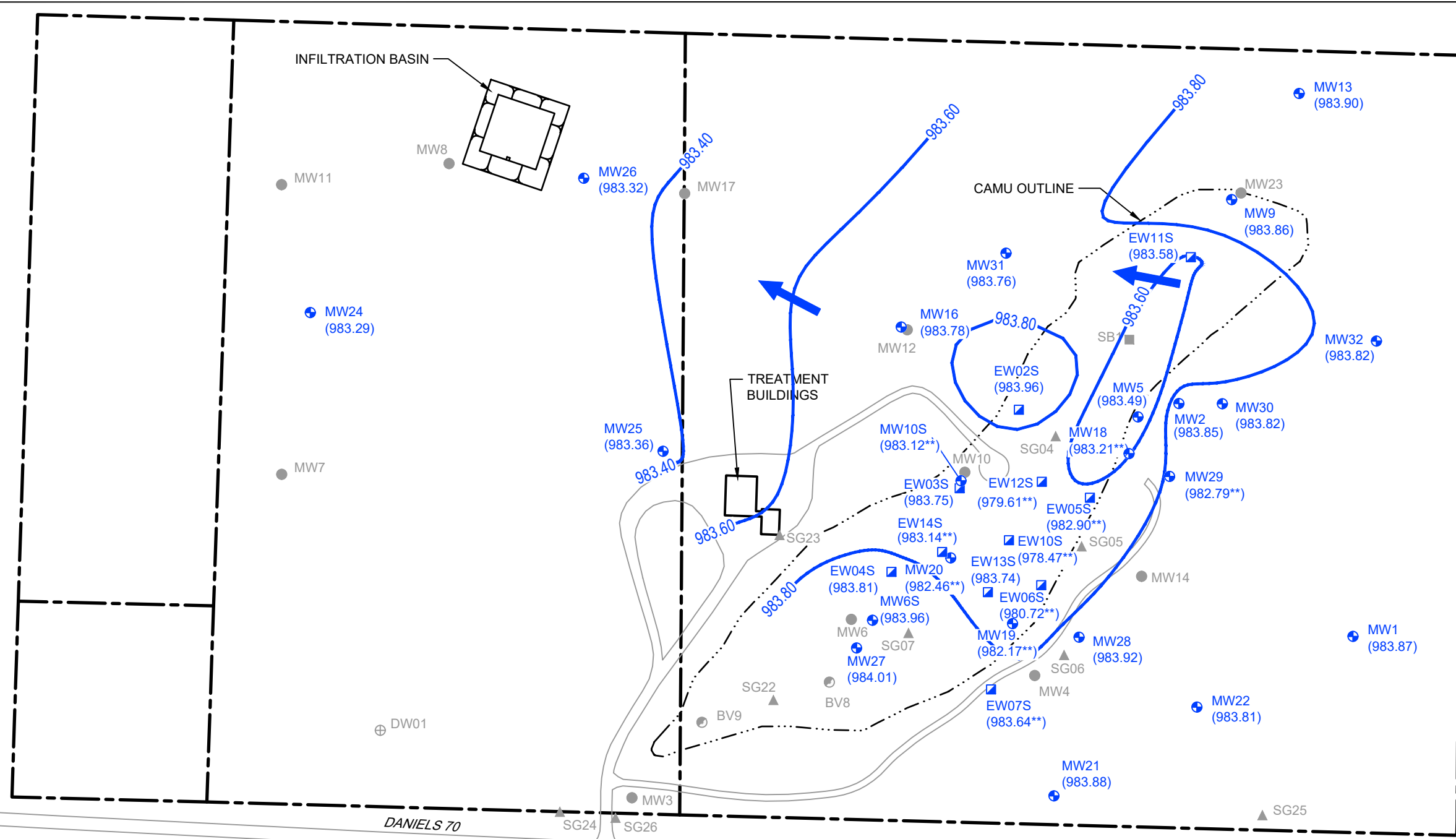
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PENTA WOOD PRODUCTS SUPERFUND SITE
 SIREN, WISCONSIN

Project No. 11222418-05
 Revision No. -
 Date 09/01/2023

RESIDENTIAL WELL LOCATIONS

FIGURE 1.3



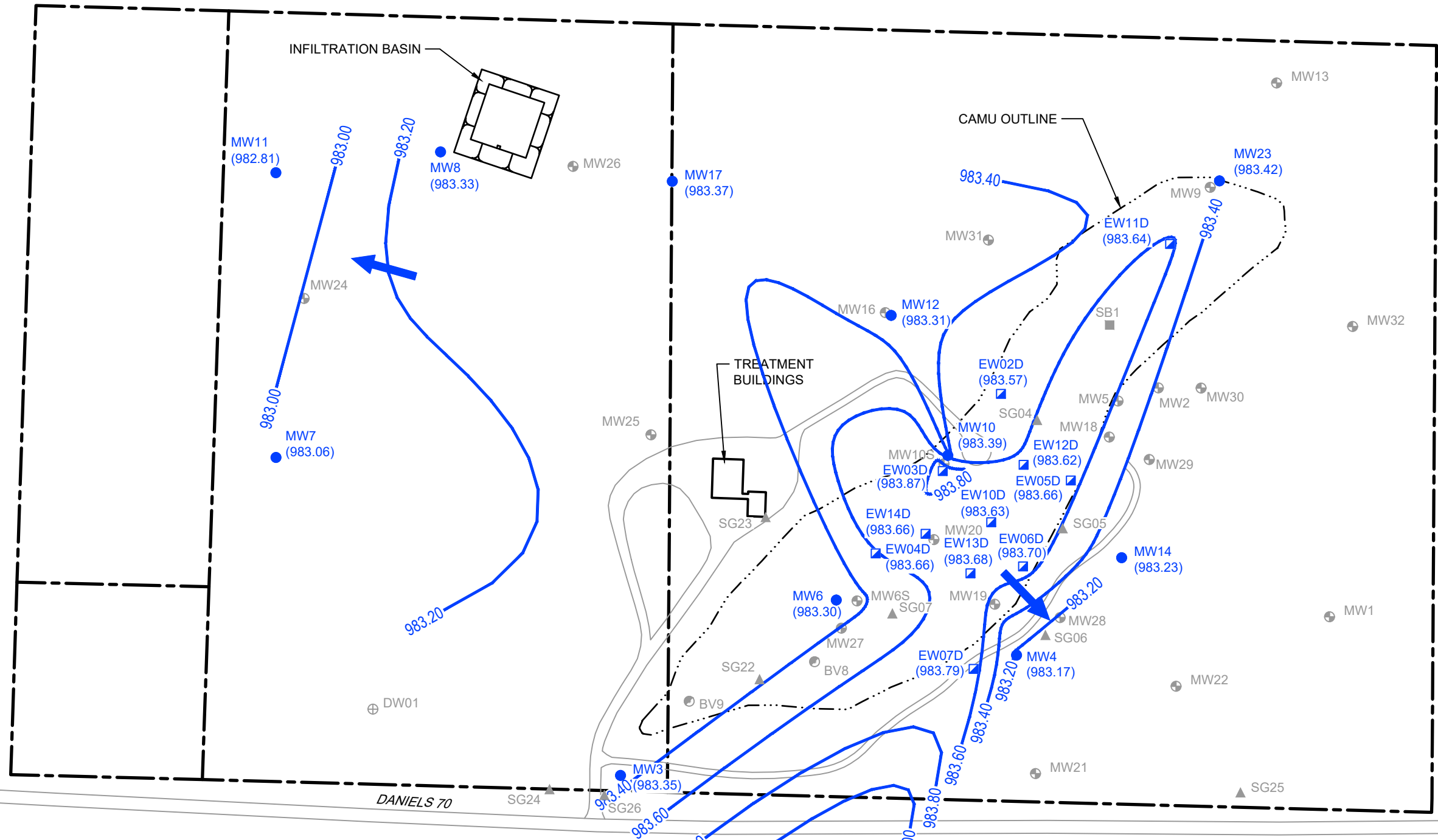
- LEGEND**
- PARCEL BOUNDARY
 - EW11 EXTRACTION WELL NEST
 - BV09 BIOVENTING WELL
 - ▲ SG05 SOIL GAS WELL NEST
 - MW27 UNCONFINED MONITORING WELL LOCATION
 - MW7 SEMICONFINED MONITORING WELL LOCATION
 - ⊕ DW01 WATER SUPPLY WELL LOCATION
 - SB1 SOIL BORING LOCATION
 - RW1 RESIDENTIAL WELL
 - (984.01) GROUNDWATER ELEVATION
 - 983.60 GROUNDWATER ELEVATION CONTOUR
 - GROUNDWATER FLOW DIRECTION
 - ** LNAPL PRESENT IN WELL, WELL NOT UTILIZED TO INFER GROUNDWATER ELEVATION CONTOURS

PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

**UNCONFINED (UPPER) AQUIFER
GROUNDWATER CONTOURS**
- APRIL 2023

Project No. 11222418
Date August 2023

FIGURE 2.1



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
⊙ RW1	RESIDENTIAL WELL
(984.54)	GROUNDWATER ELEVATION
— 984.00 —	GROUNDWATER ELEVATION CONTOUR
→	GROUNDWATER FLOW DIRECTION

0 100 200 ft

PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

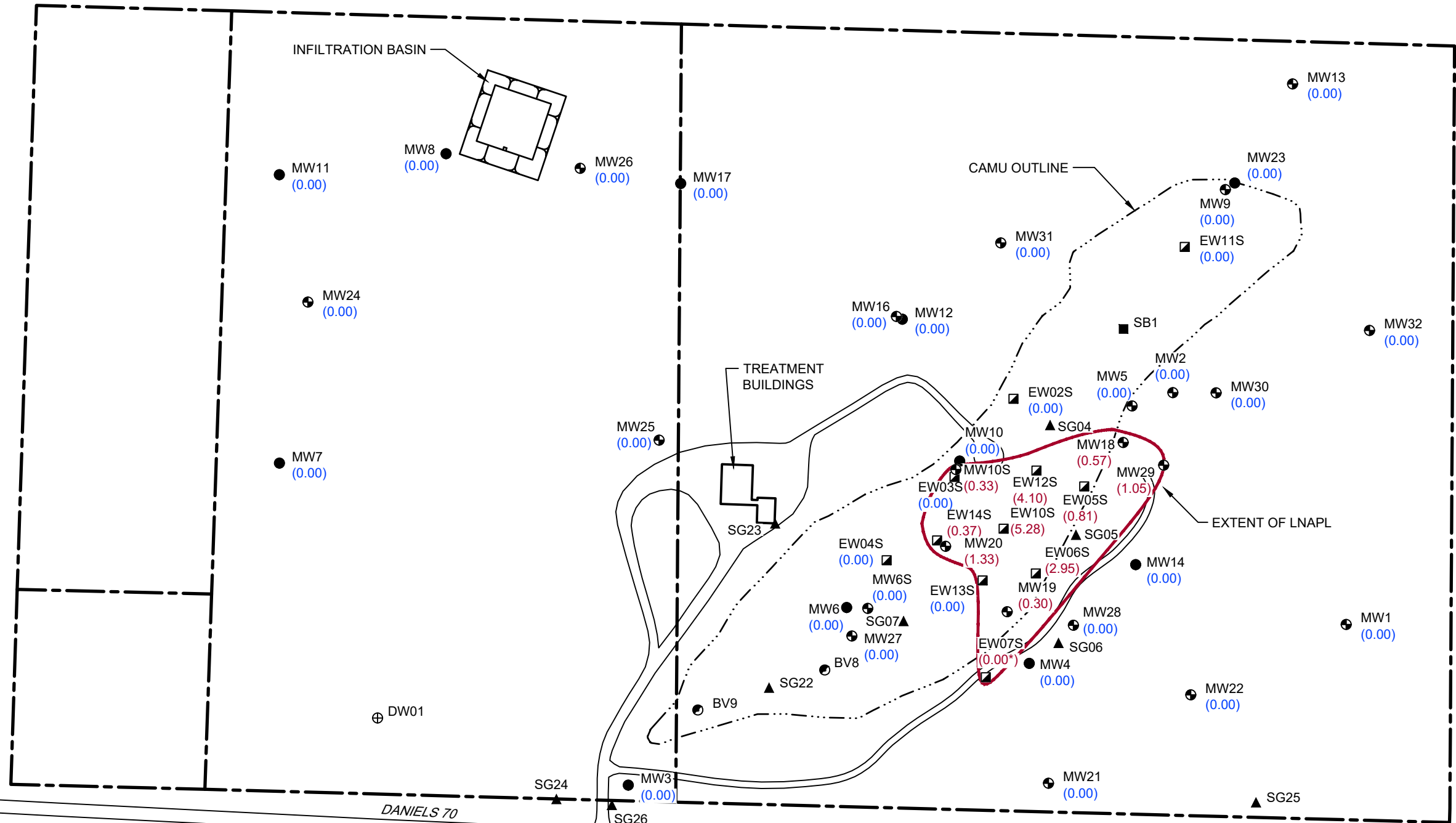
**SEMICONFINED (LOWER) AQUIFER
GROUNDWATER CONTOURS**
- APRIL 2023

Project No. 11222418
Date June 2023

FIGURE 2.2

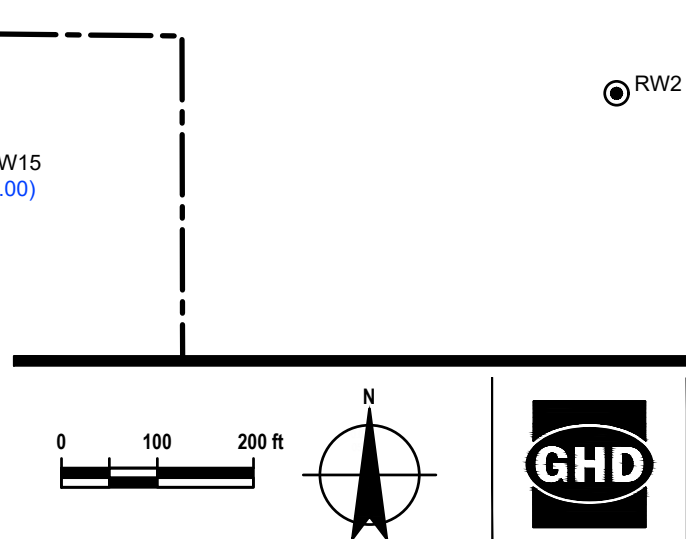
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DATA SOURCE: KEMPER AND ASSOCIATES, INC. SURVEY DATED MAY 2016 (WISCONSIN BURNETT COUNTY COORDINATE SYSTEM NAD83, 1996).



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
⊙ RW1	RESIDENTIAL WELL
(0.00)	LNAPL NOT PRESENT
(0.30)	LNAPL THICKNESS (FEET)
—	EXTENT OF LNAPL
*	TRACE LNAPL

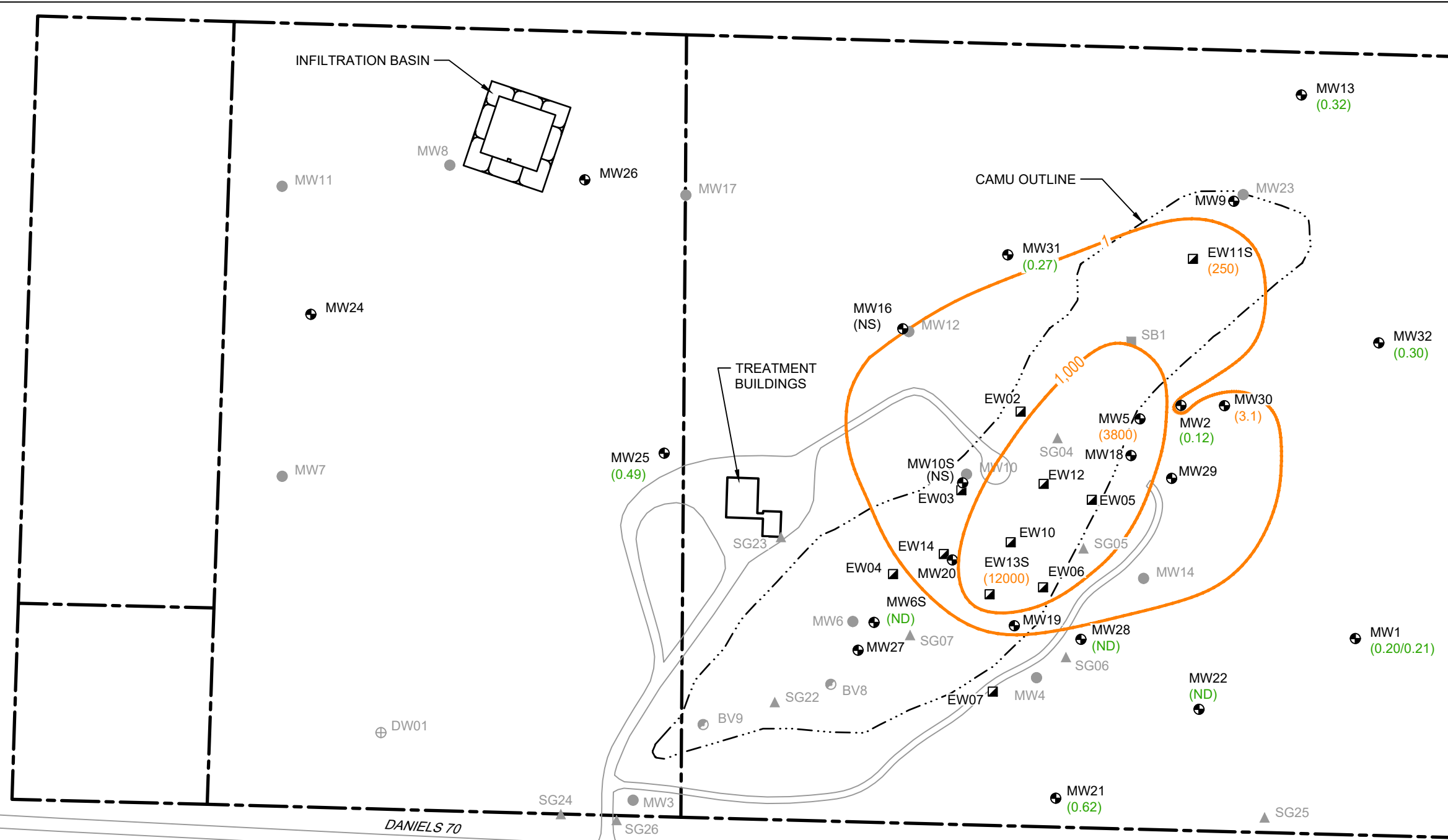


PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

Project No. 11222418
Date June 2023

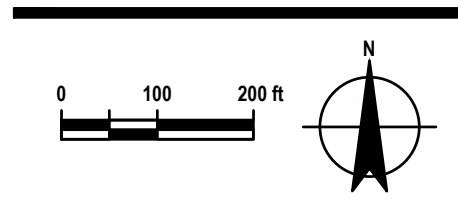
LNAPL THICKNESS - APRIL 2023

FIGURE 2.3



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
- ⊙ RW1 RESIDENTIAL WELL
- 1 — PENTACHLOROPHENOL CONCENTRATION CONTOUR (µg/L)
- (NS) NOT SAMPLED DUE TO LNAPL PRESENCE OR INSUFFICIENT WATER
- (ND) NOT DETECTED
- (0.20/0.21) PENTACHLOROPHENOL CONCENTRATION (µg/L) MEETS ENFORCEMENT STANDARD OF 1.0 µg/L/DUPLICATE CONCENTRATION
- (3.1) PENTACHLOROPHENOL CONCENTRATION (µg/L) EXCEEDS ENFORCEMENT STANDARD OF 1.0 µg/L

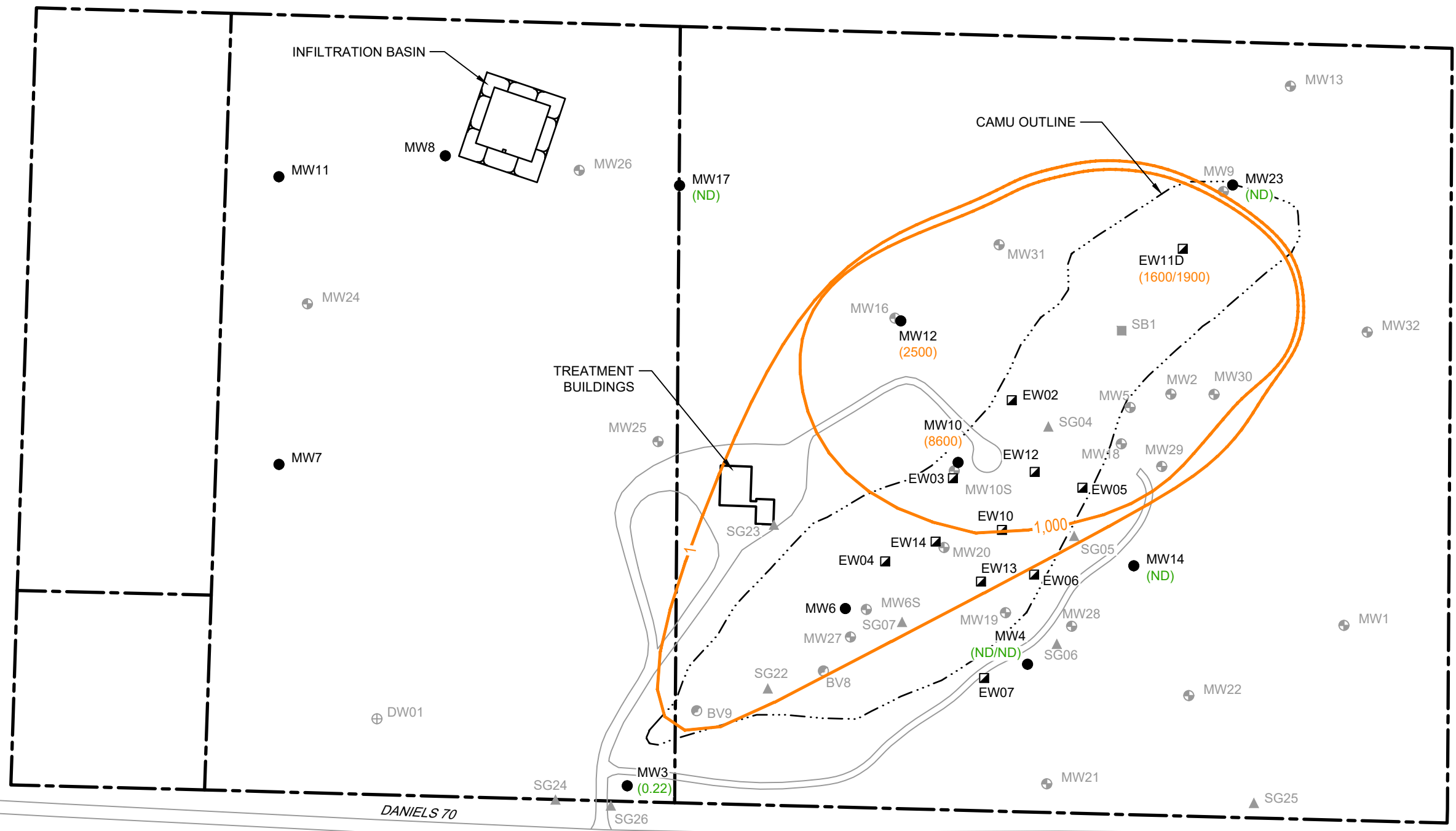


PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

**UNCONFINED (UPPER) AQUIFER
PENTACHLOROPHENOL
CONCENTRATIONS - APRIL 2023**

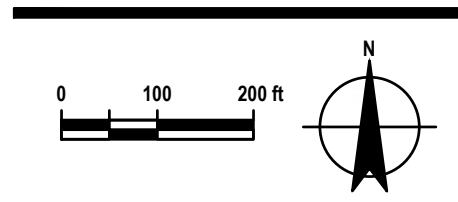
Project No. 11222418
Date June 2023

FIGURE 2.4



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
- RW1 RESIDENTIAL WELL
- 1 — PENTACHLOROPHENOL CONCENTRATION CONTOUR (µg/L)
- (ND) NOT DETECTED
- (0.22) PENTACHLOROPHENOL CONCENTRATION (µg/L) MEETS ENFORCEMENT STANDARD OF 1.0 µg/L
- (1600/1900) PENTACHLOROPHENOL CONCENTRATION (µg/L) EXCEEDS ENFORCEMENT STANDARD OF 1.0 µg/L/DUPLICATE CONCENTRATION



PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

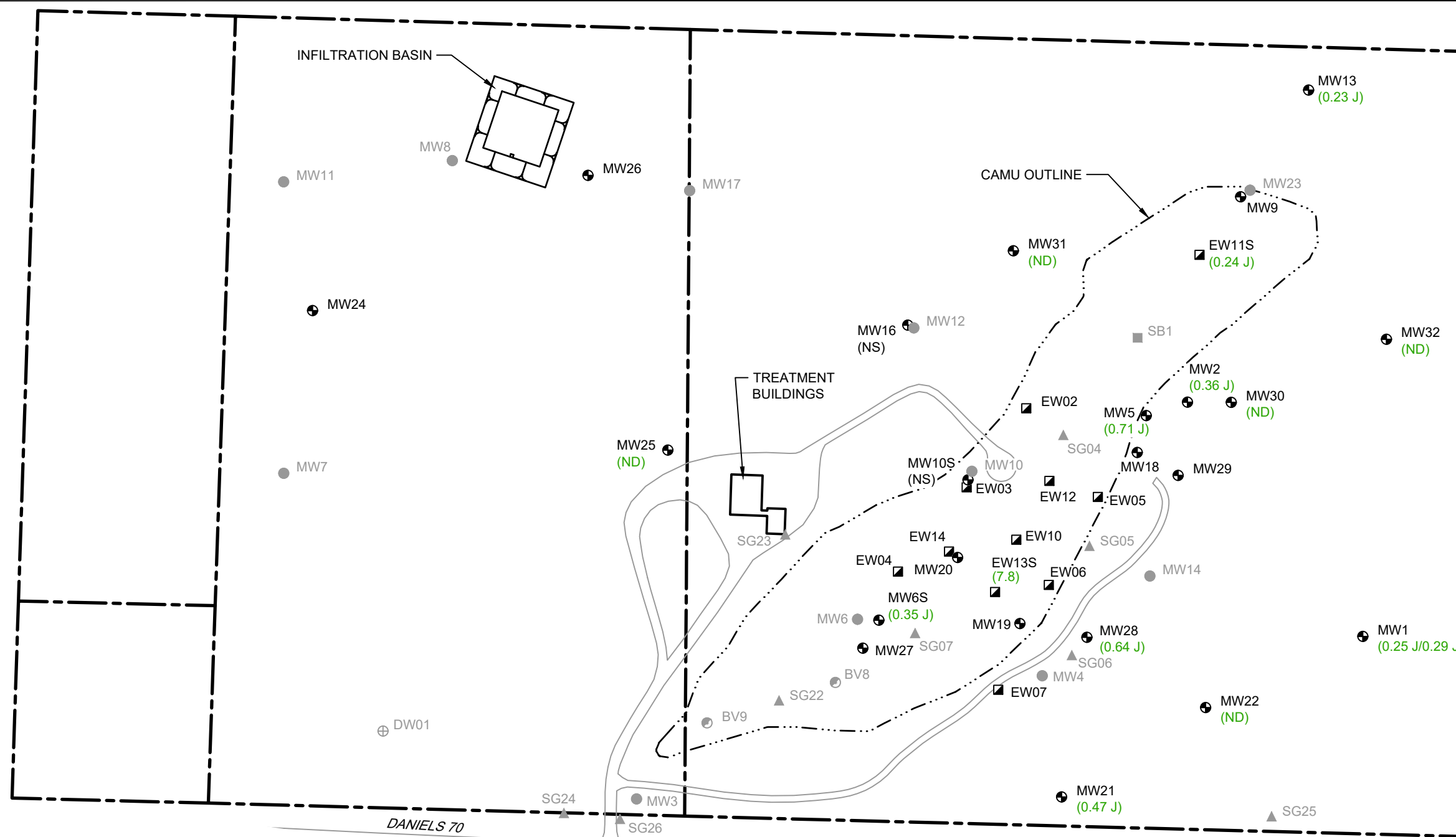
SEMICONFINED (LOWER) AQUIFER
PENTACHLOROPHENOL
CONCENTRATIONS - APRIL 2023

Project No. 11222418
Date June 2023

FIGURE 2.5

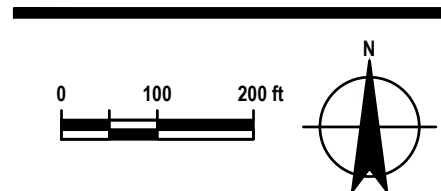
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Plot Date: 29 June 2023 2:06 PM

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



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
- RW1 RESIDENTIAL WELL
- (0.31 J) DISSOLVED ARSENIC CONCENTRATION (µg/L) MEETS ENFORCEMENT STANDARD OF 10 µg/L
- (0.25 J/0.29 J) DISSOLVED ARSENIC / DUPLICATE CONCENTRATION (µg/L)
- (ND) NOT DETECTED
- (NS) NOT SAMPLED DUE TO LNAPL PRESENCE OR INSUFFICIENT WATER
- J CONCENTRATION WAS BETWEEN THE LIMIT OF DETECTION AND LIMIT OF QUANTITATION

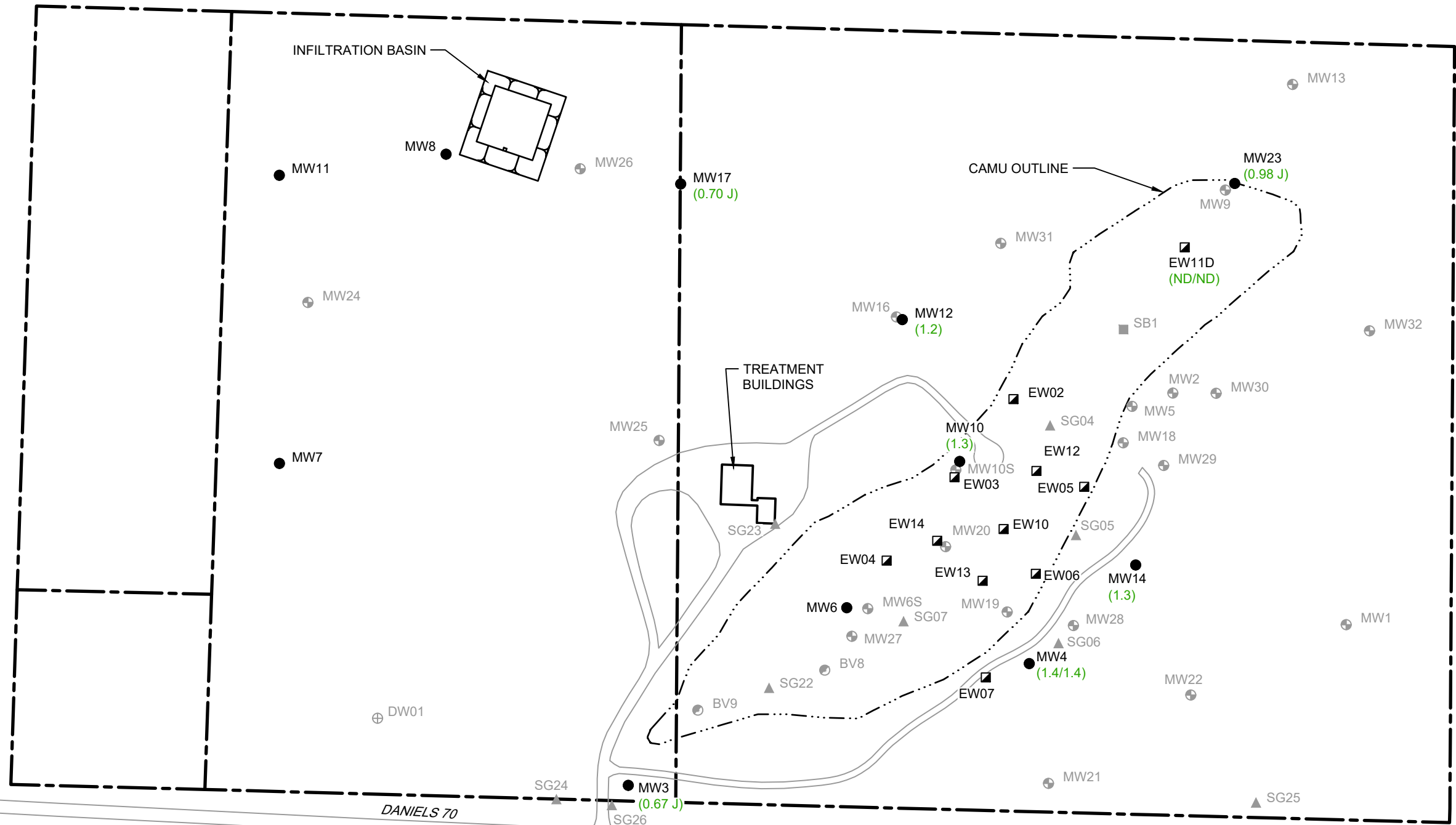


PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

**UNCONFINED (UPPER) AQUIFER
DISSOLVED ARSENIC CONCENTRATIONS
- APRIL 2023**

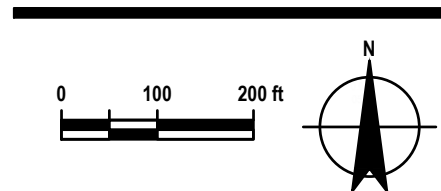
Project No. 11222418
Date September 2023

FIGURE 2.6



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
- ⊙ RW1 RESIDENTIAL WELL
- (ND) NOT DETECTED
- J CONCENTRATION WAS BETWEEN THE LIMIT OF DETECTION AND LIMIT OF QUANTITATION
- (1.4/1.4) DISSOLVED ARSENIC CONCENTRATION (µg/L) MEETS ENFORCEMENT STANDARD OF 10 µg/L/DUPLICATE CONCENTRATION



PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

**SEMICONFINED (LOWER) AQUIFER
DISSOLVED ARSENIC CONCENTRATIONS
- APRIL 2023**

Project No. 11222418
Date September 2023

FIGURE 2.7

Appendices

Appendix A

Historical Site Data

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L				
DW01	9/24/2003	N	0.5 U	0.05 J	1 U						50 UJ				5 UJ		30			1 U	0.25 U	2.5 U	2.5 U	2.5 U	250	66.9	110.8		1.48		2 U	1.5				
DW01	9/24/2003	N2	0.5 U		1 U						50 UJ				5 U		40																			
DW01	5/4/2004	N	10.0 U	0.102 UB	0.243 J						61.5 R				27300		108 R			5.00 U	0.109 J	5.00 U	0.153 J	5.00 U	292	49 =	309		1.8 J		7.9 R	1.54 J				
DW01	5/4/2004	N2			0.280 J						49.5 R						29.2 R																			
DW01	9/22/2004	N																			5.00 U	0.500 U	5.00 U	5.00 U	5.00 U											
DW01	9/28/2004	N		1.08 =																																
DW01	11/1/2004	N		0.0962 U																																
DW01	5/11/2005	N	2.0 U	0.033 J																0.93 U	0.50 U	5.0 U	5.0 U	5.0 U				260 J								
DW01	9/27/2005	N		0.040 J																0.93 UJ	0.50 U	5.0 U	5.0 U	5.0 U												
DW01	5/31/2006	N	2.0 U	0.039 J	1.0 UJ						140 J						50 UJ			0.95 U	0.50 U	5.0 U	5.0 U	5.0 U	270 J	29 J	260 J		1.5 J		6.5	1.1 J				
DW01	9/26/2006	N	2.0 UJ	0.11 U	1.0 UJ						100						50 UJ			0.93 U	0.50 U	5.0 U	5.0 U	5.0 U	230 J	21 J	230 J		0.67 J		13 J	2.1				
DW01	5/10/2007	N	2.0 UJ	0.074 J	1.0 UJ						100						100 UJ			0.95 R	1.0 UJ	1.0 UJ	1.0 UJ	2.0 UJ	400 =	29	320		1.8		17 J	1.0 UB				
DW01	9/19/2007	N	2.0 UJ	0.093 UJ	0.63 J						89						100 UJ			0.93 R	1.0 U	1.0 U	1.0 U	2.0 U	250 J	27	330 J		1.5 J		14 J	0.92 J				
DW01	5/20/2008	N		0.094 UJ																0.94 U	1.0 UJ	1.0 U	1.0 U	2.0 UJ												
DW01	10/23/2008	N	2.0 UJ	0.1 U	2 UJ						205 J						642 J			1 U	0.5 U	2.0 U	2.0 U	5.0 U	297 J	29.6	423 J		1.79 J		9.07	44.4				
DW01	6/3/2009	N		0.1 U																1.0 UJ	0.5 U	2.0 U	2.0 U	5.0 U												
DW01	10/8/2009	N		0.1 UJ																0.994 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ												
DW01	5/19/2010	N		0.1 U																1.0 U	0.4 U	5 U	5 U	5 U												
DW01	10/7/2010	N		0.1 UJ																0.995 UJ	0.1 U	0.4 U	0.4 U	1 U												
DW01	6/30/2011	N		0.1 U																0.999 U	0.1 U	0.4 U	0.4 U	1 U												
DW01	10/18/2011	N		0.032 J																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U												
DW01	5/23/2012	N		0.028 J																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U												
DW01	10/18/2012	N		0.032 J																0.19 U H	0.50 U	1.0 U	1.0 U	2.0 U												
DW01	5/21/2013	N		0.029 J																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U												
DW01	10/8/2013	N		0.027 J																0.20 U	0.50 U	1.0 U	1.0 U	2.0 U												
DW01	5/13/2014	N		0.057 J																																
DW01	9/25/2014	N		0.54 J																0.19 UJ																
DW01	4/21/2015	N		0.023 J																0.19 U																
DW01	10/15/2015	FD		0.096 U																0.19 U																
DW01	10/15/2015	N		0.095 U																0.19 U																
DW01	4/5/2016	FD		0.097 U																0.20 U	0.50 U	1.0 U	1.0 U	2.0 U												
DW01	4/5/2016	N		0.095 U																0.14 J	0.50 U	1.0 U	1.0 U	2.0 U												
DW01	10/10/2016	FD		0.024 J																0.20 U	0.50 U	1.0 U	1.0 U	2.0 U												
DW01	10/10/2016	N		0.025 J																0.20 U	0.50 U	1.0 U	1.0 U	2.0 U												
DW01	4/18/2017	FD		0.022 J																0.20 U	0.50 U	1.0 U	1.0 U	2.0 U												
DW01	4/18/2017	N		0.020 J																0.20 U	0.50 U	1.0 U	1.0 U	2.0 U												
DW01	10/20/2017	FD		0.10 U																0.88 U	0.50 U	0.50 U	0.50 U	1.0 U												
DW01	10/20/2017	N		0.10 U																0.83 U	0.50 U	0.50 U	0.50 U	1.0 U												
DW01	6/5/2018	N		0.095 U																0.77 U	0.50 U	0.50 U	0.50 U	1.0 U												
DW01	10/16/2018	N		0.095 U																0.82 U	0.50 U	0.50 U	0.50 U	1.0 U												
DW01	4/22/2019	N		0.099 U																0.26 U	0.15 U	0.18 U	0.15 U	0.22 U												
DW01	10/1/2019	N		0.087 U																0.26 U	0.15 U	0.18 U	0.15 U	0.23 J												
EW02D	8/22/2014	N		52																0.28																
EW02D	4/23/2015	N		17																															2.1 J	
EW02D	4/14/2016	N	0.15 J	370	0.49 J						3.8						299			384		46.7													8.7	4.8

Appendix A.1

**Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin**

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
EW02S	4/14/2016	N	0.094 J	690	5.0 U				1.4 J		50.2 J				39.3		20.0 U			2.5	0.50 U	1.0 U	1.0 U	2.0 U	30.0	10.5	41.2		1.0		7.0	2.7
EW03D	8/22/2014	N		260															0.87											1.6 J		
EW03D	4/18/2016	N	1.3	3500	2.7 J				9.8		12500				1780		398			2.4	0.50 U	0.33 J	1.0 U	3.6	184	13.4	169		0.10 U		25.6	10
EW03S	4/18/2016	N	0.15 J	14000	0.53 J				10.8		1050				3530		20.0 U			12	1.0 U	2.0 U	2.0 U	5.2	88.0	73.8	220		0.29		39.1	59.1
EW04D	8/22/2014	N		150															0.65											4.8 U		
EW04D	2/3/2015	N		200															0.71											4.9 U		
EW04D	4/23/2015	N		430																												
EW04D	4/18/2016	N	0.33 J	24	5.0 U				2.2		3060				316		172			0.16 J	0.50 U	1.0 U	1.0 U	2.0 U	129	16.5	131		1.9		6.0	5.3
EW04S	4/18/2016	N	0.12 J	210	5.0 U				2.4		567				385		20.0 U			0.25	0.50 U	1.0 U	1.0 U	2.0 U	81.0	9.9	98.0		0.92		8.1	7.2
EW05D	8/22/2014	N		4400															6.8											6.3		
EW05D	2/3/2015	N		3100															11											2.0 J		
EW05D	4/20/2016	N	0.44 J	7500	2.7 J				8.6		8430				1980		372			19	0.50 U	0.79 J	0.95 J	6.7	145	14.4	171		0.10 U		17.0	36.7
EW06D	8/22/2014	N		910															1.8											1.9 J		
EW06D	2/3/2015	N		4900															12											1.6 J		
EW06D	1/24/2017	N	0.25 J	840	0.35				0.70 J		398				163		15.4 J			1.7	0.28	0.26	0.23	1.2 J	124	12.3	144		1.0		5.9	6.4
EW07D	8/22/2014	N		280															0.68											1.3 J		
EW07D	2/3/2015	N		170															0.28											4.9 U		
EW07D	4/23/2015	N		2400																												
EW07D	4/12/2016	N	0.59	0.31	5.0 U				1.1 J		122				210		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	127	23.7	174		6.6		8.4	1.2
EW10D	8/22/2014	N		7000															11											11		
EW10D	2/3/2015	N		2800															7.7											4.9 U		
EW10D	4/20/2016	FD	1.3	4800	7.6				12.1		3720				2170		114			19	0.50 U	1.3	1.9	12	136	23.9	184		0.060 J		20.3	41.0
EW10D	4/20/2016	N	1.1	5000	6.5				10.3		3350				2200		81.0			19	0.50 U	1.4	1.8	12	135	25.7	180		0.057 J		21.8	41.8
EW11D	4/14/2016	FD	0.080 J	2.5	5.0 U				2.0 U		825				27.4		55.9			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	190	12.8	276		2.0		198	1.2
EW11D	4/14/2016	N	0.50 U	3.4	5.0 U				1.1 J		657				22.6		46.4			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	187	12.7	282		2.0		155	1.0
EW11D	7/19/2016	N	1.1	7.4	5.0 U				2.7		292				54.5		50.0			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	151	9.1	242		2.2		112	1.9
EW11D	10/10/2016	N	3.2	8.4	5.0 U				0.67 J		793				23.6		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	190	13.6	272		2.7		159	1.0
EW11D	1/19/2017	N	8.9	0.15	0.35				0.51 J		897				40.4		10.8 J			0.060	0.28	0.26	0.23	0.24	168	12.2	70.0		3.3		129	1.9
EW11D	4/19/2017	N	35	0.13	5.0 U				0.58 J		2930				129		19.0 J			0.22 U	0.50 U	1.0 U	1.0 U	2.0 U	152	11.4	238		5.2		97.3	3.2
EW11D	10/4/2017	N	14	0.18	0.31 J				1.4 J		1290				66.9		11.9 J			0.81 U	0.50 U	0.50 U	0.50 U	1.0 U	159	11.5	220		7.7		79.4	2.5
EW11D	5/31/2018	FD	2.4	0.12	0.35 J				1.2 J		2690				126		10.2 J			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	137	8.9	204		13.4		51.7	3.4
EW11D	5/31/2018	N	2.5	0.10 U	0.36 J				0.87 J		2600				124		10.2 J			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	137	9.0	202		13.0		49.5	3.4
EW11D	10/19/2018	N	1.0 U	0.096 U	1.0 U				13.1		144				34.5		20.0 U			0.76 U	0.50 U	0.50 U	0.50 U	0.44 J	131	7.2	121		9.9		40.3	4.3
EW11D	4/24/2019	N	0.17 U	0.20	1.1				7.0		23400				217		282			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	48.2	0.94	95.1		5.7		19.5 B	5.5
EW11D	10/17/2019	N	0.31 J	2.7	0.24 J				2.1		1260				66.1		15.2 J			0.24 U	0.15 U	0.18 U	0.15 J	0.22 U	149 H	3.9	172		5.4		29.5	6.4
EW11D	4/13/2020	N	0.22 J	0.86	0.30 JB				4.6		2180				162		27.3			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	44.9	0.46	66.1		3.7		14.2	5.6

Appendix A.1

**Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin**

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
EW11D	10/7/2020	N	12	0.091 U	0.55 J				15.0		4880				57.3		12.4 J			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	201	5.2	228		6.8 H		27.6	3.4
EW11D	4/13/2021	N	1.0 U	3.2	0.50 J				18.9		3470				208		37.8			0.79 U	0.50 U	0.50 U	0.50 U	1.0 U	75.8	1.3	101		2.3	20.8	7.4	
EW11D	10/12/2021	N	550	0.60	0.27 J				1.9 J		23500				692		15.6 J			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	83.7	3.6	90.8		1.6	6.1	6.8	
EW11D	4/12/2022	N	870	0.44	2.3				9.0		49200				157		276			0.75 U	0.50 U	0.50 U	0.50 U	1.0 U	164	2.3	97.6		1.8	8.3	3.7	
EW11D	10/4/2022	N	120	1000	1.0 U	0.28 J			0.88 J	1.9 J	354	11200			59.8	98.7	20.0 U	46.0		0.77 U	0.50 U	0.50 U	0.50 U	0.23 J	174	2.5	100		0.44	5.5	4.2	
EW11D	10/4/2022	FD	110	1000	1.0 U	1.0 U			1.3 J	1.4 J	352	7830			61.3	80.9	20.0 U	35.8		0.81 U	0.50 U	0.50 U	0.50 U	1.0 U	173	2.5	100		0.44	5.6	4.0	
EW11D	4/25/2023	N	91	1600	1.0 U	0.93 J			0.75 J	3.4	2230	27900			165	191	20.0 U	67.9		0.68 U	0.50 U	0.50 U	0.50 U	0.44 J	187	1.7	112	112	0.71 J	7.4	4.7	
EW11D	4/25/2023	FD	97	1900	1.0 U	2.7			3.5	7.6	3770	91100			202	326	20.0 U	222		0.75 U	0.50 U	0.50 U	0.50 U	0.30 J	196	1.8	104	108	0.73 J	6.9	5.3	
EW11S	4/14/2016	N	0.50 U	0.37	5.0 U				3.4		451				63.5		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	48.6	7.0	100		8.9	45.1	5.2	
EW11S	7/19/2016	N	0.50 U	1.2	5.0 U				2.3		84.2 J				37.3		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	65.7	7.9	106		6.0	36.5	2.7	
EW11S	10/10/2016	N	0.50 U	0.70	0.40 J				3.0		114				97.9		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	64.7	7.9	118		7.9	39.1	4.7	
EW11S	1/19/2017	N	0.20 J	0.96	0.40 J				2.2		211				157		6.2			0.060	0.28	0.26	0.23	0.24	50.5	9.8	108		7.7	36.3	4.3	
EW11S	4/19/2017	N	0.26 J	0.20	5.0 U				1.8 J		445				185		20.0 U			0.23 U	0.50 U	1.0 U	1.0 U	2.0 U	45.9	9.2	122		8.6	36.8	3.5	
EW11S	10/4/2017	N	0.22 J	0.25	0.31 J				2.9		164				65.0		7.9 J			0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	65.2	9.4	129		8.0	39.1	3.9	
EW11S	6/1/2018	N	1.0 U	0.25	0.24 J				2.7		242				74.7		20.0 U			0.76 U	0.50 U	0.50 U	0.50 U	1.0 U	53.5	10.6	127		13.2	36.3	3.3	
EW11S	10/19/2018	N	1.0 U	0.099 U	1.0 U				9.6		213				63.5		12.8 J			0.81 U	0.50 U	0.50 U	0.50 U	0.23 J	56.4	7.4	182		11.9	29.2	2.7	
EW11S	4/24/2019	N	0.17 U	0.16	0.23 U				2.2		94.7 J				10.7		8.2 J			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	53.0	2.7	96.5		6.0	23.7 B	2.5	
EW11S	10/17/2019	N	0.21 J	2.1	0.23 U				2		46.7 U				24.6		6.9 U			0.24 U	0.15 U	0.18 U	0.15 J	0.22 U	93.6 H	3.2	128		7.3	22	3.6	
EW11S	4/13/2020	N	0.17 U	0.98	0.30 JB				9.1		46.7 U				2.2 J		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	72.7	2.2	96		4.5	20.7	2.2	
EW11S	10/7/2020	N	1.9	0.087 U	0.28 J				20.6		241				59.3		6.9 U			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	97.4	5.1	127		5.7 H	24.8	3.1	
EW11S	4/13/2021	N	1.0 U	1.2	1.0 U				20.9		100 U				5.4		12.5 JB			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	97.3	4.5	134		6.5 H	21	2.5	
EW11S	10/12/2021	N	0.30 J	0.18	1.0 U				15.0		49.7 J				6.1		20.0 U			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	94.7	2.8	128		6.4	15.5	1.5	
EW11S	4/12/2022	N	0.94 J	1.2	1.2				2.8		734				48.6		8.2 J			0.81 U	0.50 U	0.50 U	0.50 U	1.0 U	104	2.2	65.1		4.3	11.0	1.4	
EW11S	10/4/2022	N	1.1	2.3	0.24 J	1.0 U			1.4 J	1.8 J	100 U	422			1.9 J	39.6	20.0 U	20.0 U		0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	101	1.8	60.7		3.6	8.0	1.4	
EW11S	4/26/2023	N	1.0 U	250	0.24 J	0.40 J			3.0	3.2	100 U	153			2.1 J	10.9	20.0 U	20.0 U		0.70 U	0.50 U	0.50 U	0.50 U	1.0 U	73.8	1.2	50.6	47.1	2.4	10.6	3.3	
EW12D	8/22/2014	N		4600															5.7											5.1		
EW12D	2/3/2015	N		880															4.1											4.9 U		
EW12D	4/20/2016	N	4.0	2500	2.2 J				1.3 J		3820				1620		20.0 U			12	0.50 U	0.58 J	0.50 J	7.2	90.0	5.4	80.4		0.10 U	6.4	15.7	
EW13D	8/22/2014	N		780															1.2											1.5 J		
EW13D	2/3/2015	N		660															1.6											4.7 U		
EW13D	4/23/2015	N		18000																												
EW13D	4/19/2016	N	1100	2100	1.6 J				2.0 U		7660				956		11.7 J			13	0.50 U	0.27 J	0.32 J	4.8	180	15.1	167		0.093 J	2.0	20.7	
EW13S	4/19/2016	N	4.9	770	23.2				37.7		14100				2340		13.8 J			2.0	0.50 U	0.26 J	1.0 U	4.2	370	20.7	229		0.10 U	9.6	36.6	
EW13S	7/26/2016	N	20	1900	58.9				133		45600				2580		52.2			4.0	0.50 U	0.31 J	0.35 J	4.4	312	21.2	292		0.10 U	7.8	32.6	
EW13S	10/14/2016	N	40	4200	18.5				30.6		15600				2360		8.4 J			6.8	0.50 U	0.53 J	0.54 J	7.1	296	25.1	236		0.10 U	11.8	34.7	
EW13S	1/24/2017	N	48	6400	11.4				3.2		8700				2220		6.2			11	0.28	0.70 J	0.62 J	9.3	297	28.0	304		4.8	12.1	35.8	
EW13S	4/20/2017	N	32	5100	13.7				2.2		10600				2260		20.0 U			20	0.50 U	0.96 J	0.90 J	13	240	29.1	294		0.10 U	16.1	37.2	
EW13S	10/5/2017	N	52	8700	12.4				0.93 J		10400				2010		20.0 U			16	0.50 U	1.0	1.0	14	276	34.5	276		0.075 J	13.6	34.9	
EW13S	6/1/2018	N	24	6000	14.9				3.6		13400				2540		20.0 U			19	0.50 U	0.93	1.0	13	271	34.2	253		0.085 J	13.6	33.8	
EW13S	10/19/2018	FD	17	9800	16.3				17.3		16300				2610		20.0 U			33	0.50 U	1.3	1.3	19	241	32.6	255		0.20 U	17.0	34.7	
EW13S	10/19/2018	N	16	10000	16.0				12.5		16400				2620		11.5 J			34	0.23 J	1.2	1.2	21	242	33.4	251		0.20 U	17.4	35.3	
EW13S	4/23/2019	N	8.4	8900	5.5 B				1.8 JB		18700				3040 B		6.9 U			17	0.15 U	0.83	0.84	15	243	32.2	340		0.068 U	19.9	31.5	

Appendix A.1

**Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin**

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L	
EW13S	10/15/2019	N	6.3	11000	8.9				2.2		19800				3150		6.9 U			20	0.15 U	1.3	0.97	18	265	33.1	268		0.068 U		15.5	36.6	
EW13S	4/8/2020	N	5.5	3700	3.8				8.1		10200				1310		9.0 J			27	0.15 U	0.74	0.81	12	257	32.1	258		0.068 U		13.6	35.8	
EW13S	10/7/2020	FD	4.6	7900	15.5				1.1 J		14800				2590		6.9 U			33	0.15 U	1.5	1.2	21	234	36.7	276		0.076 JH		18.4	29.0	
EW13S	10/7/2020	N	5.2	8300	14.8				1.4 J		14200				2440		6.9 U			33	0.15 U	1.2	0.89	17	233	34.3	270		0.11 JH		16.9	29.1	
EW13S	4/15/2021	N	5.5	9400	3.6				1.2 JB		18900				3410		11.0 J			20	0.50 U	0.99	0.94	16	278	27.1	301		0.088 J		13.5	4.5	
EW13S	10/14/2021	N	4.1	9400	7.7				33.3		25400				3340		12.8 J			21	0.50 U	0.93	0.84	18	290	35.4	305		0.20 U*		12.6	57.1	
EW13S	4/12/2022	N	6.2	19000	7.3				3.0		20700				4190		20.0 U			18	0.50 U	1.1	1.0	18	279	36.8	205		0.20 U		17.7	45.0	
EW13S	4/26/2023	N	6.1	12000	7.8	21.0			3.4	45.6	29000	40100			3670	3580	20.0 U	26.9		13	0.50 U	1.0	0.87	17	281	34.9	189	204	1.0 U		11.5	30.1	
EW14D	8/22/2014	N		290															0.99												1.4 J		
EW14D	2/3/2015	N		660															1.5												4.9 U		
EW14D	4/23/2015	N		2100																													
EW14D	4/19/2016	FD	3.5	2700	5.0 U				2.0 U		292				77.8		17.2 J			3.1	0.50 U	1.0 U	1.0 U	2.4	136	11.9	145		0.48		7.1	6.3	
EW14D	4/19/2016	N	4.2	2800	5.0 U				3.4		301				77.4		17.5 J			3.5	0.50 U	1.0 U	1.0 U	2.4	137	12.0	139		0.48		7.2	6.5	
MW1	10/9/1997	FD	10 U	1	2.3				3.5 U		20 J				1180		3.8				0.1 U	1 U	1 U	1 U	190	16			4.5		5.8	43.5	
MW1	10/9/1997	FD2			2 U				70.9								36																
MW1	10/9/1997	N	10 U	2	2 U				61.6		20 U				1070		32.8				0.1 U	1 U	1 U	1 U	190	18			6.5		6.3	20	
MW1	10/9/1997	N2		2	2 U				2 U								3				0.1 U	1 U	1 U	1 U	190	18			6.5		6.3	20	
MW1	4/24/2001	N	0.11 U	0.1 U	2.4				33		9830				642		16			5.6 U	0.1 U	1 U	1 U	1 U	140	24	218		6.5 =		13	3.89	
MW1	4/24/2001	N2	0.11 U		1 U				25 U		25 U				15 U		25 U													6.5			
MW1	9/11/2001	N	10 U	0.5	0.7 J				4 J		35 U				0.79 J		3.7 U			0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	130	10	170		2.6		8.2 U	3.9	
MW1	9/11/2001	N2			1.3				25 U		4000				450		20																
MW1	5/14/2002	N			1.4 U				1.6 J		11.2 U				0.48 J		5.4 J																
MW1	8/6/2002	N	0.01 U	0.067	1.4 U				7.6 J		1700				180		5.8 J			5 U	1 U	5 U	5 U	5 U	170	7.4	190		0.15 U		7.9	2.6	
MW1	8/6/2002	N2	0.01 U	0.063	1.7 J				0.3 U		11 U				0.95 J		3.9 J			5 U	1 U	5 U	5 U	5 U	160	7.3	190		0.15 U		7.7	3.7	
MW1	8/6/2002	N3			1.8 J				9.5 J		2200				230		6.5 J																
MW1	8/6/2002	N4			1.4 U				0.3 U		11 U				2.2 J		2.9 J																
MW1	4/29/2003	N	0.5 U	0.1 U	1 U				14		3160				217		10 U			7.4 U	0.5 U	5 U	5 U	5 U	174	4.3	187		2.6		10	3.2	
MW1	4/29/2003	N2	0.5 U		1 U				1 U		25 U				5 U		10 U																
MW1	9/24/2003	N	0.5 U	0.13	1 J				21		7000 J				416		20 J			1 U	0.25 U	2.5 U	2.5 U	2.5 U	157	3.3	68.25		2.61		2 U	8.4	
MW1	9/24/2003	N2	0.5 U		1 U				1 J		100 J				36		10 U																
MW1	5/4/2004	N	0.863 J	1.06 J	0.346 J				5.73 R		790 R			13900	135 R		7.43 R			5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	147	4.3 R	158		2.1 J		2.0 R	6.37 J	
MW1	5/4/2004	N2			0.190 J				0.785 R		29.9 R				15.0 R		2.74 R																
MW1	9/21/2004	FD	10.0 U	0.442	0.470 J				13.6 J		1210				158		13.4 J			5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	140	2.7 =	1960		1.8 J		4.5 J	7.98	
MW1	9/21/2004	FD2			0.227 J				0.707 J		21.0 J				3.07 J		3.31 J																
MW1	9/21/2004	N	10.0 U	0.348	0.353 J				8.41 J		838				103		17.1 J			1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	130	2.7 =	776		1.8 J		5.2 J	6.75	
MW1	9/21/2004	N2			0.218 J				0.605 J		18.0 J				2.60 J		4.06 J																
MW1	5/10/2005	N	2.0 U	0.12	1.0 U				18		3800				360		11 J			0.92 U	0.50 U	5.0 U	5.0 U	5.0 U	110 J	3.6 J	140 J		1.7 J		14 R	3.7 R	
MW1	5/10/2005	N2			1.0 U				10 U		50 U				10 U		20 U																
MW1	9/29/2005	N	2.0 U	0.12	1.0 J				23 J		4800 J				400 J		14 J			1.0 U	0.50 U	5.0 U	5.0 U	5.0 U	110 J	6.2 J	160 J		1.9 J		16 R	2.4 J	
MW1	9/29/2005	N2			1.0 UJ				10 UJ		50 UJ				3.8 J		20 UJ																
MW1	5/31/2006	N	2.0 U	0.049 J	1.0 UJ				10 UJ		50 UJ				10 UJ		20 UJ			1.0 U	0.50 U	5.0 U	5.0 U	5.0 U	110 J	2.3 J	100 J		1.6 J		17	1.7 J	
MW1	5/8/2007	N	2.0 UJ	0.11 J	1.0 UJ				10 UJ		100 UJ				6.3 J		20 UJ			1.0 R	1.0 U	1.0 U	1.0 U	2.0 U	190 =	2.2 J	130		1.9		15 J	1.9	
MW1	9/18/2007	N	2.0 UJ	0.093 UJ	1.0 UJ				10 UJ		100 UJ				10 UJ		20 UJ			0.93 R	1.0 U	1.0 U	1.0 U	2.0 U	110 J	9.4	170 J		3.0 J		12 J	1.1 J	
MW1	10/21/2008	N	2.0 UJ	0.42 UJ	2 U				10 UJ		388			21200	10 U		8.60 J			1.00 U	0.50 U	2.0 U	2.0 U	5.0 U	109	3.91	223 J		1.62 J		6.19	3.38 J	

Appendix A.1

**Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin**

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L	
MW1	4/12/2016	N	0.50 U	0.15	5.0 U				2.0 U		19.9 J				1.4 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	79.9	5.1	102		0.53		5.2	0.73 J	
MW1	7/20/2016	N	0.50 U	1.1	5.0 U				2.0 U		100 U				5.0 U		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	82.4	5.6	30.0		0.53		5.2	0.83 J	
MW1	10/12/2016	N	0.16 J	0.12	0.46 J				0.67 J		100 U				0.96 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	86.2	7.5	92.0		0.45		5.2	0.59 J	
MW1	1/19/2017	FD	0.080	0.30	0.51 J				0.73 J		5.7 J				0.25		6.2			0.061	0.28	0.26	0.23	0.24	71.9	6.8	88.0		0.54		4.8	0.73 J	
MW1	1/19/2017	N	0.080	0.19	0.77 J				0.76 J		8.1 J				0.25		6.2			0.063	0.28	0.26	0.23	0.24	71.9	6.7	88.0		0.54		4.7	0.65 J	
MW1	4/18/2017	N	0.50 U	0.12	0.37 J				2.0 U		100 U				5.0 U		20.0 U			0.22 U	0.50 U	1.0 U	1.0 U	2.0 U	64.4	3.9	84.0		0.39		5.5	0.91 J	
MW1	10/4/2017	N	0.15 J	0.17	1.0 U				1.1 J		100 U				2.5 U		20.0 U			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	78.5	8.1	81.3		1.1		5.5	0.63 J	
MW1	10/18/2018	N	1.0 U	0.096 U	0.34 J				1.3 J		100 U				2.5 U		8.8 J			0.81 U	0.50 U	0.50 U	0.50 U	1.0 U	85.5	13.1	109		2.9		5.9	1.0	
MW1	4/24/2019	FD	0.17 U	0.14	0.45 J				1.5 JB		69.1 J				3.7		7.3 J			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	84.0	10.7	116		3.4		6.0 B	0.89 J	
MW1	4/24/2019	N	0.17 U	0.12	0.24 J				1.2 JB		53.2 J				3.5		8.2 J			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	85.1	11.3	116		3.4		5.9 B	0.47 U	
MW1	10/14/2019	N	0.17 U	0.085 U	0.37 J				1.5 J		76.5 J				4.7		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	99.1	14.7	116		3.7 H		5.7	0.55 J	
MW1	4/9/2020	N	0.17 U	0.086 U	0.47 J				1.6 J		46.7 U				0.79 U		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	72.9	6	83.4		1.4		5.5	0.54 J	
MW1	10/6/2020	N	0.17 U	0.17	0.36 J				3.6		46.7 U				0.79 U		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	82.0	9.7	105		3.0		7.1	1.2	
MW1	4/12/2021	N	1.0 U	0.41	0.34 J				16.6 B		100 U				1.0 JB		8.0 J			0.88 U	0.50 U	0.50 U	0.50 U	1.0 U	75.5	6.6	87.7		1.3		5	0.87 J	
MW1	10/11/2021	N	1.0 U	0.10 U^c	0.52 J				52.6		100 U				2.5 U		20.0 U			0.81 U	0.50 U	0.50 U	0.50 U	1.0 U	93.6	11.4 F1	113		2.9		5.4	0.50 JF1	
MW1	4/11/2022	N	1.0 U	0.50	0.33 J				2.4		100 U				2.7		20.0 U			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	116	14.2	82.5		3.9		5.9	1.0	
MW1	10/5/2022	N	1.0 U	0.35	0.33 J	0.32 J			1.7 J	1.4 J	100 U	100 U			2.5 U	2.5 U	20.0 U	20.0 U		0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	107	14.3	82.1		3.4		5.9	0.97 J	
MW1	4/25/2023	N	1.0 U	0.21	0.25 J	0.23 J	32900	33900	1.2 J	1.1 J	100 U	100 U	12200	12600	2.5 U	1.5 J	20.0 U	20.0 U		0.64 U	0.50 U	0.50 U	0.50 U	1.0 U	111	17.9	84.7	82.3	1.7		4.3	0.86 J	
MW1	4/25/2023	FD	1.0 U	0.20	0.29 J	0.25 J	32900	33900	4.7	1.1 J	100 U	100 U	12300	13100	2.5 U	1.5 J	20.0 U	20.0 U		0.63 U	0.50 U	0.50 U	0.50 U	1.0 U	110	17.8	84.6	82.2	1.7		4.3	0.79 J	
MW2	10/9/1997	N	10 U	1 U	2 U				10.2 J		20 J				50.6		10				0.1 U	1 U	1 U	1 U	300	3.5			1.1		17	2.6	
MW2	10/9/1997	N2		1 U	2 U				11.4 J								10.7				0.1 U	1 U	1 U	1 U									
MW2	4/5/2000	N		0.5 U																10 U													
MW2	6/18/2001	N	0.14	0.1 U	0.37 J				25 U		24 U				8.3		25 U			5 U	0.1 U	1 U	1 U	1 U	36	5.73	66		38 =		105	5.57	
MW2	6/18/2001	N2	0.14		6.7				109		39900				1230		64												38				
MW2	9/12/2001	N	10 U	0.51	3.9				110		29000				1200		69			0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	49	6.2	140		2.3		10	4.2	
MW2	9/12/2001	N2			0.29 U				2.2 U		35 U				57		5.2 J																
MW2	8/6/2002	N	0.01 U	0.12	6.4				30		10000				420		26 J			5 U	1 U	5 U	5 U	5 U	66	3	98		0.15 U		10	3.2	
MW2	8/6/2002	N2			1.4 U				0.3 U		48				18		9.1 J																
MW2	9/24/2003	N	0.5 U	0.28	8				100		41300 J				1180		80			0.99 U	0.25 U	2.5 U	2.5 U	2.5 U	80	1 J	106.2		2.02		3 J	2.3	
MW2	9/24/2003	N2	0.5 U		1 U				16		3030 J				443		20 J																
MW2	9/21/2004	N	10.0 UJ	1.26	4.03 J				87.2 J		25800 J				972 J		64.2 J			5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	110 J	12 J	921 J		1.4 J		4.0 R	5.23 R	
MW2	9/21/2004	N2			0.237 J				3.10 J		662				22.2 J		7.73 J																
MW2	9/28/2005	N	2.0 U	2.2 =	6.7				140 J		40000 J				1300 J		82 J			0.98 U	0.50 U	5.0 U	5.0 U	5.0 U	150 J	5.6 J	270 J		0.10 UJ		27 R	2.5 J	
MW2	9/28/2005	N2			1.0 UJ				2.5 J		65 J				9.3 J		20 UJ																
MW2	9/26/2006	N	2.0 UJ	2.3	1.0 U				10 UJ		50 U				2.6 UB		20 UJ			1.7 U	0.50 U	5.0 U	5.0 U	5.0 U	160 J	1.6 J	220		0.12 J		20 J	3.1	
MW2	9/19/2007	N	2.0 UJ	3.7 J	0.62 J				10 UJ		100 UJ				6.5 J		20 UJ			0.97 R	1.0 U	1.0 U	1.0 U	2.0 U	160 J	3.6	200 J		0.22 J		16 J	2.1 J	
MW2	10/21/2008	N	2.0 UJ	1.60 J	2 U				10 UJ		424 J			27900	5.20 J		20 U			1.00 U	0.5 U	2.0 U	2.0 U	5.0 U	138	3.17	276 J		1.10 J		12.90	2.59 J	
MW2	10/6/2009	N	0.83 UJ	2.21 J	2 UJ				10 UJ		129 J			19000 J	10 UJ		20 UJ			0.996 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ	122 J	1.97 J	190.6 J		0.81 J		11.6 J	5.33 J	
MW2	10/6/2010	N	1.3 U	0.1 U	2 U				8 U		43 J			4680	9.4 J		20 U			1.0 U	0.1 U	0.4 U	0.4 U	1 U	62	0.6 J	52.5		1.01 J		4.2 J	24	
MW2	10/19/2011	N	0.50 U	0.097 U	2.0 U				2.2 J+		47 J			9400 B	3.7 J		10 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	63	7.7	93.60		0.50 J		33	1.0 U	
MW2	10/16/2012	N	0.50 U	0.33	0.82 J				6.2 J		810			8800 =	25		20 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	54	4.1	91.2		0.90 J		32 J	6.7	
MW2	10/9/2013	N	0.50 U	0.94 J	2.0 UJ				10.0 UJ		50 UJ			6900 J	10 UJ		20 UJ			0.21 U	0.50 U	1.0 U	1.0 U	2.0 U *	39 J	2.8			2.9 J		28	4.5 J	
MW2	10/9/2013	N2																												2.9 J			
MW2	9/24/2014	N	0.50 U	0.32	5.0 U				2.0 U		100 U				1.4 J		20 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	62	0.69 J	68		0.73		2.4	1.0 U	
MW2	10/14/2015	N	0.50 U	0.13	5.0 U				0.75 J		56.7 J				2.9 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	50.7	0.55 J	60.3		0.63		2.1	1.3	

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L		
MW2	4/14/2016	N	0.50 U	0.080 J	1.3 J				20.1		6580				171		19.7 J			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	34.4	0.51 J	49.0		0.38		1.8	3.6		
MW2	10/29/2018	N	1.0 U	0.21	1.0 U				2.8		100 U				1.8 J		10.9 J			0.86 U	0.50 U	0.50 U	0.50 U	1.0 U	66.6	0.42	87.2		0.51		1.6	2.1		
MW2	4/25/2019	N	0.17 U	0.37	0.23 U				1.8 J		230				7.5		9.7 J			0.24 U	0.15 U	0.18 U	0.15 U	1.0 U	61.5	0.48	80.5		0.30		1.7 B	1.3		
MW2	10/18/2019	N	0.17 U	0.094 U	0.33 J				5.2		1170				40.9		12.1 J			0.26 U	0.15 U	0.18 U	0.15 U	0.22 U	67.9 H	0.34	75.6		0.3		1.4 B	5.3		
MW2	4/9/2020	N	0.17 U	0.093 U	1.4				28.2		6900				292		30.5			0.26 U	0.15 U	0.18 U	0.15 U	0.22 U	73.3	0.3	160		0.24		1.4	0.70 J		
MW2	10/8/2020	N	0.17 U	0.10 U	0.23 U				0.79 J		46.7 U				3.3		6.9 U			0.32 J	0.15 U	0.18 U	0.15 U	0.22 U	68.2	0.26	87.8		0.27 H		1.3	0.90 J		
MW2	4/13/2021	N	1.0 U	0.10 U	0.39 J				10.5		2540				108		20			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	86.6	0.33	106		0.33		1.4	0.91 J		
MW2	10/14/2021	N	1.0 U	0.12 U	1.0 U				2.3		398				13.9		17.7 J			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	86.0	0.35	92.7		0.31		1.7	0.53 J		
MW2	4/13/2022	N	1.0 U	17	1.9				29.8		9390				336		40.1			0.85 U	0.50 U	0.50 U	0.50 U	1.0 U	79.6	0.30	49.1		0.21		1.2	0.60 J		
MW2	10/6/2022	N	1.0 U	0.26	1.0 U	3.3			9.9	63.1	476	14700			18.8	599	13.4 J	52.2		0.81 U	0.50 U	0.50 U	0.50 U	1.0 U	86.6	0.45	48.3		0.20		1.6	0.75 J		
MW2	4/27/2023	N	1.0 U	0.12	0.36 J	1.3	17600	16800	0.72 J	17.3	100 U	4590	6960	7380	0.87 J	181	6.9 J	23.6		0.63 U	0.50 U	0.50 U	0.50 U	1.0 U	77.4	0.47 J	41.8	44.1	0.35 J		1.5	0.73 J		
MW3	10/8/1997	N	10 U	1 U	2 U				2 U		257				10.9		2 U				0.1 U	1 U	1 U	1 U	370	42 J			4.4 J		16	1.2		
MW3	10/8/1997	N2		1 U																	0.1 U	1 U	1 U	1 U										
MW3	4/4/2000	N		0.6 U																12 U														
MW3	4/25/2001	N		0.11 U	1 U				25 U		147				7.3		25 U			6.1 U	0.1 U	1 U	0.46	1 U	442	47	544		4.42		11	1 U		
MW3	4/25/2001	N2			1 U				25 U		142				7.9		25 U			6.1 U									4.42 =					
MW3	9/13/2001	N	10 U	0.092 J	0.29 U				2.2 U		930				31		3.7 U			0.26 U	0.44 U	0.5 U	0.4 U	1.2 U	440	58	480		4		14	1.1		
MW3	9/13/2001	N2			0.35 J				2.2 U		2400				31		3.7 U																	
MW3	8/7/2002	N	0.01 U	0.11	1.7 J				2.3 J		480				15 J		1.4 J			5 U	1 U	5 U	5 U	5 U	420	69	540		0.15 U		16	1.4		
MW3	8/7/2002	N2			1.9 J				0.58 J		160				12 J		4.8 J																	
MW3	9/23/2003	N	2.5	0.31	1 U				1 J		150				5 U		10 U			1.1 U	0.25 U	2.5 U	2.5 U	2.5 U	357	52.4	160		4.43		2 U	1.6		
MW3	9/23/2003	N2	2.5																															
MW3	9/24/2003	N			1 U				1 U		1 U				8 J		10 U																	
MW3	9/21/2004	N	5.71 J	0.367	0.189 J				356 J		278 J				6.45 J		273 J			5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	430 J	62 J	3250 J		3.5 J		8.9 R	2.16 R		
MW3	9/21/2004	N2			0.119 J				1.91 J		137 J				4.99 J		4.61 J																	
MW3	9/28/2005	FD																			0.50 U	5.0 U	5.0 U	5.0 U										
MW3	9/28/2005	N	2.0 U	0.20 J	1.0 U				4.9 J		23000 J				93 J		20 UJ			0.93 U	0.50 U	5.0 U	5.0 U	5.0 U	370 J	62 J	490 J		3.3 J		24 R	1.4 J		
MW3	9/28/2005	N2			1.0 U				3.0 J		120 J				6.7 J		20 UJ																	
MW3	10/21/2008	N	4.90 J	0.10 UJ	2.00 U				10 UJ		2140			58700	15.20 J		20 U			3.13 U	0.50 U	2.0 U	2.0 U	5.0 U	513	60.50	836		2.73 J		15.20	18 J		
MW3	10/7/2009	N	21 J	0.1 UJ	2 UJ				10 UJ		722 J			46000 J	12.4 J		20 UJ			0.997 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ	482 J	53.8 J	581.46 J		2.55 J		11 J	3.42 J		
MW3	10/5/2010	N	1.6	0.1 U	2 U				10 U		805			69100	12 J		20 U			1.0 U	0.1 U	0.4 U	0.4 U	1 U	510	67.2	906		3.62		19.8 J	2.2 J		
MW3	10/18/2011	N	140	0.58	0.76 J				2 U		510			44000 B	41		10 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	510	64	531.00		3.3		16	2.9		
MW3	10/16/2012	N	13	0.46	0.59 J				10 U		260			41000 =	8.3 J		20 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	460	69	493		3.6 J		17 =	2.4		
MW3	10/8/2013	N	4.3	0.38	0.088 J				10.0 U		50 U			42000 B	8.3 J		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	390	70			3.5 J		16	1.6		
MW3	9/25/2014	N	15	0.35	5.0 U				2.0 U		160				7.6		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	290	72	360		2.1		12	0.91 J		
MW3	10/15/2015	FD	5.7	0.23	5.0 U				1.2 J		56.6 J				7.9		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	258	52.3	312		1.7		11.2	1.2		
MW3	10/15/2015	N	5.1	0.15	5.0 U				0.93 J		58.2 J				7.4		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	258	52.5	322		1.7		11.1	1.1		
MW3	4/5/2016	FD	4.2	0.40	5.0 U				0.99 J		514				18.6		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	221	48.6	283		1.4		10.0	0.94 J		
MW3	4/5/2016	N	4.4	0.46	5.0 U				1.4 J		716				20.4		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	224	48.2	299		1.4		10.1	0.98 J		
MW3	7/21/2016	N	2.5	0.35	5.0 U				2.0 U		317				16.2		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	215	45.5	248		1.4		9.2	1.0		
MW3	10/11/2016	N	1.5	0.45	5.0 U				1.7 J		171				14.8		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	233	46.8	268		1.8		12.7	1.1		
MW3	1/20/2017	N	1.9	0.93	0.35				2.0		812				16.4		6.2			0.060	0.28	0.26	0.23	0.24	230	47.3	284		1.9		14.5	1.6		
MW3	4/20/2017	N	1.3	0.47	5.0 U				1.7 J		83.6 J				23.0		20.0 U			0.22 U	0.50 U	1.0 U	1.0 U	2.0 U	232	45.5	358		1.8		15.0	1.4		
MW3	10/13/2017	N	2.1	0.55	1.0 U				2.0		59.7 J				12.5		20.0 U			0.79 U	0.50 U	0.50 U	0.50 U	1.0 U	272	50.1	298		2.0		13.9	1.4		
MW3	6/1/2018	N	1.0 U	0.25	0.29 J				1.7 J		50.6 J				9.4		20.0 U			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	698	31.5	246		1.9		10.8	1.2		

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L		
MW3	10/18/2018	N	1.0 U	0.50	1.0 U				1.7 J		77.2 J				9.2		20.0 U			0.79 U	0.50 U	0.50 U	0.50 U	1.0 U	227	23.9	231		1.7		10.2	1.3		
MW3	4/25/2019	N	200	0.27	0.23 U				2.0		372				21.7		9.7 J			0.24 U	0.24 J	0.18 U	0.15 U	0.22 U	200	35.4	215		1.5		7.8 B	1.0		
MW3	10/14/2019	N	86	0.091 U	0.23 U				0.73 J		482				52.1		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	209	30.1	235		1.3 H		8.3	0.69 J		
MW3	4/6/2020	FD	21	0.089 U	0.25 J				0.86 J		675				32		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	203	25.4	219		1.4 H		7	0.57 J		
MW3	4/6/2020	N	22	0.090 U	0.23 U				0.91 J		685				31.9		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	199	24.9	213		1.4 H		7	0.58 J		
MW3	10/7/2020	N	6.6	0.49	0.24 J				0.60 J		1770				25.7		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	256	25.2	280		2.3 H		7.7	1.1		
MW3	4/14/2021	N	5.4	0.097 U	0.27 J				1.0 J		731				15.7		20.0 U			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	406	73.8	465		1.9		6.7	1.1		
MW3	4/14/2021	FD	4.4	0.098 U	0.30 J				0.81 J		759				16.3		8.0 JB			0.79 U	0.50 U	0.50 U	0.50 U	1.0 U	412	74.9	456		1.9		6.7	1.1		
MW3	10/13/2021	N	49	0.096 U	0.43 J				1.0 J		1660				25.4		20.0 U			0.74 U	0.50 U	0.50 U	0.50 U	1.0 U	410	50.6	380		1.1		12.5	0.73 J		
MW3	4/14/2022	N	70	0.45	1.0 U				0.91 J		890				15.2		20.0 U			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	354	27.9	225		2.8		5.5	0.90 J		
MW3	10/10/2022	N	80	0.31	0.30 J	0.25 J			0.88 J	0.89 J	1470	1660			22.4	27.0	20.0 U	20.0 U		0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	362	27.6	258		3.1		5.8	0.86 J		
MW3	10/10/2022	FD	78	0.32	0.31 J	0.31 J			0.93 J	0.82 J	1540	1620			23.1	22.9	20.0 U	20.0 U		0.84 U	0.50 U	0.50 U	0.50 U	1.0 U	365	27.2	255		3.1		6.0	0.86 J		
MW3	4/27/2023	N	41	0.22	0.67 J	0.70 J	102000	101000	1.1 J	2.0 U	2030	2450	30500	29500	23.5	23.9	20.0 U	20.0 U		0.69 U	0.50 U	0.50 U	0.50 U	1.0 U	384	18.7	251	255	2.8		5.8	0.90 J		
MW4	10/9/1997	N	139	1 U	2 J				2 U		35.9 J				55.9		2 U				2	3	1	3	94	7.3			0.1 U		6.3	12.3		
MW4	10/9/1997	N2		1 U	2 U				2.4 U								4.5				2	3	1	3										
MW4	4/4/2000	N		0.5 U																10 U														
MW4	1/20/2017	N	0.92	3.0	1.5 J				0.36		124				37.9		6.2			0.063	0.28	0.26	0.23	0.24	87.9	22.7	132		0.23		11.6	0.53 J		
MW4	4/21/2017	N	10	0.11	1.2 J				2.0 U		85.4 J				39.0		20.0 U			0.22 U	0.50 U	1.0 U	1.0 U	2.0 U	82.8	32.9	170		0.15		13.2	0.60 J		
MW4	10/3/2017	N	7.2	0.097 U	1.2				1.2 J		501				41.8		20.0 U			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	93.7	37.0	134		0.26		30.0	1.0 U		
MW4	5/31/2018	N	300	0.11 U	1.1				2.0 U		149				38.6		20.0 U			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	76.8	47.9	145		0.096 J		14.1	0.85 J		
MW4	10/17/2018	FD	6.7	0.10 U	1.2				2.0 U		100 U				36.0		6.9 J			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	87.1	40.3	138		0.22		13.1	0.68 J		
MW4	10/17/2018	N	5.9	0.097 U	1.2				2.0 U		100 U				33.8		20.0 U			0.55 U	0.50 U	0.50 U	0.50 U	1.0 U	86.5	40.9	138		0.20		13.0	0.72 J		
MW4	4/24/2019	FD	50	0.089 U	0.97 J				0.50 U		82.6 J				35.7		6.9 U			0.24 U	0.15 U	0.18 U	0.16 J	0.22 U	75.1	49.7	142		0.086 J		12.5 B	0.84 J		
MW4	4/24/2019	N	45	0.085 U	0.89 J				1.3 J		118				33.6		6.9 U			0.24 U	0.15 U	0.18 U	0.16 J	0.22 U	74.7	52.1	144		0.070 J		13.0 B	0.65 J		
MW4	10/16/2019	N	25	5.7	1				0.50 U		214				134		6.9 U			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	80.3 H	50.4	147		0.090 J		13.6 B	0.47 U		
MW4	4/7/2020	N	18	0.87	1.1				0.68 J		67.9 J				36		10 J			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	73.8	49.5	143		0.24		14	0.47 U		
MW4	10/5/2020	N	4.7	0.086 U	1.1				0.50 U		46.7 U				37.4		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	74.1	44.3	151		0.28		13.7	0.81 J		
MW4	4/15/2021	N	18	0.099 U	1.1				2.0 U		138				36.8		18.7 JF3			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	78.4	46.7	146		0.2		13.1	0.67 J		
MW4	10/13/2021	N	20	0.11 U	1.2				2.0 U		62.8 J				38.4		20.0 U			0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	80.7	54.8	148		0.17 J		15.0	1.0 U		
MW4	4/13/2022	N	35	1.0	1.2				2.0 U		74.5 J				33.8		20.0 U			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	79.6	48.3	93.7		0.10 J		13.4	0.51 J		
MW4	4/13/2022	FD	37	0.098 U	1.1				2.0 U		68.6 J				36.6		20.0 U			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	85.9	52.5	99.2		0.10 J		14.5	0.53 J		
MW4	10/10/2022	N	33	0.099 U	1.2	1.2			4.3	2.0 U	100 U	202			37.2	37.9	20.0 U	20.0 U		0.84 U	0.50 U	0.50 U	0.50 U	1.0 U	83.9	48.7	105		0.12 J		14.0	0.97 J		
MW4	4/27/2023	N	28	0.10 U	1.4	1.5	37900	37200	2.0 U	2.0 U	100 U	136	12200	11600	30.8	30.4	20.0 U	20.0 U		0.70 U	0.50 U	0.50 U	0.50 U	1.0 U	84.5	43.7	93	94.6	0.27 J		13.5	0.90 J		
MW4	4/27/2023	FD	23	0.097 U	1.4	1.5	37700	37500	2.0 U	2.0 U	100 U	71.1 J	12300	11700	30.6	30.4	20.0 U	20.0 U		0.68 U	0.50 U	0.50 U	0.50 U	1.0 U	84.7	41.1	93.8	94.1	0.30 J		13.2	0.82 J		
MW5	10/10/1997	FD	10 U	31000 J	4.3				26.2 J		5070				15500		2				0.1 U	2	4	18	370	50			0.1 U		16	160		
MW5	10/10/1997	FD2			4.6				4835 J								2.7																	
MW5	10/10/1997	N	10 U	28000 J	3.8				48.5 J		4860				12900		3.7				0.1 U	3	5	21	370	50			0.1 U		15	115		
MW5	10/10/1997	N2		28000 E	3.2				24 J								2 J				0.1 U	3	5	21										
MW5	4/7/2000	N		20600 =																76 U														
MW5	4/26/2001	N	0.4	20600	5.6				74		20400				11200		25 U			38	0.22	0.84	1.8	8.1	352	42	349		0.13 U		28	43		
MW5	4/26/2001	N2	0.4		3.9				25 U		7630				11300		25 U																	
MW5	9/13/2001	N	10 U	6300	3.7				5.1 J		4100				8500		6.2 J			23	0.44 U	0.54 J	0.78 J	4.3	270	29	240		0.17 J		22	27		
MW5	9/13/2001	N2			8.2				100		26000				8500		4.2 J																	
MW5	8/7/2002	N		510 J	4.1				28		34500				8130		104			3.2 J	1 U	5 U	5 U	5 U	220	26	4 U		0.15 U		21	25		

Appendix A.1

**Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin**

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L		
MW5	8/7/2002	N2			2 J				1.5 J		7900				7840		26.9 J																	
MW5	9/25/2003	N	0.47 J	1100	4				50		35100				9450		10 U			2.5	0.25 U	2.5 U	2.5 U	2.5 U	228	22.1	78.48		0.05 U		20	6.2		
MW5	9/25/2003	N2	0.47 J		3				7		13400				8320		10 U																	
MW5	9/22/2004	N	10.0 UJ	194	0.488 J				17.3 J		30500				7150		13.7 J			5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	250 J	29 J	1490 J		0.01 R		24 R	18.8 R		
MW5	9/22/2004	N2		214 E	0.612 J				1.44 J		7480 J				5650 J		5.91 J																	
MW5	9/28/2005	N	2.3	1100 =	1.0 UJ				6.0 J		18000 J				7600 J		20 UJ			1.8	0.50 U	5.0 U	5.0 U	5.0 U	260 J	18 J	480 J		0.10 UJ		35 R	7.4 J		
MW5	9/28/2005	N2			1.0 UJ				10 UJ		19000 J				7600 J		20 UJ																	
MW5	9/26/2006	N	8.7 J	460 =	1.0 UJ				10 UJ		23000 J				8000 J		20 UJ			1.4 U	0.50 U	5.0 U	5.0 U	5.0 U	290 J	16 J	370		0.10 J		27 J	6.6		
MW5	9/20/2007	N	9.8	31 J	1.0 UJ				10 UJ		25000				7600		20 UJ			0.74 R	1.0 U	1.0 U	1.0 U	2.0 U	230 J	13	270 J		0.10 U		39 J	4.1 J		
MW5	10/22/2008	N	11 J	206	2 UJ				10 UJ		10500 J			31400 J	9700 J		20 UJ			1 U	0.5 U	2.0 U	2.0 U	5.0 U	267 J	8.68	357 J		0.05 U		24.8	30.5		
MW5	10/7/2009	N	17 J	33.3 J	2 UJ				10 UJ		6000 J			33600 J	11800 J		20 UJ			0.998 UJ	0.1 UJ	0.4 UJ	0.4 UJ	0.14 J	256 J	8.59 J	344.62 J		0.05 UJ		55.1 J	3.5 J		
MW5	10/6/2010	N	4.1	39.8 J	3.36 J				8 U		3030			43600	12600		20 U			1.0 U	0.1 U	0.4 U	0.4 U	1 U	274	11.4 J	437		0.10 UJ		79.4	4.2		
MW5	10/19/2011	N	38 J	0.97	1.0 J				2 U		2600			40000 B	11000		20 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	260	15	397.00		0.10 U		150	2.6		
MW5	10/17/2012	N	17	0.59 J	0.57 J				10 U		2700			29000 =	7000		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	180	11	302		0.10 U H		130 =	1.8		
MW5	10/10/2013	N	19	0.60	0.39 J				10.0 UJ		2200 J			20000 J	4700 J		20 UJ			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	150 B	9.2 J		0.10 UJ		140 J	1.8			
MW5	9/24/2014	FD	10	12	0.42 J				2.0 U		1200				2200		20 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	97	4.3	150		0.12		48	1.0 U		
MW5	9/24/2014	N	12	12	0.41 J				2.0 U		1200				2200		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	100	4.3	150		0.14		48	2.3		
MW5	10/14/2015	N	1.8	64	5.0 U				2.0 U		954				2230		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	98.7	12.7	159		0.053 J		48.9	3.3		
MW5	4/7/2016	FD	4.9	16	5.0 U				2.0 U		940				2070		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	71.3	12.5	113		0.96		37.6	4.5		
MW5	4/7/2016	N	4.3	17	5.0 U				2.0 U		931				1990		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	72.0	12.7	113		0.97		38.0	4.6		
MW5	10/29/2018	N	15	5600	0.71 J				1.5 J		7920				6730		20.0 U			23	0.50 U	0.57	0.53	6.5	249	28.5	292		0.084 J		28.5	39.6		
MW5	4/25/2019	N	96	5100	0.79 J				0.97 J		10200				6250		6.9 U			24	0.15 U	0.47 J	0.52	5.8	262	27.0	305		0.068 U		27.7 B	33.3 F1		
MW5	10/17/2019	FD	32	5500	0.69 J				0.84 J		21900				6870		6.9 U			20	0.15 U	0.62	0.43 J	6.4	265	25.7	283		0.068 U		24.4	38.4		
MW5	10/17/2019	N	34	6000	0.75 J				0.70 J		22300				7140		6.9 U			22	0.15 U	0.62	0.46 J	6.3	452	28.2	273		0.068 U		25.6	38.7		
MW5	4/13/2020	N	13	6200	0.92 JB				1.1 J		17000				7190 B		6.9 U			22	0.15 U	0.72	0.6	7	253	27	286		0.068 U		23.8	42.5		
MW5	10/8/2020	FD	8.9	4800	1.0				1.3 J		14200				7310		6.9 U			26	0.15 U	0.57	0.57	7.7	244	31.6	283		0.076 JH		29.2	45.8		
MW5	10/8/2020	N	9.8	5000	0.93 J				1.5 J		14300				7470		6.9 U			25	0.15 U	0.71	0.62	7.2	242	26.7	296		0.084 JH		24.6	47.0		
MW5	4/13/2021	N	9.7	4700	0.70 J				2.1		16100				8010		10.6 JB			35	0.50 U	0.81	0.85	7.7	258	25.2	310		0.069 J		22.6	63.7		
MW5	10/14/2021	N	9.5	2800	0.98 J				1.8 J		12900				7970		20.0 U			38	0.50 U	1.0	0.89	10	282	24.8	309		0.20 U		21.4	54.6		
MW5	10/14/2021	FD	8.3	6100	0.87 J				1.6 J		12900				8130		20.0 U			36	0.50 U	0.95	0.89	10	286	25.4	310		0.068 J		21.8	55.2		
MW5	4/12/2022	N	51	10000	3.6				6.9		16500				7440		20.0 U			26	0.50 U	0.83	0.79	9.3	288	25.1	179		0.20 U		18.9	37.7		
MW5	10/4/2022	N	21	6300	0.77 J	1.3			2.3	3.4	14400	13900			7400	8490	20.0 U	20.0 U		30	0.50 U	0.90	0.51	7.4	296	20.5	194		0.20 U		15.6	29.4		
MW5	4/26/2023	N	39	3800	0.71 J	0.96 J			0.58 J	3.4	15400	19500			6820	6940	20.0 U	20.0 U		7.3	0.50 U	0.61	0.21 J	5.8	273	19.6	177	178	1.0 U		14.9	22.4		
MW6	4/19/2016	FD		0.050 J	5.0 U				2.0 U		100 U				3.2 J		20.0 U			0.21 U	0.50 U	1.0 U	1.0 U	2.0 U										
MW6	4/19/2016	N	0.78	170	5.0 U				5.2		282				5.6		9.0 J			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	183	35.0	245		10.2		26.3	6.2		
MW6S	10/9/1997	N	10 U	1 U	5.1				473		20 U				4720		258				0.1 U	1 U	1 U	1 U	62	72 J			4.5		0.9	1.6		
MW6S	10/9/1997	N2		1 U	2 U				2 U								2.2				0.1 U	1 U	1 U	1 U										
MW6S	4/26/2001	N	0.12 U	2.5	15				202		82800				1950		131			5.4 U	0.1 U	1 U	1 U	1 U	148	14	285		0.87		12	5.29		
MW6S	4/26/2001	N2	0.12 U		0.26				25 U		25 U				347		25 U																	
MW6S	9/12/2001	N	10 U	1.1	7.4				190		42000				1900		110			0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	160	12	290		1.1		16	6.3		
MW6S	9/12/2001	N2			0.58 J				3.1 J		35 U				800		5 J																	
MW6S	8/7/2002	N	0.27	88 J	5.5				69.1		7570				2210		18.3 J			5 U	1 U	5 U	5 U	5 U	270	17	4 U		0.15 U		18	5.8		
MW6S	8/7/2002	N2			2.7				9.9 J		3330				1790		9.7 J																	
MW6S	9/25/2003	N	130	0.33	1 J				22		5900				1190		10 J			1 U	0.25 U	2.5 U	2.5 U	2.5 U	282	23.9	104		1.01		17	8.2		

Appendix A.1

**Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin**

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L			
MW6S	9/25/2003	N2	130		1 J				9		1100				961		10 U																		
MW6S	9/27/2006	N	3.5 J	0.21	1.0 U				2.6 J		50 U				590		20 U				1.1 U	0.50 U	5.0 U	5.0 U	5.0 U	320 J	18	350			3.9 =	18	4.1		
MW6S	9/20/2007	FD	2.7	0.14 J	1.0 UJ				10 UJ		390				190		7.0 J				0.93 R	1.0 U	1.0 U	1.0 U	2.0 U	230 J	29	330 J			4.7	36 J	5.2 J		
MW6S	9/20/2007	N	3.0	0.099 J	1.0 UJ				10 UJ		510				200		7.0 J				0.93 R	1.0 U	1.0 U	1.0 U	2.0 U	230 J	30	320 J			4.7	34 J	4.7 J		
MW6S	10/23/2008	N	2.0 UJ	2.65	2 UJ				4.4 J		438 J			6260 J	65.3 J		20 UJ				1 U	0.5 U	2.0 U	2.0 U	5.0 U	4.98 J	28.3	90 J			7.11 J	11	8.3		
MW6S	10/7/2010	N	1.3 U	0.1 UJ	2 U				5 J		531			4780	19.7 J		20 U				1.0 UJ	0.5 UJ	2 U	2 U	5 U	11 UB	21.3	56.9			6.94 J	11 J	6.8		
MW6S	10/19/2011	N	0.50 U	0.10 U	2.0 U				3.7 J		50 U			4400 B	14		10 U				0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	15	17	45.60			5.3	9.8	1.0 U		
MW6S	10/17/2012	N	0.50 U	0.10 U	0.54 J				10 U		50 U			4600 =	3.9 J		20 U				0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	18	16	51.4			5.5 H	11 J	3.2		
MW6S	10/9/2013	N	0.50 U	0.52 J	2.0 UJ				10.0 UJ		1500 J			6000 J	32 J		20 UJ				0.21 U	0.50 U	1.0 U	1.0 U	2.0 U *	5.0 UJ	29				9.0 J	9.5	8.0 J		
MW6S	10/9/2013	N2																															8.9 J		
MW6S	9/24/2014	N	0.082 J	0.27	1.3 J				27		6000				110		41				0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	22	9.3	100			3.6	7.3	1.0 U		
MW6S	10/14/2015	N	0.50 U	0.17	5.0 U				2.5		16.8 J				1.4 J		20.0 U				0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	12.5	10.8	76.4			3.6	6.7	3.4		
MW6S	4/19/2016	N	0.50 U	0.20	0.51 J				4.7		831				15.4		20.0 U				0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	42.0	7.4	70.6			4.8	6.3	18.2		
MW6S	7/25/2016	N	0.50 U	0.19	5.0 U				3.4		118				6.1		20.0 U				0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	49.4	13.8	86.0			7.0	8.0	3.7		
MW6S	10/13/2016	N	0.50 U	0.20	0.71 J				19.7		2290				52.7		11.7 J				0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	126	14.5	152			6.9	8.1	4.2		
MW6S	1/23/2017	N	0.080	0.059 J	0.35				2.8		5.3				6.0		6.2				0.063	0.28	0.26	0.23	0.24	188	6.6	212			3.1	6.0	3.8		
MW6S	4/24/2017	N	0.089 J	0.13	5.0 U				3.3		8.3 J				7.4		20.0 U				0.23 U	0.50 U	1.0 U	1.0 U	2.0 U	198	6.5	268			3.8	8.1	2.3		
MW6S	10/5/2017	N	0.50 U	0.32	1.0 U				5.5		100 U				4.0		7.2 J				0.86 U	0.50 U	0.50 U	0.50 U	1.0 U	225	18.2	283			6.6	8.0	1.8		
MW6S	6/1/2018	N	1.0 U	0.11 U	0.37 J				3.1		58.6 J				4.7		20.0 U				0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	250	14.1	320			11.6	11.9	2.3		
MW6S	10/19/2018	N	1.0 U	0.097 U	0.28 J				15.7		100 U				5.2		12.4 J				0.76 U	0.50 U	0.50 U	0.50 U	0.24 J	249	13.1	306			5.1	8.0	3.2		
MW6S	4/25/2019	N	0.17 U	0.095 U	0.27 J				2.6		121				4.8		10.3 J				0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	275	12.1	336			10	13.2 B	2.0		
MW6S	10/17/2019	N	0.17 U	2.7	0.27 J				3.4		271				11		11.0 J				0.23 U	0.15 U	0.18 U	0.15 J	0.22 U	444 H	8.9	259			3.8	7.4	2.6		
MW6S	4/9/2020	N	0.17 U	0.089 U	0.41 J				3.7		89.8 J				5.1		6.9 U				0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	245	11	297			7.3	11.1	2.8		
MW6S	10/7/2020	N	0.17 U	0.095 U	0.71 J				2.8		46.7 U				9.9		6.9 U				0.26 U	0.15 U	0.18 U	0.15 U	0.22 U	196	11.9	207			2.7	6.7	2.8		
MW6S	10/14/2021	N	1.0 U	1.1 U	0.35 J				3.5		100 U				2.9		20.0 U				0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	282	17.2	297			7.2	12.2	2.8		
MW6S	4/14/2022	N	1.0 U	0.75	1.0 U				2.8		100 U				1.9 J		20.0 U				0.76 U	0.50 U	0.50 U	0.50 U	1.0 U	250	14.4	166			6.3	9.4	2.0		
MW6S	10/11/2022	N	1.0 U	0.10 U	0.30 J	0.29 J			3.1	3.4	100 U	100 U			1.7 J	1.8 J	20.0 U	20.0 U			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	213	13.4	147			4.0	11.8	3.3		
MW6S	4/28/2023	N	1.0 U	0.098 U	0.35 J	0.62 J			3.5	13.9	100 U	2020			3.0	38.8	20.0 U	9.4 J			0.68 U	0.50 U	0.50 U	0.50 U	0.24 J	207	12.6	125	126		1.0 U	9.7	3.0		
MW7	10/14/1997	N	10 U	1 U	2 U				6.2		622				13.4		11.4				0.1 U	1 U	1 U	1 U	350	7.6					4.9	6	1.6		
MW7	10/14/1997	N2		1 U	2 U				2 U								3.5				0.1 U	1 U	1 U	1 U											
MW7	4/4/2000	FD		0.5 U																	10 U														
MW7	4/4/2000	N		0.5 U																	10 U														
MW7	4/25/2001	N	4.65	0.1 U	1 U				25 U		352				5.4		25 U				5.2 U	0.1 U	1 U	1 U	1 U	352	8.36	388			3.63	6.54	2.8		
MW7	4/25/2001	N2	4.65		1 U				25 U		154				6.6		25 U				5.2 U												3.63 =		
MW7	9/11/2001	N	12	0.083 J	0.4 J				2.2 U		560				6.4		3.7 U				0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	340	23	410			3	10	2		
MW7	9/11/2001	N2	10 U	0.13 J	0.29 U				2.2 U		230				4.4		5.2 J				0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	350	24	400			3	10	1.8		
MW7	9/11/2001	N3			0.47 J				2.2 U		560				5.7		4.8 J																		
MW7	9/11/2001	N4			0.29 U				2.2 U		230				4.6		3.9 J																		
MW7	8/7/2002	N	0.01 U	0.03 J	1.5 J				0.3 U		730				6.5 J		2.8 J				5 U	1 U	5 U	5 U	5 U	390	21	450			0.15 U	10	1.5		
MW7	8/7/2002	N2			1.4 U				0.3 U		300				4 J		0.98 U																		
MW7	9/24/2003	N	4.9	0.044 J	1 U				1 U		280 J				6 J		10 UJ				0.96 U	0.25 U	2.5 U	2.5 U	2.5 U	346	12.2	133.3			2.97	2 U	1.2		
MW7	9/24/2003	N2	4.9		1 U				1 U		90 J				5 U		10 UJ																		
MW7	9/22/2004	N	10.0 UJ	9.18 E	1.00 UJ				1.09 J		1640 J				9.86 J		4.06 J				5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	300 J	7.2 J	1560 J			3.4 J	6.8 R	1.98 R		
MW7	9/22/2004	N2		5.75	0.108 J				0.847 J		25.0 UJ				9.75 J		2.96 J																		
MW7	9/27/2005	N	2.0 UJ	0.12 U	1.0 U				10 U		1300				18		20 U				0.91 UJ	0.50 U	5.0 U	5.0 U	5.0 U	260 J	18 J	450			1.8 J	130 J	0.96 J		

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L		
MW7	9/27/2005	N2			1.0 U				10 U		880				16 J		20 U																	
MW7	9/26/2006	N	4.3 J	0.087 J	1.0 U				10 U		50 U				68 J		20 U				0.92 U	0.50 U	5.0 U	5.0 U	5.0 U	280 J	15	390		1.8 =		110 =	2.4	
MW7	9/20/2007	N	3.7	0.093 U	1.0 UJ				10 UJ		260				22		5.9 J				0.93 R	1.0 U	1.0 U	1.0 U	2.0 U	270 J	16	370 J		1.5	170 J	1.1 J		
MW7	10/22/2008	N	110 J	0.1 U	2 UJ				4 J		926 J			37700 J	41.6 J		20 UJ				1 U	0.5 U	2.0 U	2.0 U	5 U	277 J	14.1	535 J		1.54 J	98.9	4.16		
MW7	10/22/2008	N2																															4.41	
MW7	10/7/2009	N	2.4 J	0.403 J	2 UJ				10 UJ		687 J			32600 J	109 J		20 UJ				0.999 UJ	0.1 UJ	0.4 UJ	0.4 UJ	0.14 J	245 J	12.2 J	396.43 J		1.91 J	152 J	14.5 J		
MW7	10/6/2010	N	28	0.1 U	2 U				8 U		989			38900	63.2		20 U				1.0 U	0.1 U	0.4 U	0.4 U	1 U	226	13.8 J	482		2.24 J	168	10.4		
MW7	10/19/2011	N	15	0.098 U	0.48 J				2 U		81			21000 B	21		10 U				0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	230	12	249.00		1.9 J	92	1.5 J		
MW7	10/17/2012	N	2.2	0.096 U	2.0 U				10 U		230			21000 =	22		20 U				0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	210	11	254		1.5 H	120 =	0.97 J		
MW7	10/9/2013	N	2.2 B	0.094 U	0.34 J				10.0 UJ		10000 J			21000 J	74 J		20 UJ				0.19 U	0.50 U	1.0 U	1.0 U	2.0 U *	200 J	12			1.8 J	120	0.75 J		
MW7	10/9/2013	N2																														1.8 J		
MW7	9/23/2014	N	15	0.034 J	0.28 J				2.0 U		260				33		30				0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	200	9.0	240		1.9	110	0.96 J		
MW7	10/12/2015	N	6.5	0.094 U	0.88 J				1.6 J		100 U				423		20.0 U				0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	228	8.3	229		1.5	46.2	0.85 J		
MW7	4/6/2016	N	13	0.098 U	5.0 U				1.9 J		5270				117		36.2				0.21 U	0.50 U	1.0 U	1.0 U	2.0 U	212	10.3	237		1.7	25.7	0.58 J		
MW8	10/14/1997	N	36.5	1 U	2 U				2 U		148				17.8		7.4				0.1 U	1 U	1 U	1 U	170	4.2				1.4	4.5	2.3		
MW8	10/14/1997	N2		1 U	2 J				2 U								4.6				0.1 U	1 U	1 U	1 U										
MW8	4/5/2000	N		0.5 U																10 U														
MW8	4/25/2001	N	11.6	0.2	0.99				25 U		829				32		25 U				5 U	0.1 U	1 U	1 U	1 U	154	3.25	181		1.52	7.47	1.46		
MW8	4/25/2001	N2	11.6		0.75				25 U		25 U				27		25 U																	
MW8	4/25/2001	N3			0.57				25 U		25 U				22		25 U																	
MW8	9/11/2001	N	10 U	0.062 J	1				2.2 U		70 J				18		4.3 J				0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	150	3.8	170		1.5	7.6 U	1 J		
MW8	9/11/2001	N2			1.2				2.2 U		350				19		3.7 U																	
MW8	8/8/2002	N	0.01 U	0.04 U	1.4 U				0.3 U		98				6.4 J		12 J				5 U	1 U	5 U	5 U	5 U	180	4.2	310		0.15 U	6	1.1		
MW8	8/8/2002	N2			1.8 J				0.27 U		11 J				5.3 J		2.3 J																	
MW8	9/25/2003	N	8.9	0.047 J	1 U				1 U		140				8 J		10 U				0.95 U	0.25 U	2.5 U	2.5 U	2.5 U	182	11	69.57		2.61	2 U	1.7		
MW8	9/25/2003	N2	9.2	0.11 U	1 U				1 U		50 U				8 J		10 U				1 U	0.25 U	2.5 U	2.5 U	2.5 U	184	11	69.44		2.6	2 U	2.3		
MW8	9/25/2003	N3	9.2		1 U				1 U		240				8 J		10 U																	
MW8	9/25/2003	N4			1 U				1 U		50 U				6 J		10 U																	
MW8	9/23/2004	N	3.75 J	1.94 =	0.127 J				0.465 J		256				15.1		2.25 J				5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	200	15	1160		2.4 J	5.8 J	1.40		
MW8	9/23/2004	N2			0.539 J				0.660 J		11.0 J				12.0 J		2.09 J																	
MW8	9/28/2005	FD	2.0 U	0.12 U	1.0 UJ				2.3 J		4500 J				56 J		20 UJ				0.93 U	0.50 U	5.0 U	5.0 U	5.0 U	160 J	19 J	200 J		2.0 J	19 R	1.0 J		
MW8	9/28/2005	FD2			1.0 UJ				10 UJ		120 J				13 J		20 UJ																	
MW8	9/28/2005	N	2.6	0.031 J	1.0 UJ				3.8 J		4700 J				63 J		20 UJ				0.93 U	0.50 U	5.0 U	5.0 U	5.0 U	160 J	20 J	240 J		2.0 J	19 R	1.2 J		
MW8	9/28/2005	N2			1.0 UJ				10 UJ		130 J				16 J		20 UJ																	
MW8	9/20/2007	N	2.0 UJ	0.093 U	0.61 J				10 UJ		210				13 J		20 UJ				0.93 U	1.0 U	1.0 U	1.0 U	2.0 U	180	21	260 J		1.5	76 J	1.1 J		
MW8	10/22/2008	N	0.78 J	0.1 U	2 UJ				10 UJ		707 J			40400 J	13.1 J		20 UJ				1 U	0.5 U	2.0 U	2.0 U	5 U	178 J	24.3	496 J		1.92 J	73.1	16.1		
MW8	4/11/2016	N	1.5	0.016 J	0.60 J				2.0 U		197				10.9		20.0 U				0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	174	18.0	421		1.3	201	0.26 J		
MW9	10/8/1997	N	10 U	1 U	2 U				4.2 U		20 U				19.7		5.6				0.1 U	1 U	1 U	1 U	60	45				4.2	3.4	6.5		
MW9	10/8/1997	N2		1 U																	0.1 U	1 U	1 U	1 U										
MW9	4/5/2000	N		0.6 =																10 U														
MW9	4/23/2001	N	0.12 U	0.12	0.38				25 U		470				46		25 U				5.3 U	0.1 U	1 U	1 U	1 U	60	3.22	59		2.46 =	27	9.94		
MW9	4/23/2001	N2	0.12 U																												2.46			
MW9	4/24/2001	N			0.28				25 U		25 U				34		25 U																	
MW9	9/12/2001	N	10 U	0.76	0.43 J				6.1 J		300				27		11 J				0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	62	6.5	64		3.3	6.8 U	5.1		

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L		
MW9	9/12/2001	N2			0.34 J				2.2 U		110				16		6.6 J																	
MW9	8/6/2002	N	0.01 U	0.54	1.4 U				1.6 J		200				14 J		6.4 J				5 U	1 U	5 U	5 U	5 U	64	11	95		0.15 U		22	8.4	
MW9	8/6/2002	N2			1.4 U				0.3 U		11 U				6.3 J		9.6 J																	
MW9	9/25/2003	N	0.5 U	2.3	1 J				20		7400				229		20 J				1 U	0.25 U	2.5 U	2.5 U	2.5 U	59	4.4	32.83		2.36		24	6.5	
MW9	9/25/2003	N2	0.5 U		1 U				1 U		240				16		10 U																	
MW9	9/22/2004	N	10.0 UJ	2.92	0.134 J				2.07 J		231 J				16.5 J		4.60 J				5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	58 J	3.2 J	776 J		1.8 J		26 R	6.48 R	
MW9	9/22/2004	N2			0.265 J				2.88 J		125 U				8.51 J		14.9 J																	
MW9	9/27/2005	N	2.0 UJ		1.0 UJ				10 U		50 U				6.3 J		20 U				0.93 U	0.50 U	5.0 U	5.0 U	5.0 U	55 J	2.6 J	70		1.9 J		20 J	2.0	
MW9	9/27/2005	N2			1.0 UJ				10 U		50 U				5.4 J		20 U																	
MW9	10/18/2005	N		0.57																														
MW9	9/21/2007	N	2.0 U	0.37 J	1.0 UJ				5.9 J		100 UJ				4.1 J		20 UJ				0.97 R	1.0 U	1.0 U	1.0 U	2.0 U	58 J	2.6	86 J		3.8		15 J	3.3 J	
MW9	10/22/2008	N	2.0 UJ	0.1 U	2 UJ				6 J		166 J			11600 J	10 UJ		20 UJ				1 U	0.5 U	2.0 U	2.0 U	5 U	55 J	3.44	113 J		2.48 J		14.9	11.2	
MW9	5/18/2010	N	1.3 U	0.073 J	2 UJ				10 UJ		120. UJ			6230. J	7.1 J		20 UJ				1.0 U	0.5 U	5 U	5 U	5 U	63 UB	2.63	67.9		2.42 J		11	25.7 UB	
MW9	10/6/2010	N	1.3 U	0.1 U	2 U				8 U		109 J			8540	16.7 U		20 U				1.0 U	0.1 U	0.4 U	0.4 U	1 U	27	3.3 J	88.1		3.35		14 J	7.6	
MW9	10/19/2011	N	0.50 U	0.098 U	2.0 U				3.5 J+		50 U			8400 B	2.9 J		10 U				0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	69	1.0 U	82.00		3.1		8.9	1.0 U	
MW9	10/16/2012	N	0.50 U	0.39	0.91 J				10 U		50 U			8400 =	10 U		20 U				0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	63	2.8 J	82		5.9 J		10 J	3.8	
MW9	10/9/2013	N	0.50 U	0.41 J	2.0 UJ				10.0 UJ		50 UJ			6200 J	10 UJ		20 UJ				0.21 U	0.50 U	1.0 U	1.0 U	2.0 U *	47 J	1.2			3.8 J		12	1.6 J	
MW9	10/9/2013	N2																																
MW9	9/24/2014	N	0.50 U	1.6	5.0 U				2.0 U		100 U				5.0 U		20 U				0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	14	1.1	41		2.4		10	2.5	
MW9	10/13/2015	N	0.50 U	0.17	5.0 U				1.3 J		21.1 J				5.0 U		20.0 U				0.21 U	0.50 U	1.0 U	1.0 U	2.0 U	31.0	0.70 J	40.2		1.5		7.4	4.4	
MW9	4/13/2016	N	0.50 U	0.28	5.0 U				1.4 J		33.6 J				1.5 J		20.0 U				0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	26.6	0.99 J	37.2		1.4		7.3	30.2	
MW10	10/15/1997	N	13.5	8200 J	1.4				9.1		2190				2510 J		4.4				0.2	2	3	17	340	35			4.9		13	20		
MW10	10/15/1997	N2		8200 E	2 J				2.8 U								9.2				0.2	2	3	17										
MW10	4/6/2000	N		9530 J																	60 =													
MW10	4/6/2000	N2		12900 =																	5410 U													
MW10	4/26/2001	N	2.9	22800	3.1				98		25200				2560		44				5.2 U	0.4	3.3	5.3	27	472	48	505		0.18		22	26	
MW10	4/26/2001	N2	2.9		2.4				5.9		5650				2380		25 U																	
MW10	9/12/2001	N	10 U	21000	3.9				3.9 J		2400				3200		9.5 J				130	0.44 U	6.3	10	55	540 J	61	630		0.13 J		23	64	
MW10	9/12/2001	N2			4.5				40		20000				3300		13																	
MW10	8/7/2002	N	0.011	22000 J	9.5				48.2		24400				2730		2.8 J				120	1 U	7	11	54	400	56	480		0.15 U		20	110	
MW10	8/7/2002	N2			7.3				10.1 J		10700				2540		6.1 J																	
MW10	10/1/2003	N	0.62	9000	2 J				30		5470				1960		10 J				18	0.25 U	2.5 U	2.5 U	13.5	287	22	93.58		0.05 U		3 J	25.3	
MW10	10/1/2003	N2	0.62		2 J				8		2590				1850		10 U																	
MW10	9/23/2004	N	10.0 U	38000 =	2.66				28.3		3550				2550		5.58 J				173 E	0.296 J	5.58 J	8.09 J	47.1	390	38	1640		0.0018 J		18 =	54.1	
MW10	9/23/2004	N2			3.01				12.4 J		24.1 J				1810		4.23 J				160													
MW10	9/27/2006	N	2.0 UJ	23000 J	1.0 U				4.3 J		120				2600		20 U				50	0.50 U	2.0 J	1.7 J	16	450 J	14	440		0.10 U		24 =	21	
MW10	9/21/2007	N	2.4 J	1700 J	0.88 J				2.3 J		550				2700		20 UJ				12 J	1.0 U	1.3	1.0 U	7.2	380 J	20	420 J		0.68		25 J	12 J	
MW10	10/23/2008	FD	7 J	1720	2 UJ				10 UJ		1080			48600 J	2190 J		20 UJ				0.82 J	0.5 U	2.0 U	2.0 U	5.0 U	310 J	12.4	500 J		0.05 J		29.5	13.1	
MW10	10/23/2008	N	6 J	1630	2 UJ				10 UJ		1110 J			40000 J	2210 J		20 UJ				0.92 J	0.5 U	2.0 U	2.0 U	5.0 U	305 J	12.4	432 J		0.05 U		28.1	39.2	
MW10	10/7/2009	FD	23 J	214 J	2 UJ				10 UJ		704 J			36900 J	2310 J		20 UJ				0.996 UJ	0.1 UJ	0.094 J	0.083 J	0.49 J	282 J	9.84 J	347.47 J		0.05 UJ		59 J	2.13 J	
MW10	10/7/2009	N	17 J	220 J	2 UJ				8.2 J		1210 J			38800 J	2230 J		20 UJ				0.998 UJ	0.1 UJ	0.072 J	0.073 J	0.41 J	280 J	9.82 J	369.28 J		0.05 UJ		58.7 J	4.68 J	
MW10	10/7/2010	FD	2.3	77.1 J	2 U				8 U		396			37200	1820		20 U				1.0 UJ	0.1 U	0.4 U	0.074 J	1 U	272	7.3 J	346		0.10 UJ		47.7 J	1.8	
MW10	10/7/2010	N	1.8	92.4 J	2 U				8 U		488			41600	1780		20 U				1.0 UJ	0.1 U	0.4 U	0.051 J	1 U	308	7.2 J	390		0.10 UJ		48.2 J	2.2	
MW10	10/20/2011	FD	11 J	21	0.60 J				2 U		180			33000 B	1700		20 U				0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	260	8.7	303.00		0.22		54	2.1	
MW10	10/20/2011	N	8.8 J	21	2.0 U				2 U		180			33000 B	1700		20 U				0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	260	8.4	303.00		0.21		53	2.1	

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L		
MW10	10/17/2012	FD	12	14	0.50 J				10 U		180			31000 =	1600		20 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	230	8.0	292		0.067 J		69 J	1.7		
MW10	10/17/2012	N	12	8.7	0.55 J				10 U		190			32000 =	1600		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	240	7.8	304		0.075 J		68 J	1.7		
MW10	10/10/2013	FD	140 J	16	0.19 J				10.0 UJ		230 J			31000 J	1600 J		20 UJ			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	230 B	7.9			0.39 J		94	1.7		
MW10	10/10/2013	N	27 J	17	0.19 J				10.0 UJ		260 J			32000 J	1700 J		20 UJ			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	220 B	7.8			0.41 J		93	1.4		
MW10	9/25/2014	N	8.1	37	0.21 J				2.0 U		250				1300		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	180	6.1	270		0.10		77	1.0 U		
MW10	10/15/2015	N	8.2	150	5.0 U				1.0 J		188				861		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	178	6.5	244		0.10 U		71.8	1.8		
MW10	4/7/2016	N	290	1900	5.0 U				2.0 U		1350				719		20.0 U			4.8	0.50 U	0.46 J	0.53 J	2.9	162	9.8	189		0.10 U		46.1	8.6		
MW10	7/25/2016	N	8.6	1700	5.0 U				3.7		826				744		20.0 U			5.2	0.50 U	0.66 J	0.64 J	5.2	160	12.3	188		0.10 U		31.7	11.6		
MW10	10/13/2016	N	5.5	7300	0.46 J				1.7 J		434				777		20.0 U			6.2	0.50 U	0.79 J	0.79 J	5.7	156	14.6	186		0.10 U		24.3	11.1		
MW10	1/24/2017	N	8.5	6200	0.46 J				1.9 J		539				831		6.2			10	0.28	0.96 J	0.91 J	8.1	158	17.4	220		0.035		24.0	19.4		
MW10	4/24/2017	N	3.7	7600	0.76 J				5.9		756				897		20.0 U			20	0.50 U	1.6	1.8	14	142	19.1	234		0.10 U		25.0	27.9		
MW10	10/5/2017	FD	15	5000	0.53 J				3.7		609				898		20.0 U			19	0.50 U	1.3	1.5	9.5	157	25.9	182		0.081 J		20.1	32.0		
MW10	10/5/2017	N	13	4800	0.53 J				3.0		626				903		20.0 U			20	0.50 U	1.2	1.5	9.4	157	26.2	184		0.083 J		20.2	30.8		
MW10	6/1/2018	N	23	2500	1.0				3.6		796				951		20.0 U			24	0.50 U	1.4	1.5	10	470	27.6	197		0.084 J		19.9	2.1		
MW10	10/19/2018	N	40	2500	1.1				13.6		1310				907		20.0 U			21	0.50 U	1.2	1.1	8.6	146	19.9	182		0.20 U		15.3	26.2		
MW10	4/22/2019	N	550	1600 H	1.1 B				2.2 B		769				740 B		6.9 U			9.3	0.15 U	0.80	0.90	6.0	130	24.8	173		0.068 U		12.9	23.3		
MW10	10/16/2019	FD	180	1800	1.1				2.4		1640				937		6.9 U			7	0.15 U	0.18 U	0.98	7.7	144 B	30.3	183		0.068 U		14.4 B	26.6		
MW10	10/16/2019	N	81	1700	1.1				2.7		1800				937		6.9 U			7.5	0.15 U	0.69	0.15 U	7.4	143 B	31.2	186		0.068 U		14.4 B	27.1		
MW10	4/8/2020	N	230	3600	1.3				2.9		1150				1070		6.9 U			26	0.15 U	1.8	1.6	13	136	37.5	196		0.068 U		20	42.1		
MW10	10/6/2020	N	81	3200	1.5				8.6		2340				1180		6.9 U			22	0.15 U	1.7	1.3	13	150	41.6	203		0.068 U		21.2	40.1		
MW10	4/14/2021	N	120	840	0.91 J				1.6 J		1070				882		20.0 U			3.1	0.50 U	0.42 J	0.55	3.4	135	25.2	165		0.20 U		8.8	13.6		
MW10	10/14/2021	N	49	660	0.85 J				4.7		1280				569		20.0 U			1.2	0.50 U	0.36 J	0.34 J	2.6	139	23.7	156		0.20 U		4.8	11.8		
MW10	4/14/2022	N	68	3200	1.2				9.6		2730				989		20.0 U			3.5	0.50 U	0.84	0.71	4.9	152	23.4	113		0.20 U		9.2	15.5		
MW10	10/11/2022	N	18	0.099 U	1.2	1.3			2.0	8.8	760	1140			1140	1110	20.0 U	20.0 U		9.1	0.50 U	1.1	1.1	8.0	155	25.3	129		0.20 U		10.3	21.6		
MW10	5/2/2023	N	41	8600	1.3	1.3	61300	59100	3.1	8.6	782	1060	19100	18300	1460	1420	20.0 U	20.0 U		11	0.50 U	1.9	1.7	14	183	29.7	148	153	1.0 U		12.6	33.1		
MW10S	10/15/1997	N	10 U	30000 E	2 U				28.5 J		45.4 J				10700 J		11.6				0.4	0.9 J	1	8	260	38			0.1 U		23	49.7		
MW10S	10/15/1997	N2		30000 J	2 J				10.9 J								8.4				0.4	0.9 J	1	8										
MW10S	4/7/2000	N		56100 J																512 =														
MW10S	4/7/2000	N2		34800 =																393 F														
MW10S	12/5/2000	N	0.57	3810 B	0.74 J				13 J		610				6900		25 U			152	0.1 U	5.9	2.9	70	31	15	570		1		11	300		
MW10S	12/5/2000	N2	0.57	3810 J	9.36				160		11000				7100		35			152														
MW10S	4/25/2001	N	0.55	49000	18				409		131000				7990		216			306	1 U	3.5	10 U	44	142	11	425		1.49 =		8.64	503		
MW10S	4/25/2001	N2	0.55		2.3				46		11300				6030		45				10 U	100 U	100 U	100 U					1.49					
MW10S	9/12/2001	N	10 U	82000	5.1				170		35000				8600		100			75	0.44 U	0.94 J	0.41 J	15	270 J	10	260		4.7		13	19		
MW10S	9/12/2001	N2			0.29 U				3.2 J		48 J				7600		3.7 U																	
MW10S	8/7/2002	N	0.01 U	390 J	3.9				53.3		9490				7560		22.4 J			5 U	1 U	1 J	5 U	10	170	10	4 U		0.11 J		14	10		
MW10S	8/7/2002	N2			3.1				2.3 J		67.3				7070		0.98 U																	
MW10S	9/25/2003	N	0.5 U	2200	1 U				7		1760				5910		10 U			1 U	0.25 U	2.5 U	2.5 U	3.4 J	135	6.7	52.05		3.41		2 J	6.6		
MW10S	9/25/2003	N2	0.5 U		1 U				1 J		50 U				5900		10 U																	
MW10S	9/22/2004	N	10.0 UJ	9490	1.49 J				73.1 J		14500 J				5460 J		49.7 J			51.9	5.00 U	50.0 U	50.0 U	5.42 J	120 J	24 J	1220 J		3.6 J		15 R	7.54 R		
MW10S	9/22/2004	N2			0.190 J				1.79 J		22.7 J				3740 J		6.07 J																	
MW10S	9/29/2005	N	2.0 U	0.11 U	1.0 UJ				14 J		3600 J				4000 J		8.0 J			5.6	0.50 U	5.0 U	5.0 U	0.99 J	130 J	16 J	300 J		2.0 J		120 R	3.0 J		
MW10S	9/29/2005	N2			1.0 UJ				10 UJ		50 UJ				3900 J		20 UJ																	
MW10S	9/26/2006	N	2.0 UJ	2700 J	1.0 U				2.2 J		50 U				2500		20 U			1.2	0.50 U	5.0 U	5.0 U	2.6 J	180 J	8.6	310		1.2		79 =	6.5		
MW10S	9/21/2007	N	2.0 U	24 J	1.0 UJ				10 UJ		100 UJ				1300		20 UJ			2.4 R	1.0 U	1.0 U	1.0 U	2.0 U	170 J	8.7	240 J		1.3		69 J	2.9 J		

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**Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin**

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L		
MW10S	10/24/2008	N	2.0 UJ						2.6		190				388		20.0 U			3.36	0.5 U	2.0 U	2.0 U	5.0 U										
MW10S	4/18/2016	N	0.50 U	3500	0.59 J				2.6		190				388		20.0 U			4.7	0.50 U	1.0 U	1.0 U	2.7	102	7.8	92.1			0.10 U		9.1	9.5	
MW10S	7/25/2016	N	0.50 U	5200	0.68 J				9.2		183				315		20.0 U			13	0.50 U	0.39 J	1.0 U	5.6	107	7.7	124			0.10 U		11.8	15.6	
MW10S	10/13/2016	N	0.12 J	6600	0.44 J				4.6		124				399		20.0 U			9.6	0.50 U	0.30 J	1.0 U	4.6	83.7	6.1	100			0.10 U		11.9	12.3	
MW10S	1/24/2017	N	0.12 J	9800	0.80 J				2.5		254				624		6.2			10	0.28	0.40 J	0.23	5.7	164	12.3	220			0.035		17.3	23.4	
MW10S	4/24/2017	FD	0.36 J	3300	0.65 J				3.3		406				1380		20.0 U			10	0.50 U	0.40 J	1.0 U	5.8	195	25.7	350			0.082 J		23.1	32.1	
MW10S	4/24/2017	N	0.35 J	4300	0.74 J				3.3		394				1340		20.0 U			11	0.50 U	0.40 J	1.0 U	5.9	195	25.6	332			0.10 U		23.1	33.0	
MW10S	10/5/2017	N	0.29 J	4400	0.50 J				2.9		770				1260		8.1 J			9.9	0.50 U	0.46 J	0.50 U	6.0	314	41.1	378			0.13 J		26.7	29.8	
MW10S	6/1/2018	N	1.0 U	1500	0.91 J				5.2		1010				2880		20.0 U			11	0.50 U	0.42 J	0.22 J	5.2	322	69.8	456			0.083 J		39.7	5.5	
MW10S	10/19/2018	N	1.0 U	1900	0.51 J				8.2		716				2030		20.0 U			5.9 J	0.50 U	0.84	0.34 J	10	311	32.9	388			0.76		23.5	26.1	
MW10S	4/23/2019	FD	0.17 U	1500	2.1 B				6.0 B		886				3470 B		6.9 U			10	0.15 U	0.36 J	0.28 J	5.9	313	63.6	464			0.073 J		42.5	56.3	
MW10S	4/23/2019	N	0.17 U	1400 ^	0.67 JB				8.8 B		861				3450 B		6.9 U			10	0.15 U	0.38 J	0.30 J	6.1	312	64.8	471			0.074 J		43.1	60.9	
MW10S	10/16/2019	N	0.31 J	2500	0.49 J				1.8 J		551				3010		6.9 U			13	0.15 U	0.18 U	0.15 U	14	345 B	20.5	379			0.19 J		18.8	27.7	
MW10S	4/8/2020	FD	0.17 U	2300	0.57 J				2.8		571				3670		6.9 U			16	0.15 U	0.91	0.26 J	12	301	19.4	341			0.068 U		21.1	34.5	
MW10S	4/8/2020	N	0.17 U	2800	0.54 J				2.3		563				3530		6.9 U			17	0.15 U	0.82	0.25 J	11	312	21.7	345			0.068 U		22.6	34	
MW10S	10/7/2020	N	0.17 U	2100	1.1				8.2		819				4880		6.9 U			19	0.15 U	0.80	0.22 J	11	344	20.6	388			0.076 J		22.0	29.7	
MW10S	4/14/2021	N	0.51 J	2000	0.77 J				2.8		980				6360		20.0 U			15	0.50 U	0.69	0.21 J	10	317	42.7	401			0.20 U		34.8	60.8	
MW10S	10/14/2021	N	0.22 J	3100	0.94 J				3.4		1510				6430		20.0 U			17	0.50 U	0.81	0.16 J	11	310	52.3	402			0.085 J		37.6	61.5	
MW11	10/15/1997	N	10 U	1 U	2 U				2 U		10 U				2 U		5.3				0.3	1 JB	0.2 J	0.5 J	190	7.5			5		12	1.3		
MW11	10/15/1997	N2		1 U	2 J				4.2 U								10.3				0.3	1 J	0.2 J	0.5 J										
MW11	4/4/2000	N		0.6 U																11 U														
MW11	4/24/2001	N	0.1 U	0.1 U	1.4				25 U		58				15 U		25			5.3 U	0.1 U	1 U	1 U	1 U	185	6.16	231			3.59 =		4.57	7.9	
MW11	4/24/2001	N2	0.11 U	0.11 U	1.2				25 U		25 U				15 U		20			5.3 U	0.1 U	1 U	1 U	1 U	225	6.25	231			3.59 =		3.48	4.67	
MW11	4/24/2001	N3	0.11 U		1.4				25 U		151				15 U		126			5.4 U											3.74 =			
MW11	4/24/2001	N4			1.3				25 U		25 U				15 U		25 U			5.4 U										3.74				
MW11	9/10/2001	N	10 U	0.091 J	1.4				2.9 J		66 J				1.9		9.1 J			0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	190	8	220			3.1		7.4 U	4.2	
MW11	9/10/2001	N2			1.1				2.2 U		35 U				0.45 J		3.7 U																	
MW11	8/6/2002	N	0.01 U	0.04 U	4.7				0.83 J		46				2.3 J		6.4 J			5 U	1 U	5 U	5 U	5 U	210	7.8	230			0.15 U		7.6	18	
MW11	8/6/2002	N2	0.01 U		1.5 J				0.3 U		11.2 U				1.2 J		8.5 J																	
MW11	9/23/2003	N	0.5 U	0.11 U	1 U				2		160				5 U		10 U			0.98 U	0.25 U	2.5 U	2.5 U	2.5 U	187	6.7	72.14			2.94		2 U	2.3	
MW11	9/23/2003	N2	0.5 U		1 U				1 U		50 U				5 U		10 U																	
MW11	9/21/2004	N	10.0 U	0.0656 J	0.885 J				0.620 J		15.6 J				2.81 J		6.36 J			1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	210	9.0 =	1020			3.0 J		6.2 J	14.1	
MW11	9/21/2004	N2			0.948 J				0.366 J		6.05 J				1.40 J		4.05 J																	
MW11	9/29/2005	N	2.0 U	740 =	1.0 UJ				10 UJ		50 UJ				1.6 J		20 UJ			0.95 U	0.50 U	5.0 U	5.0 U	5.0 U	200 J	14 J	280 J			2.4 J		9.7 R	1.2 J	
MW11	9/29/2005	N2			1.0 UJ				10 UJ		50 UJ				3.0 J		20 UJ																	
MW11	9/27/2006	N	2.0 UJ	0.11 U	1.0 UJ				10 UJ		50 UJ				10 UJ		20 UJ			0.93 U	0.50 U	5.0 U	5.0 U	5.0 U	220 J	16 J	240			0.53 J		8.8 J	2.3	
MW11	9/20/2007	N	2.0 UJ	0.093 U	1.2 J				10 UJ		100 UJ				10 UJ		20 UJ			0.93 U	1.0 U	1.0 U	1.0 U	2.0 U	220	20	260 J			2.4		19 J	1.2 J	
MW11	10/22/2008	N	2.0 UJ	0.27	2 UJ				10 UJ		533			33600 J	10 UJ		20 UJ			1 U	0.5 U	2.0 U	2.0 U	5 U	234 J	19.9	433 J			2.26 J		17.8	20.2	
MW11	4/11/2016	N	0.50 U	0.10 U	0.75 J				2.0 U		32.1 J				1.9 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	229	18.0	470			1.6		200	0.32 J	
MW12	10/15/1997	N	10 U	13000 E	2 U				5		267				1660		10.6				1	2	3	14	490	50			0.1 U		15	21.7		
MW12	10/15/1997	N2		13000 J	2 U				6.1 U								16.3				1	2	3	14										
MW12	4/6/2000	FD		10600 J																45 =														
MW12	4/6/2000	FD2		14100 =																5150 U														
MW12	4/6/2000	N		15000 =																5210 U														

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Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L	
MW12	4/6/2000	N2		10300 J																47 =													
MW12	4/26/2001	N	0.99	1500	1				25 U		151				1540		25 U			44	0.34	2.5	4.1	22	564	48	556			0.43	16	23	
MW12	4/26/2001	N2	0.99		0.91				25 U		131			1570		25 U																	
MW12	9/13/2001	N	10 U	18000	1.1				5 J		770			1300		9.3 J				40	0.44 U	2.3 U	3.2 U	20	490	47	470			0.53 U	16	25	
MW12	9/13/2001	N2			0.95 U				6.8 J		740			1400		12																	
MW12	5/14/2002	FD		4000																													
MW12	5/14/2002	N	10 U	4000	1.4 U				5.3 J		44.5			1670		7.4 J				33	1 U	2 J	2 J	14	490	39	520			0.68 H	16	31	
MW12	5/14/2002	N2		4300	1.5 J				5 J		11.2 U			1670		9.3 J																	
MW12	5/14/2002	N3			1.4 U				4.9 J		11.2 U			1680		12 J																	
MW12	8/8/2002	N	0.01 U	6400 J	2.8				5.6 J		123			1620		7.7 J				28	1 U	2 J	2 J	15	460	37	4 U			0.46	15	28	
MW12	8/8/2002	N2			1.4 U				2.9 J		105			1600		3.3 J																	
MW12	4/29/2003	N	0.5 U	3000	1 J				5		230			1640		10 U				17	0.5 U	1.3 J	1.3 J	11	470	31	442			0.8	20	19	
MW12	4/29/2003	N2	0.5 U		1 U				4		25 U			1560		10 U																	
MW12	9/23/2003	N	0.49 J	10000	1 U				4		70 J			1420		10 U				14	0.25 U	2.5 U	2.5 U	8.6	443	30.8	151.4			1.17	2 U	15.5	
MW12	9/23/2003	N2	0.49 J		1 U				3		50 U			1530		10 U						0.25 U	2.5 U	2.5 U	9.4	433	29.8	153.3			1.23	2 U	16
MW12	9/23/2003	N3	0.64		1 U				4		80 J			1490		10 U																	
MW12	9/23/2003	N4			1 U				3		50 U			1490		10 U																	
MW12	5/4/2004	N	1.34 J	11200 J	0.564 J				5.50 R		52.7 R			45900	1730 R	10.8 R				22.9	0.124 J	1.39 J	1.03 J	11.2	446	29 =	443			1.1 J	14 R	20.2 J	
MW12	5/4/2004	N2			0.600 J				3.95 R		33.6 R			1480 R		8.80 R																	
MW12	9/22/2004	N	10.0 UJ	9060 J	1.00 UJ				5.09 J		53.9 J			1540 J		9.53 J				28.2 J	0.113 J	1.22 J	0.866 J	9.83	440 J	26 J	1660 J			1.1 J	12 R	18.2 R	
MW12	9/22/2004	N2		3730 E	0.672 J				3.91 J		22.7 J			1230 J		8.10 J																	
MW12	5/10/2005	N	2.0 U	8300 J	1.0 U				4.2 J		50 U			1500		8.9 J				6.1	0.50 U	0.93 J	5.0 U	5.6	390 J	23 J	360 J			1.3 J	16 R	9.9 R	
MW12	5/10/2005	N2			1.0 U				4.8 J		50 U			1400		20 U																	
MW12	9/27/2005	N	2.0 UJ	8500 J	1.0 UJ				10 U		50 U			1200		7.8 J				3.3	0.50 U	0.85 J	5.0 U	4.9 J	370 J	20 J	410			1.1 J	26 J	9.2	
MW12	9/27/2005	N2			1.0 UJ				3.9 J		50 U			1300		20 U																	
MW12	6/7/2006	N	2.0 U	6100 J	1.0 UJ				2.3 J		50 R			1100 J		20 UJ				0.94 U	0.50 U	0.67 J	5.0 U	3.4 J	400 J	21 J	400 J			2.1 J	32 =	7.2 J	
MW12	9/26/2006	FD	2.0 UJ	2000 =	1.0 UJ				2.5 UJ		46 J			1200 J		20 UJ				1.4	0.50 U	5.0 U	5.0 U	1.7 J	390 J	15 J	370			2.0 J	15 J	10	
MW12	9/26/2006	N	2.0 UJ	3100 =	1.0 UJ				3.2 J		50 UJ			1200 J		16 J				1.5	0.50 U	5.0 U	5.0 U	2.9 J	390 J	14 J	380			1.9 J	15 J	10	
MW12	5/9/2007	N	2.0 UJ	3000 J	1.0 UJ				2.1 J		100 UJ			1100		5.2 J				0.99 J	1.0 UJ	1.0 UJ	1.0 UJ	1.9 J	340 =	13	370			2.4	37 J	7.0 UB	
MW12	9/19/2007	FD	2.0 UJ	1000 J	1.1 J				1.7 J		100 R			790		20 UJ				0.74 J	1.0 U	1.0 U	1.0 U	2.0 U	340	14	350 J			2.2	2.7 J	5.7 J	
MW12	9/19/2007	N	2.0 UJ	1100 J	0.97 J				10 UJ		100 R			820		20 UJ				0.71 J	1.0 U	1.0 U	1.0 U	2.0 U	340	14	330 J			2.8	29 J	5.6 J	
MW12	5/20/2008	FD	2.0 UJ	2200 J	0.61 J				3.8		100 UJ			1000		4.2 J				0.95 U	1.0 UJ	1.0 U	1.0 U	1.6 J	360 =	12	380			2.1	25	4.5 J	
MW12	5/20/2008	N	2.0 UJ	2100 J	0.59 J				3.7		100 UJ			1000		4.6 J				0.96 U	1.0 UJ	1.0 U	1.0 U	1.5 J	360 =	12	350			2.0	25	4.7 J	
MW12	10/21/2008	FD	2.0 UJ	1300.00 J	2.00 U				3.70 J		936			45000	1120	20 U				1.00 U	0.5 U	2.0 U	2.0 U	5.0 U	322	14.50	465 J			2.95 J	31.70	11.80 J	
MW12	10/21/2008	N	2.0 UJ	1670.00 J	2 U				4 J		927			50200	1140	11 J				1.00 U	0.5 U	2.0 U	2.0 U	5.0 U	323	13.10	519 J			2.96 J	31.80	11.70 J	
MW12	6/2/2009	FD	0.8 UJ	489 J	2 U				10 UJ		292 =			40600 =	1020 =	20 U				1.0 UJ	0.5 U	0.31 J	2.0 U	0.96 J	302 J	12.4	429.3758			2.64 J	62.2	1.7 J	
MW12	6/2/2009	N	0.8 UJ	521 J	2 U				10 UJ		310 =			34400 =	1040 =	20 U				1.0 UJ	0.5 U	0.28 J	2.0 U	0.88 J	294 J	12.3	363.3928			2.65 J	59.9	3.6 J	
MW12	10/6/2009	FD	0.83 UJ	289 J	2 UJ				4 J		294 J			47600 J	982 J	20 UJ				0.997 UJ	0.1 UJ	0.069 J	0.4 UJ	0.28 J	294 J	13.7 J	468.19 J			1.83 J	84.7 J	3.25 J	
MW12	10/6/2009	N	0.83 UJ	295 J	2 UJ				4 J		307 J			51600 J	987 J	20 UJ				0.995 UJ	0.1 UJ	0.073 J	0.4 UJ	0.28 J	297 J	13.7 J	509.63 J			1.84 J	85.4 J	3.83 J	
MW12	5/19/2010	FD	1.3 U	81.9	2 UJ				3.8 J		225. J			41800. J	633. J	8.2 J				1.0 U	0.5 U	5 U	5 U	5 U	308	14.7	432			1.91 J	117	36.1 UB	
MW12	5/19/2010	N	1.3 U	70.3	1.9 J				3.5 J		228. J			47700. J	913. J	11. J				1.0 U	0.5 U	5 U	5 U	5 U	308	14.7	496			1.87 J	116	41.8 UB	
MW12	10/5/2010	FD	1.3 U	42.9	2 U				8 U		332			47500 R	859	20 U				1.0 U	0.1 U	0.4 U	0.4 U	1 U	316	14.4 J	483			1.72	119	22.9 J	
MW12	10/5/2010	N	1.3 U	43.7	2 U				8 U		358			41500 R	834	20 U				1.0 U	0.1 U	0.4 U	0.044	1 U	320	14.4 J	548			1.73	119	53.9 J	
MW12	6/29/2011	FD	0.9 U	35.1	2 UJ				10 U		291			56900	765	20 U				0.998 U	0.1 U	0.4 U	0.4 U	1 U	276	13.3 J	524.00			2.11 J	103 J	1.53 J+	
MW12	6/29/2011	N	0.9 U	37	1.8 J				10 U		314			62600	744	20 U				0.998 U	0.1 U	0.4 U	0.4 U	1 U	295	14.1 J	555.00			2.28	111	1.28 J+	
MW12	10/18/2011	FD	0.50 U	30	1.0 J				2.3 J+		50 U			42000 B	640	10 U				0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	300	14	398.00			2.1	100	2.0	

Appendix A.1

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MW12	10/18/2011	N	0.50 U	37	1.1 J				2.3 J+		50 U			42000 B	660		10 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	300	14	398.00		2.1		98	2.0	
MW12	5/22/2012	FD	0.50 U	16 J	2.0 U				4.3 J		50 U			43000 =	630		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	310	14 =	419.00		1.8		120	1.6	
MW12	5/22/2012	N	0.50 U	21 J	2.0 U				10 U		50 U			44000 =	670		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	300	14 =	431.00		1.8		120	1.5	
MW12	10/16/2012	FD	0.50 U	23	1.2 J				10 U		50 U			43000 =	420		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	290	13	424		2.0 J		130 =	1.3	
MW12	10/16/2012	N	0.50 U	26	0.98 J				10 U		50 U			42000 =	410		20 U			0.21 U	0.50 U	1.0 U	1.0 U	2.0 U	280	14	413		2.0 J		120 =	1.4	
MW12	5/22/2013	FD	0.50 U	24	2.0 U				10 U		50 UJ			39000 B	530 B		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	290	12			2.1 J		150	1.6	
MW12	5/22/2013	N	0.50 U	22	2.0 U				10 U		50 U			36000 B	460 B		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	280	12			2.0 J		150	1.6	
MW12	10/8/2013	FD	0.50 U	22	0.37 J				10.0 U		50 U			42000 B	710 B		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	260	12			2.1 J		120	1.3	
MW12	10/8/2013	N	0.50 U	28	0.37 J				10.0 U		50 U			41000 B	680 B		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	270	12			2.1 J		120	1.4	
MW12	5/14/2014	N		19																													
MW12	9/23/2014	N	0.076 J	24	0.66 J				2.0 U		100 U				450		20 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	240	11	360		1.7		130	1.0 U	
MW12	4/20/2015	N	0.50 U	16	1.1 J				1.4 J		100 U				530		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	220	11	410		1.7		140	0.95 J	
MW12	10/13/2015	N	0.080 J	25	5.0 U				2.0 U		362				27.4		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	279	11.7	74.4		1.6		159	1.2	
MW12	4/6/2016	N	0.12 J	5.2	0.77 J				1.4 J		60.1 J				148		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	236	10.6	358		1.6		135	0.67 J	
MW12	7/19/2016	N	0.50 U	14	0.61 J				1.6 J		100 U				388		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	238	10.1	358		1.4		134	0.96 J	
MW12	10/12/2016	N	0.092 J	14	0.50 J				1.6 J		10 J				439		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	239	10.8	340		1.2		124	0.71 J	
MW12	1/18/2017	N	0.13 J	18	0.87 J				1.4 J		8.5 J				427		6.2			0.060	0.28	0.26	0.23	0.24	203	10.7	326		1.1		122	0.89 J	
MW12	4/19/2017	N	0.13 J	14	0.46 J				1.2 J		10.8 J				362		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	201	10.1	346		1.0		112	1.0	
MW12	10/2/2017	N	0.48 J	32	0.49 J				1.9 J		100 U				328		20.0 U			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	199	11.7	282		0.90		105	1.1	
MW12	10/16/2018	N	1.0 U	110	0.53 J				1.3 J		100 U				72.2		20.0 U			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	173	8.1	231		0.61		59.9	2.1	
MW12	4/23/2019	N	0.17 U	290	0.55 JB				1.5 JB		46.7 U				55.0 B		6.9 U			0.24 U	0.15 U	0.18 U	0.15 J	0.22 U	165	9.1	218		0.53		45.5	2.4	
MW12	10/14/2019	N	0.25 J	300	0.89 J				0.85 J		46.7 U				8.4		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	158	8.7	197		0.61 H		43.5	1.2	
MW12	4/7/2020	N	0.17 U	880	0.78 J				1.9 J		46.7 U				70		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.70 J	160	9.3	192		0.31		37.6	4.2	
MW12	10/5/2020	N	0.17 U	0.089 U	0.92 J				1.8 J		46.7 U				81.1		6.9 U			0.45 J	0.15 U	0.19 J	0.15 U	0.82 J	153	8.6	172		0.35		34.2	3.1	
MW12	4/14/2021	N	1.0 U	480	0.65 J				1.5 J		100 U				143		20.0 U			0.31 J	0.50 U	0.50 U	0.50 U	1.2	155	11.3	188		0.31		27.9	5.3	
MW12	10/14/2021	N	0.20 J	1200	0.75 J				1.7 J		100 U				238 F1F2		20.0 U			2.6 F2	0.50 U	0.48 J	0.23 J	3.1	109	8.4 F1	189		0.30		15.2 F1	12.3	
MW12	4/13/2022	N	0.47 J	2700	0.59 J				3.2		94.2 J				294		20.0 U			4.4	0.50 U	0.83	0.30 J	4.6	160	15.9	118		0.20		22.2	17.7	
MW12	10/10/2022	N	0.39 J	0.099 U	0.77 J	0.73 J			2.3	2.9	100 U	100 U			567	575	20.0 U	20.0 U		5.5	0.50 U	0.82	0.35 J	4.6	166	20.2	130		0.24		22.6	18.8	
MW12	4/27/2023	N	0.47 J	2500	1.2	1.2	49300	50800	1.8 J	2.8	100 U	100 U	20400	21100	847	1030	20.0 U	20.0 U		5.8	0.50 U	1.0	0.15 J	5.9	174	22.5	127	123	0.30 J		22.5	20.0	
MW13	10/8/1997	N	10 U	0.7 J	2 U				3.32 U		6.7 J				27.3		2.7			0.1 U	1 U	1 U	1 U	1 U	70	2.7			1.4		1.4	17.9	
MW13	10/8/1997	N2		0.7 J																0.1 U	1 U	1 U	1 U										
MW13	4/5/2000	N		0.8 =																10 U													
MW13	12/5/2000	N	0.58 U	114 J	1 U				25 U		230				66		25 U			5.5 U	0.1 U	1 U	1 U	1 U	72	4.2	140		0.45		8.2	7.9	
MW13	12/5/2000	N2	0.58 U						92		26000				870		52			5.5 U	0.1 U	1 U	1 U	1 U			140						
MW13	4/23/2001	N	0.12 U	0.18	14				140		56300				1300		89			5.3 U	0.1 U	1 U	1 U	1 U	70	3.52	146		1.77		35	18	
MW13	4/23/2001	N2	0.12 U		0.24				25 U		25 U				110		25 U																
MW13	6/19/2001	N	0.12 U	0.11 U	1.1				68		32800				848		45			5.3 U	0.12	1 U	1 U	1 U	68	5.73	112		2.87 =		11	13	
MW13	6/19/2001	N2	0.12 U		9.1				6.1 J		141				26		25 U													2.87			
MW13	9/10/2001	N	10 U	0.69	3.9				49		14000				510		37			0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	75	5.4	100		2.5		7.5 U	9.5	
MW13	9/10/2001	N2			0.54 J				2.8 J		52 J				27		4.7 J																
MW13	8/5/2002	N	0.01 U	0.64	9.1				55.3		19000				580		39.5			5 U	1 U	5 U	5 U	5 U	86	6.8	110		0.15 U		8.4	6.3	
MW13	8/5/2002	N2			2.2 J				2.5 J		1300				45		9.1 J																
MW13	9/23/2003	N	0.5 U	2.9	3				55		24600				687		50			1 U	0.25 U	2.5 U	2.5 U	2.5 U	78	5.1	35.04		1.86		7	6	
MW13	9/23/2003	N2	0.5 U		1 U				8		960				182		10 U																
MW13	9/21/2004	N	10.0 UJ	4.67	1.52				32.4		8770				357		24.3 J			5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	68 J	6.5 J	667 J		2.4 J		6.4 R	6.30 R	

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Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L		
MW13	9/21/2004	N2			0.259 J				1.96 J		125 UJ				3.67 J		5.28 J																	
MW13	9/27/2005	N	2.0 UJ	0.85	1.0 J				18		6200				200		18 J				0.97 U	0.50 U	5.0 U	5.0 U	5.0 U	67 J	3.1 J	68		0.60 J		19 J	4.3	
MW13	9/27/2005	N2			1.0 UJ				2.5 J		50 U				7.1 J		20 U																	
MW13	9/18/2007	N	2.0 UJ	0.53 J	1.0 UJ				10 UJ		100 UJ				6.3 J		5.2 J			0.93 R	1.0 U	1.0 U	1.0 U	2.0 U	71 J	2.9	100 J		0.31 J		29 J	4.1 J		
MW13	10/21/2008	N	2.0 UJ	0.31 UJ	2 U				10 UJ		207			10500 J	10 U		20 U			1.00 U	0.50 U	2.0 U	2.0 U	5.0 U	55	1.90	110 J		0.45 J		10.10	3.44 J		
MW13	10/7/2009	N	0.83 UJ	0.16 J	2 UJ				3.2 J		50 UJ			4430 J	10 UJ		20 UJ			0.996 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ	30 J	2.12 J	45.46 J		0.77 J		9.71 J	13.9 J		
MW13	4/13/2016	N	0.50 U	0.34	5.0 U				3.2		449				13.4		20.0 U			0.21 U	0.50 U	1.0 U	1.0 U	2.0 U	51.0	1.4	54.9		0.70		3.4	4.2		
MW13	7/20/2016	N	0.50 U	1.1	5.0 U				1.5 J		19.4 J				5.0 U		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	39.5	0.91 J	86.0		1.0		2.2	2.1		
MW13	10/10/2016	N	0.50 U	0.37	0.87 J				2.3		23.2 J				0.94 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	49.3	0.98 J	56.0		0.58		3.1	1.9		
MW13	1/19/2017	N	0.080	0.33	0.35 J				3.1		17.1 J				1.1 J		6.2			0.064	0.28	0.26	0.23	0.24	50.8	0.71 J	52.0		0.49		3.6	2.2		
MW13	4/19/2017	N	0.50 U	0.24	5.0 U				1.1 J		100 U				0.28 J		20.0 U			0.21 U	0.50 U	1.0 U	1.0 U	2.0 U	53.7	0.76 J	60.0		0.50		4.4	2.2		
MW13	9/29/2017	N	0.25 J	0.27 J	1.0 U				1.6 J		53.5 J				1.4 J		20.0 U			0.79 U	0.50 U	0.50 U	0.50 U	1.0 U	59.0	1.4	47.6		0.56		3.3	2.0		
MW13	10/16/2018	N	1.0 U	0.35	1.0 U				1.8 J		100 U				3.2		20.0 U			0.79 U	0.50 U	0.50 U	0.15 J	1.0 U	54.9	0.83	47.7		0.41		2.8	2.4		
MW13	4/23/2019	N	0.17 U	0.30 ^	0.28 JB				2.3 B		46.7 U				1.6 JB		11.2 J			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	54.2	0.89	49.8		0.41		3.0	2.3		
MW13	10/14/2019	N	0.17 U	0.086 U	0.28 J				2.3		149				4.3		6.9 J			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	44.7	1.2	40.1		0.29 H		1.8	1.9		
MW13	4/9/2020	N	0.17 U	0.089 U	0.35 J				3.9		46.7 U				1.0 J		6.9 U			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	51.7	0.72	50.3		0.41		2.6	1.7		
MW13	10/6/2020	N	0.17 U	0.20	0.27 J				3.3		46.7 U				0.79 U		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	53.6	0.81	48.9		0.31		2.6	2.1		
MW13	4/12/2021	N	1.0 U	0.25	1.0 U				13.0 B		97.6 J				1.8 JB		20.0 U			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	55.1	0.61	52.5		0.37		2.5	1.8		
MW13	4/12/2021	FD	1.0 U	0.26	1.0 U				10.4 B		58.2 J				1.7 JB		20.0 U			0.83 U	0.50 U	0.50 U	0.50 U	1.0 U	62.3	0.61	52.8		0.37		2.5	1.9		
MW13	10/12/2021	N	1.0 U	0.30	0.23 J				6.7		100 U				2.1 J		20.0 U			0.79 U	0.50 U	0.50 U	0.50 U	1.0 U	66.6	0.51	55.9		0.30		2.5	1.9		
MW13	4/11/2022	N	1.0 U	0.37	0.25 J				7.5		100 U				1.8 J		20.0 U			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	66.0	0.30	37.9		0.33		2.5	2.3		
MW13	10/5/2022	N	1.0 U	0.32	0.24 J	0.23 J			1.7 J	1.9 J	100 U	51.4 J			2.5 U	1.6 J	20.0 U	20.0 U		0.81 U	0.50 U	0.50 U	0.50 U	1.0 U	65.8	0.60	38.8		0.48		2.3	2.1		
MW13	4/25/2023	N	1.0 U	0.32	0.23 J	1.0 U	12500	13000	2.1	2.1	100 U	151	4790	5090	2.5 U	4.4	20.0 U	20.0 U		0.69 U	0.50 U	0.50 U	0.50 U	1.0 U	52.9	0.64	32.5	31.1	0.51		1.9 J	2.1		
MW14	10/9/1997	N	10 U	1 U	2 U				2 U		20 U				4 J		4				0.1 U	1 U	1 U	1 U	120	8			1.6		2.4	1 U		
MW14	10/9/1997	N2		1 U	2 U				2 U								2 U				0.1 U	1 U	1 U	1 U										
MW14	4/6/2000	N		0.5 U																11 U														
MW14	6/19/2001	N	0.11 U	0.96	1.4				5.4 J		1070				57		25 U			239	0.1 U	1 U	1 U	1 U	104	12	124		2.06		3.48 J	6.41		
MW14	6/19/2001	N2	0.11 U		2				25 U		25 U				4.4		25 U												2.06 =					
MW14	1/23/2017	N	0.080	0.12	1.1 J				0.62 J		5.3				1.6 J		6.2			0.061	0.28	0.26	0.23	0.24	129	15.8	146		1.7		6.6	0.51 J		
MW14	10/3/2017	FD	0.11 J	0.099 U	1.0				0.74 J		100 U				0.93 J		20.0 U			0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	128	17.1	148		1.9		6.7	1.0 U		
MW14	10/3/2017	N	0.087 J	0.098 U	0.95 J				0.72 J		100 U				1.1 J		20.0 U			0.76 U	0.50 U	0.50 U	0.50 U	1.0 U	129	16.1	166		1.9		6.9	0.47 J		
MW14	5/31/2018	N	1.0 U	0.10 U	1.2				0.79 J		100 U				3.1		20.0 U			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	585	16.4	143		1.7		6.3	0.71 J		
MW14	10/17/2018	N	1.0 U	0.097 U	1.1				2.0 U		100 U				1.3 J		20.0 U			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	122	15.6	142		1.8		6.4	0.68 J		
MW14	4/25/2019	N	0.17 U	0.14	1.1				0.95 J		46.7 U				6.3		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	122	15.0	140		1.5		6.0 B	0.64 J		
MW14	10/16/2019	N	0.17 U	0.086 U	1.1				0.50 U		46.7 U				9.0 F2		6.9 U			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	123 H	17.5 F1	146		1.7		6.6 B	0.47 U		
MW14	4/8/2020	N	0.17 U	0.096 U	1.1				0.66 J		46.7 U				2.5		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	115	18.1	140		1.4		6	0.60 J		
MW14	10/5/2020	N	0.17 U	0.086 U	1.2				0.55 J		46.7 U				3.4		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	119	22.4	143		1.6		6.6	0.72 J		
MW14	4/15/2021	N	1.0 U	0.095 U	1				0.53 JB		100 U				1.2 J		20.0 U			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	122	20.2	145		1.5		5.6	0.69 J		
MW14	4/15/2021	FD	1.0 U	0.095 U	1				2.0 U		100 U				1.2 J		20.4			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	121	18.1	143		1.5		6.2	0.68 J		
MW14	10/14/2021	N	1.0 U	0.096 U	1.2				0.50 J		100 U				2.9		20.0 U			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	123	23.4	152		4.0 *		6.2	1.0 U		
MW14	10/14/2021	FD	1.0 U	0.096 U	1.2				0.64 J		100 U				3.0		20.0 U			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	128	21.3	148		1.4 *		12.4	1.0 U		
MW14	4/13/2022	N	1.0 U	0.098 U	1.1				0.50 J		100 U				1.3 J		20.0 U			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	115	17.7	101		0.95		6.0	1.0 U		
MW14	10/10/2022	N	1.0 U	0.097 U	1.0	1.2			0.53 J	0.50 J	100 U	49.5 J			2.5 U	2.8	20.0 U	20.0 U		0.83 U	0.50 U	0.50 U	0.50 U	1.0 U	127	28.7	111		1.6		6.6	0.66 J		
MW14	4/27/2023	N	1.0 U	0.096 U	1.3	1.5	42900	42200	2.0 U	2.0 U	100 U	100 U	13000	12600	2.5 U	2.5 U	20.0 U	20.0 U		0.65 U	0.50 U	0.50 U	0.50 U	1.0 U	127	23.1	105	107	1.4		5.9	0.62 J		

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L			
MW15	10/16/1997	N	10 U	1 U	2 U				2 U		8.2 J				62.2		2 U				0.1 U	1 U	1 U	1 U	190	6.5			4.1		6.3	1.2			
MW15	10/16/1997	N2		1 U	2 U				3.5 U								13.9				0.1 U	1 U	1 U	1 U											
MW15	4/4/2000	N		0.5 U																11 U															
MW15	4/25/2001	N	0.1 U	0.11 U	0.5				25 U		58				4.8		50			5.3 U	0.1 U	1 U	1 U	1 U	240	15	276		3.97	2.61	5.24				
MW15	4/25/2001	N2	0.1 U	0.11 U	0.31				25 U		25 U				15 U		15			5.6 U	0.1 U	1 U	1 U	1 U	246	16	276		3.97 =	4.05	3.7				
MW15	4/25/2001	N3	0.12 U		0.56				25 U		174				4.1		25 U			5.6 U									3.92						
MW15	4/25/2001	N4			0.42				25 U		25 U				15 U		16												3.92 =						
MW15	9/12/2001	N	10 U	0.077 J	0.95 U				2.9 J		35 U				0.31 J		35			0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	240	17	270		3.7	4.5 U	4.5				
MW15	9/12/2001	N2			0.95 U				5.7 J		63 J				2.7		36																		
MW15	8/6/2002	N	0.01 U	0.04 U	3.7				1.6 J		130				2.8 J		17 J			5 U	1 U	5 U	5 U	5 U	230	16	250		0.15 U	4.7	53				
MW15	8/6/2002	N2			2.6				0.3 U		11 U				0.42 U		11 J																		
MW15	9/23/2003	N	0.5 U	0.1 U	1 U				1 J		280				9 J		10 J			0.99 U	0.25 U	2.5 U	2.5 U	2.5 U	213	17.4	88.57		3.8	2 U	1.8				
MW15	9/23/2003	N2	0.5 U		1 U				1 U		50 U				5 U		10 U																		
MW15	9/21/2004	N	10.0 U	0.279	0.468 J				1.74 J		36.7				3.15 J		20.8 J			1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	230	16 =	1020		3.2 J	3.9 J	12.7				
MW15	9/21/2004	N2			0.482 J				0.648 J		5.57 J				0.976 J		8.97 J																		
MW15	9/29/2005	N	2.0 U	0.11 U	1.0 UJ				2.4 J		420 J				15 J		20 UJ			0.93 U	0.50 U	5.0 U	5.0 U	5.0 U	220 J	17 J	300 J		4.2 J	5.8 R	0.84 J				
MW15	9/29/2005	N2			1.0 UJ				10 UJ		50 UJ				1.6 J		20 UJ																		
MW15	9/27/2006	N	2.0 UJ	0.11 U	1.0 UJ				3.5 J		50 UJ				2.0 UB		13 J			0.91 U	0.50 U	5.0 U	5.0 U	5.0 U	260 J	14 J	250		4.7 J	5.9 J	2.1				
MW15	9/19/2007	N	2.0 UJ	0.10 U	0.68 J				10 UJ		100 UJ				10 UJ		20 UJ			1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	250	15	250 J		5.7	13 J	1.3 J				
MW15	5/20/2008	N	2.0 UJ	0.18 J	0.40 J				1.0 J		100 UJ				0.52 J		20 U			0.93 U	1.0 UJ	1.0 U	1.0 U	2.0 UJ	260 =	14	290		4.7	6.6	0.85 J				
MW15	10/21/2008	N	2.0 UJ	0.10 UJ	2 U				10 UJ		854			45400	10 U		20 U			1.00 U	0.5 U	2.0 U	2.0 U	5.00 U	265	14.60	567 J		6.05 J	6.99	13.60 J				
MW15	6/2/2009	N	0.8 UJ	0.1 UJ	2 U				10 UJ		301 =			30600 =	10 U		20 U			1.0 UJ	0.5 U	0.21 J	2.0 U	5.0 U	279 J	13.5	375.2114		5.33 J	6.42	1.7 UJ				
MW15	10/7/2009	N	0.83 UJ	0.1 UJ	2 UJ				3 J		293 J			25500 J	10 UJ		5.4 J			0.999 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ	260 J	12.9 J	294.28 J		4.74 J	6.52 J	1.49 J				
MW15	5/18/2010	N	1.3 U	0.1 U	2 UJ				10 UJ		194. J			24400. J	10 UJ		20 UJ			1.0 U	0.5 U	5 U	5 U	5 U	300	10.7	342		4.57 J	6.3	26.7 UB				
MW15	10/7/2010	N	1.3 U	2.32 J	2 U				8 U		311			38400	16.7 U		20 U			1.0 UJ	0.5 UJ	2 UJ	2 UJ	5 UJ	252	13.2 J	430		5.49 J	6.9 J	1.0 U				
MW15	6/28/2011	N	0.9 U	0.1 U	2 UJ				10 U		205			23100	10 U		20 U			0.998 U	0.1 U	0.4 U	0.4 U	1 U	239	12.1 J	307.00		5.2 J	6.91	0.77 J				
MW15	10/18/2011	N	0.50 U	0.10 U	0.70 J				2.7 J+		50 U			24000 B	1.7 J		10 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	240	12	261.00		4.8 J	5.3	1.0 J				
MW15	5/22/2012	N	0.50 U	0.024 J	2.0 U				10 U		50 U			24000 =	10 U		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	260	11	266.00		4.6 J	5.1 J	1.2				
MW15	10/16/2012	N	0.50 U	0.094 U	0.97 J				10 U		50 U			24000 =	10 U		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	250	12	271		5.3 J	5.0 U	0.69 J				
MW15	5/21/2013	N	0.50 U	0.025 J	2.0 U				10 U		50 U			26000 B	10 U		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	280	9.8			4.7 J	5.9	0.82 J				
MW15	10/8/2013	N	0.50 U	0.095 U	0.36 J				10.0 U		50 U			23000 B	10 U		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	220	11			5.2 J	6.5	0.50 J				
MW15	5/13/2014	N		0.095 U																															
MW15	9/23/2014	N	0.50 U	0.054 J	1.1 J				2.0 U		28 J				1.9 J		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	210	11	250		5.3	5.6	0.85 J				
MW15	4/20/2015	N	0.50 U	0.094 U	0.78 J				2.0 U		100 U				1.1 J		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	190	11	270		5.6	5.7	0.44 J				
MW15	10/12/2015	N	0.50 U	0.094 U	0.54 J				1.0 J		100 U				5.0 U		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	224	12.0	302		6.7	5.8	0.55 J				
MW15	4/5/2016	N	0.50 U	0.078 J	0.70 J				1.7 J		100 U				5.0 U		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	207	12.5	312		0.45	6.3	0.49 J				
MW16	10/14/1997	N	10 U	1 U	17.1				438		15.3 J				10300 J		210			0.1 U	1 U	1 U	1 U	170	6.1			2.6		8.1	3				
MW16	10/14/1997	N2		1 U	2 U				2.7 U								1.9 J			0.1 U	1 U	1 U	1 U												
MW16	4/6/2000	N		0.5 U																10 U															
MW16	4/23/2001	N	0.12 U	0.11 U	6.5				62		22300				1460		136			5.6 U	0.1 U	1 U	1 U	1 U	90	3.57	164		8.69 =	29	4.4				
MW16	4/23/2001	N2	0.12 U		1 U				25 U		26				9.4		23												8.69						
MW16	9/10/2001	N	10 U	0.17	1.8				23 U		5500				520		19			0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	79	1.8	120		5.8	11	0.34 U				
MW16	9/10/2001	N2			0.29 U				2.2 U		35 U				0.82 J		4.5 J																		
MW16	8/6/2002	N	0.01 U	0.035 J	3.5				25 J		6800				14		760 J			5 U	1 U	5 U	5 U	5 U	130	2	120		0.15 U	13	1.3				
MW16	8/6/2002	N2			1.4 U				0.3 U		78				9.1 J		13 J																		

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L		
MW16	9/23/2003	N	0.5 U	0.089 J	2 J				18		7470				532		10 J			1.1 U	0.25 U	2.5 U	2.5 U	2.5 U	82	6.2	37.96		3.49		3 J	2.3		
MW16	9/23/2003	N2	0.5 U		1 U				1 U		50 U				5 U		10 U																	
MW16	9/21/2004	N	10.0 U	0.0962 J	0.277 J				4.07 J		570				74.7		8.71 J			1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	82	3.7 =	1220		2.1 J		5.5 J	4.28		
MW16	9/21/2004	N2			0.135 J				0.509 J		25.0 U				0.617 J		2.79 J																	
MW16	9/29/2005	N	2.0 U	0.11 U	1.0 UJ				7.6 J		1000 J				130 J		8.1 J			1.0 U	0.50 U	5.0 U	5.0 U	5.0 U	82 J	11 J	190 J		1.5 J		71 R	0.83 J		
MW16	9/29/2005	N2			1.0 UJ				2.9 J		50 UJ				2.1 J		20 UJ																	
MW16	9/27/2006	N	2.0 UJ	0.046 J	1.0 UJ				10 UJ		50 UJ				0.59 UB		20 UJ			0.92 U	0.50 U	5.0 U	5.0 U	5.0 U	83 J	4.1 J	100		1.2 J		32 J	1.3		
MW16	9/18/2007	N	2.0 UJ	0.20 J	1.0 UJ				10 UJ		100 UJ				10 UJ		20 UJ			0.99 R	1.0 U	1.0 U	1.0 U	2.0 U	81 J	4.5	120 J		1.2 J		23 J	1.3 J		
MW16	10/22/2008	N	2.0 UJ	0.08 J	2 UJ				10 UJ		318 J			19400 J	20 J		20 UJ			1 U	0.5 U	2.0 U	2.0 U	5 U	51 J	7.51	175 J		0.99 J		43.2	92.3		
MW16	10/6/2009	N	0.83 UJ	0.1 UJ	2 UJ				6.6 J		458 J			8360 J	48.6 J		20 UJ			0.998 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ	40 J	6.35 J	81.869 J		1.03 J		36.7 J	1 UJ		
MW16	10/5/2010	N	1.3 U	0.1 U	2 U				8 U		50 U			2910 R	16.7 U		20 U			1.0 U	0.1 U	0.4 U	0.4 U	1 U	39	5.7 J	29.3		0.63 J		6.3 J	15.7		
MW16	10/19/2011	N	0.50 U	0.095 U	0.44 J				2.2 J+		130			3200 B	14		10 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	32	4.2	30.70		0.63 J		12	1.0 U		
MW16	10/16/2012	N	0.50 U	0.099 U	0.66 J				10 U		180			3600 =	17		20 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	37	4.6	39.8		0.52 J		17 J	1.3		
MW16	10/8/2013	N	0.50 U	0.029 J	0.61 J				10.0 U		1500 B			3300 B	100 B		59 J			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	34	6.2			0.57 J		6.3	1.1		
MW16	9/23/2014	N	0.50 U	0.036 J	0.41 J				2.0 U		100 U				5.0 U		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	31	5.4	60		0.54		2.8	1.1		
MW16	10/13/2015	N	0.50 U	0.098 U	5.0 U				1.0 J		45.2 J				2.1 J		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	48.4	4.3	84.4		0.61		5.9	0.70 J		
MW16	4/6/2016	N	0.50 U	0.096 U	5.0 U				1.9 J		168				14.6		20.0 U			0.11 J	0.50 U	1.0 U	1.0 U	2.0 U	32.6	2.2	31.8		0.41		2.6	2.3		
MW16	7/19/2016	N	0.50 U	0.094 U	5.0 U				2.2		114				11.5		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	32.4	2.2	34.0		0.42		2.6	5.8		
MW16	10/12/2016	N	0.50 U	0.18	0.40 J				1.7 J		61.7 J				5.3		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	33.1	2.4	24.0		0.30		2.2	0.58 J		
MW16	1/18/2017	N	0.080	0.015	0.47 J				1.3 J		11.5 J				1.2 J		6.2			0.060	0.28	0.26	0.23	0.24	31.3	3.2	46.0		0.46		3.6	1.1		
MW16	4/19/2017	N	0.50 U	0.10 U	5.0 U				1.6 J		7.7 J				0.80 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	39.0	3.3	60.0		0.57		4.5	2.0		
MW16	10/2/2017	N	0.11 J	0.096 U	1.0 U				2.5		100 U				2.0 J		8.8 J			0.90 U	0.50 U	0.50 U	0.50 U	1.0 U	43.7	4.0	45.7		0.73		6.6	0.82 J		
MW16	10/16/2018	N	1.0 U	0.10 U	0.26 J				3.2		100 U				2.5 U		13.0 J			0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	32.0	4.5	28.6		0.74		3.5	1.8		
MW16	4/24/2019	N	0.17 U	0.24	0.37 J				1.9 J		169				15.7		9.0 J			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	34.1	4.7	39.4		0.63		4.7 B	0.74 J		
MW16	10/14/2019	FD	0.17 U	0.087 U	0.26 J				2.4		105				4.2		6.9 U			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	43.2	3.8	37.9		0.55 H		4.4	0.47 U		
MW16	10/14/2019	N	0.17 U	0.086 U	0.27 J				1.6 J		60.3 J				4		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	42.8	3.9	37.5		0.55 H		4.4	0.47 U		
MW16	4/7/2020	N	0.17 U	0.52	0.34 J				5.3		46.7 U				0.79 U		8.6 J			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	44.1	2.2	35.4		0.56		3.3	0.47 U		
MW16	10/5/2020	N	0.17 U	0.087 U	0.24 J				3.5		46.7 U				0.79 U		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	56.3	2.0	49.9		0.59		3.8	0.94 J		
MW16	4/14/2021	N	1.0 U	0.096 U	0.31 J				3.6		100 U				2.5 U		20.0 U			0.76 U	0.50 U	0.50 U	0.50 U	1.0 U	76.6	0.91	61.5		0.55		2.6	0.84 J		
MW16	10/14/2021	N	1.0 U	0.095 U^c	0.37 J				1.9 J		100 U				2.5 U		20.0 U			0.83 U	0.50 U	0.50 U	0.50 U	1.0 U	106	0.63	77.4		0.48		4.3	1.0 U		
MW16	4/13/2022	N	1.0 U	0.45	0.29 J				1.3 J		100 U				2.5 U		20.0 U			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	131	0.52	53.9		0.33		1.6	1.0 U		
MW17	10/15/1997	N	10 U	1 U	2 U				2		10 U				2 U		17.6				0.1 U	1 JB	1 U	0.6 J	180	4.8			4.1		10	0.7 J		
MW17	10/15/1997	N2		1 U	2 U				2.3 U								2.5				0.1 U	1 J	1 U	0.6 J										
MW17	10/28/1997	N		5																														
MW17	4/6/2000	N		0.5 U																11 U														
MW17	4/26/2001	N	0.12 U	0.72	0.6				25 U		33				15 U		12			54	0.1 U	1 U	1 U	1 U	202	4.12	228		4.98		6.82	1.57		
MW17	4/26/2001	N2	0.12 U		0.69				25 U		25 U				15 U		25 U													4.98 =				
MW17	9/11/2001	N	10 U	0.059 U	0.94				2.2 U		330				0.27 U		3.7 U			0.29 U	0.44 U	0.5 U	0.4 U	1.2 U	180	4.8	210		4.4		9.3 U	1 J		
MW17	9/11/2001	N2			1				2.2 U		310				0.27 U		3.7 U																	
MW17	8/8/2002	N	0.01 U	0.032 J	3				0.47 J		11 U				0.42 U		0.98 U			5 U	1 U	5 U	5 U	5 U	200	4.6	210		0.15 U		7.4	0.73		
MW17	8/8/2002	N2			1.9 J				0.3 U		11 U				0.42 U		15 J																	
MW17	9/25/2003	N	0.5 U	0.46	1 U				1 U		50 U				18		10 U			0.96 U	0.25 U	2.5 U	2.5 U	2.5 U	184	4.4	71.56		5.1		2 U	2.1		
MW17	9/25/2003	N2	0.5 U		1 U				1 U		50 U				5 U		10 U																	
MW17	9/22/2004	N	10.0 UJ	2.82	0.0787 J				0.774 J		11.5 UB				0.371 J		2.46 J			5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	190 J	4.1 J	1100 J		4.8 J		8.6 R	1.67 R		
MW17	9/22/2004	N2			0.782 J				0.847 J		13.9 J				45.0 J		2.09 J																	

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Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L		
MW17	9/27/2005	N	2.0 UJ	0.054 J	1.0 UJ				10 U		50 U				0.44 J		20 U			0.92 U	0.50 U	5.0 U	5.0 U	5.0 U	160 J	3.9 J	180		5.1 J		7.8 J	0.91 J		
MW17	9/27/2005	N2			1.0 UJ				10 U		50 U				10 U		20 U																	
MW17	9/26/2006	N	2.0 UJ	0.11 U	1.0 UJ				10 UJ		50 UJ				10 UJ		7.5 J			0.91 U	0.50 U	5.0 U	5.0 U	5.0 U	170 J	2.9 J	170		5.5 J		6.5 J	1.1		
MW17	9/19/2007	N	2.0 UJ	0.099 U	1.0 J				10 UJ		100 UJ				10 UJ		20 UJ			0.94 U	1.0 U	1.0 U	1.0 U	2.0 U	160	4.7	160 J		5.6		14 J	1.2 J		
MW17	10/22/2008	N	2.0 UJ	0.1	2 UJ				10 UJ		374 J			29200 J	10 UJ		20 UJ			1 U	0.5 U	2.0 U	2.0 U	5 U	155 J	7.78	295 J		5.75 J		7.75	20.2		
MW17	10/6/2009	N	0.83 UJ	0.1 UJ	2 UJ				10 UJ		160 J			26700 J	10 UJ		20 UJ			0.995 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ	60 J	6.54 J	295.228 J		1.65 J		6.86 J	1 UJ		
MW17	10/5/2010	N	1.3 U	0.1 U	2 U				10 U		163			20500	10 U		20 U			1.0 U	0.1 U	0.4 U	0.4 U	1 U	160	11.6 J	225		5.18		9.7 J	1.6		
MW17	10/18/2011	N	0.50 U	0.095 U	1.1 J				2 U		50 U			17000 B	10 U		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	140	16	180.00		3.9		24	0.89 J		
MW17	10/16/2012	N	0.50 U	0.095 U	1.2 J				10 U		50 U			17000 =	10 U		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	150	16	187		4.7		23 J	0.59 J		
MW17	10/8/2013	N	0.50 U	0.095 U	0.72 J				10.0 U		50 U			18000 B	10 U		20 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	140	16			4.5 J		36	0.40 J		
MW17	9/24/2014	N	0.50 U	0.097 U	0.83 J				2.0 U		100 U				1.3 J		20 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	150	15	250		4.8		40	0.72 J		
MW17	10/13/2015	N	0.50 U	0.095 U	1.1 J				2.0 U		100 U				5.0 U		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	184	14.8	265		4.2		45.3	0.59 J		
MW17	4/5/2016	N	0.50 U	0.095 U	0.81 J				1.8 J		100 U				5.0 U		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	173	13.6	289		3.5		85.4	0.46 J		
MW17	7/19/2016	N	0.50 U	0.095 U	0.84 J				1.4 J		100 U				5.0 U		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	195	14.7	336		2.8		142	0.52 J		
MW17	10/11/2016	N	0.50 U	0.094 U	0.80 J				0.76 J		100 U				0.28 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	208	17.0	348		2.7		136	0.36 J		
MW17	1/23/2017	FD	0.080	0.015	0.76 J				0.66 J		5.3				0.25		6.2			0.060	0.28	0.26	0.23	0.24	213	17.4	380		2.1		167	0.50 J		
MW17	1/23/2017	N	0.13 J	0.099	0.73 J				1.4 J		5.3				0.25		6.2			0.060	0.28	0.26	0.23	0.24	202	17.4	390		2.1		167	0.81 J		
MW17	4/20/2017	FD	0.50 U	0.10 U	0.68 J				0.65 J		100 U				0.58 J		20.0 U			0.24 U	0.50 U	1.0 U	1.0 U	2.0 U	223	16.1	470		2.2		165	0.43 J		
MW17	4/20/2017	N	0.50 U	0.10 U	0.71 J				0.77 J		100 U				0.45 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	201	16.1	460		2.2		164	0.48 J		
MW17	10/3/2017	N	0.096 J	0.099 U	0.74 J				1.8 J		100 U				2.5 U		20.0 U			0.85 U	0.50 U	0.50 U	0.50 U	1.0 U	212	17.2	390		3.5		125	1.0 U		
MW17	5/31/2018	N	1.0 U	0.096 U	0.79 J				1.7 J		100 U				2.5 U		20.0 U			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	194	14.9	311		3.3		98.2	0.77 J		
MW17	10/17/2018	N	1.0 U	0.11 U	0.63 J				1.1 J		100 U				2.5 U		20.0 U			0.81 U	0.50 U	0.50 U	0.15 J	1.0 U	185	13.6	317		2.9		106	0.61 J		
MW17	4/22/2019	N	0.17 U	0.087 U	0.80 JB				1.3 JB		46.7 U				1.2 JB		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	187	12.4	335		2.2		140	1.2		
MW17	10/15/2019	N	0.17 U	0.087 U	0.55 J				1.0 J		46.7 U				0.79 U		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	193	13.8	338		2		128	0.47 U		
MW17	4/7/2020	N	0.17 U	0.085 U	0.88 J				1.3 J		46.7 U				0.79 U		6.9 U			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	181	12.6	310		1.8		131	0.47 U		
MW17	10/5/2020	N	0.17 U	0.095 U	0.70 J				1.9 J		46.7 U				0.79 U		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	191	13.1	335		1.8		151	0.68 J		
MW17	4/15/2021	N	1.0 U	0.3	0.68 J				1.3 JB		100 U				2.5 U		20.0 U			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	188	11	317		1.5		113	0.56 J		
MW17	10/13/2021	N	1.0 U	0.095 U	0.87 J				1.0 J		100 U				1.2 J		20.0 U			0.76 U	0.50 U	0.50 U	0.50 U	1.0 U	196	7.4	294		1.4 H		108	1.0 U		
MW17	4/11/2022	N	1.0 U	0.098 U	0.58 J				0.55 J		100 U				2.5 U		20.0 U			0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	200	11.6	192		1.3		108	1.0 U		
MW17	10/10/2022	N	1.0 U	0.10 U	0.77 J	0.72 J			0.63 J	0.81 J	100 U	100 U			2.5 U	2.5 U	20.0 U	20.0 U		0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	204	11.1	191		1.4		95.4	1.0 U		
MW17	5/2/2023	N	1.0 U	0.098 U	0.70 J	0.76 J	68600	70100	1.7 J	1.3 J	100 U	100 U	26200	26700	2.5 U	2.5 U	20.0 U	20.0 U		0.66 U	0.50 U	0.50 U	0.50 U	1.0 U	196	8.6	175	171	1.2		82.9	0.56 J		
MW18	10/10/1997	N	10 U	27000 J	8.2				43.5 J		32000 J				10600		2.6			0.1 U	2	16	19	260	49				0.1 U		11	154		
MW18	10/10/1997	N2		27000 E	8.9				62.5								5.3			0.1 U	2	16	19											
MW18	6/19/2001	N	0.13 U	27400	4.9				21 J		13700				6650		25 U			5 U	1.1	14	10 U	20	168	19	182		0.13 U		33 J	6.63		
MW18	6/19/2001	N2	0.13 U		5				43		15200				6540		25 U																	
MW19	10/16/1997	N	10 U	19000 J	2 U				38 J		10 U				2690 J		46			0.2	1 U	1 U	0.2 J	180	47				3.8		19	32.8		
MW19	10/16/1997	N2		19000 E	2 U				3.4 U								2 U			0.2	1 U	1 U	0.2 J											
MW19	4/7/2000	N		11800 =																5260 U														
MW19	4/7/2000	N2		11000 J																22 =														
MW19	4/26/2001	N	0.5	25600	2.2				38		10000				1840		27			325 =	1 U	10 U	10 U	10	236	39	323		3.37 =		47	33		
MW19	4/26/2001	N2	0.5		1 U				25 U		25 U				1790		25 U			325	10 U	100 U	100 U	100 U					3.37					
MW19	9/12/2001	N	16	400000	0.29 U				6.4 J		71 J				1800		5.8 J			240	0.44 U	1.9 U	1.7 U	28	320 J	19	270		1.3		9.7 U	34		
MW19	9/12/2001	N2			1.7 J				44		5600				2100		53 J																	
MW19	5/13/2002	N		14000	1.4 U				5.1 J		11.2 U				2070		9.4 J			190														

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L		
MW19	8/8/2002	N	0.01 U	11000 J	7				30.2		719				3100		290			210	1 U	2 J	1 J	29	130	22	4 U		0.16		16	65		
MW19	8/8/2002	N2			1.4 U				7.1 J		218				3110		5.7 J																	
MW19	4/29/2003	N	2.4	4900	2 J				24		2030				3670		10 U			1200	500 U	5000 U	5000 U	5000 U	118	19.6	162		3		27	53		
MW19	4/29/2003	N2	2.4		1 U				5		25 U				3590		10 U																	
MW19	9/25/2003	N	5.7	15000	1 U				27		950				2210		10 U			3200	1 U	10 U	10 U	46.6	160	17.5 J	71.57		2 J		90 J	129 J		
MW19	9/25/2003	N2	5.7		1 U				9		50 J				4470		10 U													2 J				
MW19	5/4/2004	N	1.13 J	70000 J	0.284 J				22.2 R		892 R			17600	4040 R		11.6 R			201	2.50 U	2.13 J	1.98 J	30.0	144	25 =	176		0.71 J		16 R	43.7 J		
MW19	5/4/2004	N2			0.169 J				5.77 R		31.4				3360 R		6.93 R																	
MW19	9/22/2004	N	10.0 UJ	111000	1.00 UJ				13.5 J		402 J				3160 J		16.7 J			260	0.500 U	3.45 J	2.25 J	50.3	110 J	15 J	1120 J		1.5 J		23 R	31.3 R		
MW19	9/22/2004	N2			0.159 J				6.26 J		125 U				2650		16.0 J																	
MW19	5/10/2005	N	2.0 U	45000 J	1.0 U				6.3 J		50 U				2300		9.8 J			2300 =	100 UJ	1000 UJ	1000 UJ	1000 UJ	97 J	18 J	140 J		0.76 J		29 R	35 R		
MW19	5/10/2005	N2			1.0 U				15		630				2100		8.4 J																	
MW19	9/29/2005	N	2.0 U	13000 =	1.0 UJ				11 J		97 J				2600 J		20 UJ			78	0.50 U	1.2 J	1.1 J	18	140 J	19 J	5 UJ		0.75 J		40 R	32 J		
MW19	9/29/2005	N2			1.0 UJ				5.0 J		50 UJ				2700 J		20 UJ																	
MW19	6/7/2006	N	2.0 U	17000 J	1.0 UJ				4.4 J		50 UJ				2700 J		20 UJ			59	0.50 U	1.5 J	1.3 J	22	120 J	18 J	360 J		0.76 J		36 =	20 J		
MW19	9/27/2006	N	2.0 UJ	8200 J	1.0 U				6.4 J		50 U				3100		20 U			69	0.50 U	1.4 J	1.2 J	19	160 J	14	190		0.66 J		30 =	35		
MW19	5/9/2007	N	2.0 UJ	11000 J	1.0 UJ				3.7 J		100 UJ				2600		20 UJ			54 J	1.0 U	1.4	1.5	17	230 =	15	160		0.29		59 J	33 UB		
MW19	9/21/2007	N		3500 J	1.0 UJ				4.0 J		100 UJ				3100		20 UJ			47 R	1.0 U	1.8	2.0	21	190 J	17	240 J		0.28		42 J	38 J		
MW19	5/20/2008	N	2.0 U	23000 J	1.0 U				3.4		100 UJ				2900		2.3 J			140	1.0 UJ	5.0	4.8	54 J	220 =	16	260		0.44		42	18 J		
MW19	10/24/2008	N	2.1 J	27900	2 UJ				5 J		510 J			28700 J	4850 J		20 UJ			120	0.5 U	5.11	5.08 =	50.3	221 J	15.9	373 J		0.04 J		46.2	29.8		
MW19	6/2/2009	N	3.9 J	18600 J	2 U				10 UJ		222 =			29900 =	4050 =		20 U			110 J	0.5 U	7.93	6.66	74.6	249 J	12.8	317.6445		0.01 UB		44.7	13		
MW19	10/7/2009	N	2 J	31800 J	2 UJ				3.8 J		237 J			27400 J	3190 J		7.2 J			137 J	0.1 UJ	7.62 J	5.77 J	60.7 J	228 J	14.3 J	271.39 J		0.05 UJ		42 J	20.4 J		
MW19	5/20/2010	N	1.4	26000.	2 UJ				3.2 J		92.2 UJ			19900. J	1870. J		20 UJ			123.	0.5 U	7.95	5.65	64.3	136	21.5	199		0.05 UJ		32.4	50.4 UB		
MW19	10/7/2010	N	1.3 U	4470 J	2 U				2.9 J		114			7130	942		20 U			102 J	0.5 UJ	3.21 J	1.7 J	44.7 J	84	13.6 J	77.8		0.10 UJ		18.7 J	17.4		
MW19	6/29/2011	N	0.9 U	8880	2 UJ				14.8 J		131			9550	1300		20 U			42.1	0.1 U	1.12	1.09	22.7	43	16.6 J	90.00		0.26		20.1	85.4		
MW19	10/20/2011	N	0.33 J	13000	2.0 U				12 B		52 J+			8600 B	1700		14 J+			2.8	0.84 U	1.1 J	1.0 J	23	57	19	85.40		0.30		17	92		
MW19	5/22/2012	N	0.71	5300	2.0 U				7.6 J		50 U			7600 =	1300		20 U			50	2.0 U	0.88 J	0.76 J	16	51	15	76.20		1.1		12	38		
MW19	10/17/2012	N	0.50 U	8100	2.0 U				6.9 J		50 U			5800 =	900		20 U			8.4	2.0 U	4.0 U	0.67 J	9.7	36	12	66.3		1.4		11 J	27		
MW19	5/22/2013	N	0.84 J	5800	2.0 U				7.3 J		50 U			8700 B	1100 B		20 U			29 J	0.50 U	0.99 J	1.5	19	54	14		1.1 J		11	45			
MW19	10/10/2013	N	0.50 U	7900	0.26 J				10.0 UJ		50 UJ			5800 J	990 J		20 UJ			3.0	2.5 U	5.0 U	1.1 J	15	36 B	12		1.1 J		11	31			
MW19	5/14/2014	N		18000																														
MW20	10/15/1997	N	10 U	29000 J																	0.1 U	1 U	1 U	0.1 U										
MW20	4/26/2001	N	2.73	36600	8.2				196		33200				3120		126			9970 =	1 U	10 U	10 U	29	198	24	301		0.13 U		67	478		
MW20	4/26/2001	N2	2.73		1.1				14		841				2250		23			9970	10 U	100 U	100 U	71										
MW20	9/12/2001	N	10 U	83000	3.6				81		7900				3200		36			890	0.44 U	3.4 U	4.1 U	37	260 J	16	250		0.15 J		24	65		
MW20	9/12/2001	N2			1.5				15 U		35 U				2800		12 U																	
MW20	8/7/2002	N	0.01 U	30000 J	8.9				87.4		4910				3520		16.6 J			1400	1 U	12	9	120	220	22	4 U		0.15 U		25	71		
MW20	8/7/2002	N2			2.6				5.8 J		206				3280		15.4 J																	
MW20	9/25/2003	N	5.4	13000	2 J				58		7220				3310		20 J			830	1 U	10 U	10 U	60.9	233	19.4 J	86.67		1.25 U		80 J	150 J		
MW20	9/25/2003	N2	5.4		1 U				11		350				3250		10 J																	
MW20	9/22/2004	N	10.0 UJ	133000	1.00 UJ				30.4 J		1320 J				2770 J		18.7 J			282	2.50 U	3.01 J	3.21 J	40.3	190 J	24 J	1320 J		0.29 J		23 R	46.3 R		
MW20	9/22/2004	N2			0.498 J				35.2 J		2070				2320		47.0 J																	
MW20	10/25/2005	N	2.0 UJ	63000 =	1.0 U				16 J		780 J				2300 J		20 UJ				0.50 U	5.5	5.4	62	170 J	13 J	190 J		2.1 J		39 R	21 R		
MW20	10/25/2005	N2			1.0 UJ				2.7 UJ		140 J				2400 J		20 UJ																	
MW20	9/27/2006	FD	2.0 UJ	44000 J	1.0 UJ				4.8 J		94 J				4200		20 U			180 =	0.50 U	5.1	4.1 J	53	230 J	16	380		0.19		65 =	22		

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MW20	9/27/2006	N	2.0 UJ	35000 J	1.0 U				3.8 J		48 J				4200		20 U			160 =	0.50 U	4.8 J	4.1 J	51	220 J	16	240		0.22		71 =	23	
MW20	9/21/2007	N	2.0 U	9500 J	1.0 UJ				10 UJ		100 UJ				4800		20 UJ			71 R	1.0 U	6.4	4.4	62	230 J	18	300 J		0.10 U		98 J	13 J	
MW20	10/23/2008	N	2.0 UJ	41000	2 UJ				17.3 J		462			31700 J	3400 J		20 UJ			1150	0.5 U	2.99 =	2.94 =	38.7	127 J	15.7	332 J		0.13 J		28.9	121	
MW20	4/20/2017	FD	0.50 U	0.10 U	0.99 J				2.0 U		100 U				0.64 J		20.0 U			0.22 U	0.50 U	1.0 U	1.0 U	2.0 U	133	14.7	188		1.7		7.0	0.49 J	
MW20	4/20/2017	N	0.50 U	0.10 U	1.0 J				0.37 J		100 U				0.33 J		20.0 U			0.21 U	0.50 U	1.0 U	1.0 U	2.0 U	131	14.8	186		3.5		7.0	0.47 J	
MW21	2/9/1998	FD	10	1	3.1				83.9		7.3 U				1380		98.9				0.1 U	1 U	1 U	1 U	196	67.3					8.9	0.47 U	
MW21	2/9/1998	FD2			2 U				9.5 U								33.8																
MW21	2/9/1998	N	11	1 U	3				70.1		5.5 U				1210		113				0.1 U	1 U	1 U	1 U	176	70.6					9.1	0.47 U	
MW21	2/9/1998	N2		1 U	2 U				9.5 U								32.6 U				0.1 U	1 U	1 U	1 U									
MW21	5/14/2002	N			1.9 J				1.3 J		130				9.7 J		11 J																
MW21	8/6/2002	N		0.035 J	4.4				50		10000				930		29			5 U	1 U	5 U	5 U	5 U	120	49	150		0.15 U		9.6	8.3	
MW21	8/6/2002	N2			1.6 J				0.3 U		11 U				0.63 J		6.8 J																
MW21	4/29/2003	N	0.5 U	0.15	1 U				12		3440				227		10 U			7.4 U	0.5 U	5 U	5 U	5 U	144	41	169		2.5		12	1.5	
MW21	4/29/2003	N2	0.5 U		1 U				1 U		25 U				5 U		10 U																
MW21	9/24/2003	N	0.5 U	0.063 J	1 U				260		68400				3750		150			1 U	0.25 U	2.5 U	2.5 U	2.5 U	165	48	81.46		2.62		2 U	3.6	
MW21	9/24/2003	N2	0.5 U		1 U				1 U		50 UJ				5 U		10 U																
MW21	5/4/2004	N	10.0 U	0.135 UB	2.31 J				72.5 R		14000 R			19300	1970 R		46.5 R			5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	165	67 =	188		2.3 J		3.6 R	3.12 J	
MW21	5/4/2004	N2			0.122 J				1.28 R		28.6 R				0.718 R		4.48 R																
MW21	9/21/2004	N	10.0 UJ	0.474	1.80 J				48.2 J		10300 J				983 J		32.6 J			5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	150 J	63 J	1030 J		2.4 J		4.8 R	2.76 R	
MW21	9/21/2004	N2			0.130 J				0.955 J		25.0 UJ				0.484 J		3.30 J																
MW21	5/10/2005	N	2.0 U	0.33	1.0 U				10 U		50 U				0.47 J		20 U			0.98 U	0.50 U	5.0 U	5.0 U	5.0 U	130 J	49 J	170 J		2.8 J		12 R	2.2 R	
MW21	5/10/2005	N2			1.0 U				25		6200				480		16 J																
MW21	9/27/2005	N	2.0 UJ	0.046 J	7.1				230		56000				3400		110			0.91 U	0.50 U	5.0 U	5.0 U	5.0 U	130 J	47 J	370		2.4 J		17 J	1.2	
MW21	9/27/2005	N2			1.0 UJ				2.6 J		36 J				9.8 J		20 U																
MW21	6/1/2006	N	2.0 U	0.023 J	1.0 UJ				10 UJ		47 J				17 J		20 UJ			0.99 U	0.50 U	5.0 U	5.0 U	5.0 U	140 J	65 J	140		2.7 J		20	1.5 J	
MW21	5/8/2007	N	2.0 UJ	0.098 UJ	1.0 UJ				10 UJ		100 UJ				10 UJ		4.2 J			1.0 R	1.0 U	1.0 U	1.0 U	2.0 U	210 =	33 J	120		4.2		9.3 J	1.7	
MW21	9/18/2007	N	2.0 UJ	0.13 J	1.0 UJ				10 UJ		100 UJ				10 UJ		20 UJ			0.98 R	1.0 U	1.0 U	1.0 U	2.0 U	110 J	29	120 J		3.7 J		12 J	1.2 J	
MW21	10/21/2008	N	2.0 UJ	0.10 UJ	2 U				10 UJ		294 J				14900 J	10 U	20 U			1.00 U	0.50 U	2.00 U	2.0 U	5.00 U	66	68.80	149 J		2.69 J		7.27 U	2.38 J	
MW21	4/6/2016	N	0.092 J	0.016 J	0.70 J				1.0 J		22.8 J				1.7 J		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	25.9	101	83.6		1.8		6.8	0.63 J	
MW21	7/20/2016	FD	0.50 U	5.5	5.0 U				0.86 J		23.5 J				5.0 U		20.0 U			0.24 U	0.50 U	1.0 U	1.0 U	2.0 U	29.9	84.9	78.0		1.7		6.6	0.90 J	
MW21	7/20/2016	N	0.11 J	8.5	5.0 U				1.3 J		29.4 J				5.0 U		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	29.4	84.5	84.0		1.7		6.8	0.93 J	
MW21	10/11/2016	N	0.50 U	5.7	0.38 J				1.8 J		6.2 J				0.44 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	30.5	74.4	82.0		1.8		6.6	0.61 J	
MW21	1/18/2017	N	0.080	2.9	0.39 J				2.2		6.8 J				0.25		6.2			0.060	0.28	0.26	0.23	0.24	25.4	86.8	88.0		1.8		7.4	0.75 J	
MW21	4/18/2017	N	0.50 U	0.017 J	5.0 U				0.44 J		100 U				5.0 U		20.0 U			0.22 U	0.50 U	1.0 U	1.0 U	2.0 U	26.7	78.6	92.0		1.8		7.5	0.77 J	
MW21	10/3/2017	N	0.082 J	0.096 U	0.28 J				1.2 J		100 U				2.5 U		20.0 U			0.76 U	0.50 U	0.50 U	0.50 U	1.0 U	35.2	72.6	70.5		1.8		7.1	0.76 J	
MW21	10/17/2018	N	1.0 U	0.099 U	1.0 U				1.2 J		100 U				2.5 U		20.0 U			0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	35.4	66.6	65.6		1.9		6.0	1.1	
MW21	4/24/2019	N	0.17 U	0.086 U	0.23 J				1.5 J		46.7 U				0.79 U		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	32.6	78.4	72.8		1.6		6.4 B	0.94 J	
MW21	10/15/2019	N	0.17 U	0.088 U	0.23 J				0.72 J		46.7 U				0.79 U		7.0 J			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	35.1	87.1	83.1		1.6		5.9	0.47 U	
MW21	4/9/2020	N	0.17 U	0.088 U	0.39 J				1.4 J		488				7.3		8.0 J			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	37.1	77.3	85.4		1.6		5.8	0.47 U	
MW21	10/6/2020	N	0.17 U	0.091 U	0.27 J				0.73 J		46.7 U				0.79 U		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	47.0	81.5	95.4		1.9		6.7	0.99 J	
MW21	4/12/2021	N	1.0 U	0.65	1.0 U				71.0 B		77.7 J				3.8 B		20.0 U			0.90 U	0.27 J	0.50 U	0.50 U	1.0 U	48.5	76.5	89.7		1.8		5.5	0.82 J	
MW21	10/11/2021	N	1.0 U	0.095 U^c	0.43 J				2.1		100 U				4.2		20.0 U			0.75 U	0.50 U	0.50 U	0.50 U	1.0 U	62.3	60.4	76.6		2.2		5.3	0.58 J	
MW21	10/11/2021	FD	1.0 U	0.096 U^c	0.41 J				1.8 J		100 U				4.1		20.0 U			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	63.8	59.8	76.9		2.2		5.4	0.55 J	
MW21	10/6/2022	N	1.0 U	0.10 U	1.0 U	0.77 J			10.2	13.3	47.5 J	2950			3.0	195	20.0 U			0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	76.5	73.9	53.2		2.1		4.7	0.95 J	
MW21	4/27/2023	N	1.0 U	0.62	0.47 J	2.1	20500	19000	5.8	33.7	106	7250	7710	8570	4.6	454	20.0 U	19.0 J		0.70 U	0.50 U	0.50 U	0.50 U	1.0 U	70.7	62.9	47.3	51.2	1.6		4.4	1.6	

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Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L	
MW22	2/9/1998	N	13	1 U	4				255		5.5 U				3700		121				0.1 U	1 U	1 U	1 U	186	56.3					17.9	0.47 U	
MW22	2/9/1998	N2		1 U	2 U				9.5 U								12.6				0.1 U	1 U	1 U	1 U									
MW22	5/14/2002	N			1.4 U				0.3 U		22.9 J				3.5 J		2.7 J																
MW22	8/6/2002	N	0.01 U	0.078	2.2 J				9.8 J		2500				170		7.3 J			5 U	1 U	5 U	5 U	5 U	150	7.2	170		0.15 U	12	1.3		
MW22	8/6/2002	N2			1.4 U				0.3 U		25 J				0.42 U		4.9 J																
MW22	9/24/2003	N	0.5 U	0.34	7				140		56900				2570		120 J			1 U	0.25 U	2.5 U	2.5 U	2.5 U	132	4.9	101.8		2.15	3 J	1.7		
MW22	9/24/2003	N2	0.5 U		1 U				20		2770				542		20 J																
MW22	9/21/2004	N	10.0 UJ	0.220	2.76 J				71.6 J		13600 J				963 J		48.4 J			5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	130 J	11 J	885 J		2.2 J	6.7 R	3.86 R		
MW22	9/21/2004	N2			0.164 J				0.473 J		25.0 UJ				15.0 UJ		2.31 J																
MW22	9/28/2005	N	2.0 U	0.16 J	1.0 UJ				9.8 J		2100 J				130 J		8.0 J			1.0 U	0.50 U	5.0 U	5.0 U	5.0 U	91 J	9.6 J	130 J		1.7 J	18 R	0.94 J		
MW22	9/28/2005	N2			1.0 UJ				10 UJ		50 UJ				1.3 J		20 UJ																
MW22	9/18/2007	N	2.0 UJ	0.13 J	1.0 UJ				10 UJ		100 UJ				10 UJ		20 UJ			0.99 R	1.0 U	1.0 U	1.0 U	2.0 U	110 J	8.2	160 J		2.5 J	10 J	1.0 J		
MW22	5/20/2008	N	2.0 UJ	0.77 J	1.0 U				0.98 J		100 UJ				3.6		5.4 J			0.95 U	1.0 UJ	1.0 U	1.0 U	2.0 UJ	110 =	8.4	200		2.3	12	3.0 J		
MW22	10/21/2008	N	2.0 UJ	0.09 UJ	2.60 J				10 UJ		303 J			11100 J	0.01 U		20 U			1.00 U	0.5 U	2.0 U	2.0 U	5.0 U	90	4.69	111 J		1.48 J	6.95	21.10 J		
MW22	6/2/2009	N	0.8 UJ	0.1 UJ	2 U				10 UJ		83.1 =			10000 J	10 U		20 U			1.0 UJ	0.5 U	0.22 J	2.0 U	5.0 U	70 J	6.92	99.6098		1.97 J	6.73	1.7 UJ		
MW22	10/6/2009	N	0.83 UJ	0.1 UJ	2 UJ				13.1 J		1560 J			11500 J	168 J		6.7 J			0.994 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ	147 J	7 J	106.54 J		5.31 J	7.53 J	8.62 J		
MW22	5/18/2010	N	1.3 U	0.1 U																0.5 U	5 U	5 U	5 U	66 UB	9.21				1.9 J	6.9	58.8 UB		
MW22	10/6/2010	N	1.3 U	0.13 UB	2 U				4.1 J		74.2 J			3680	16.7 U		20 U			1.0 U	0.1 U	0.4 U	0.4 U	1 U	62	1.8 J	40.9		0.90 J	5.6 J	24.6		
MW22	6/29/2011	N	0.9 U	0.1 U	2 UJ				4.5 J		499			3700	27.6		20 U			0.999 U	0.1 U	0.4 U	0.4 U	1 U	32	0.78 J+	34.10		0.46 J	3.9 J	11		
MW22	10/18/2011	N	0.50 U	0.098 U	0.45 J				2.1 J+		50 U			3600 B	2.7 J		10 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	43	1.0 U	37.30		0.50 J	3.5 J	1.0 U		
MW22	5/22/2012	N	0.50 U	0.084 J	2.0 U				2.3 J		160			5000 =	13		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	49	3.4	50.60		0.76 J	3.9 J	10		
MW22	10/16/2012	N	0.50 U	0.096 U	0.59 J				10 U		50 U			5000 =	5.7 J		20 U			0.19 U	2.5 UJ	5.0 UJ	5.0 UJ	10 UJ	48	4.1	53.1		0.48 J	5.0 U	36		
MW22	5/22/2013	N	0.50 U	0.11	2.0 U				10 U		50 U			4000 B	10 U		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	41	3.7			1.0 J	3.9	15		
MW22	10/8/2013	N	0.50 U	0.14	0.24 J				10.0 U		50 U			5200 B	2.8 J		20 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	45	7.2			1.4 J	4.7	10		
MW22	5/14/2014	N		0.093 J																													
MW22	9/24/2014	N	0.50 U	0.27	0.22 J				2.0 U		25 J				19		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	51	1.7	60		0.69	3.6	0.71 J		
MW22	4/21/2015	N	0.50 U	0.072 J	0.60 J				2.8		390				23		20 U			0.21 U	0.50 U	1.0 U	1.0 U	2.0 U	42	1.9	57		0.69	3.7	0.57 J		
MW22	10/13/2015	N	0.50 U	0.041 J	5.0 U				1.2 J		100 U				5.0 U		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	46.3	1.7	52.3		0.65	2.8	0.74 J		
MW22	4/6/2016	N	0.50 U	0.025 J	5.0 U				0.92 J		17.5 J				2.2 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	50.8	1.3	57.7		0.61	2.9	5.3		
MW22	7/20/2016	N	0.50 U	0.030 J	5.0 U				3.4		235				10		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	58.6	1.2	64.0		0.60	3.1	1.7		
MW22	10/12/2016	N	0.50 U	0.043 J	0.41 J				1.7 J		85.4 J				5.4		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	67.2	1.7	70.0		0.53	3.5	0.96 J		
MW22	1/18/2017	N	0.080 J	0.058 J	0.44 J				3.4		186				10.6		6.2			0.060	0.28	0.26	0.23	0.24	58.4	2.1	94.0		0.65	3.8	1.1		
MW22	4/21/2017	N	0.50 U	0.090 J	5.0 U				2.6		100 U				0.31 J		20.0 U			0.23 U	0.50 U	1.0 U	1.0 U	2.0 U	62.9	2.8	110		0.77	4.4	0.93 J		
MW22	10/4/2017	N	0.39 J	0.049 J	1.0 U				2.6		198				11.9		8.5 J			0.89 U	0.50 U	0.50 U	0.50 U	1.0 U	74.1	2.7	77.9		0.71	3.7	0.90 J		
MW22	10/17/2018	N	1.0 U	0.10 U	1.0 U				3.2		100 U				2.5 U		16.3 J			0.81 U	0.50 U	0.50 U	0.50 U	1.0 U	61.7	2.5	70.2		0.71	3.8	0.78 J		
MW22	4/24/2019	N	0.17 U	0.085 U	0.27 J				1.8 J		166				9.6		9.6 J			0.28 U	0.15 U	0.18 U	0.15 U	2.0 U	60.3	4.1	102		0.75	4.1 B	0.84 J		
MW22	10/16/2019	N	0.17 U	0.095 U	0.35 J				3.3		509				99		11.5 J			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	62.6 H	3.6	71.2		0.71	4.5 B	12.4		
MW22	4/9/2020	N	0.17 U	0.092 U	0.53 J				6.1		1160				67.8		11.3 J			0.26 U	0.15 U	0.18 U	0.15 U	0.22 U	72.9	3.9	116		0.61	5.4	1.3		
MW22	10/8/2020	N	0.17 U	0.095 U	0.43 J				2.6		507				32.2		6.9 U			0.27 U	0.15 U	0.18 U	0.15 U	0.22 U	79.6	4.0	91.9		0.62 H	3.6	0.70 J		
MW22	4/13/2021	N	1.0 U	0.10 U	0.23 J				4.8		389				22.9		9.6 JB			0.84 U	0.50 U	0.50 U	0.50 U	1.0 U	74.3	6.5	117		0.68	3.3	0.75 J		
MW22	10/14/2021	N	1.0 U	0.12 U	0.23 J				2.3		307				15.6		11.2 J			0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	74.5	4.0	83.9		0.34	1.7	1.0 U		
MW22	4/12/2022	N	1.0 U	9.4	3.1				32.3		7830				403		36.9			0.91 U	0.50 U	0.50 U	0.50 U	1.0 U	69.8	7.3	46.8		0.57	3.2	0.63 J		
MW22	10/6/2022	N	1.0 U	0.10 U	1.0 U	0.75 J			7.0	11.0	100 U	2380			1.8 J	136	6.9 J	8.2 J		0.81 U	0.50 U	0.50 U	0.50 U	1.0 U	75.0	11.4	51.6		0.87	3.4	0.67 J		
MW22	4/26/2023	N	1.0 U	0.096 U	1.0 U	0.61 J			7.2	9.0	100 U	2070			1.9 J	105	13.8 J	9.0 J		0.62 U	0.50 U	0.50 U	0.50 U	1.0 U	83.1	8.2	54.6	54.4	0.93 J	3.4	0.73 J		

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
MW23	2/26/1998	N	57	1 U	2 U				17.6 U		5.5 U				128		43.6				2	1 U	77	2	120	8.7					7.6	0.47 U
MW23	2/26/1998	N2		1 U	2 U				14.2 U								6.6				2 =	1 U	77 =	2 =								
MW23	9/11/2001	N	10 U	0.49	1.2				6.3 J		630				140		37			0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	110	10	140		0.13 U	8.2 U	5.6	
MW23	9/11/2001	N2			0.62 J				2.2 U		35 U				29		4.7 J															
MW23	4/13/2016	N	0.50 U	0.095 U	0.58 J				2.0 U		35.1 J				5.0 U		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	197	29.5	255		1.8	7.1	0.62 J	
MW23	7/20/2016	N	0.50 U	0.31	0.70 J				2.0 U		100 U				5.0 U		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	195	30.6	230		1.8	7.2	0.66 J	
MW23	10/11/2016	N	0.50 U	0.094 U	0.71 J				0.90 J		100 U				0.38 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	194	32.3	230		1.9	8.1	0.54 J	
MW23	1/19/2017	N	0.080	0.015	0.75 J				0.64 J		5.3				0.25		6.2			0.061	0.28	0.26	0.23	0.24	177	35.1	238		1.8	8.2	0.81 J	
MW23	4/19/2017	N	0.50 U	0.095 U	0.59 J				2.0 U		100 U				5.0 U		20.0 U			0.22 U	0.50 U	1.0 U	1.0 U	2.0 U	179	34.7	304		1.9	9.1	0.76 J	
MW23	10/2/2017	N	0.50 U	0.098 U	0.66 J				1.5 J		100 U				2.5 U		20.0 U			0.81 U	0.50 U	0.50 U	0.50 U	1.0 U	197	40.3	240		2.0	9.1	0.68 J	
MW23	6/1/2018	N	1.0 U	0.10 U	0.74 J				0.90 J		100 U				2.5 U		20.0 U			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	194	42.3	256		2.0	8.8	0.81 J	
MW23	10/17/2018	N	1.0 U	0.099 U	0.58 J				0.82 J		100 U				2.5 U		20.0 U			0.79 U	0.50 U	0.50 U	0.18 J	1.0 U	191	39.7	239		2.1	8.7	0.90 J	
MW23	4/23/2019	N	0.17 U	0.087 U	0.65 JB				0.99 JB		46.7 U				0.79 U		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	187	44.6	255		2.1	9.0	0.86 J	
MW23	10/14/2019	N	6.4	0.085 U	0.64 J				0.67 J		46.7 U				2.6		6.9 U			0.65 J	0.15 U	0.18 U	0.15 U	0.22 U	195	46.2	250		2.1 H	8.1	0.47 U	
MW23	4/8/2020	N	0.17 U	0.087 U	0.58 J				0.89 J		46.7 U				0.79 U		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	185	46.2	243		2	8.4	1.5	
MW23	10/6/2020	N	0.17 U	0.089 U	0.77 J				0.58 J		46.7 U				1.1 J		7.1 J			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	184	54.1	239		2.3	9.2	0.95 J	
MW23	4/15/2021	N	1.0 U	0.096 U	0.53 J				0.54 JB		100 U				2.5 U		11.6 J			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	190	45.4	255		2.2	8.8	0.76 J	
MW23	10/13/2021	N	1.0 U	0.095 U	0.75 J				2.0 U		100 U				2.5 U		20.0 U			0.75 U	0.50 U	0.50 U	0.50 U	1.0 U	195	61.0	249		1.4 H	5.4	1.0 U	
MW23	4/11/2022	N	1.0 U	0.10 U	0.59 J				2.0 U		100 U				2.5 U		20.0 U			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	185	61.5	174		2.3	8.2	0.76 J	
MW23	10/11/2022	N	1.0 U	0.099 U	0.58 J	0.58 J			5.3	2.0 U	100 U	100 U			2.5 U	2.5 U	20.0 U	20.0 U		0.79 U	0.50 U	0.50 U	0.50 U	1.0 U	190	58.5	170		2.3	8.5	0.72 J	
MW23	4/27/2023	N	1.0 U	0.096 U	0.98 J	1.0	66400	66000	2.0 U	2.0 U	100 U	100 U	22200	22100	2.5 U	2.5 U	20.0 U	20.0 U		0.67 U	0.50 U	0.50 U	0.50 U	1.0 U	194	46.1	165	166	1.9	8.2	0.90 J	
MW24	2/8/1998	N	10 U	4 U	4.3				53		5.5 U				1030		50.7				3 U	2 U	3 U	5 U	253	18.7					5.2	1.8
MW24	2/8/1998	N2		4 U	2 U				9.5 U								23				3 U	2 U	3 U	5 U								
MW24	12/6/2000	N	0.53 U	123 J	1.6				27		6500				530		11			5.9 U	0.1 U	1 U	0.29	1 U	180	21	310		2.3	7.1	5.5	
MW24	12/6/2000	N2	0.53 U		0.29				25 U		25 U				15 U		25 U			5.9 U	0.1 U	1 U	0.29	1 U								
MW24	4/24/2001	N	0.1 U	0.11	2.4				30		7310				508		23			5.3 U	0.1 U	1 U	1 U	1 U	256	36	348		3.64 =	12	3.36	
MW24	4/24/2001	N2	0.1 U		0.29				5.2		25 U				2.4		11			5.3 U										3.64		
MW24	4/7/2016	N	0.11 J	0.044 J	5.0 U				3.0		420				28.4		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	168	9.1	135		1.9	17.4	0.79 J	
MW25	2/9/1998	N	17	1	6.6				462		30.2 U				4480		321				0.1 U	1 U	1 U	1 U	455	15.6					9.9	0.47 U
MW25	2/9/1998	N2		1 =	2 U				9.5 U								16.4				0.1 U	1 U	1 U	1 U								
MW25	4/11/2016	N	0.50 U	0.024 J	1.1 J				17.6		6090				148		12.4 J			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	33.7	37.8	137		2.4	3.8	1.5	
MW25	7/26/2016	N	0.50 U	0.30	5.0 U				1.3 J		28.8 J				1.0 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	40.3	49.1	108		3.2	5.0	0.70 J	
MW25	10/10/2016	FD	0.50 U	0.17	5.0 U				0.71 J		100 U				0.27 J		20.0 U			0.21 U	0.50 U	1.0 U	1.0 U	2.0 U	31.1	16.9	54.0		1.6	2.7	0.44 J	
MW25	10/10/2016	N	0.50 U	0.23	5.0 U				0.62 J		5.4 J				0.46 J		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	31.1	17.5	52.0		1.6	2.8	0.44 J	
MW25	1/18/2017	N	0.080	4.9	0.35				1.2 J		28.2 J				0.70 J		6.2			0.063	0.28	0.26	0.23	0.24	46.0	45.2	112		2.8	4.9	0.78 J	
MW25	4/18/2017	N	0.50 U	0.094 U	5.0 U				1.4 J		100 U				5.0 U		20.0 U			0.21 U	0.50 U	1.0 U	1.0 U	2.0 U	81.3	29.0	108		2.9	7.3	0.82 J	
MW25	10/13/2017	N	1.0 U	0.051 J	1.0 U				1.3 J		100 U				2.5 U		20.0 U			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	79.5	36.1	125		3.2	7.0	0.84 J	
MW25	10/13/2017	N	1.0 U	0.083 J	1.0 U				1.1 J		100 U				2.5 U		20.0 U			0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	78.7	35.0	122		3.2	7.0	0.81 J	
MW25	5/31/2018	N	1.0 U	0.096 U	0.28 J				1.3 J		100 U				2.5 U		20.0 U			0.84 U	0.50 U	0.50 U	0.50 U	1.0 U	112	12.5	123		2.4	6.0	1.1	
MW25	10/19/2018	N	1.0 U	0.095 U	1.0 U				4.7		100 U				1.3 J		20.0 U			0.80 U	0.50 U	0.50 U	0.50 U	0.41 J	98.2	30.1	138		2.8	5.9	0.95 J	
MW25	4/24/2019	N	5.0	0.091 U	0.27 J				1.3 J		46.7 U				0.79 U		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	92.3	27.2	117		2.6	5.5 B	1.7	
MW25	10/15/2019	N	0.17 U	0.088 U	0.24 J				1.5 J		46.7 U				0.79 U		7.6 J			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	404	20.2	205		2.1	3.9	0.47 U	
MW25	4/7/2020	N	0.17 U	0.090 U	0.47 J				6.2		103				3.4		6.9 U			0.26 U	0.15 U	0.18 U	0.15 U	0.22 U	268	11.7	286		2.3	5.5	0.87 J	
MW25	10/6/2020	N	0.17 U	0.091 U	0.40 J				1.1 J		133				3.2		6.9 U			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	226	21.8	251		2.3	4.5	1.0	

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L		
MW25	4/14/2021	N	1.0 U	0.095 U	0.31 J				1.4 J		100 U				2.5 U		9.4 JB			0.79 U	0.50 U	0.50 U	0.50 U	1.0 U	354	4.3	363		1.6		3.5	1.2		
MW25	10/13/2021	N	1.0 U	0.098 U	0.51 J				2.0		61.9 J				1.2 J		20.0 U			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	392	7.1	369		1.4		3.4	0.64 J		
MW25	4/11/2022	N	1.0 U	0.095 U	0.25 J				2.4		504				7.8		20.0 U			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	138	26.2	103		1.9		3.1	0.78 J		
MW25	10/10/2022	N	1.0 U	0.11 U	1.0 U	0.29 J			1.1 J	2.1	100 U	411			0.98 J	6.6	20.0 U	20.0 U		0.84 U	0.50 U	0.50 U	0.50 U	1.0 U	128	24.7	101		1.9		3.0	0.75 J		
MW25	5/2/2023	N	2.5	0.49	1.0 U	1.0 U	35000	34500	2.5	1.9 J	100 U	281	13700	13700	0.79 J	5.2	20.0 U	20.0 U		0.72 U	0.50 U	0.50 U	0.50 U	1.0 U	109	24.2	86.1	87.4	1.5		2.5	1.0		
MW26	12/6/2000	N	0.65 U	118 J	1.1				21		25 U				94		17			5 U	0.1 U	1 U	1 U	1 U	230	29	350		2.8		540	8		
MW26	12/6/2000	N2	0.65 U	115 J	2.8				27		16000				300		35			5 U	0.1 U	1 U	1 U	1 U	270	28	330		2.8		770	6.1		
MW26	12/6/2000	N3	0.7 U		4				25 U		25 U				89		25 U			5 U	0.1 U	1 U	1 U	1 U										
MW26	12/6/2000	N4			1.1				25		16000				290		33																	
MW26	4/24/2001	N	0.1 U	0.1 U	3				13		6980				132		24			5.4 U	0.1 U	1 U	1 U	1 U	240	22	294		5 =		10	2.79		
MW26	4/24/2001	N2	0.1 U		0.24				25 U		36				15 U		19700																	
MW26	6/18/2001	N	0.1 U	1	1.1				25 U		25 U				15 U		25 U			5 U	0.1 U	1 U	1 U	1 U	230	27	326		30		13	6.67		
MW26	6/18/2001	N2	0.1 U		3.6				18		9140				232		28																	
MW26	9/10/2001	N	10 U	0.16 J	1.5				10 U		2300				94		24			0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	260	30	300		30 =		12	0.34 U		
MW26	9/10/2001	N2	10 U	0.16 J	0.8 J				4 J		100 J				4 U		3.8 J			0.24 U	0.44 U	0.5 U	0.4 U	1.2 U	260	29	310		3.2		12	2.7		
MW26	9/10/2001	N3			0.75 J				2.9 J		55 J				1.5 U		3.7 U																	
MW26	9/10/2001	N4			1.6				13		2500				96		24																	
MW26	5/14/2002	N		0.1	1.4 J				5 J		1530				57.2		9.7 J			5 U	1 U	5 U	5 U	5 U	260	27	300		3 H		15	5		
MW26	5/14/2002	N2			1.4 U				1.2 J		11.2 U				0.73 J		9.3 J																	
MW26	8/5/2002	N	0.01 U	0.03 J	3				2.5 J		385				17.2		16.3 J			5 U	1 U	5 U	5 U	5 U	270	18	310		0.15 U		14	4.5		
MW26	8/5/2002	N2	0.01 U	0.035 J	1.4 U				0.3 U		11.2 U				0.56 J		13.7 J			5 U	1 U	5 U	5 U	5 U	280	19	310		0.15 U		11	24		
MW26	8/5/2002	N3			2.7				3.9 J		728				26		18.7 J																	
MW26	8/5/2002	N4			3.2				0.3 U		11.2 U				0.42 U		7.4 J																	
MW26	4/29/2003	N	0.5 U	0.1 U	1 U				4		1290				46		10 U			7.1 U	0.5 U	5 U	5 U	5 U	248	18	262		3.5		14	7		
MW26	4/29/2003	N2	0.5 U	0.11 U	1 U				2 J		25 U				5 U		10 U			7.1 U	0.5 U	5 U	5 U	5 U	250	18.7	257		3.6		14	12		
MW26	4/29/2003	N3	0.5 U		2 J				5		1690				48		20																	
MW26	4/29/2003	N4			1 U				1 U		25 U				5 U		10 U																	
MW26	9/23/2003	N	0.5 U	0.11 U	1 U				1 J		740				29		10 U			1 U	0.25 U	2.5 U	2.5 U	2.5 U	250	11	90.28		3.74		2 U	6.4		
MW26	9/23/2003	N2	0.5 U		1 U				1 U		50 U				5 U		10 U																	
MW26	5/4/2004	FD	10.0 U	0.219 UB	0.295 J				2.37 R		399 R		27400	15.2 R	7.82 R				5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	5.00 U	242	17 =	291		4.0 J		44 R	4.35 J		
MW26	5/4/2004	FD2			0.323 J				1.19 R		49.3 R				2.07 R		4.15 R																	
MW26	5/4/2004	N	10.0 U	0.242 UB	0.264 J				2.62 R		458 R		26700	17.8 R	10.5 R				5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	5.00 U	242	17 =	284		3.9 J		42 R	3.75 J		
MW26	5/4/2004	N2			0.289 J				1.24 R		39.0 R				1.23 R		4.36 R																	
MW26	9/23/2004	FD	10.0 U	5.97 BE	1.00 U				3.10 J		542				22.2		6.95 J			5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	280	28	1770		1.5 J		170 =	1.95		
MW26	9/23/2004	FD2			4.11 =	0.354 J			2.01 J		6.48 J				4.00 J		3.80 J																	
MW26	9/23/2004	N	10.0 U	0.393 =	1.00 U				3.73 J		620				24.8		7.86 J			5.00 U	0.500 U	5.00 U	5.00 U	5.00 U	280	28	1670		1.5 J		120 =	2.40		
MW26	9/23/2004	N2			0.314 J				1.57 J		8.81 J				19.3		4.70 J																	
MW26	5/10/2005	FD	2.0 U	0.11 U	1.0 U				10 U		50 U				0.59 J		20 U			0.93 U	0.50 U	5.0 U	5.0 U	5.0 U	240 J	26 J	370 J		2.2 J		180 R	1.1 R		
MW26	5/10/2005	FD2			1.0 U				2.2 J		510				14		17 J																	
MW26	5/10/2005	N	2.0 U	0.061 J	1.0 U				10 U		50 U				1.8 J		20 U			0.94 U	0.50 U	5.0 U	5.0 U	5.0 U	250 J	26 J	340 J		2.8 J		200 R	2.1 R		
MW26	5/10/2005	N2			1.0 U				2.4 J		680				18		7.5 J																	
MW26	9/27/2005	FD	2.0 UJ	0.024 J	1.0 UJ				10 U		50 U				1.7 J		20 U			0.92 U					250 J	25 J	380		2.0 J		160 J	0.68 J		
MW26	9/27/2005	FD2			1.0 UJ				2.6 J		50 UJ				10 U		20 U																	
MW26	9/27/2005	N	2.0 UJ	0.027 J	1.0 UJ				10 U		50 U				2.3 J		20 U			0.93 U	0.50 U	5.0 U	5.0 U	5.0 U	240 J	25 J	350		1.9 J		170 =	0.72 J		
MW26	9/27/2005	N2			1.0 UJ				2.2 J		50 U				10 U		20 U																	

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Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L		
MW26	6/7/2006	FD	2.0 U	0.091 J	1.0 UJ				10 UJ		50 UJ				1.0 UJ		20 UJ			0.94 U	0.50 U	5.0 U	5.0 U	5.0 U	250 J	29 J	350 J		1.8 J		150 =	0.94 J		
MW26	6/7/2006	N	2.0 U	0.11 UJ	1.0 UJ				10 UJ		50 UJ				2.5 UJ		20 UJ			0.95 U	0.50 U	5.0 U	5.0 U	5.0 U	260 J	29 J	320 J		1.8 J		140 =	1.4 J		
MW26	9/26/2006	N	2.0 UJ	0.11 U	1.0 UJ				10 UJ		50 UJ				10 UJ		20 UJ			0.91 U	0.50 U	5.0 U	5.0 U	5.0 U	270 J	23 J	350		1.5 J		87 J	2.0		
MW26	5/8/2007	FD	2.0 UJ	0.095 UJ	1.0 UJ				10 UJ		100 UJ				10 UJ		20 UJ			0.92 R	1.0 U	1.0 U	1.0 U	2.0 U	270 =	21 J	360		1.6		250 J	0.76 J		
MW26	5/8/2007	N	2.0 UJ	0.093 UJ	1.0 UJ				10 UJ		100 UJ				10 UJ		20 UJ			0.92 R	1.0 U	1.0 U	1.0 U	2.0 U	260 =	21 J	360		1.5		210 J	0.68 J		
MW26	9/19/2007	N	2.0 UJ	0.095 U	1.0 UJ				10 UJ		100 R				10 UJ		20 UJ			0.93 U	1.0 U	1.0 U	1.0 U	2.0 U	240	25	500 J		1.3		220 J	0.84 J		
MW26	5/20/2008	N	2.0 UJ	0.096 UJ	0.34 J						0.47 J						2.5 U			0.96 U	1.0 UJ	1.0 U	1.0 U	2.0 UJ	240 =	22	430		1.8		230	0.65 J		
MW26	10/22/2008	N	2.0 UJ	0.1 U	2 UJ				6.2 J		777 J			35100 J	10 UJ		20 UJ			1 U	0.5 U	2.0 U	2.0 U	5.0 U	256 J	21.7	432 J		2.36 J		235	18.6		
MW26	6/2/2009	N	0.8 UJ	0.1 UJ	2 U				10 UJ		341 =			33400 =	10 U		20 U			1.0 UJ	0.5 UB	0.3 J	2.0 UB	5.0 U	229 J	203	414.7082		1.83 J		2360	1.7 UJ		
MW26	10/6/2009	N	0.83 UJ	0.1 UJ	2 UJ				3.8 J		325 J			42900 J	10 UJ		20 UJ			0.997 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ	227 J	20.7 J	491.28 J		1.7 J		212 J	1 UJ		
MW26	5/19/2010	N	1.3 U	0.13 J	1.8 J				10 UJ		236. J			39800. J	10 UJ		15. J			1.0 U	0.5 U	5 U	5 U	5 U	230	20.4	486		2.41 J		279	20.1 J		
MW26	10/5/2010	N	1.3 U	0.1 UJ	2 U				10 U		376			37900	10 U		20 U			1.0 U	0.1 U	0.4 U	0.4 U	1 U	236	20.0 J	478		1.77		232	0.6 J		
MW26	6/29/2011	N	0.9 U	0.1 U	2 UJ				10 U		274			41600	10 U		20 U			0.992 U	0.1 U	0.4 U	0.4 U	1 U	202	18.3 J	463.00		1.83 J		230	1 U		
MW26	10/19/2011	N	0.50 U	0.099 U	0.87 J				2 U		50 U			29000 B	10 U		10 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	230	19	329.00		1.6 J		200	0.88 J		
MW26	5/22/2012	N	0.50 U	0.10 U	2.0 U				10 U		50 U			28000 =	10 U		20 U			0.19 UJ	0.50 U	1.0 U	1.0 U	2.0 U	200	19	325.00		1.7		210	0.43 J		
MW26	10/16/2012	N	0.50 U	0.095 U	0.99 J				10 U		50 U			29000 =	10 U		20 U			0.19 U	0.50 U	1.0 U	1.0 UJ	2.0 U	190	19	344		1.8 J		200 =	0.30 J		
MW26	5/22/2013	N	0.50 U	0.094 U	2.0 U				10 U		50 U			25000 B	10 U		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	170	18			1.9 J		230	0.55 J		
MW26	10/8/2013	N	0.50 U	0.095 U	0.37 J				10.0 U		50 U			26000 B	10 U		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	160	18			1.5 J		110 J	1.0 U		
MW26	5/14/2014	N		0.095 U																														
MW26	9/24/2014	FD	0.50 U	0.095 U	0.32 J				2.0 U		100 U				5.0 U		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	150	17	280		1.2		160	1.0 U		
MW26	9/24/2014	N	0.50 U	0.095 U	0.43 J				2.0 U		100 U				5.0 U		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	150	17	290		1.2		160	1.0 U		
MW26	4/21/2015	FD		0.094 U	0.76 J				2.0 U		100 U				5.0 U		20 U			0.19 U														
MW26	4/21/2015	N	0.50 U	0.094 U	0.71 J				2.0 U		100 U				4.4 J		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	160	16	240		2.4		82	1.0 U		
MW26	10/13/2015	N	0.50 U	0.096 U	0.76 J				2.0 U		100 U				5.0 U		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	198	15.3	229		1.9		74.6	0.32 J		
MW26	10/13/2015	N	0.50 U	0.096 U	0.50 J				2.0 U		100 U				5.0 U		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	194	15.5	235		1.9		75.7	0.33 J		
MW26	4/5/2016	N	0.15 J	0.095 U	0.57 J				1.5 J		21.4 J				58.7		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	154	9.4	183		1.4		36.1	0.26 J		
MW27	10/20/2011	N	0.10 J	0.17	1.7 J				2.3 J+		50 U			2300 B	10 U		10 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	63	10	28.70		3.1		9.1	1.6		
MW27	4/7/2016	FD		0.094 U	5.0 U				2.0 U		29.9 J				2.3 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U										
MW27	4/7/2016	N	0.092 J	0.15	0.59 J				1.9 J		21.1 J				5.0 U		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	137	20.0	113		6.5		14.2	1.9		
MW28	10/20/2011	N	0.19 J	690	0.55 J				2 U		50 U			12000 B	6.0 J		10 U			0.19 U	0.50 U	1.0 U	1.0 U	0.38 J	130	5.5	132.00		1.3		5.2	2.7		
MW28	10/17/2012	N	0.50 U	0.095 U	0.48 J				10 U		50 U			12000 =	10 U		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	120	11	134		1.8		5.0 U	0.81 J		
MW28	10/9/2013	N	0.50 U	0.049 J	2.0 UJ				10.0 UJ		50 UJ			12000 J	10 UJ		20 UJ			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U *	120 J	21			2.2 J		6.5	0.49 J		
MW28	10/9/2013	N2																																
MW28	9/25/2014	N	0.50 U	0.099	0.31 J				2.0 U		100 U				5.0 U		20 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	120	18	150		1.3		5.1	0.85 J		
MW28	10/14/2015	N	0.50 U	0.32	5.0 U				2.0 U		100 U				5.0 U		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	126	15.5	155		2.0		5.4	0.69 J		
MW28	4/6/2016	N	0.20 J	47	5.0 U				0.76 J		29.7 J				2.7 J		20.0 U			0.21 U	0.50 U	1.0 U	1.0 U	2.0 U	122	9.4	125		1.2		4.8	1.6		
MW28	7/21/2016	N	0.10 J	100	0.49 J				2.0 U		25.9 J				10.8		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	127	11.4	138		1.9		5.4	1.9		
MW28	10/13/2016	FD	0.36 J	1200	0.38 J				0.61 J		100 U				7.9		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	1.4 J	125	11.4	142		1.7		5.6	12.3		
MW28	10/13/2016	N	0.28 J	1900	0.39 J				0.76 J		9.8 J				8.5		20.0 U			0.12 J	0.50 U	1.0 U	1.0 U	1.4 J	128	11.4	148		1.7		5.8	12.3		
MW28	1/20/2017	N	0.20 J	290	0.47 J				1.0 J		5.3				10.3		6.2			0.063	0.28	0.26	0.23	0.24	113	13.4	138		2.0		6.1	4.9		
MW28	4/20/2017	N	0.50 U	22	0.55 J				1.0 J		11.9 J				4.0 J		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	123	22.5	186		3.3		7.1	1.6		
MW28	10/3/2017	N	0.18 J	0.16	0.38 J				1.4 J		100 U				2.5 U		20.0 U			0.76 U	0.50 U	0.50 U	0.50 U	1.0 U	116	31.8	171		2.3		6.6	0.83 J		
MW28	10/17/2018	N	1.0 U	0.10 U	0.38 J				1.0 J		100 U				2.5 U		7.1 J			0.81 U	0.50 U	0.50 U	0.50 U	1.0 U	106	21.2	126		2.2		5.4	0.97 J		
MW28	4/23/2019	N	0.17 U	0.20 ^	0.39 JB				2.0 B		62.7 J				2.1 JB		6.9 U			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	106	19.3 F1	128		2.1		5.4	0.67 J		

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
MW28	10/16/2019	N	0.17 U	0.086 U	0.31 J				0.50 U		46.7 U				0.79 U		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	105 H	22.9	120		2.1		5.3 B	0.51 J
MW28	4/7/2020	N	0.17 U	0.085 U	0.51 J				1.0 J		46.7 U				0.79 U		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	99.3	17	107		2		4.8	0.48 J
MW28	10/6/2020	FD	0.17 U	0.085 U	0.47 J				0.50 U		46.7 U				1.0 J		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	103	24.9	123		18.0		48.9	0.92 J
MW28	10/6/2020	N	0.17 U	0.089 U	0.49 J				0.50 U		46.7 U				1.5 J		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	103	25.4	118		1.9		5.0	0.90 J
MW28	4/15/2021	N	1.0 U	0.098 U	0.30 J				0.90 JB		100 U				2.5 U		12.4 J			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	101	35	128		1.5		3.8	0.89 J
MW28	10/13/2021	N	1.0 U	1600	0.71 J				1.7 J		100 U				239		19.7 J			2.6	0.50 U	0.50 U	0.50 U	1.0 U	165	12.6	188		0.28 H		23.9	1.0 U
MW28	4/14/2022	N	1.0 U	0.84	0.32 J				0.61 J		100 U				2.5 U		20.0 U			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	113	27.9	86.2		1.9		4.0	0.81 J
MW28	4/14/2022	FD	1.0 U	0.10 U	0.28 J				0.77 J		100 U				2.5 U		20.0 U			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	113	28.9	88.5		1.9		4.5	0.77 J
MW28	10/10/2022	N	1.0 U	0.098 U	0.40 J	0.35 J			0.78 J	0.63 J	100 U	100 U			2.5 U	2.5 U	20.0 U	20.0 U		0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	120	28.0	95.3		2.4		4.8	0.75 J
MW28	4/27/2023	N	1.0 U	0.098 U	0.64 J	0.77 J	35800	34600	0.59 J	0.56 J	100 U	100 U	11900	11300	2.5 U	0.82 J	20.0 U	20.0 U		0.66 U	0.50 U	0.50 U	0.50 U	1.0 U	121	21.0	86.4	89.4	2.3		4.6	0.90 J
MW29	4/13/2016	N	1.4	14000	5.0 U				6.7		1660				2270		20.0 U			34	0.50 U	0.58 J	0.90 J	7.2	87.0	4.5	120		0.10 U		6.4	70.2
MW29	7/21/2016	FD	0.69	9100	5.0 U				2.1		1250				2740		20.0 U			30	0.50 U	0.83 J	1.2	9.3	83.8	9.2	110		0.10 U		10.5	51.6
MW29	7/21/2016	N	0.67	11000	5.0 U				2.1		1290				2800		20.0 U			35	0.50 U	0.74 J	1.3	9.1	84.0	9.2	110		0.10 U		10.4	50.5
MW29	10/14/2016	N	0.32 J	20000	0.35 J				2.6		1970				3220		20.0 U			32	0.50 U	0.98 J	1.6	11	83.0	15.9	124		0.10 U		16.3	56.9
MW29	1/24/2017	FD	0.37 J	67000	0.35				3.3		1380				3170		6.2			41	0.28	0.90 J	1.3	12	112	4.3	122		0.035		6.9	49.9
MW29	1/24/2017	N	0.40 J	56000	0.35				1.9 J		1400				3290		6.2			40	0.28	0.98 J	1.2	12	113	4.3	120		0.035		6.8	51.4
MW30	4/13/2016	N	0.50 U	0.72	5.0 U				0.81 J		46.1 J				147		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	42.0	3.2	82.3		3.4		32.8	1.2
MW30	7/21/2016	N	0.50 U	1.7	5.0 U				2.0 U		100 U				52.9		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	44.5	2.9	82.0		4.0		29.9	1.4
MW30	10/12/2016	N	0.084 J	3.8	5.0 U				1.1 J		13.8 J				67.3		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	52.2	3.8	86.0		1.6		30.5	
MW30	1/20/2017	N	0.080	5.5	0.35				1.0 J		9.4 J				52.8		6.2			0.060	0.28	0.26	0.23	0.24	45.9	2.4	60.0		0.80		9.9	1.4
MW30	4/21/2017	N	0.50 U	3.6	5.0 U				0.95 J		8.1 J				37.7		20.0 U			0.21 U	0.50 U	1.0 U	1.0 U	2.0 U	46.2	0.57 J	250		1.1		5.4	0.93 J
MW30	10/5/2017	N	0.11 J	2.1	1.0 U				1.1 J		49.4 J				31.5		20.0 U			0.80 U	0.50 U	0.50 U	0.50 U	1.0 U	48.4	0.55	52.3		2.0		4.6	1.6
MW30	5/31/2018	N	1.0 U	630	1.0 U				1.1 J		100 U				23.3		20.0 U			1.7	0.50 U	0.50 U	0.50 U	0.39 J	67.3	0.66	69.1		1.6		3.7	1.7
MW30	10/18/2018	N	1.0 U	640	1.0 U				0.94 J		100 U				15.4		7.9 J			1.3	0.50 U	0.50 U	0.50 U	1.0 U	77.5	1.7	82.9		2.2		3.7	2.6
MW30	4/25/2019	N	0.17 U	800	0.23 U				1.1 J		46.7 U				25.1		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	66.9	1.4	69.9		0.55		3.8 B	5.3
MW30	10/17/2019	N	0.17 U	41	0.23 U				1.2 J		46.7 U				22.6		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.28 J	88.8 H	0.62	92		0.53		2.4	0.85 J
MW30	4/13/2020	N	0.25 J	270	0.29 JB				5.4		46.7 U				24.1		6.9 U			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	97.3	0.98	102		1.5		3.3	1.4
MW30	10/7/2020	N	0.17 U	10	0.23 U				16.8		78.1 J				15.6		6.9 U			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	90.0	0.45	88.5		0.37		2.2	0.89 J
MW30	4/13/2021	N	1.0 U	190	1.0 U				36		59.2 J				22.2		20.0 U			3.1	0.50 U	0.50 U	0.50 U	0.56 J	123	0.74	115		1.1		2.9	2.2
MW30	10/11/2021	N	1.0 U	2100	0.42 J				34.2		149				50.7		20.0 U			1.5	0.50 U	0.50 U	0.50 U	1.0 U	125	3.0	139		0.12 J		5.4	14.9
MW30	4/12/2022	N	3.2	30	0.68 J				13.7		3720				209		12.6 J			0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	96.1	0.46	63.4		0.20		1.7	1.3
MW30	10/5/2022	N	1.0 U	2.4	1.0 U	1.0 U			3.4	0.79 J	100 U	100 U			3.8	4	20.0 U	20.0 U		0.77 U	0.50 U	0.50 U	0.50 U	1.0 U	92.4	0.75	54.4		0.28		1.8	0.72 J
MW30	4/26/2023	N	1.0 U	3.1	1.0 U	1.0 U			0.62 J	1.4 J	100 U	100 U			2.2 J	2.1 J	20.0 U	20.0 U		0.70 U	0.50 U	0.50 U	0.50 U	1.0 U	96.5	0.43 J	56.3	57.5	0.41 J		1.5	0.99 J
MW31	4/12/2016	N	0.50 U	0.030 J	5.0 U				2.0 U		20.9 J				7.7		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	122	0.99 J	125		0.68		4.0	0.59 J
MW31	7/20/2016	N	0.50 U	4.6	5.0 U				0.86 J		100 U				2.2 J		20.0 U			0.20 U	0.50 U	1.0 U	1.0 U	2.0 U	105	0.76 J	100		0.49		1.9	0.68 J
MW31	10/13/2016	N	0.11 J	3.7	5.0 U				0.76 J		100 U				5.0 U		20.0 U			0.19 U	0.50 U	1.0 U	1.0 U	2.0 U	110	0.63 J	104		0.46		1.5	0.29 J
MW31	1/17/2017	N	0.20 J	0.69	0.59 J				1.4 J		10.5 J				0.52 J		6.2			0.061	0.28	0.26	0.23	0.24	113	0.53 J	118		0.51		1.7	0.74 J
MW31	4/18/2017	N	0.21 J	0.026 J	5.0 U				0.58 J		100 U				0.63 J		20.0 U			0.22 U	0.50 U	1.0 U	1.0 U	2.0 U	111	0.68 J	136		0.73		2.8	0.72 J
MW31	10/2/2017	N	1.9	0.095 U	0.51 J				5.0		1630				34.5		9.7 J			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	104	1.4	93.9		0.54		1.3	0.50 J
MW31	10/16/2018	N	1.0 U	0.097 U	1.0 U				0.63 J		100 U				1.0 J		20.0 U			0.79 U	0.50 U	0.50 U	0.50 U	0.46 J	187	0.67	181		0.55		1.5	0.70 J
MW31	4/24/2019	N	3.0	0.086 U	0.23 J				1.1 J		46.7 U				1.9 J		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	178	0.61	191		0.63		1.6 B	0.67 J
MW31	10/14/2019	N	0.17 U	0.086 U	0.23 U				1.3 J		46.7 U				0.79 U		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	240	0.52	231		0.33 F1		0.84	0.47 U
MW31	4/13/2020	N	0.21 J	6	0.23 JB				18.7		46.7 U				2.6		6.9 U			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	210	0.33	207		0.42		1.1	1.3

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L				
MW31	10/6/2020	N	0.43 J	0.089 U	0.23 U				24.3		46.7 U				1.9 J		6.9 U			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	168	0.39	163		0.37		0.94	0.52 J				
MW31	4/12/2021	N	1.0 U	0.19	1.0 U				42.3 B		100 U				2.2 JB		9.4 J			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	194	0.48	201		0.66		1.8	0.62 J				
MW31	10/12/2021	N	1.0 U	0.20	0.24 J				73.8		100 U				1.5 J		20.0 U			0.76 U	0.50 U	0.50 U	0.50 U	1.0 U	154	0.34	148		0.48		1.2	1.0 U				
MW31	4/11/2022	N	1.0 U	0.24	1.0 U				4.5		100 U				3.8		20.0 U			0.79 U	0.50 U	0.50 U	0.50 U	1.0 U	145	0.20	90.9		0.55		1.3	0.62 J				
MW31	10/5/2022	N	1.0 U	0.44	1.0 U	1.0 U			0.89 J	0.95 J	100 U	100 U			0.99 J	1.5 J	20.0 U	20.0 U		0.79 U	0.50 U	0.50 U	0.50 U	1.0 U	138	0.4	86.4		0.42		1.1	0.59 J				
MW31	10/5/2022	FD	1.0 U	0.54	1.0 U	1.0 U			0.65 J	0.72 J	100 U	100 U			1.2 J	1.2 J	20.0 U	20.0 U		0.79 U	0.50 U	0.50 U	0.50 U	1.0 U	138	0.4	86.4		0.42		1	0.50 J				
MW31	4/25/2023	N	1.0 U	0.27	1.0 U	1.0 U	37900	38700	6.8	1.1 J	100 U	202	13300	13700	1.1 J	6.1	20.0 U	20.0 U		0.69 U	0.50 U	0.50 U	0.50 U	1.0 U	148	0.28 J	96.5	94.7	0.5		1.3 J	0.57 J				
MW32	5/17/2019	N	0.17 U	0.14	0.23 U				1.6 J		46.8 J				135		17.0 J			0.23 U	0.15 U	0.18 U	0.15 U	0.22 U	35.9	1.7	40.3		1.3 H		11.3	1.1				
MW32	10/14/2019	N	0.17 U	0.088 U	0.23 U				0.77 J		134				14.8		6.9 U			0.24 U	0.15 U	0.18 U	0.15 U	0.22 U	33.3	0.74	35.7		0.64 H		3.8	0.69 J				
MW32	4/13/2020	N	0.17 U	0.092 U	0.23 JB				2.7		46.7 U				3.9		6.9 U			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	31.5	0.67	30.6		0.69		4.4	0.47 U				
MW32	10/8/2020	N	0.17 U	0.091 U	0.23 U				6.7		60.1 J				4.2		6.9 U			0.25 U	0.15 U	0.18 U	0.15 U	0.22 U	30.0	0.70	33.9		0.70 H		4.4	0.95 J				
MW32	4/12/2021	N	8.9	0.2	1.0 U				10.6 B		62.2 J				2.2 JB		20.0 U			0.76 U	0.50 U	0.50 U	0.50 U	1.0 U	28.2	0.59	34.9		0.57		3.7	0.88 J				
MW32	10/12/2021	N	5.9	0.42	1.0 U				16.0		117				4.0		20.0 U			0.81 U	0.50 U	0.50 U	0.50 U	1.0 U	32.6	0.54	33.4		0.53		3.6	1.0 U				
MW32	4/11/2022	N	0.67 J	2.0	2.6				49.9		17400				302		32.9			0.82 U	0.50 U	0.50 U	0.50 U	1.0 U	36.1	0.46	24.1		0.40		2.8	1.6				
MW32	10/6/2022	N	0.62 J	0.10 U	1.0 U				0.62 J		100 U				1.4 J		20.0 U			0.83 U	0.50 U	0.50 U	0.50 U	1.0 U	36.3	0.54			0.38		2.7	1				
MW32	4/25/2023	N	1.4	0.3	1.0 U	0.44 J	9920	9210	0.70 J	6.4	291	2660	3750	4200	33	37.5	20.0 U	7.6 J		0.64 U	0.50 U	0.50 U	0.50 U	1.0 U	38.2	0.56	23	24.8	0.35		2.5	1.1				
MW6S	4/15/2021	N	1.0 U	1.1	1.0 U				4.6 B		100 U				3.2		17.3 J			0.78 U	0.50 U	0.50 U	0.50 U	1.0 U	257	10.5	280		4.9 H		7.3	1.4				
RW01	10/9/1997	N		1 U																																
RW01	4/23/2001	N		0.1 U																5.3 U	0.5 U	5 U	5 U													
RW01	9/11/2001	N		0.071 J																0.26 U	0.44 U	0.5 U	0.4 U	1.2 U												
RW01	9/28/2001	N		0.1 U																																
RW01	9/28/2001	N2		0.05 U																																
RW01	5/14/2002	N		0.23																5 U	1 U	5 U	2 J	2 J												
RW01	8/6/2002	N		0.04																5 U	1 U	5 U	5 U	5 U												
RW01	4/29/2003	N		0.1 J																7.1 U	0.5 U	5 U	5 U	5 U												
RW01	9/23/2003	N		0.28																0.97 U	0.25 U	2.5 U	2.5 U	2.5 U												
RW01	11/20/2003	N		0.24																																
RW01	5/4/2004	FD		0.134 UB																5.00 U	0.500 U	5.00 U	5.00 U	5.00 U												
RW01	5/4/2004	N		0.140 UB																5.00 U	0.500 U	5.00 U	5.00 U	5.00 U												
RW01	9/22/2004	FD		1.51																5.00 U	0.500 U	5.00 U	5.00 U	5.00 U												
RW01	9/22/2004	N		0.201																5.00 U	0.500 U	5.00 U	5.00 U	5.00 U												
RW01	11/1/2004	N		0.0952 U																																
RW01	5/10/2005	FD		0.053 J																0.93 U	0.50 U	5.0 U	5.0 U	5.0 U												
RW01	5/10/2005	N		0.068 J																0.93 U	0.50 U	5.0 U	5.0 U	5.0 U												
RW01	7/7/2005	FD		0.035 J																0.96 U	0.50 U	5.0 U	5.0 U	5.0 U												
RW01	7/7/2005	N		0.043 J																0.95 U	0.50 U	5.0 U	5.0 U	5.0 U												
RW01	9/27/2005	FD		0.049 J																0.93 UJ	0.50 U	5.0 U	5.0 U	5.0 U												
RW01	9/27/2005	N		0.050 J																0.92 UJ	0.50 U	5.0 U	5.0 U	5.0 U												
RW01	5/31/2006	FD		0.055 J																0.94 U	0.50 U	5.0 U	5.0 U	5.0 U												
RW01	5/31/2006	N		0.048 J																0.93 U	0.50 U	5.0 U	5.0 U	5.0 U												
RW01	9/25/2006	FD		0.023 J																0.93 U	0.50 U	5.0 U	5.0 U	5.0 U												
RW01	9/25/2006	N		0.11 U																0.93 U	0.50 U	5.0 U	5.0 U	5.0 U												
RW01	5/9/2007	FD		0.048 J																0.95 R	1.0 U	1.0 U	1.0 U	2.0 U												
RW01	5/9/2007	N		0.035 J																0.95 R	1.0 U	1.0 U	1.0 U	2.0 U												

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L				
RW01	9/18/2007	FD		0.27 R																0.93 R	1.0 U	1.0 U	1.0 U	2.0 U												
RW01	9/18/2007	N		0.093 UJ																	0.93 R	1.0 U	1.0 U	1.0 U	2.0 U											
RW01	5/20/2008	FD		0.066 J																	0.95 U	1.0 UJ	1.0 U	1.0 U	2.0 UJ											
RW01	5/20/2008	N		0.060 J																	0.95 U	1.0 UJ	1.0 U	1.0 U	2.0 UJ											
RW01	10/23/2008	FD																			1 U															
RW01	10/23/2008	N																			1 U															
RW01	12/11/2008	FD		0.1 U																		0.1 U	0.4 U	0.4 U	1.0 U											
RW01	12/11/2008	N		0.1 UJ																		0.1 U	0.4 U	0.4 U	1.0 U											
RW01	6/2/2009	FD		0.1 UJ																	1.0 UJ	0.5 UB	2.0 UB	2.0 UB	5.0 UB											
RW01	6/2/2009	N		0.1 UJ																	1.0 UJ	0.5 UB	2.0 UB	2.0 UB	5.0 U											
RW01	7/6/2009	FD																				0.5 U	2.0 U	2.0 U	5.0 U											
RW01	7/6/2009	N																				0.5 U	2.0 U	2.0 U	5.0 U											
RW01	10/7/2009	FD		0.1 UJ																	0.997 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ											
RW01	10/7/2009	N		0.1 UJ																	1 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ											
RW01	5/19/2010	FD		0.1 U																	1.0 U	0.4 U	5 U	5 U	5 U											
RW01	5/19/2010	N		0.1 U																	1.0 U	0.4 UJ	5 UJ	5 UJ	5 UJ											
RW01	10/5/2010	FD		0.1 U																	1.0 U	0.1 U	0.4 U	0.4 U	1 U											
RW01	10/5/2010	N		0.1 U																	1.0 U	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ											
RW01	11/30/2010	N																				0.1 U	0.4 U	0.4 U	1 U											
RW01	6/30/2011	FD		0.1 U																	1 U	0.1 U	0.4 U	0.4 U	1 U											
RW01	6/30/2011	N		0.1 U																	0.997 U	0.1 U	0.4 U	0.4 U	1 U											
RW01	10/20/2011	FD		0.039 J																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW01	10/20/2011	N		0.040 J																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW01	12/16/2011	FD		0.031 R																																
RW01	12/16/2011	N		0.096 UJ																																
RW01	5/23/2012	FD		0.017 J																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW01	5/23/2012	N		0.019 J																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW01	7/11/2012	FD		0.035 J																																
RW01	7/11/2012	FD2		0.033 J																																
RW01	7/11/2012	N		0.027 J																																
RW01	10/17/2012	FD		0.035 J																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW01	10/17/2012	N		0.045 J																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW01	12/3/2012	FD		0.094 UJ																																
RW01	12/3/2012	FD2		0.095 U																																
RW01	12/3/2012	N		0.094 UJ																																
RW01	12/3/2012	N2		0.095 U																																
RW01	5/21/2013	FD		0.029 J																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW01	5/21/2013	N		0.031 J																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW01	10/8/2013	N		0.040 J																	0.20 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW01	10/8/2013	N2		0.097 U																	0.20 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW01	5/13/2014	N		0.051 J																																
RW01	9/25/2014	N		0.043 J																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW01	4/21/2015	N		0.095 U																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW01	10/15/2015	N		0.094 U																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW01	4/5/2016	N		0.095 U																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW01	10/10/2016	N		0.020 J																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
RW01	4/19/2017	N		0.015 J																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U								
RW01	10/20/2017	N		0.10 U																	0.87 U	0.50 U	0.50 U	0.37 J	1.0 U							
RW01	6/5/2018	N		0.095 U																	0.75 U	0.50 U	0.50 U	0.50 U	1.0 U							
RW01	10/15/2018	N		0.10 U																	0.79 U	0.50 U	0.50 U	0.50 U	1.0 U							
RW01	4/22/2019	N		0.087 U																	0.23 U	0.15 U	0.18 U	0.15 U	0.22 U							
RW01	10/1/2019	N		0.093 U																	0.24 U	0.15 U	0.18 U	0.15 U	0.22 U							
RW01	4/15/2021	N		0.10 U																	0.83 U	0.50 U	0.50 U	0.50 U	1.0 U							
RW01	10/13/2021	N		0.096 U																	0.76 U	0.50 U	0.50 U	0.50 U	1.0 U							
RW01	6/20/2022	N		0.14 U																	0.23 U	0.15 U	0.15 U	0.18 U	0.22 U							
RW01	10/03/2022	N		0.10 U																	0.81 U	0.50 U	0.50 U	0.50 U	1.0 U							
RW01	4/25/2023	N		0.10 U																	0.78 U	0.50 U	0.50 U	0.50 U	1.0 U							
RW02	10/9/1997	FD		2																												
RW02	10/9/1997	N		0.9 J																												
RW02	10/24/1997	N		1 U																												
RW02	4/8/1998	N		1 U																												
RW02	4/24/2001	N		0.1 U																	5.4 U	0.1 U	1 U	1 U	1 U							
RW02	9/11/2001	N		9.5																	0.25 U	0.44 U	0.5 U	0.4 U	1.2 U							
RW02	9/28/2001	N		0.1 U																												
RW02	9/28/2001	N2		0.1 U																												
RW02	9/28/2001	N3		0.05 U																												
RW02	9/28/2001	N4		0.05 U																												
RW02	5/14/2002	N		0.1																	5 U	1 U	5 U	5 U	5 U							
RW02	8/6/2002	N		0.04 U																	5 U	1 U	5 U	5 U	5 U							
RW02	8/6/2002	N2		0.04 U																	5 U	1 U	5 U	5 U	5 U							
RW02	4/29/2003	N		0.11 U																	6.8 U	0.5 U	5 U	5 U	5 U							
RW02	9/24/2003	N		0.11 U																	0.97 U	0.25 U	2.5 U	2.5 U	2.5 U							
RW02	9/24/2003	N2		0.11 U																	0.96 U	0.25 U	2.5 U	2.5 U	2.5 U							
RW02	5/4/2004	N		0.0252 UB																	5.00 U	0.500 U	5.00 U	5.00 U	5.00 U							
RW02	9/22/2004	N		0.398																	5.00 U	0.500 U	5.00 U	5.00 U	5.00 U							
RW02	11/1/2004	N		0.0962 U																												
RW02	5/10/2005	N		0.11 U																	0.93 U	0.50 U	5.0 U	5.0 U	5.0 U							
RW02	9/27/2005	N		0.11 U																	0.92 UJ	0.50 U	5.0 U	5.0 U	5.0 U							
RW02	5/31/2006	N		0.11 UJ																	0.93 U	0.50 U	5.0 U	5.0 U	5.0 U							
RW02	9/25/2006	N		0.11 U																	0.93 U	0.50 U	5.0 U	5.0 U	5.0 U							
RW02	5/9/2007	N		0.092 UJ																	0.97 R	1.0 U	1.0 U	1.0 U	2.0 U							
RW02	9/18/2007	N		0.093 UJ																	0.93 R	1.0 U	1.0 U	1.0 U	2.0 U							
RW02	5/20/2008	N		0.095 UJ																	0.95 U	1.0 UJ	1.0 U	1.0 U	2.0 UJ							
RW02	10/23/2008	N																			1.33 U											
RW02	12/10/2008	N		0.1 U																		0.1 U	0.4 U	0.4 U	1.0 U							
RW02	6/2/2009	N		0.1 UJ																	1.0 UJ	0.5 U	2.0 U	2.0 U	5.0 U							
RW02	10/7/2009	N		0.1 UJ																	0.997 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ							
RW02	5/19/2010	N		0.1 U																	1.0 U	0.4 U	5 U	5 U	5 U							
RW02	10/5/2010	N		0.1 U																	1.0 U	0.1 U	0.4 U	0.4 U	1 U							
RW02	6/30/2011	N		0.1 U																	0.999 U	0.1 U	0.4 U	0.4 U	1 U							
RW02	10/20/2011	N		0.095 U																	0.20 U	0.50 U	1.0 U	1.0 U	2.0 U							

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L		
RW02	5/23/2012	N		0.097 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U										
RW02	10/17/2012	N		0.037 J																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW02	10/17/2012	N2		0.057 J																														
RW02	10/17/2012	N3		0.094 UJ																														
RW02	12/3/2012	N		0.095 U																														
RW02	12/3/2012	N2		0.094 UJ																														
RW02	5/21/2013	N		0.097 U																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW02	10/8/2013	N		0.094 U																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW02	5/13/2014	N		0.095 U																														
RW02	9/25/2014	N		0.096 U																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW02	4/21/2015	N		0.095 U																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW02	10/15/2015	N		0.096 U																	0.20 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW02	4/5/2016	N		0.095 U																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW02	10/10/2016	N		0.097 U																	0.20 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW02	4/17/2017	N		0.095 U																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW02	10/20/2017	N		0.10 U																	0.75 U	0.50 U	0.50 U	0.33 J	1.0 U									
RW02	4/17/2018	N		0.024 U																	0.79 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW02	10/16/2018	FD		0.099 U																	0.80 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW02	10/16/2018	N		0.097 U																	0.77 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW02	4/22/2019	FD		0.085 U																	0.23 U	0.15 U	0.18 U	0.15 U	0.22 U									
RW02	4/22/2019	N		0.085 U																	0.23 U	0.15 U	0.18 U	0.15 U	0.22 U									
RW02	10/1/2019	N		0.089 U																	0.24 U	0.15 U	0.18 U	0.15 U	0.22 U									
RW02	4/15/2021	N		0.096 U																	0.79 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW02	10/13/2021	N		0.097 U																	0.76 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW02	10/13/2021	FD		0.095 U																	0.81 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW02	4/14/2022	N		0.31 J																	0.75 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW02	6/20/2022	N		0.15 U																	0.23 U	0.15 U	0.15 U	0.18 U	0.22 U									
RW02	10/03/2022	N		0.10 U																	0.76 U	0.50 U	0.50 U	0.50 U	1.0 U									
RW02	4/24/2023	N		0.10 U																	0.70 U	0.50 U	0.50 U	0.50 U	0.35 J									
RW03	10/9/1997	N		1 U																														
RW03	9/11/2001	N		0.1 J																	0.28 U	0.44 U	0.5 U	0.4 U	1.2 U									
RW03	9/28/2001	N		0.1 U																														
RW03	9/28/2001	N2		0.05 U																														
RW03	5/14/2002	N		0.094 J																	5 U	1 U	5 U	5 U	5 U									
RW03	8/6/2002	N		0.04 U																	5 U	1 U	5 U	5 U	5 U									
RW03	4/29/2003	N		0.11 U																	6.8 U	0.5 U	5 U	5 U	5 U									
RW03	9/23/2003	N		0.11 U																	0.96 U	0.25 U	2.5 U	2.5 U	2.5 U									
RW03	5/4/2004	N		0.0952 U																	5.00 U	0.500 U	5.00 U	5.00 U	5.00 U									
RW03	9/22/2004	N		2.18																	5.00 U	0.500 U	5.00 U	5.00 U	5.00 U									
RW03	11/1/2004	N		0.0962 U																														
RW03	5/10/2005	N		0.11 U																	0.93 U	0.50 U	5.0 U	5.0 U	5.0 U									
RW03	9/27/2005	N		0.11 U																	0.93 UJ	0.50 U	5.0 U	5.0 U	5.0 U									
RW03	5/31/2006	N		0.11 UJ																	0.94 U	0.50 U	5.0 U	5.0 U	5.0 U									
RW03	9/25/2006	N		0.11 U																	0.93 U	0.50 U	5.0 U	5.0 U	5.0 U									
RW03	5/9/2007	N		0.092 UJ																	0.95 R	1.0 U	1.0 U	1.0 U	2.0 U									

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
RW03	9/18/2007	N		0.093 UJ																0.93 R	1.0 U	1.0 U	1.0 U	2.0 U								
RW03	5/20/2008	N		0.097 UJ																0.96 U	1.0 UJ	1.0 U	1.0 U	2.0 UJ								
RW03	10/23/2008	N																		1 U												
RW03	12/10/2008	N		0.1 U																	0.1 U	0.4 U	0.4 U	1.0 U								
RW03	6/2/2009	N		0.1 UJ																1.0 UJ	0.5 U	2.0 U	2.0 U	5.0 U								
RW03	10/7/2009	N		0.1 UJ																0.997 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ								
RW03	5/19/2010	N		0.1 U																1.0 U	0.4 UJ	5 UJ	5 UJ	5 UJ								
RW03	10/5/2010	N		0.1 U																1.0 U	0.1 U	0.4 U	0.4 U	1 U								
RW03	6/30/2011	N		0.1 U																0.994 U	0.1 U	0.4 U	0.4 U	1 U								
RW03	10/20/2011	N		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U								
RW03	5/23/2012	N		0.097 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U								
RW03	10/17/2012	N		0.015 J																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U								
RW03	12/3/2012	N		0.095 U																												
RW03	12/3/2012	N2		0.095 UJ																												
RW03	5/21/2013	N		0.053 J																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U								
RW03	10/8/2013	N		0.096 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U								
RW03	5/13/2014	N		0.095 U																												
RW03	9/25/2014	FD		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U								
RW03	9/25/2014	N		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U								
RW03	4/21/2015	N		0.097 U																0.20 U	0.50 U	1.0 U	1.0 U	2.0 U								
RW03	10/15/2015	N		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U								
RW03	4/5/2016	N		0.094 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U								
RW03	10/10/2016	N		0.095 U																0.20 U	0.50 U	1.0 U	1.0 U	2.0 U								
RW03	4/17/2017	N		0.095 U																0.20 U	0.50 U	1.0 U	1.0 U	2.0 U								
RW03	10/20/2017	N		0.096 U																0.79 U	0.50 U	0.50 U	0.29 J	1.0 U								
RW03	4/17/2018	N		0.025 U																0.84 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW03	10/16/2018	N		0.098 U																0.77 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW03	4/22/2019	N		0.085 U																0.24 U	0.15 U	0.18 U	0.15 U	0.22 U								
RW03	10/1/2019	N		0.088 U																0.27 U	0.15 U	0.18 U	0.15 U	0.22 U								
RW03	4/14/2021	N		0.10 U																0.78 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW03	4/14/2021	FD		0.098 U																0.85 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW03	10/13/2021	N		0.11 U																0.89 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW03	4/14/2022	N		0.097 U																0.77 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW03	10/03/2022	N		0.10 U																0.77 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW03	10/03/2022	FD		0.10 U																0.77 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW03	4/24/2023	N		0.10 U																0.62 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW04	10/9/1997	N		1 U																												
RW04	4/23/2001	N		0.1 U																5 U	0.5 U	5 U	5 U									
RW04	9/11/2001	N		0.073 J																0.25 U	0.44 U	0.5 U	0.4 U	1.2 U								
RW04	9/28/2001	N		0.1 U																												
RW04	9/28/2001	N2		0.05 U																												
RW04	5/14/2002	N		0.13																5 U	1 U	5 U	5 U	5 U								
RW04	8/6/2002	N		0.04 U																5 U	1 U	5 U	5 U	5 U								
RW04	4/29/2003	N		0.11 U																7.4 U	0.5 U	5 U	5 U	5 U								
RW04	9/23/2003	N		0.11 U																0.99 U	0.25 U	2.5 U	2.5 U	2.5 U								

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L		
RW04	5/4/2004	N		0.100 U																5.00 U	0.500 U	5.00 U	5.00 U	5.00 U										
RW04	9/22/2004	N		0.266																5.00 U	0.500 U	5.00 U	5.00 U	5.00 U										
RW04	10/1/2004	N		0.0962 R																														
RW04	5/10/2005	N		0.11 U																0.94 U	0.50 U	5.0 U	5.0 U	5.0 U										
RW04	9/27/2005	N		0.11 U																0.91 UJ	0.50 U	5.0 U	5.0 U	5.0 U										
RW04	5/31/2006	N		0.11 UJ																0.97 U	0.50 U	5.0 U	5.0 U	5.0 U										
RW04	9/25/2006	N		0.11 U																0.93 U	0.50 U	5.0 U	5.0 U	5.0 U										
RW04	5/9/2007	N		0.093 UJ																0.96 R	1.0 U	1.0 U	1.0 U	2.0 U										
RW04	9/18/2007	N		0.093 UJ																0.93 R	1.0 U	1.0 U	1.0 U	2.0 U										
RW04	5/20/2008	N		0.093 UJ																0.96 U	1.0 UJ	1.0 U	1.0 U	2.0 UJ										
RW04	10/23/2008	N																		1 U														
RW04	12/10/2008	N		0.1 U																	0.1 U	0.4 U	0.4 U	1.0 U										
RW04	6/2/2009	N		0.1 UJ																1.0 UJ	0.5 U	2.0 U	2.0 U	5.0 U										
RW04	10/7/2009	N		0.15 J																0.994 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ										
RW04	10/20/2009	N		0.1 UJ																														
RW04	5/19/2010	N		0.1 U																1.0 U	0.4 UJ	5 UJ	5 UJ	5 UJ										
RW04	10/5/2010	N		0.1 U																1.0 U	0.1 U	0.4 U	0.4 U	1 U										
RW04	6/30/2011	N		0.1 U																0.992 U	0.1 U	0.4 U	0.4 U	1 U										
RW04	10/20/2011	N		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U										
RW04	5/23/2012	N		0.094 U																0.20 U	0.50 U	1.0 U	1.0 U	2.0 U										
RW04	10/17/2012	N		0.071 J																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U										
RW04	12/3/2012	N		0.095 U																														
RW04	12/3/2012	N2		0.094 UJ																														
RW04	5/21/2013	N		0.094 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U										
RW04	10/8/2013	N		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U										
RW04	5/13/2014	N		0.023 J																														
RW04	9/25/2014	N		0.096 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U										
RW04	4/21/2015	N		0.094 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U										
RW04	10/15/2015	N		0.094 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U										
RW04	4/5/2016	N		0.094 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U										
RW04	10/10/2016	N		0.094 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U										
RW04	4/17/2017	N		0.094 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U										
RW04	10/20/2017	N		0.096 U																0.81 U	0.50 U	0.50 U	0.50 U	1.0 U										
RW04	4/17/2018	N		0.024 U																0.92 U	0.50 U	0.50 U	0.50 U	1.0 U										
RW04	10/15/2018	N		0.11 U																0.90 U	0.50 U	0.50 U	0.50 U	1.0 U										
RW04	4/22/2019	N		0.11 U																0.25 U	0.15 U	0.18 U	0.15 U	0.22 U										
RW04	10/1/2019	N		0.085 U																0.24 U	0.15 U	0.18 U	0.15 U	0.29 J										
RW04	4/14/2021	N		0.096 U																0.75 U	0.50 U	0.50 U	0.50 U	1.0 U										
RW04	10/13/2021	N		0.10 U^c																0.75 U	0.50 U	0.50 U	0.50 U	1.0 U										
RW04	4/14/2022	N		0.11 U																0.76 U	0.50 U	0.50 U	0.50 U	1.0 U										
RW04	10/03/2022	N		0.10 U																0.74 U	0.50 U	0.50 U	0.50 U	1.0 U										
RW04	4/24/2023	N		0.10 U																0.67 U	0.50 U	0.50 U	0.50 U	0.46 J										
RW05	5/4/2004	N		0.0935 U																5.00 U	0.500 U	5.00 U	5.00 U	5.00 U										
RW05	9/22/2004	N		0.293																5.00 U	0.500 U	5.00 U	5.00 U	5.00 U										
RW05	11/1/2004	N		0.0962 U																														

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L				
RW05	5/10/2005	N		0.11 U																0.93 U	0.50 U	5.0 U	5.0 U	5.0 U												
RW05	9/27/2005	N		0.11 U																	0.92 UJ	0.50 U	5.0 U	5.0 U	5.0 U											
RW05	5/31/2006	N		0.11 UJ																	0.94 U	0.50 U	5.0 U	5.0 U	5.0 U											
RW05	9/25/2006	N		0.11 U																	0.93 U	0.50 U	5.0 U	5.0 U	5.0 U											
RW05	5/9/2007	N		0.092 UJ																	0.93 R	1.0 U	1.0 U	1.0 U	2.0 U											
RW05	9/18/2007	N		0.093 UJ																	1.0 R	1.0 U	1.0 U	1.0 U	2.0 U											
RW05	5/20/2008	N		0.095 UJ																	0.95 U	1.0 UJ	1.0 U	1.0 U	2.0 UJ											
RW05	10/23/2008	N																			1 U															
RW05	12/10/2008	N		0.1 U																		0.1 U	0.4 U	0.4 U	1.0 U											
RW05	6/2/2009	N		0.1 UJ																	1.0 UJ	0.5 U	2.0 U	2.0 U	5.0 U											
RW05	10/7/2009	N		0.1 UJ																	0.997 UJ	0.1 UJ	0.4 UJ	0.4 UJ	1 UJ											
RW05	5/19/2010	N		0.1 U																	1.0 U	0.4 U	5 U	5 U	5 U											
RW05	10/5/2010	N		0.1 U																	1.0 U	0.1 U	0.4 U	0.4 U	1 U											
RW05	6/30/2011	N		0.1 U																	0.991 U	0.1 U	0.4 U	0.4 U	1 U											
RW05	10/20/2011	N		0.095 U																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW05	5/23/2012	N		0.095 U																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW05	10/17/2012	N		0.030 J																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW05	12/4/2012	N		0.095 UJ																																
RW05	12/4/2012	N2		0.095 U																																
RW05	5/21/2013	N		0.095 U																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW05	10/8/2013	N		0.098 U																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW05	5/13/2014	N		0.095 U																																
RW05	9/25/2014	N		0.096 U																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW05	4/21/2015	N		0.095 U																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW05	10/15/2015	N		0.10 U																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW05	4/5/2016	N		0.095 U																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW05	10/10/2016	N		0.095 U																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW05	4/17/2017	N		0.097 U																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW05	10/20/2017	N		0.095 U																	0.81 U	0.50 U	0.50 U	0.50 U	1.0 U											
RW05	4/17/2018	FD		0.024 U																	0.75 U	0.50 U	0.50 U	0.50 U	1.0 U											
RW05	4/17/2018	N		0.024 U																	0.75 U	0.50 U	0.50 U	0.50 U	1.0 U											
RW05	10/15/2018	N		0.16																	0.87 U	0.50 U	0.50 U	0.50 U	1.0 U											
RW05	4/22/2019	N		0.085 U																	0.25 U	0.15 U	0.18 U	0.15 U	0.22 U											
RW05	10/1/2019	FD		0.091 U																	0.26 U	0.15 U	0.18 U	0.15 U	0.22 U											
RW05	10/1/2019	N		0.090 U																	0.26 U	0.15 U	0.18 U	0.15 U	0.22 U											
RW05	4/14/2021	N		0.099 U																	0.80 U	0.50 U	0.50 U	0.50 U	1.0 U											
RW05	10/13/2021	N		0.099 U																	0.77 U	0.50 U	0.50 U	0.50 U	1.0 U											
RW05	4/14/2022	N		0.19 J																	0.78 U	0.50 U	0.50 U	0.50 U	1.0 U											
RW05	6/20/2022	N		0.14 U																	0.24 U	0.15 U	0.15 U	0.18 U	0.22 U											
RW05	10/03/2022	N		0.096 U																	0.79 U	0.50 U	0.50 U	0.50 U	1.0 U											
RW05	4/24/2023	N		0.10 U																	0.65 U	0.50 U	0.50 U	0.50 U	1.0 U											
RW06	9/25/2014	N		0.095 U																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW06	4/21/2015	N		0.095 U																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW06	10/15/2015	N		0.018 J																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											
RW06	4/5/2016	N		0.095 U																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U											

Appendix A.1

Historical Groundwater Analytical Data
Penta Wood Products Superfund Site
Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic (dissolved) ug/L	Arsenic (total) ug/L	Calcium (dissolved) ug/L	Calcium (total) ug/L	Copper (dissolved) ug/L	Copper (total) ug/L	Iron (dissolved) ug/L	Iron (total) ug/L	Magnesium (dissolved) ug/L	Magnesium (total) ug/L	Manganese (dissolved) ug/L	Manganese (total) ug/L	Zinc (dissolved) ug/L	Zinc (total) ug/L	Total Petroleum Hydrocarbons (C10-C28) DRO mg/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L	Alkalinity, total (as CaCO3) mg/L	Chloride mg/L	Hardness (total) mg/L	Hardness (dissolved) mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L	
RW06	10/10/2016	N		0.095 U																0.19 U	0.50 U	1.0 U	1.0 U	2.0 U									
RW06	4/18/2017	N		0.095 U																	0.19 U	0.50 U	1.0 U	1.0 U	2.0 U								
RW06	10/20/2017	N		0.095 U																	0.75 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW06	4/17/2018	N		0.024 U																	0.83 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW06	10/16/2018	N		0.099 U																	0.78 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW06	4/22/2019	N		0.086 U																	0.24 U	0.15 U	0.18 U	0.15 U	0.22 U								
RW06	10/1/2019	N		0.086 U																	0.24 U	0.15 U	0.18 U	0.15 U	0.22 U								
RW06	4/26/2021	N		0.096 U																	0.76 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW06	10/13/2021	N		0.10 U ^c																	0.78 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW06	4/14/2022	N		0.098 U																	0.78 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW06	4/14/2022	FD		0.096 U																	0.77 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW06	10/03/2022	N		0.097 U																	0.75 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW06	4/24/2023	N		0.10 U																	0.65 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW06	4/24/2023	FD		0.10 U																	0.63 U	0.50 U	0.50 U	0.50 U	0.46 J								
RW06 SHC	4/17/2018	N		0.024 U																	0.79 U	0.50 U	0.50 U	1.5	1.0 U								
RW06 SHC	10/16/2018	N		0.095 U																	0.75 U	0.50 U	0.50 U	1.7	1.0 U								
RW06 SHC	4/22/2019	N		0.095 U																	0.23 U	0.15 U	0.18 U	0.50 U	0.22 U								
RW06 SHC	10/1/2019	N		0.086 U																	0.25 U	0.15 U	0.18 U	0.15 U	0.22 U								
RW06 SHC	4/26/2021	N		0.097 U																	0.77 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW06 SHC	10/13/2021	N		0.097 U																	0.81 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW06 SHC	4/14/2022	N		0.10 U																	0.78 U	0.50 U	0.50 U	0.50 U	1.0 U								
RW06 SHC	10/03/2022	N		0.11 U																	0.84 U	0.50 U	0.50 U	0.17 J	0.33 J								

Notes:

- ¹ Only compounds currently sampled are included on this table.
- ² Samples collected before September 2014 were not collected by GHD. GHD has no ability to verify data or data qualifiers.
- ³ Sample type is listed for normal samples (N) and field duplicates (FD), numbers differentiate from multiple samples of similar sample type during the same sampling event.
- mg/L Concentrations listed with units of milligrams per liter.
- ug/L Concentrations listed with units of micrograms per liter.
- LCS or LCSD exceeds the control limits.
- B Compound was detected in the method blank.
- F1 MS and/or MSD Recovery exceeds the control limits
- H Analysis was performed after holding time.
- J Concentration was estimated below the reporting limit.
- P The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.
- U Compound was not detected above the reporting limit.
- UU Compound was not detected above the estimated reporting limit.

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	MW29
Sep-01	0.01	0.27	0.51	0.11	NA
May-02	0.00	0.29	0.23	0.00	NA
Aug-02	0.00	0.33	0.22	0.00	NA
May-03	0.00	0.00	0.00	0.00	NA
Sep-03	0.00	0.32	0.24	0.04	NA
May-04	0.00	0.45	0.36	0.35	NA
Sep-04	0.21	0.54	0.67	0.52	NA
May-05	0.29	0.48	0.63	0.36	NA
Sep-05	0.87	0.06	0.83	1.15	NA
May-06	0.00	0.00	0.29	0.00	NA
Sep-06	0.00	0.05	0.80	0.69	NA
Apr-07	0.58	0.04	0.74	1.22	NA
May-07	0.58	0.03	0.54	1.20	NA
Sep-07	0.04	0.16	1.07	0.00	NA
May-08	0.40	1.19	0.90	1.71	NA
Oct-08	0.14	0.04	0.00	0.00	NA
Jun-09	0.54	1.58	1.60	1.45	NA
Oct-09	0.63	1.92	1.46	1.02	NA
May-10	0.51	2.01	1.10	0.85	NA
Oct-10	0.00	0.57	0.59	0.00	NA
Jun-11	0.00	0.42	0.79	0.00	NA
Oct-11	0.00	0.53	1.07	0.00	NA
May-12	0.69	0.79	0.80	2.17	NA
Aug-12	0.04	0.43	0.89	0.30	NA
Oct-12	0.00	0.45	0.91	0.88	NA
Dec-12	0.02	0.44	1.06	0.95	NA
May-13	0.17	0.53	0.94	1.08	NA
Oct-13	0.00	0.70	1.25	0.81	NA
May-14	0.00	0.79	0.22	0.22	NA
Sep-14	0.00	0.56	0.30	0.00	NA
2/13/15	0.00	0.56	0.24	0.00	NA
2/20/15	0.00	0.53	0.23	0.00	NA
3/24/15	0.00	0.34	0.52	0.00	NA
4/16/15	0.00	0.58	NM	0.00	NA
5/14/15	0.00	0.57	NM	0.00	NA
10/12/15	0.00	0.42	0.07	0.01	NA
4/4/16	0.00	0.66	0.25	0.01	0.00
7/18/16	0.00	0.52	0.00	0.00	0.00
10/7/16	0.00	0.67	0.01	0.01	0.00
1/11/17	0.00	NM	0.18	0.02	0.00
4/17/17	0.00	0.53	0.27	0.01	0.47
7/13/17	0.00	0.51	0.10	0.01	0.15
9/28/17	0.00	NM	NM	0.01	0.45
1/3/18	0.00	0.45	0.26	0.01	0.70
5/25/18*	0.00	0.53	0.62	0.01	0.88
7/11/18	0.00	0.50	0.19	0.01	0.48
10/15/18	0.00	0.48	0.41	0.01	0.63
1/2/19	0.00	0.51	0.37	0.34	0.76
4/17/19	0.00	0.50	0.20	0.01	0.33
7/22/19	0.00	0.49	0.00	0.03	0.00
10/2/19	0.00	0.51	0.03	0.07	0.00
1/9/20	0.00	0.48	0.00	0.04	0.00
4/6/20	0.00	0.45	0.01	0.30	0.01
10/5/20	0.00	0.43	0.02	0.06	0.01
4/9/21	0.00	0.50	0.41	0.10	0.85
10/8/21	0.00	0.59	0.53	0.77	1.31
4/8/22	1.40	0.54	0.58	0.94	1.56
10/3/22	0.25	0.56	0.63	1.05	2.34
4/24/23	0.33	0.57	0.30	1.33	1.05

Notes:

NM - Not Measured

NA - Not Applicable

* - MW10S measured on 6/1/18 and MW29 measured on 5/24/18

Appendix A.3

**Historical Groundwater Extraction Summary
Penta Wood Products Superfund Site
Siren, Wisconsin**

Operation Period	Volume of Groundwater Extracted (gallons)
09/27/00 to 12/18/00	11,712,960
02/02/01 to 02/08/01	691,200
03/16/01 to 06/10/01	9,288,000
06/15/01 to 09/27/01	6,822,720
02/27/04 to 12/31/04	18,548,154
01/01/05 to 12/31/05	21,374,796
01/01/06 to 12/31/06	14,759,392
01/01/07 to 12/31/07	16,551,336
01/01/08 to 12/31/08	18,118,696
01/01/09 to 12/31/09	18,533,648
01/01/10 to 12/31/10	18,561,632
01/01/11 to 12/31/11	17,796,668
01/01/12 to 12/31/12	23,051,892
01/01/13 to 12/31/13	29,793,563
01/01/14 to 12/31/14	18,415,098
01/01/15 to 06/30/15	6,282,127
07/01/15 to 11/23/15	5,125,729
Total Gallons Extracted	255,427,611

Appendix A.4

**Historical Influent Pentachlorophenol Concentrations
Penta Wood Products Superfund Site
Siren, Wisconsin**

Date	Influent PCP Concentration (ug/L)
02/27/2004 to 12/31/2004*	9,227
01/01/2005 to 12/31/2005*	7,300
01/01/2006 to 12/31/2006*	6,425
01/01/2007 to 12/31/2007*	3,557
01/01/2008 to 12/31/2008*	3,255
March 2009	3,560
July 2009	3,140
September 2009	2,800
December 2009	2,030
March 2010	2050 J
June 2010	1,970
September 2010	1,830
December 2010	1,940
March 2011	2,470
June 2011	2,170
August 2011	1,700
October 2011	1,600
February 2012	2,600
May 2012	2,200
July 2012	1,900
October 2012	1,800
February 2013	1,100
May 2013	1,100
July 2013	1,800
October 2013	1,400
February 2014	1,800
May 2014	1,600
August 2014	2,100
September 2014	2,400
October 2014	2,400
November 2014	2,100
December 2014	4,600
January 2015	1,800
February 2015	480
March 2015	390
April 2015*	1,767
May 2015*	355
June 2015	550
July 2015*	1,100
August 2015	370
September 2015	750
October 2015	600
November 2015	1,100

Note:

* Average PCP influent concentration for that time period.

Appendix A.5

**Historical Hazardous Waste Generation Summary
Penta Wood Products Superfund Site
Siren, Wisconsin**

Date	Filter Cake (lb)	Misc. Debris (lb)	Carbon (lb)	LNAPL (lb)	Liquids[‡] (gallons)	Yearly Total (lb)
2000	0	200	6,000	5,009*	0	11,209
2001	0	400	56,100	6,166*	0	62,666
2002	0	1,400	48,000	10,790*	27,756	87,946
2003	0	600	0	3,083*	1,376	5,059
2004	155,960	3,200	102,000	53,522*	0	314,682
2005	178,784	1,290	104,860	23,847*	0	308,924
2006	112,640	1,200	136,520	52,892*	0	303,252
2007	174,020	2,200	245,377	77,615*	0	517,387
2008	211,402	3,176	70,007	28,036	0	312,621
2009	233,840	1,116	49,757	35,659	0	320,372
2010	210,940	0	81,227	34,937	0	327,104
2011	292,903	0	74,247	0	0	367,150
2012	182,280	0	65,420	25,493	0	273,193
2013	156,760	0	46,571	27,252	0	230,582
2014	110,754	13,513	65,995	11,720	0	201,982
2015	0	0	22,248	0	0	22,248
2016	0	15,212 [†]	34,877	14,374	0	49,251
2017	0	0	0	0	2,759	2,759
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
2021	0	0	0	0	0	0
2022	0	0	0	0	0	0
2023	0	0	0	0	0	0

Notes:

* - Volume shows the amount of waste disposed offsite and is estimated to be approximately 50 percent pure LNAPL and 50 percent mixture of water and emulsified LNAPL.

† - Miscellaneous debris includes sludge, filter cake, and drill cuttings from system decommissioning.

‡ - Prior to 2017, all liquids disposed were water. In 2017, liquids disposed were ferric sulfate water treatment chemicals.

lb - pounds

**LNAPL Thickness and Recovery Summary - Extraction Wells
Penta Wood Products Superfund Site
Siren, Wisconsin**

Well ID	Date	Depth to Water (feet) ¹	Depth to LNAPL (feet) ¹	LNAPL Thickness (feet)	Recovered LNAPL Volume (gallons)	Comments	
EW02	2/18/2015	97.51	NP	0.00	NA	Groundwater extraction rate increased to 10 gpm	
EW02	2/20/2015	97.52	NP	0.00	NA		
EW02	2/24/2015	97.59	NP	0.00	NA		
EW02	3/10/2015	97.67	NP	0.00	NA		
EW02	3/24/2015	97.76	NP	0.00	NA		
EW02	4/10/2015	97.79	NP	0.00	NA		
EW02	4/16/2015	97.76	NP	0.00	NA		
EW02	5/8/2015	97.77	NP	0.00	NA		
							Groundwater extraction rate increased to 12 gpm on 4/30/2015
EW02	5/21/2015	97.89	NP	0.00	NA		Groundwater extraction rate increased to 13.5 gpm
EW02	6/3/2015	97.92	NP	0.00	NA		
EW02	6/16/2015	97.99	NP	0.00	NA		
EW02	7/8/2015	98.12	NP	0.00	NA		
EW02	7/21/2015	98.11	NP	0.00	NA		
EW02	7/29/2015	98.11	NP	0.00	NA		
EW02	8/5/2015	98.18	NP	0.00	NA		
EW02	8/19/2015	98.11	NP	0.00	NA		
EW02	9/4/2015	97.83	NP	0.00	NA		
EW02	9/21/2015	97.76	NP	0.00	NA		
EW02	10/8/2015	97.72	NP	0.00	NA		
EW02	10/22/2015	97.64	NP	0.00	NA		
EW02	11/2/2015	97.58	NP	0.00	NA		
EW02	11/23/2015	NM	NM	NM	NA	Groundwater extraction pump turned off for pilot study	
			Total LNAPL Recovered		0.0		
EW04	11/4/2014	114.30	NP	0.00	NA	Groundwater extraction system shutdown pending carbon change-out	
EW04	12/11/2014	115.39	NP	0.00	NA		
EW04	12/23/2014	115.34	NP	0.00	NA		
EW04	12/30/2014	115.26	NP	0.00	NA		
EW04	1/8/2015	115.22	NP	0.00	NA		
EW04	1/19/2015	115.23	NP	0.00	NA		
EW04	1/22/2015	115.36	NP	0.00	NA		
EW04	1/30/2015	115.47	NP	0.00	NA		
EW04	2/3/2015	115.48	NP	0.00	NA		
EW04	2/13/2015	115.51	NP	0.00	NA		
EW04	2/17/2015	115.48	NP	0.00	NA		
EW04	2/18/2015	115.51	NP	0.00	NA		
EW04	2/20/2015	115.43	NP	0.00	NA		
EW04	2/24/2015	115.53	NP	0.00	NA		
EW04	3/10/2015	115.58	NP	0.00	NA		
EW04	3/24/2015	115.67	NP	0.00	NA	Groundwater extraction rate increased to 10 gpm	

**LNAPL Thickness and Recovery Summary - Extraction Wells
Penta Wood Products Superfund Site
Siren, Wisconsin**

Well ID	Date	Depth to Water (feet) ¹	Depth to LNAPL (feet) ¹	LNAPL Thickness (feet)	Recovered LNAPL Volume (gallons)	Comments
EW04	4/10/2015	115.69	NP	0.00	NA	
EW04	4/16/2015	115.69	NP	0.00	NA	
EW04	5/8/2015	115.69	NP	0.00	NA	Groundwater extraction rate increased to 12 gpm on 4/30/2015
EW04	5/21/2015	115.74	NP	0.00	NA	
EW04	6/3/2015	115.75	NP	0.00	NA	
EW04	6/16/2015	115.82	NP	0.00	NA	
EW04	7/8/2015	115.93	NP	0.00	NA	
EW04	7/21/2015	115.92	NP	0.00	NA	
EW04	7/29/2015	115.91	NP	0.00	NA	Groundwater extraction rate increased to 13.5 gpm
EW04	8/5/2015	115.97	NP	0.00	NA	
EW04	8/19/2015	115.95	NP	0.00	NA	
EW04	9/4/2015	115.78	NP	0.00	NA	
EW04	9/21/2015	115.61	NP	0.00	NA	
EW04	10/8/2015	115.58	NP	0.00	NA	
EW04	10/22/2015	115.58	NP	0.00	NA	
EW04	11/2/2015	115.45	NP	0.00	NA	
EW04	11/23/2015	NM	NM	NM	NA	Groundwater extraction pump turned off for pilot study
Total LNAPL Recovered					0.0	
EW05	11/4/2014	83.35	83.25	0.10	NA	
EW05	11/6/2014	NM	NM	NM	<0.1	
EW05	11/7/2014	91.51	91.44	0.07	NA	
EW05	11/11/2014	91.75	91.56	0.19	NA	
EW05	11/12/2014	91.65	91.48	0.17	NA	Temporary system shutdown due to alarm condition
EW05	11/17/2014	91.64	91.51	0.13	NA	
EW05	12/1/2014	91.58	91.46	0.12	NA	
EW05	12/8/2014	91.55	91.51	0.04	NA	
EW05	12/11/2014	91.65	91.52	0.13	NA	
EW05	12/23/2014	91.40	91.39	0.01	NA	Groundwater extraction system shutdown pending carbon change-out
EW05	12/30/2014	91.37	91.36	0.01	NA	Groundwater extraction system remained shutdown pending carbon change-out
EW05	1/8/2015	91.31	NP	0.00	NA	Groundwater extraction system remained shutdown pending carbon change-out
EW05	1/19/2015	91.32	NP	0.00	NA	Groundwater extraction system restarted after carbon change-out
EW05	1/22/2015	91.95	91.45	0.50	NA	
EW05	1/30/2015	92.00	91.49	0.51	0.1	Measurements recorded prior to LNAPL removal
EW05	2/3/2015	92.17	91.54	0.63	NA	
EW05	2/13/2015	92.14	91.54	0.60	NA	Groundwater extraction pump turned off
EW05	2/17/2015	91.72	91.49	0.23	NA	
EW05	2/20/2015	91.96	91.54	0.42	NA	
EW05	2/24/2015	91.91	91.56	0.35	NA	
EW05	2/27/2015	NM	NM	NM	0.3	Measurements recorded prior to LNAPL removal

**LNAPL Thickness and Recovery Summary - Extraction Wells
Penta Wood Products Superfund Site
Siren, Wisconsin**

Well ID	Date	Depth to Water (feet) ¹	Depth to LNAPL (feet) ¹	LNAPL Thickness (feet)	Recovered LNAPL Volume (gallons)	Comments
EW05	3/10/2015	92.30	91.58	0.72	0.1	Measurements recorded prior to LNAPL removal
EW05	3/26/2015	92.42	91.62	0.80	NA	
EW05	3/31/2015	NM	NM	NM	0.5	
EW05	4/10/2015	92.50	91.71	0.79	NA	
EW05	4/16/2015	92.51	91.69	0.82	NA	
EW05	4/27/2015	NM	NM	NM	1.0	
EW05	5/8/2015	92.03	91.70	0.33	NA	
EW05	5/21/2015	92.34	91.76	0.58	1.0	
EW05	6/3/2015	92.29	91.79	0.50	0.4	
EW05	6/16/2015	92.40	91.86	0.54	0.3	
EW05	7/8/2015	92.34	91.95	0.39	NA	
EW05	7/10/2015	NM	NM	NM	0.5	
EW05	7/21/2015	92.58	91.93	0.65	NA	
EW05	7/23/2015	NM	NM	NM	0.5	
EW05	7/29/2015	92.69	91.96	0.73	NA	
EW05	8/5/2015	92.60	92.04	0.56	NA	
EW05	8/7/2015	NM	NM	NM	0.3	
EW05	8/19/2015	92.45	91.94	0.51	NA	
EW05	8/21/2015	NM	NM	NM	0.3	
EW05	9/4/2015	92.02	91.82	0.20	NA	
EW05	9/11/2015	NM	NM	NM	<0.1	
EW05	9/21/2015	91.67	91.66	0.01	NA	
EW05	10/8/2015	91.87	91.67	0.20	NA	
EW05	10/22/2015	91.66	91.65	0.01	NA	
EW05	11/2/2015	91.51	91.50	0.01	NA	
			Total LNAPL Recovered		5.5	
EW06	11/5/2014	111.22	98.06	13.16	12.0	
EW06	11/12/2014	107.80	98.30	9.50	NA	Temporary system shutdown due to alarm condition
EW06	11/17/2014	110.34	98.52	11.82	NA	
EW06	11/24/2014	111.05	98.45	12.60	10.0	
EW06	11/25/2014	105.63	98.55	7.08	NA	
EW06	12/1/2014	108.60	98.53	10.07	NA	
EW06	12/4/2014	109.35	98.48	10.87	NA	
EW06	12/8/2014	101.90	97.89	4.01	NA	
EW06	12/11/2014	111.91	98.01	13.90	NA	Measurements recorded prior to LNAPL removal
EW06	12/11/2014	100.35	98.40	1.95	12.0	Measurements recorded immediately after LNAPL removal
EW06	12/15/2014	108.40	98.01	10.39	NA	
EW06	12/23/2014	109.35	98.01	11.34	NA	Measurements recorded prior to LNAPL removal
EW06	12/23/2014	99.50	98.35	1.15	13.0	Measurements recorded immediately after LNAPL removal, groundwater extraction system shutdown pending carbon change-out
EW06	12/30/2014	98.59	97.83	0.76	NA	Groundwater extraction system remained shutdown pending carbon change-out

**LNAPL Thickness and Recovery Summary - Extraction Wells
Penta Wood Products Superfund Site
Siren, Wisconsin**

Well ID	Date	Depth to Water (feet) ¹	Depth to LNAPL (feet) ¹	LNAPL Thickness (feet)	Recovered LNAPL Volume (gallons)	Comments
EW06	1/8/2015	99.00	97.92	1.08	NA	Groundwater extraction system remained shutdown pending carbon change-out
EW06	1/19/2015	99.54	97.80	1.74	NA	Groundwater extraction system restarted after carbon change-out
EW06	1/22/2015	111.10	98.18	12.92	NA	
EW06	1/23/2015	98.90	98.50	0.40	12.0	Measurements recorded immediately after LNAPL removal
EW06	1/30/2015	109.35	98.22	11.13	NA	
EW06	2/3/2015	112.61	98.22	14.39	12.0	Measurements recorded prior to LNAPL removal
EW06	2/13/2015	112.44	98.22	14.22	14.0	Groundwater extraction pump turned off
EW06	2/17/2015	101.95	98.12	3.83	NA	
EW06	2/20/2015	105.20	98.18	7.02	NA	
EW06	2/24/2015	105.37	98.02	7.35	8.0	Measurements recorded prior to LNAPL removal
EW06	3/10/2015	108.36	98.22	10.14	8.0	Measurements recorded prior to LNAPL removal
EW06	3/24/2015	NM	NM	NM	8.0	Not measured due to equipment breakdown
EW06	3/26/2015	105.87	98.21	7.66	NA	
EW06	4/10/2015	105.55	98.39	7.16	10.0	
EW06	4/16/2015	106.02	98.36	7.66	10.0	
EW06	4/30/2015	106.33	98.47	7.86	8.0	Groundwater extraction rate increased to 6 gpm
EW06	5/8/2015	100.72	98.32	2.40	4.0	
EW06	5/21/2015	106.84	98.27	8.57	10.0	
EW06	6/3/2015	106.55	98.41	8.14	NA	
EW06	6/4/2015	NM	NM	NM	10.0	
EW06	6/16/2015	105.85	98.49	7.36	7.0	
EW06	7/8/2015	107.10	98.42	8.68	20.0	
EW06	7/10/2015	107.10	98.60	8.50	17.0	
EW06	7/21/2015	107.90	98.54	9.36	17.0	
EW06	7/29/2015	105.87	98.59	7.28	NA	Groundwater extraction rate decreased to 3 gpm
EW06	8/5/2015	105.98	98.65	7.33	14.0	
EW06	8/7/2015	NM	NM	NM	14.0	
EW06	8/19/2015	103.95	98.51	5.44	10.0	
EW06	9/4/2015	105.31	98.31	7.00	10.0	
EW06	9/21/2015	104.49	98.28	6.21	10.0	
EW06	10/8/2015	100.38	98.25	2.13	5.0	
EW06	10/22/2015	105.54	98.23	7.31	8.0	
EW06	11/2/2015	105.15	98.05	7.10	NA	
EW06	11/5/2015	NM	NM	NM	8.0	
EW06	11/23/2015	NM	NM	NM	NA	Groundwater extraction pump turned off for pilot study
			Total LNAPL Recovered		301.0	
EW10	11/4/2014	108.20	103.92	4.28	NA	
EW10	11/5/2014	108.77	104.70	4.07	4.0	
EW10	11/18/2014	107.60	104.35	3.25	NA	
EW10	11/24/2014	107.45	103.94	3.51	0.0	LNAPL pump inoperable, unable to recover LNAPL
EW10	11/25/2014	107.50	103.91	3.59	NA	

**LNAPL Thickness and Recovery Summary - Extraction Wells
Penta Wood Products Superfund Site
Siren, Wisconsin**

Well ID	Date	Depth to Water (feet) ¹	Depth to LNAPL (feet) ¹	LNAPL Thickness (feet)	Recovered LNAPL Volume (gallons)	Comments
EW10	12/1/2014	107.30	104.14	3.16	NA	
EW10	12/4/2014	107.33	104.11	3.22	NA	Measurements recorded prior to LNAPL removal
EW10	12/4/2014	105.35	104.05	1.30	2.0	Measurements recorded immediately after LNAPL removal
EW10	12/8/2014	104.29	103.17	1.12	NA	
EW10	12/11/2014	106.95	104.05	2.90	NA	Measurements recorded prior to LNAPL removal
EW10	12/11/2014	105.46	104.12	1.34	2.0	Measurements recorded immediately after LNAPL removal
EW10	12/15/2014	106.68	104.00	2.68	NA	
EW10	12/23/2014	107.25	103.91	3.34	NA	Measurements recorded prior to LNAPL removal
EW10	12/23/2014	104.75	104.06	0.69	4.0	Measurements recorded immediately after LNAPL removal, groundwater extraction system shutdown pending carbon change-out
EW10	12/30/2014	104.59	103.00	1.59	NA	Groundwater extraction system remained shutdown pending carbon change-out
EW10	1/8/2015	104.55	103.10	1.45	NA	Groundwater extraction system remained shutdown pending carbon change-out
EW10	1/19/2015	104.70	103.00	1.70	NA	Groundwater extraction system restarted after carbon change-out
EW10	1/22/2015	106.38	104.31	2.07	NA	
EW10	1/23/2015	104.40	104.38	0.02	2.0	Measurements recorded immediately after LNAPL removal
EW10	1/30/2015	105.76	104.28	1.48	NA	
EW10	2/3/2015	106.00	104.27	1.73	2.0	Measurements recorded prior to LNAPL removal
EW10	2/13/2015	106.82	104.24	2.58	3.0	Groundwater extraction pump turned off
EW10	2/17/2015	105.80	103.65	2.15	NA	
EW10	2/20/2015	106.40	103.81	2.59	NA	
EW10	2/24/2015	106.85	103.79	3.06	2.0	Measurements recorded prior to LNAPL removal
EW10	3/10/2015	107.80	103.81	3.99	2.0	Measurements recorded prior to LNAPL removal
EW10	3/24/2015	108.21	103.84	4.37	2.0	Measurements recorded prior to LNAPL removal
EW10	4/10/2015	108.96	103.86	5.10	3.0	
EW10	4/16/2015	108.18	103.90	4.28	2.0	
EW10	4/30/2015	107.81	103.84	3.97	2.0	
EW10	5/8/2015	106.84	103.46	3.38	2.5	
EW10	5/21/2015	107.46	103.62	3.84	2.5	
EW10	6/3/2015	107.51	103.60	3.91	NA	
EW10	6/4/2015	NM	NM	NM	2.5	
EW10	6/16/2015	108.20	103.85	4.35	2.0	
EW10	7/8/2015	108.53	103.96	4.57	3.0	
EW10	7/10/2015	107.85	103.97	3.88	NA	
EW10	7/21/2015	108.48	103.96	4.52	3.0	
EW10	7/29/2015	108.10	104.00	4.10	NA	
EW10	8/5/2015	108.85	104.00	4.85	2.5	
EW10	8/19/2015	108.57	103.74	4.83	3.0	
EW10	9/4/2015	108.91	103.60	5.31	3.0	

**LNAPL Thickness and Recovery Summary - Extraction Wells
Penta Wood Products Superfund Site
Siren, Wisconsin**

Well ID	Date	Depth to Water (feet) ¹	Depth to LNAPL (feet) ¹	LNAPL Thickness (feet)	Recovered LNAPL Volume (gallons)	Comments
EW10	9/21/2015	108.35	103.62	4.73	3.0	
EW10	10/8/2015	107.72	103.33	4.39	2.5	
EW10	10/22/2015	109.10	103.56	5.54	3.0	
EW10	11/2/2015	109.50	103.27	6.23	NA	
EW10	11/5/2015	NM	NM	NM	3.0	
Total LNAPL Recovered					67.5	
EW12	11/4/2014	105.26	105.04	0.22	NA	
EW12	11/6/2014	NM	NM	NM	<0.1	
EW12	11/7/2014	108.26	108.15	0.11	NA	
EW12	11/11/2014	108.39	108.22	0.17	NA	
EW12	11/12/2014	101.16	101.14	0.02	NA	Temporary system shutdown due to alarm condition
EW12	11/17/2014	108.00	107.98	0.02	NA	
EW12	12/8/2014	100.99	NP	0.00	NA	
EW12	12/11/2014	108.98	108.97	0.01	NA	
EW12	12/23/2014	109.75	NP	0.00	NA	Groundwater extraction system shutdown pending carbon change-out
EW12	12/30/2014	101.10	100.88	0.22	NA	Groundwater extraction system remained shutdown pending carbon change-out
EW12	1/8/2015	101.20	100.84	0.36	NA	Groundwater extraction system remained shutdown pending carbon change-out
EW12	1/19/2015	101.35	100.85	0.50	NA	Groundwater extraction system restarted after carbon change-out
EW12	1/22/2015	108.16	108.15	0.01	NA	
EW12	1/30/2015	108.96	108.96	0.00	NA	
EW12	2/3/2015	109.13	109.13	0.00	NA	
EW12	2/13/2015	109.98	NP	0.00	NA	Groundwater extraction pump turned off
EW12	2/17/2015	101.56	101.08	0.48	NA	
EW12	2/20/2015	101.90	101.32	0.58	NA	
EW12	2/24/2015	102.01	101.31	0.70	NA	
EW12	2/27/2015	NM	NM	NM	0.1	Measurements recorded prior to LNAPL removal
EW12	3/10/2015	102.35	101.35	1.00	0.1	Measurements recorded prior to LNAPL removal
EW12	3/24/2015	102.45	101.33	1.12	NA	
EW12	3/31/2015	NM	NM	NM	1.0	
EW12	4/10/2015	102.22	101.36	0.86	NA	
EW12	4/16/2015	102.32	101.36	0.96	NA	
EW12	4/27/2015	NM	NM	NM	1.0	
EW12	5/8/2015	101.99	101.19	0.80	NA	
EW12	5/21/2015	102.39	101.40	0.99	1.0	
EW12	6/3/2015	102.34	101.45	0.89	0.4	
EW12	6/16/2015	102.27	101.50	0.77	0.3	
EW12	7/8/2015	102.26	101.54	0.72	NA	
EW12	7/10/2015	NM	NM	NM	0.5	
EW12	7/21/2015	102.10	101.61	0.49	NA	
EW12	7/23/2015	NM	NM	NM	0.5	

**LNAPL Thickness and Recovery Summary - Extraction Wells
Penta Wood Products Superfund Site
Siren, Wisconsin**

Well ID	Date	Depth to Water (feet) ¹	Depth to LNAPL (feet) ¹	LNAPL Thickness (feet)	Recovered LNAPL Volume (gallons)	Comments
EW12	7/29/2015	102.11	101.65	0.46	NA	
EW12	8/5/2015	102.39	101.69	0.70	NA	
EW12	8/7/2015	NM	NM	NM	0.3	
EW12	8/19/2015	101.27	100.45	0.82	NA	
EW12	8/21/2015	NM	NM	NM	0.1	
EW12	9/4/2015	101.87	101.47	0.40	NA	
EW12	9/11/2015	NM	NM	NM	0.3	
EW12	9/21/2015	101.60	101.29	0.31	NA	
EW12	10/1/2015	NM	NM	NM	0.2	
EW12	10/8/2015	101.39	101.15	0.24	NA	
EW12	10/22/2015	101.52	101.23	0.29	NA	
EW12	11/2/2015	101.51	101.18	0.33	NA	
Total LNAPL Recovered					5.9	
EW13	11/4/2014	111.48	NP	0.00	NA	
EW13	12/11/2014	114.81	NP	0.00	NA	
EW13	12/23/2014	115.11	NP	0.00	NA	Groundwater extraction system shutdown pending carbon change-out
EW13	12/30/2014	107.34	NP	0.00	NA	Groundwater extraction system remained shutdown pending carbon change-out
EW13	1/8/2015	107.27	NP	0.00	NA	Groundwater extraction system remained shutdown pending carbon change-out
EW13	1/19/2015	107.33	NP	0.00	NA	Groundwater extraction system restarted after carbon change-out
EW13	1/22/2015	115.05	NP	0.00	NA	
EW13	1/30/2015	115.49	NP	0.00	NA	
EW13	2/3/2015	115.28	NP	0.00	NA	
EW13	2/13/2015	115.74	NP	0.00	NA	
EW13	2/17/2015	117.05	NP	0.00	NA	Groundwater extraction rate increased to 10 gpm
EW13	2/18/2015	119.19	NP	0.00	NA	
EW13	2/20/2015	119.37	NP	0.00	NA	
EW13	2/24/2015	119.50	NP	0.00	NA	
EW13	3/10/2015	120.13	NP	0.00	NA	
EW13	3/24/2015	116.72	NP	0.00	NA	
EW13	4/10/2015	118.55	NP	0.00	NA	
EW13	4/16/2015	120.92	NP	0.00	NA	
EW13	5/8/2015	107.18	NP	0.00	NA	Groundwater extraction pump turned off on 4/30/2015
EW13	5/21/2015	104.94	NP	0.00	NA	
EW13	6/3/2015	105.88	NP	0.00	NA	
EW13	6/16/2015	106.44	NP	0.00	NA	
EW13	7/8/2015	107.42	NP	0.00	NA	
EW13	7/21/2015	107.70	NP	0.00	NA	
EW13	7/29/2015	107.91	NP	0.00	NA	
EW13	8/5/2015	107.89	NP	0.00	NA	
EW13	8/19/2015	107.80	NP	0.00	NA	

**LNAPL Thickness and Recovery Summary - Extraction Wells
Penta Wood Products Superfund Site
Siren, Wisconsin**

Well ID	Date	Depth to Water (feet) ¹	Depth to LNAPL (feet) ¹	LNAPL Thickness (feet)	Recovered LNAPL Volume (gallons)	Comments
EW13	9/4/2015	107.63	NP	0.00	NA	
EW13	9/21/2015	107.63	NP	0.00	NA	
EW13	10/8/2015	107.49	NP	0.00	NA	
EW13	10/22/2015	107.72	NP	0.00	NA	
EW13	11/2/2015	107.48	NP	0.00	NA	
			Total LNAPL Recovered		0.0	
EW14	11/4/2014	112.55	112.45	0.10	NA	
EW14	11/6/2014	NM	NM	NM	<0.1	
EW14	11/7/2014	112.54	112.49	0.05	NA	
EW14	11/11/2014	112.68	112.60	0.08	NA	
EW14	11/12/2014	112.91	112.87	0.04	NA	Temporary system shutdown due to alarm condition
EW14	11/17/2014	111.82	111.55	0.27	NA	
EW14	12/8/2014	112.89	112.85	0.04	NA	
EW14	12/11/2014	113.83	113.75	0.08	NA	
EW14	12/23/2014	113.74	113.65	0.09	NA	Groundwater extraction system shutdown pending carbon change-out
EW14	12/30/2014	112.85	112.76	0.09	NA	Groundwater extraction system remained shutdown pending carbon change-out
EW14	1/8/2015	112.77	112.71	0.06	NA	Groundwater extraction system remained shutdown pending carbon change-out
EW14	1/19/2015	112.92	112.78	0.14	NA	Groundwater extraction system restarted after carbon change-out
EW14	1/22/2015	113.80	113.72	0.08	NA	
EW14	1/30/2015	113.79	113.66	0.13	<0.1	
EW14	2/3/2015	113.74	113.65	0.09	NA	
EW14	2/13/2015	113.90	113.68	0.22	NA	
EW14	2/17/2015	113.85	113.79	0.06	NA	Groundwater extraction rate increased to 10 gpm
EW14	2/18/2015	114.29	114.21	0.08	NA	
EW14	2/20/2015	114.26	114.18	0.08	NA	
EW14	2/24/2015	114.25	114.21	0.04	NA	
EW14	3/10/2015	114.36	114.30	0.06	NA	
EW14	3/24/2015	114.41	114.36	0.05	NA	
EW14	3/31/2015	NM	NM	NM	<0.1	
EW14	4/10/2015	114.43	114.42	0.01	NA	
EW14	4/16/2015	114.47	114.44	0.03	NA	
EW14	5/8/2015	113.30	113.14	0.16	NA	Groundwater extraction pump turned off on 4/30/2015
EW14	5/21/2015	113.71	113.49	0.22	NA	
EW14	6/3/2015	113.72	113.50	0.22	0.2	
EW14	6/16/2015	113.71	113.58	0.13	0.1	
EW14	7/8/2015	113.71	113.62	0.09	NA	
EW14	7/21/2015	113.78	113.68	0.10	NA	
EW14	7/29/2015	113.83	113.72	0.11	NA	
EW14	8/5/2015	113.84	113.72	0.12	NA	
EW14	8/7/2015	NM	NM	NM	<0.1	

**LNAPL Thickness and Recovery Summary - Extraction Wells
Penta Wood Products Superfund Site
Siren, Wisconsin**

Well ID	Date	Depth to Water (feet) ¹	Depth to LNAPL (feet) ¹	LNAPL Thickness (feet)	Recovered LNAPL Volume (gallons)	Comments
EW14	8/19/2015	113.80	113.70	0.10	NA	
EW14	9/4/2015	113.68	113.59	0.09	NA	
EW14	9/11/2015	NM	NM	NM	<0.1	
EW14	9/21/2015	113.43	113.38	0.05	NA	
EW14	10/8/2015	113.12	113.06	0.06	NA	
EW14	10/22/2015	113.48	113.39	0.09	NA	
EW14	11/2/2015	113.44	113.32	0.12	NA	
Total LNAPL Recovered					0.8	
Total LNAPL Recovered (all wells)					380.7	Since system modification in October 2014; system shutdown and LNAPL recovery terminated in November 2015

Notes:

¹ location/elevation. Measurements were consistently recorded from the same benchmark location at the top of the well vault starting in December 2014.

NM - Not measured

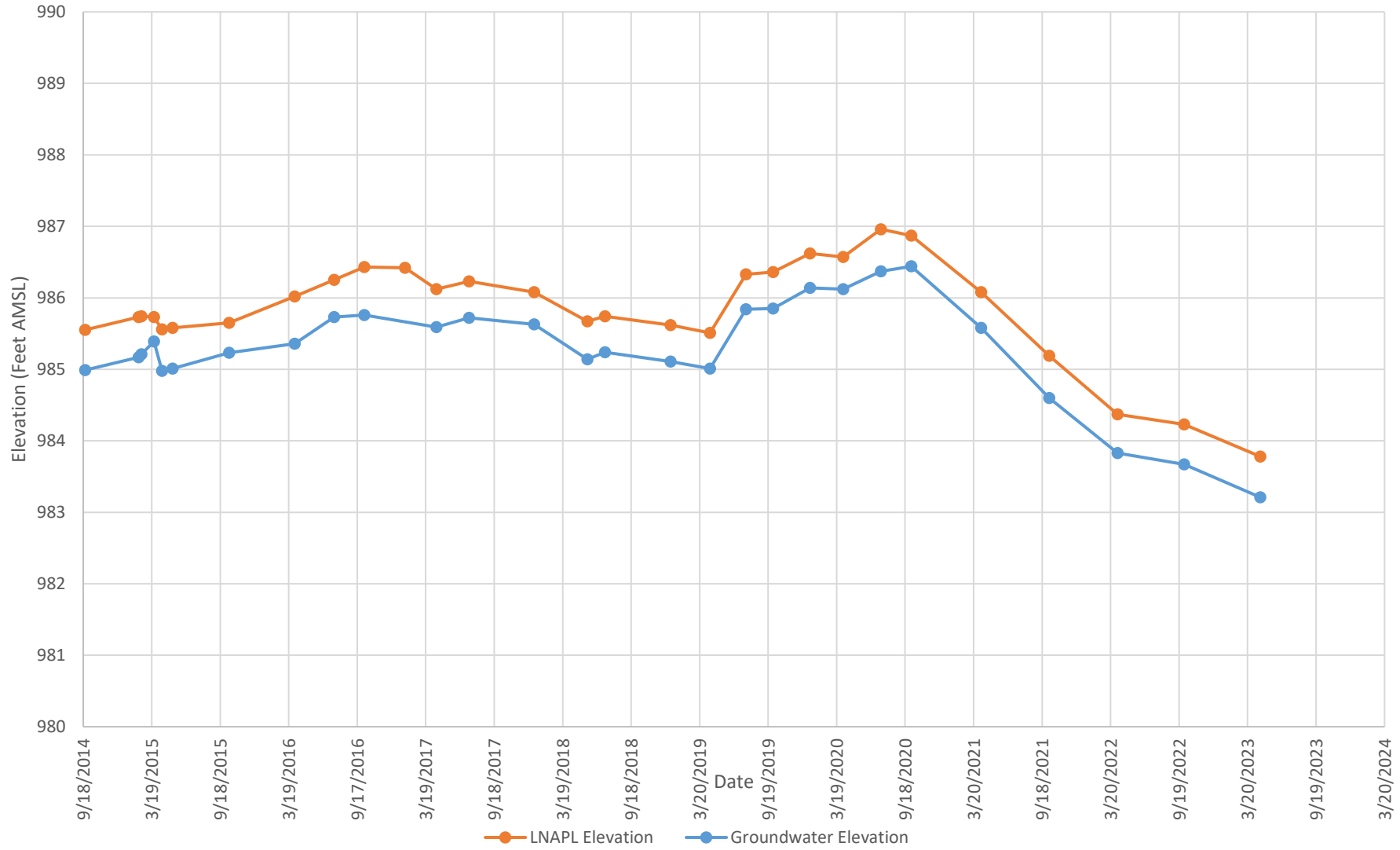
NP - LNAPL was not present in a measurable quantity

NA - Not applicable

Groundwater and LNAPL Elevation vs Time Chart - MW18

Penta Wood Products Superfund Site

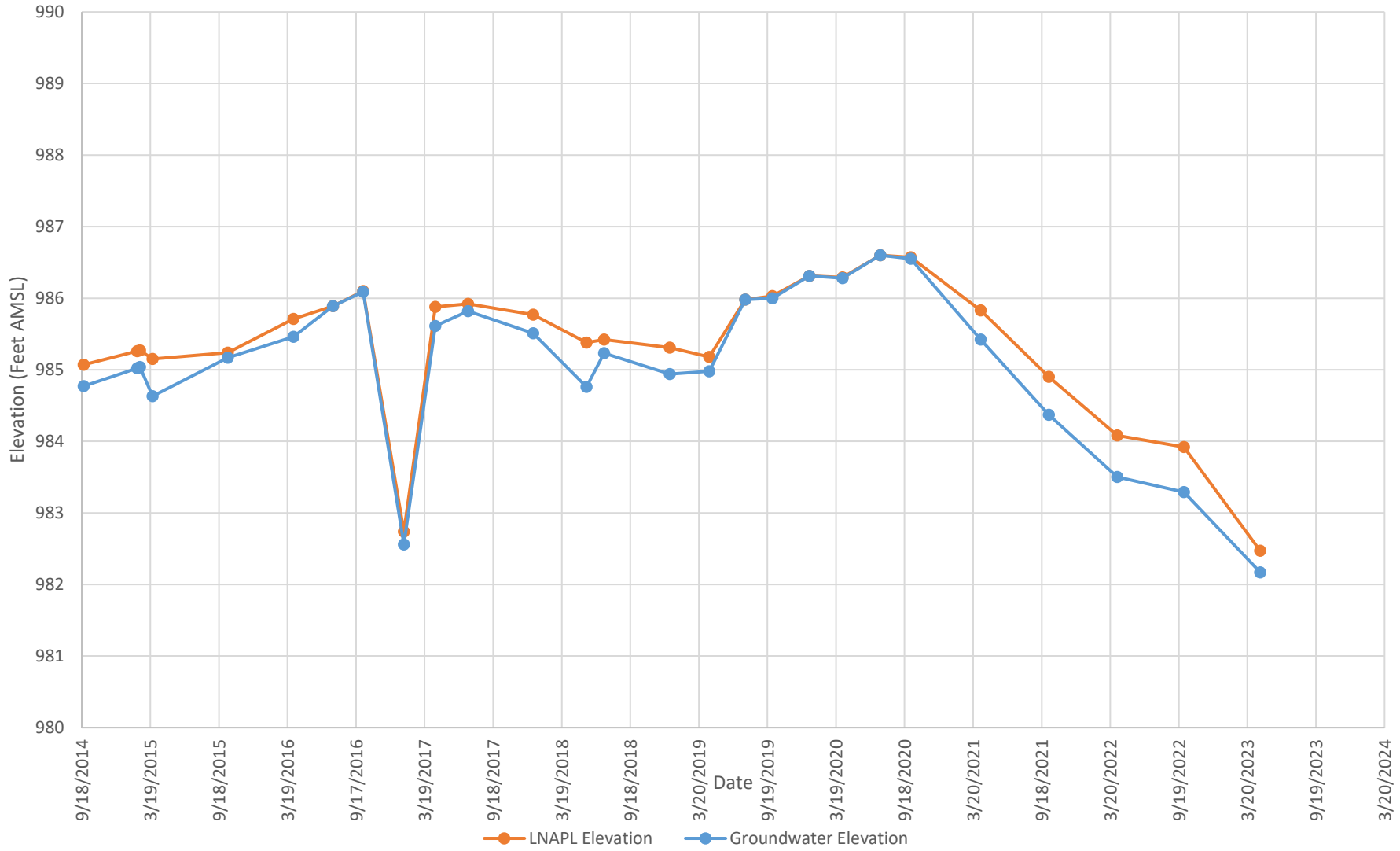
Siren, Wisconsin



Groundwater and LNAPL Elevation vs Time Chart - MW19

Penta Wood Products Superfund Site

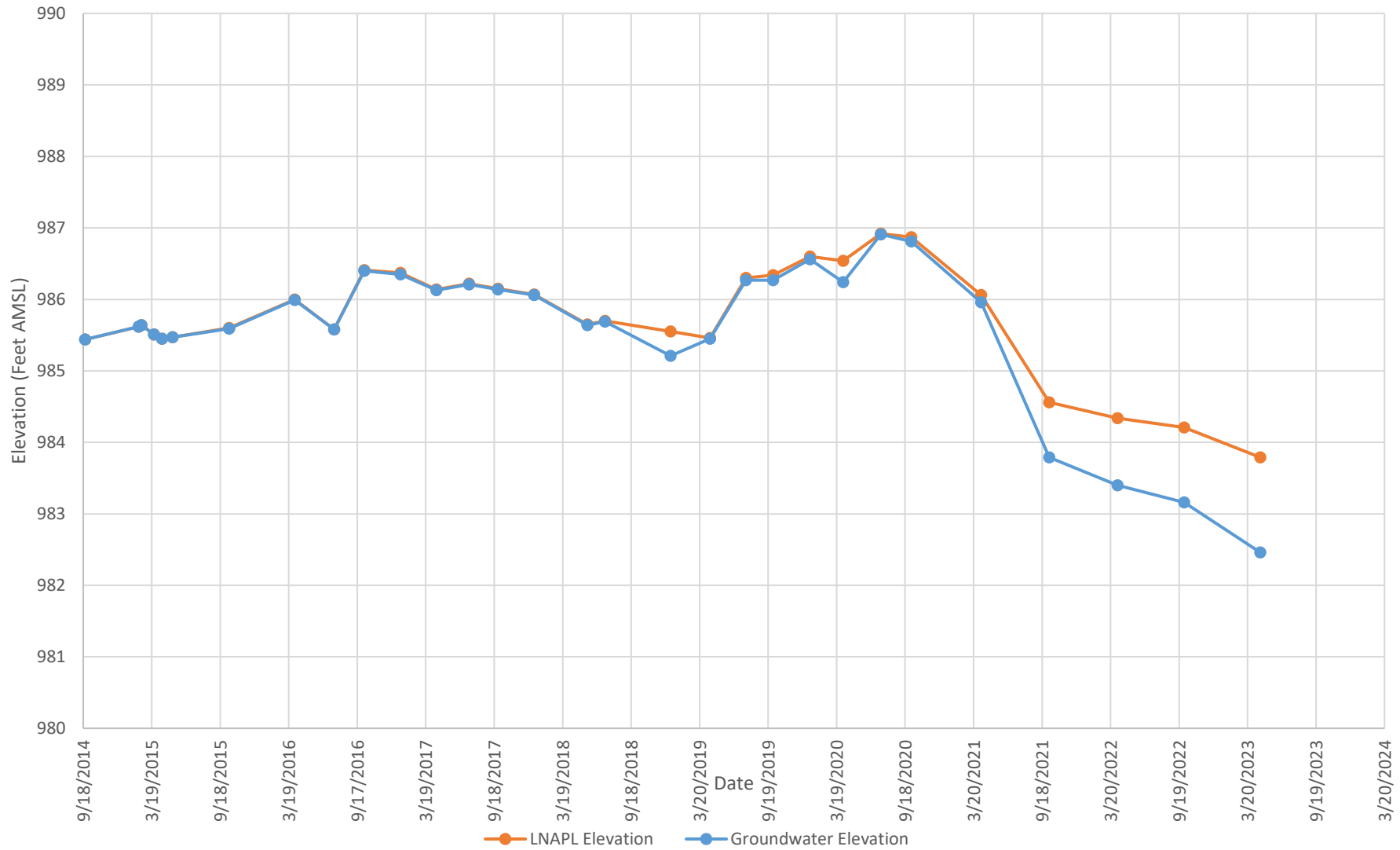
Siren, Wisconsin



Groundwater and LNAPL Elevation vs Time Chart - MW20

Penta Wood Products Superfund Site

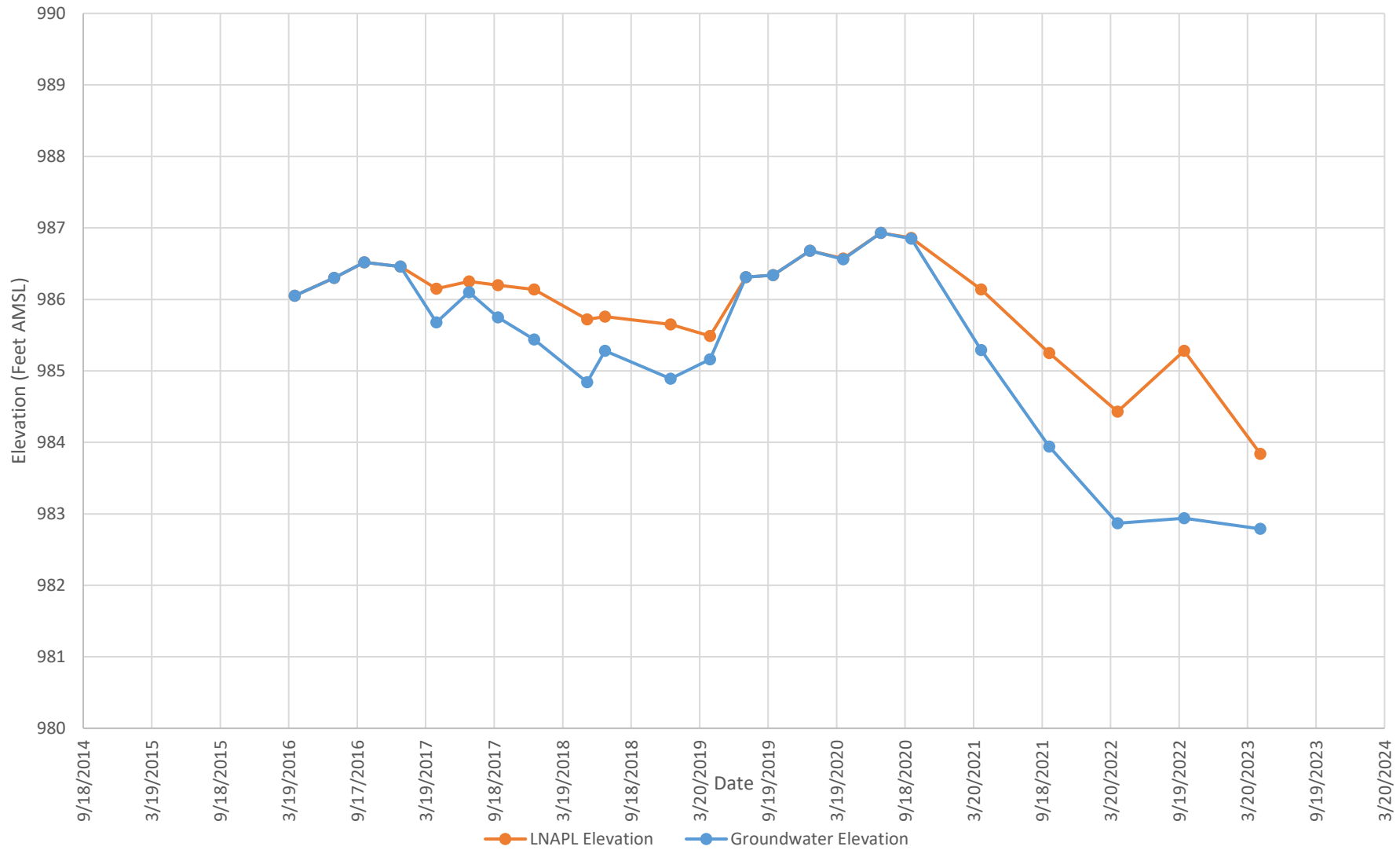
Siren, Wisconsin



Groundwater and LNAPL Elevation vs Time Chart - MW29

Penta Wood Products Superfund Site

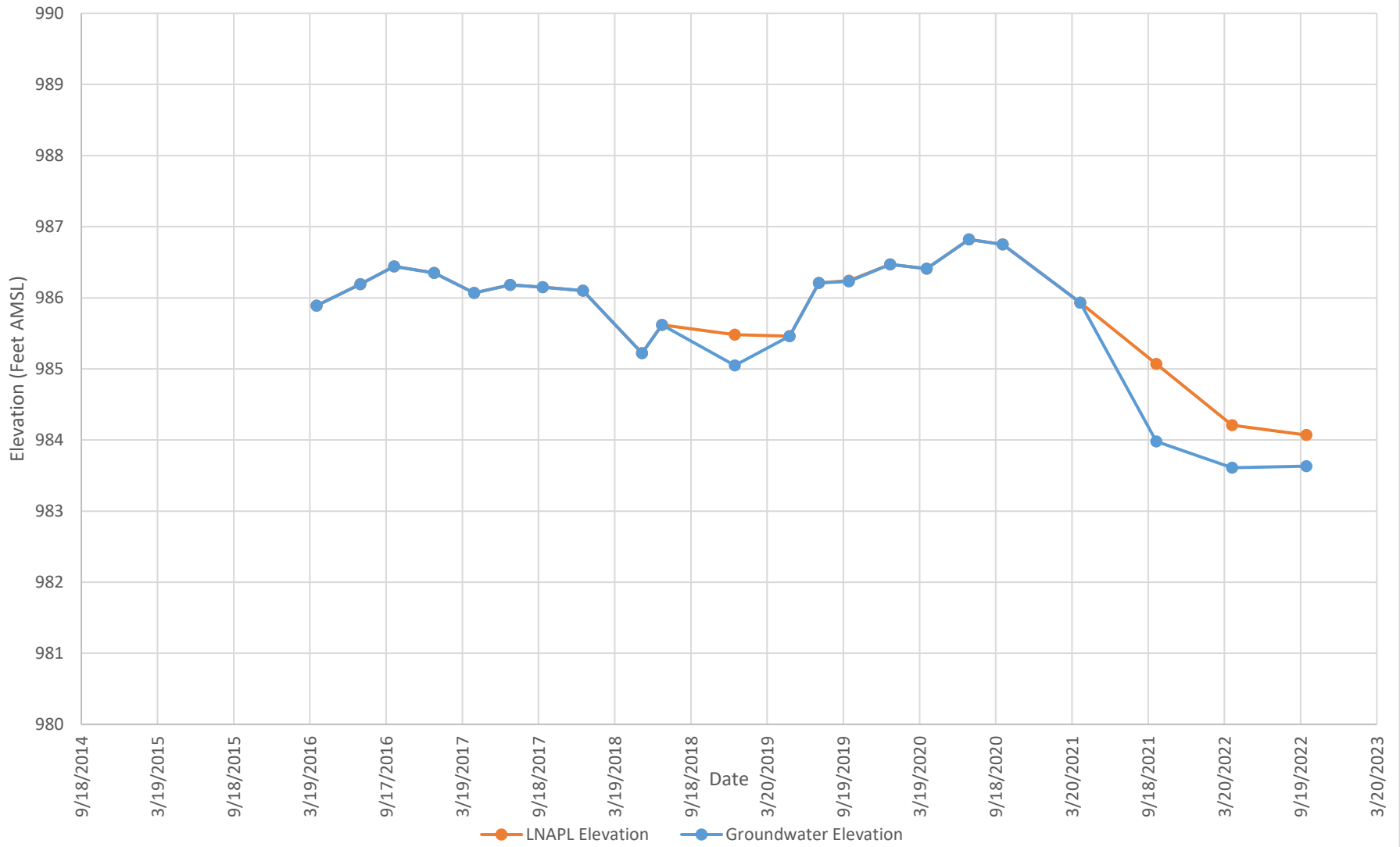
Siren, Wisconsin



Groundwater and LNAPL Elevation vs Time Chart - EW03S

Penta Wood Products Superfund Site

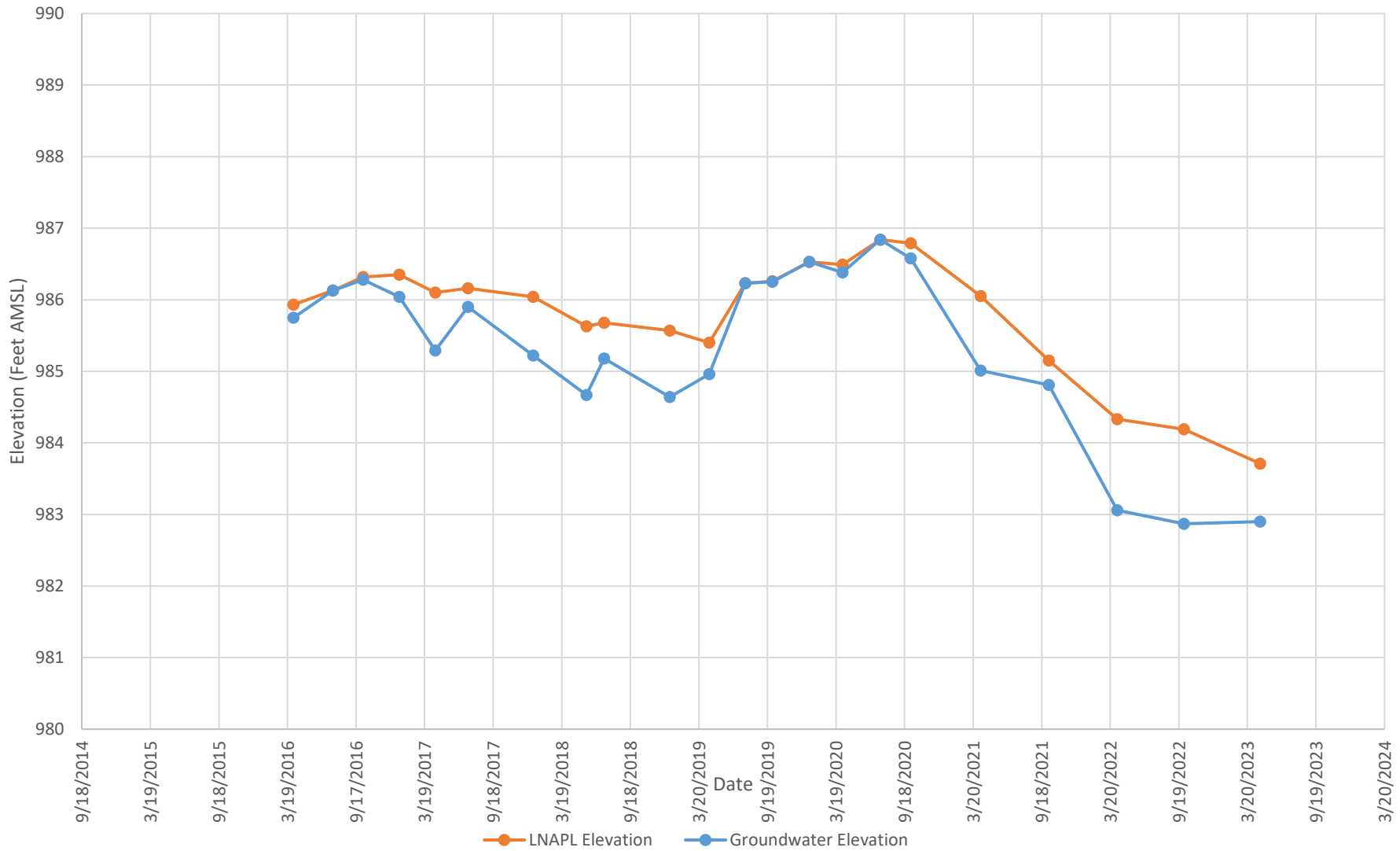
Siren, Wisconsin



Groundwater and LNAPL Elevation vs Time Chart - EW05S

Penta Wood Products Superfund Site

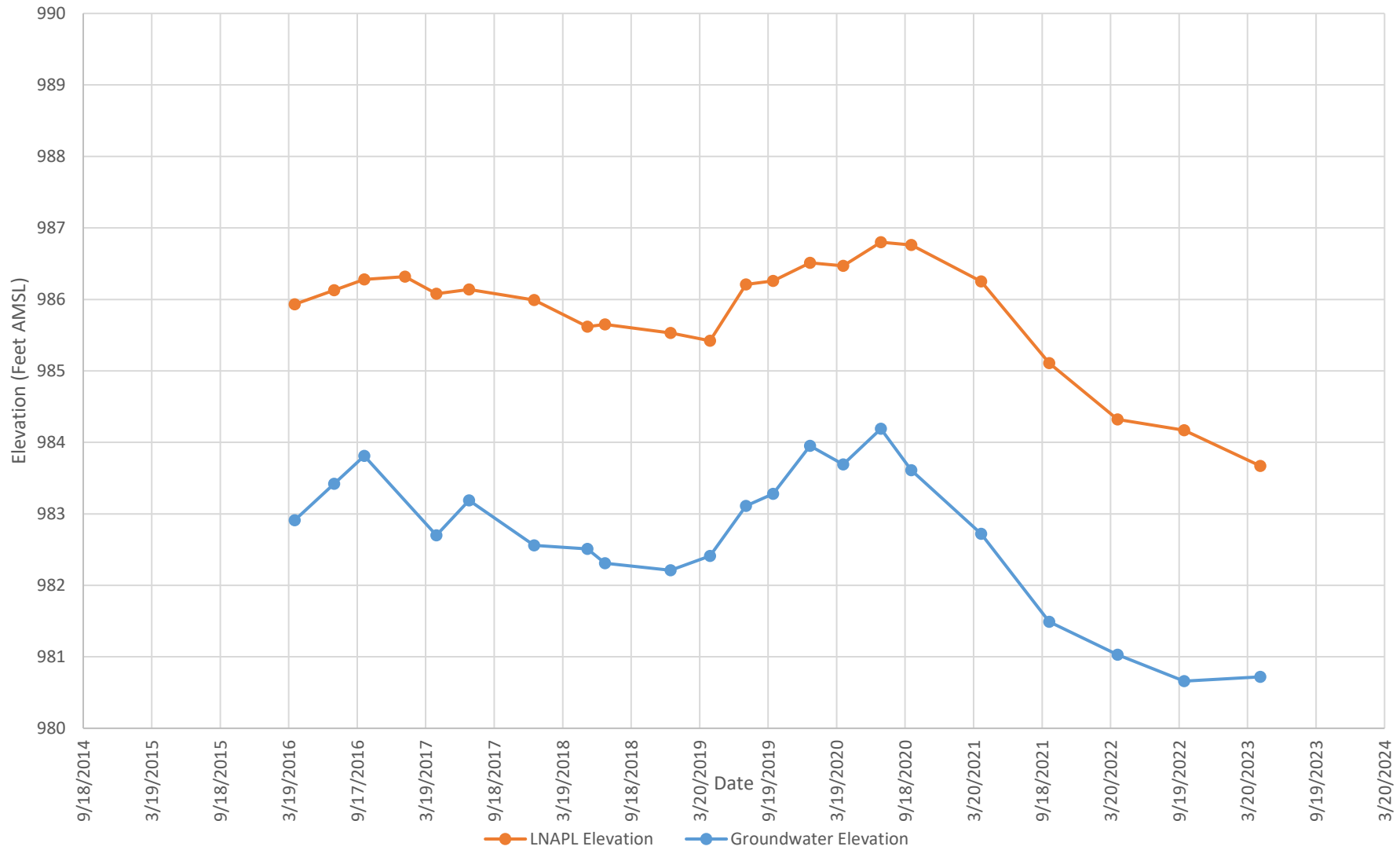
Siren, Wisconsin



Groundwater and LNAPL Elevation vs Time Chart - EW06S

Penta Wood Products Superfund Site

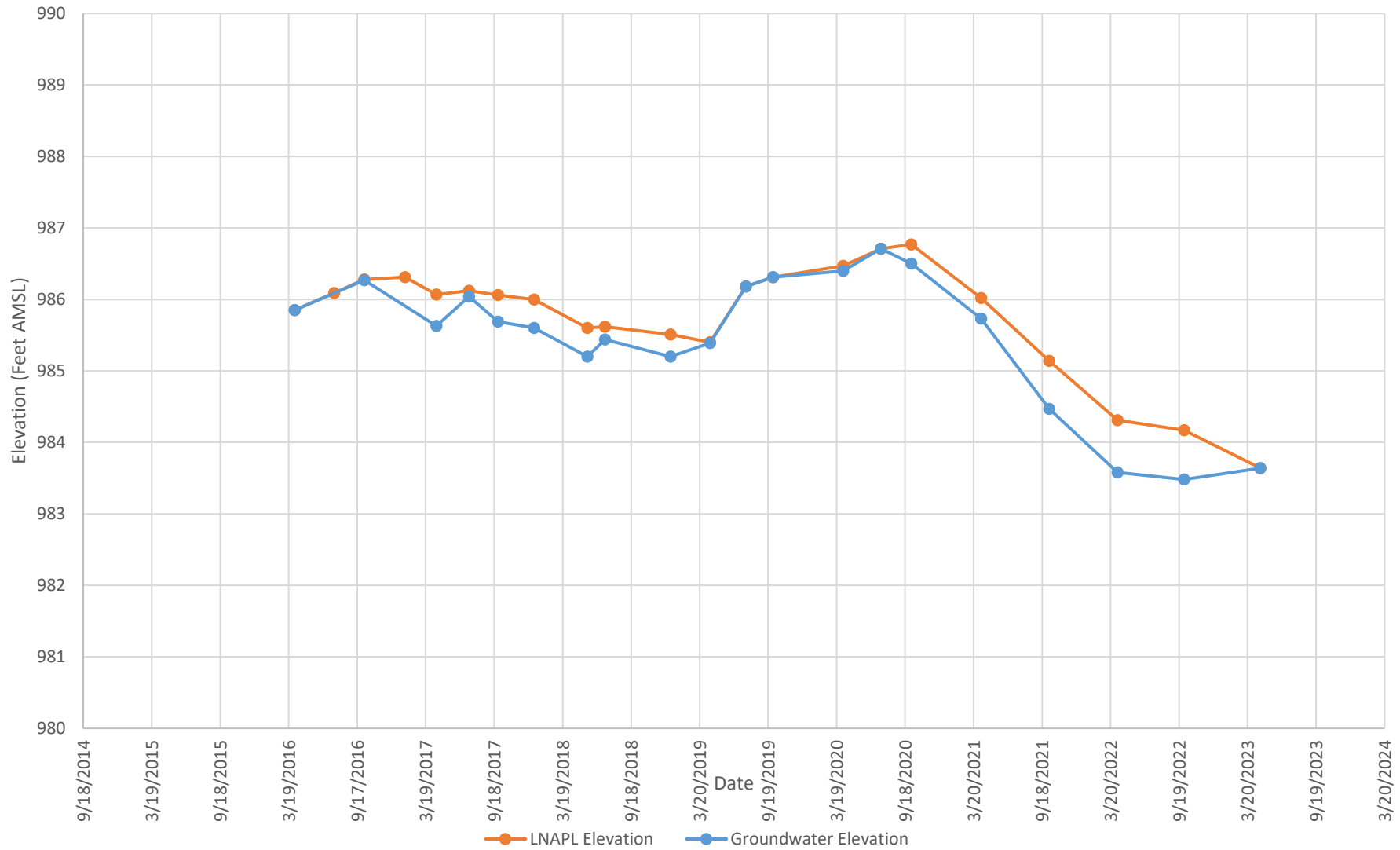
Siren, Wisconsin



Groundwater and LNAPL Elevation vs Time Chart - EW07S

Penta Wood Products Superfund Site

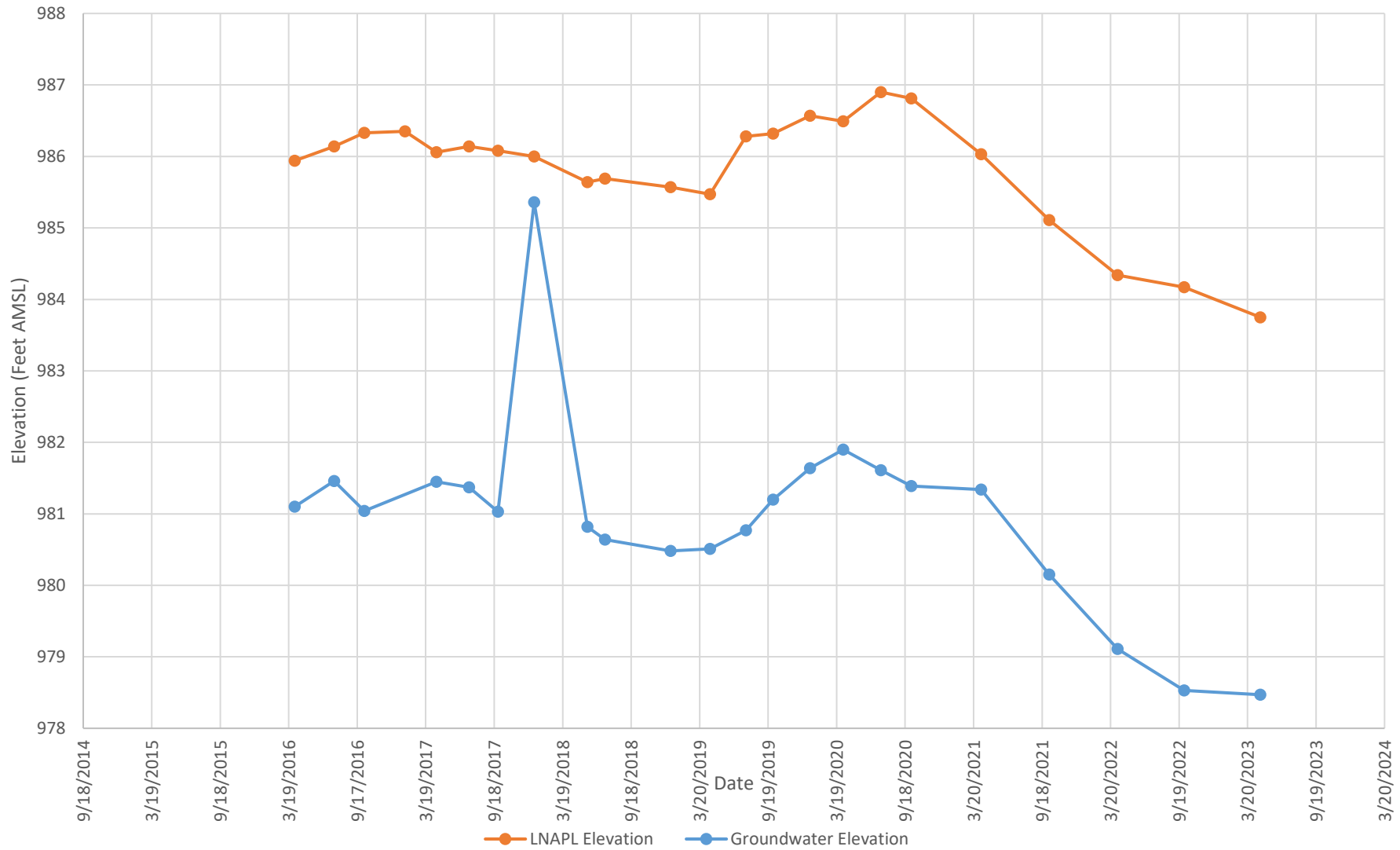
Siren, Wisconsin



Groundwater and LNAPL Elevation vs Time Chart - EW10S

Penta Wood Products Superfund Site

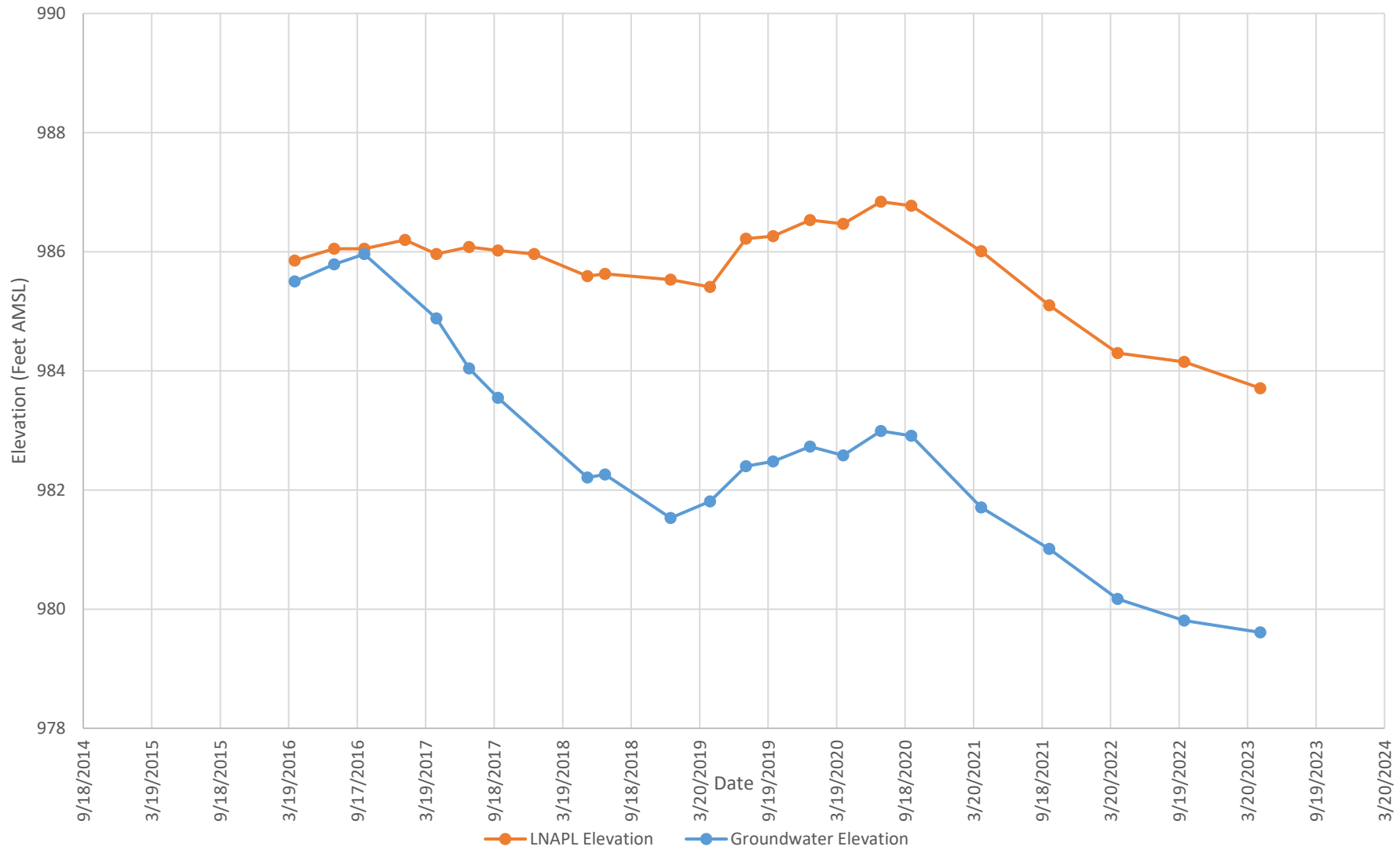
Siren, Wisconsin



Groundwater and LNAPL Elevation vs Time Chart - EW12S

Penta Wood Products Superfund Site

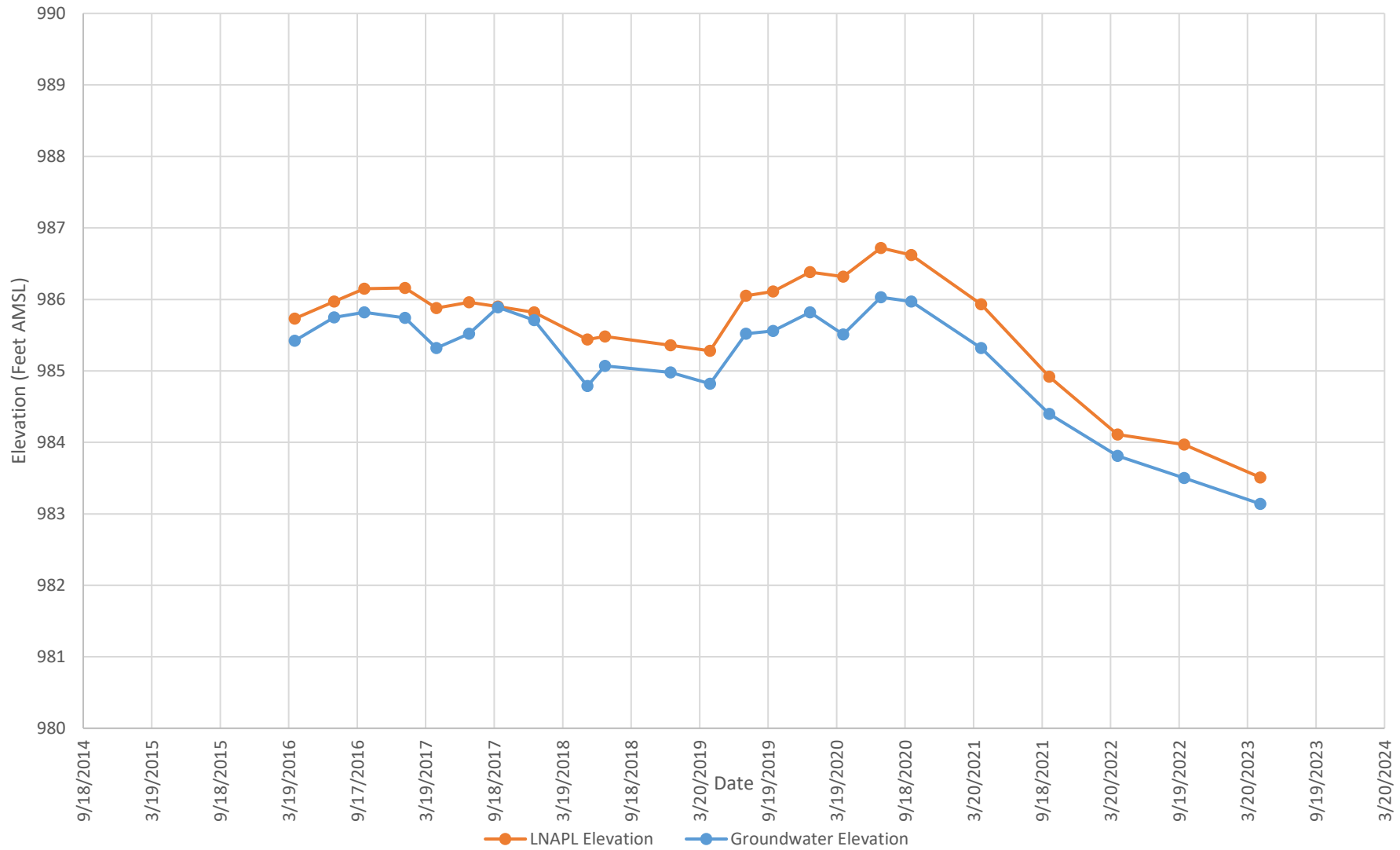
Siren, Wisconsin



Groundwater and LNAPL Elevation vs Time Chart - EW14S

Penta Wood Products Superfund Site

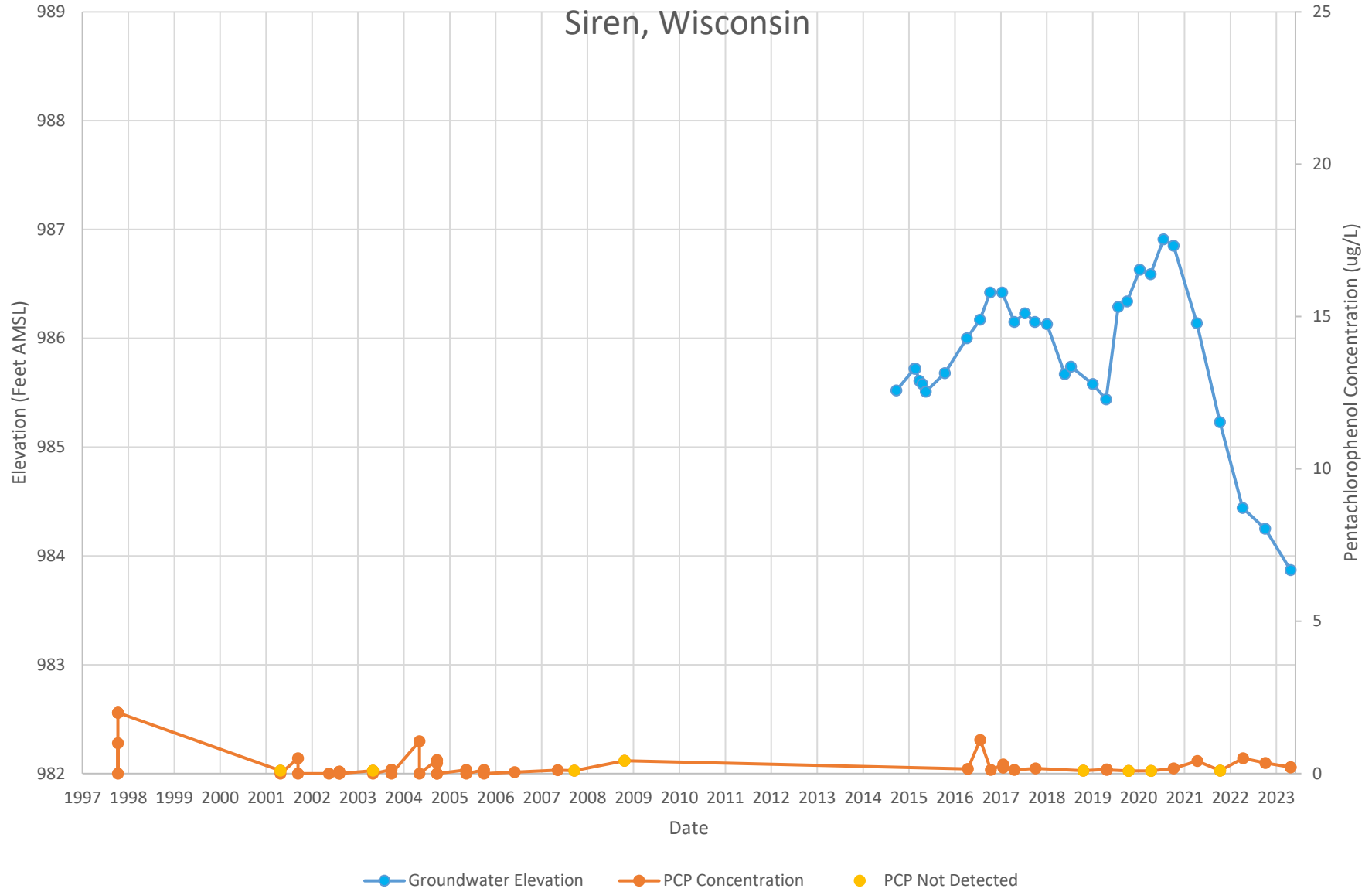
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW1

Penta Wood Products Superfund Site

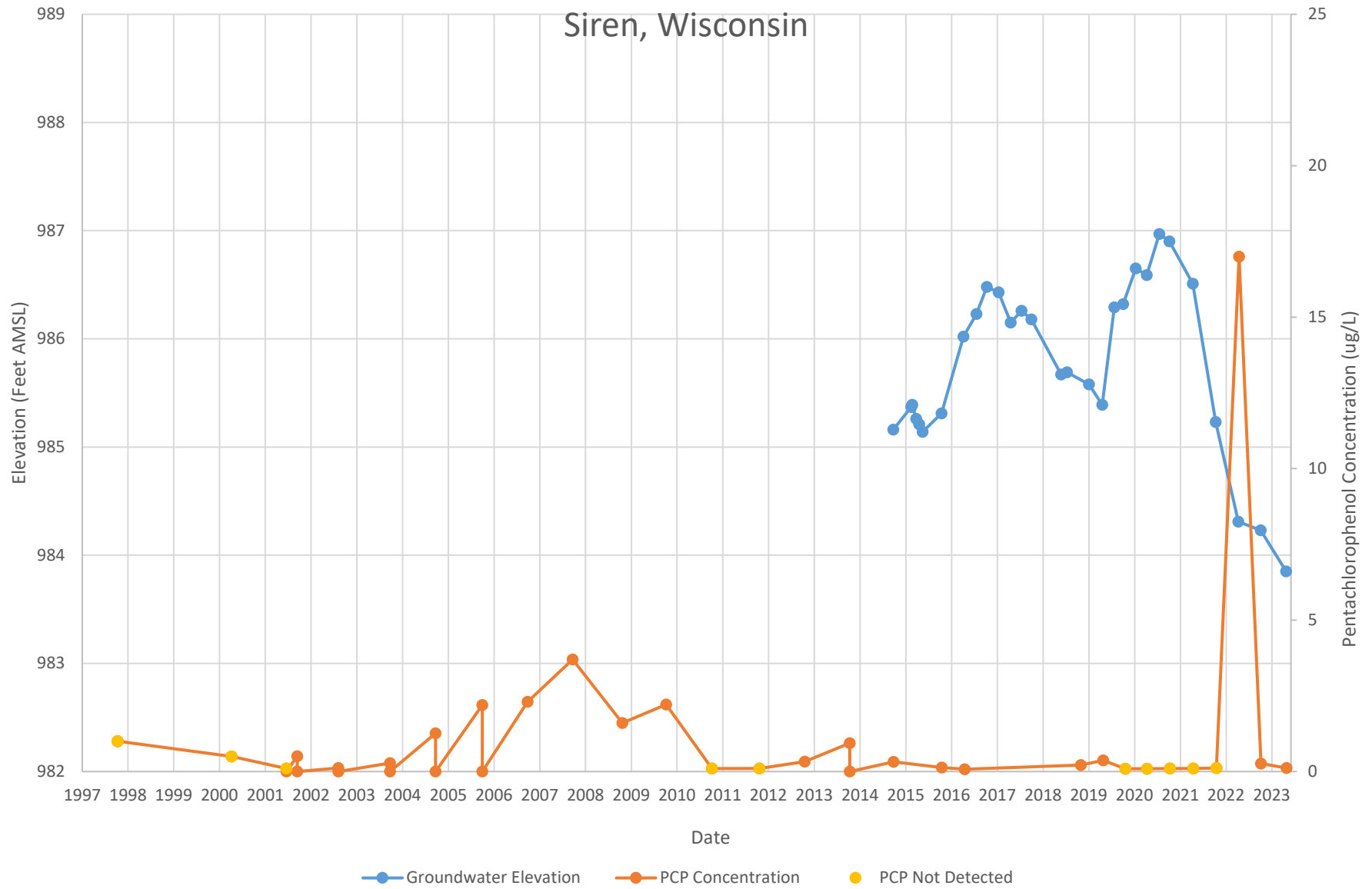
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW2

Penta Wood Products Superfund Site

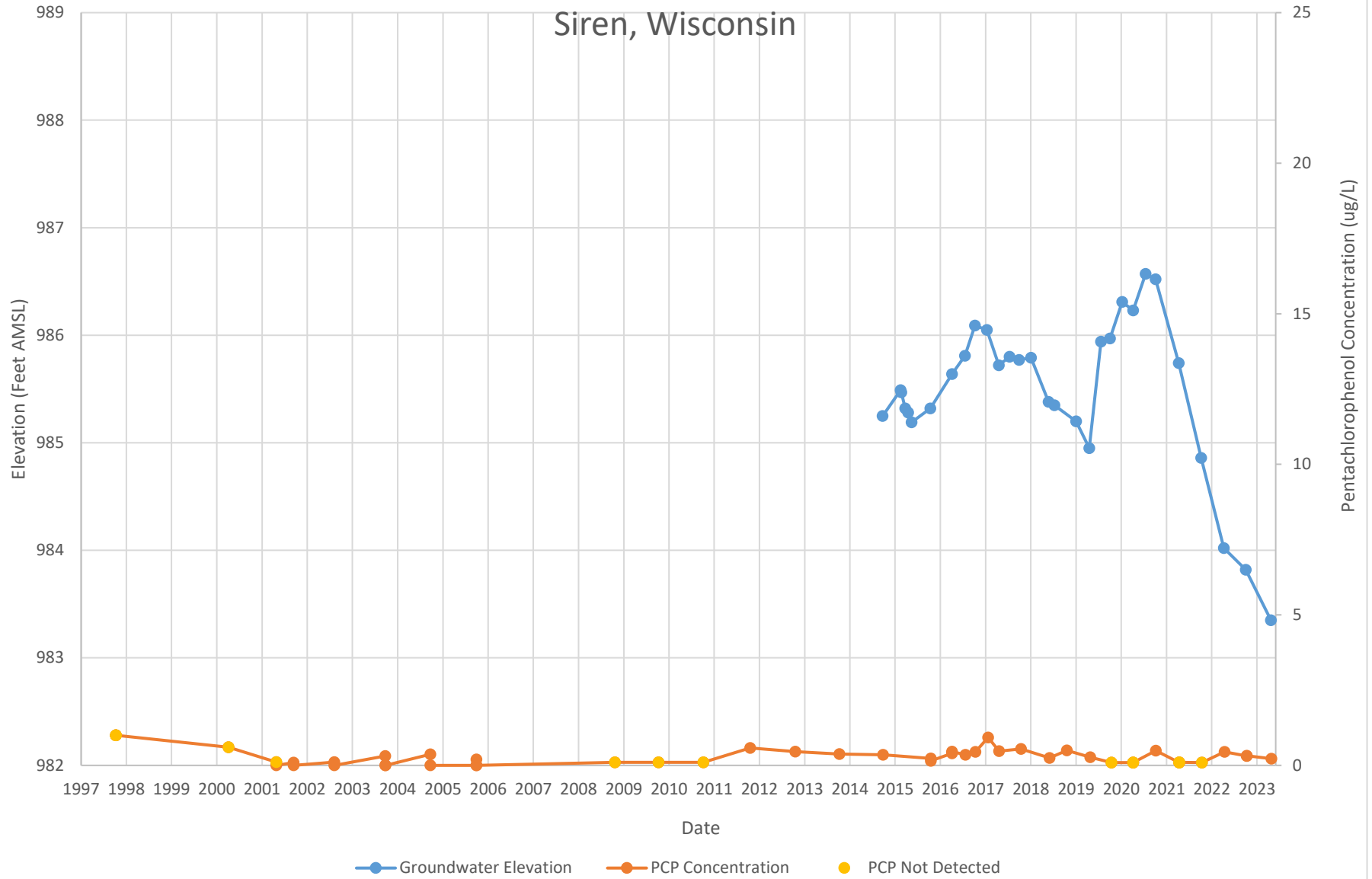
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW3

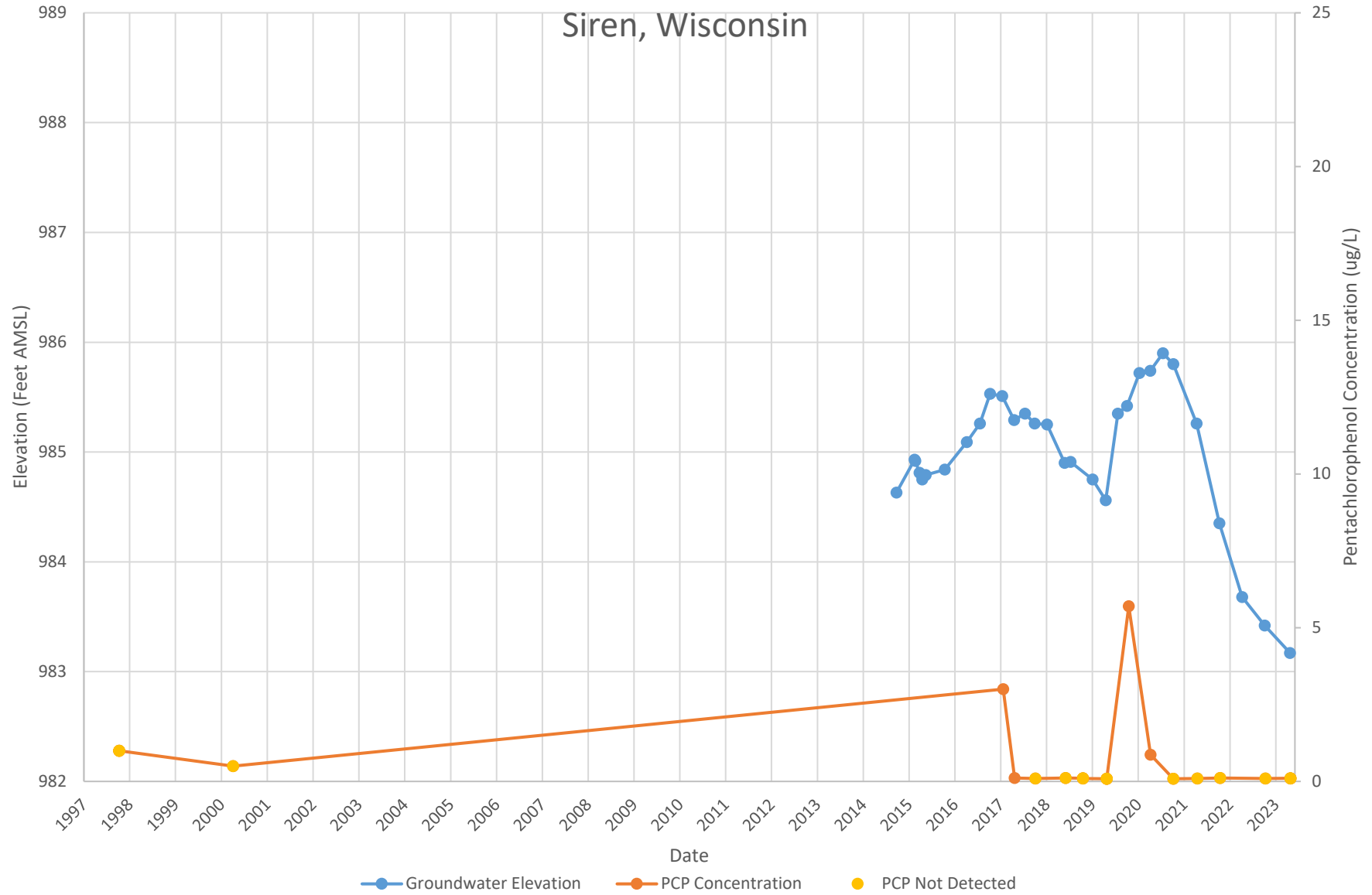
Penta Wood Products Superfund Site

Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW4 Penta Wood Products Superfund Site

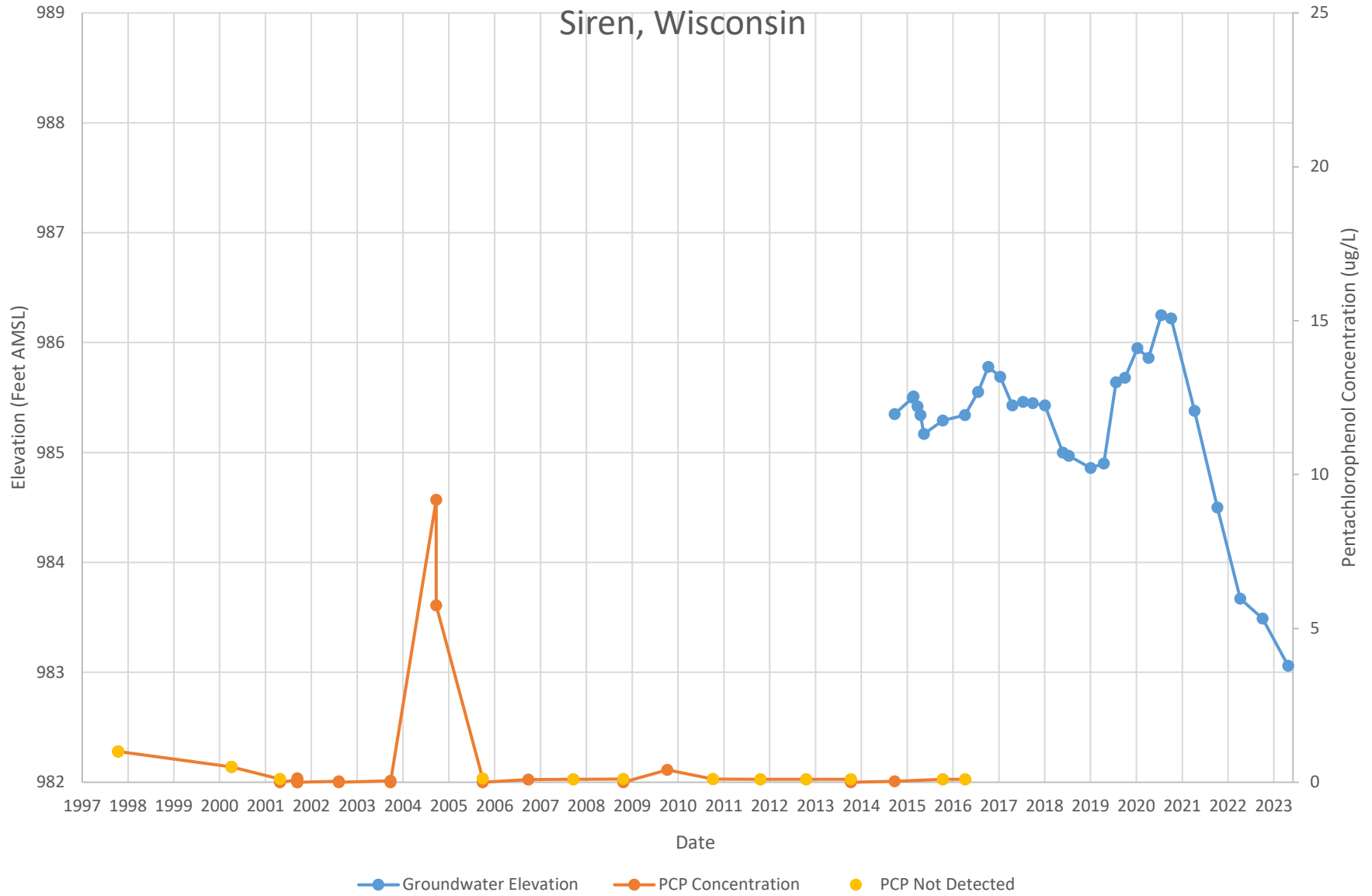
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW7

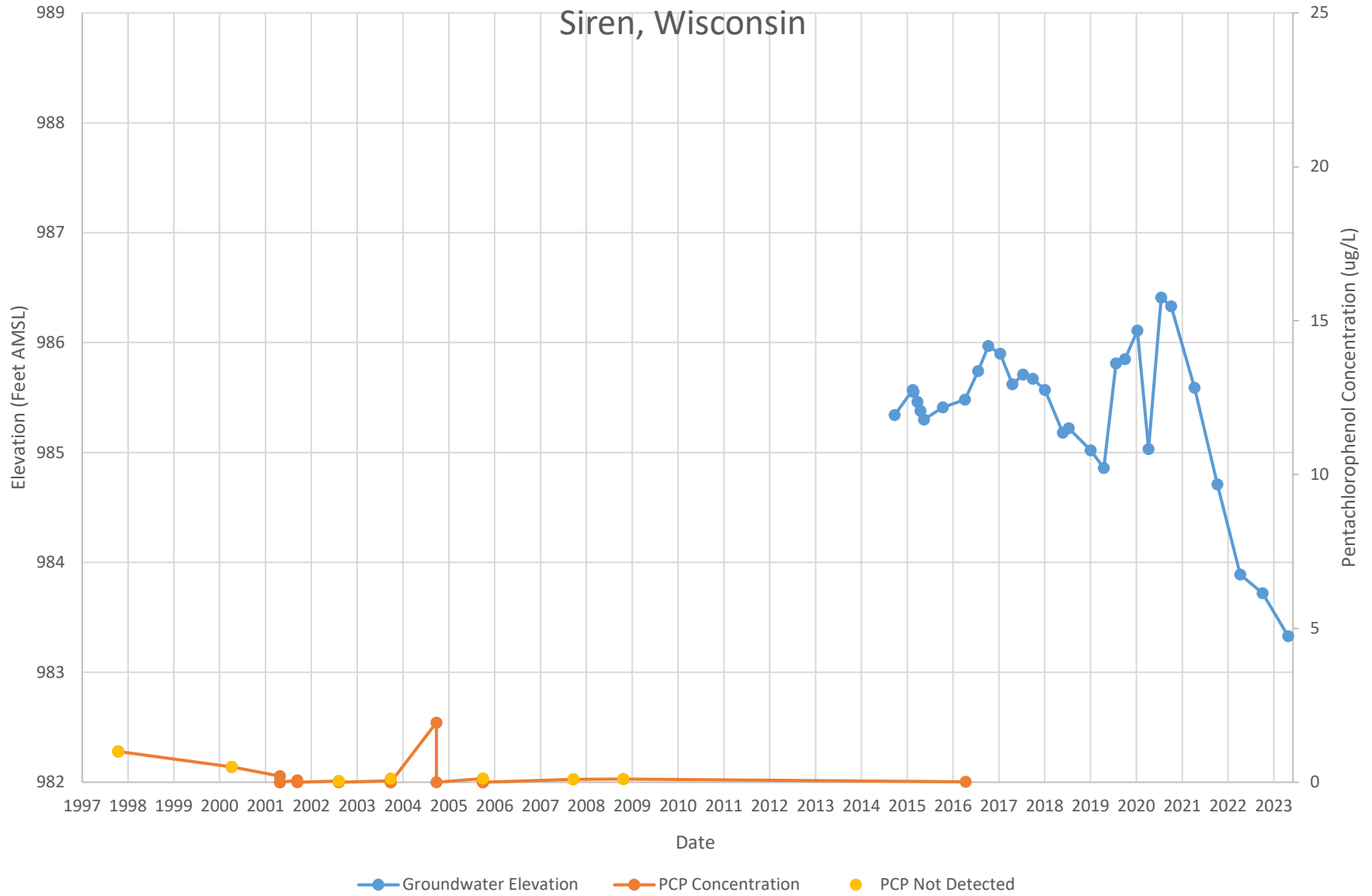
Penta Wood Products Superfund Site

Siren, Wisconsin



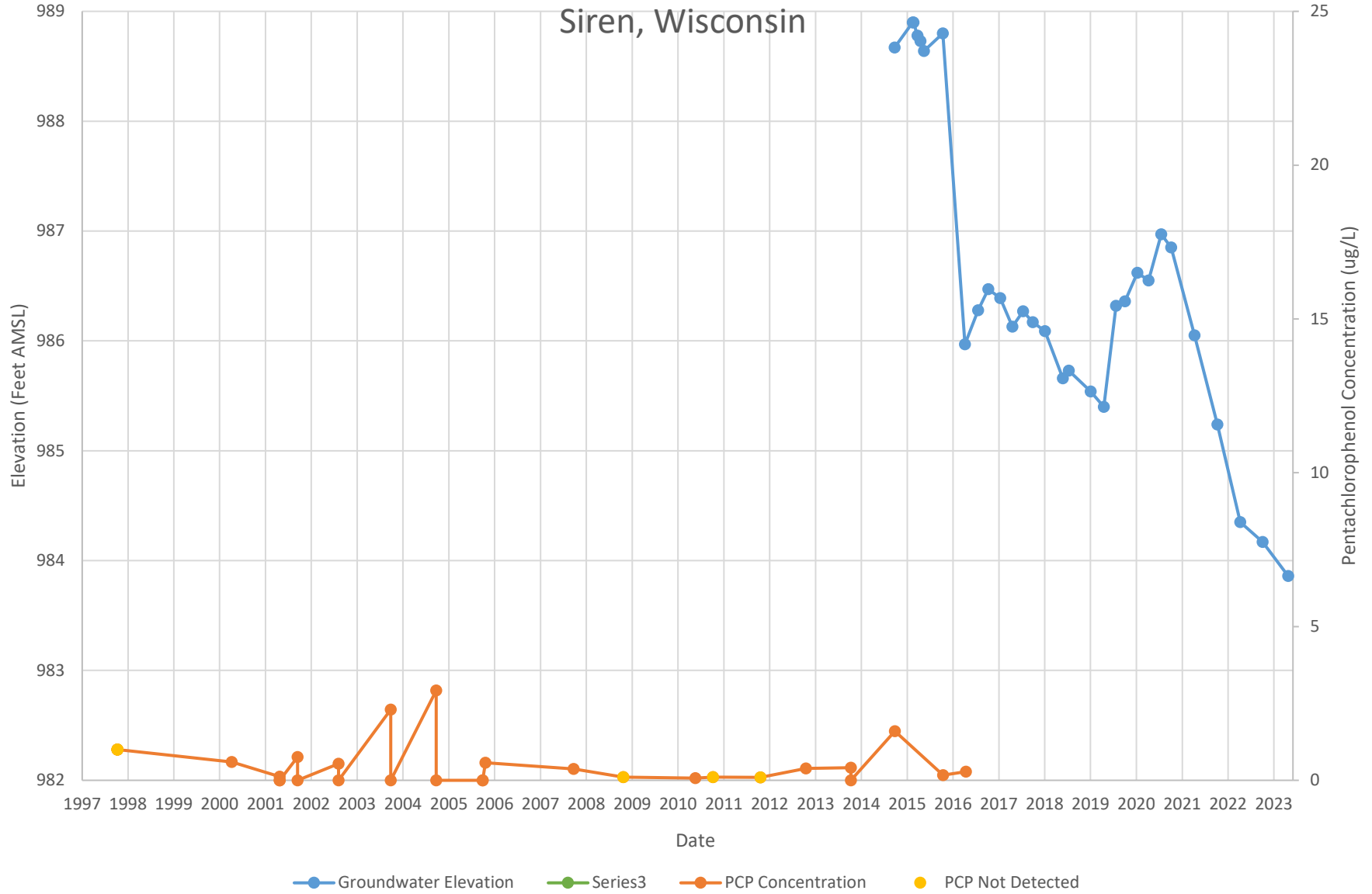
Pentachlorophenol and Groundwater Elevation vs Time Chart - MW8 Penta Wood Products Superfund Site

Siren, Wisconsin

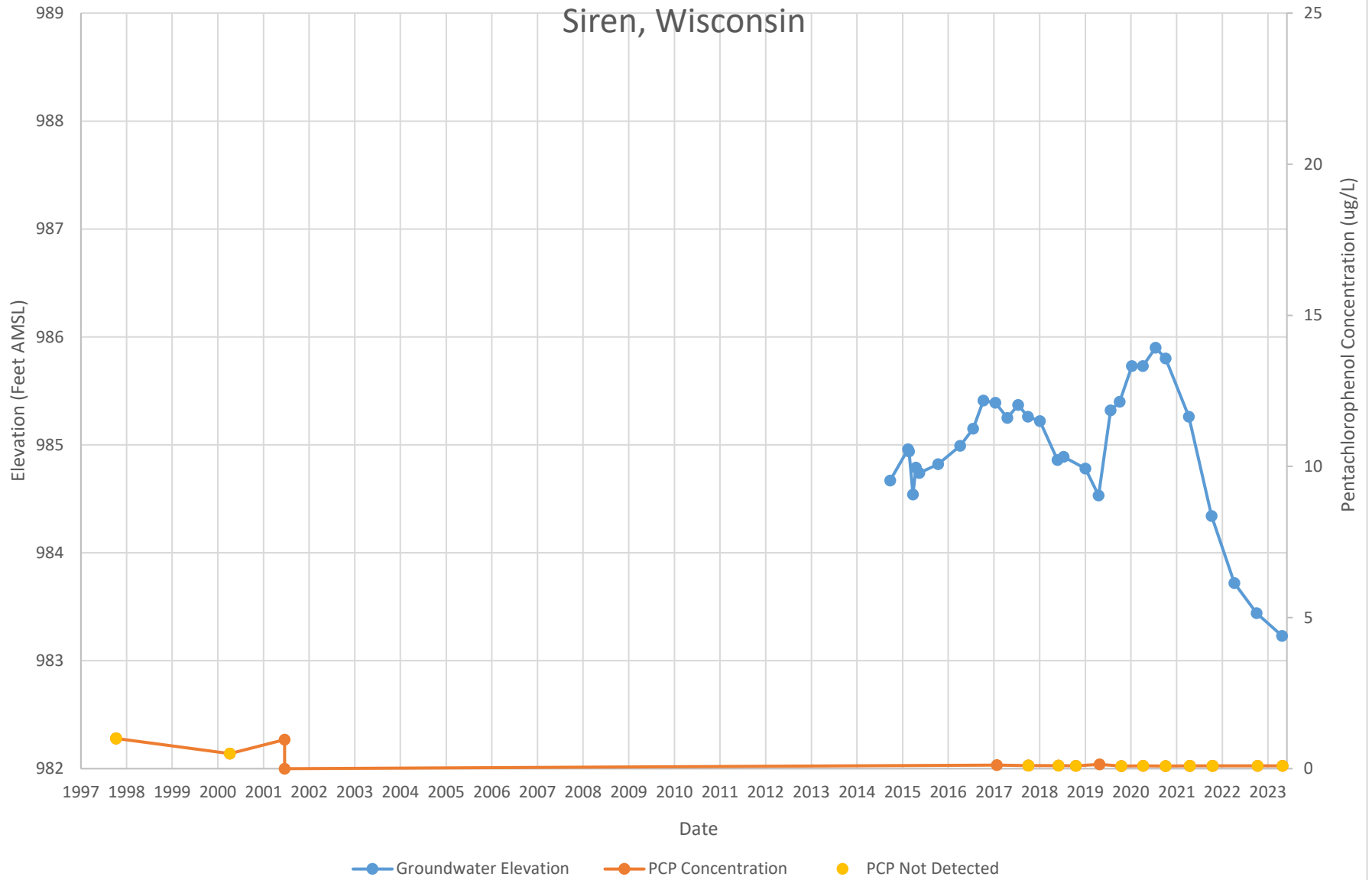


Pentachlorophenol and Groundwater Elevation vs Time Chart - MW9 Penta Wood Products Superfund Site

Siren, Wisconsin



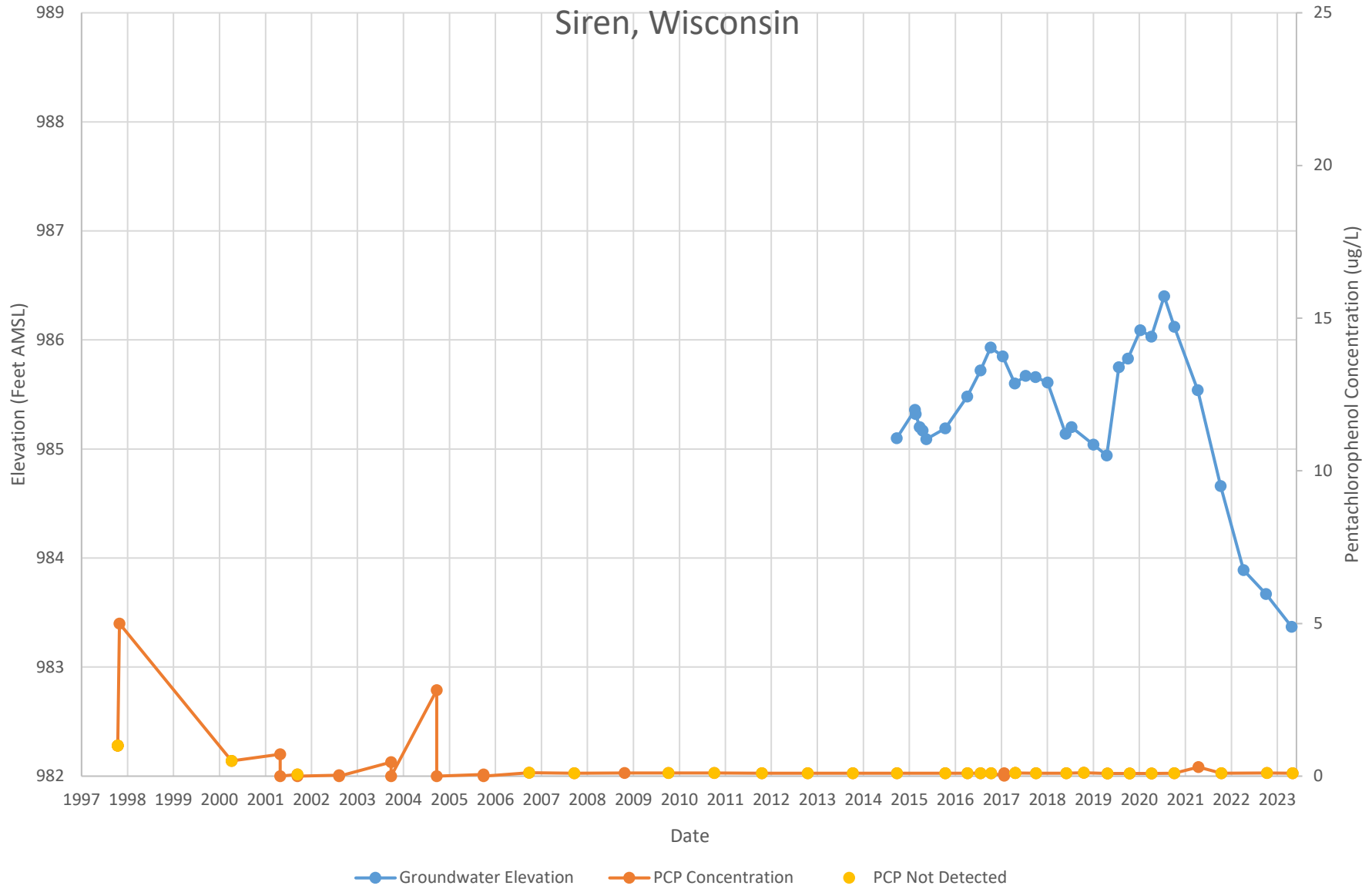
Pentachlorophenol and Groundwater Elevation vs Time Chart - MW14 Penta Wood Products Superfund Site Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW17

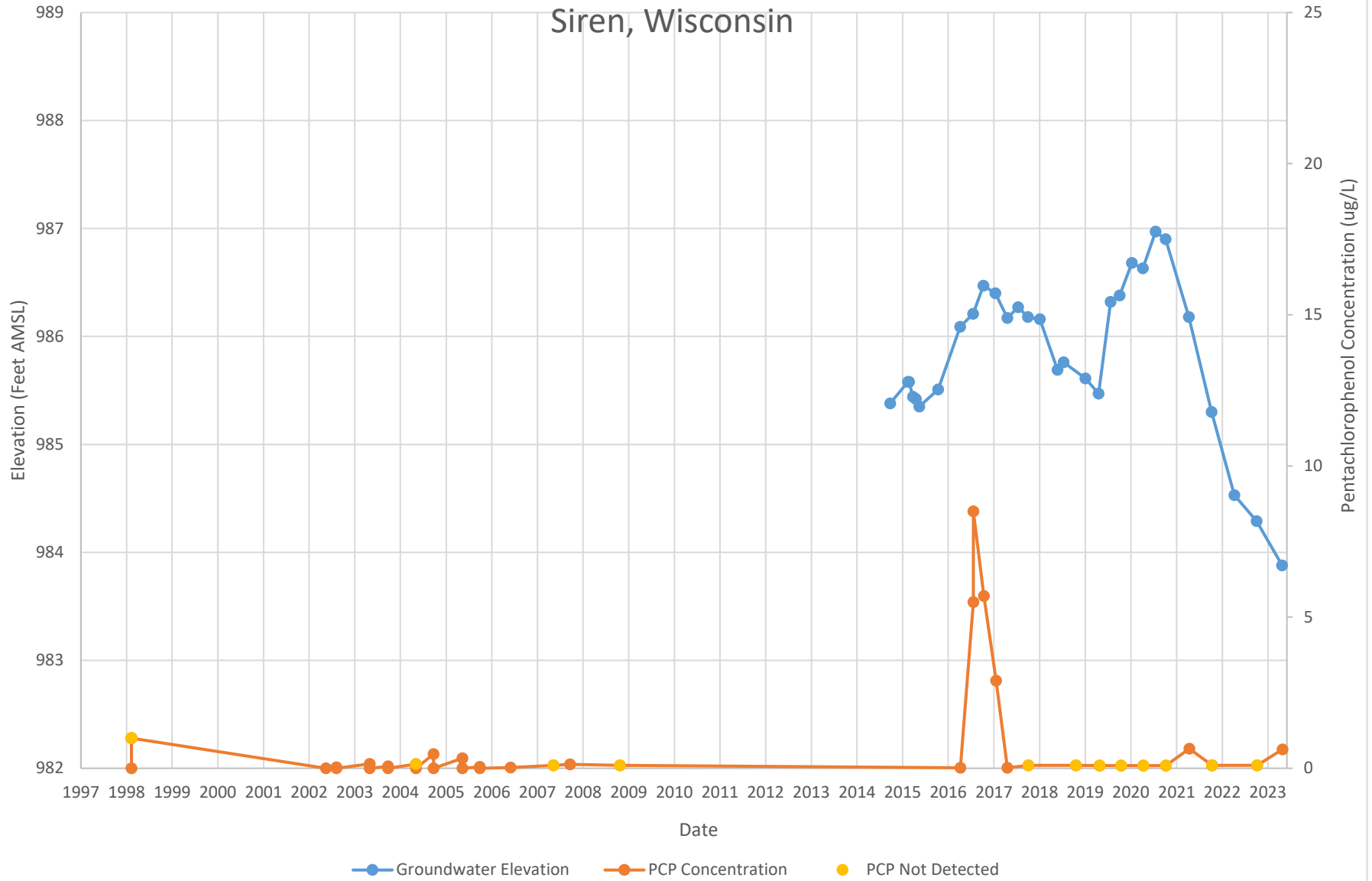
Penta Wood Products Superfund Site

Siren, Wisconsin



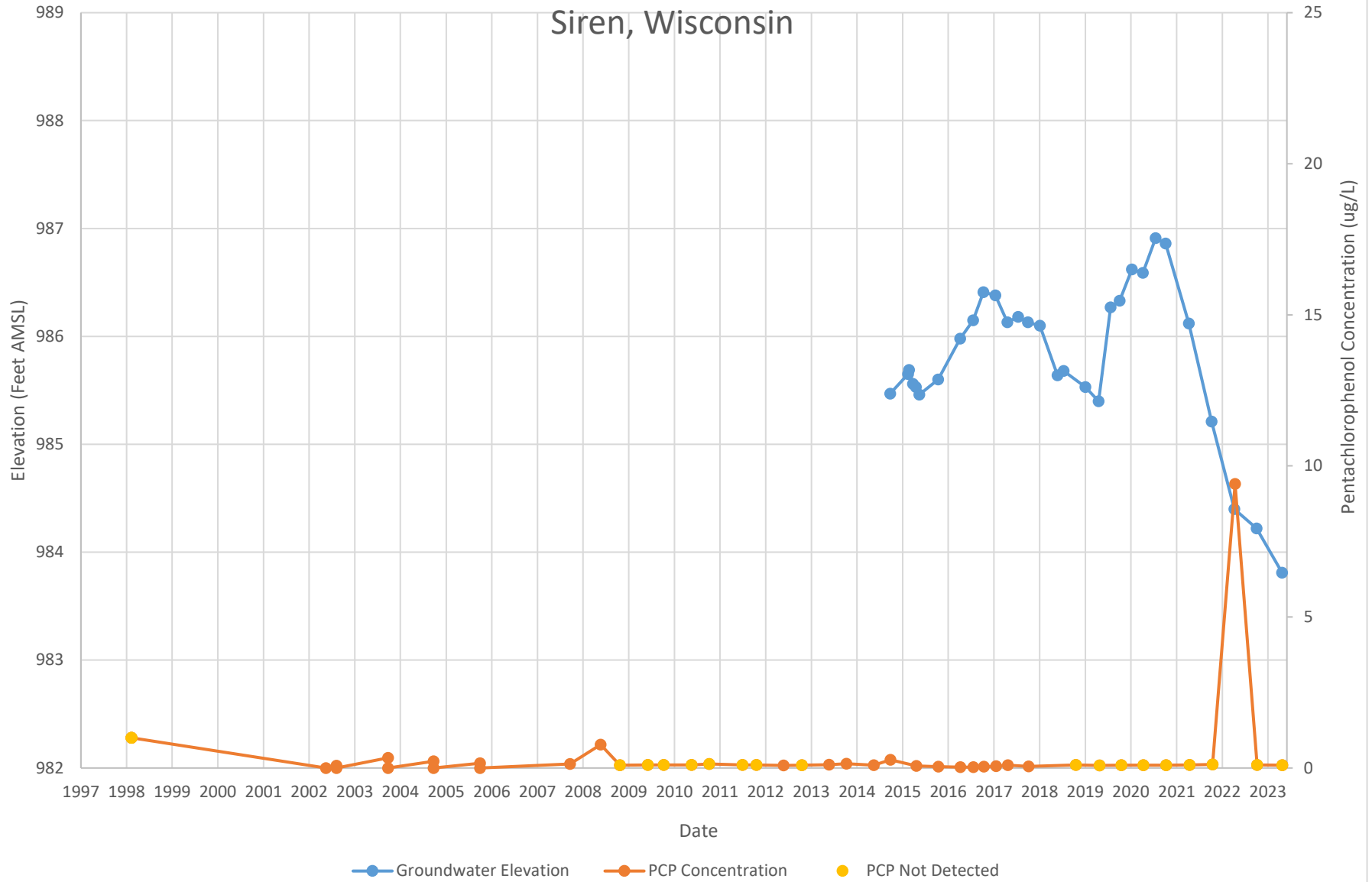
Pentachlorophenol and Groundwater Elevation vs Time Chart - MW21 Penta Wood Products Superfund Site

Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW22 Penta Wood Products Superfund Site

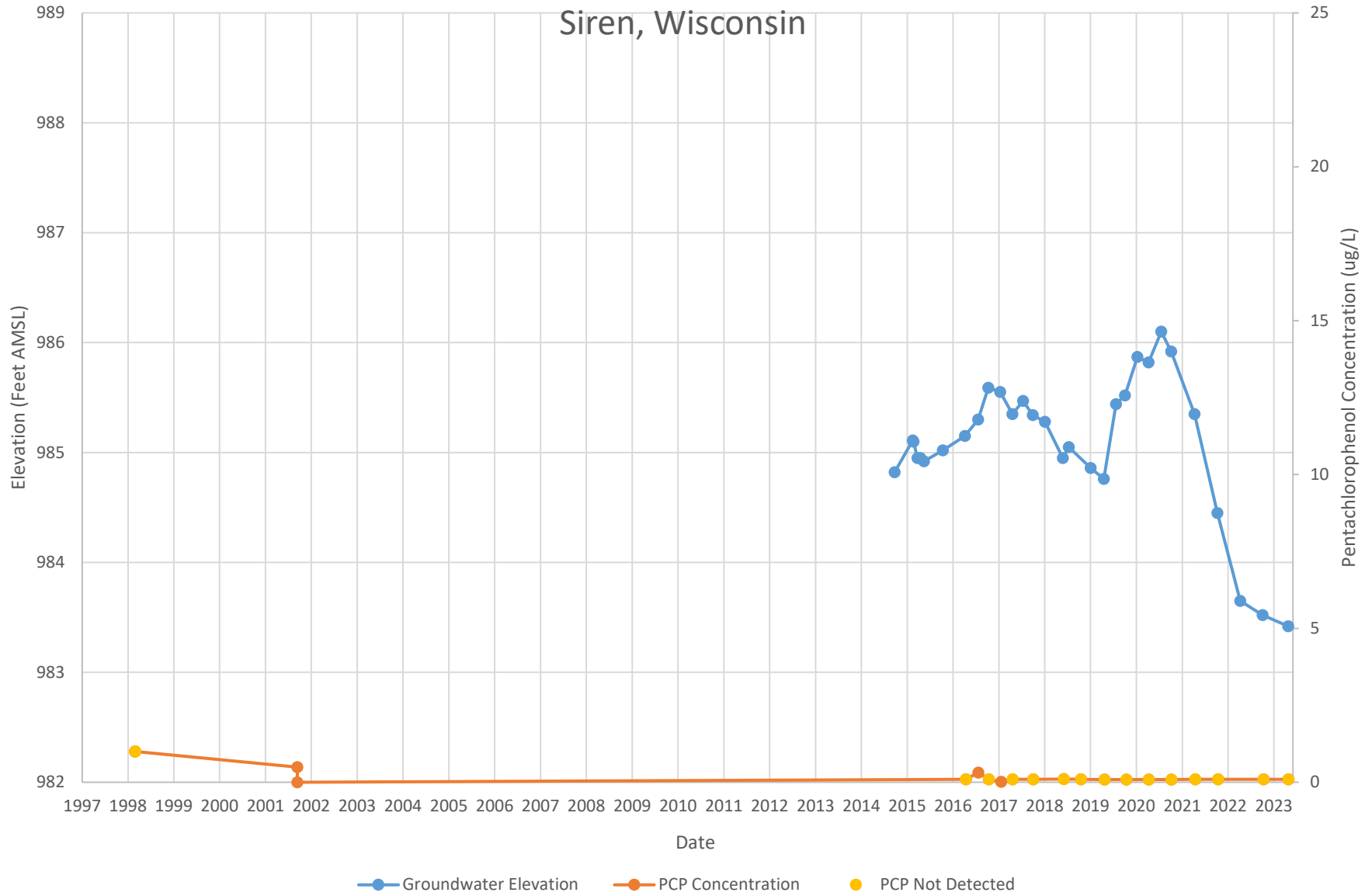
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW23

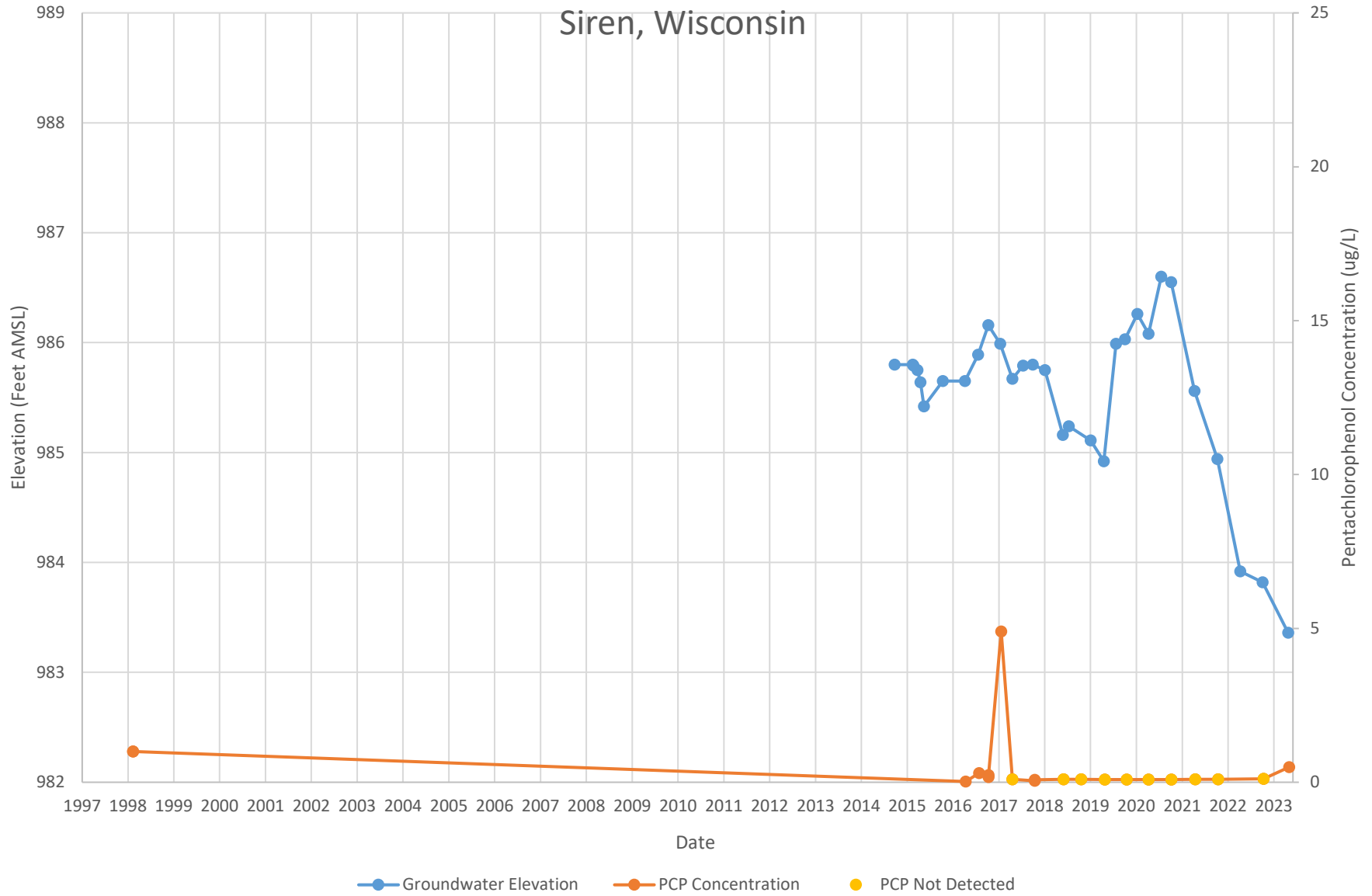
Penta Wood Products Superfund Site

Siren, Wisconsin



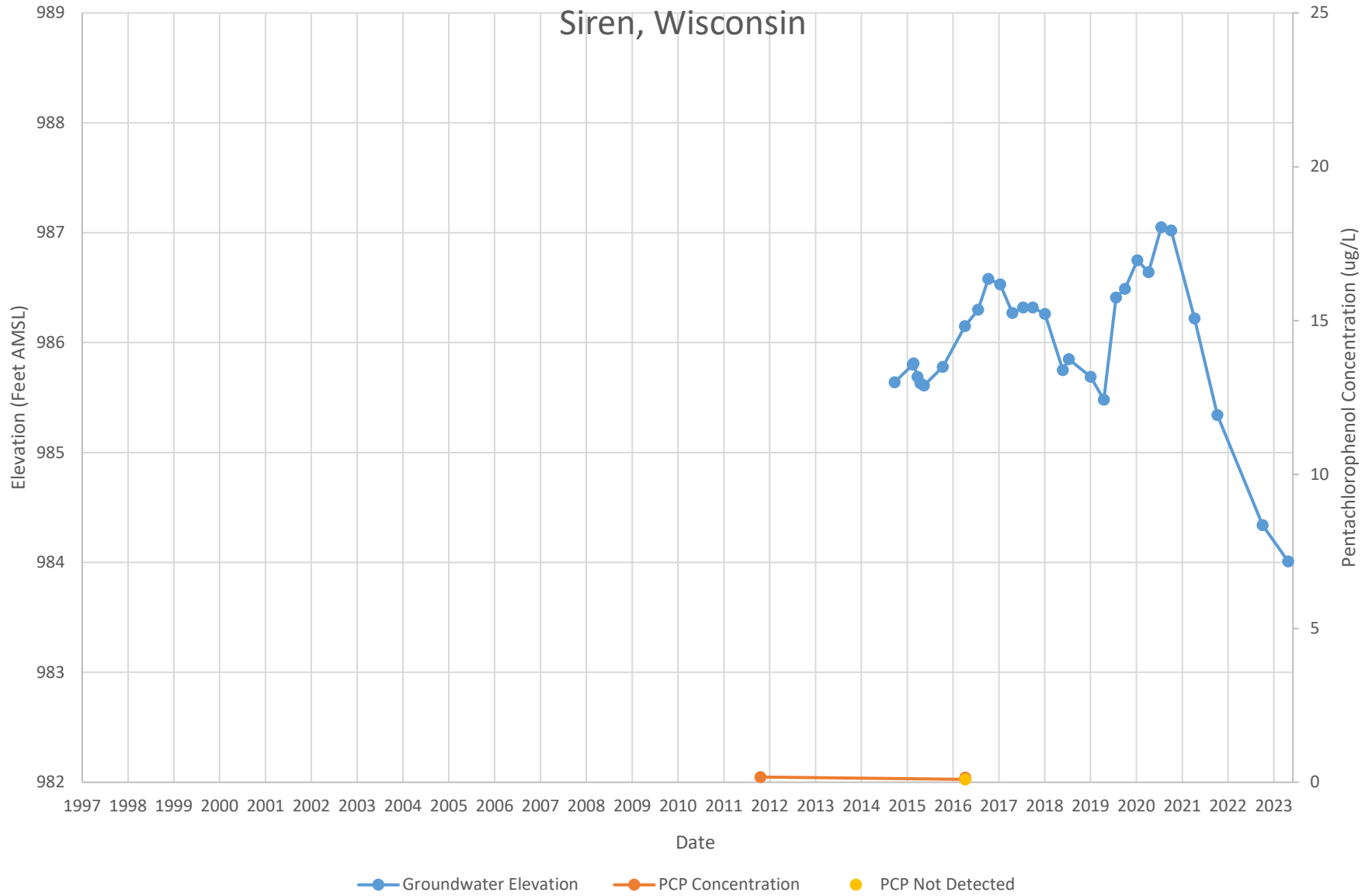
Pentachlorophenol and Groundwater Elevation vs Time Chart - MW25 Penta Wood Products Superfund Site

Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW27 Penta Wood Products Superfund Site

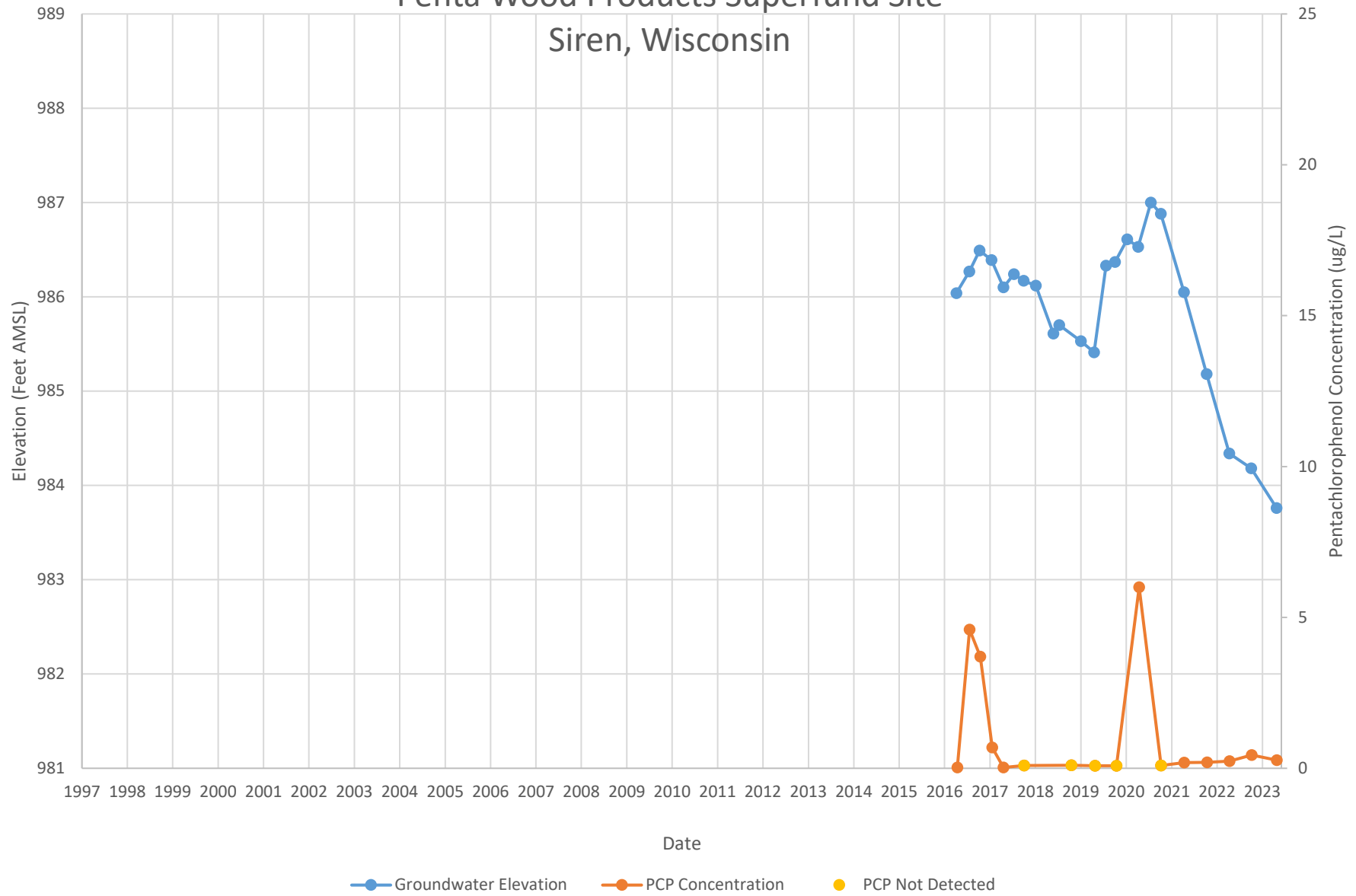
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW31

Penta Wood Products Superfund Site

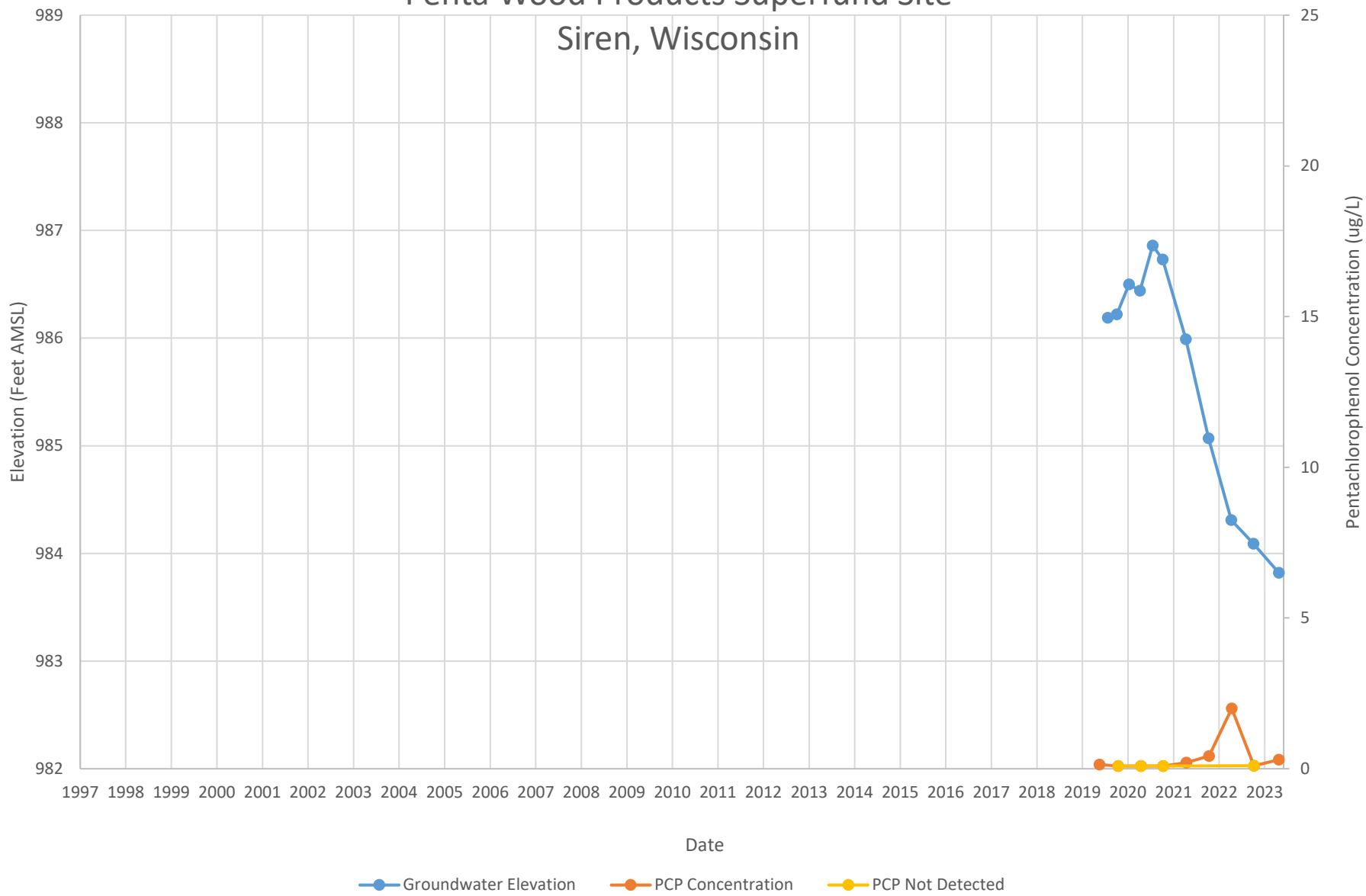
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW32

Penta Wood Products Superfund Site

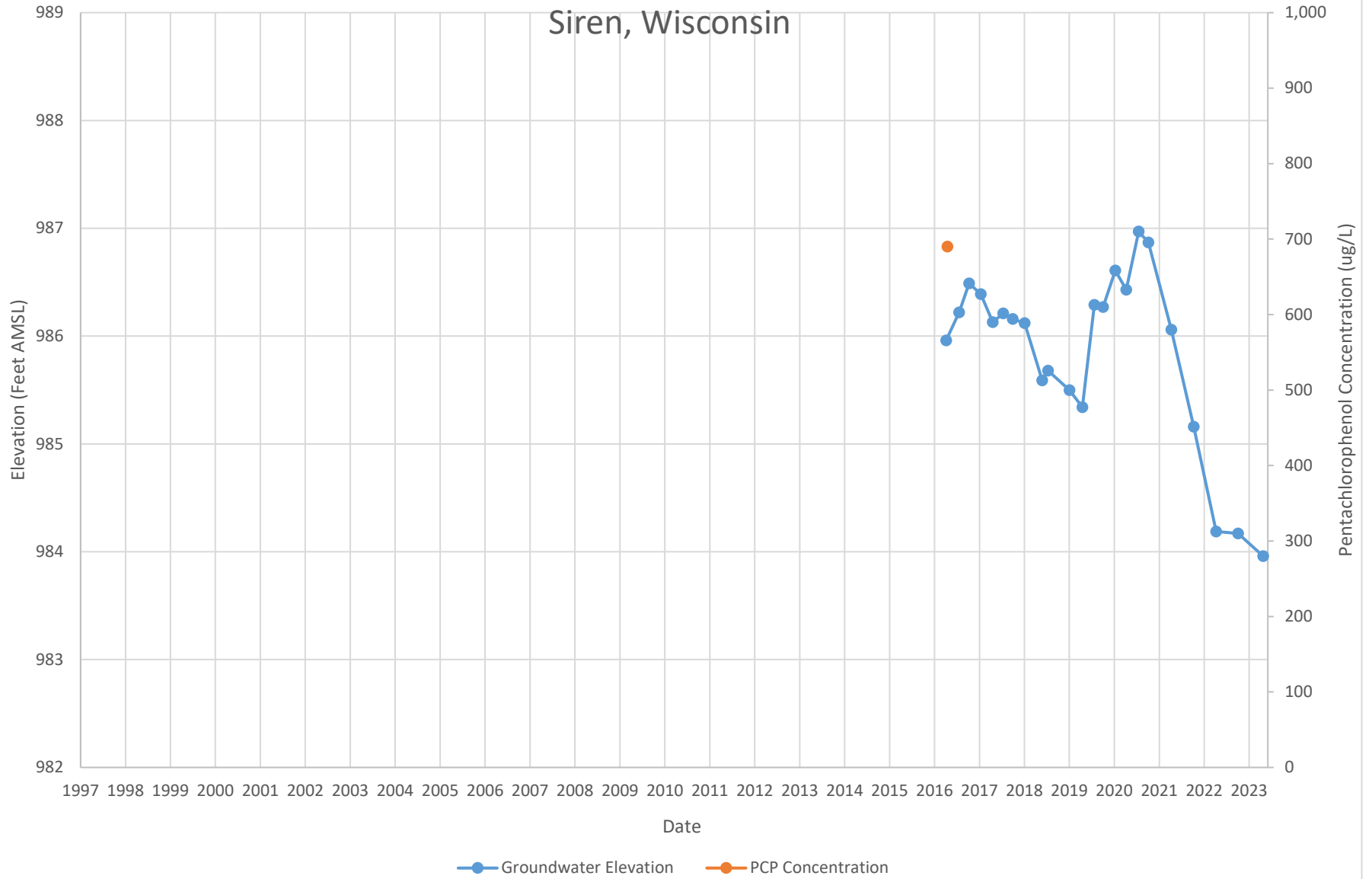
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - EW02S

Penta Wood Products Superfund Site

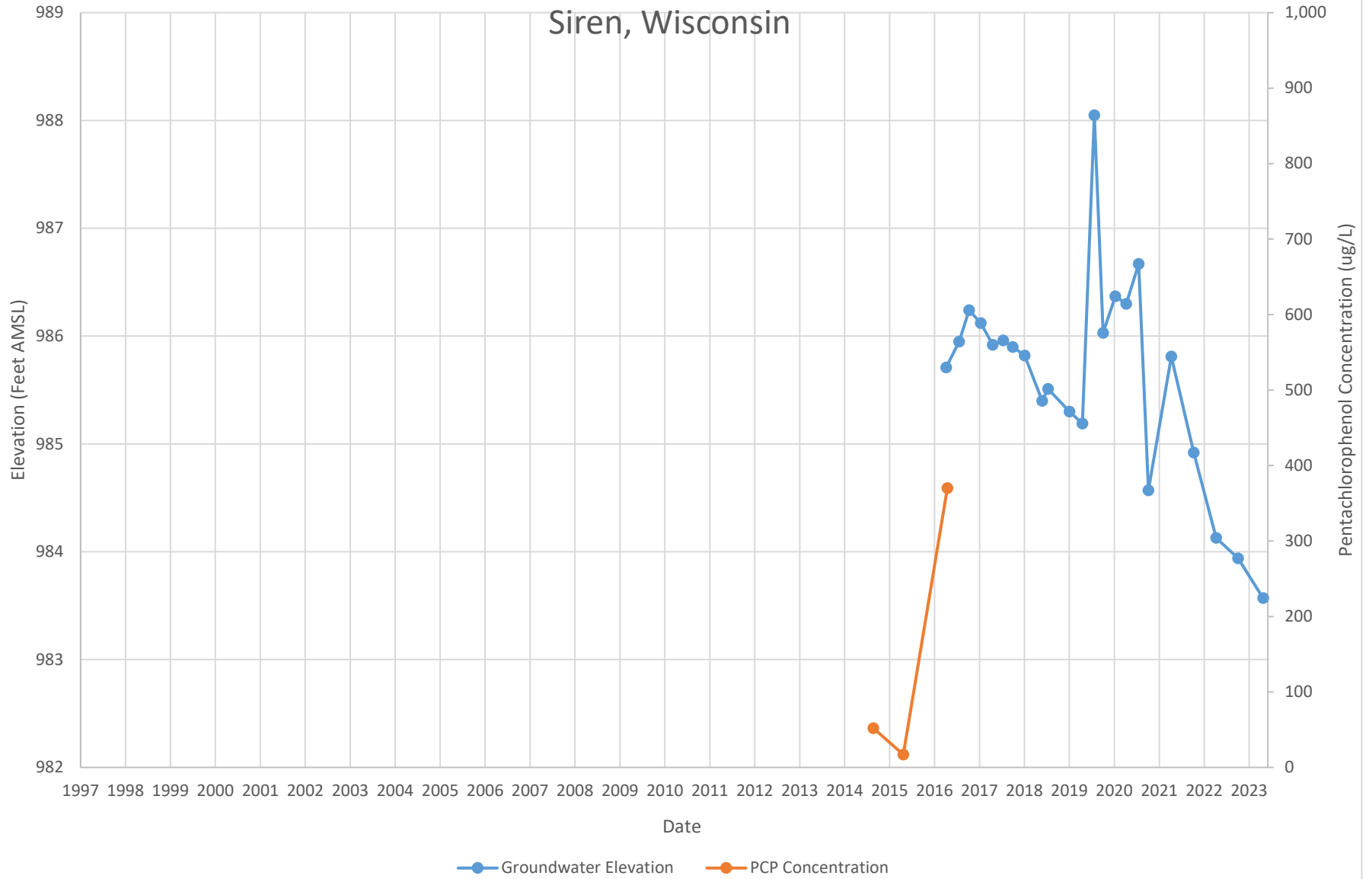
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - EW02D

Penta Wood Products Superfund Site

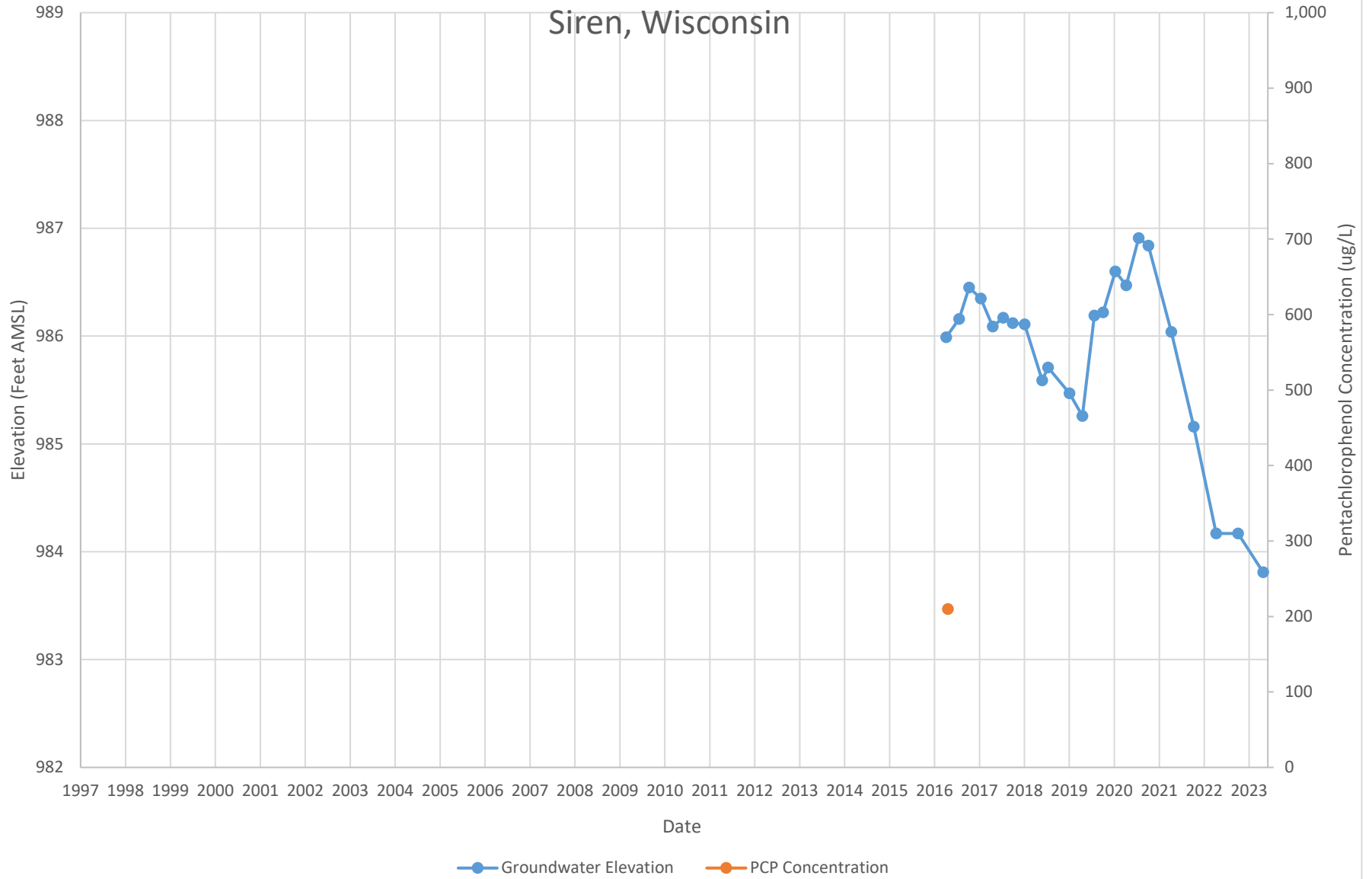
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - EW04S

Penta Wood Products Superfund Site

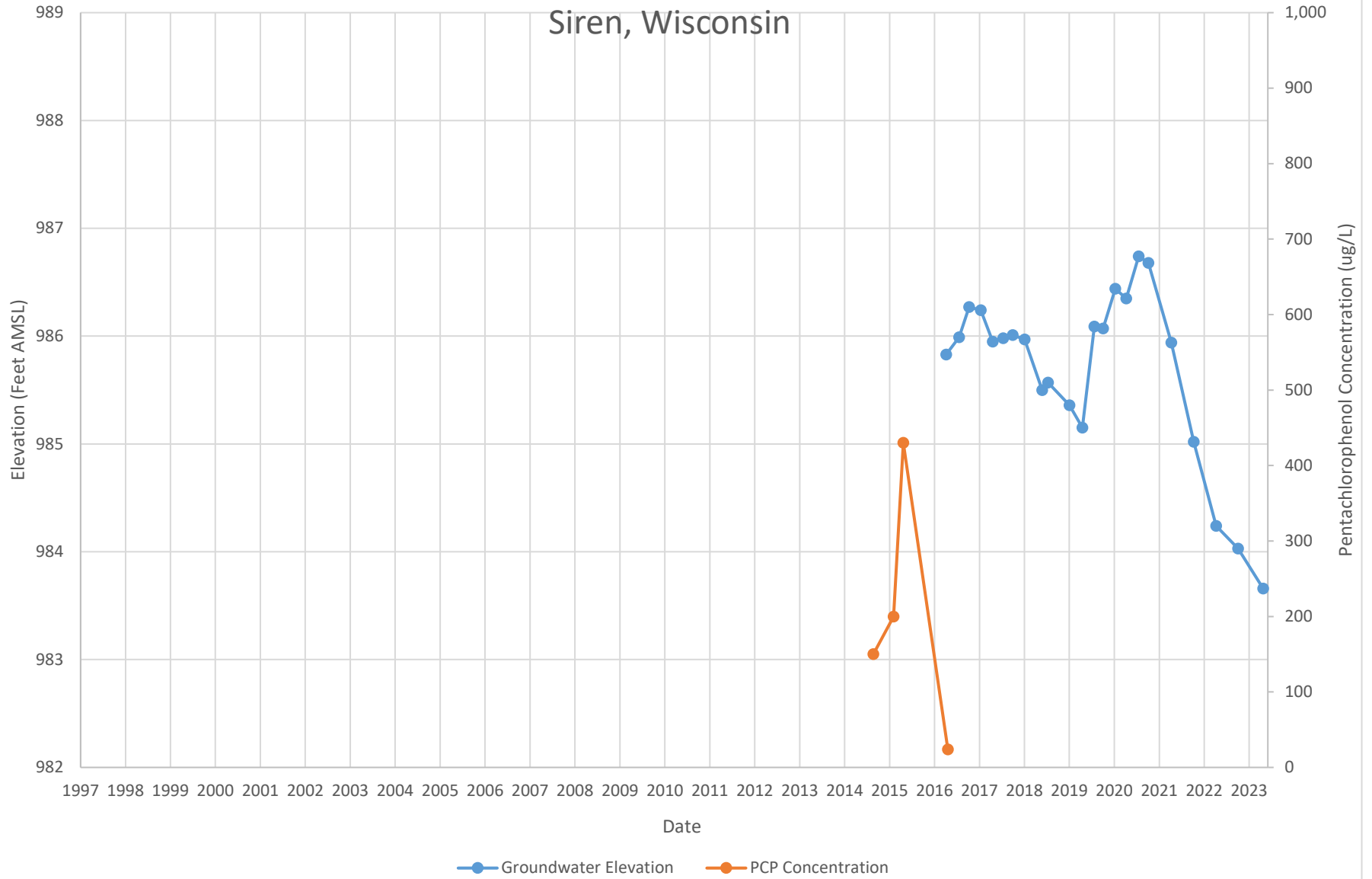
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - EW04D

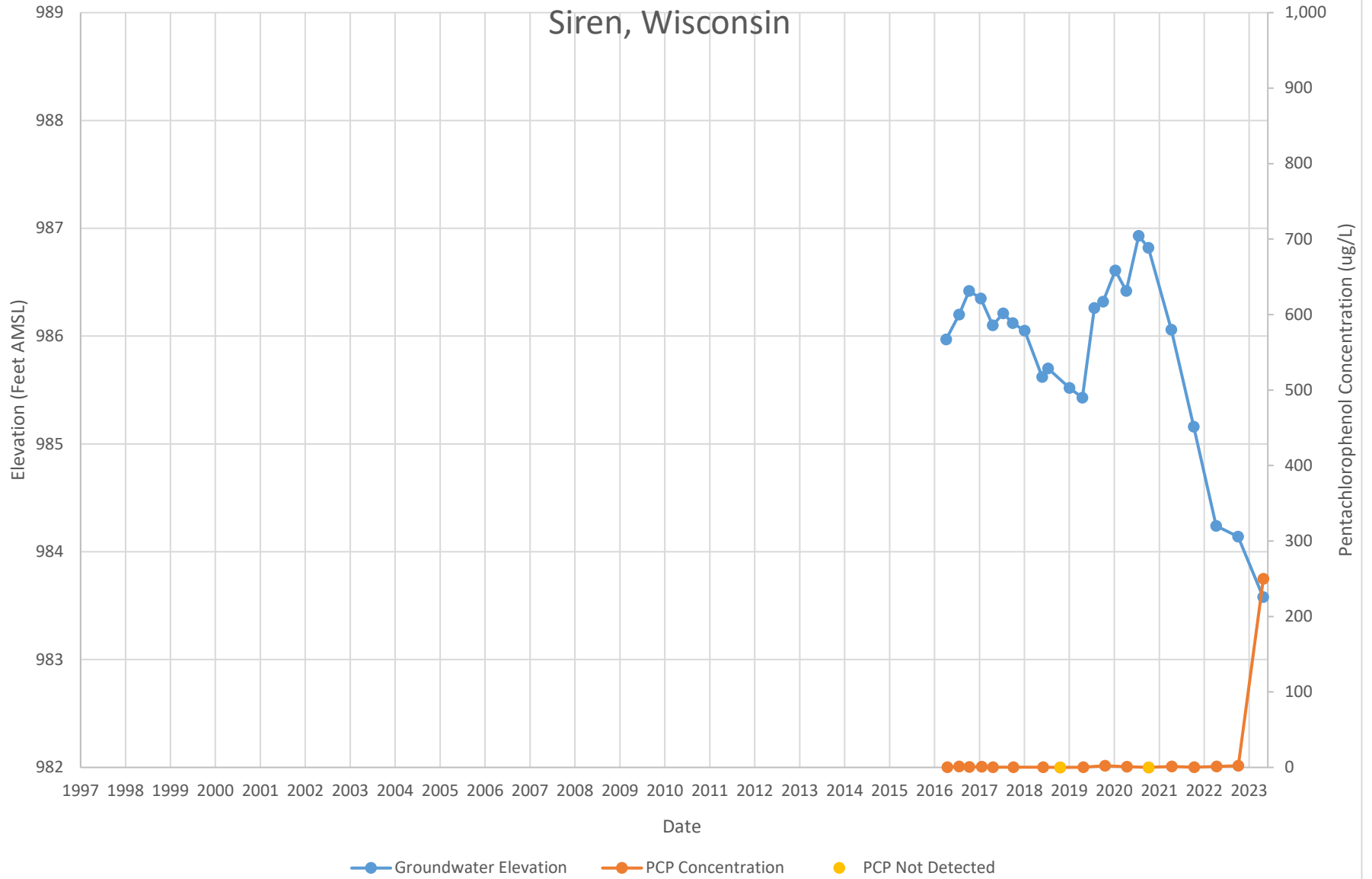
Penta Wood Products Superfund Site

Siren, Wisconsin



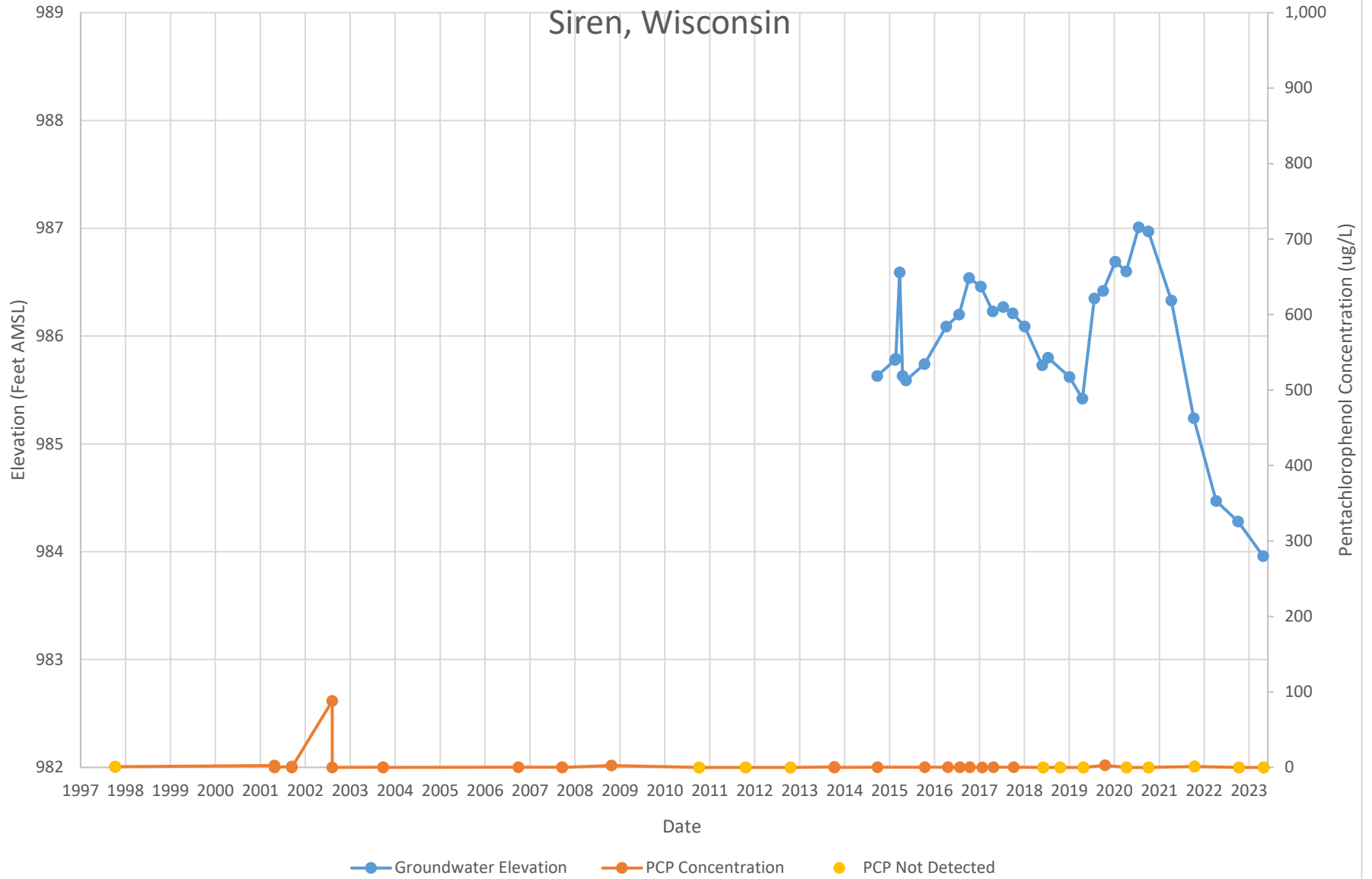
Pentachlorophenol and Groundwater Elevation vs Time Chart - EW11S Penta Wood Products Superfund Site

Siren, Wisconsin



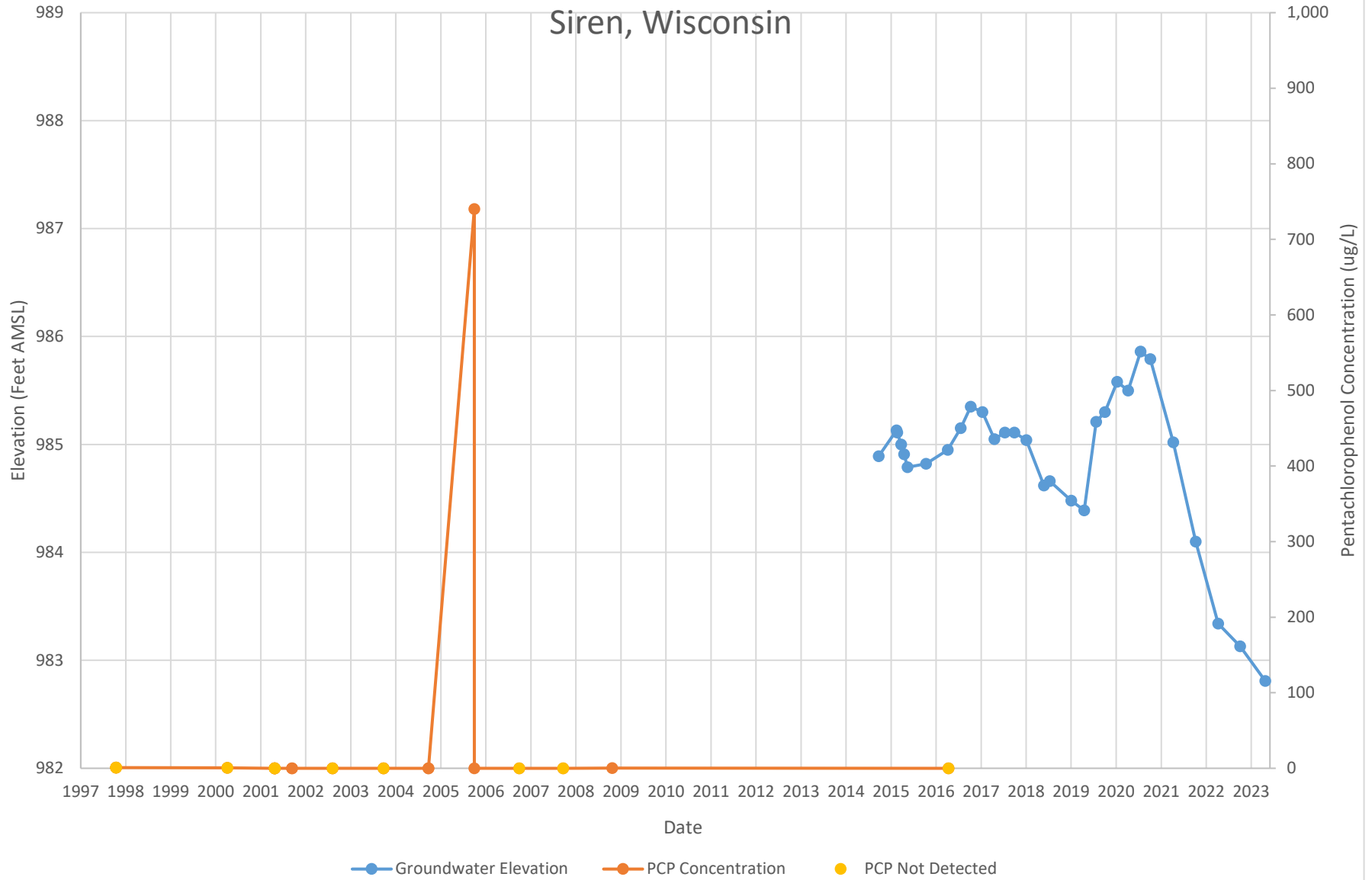
Pentachlorophenol and Groundwater Elevation vs Time Chart - MW6S Penta Wood Products Superfund Site

Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW11 Penta Wood Products Superfund Site

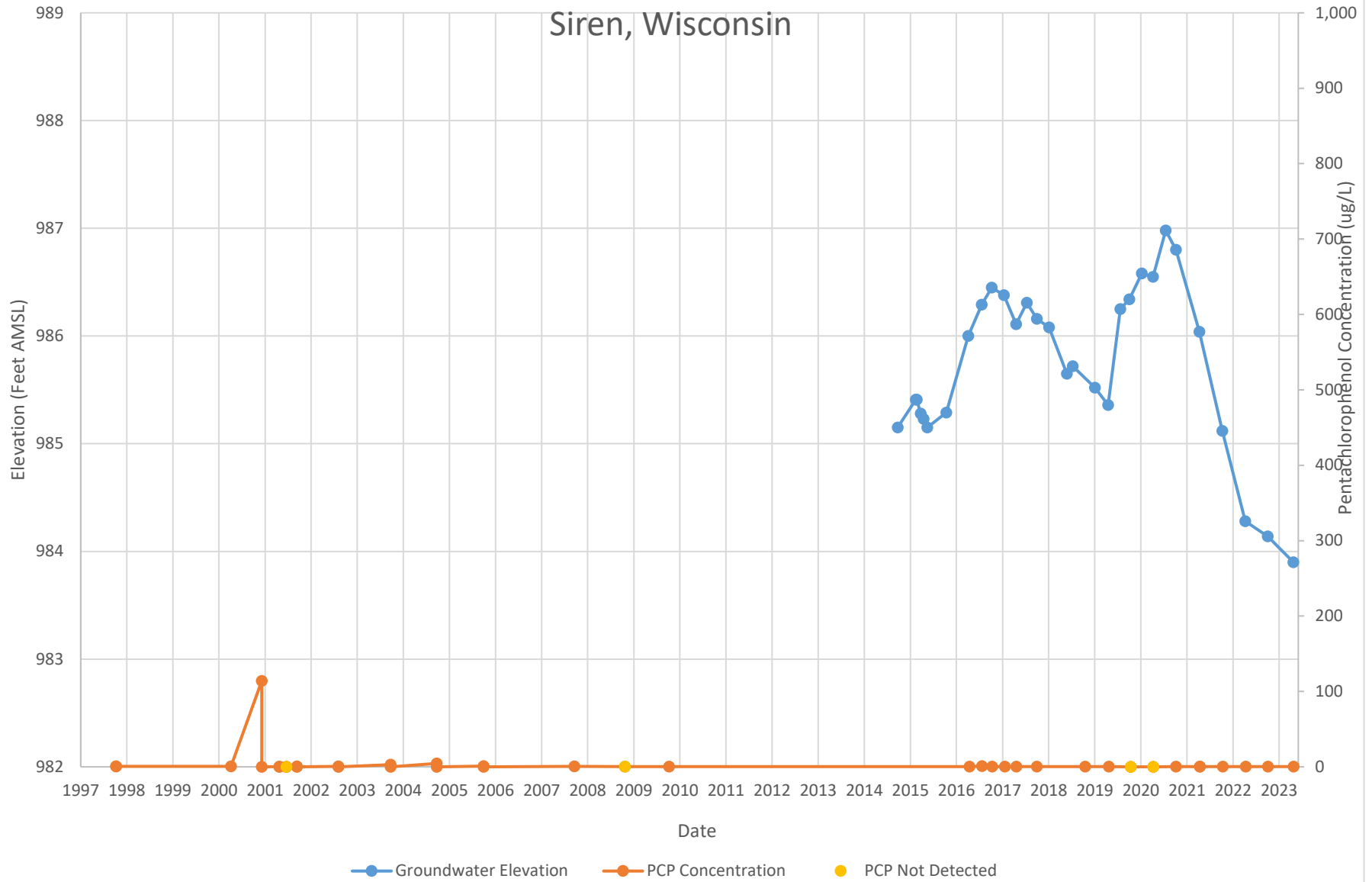
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW13

Penta Wood Products Superfund Site

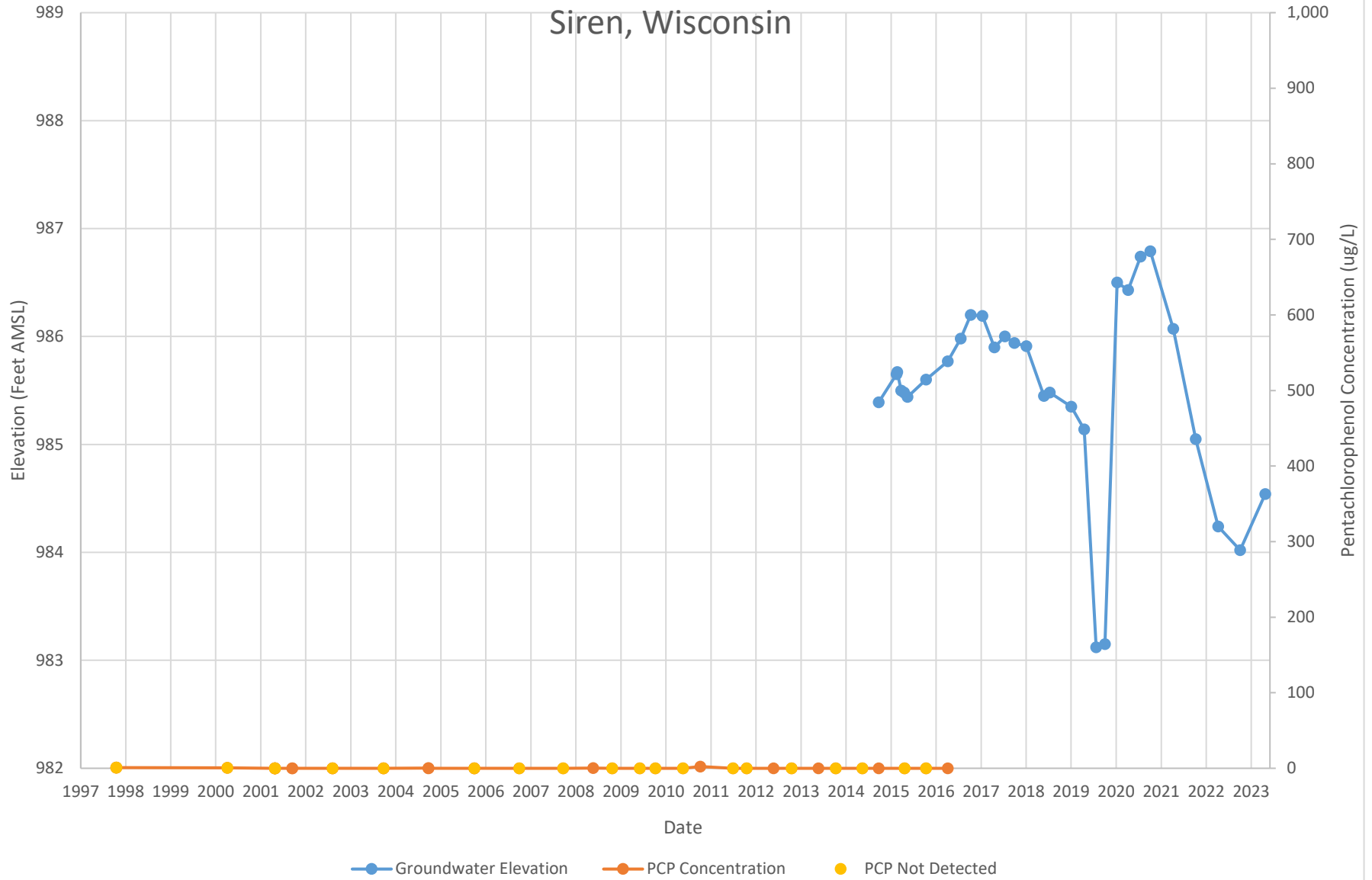
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW15

Penta Wood Products Superfund Site

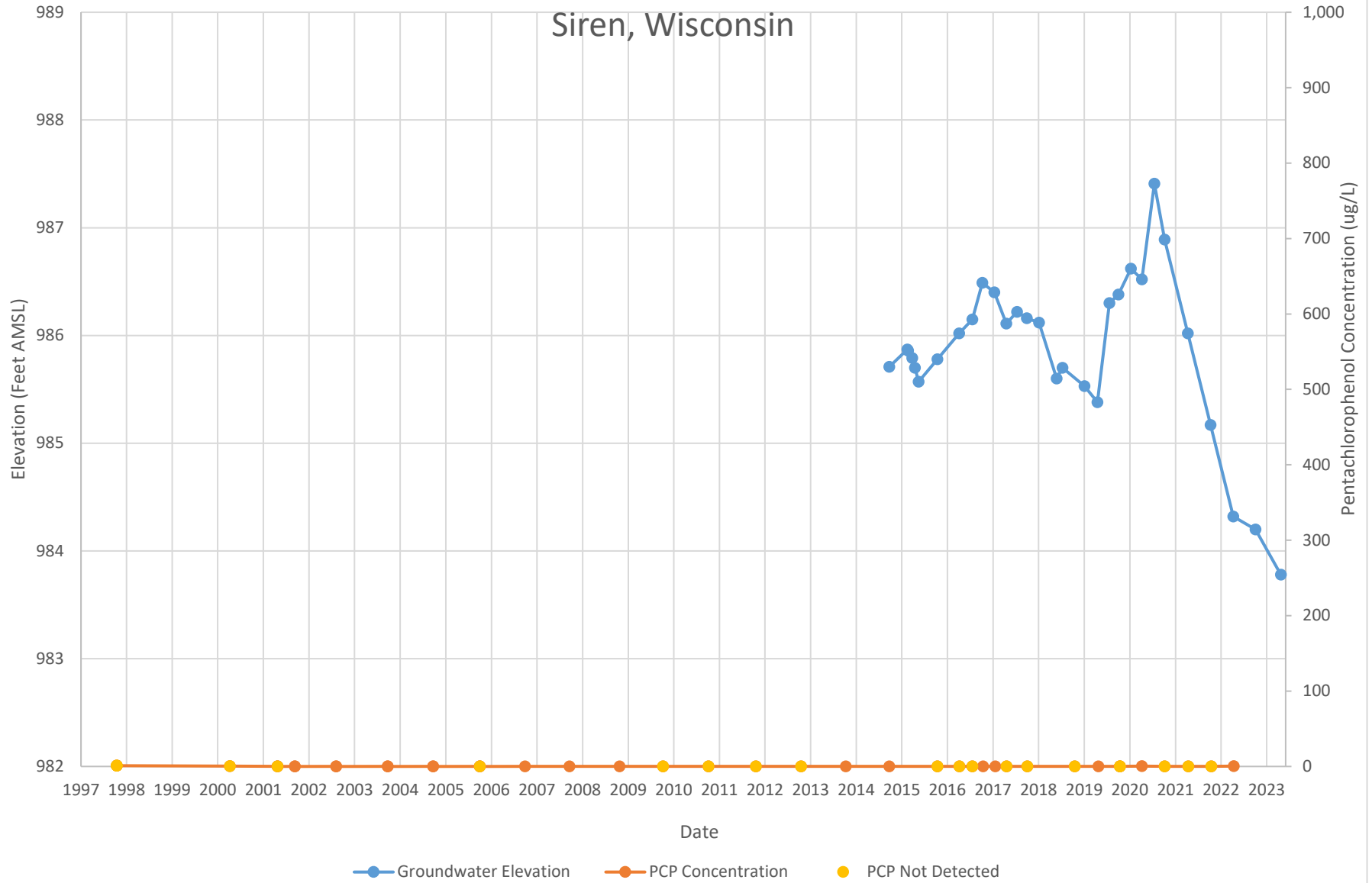
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW16

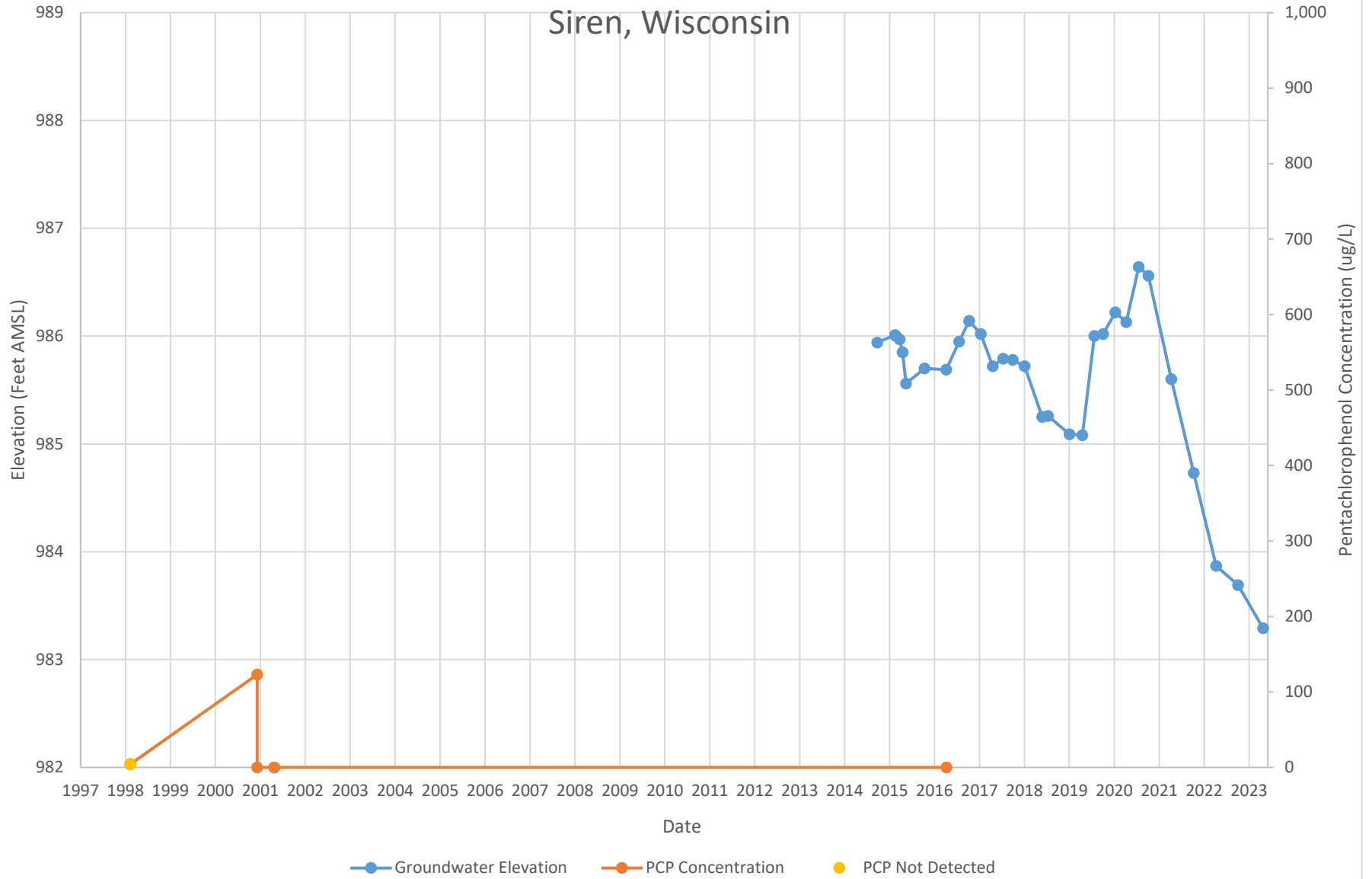
Penta Wood Products Superfund Site

Siren, Wisconsin



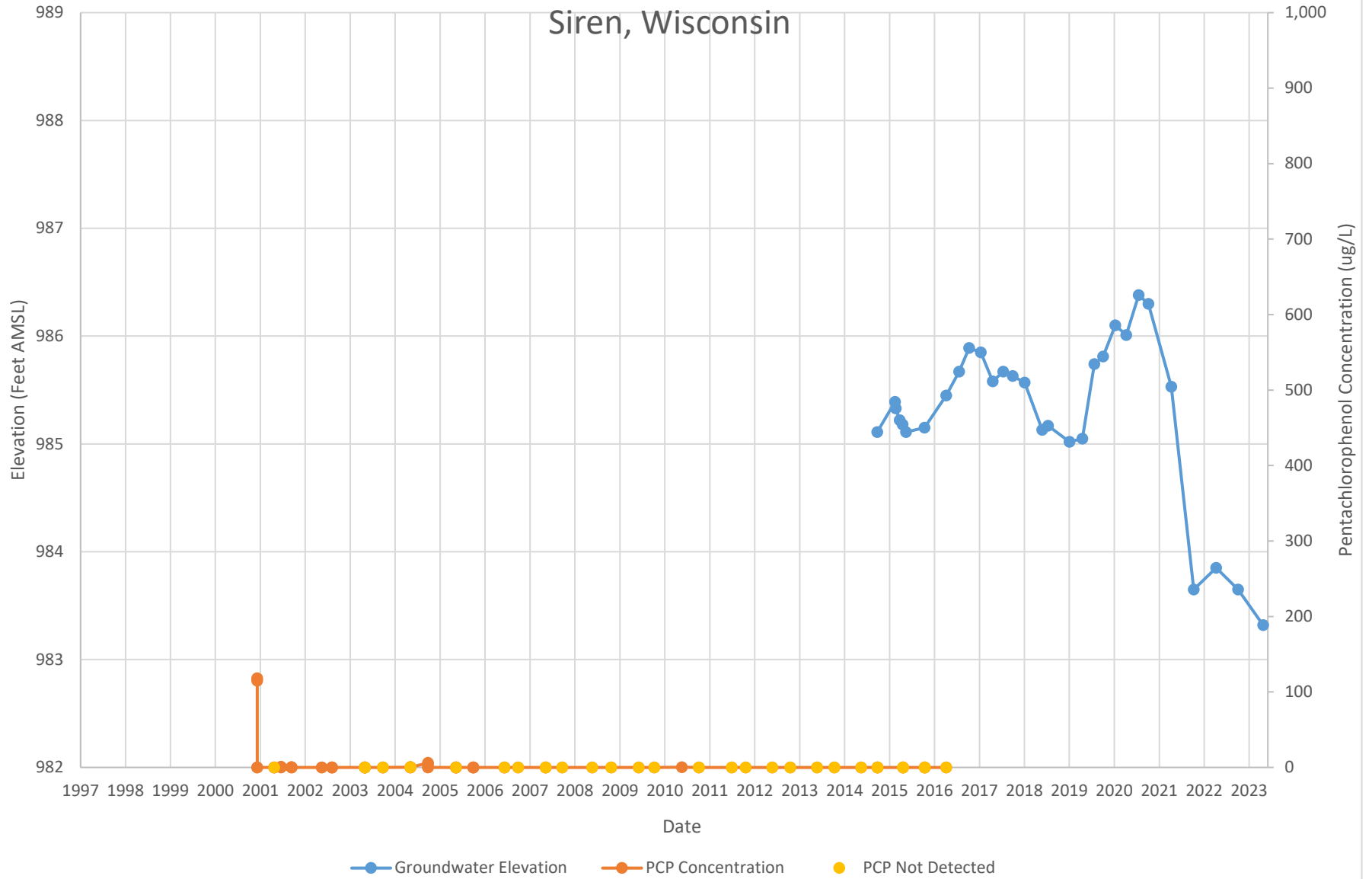
Pentachlorophenol and Groundwater Elevation vs Time Chart - MW24 Penta Wood Products Superfund Site

Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW26 Penta Wood Products Superfund Site

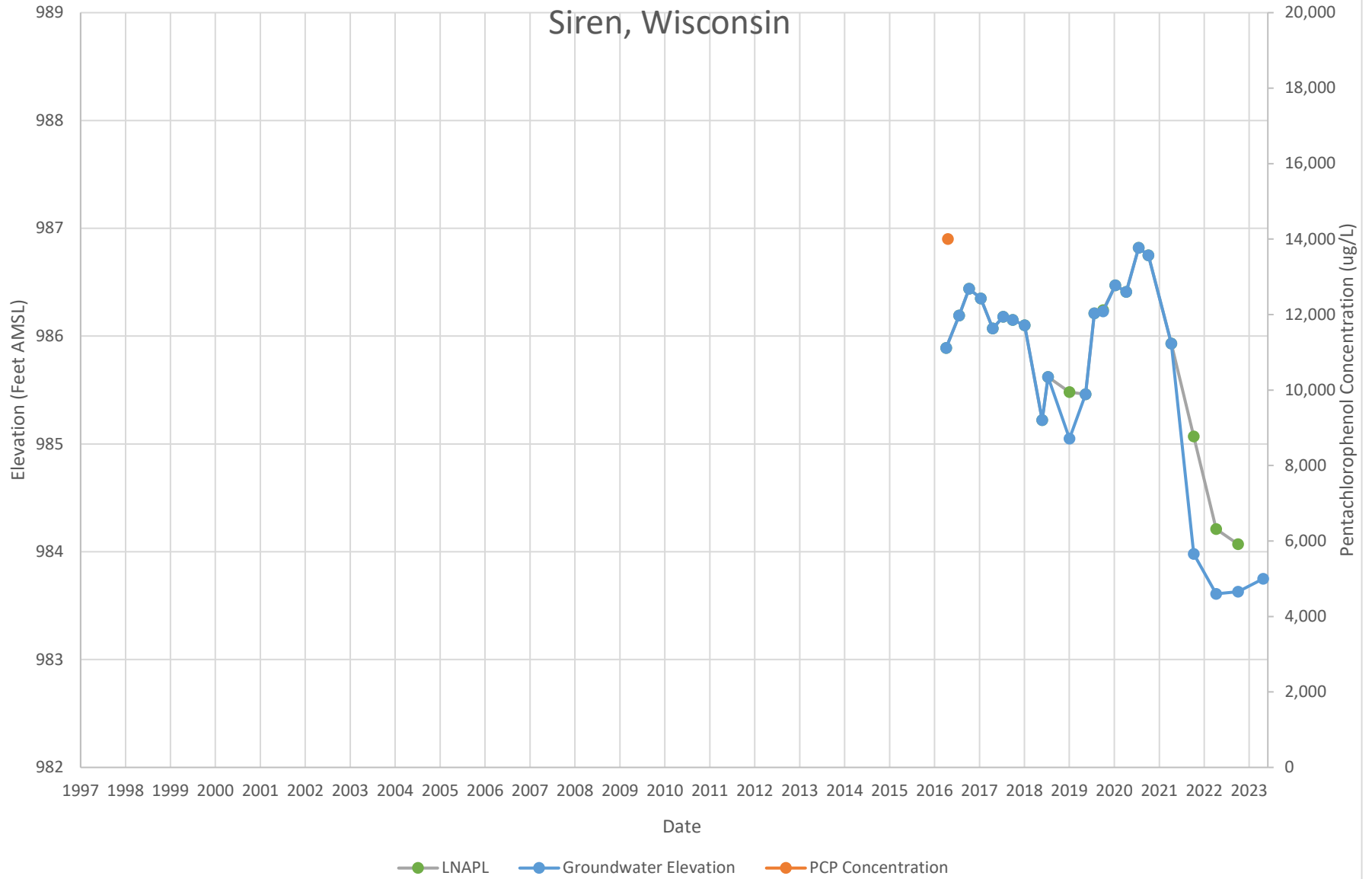
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - EW03S

Penta Wood Products Superfund Site

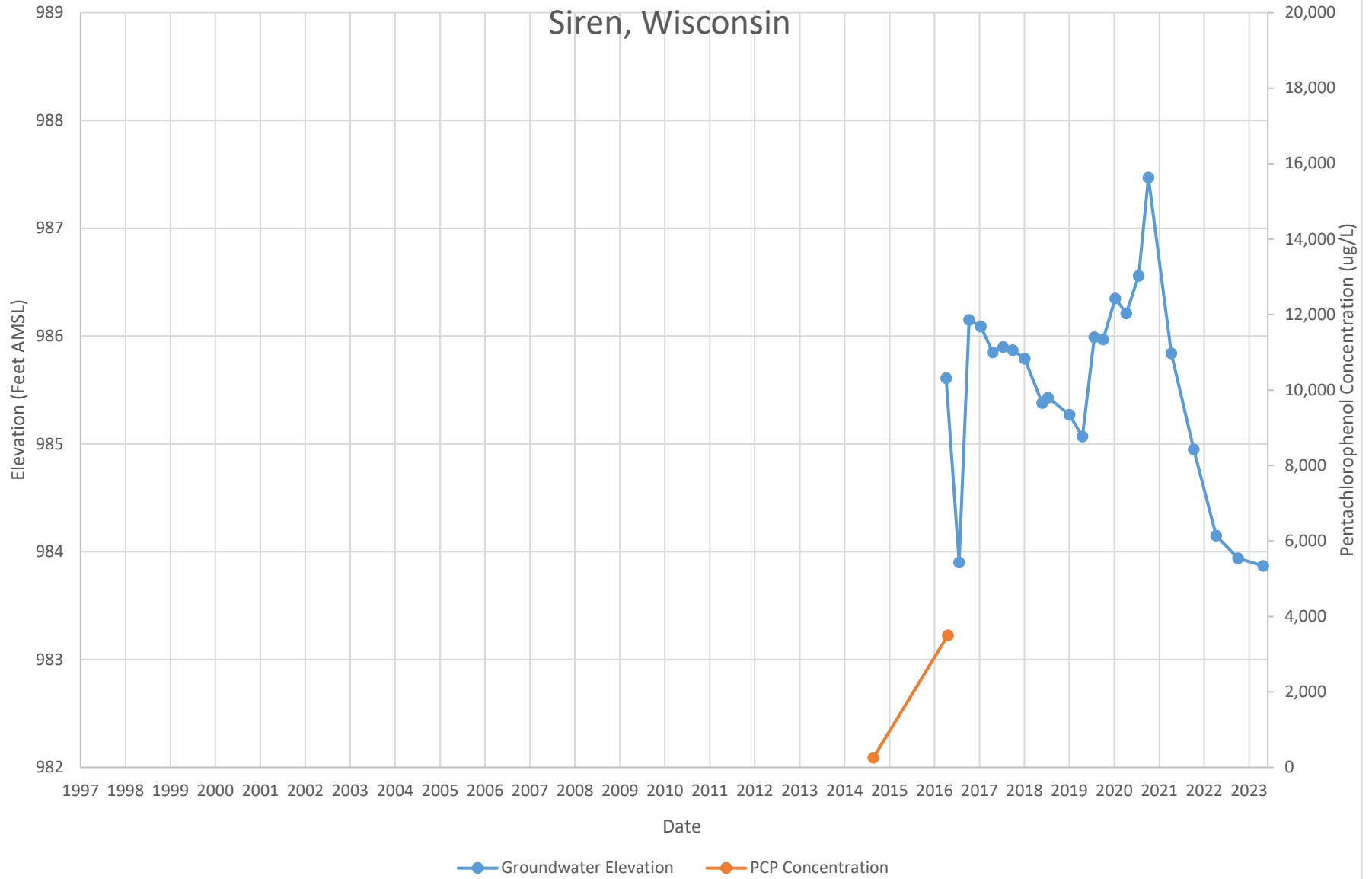
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - EW03D

Penta Wood Products Superfund Site

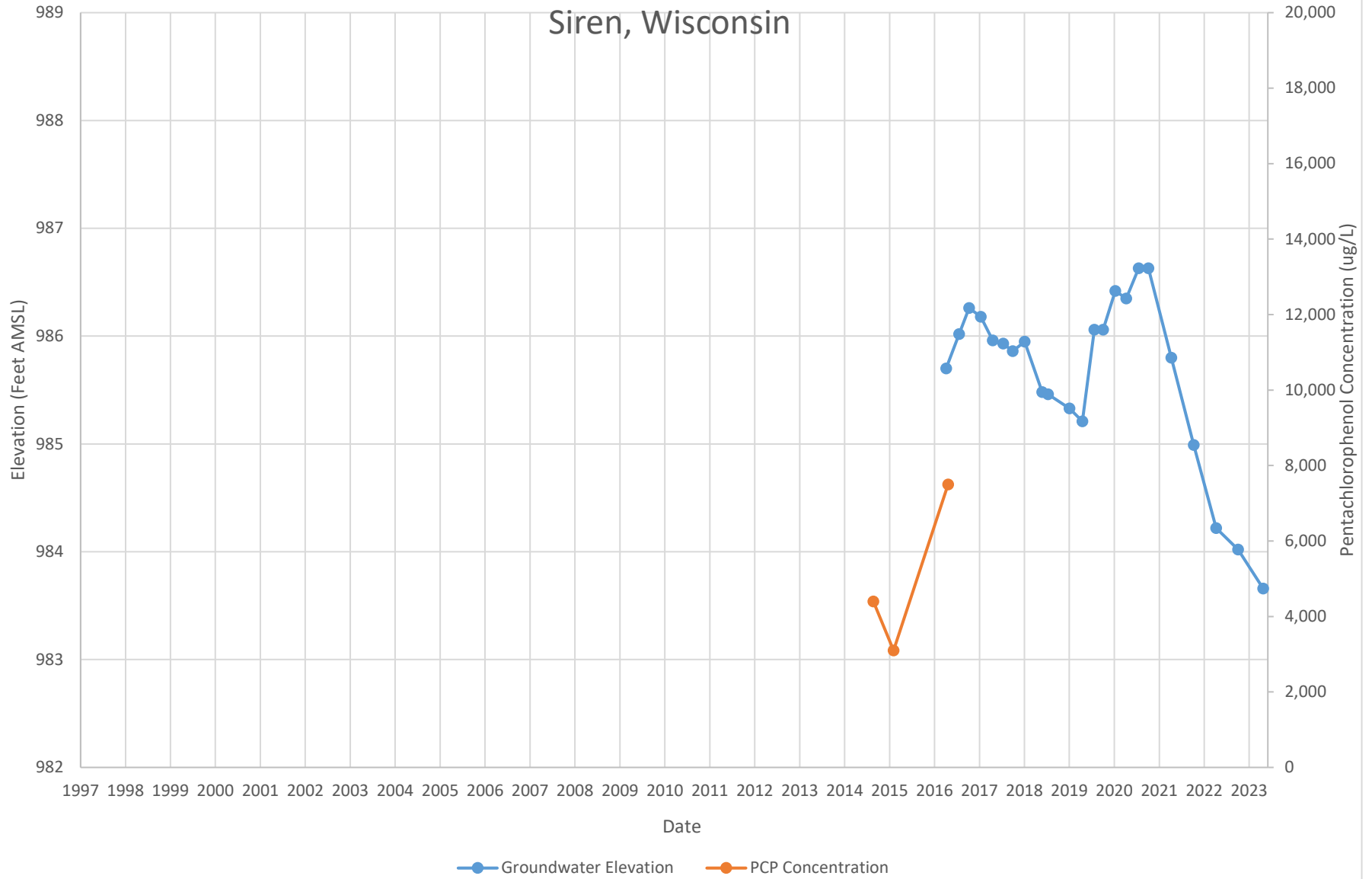
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - EW05D

Penta Wood Products Superfund Site

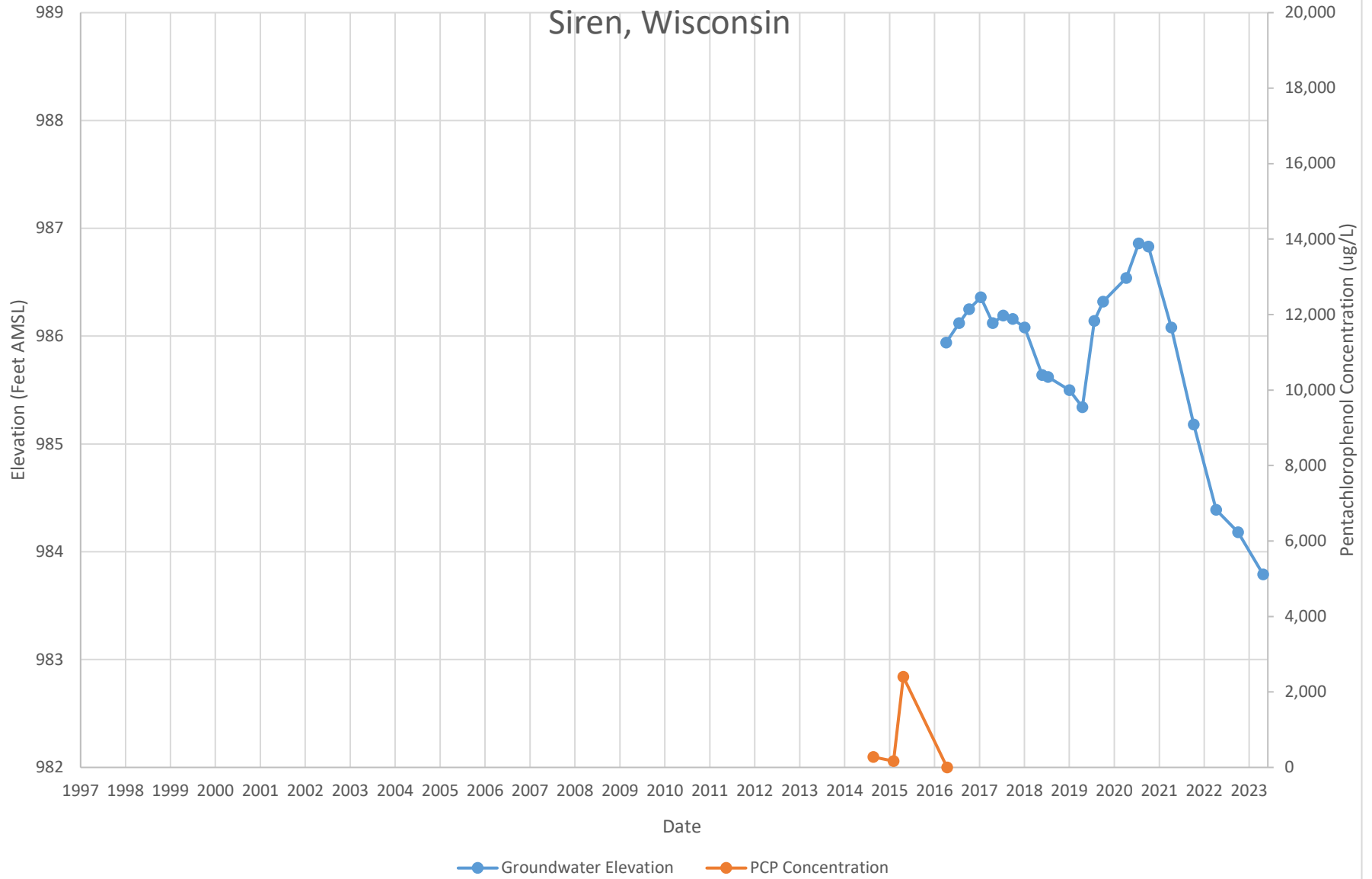
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - EW07D

Penta Wood Products Superfund Site

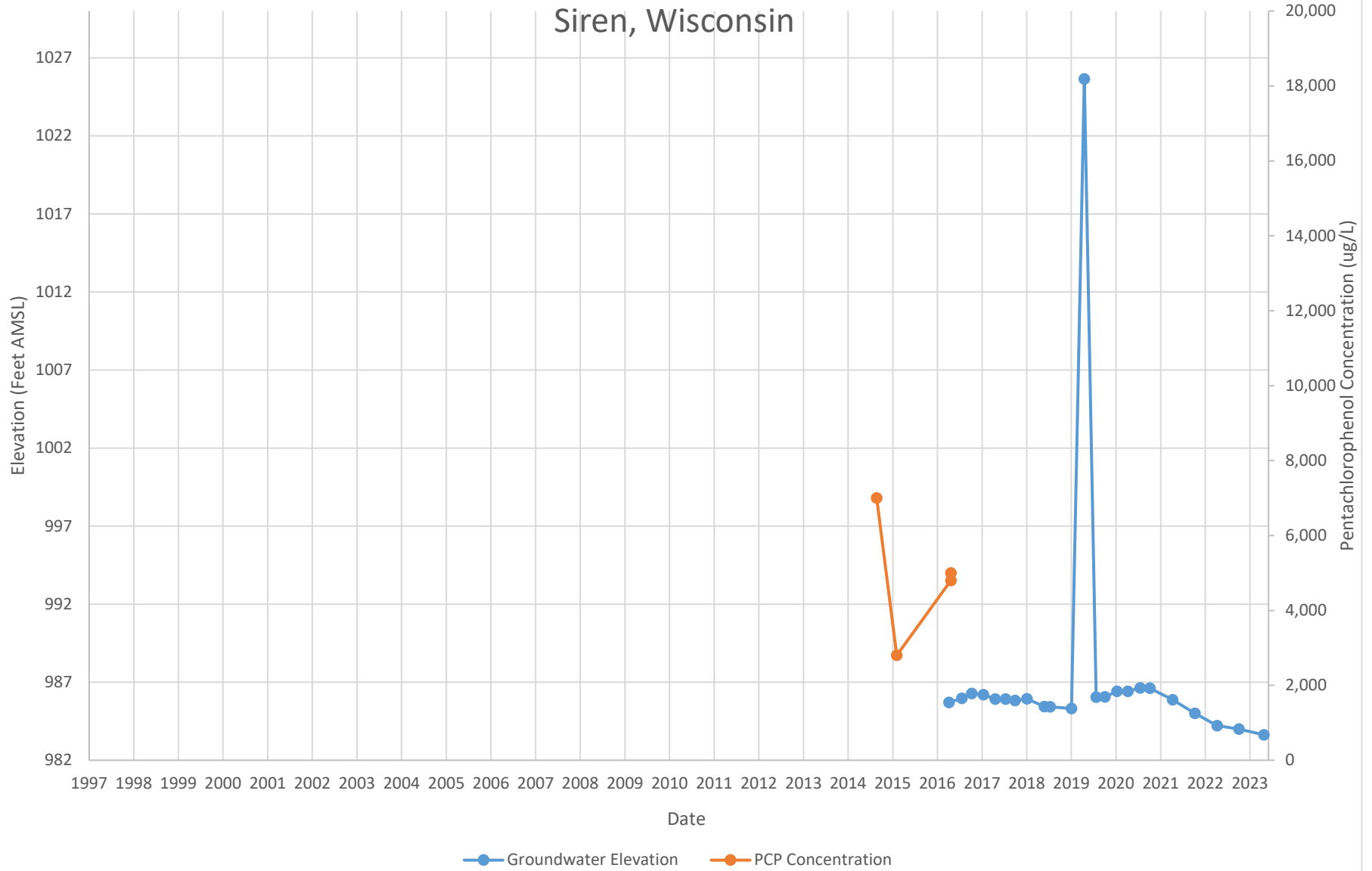
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - EW10D

Penta Wood Products Superfund Site

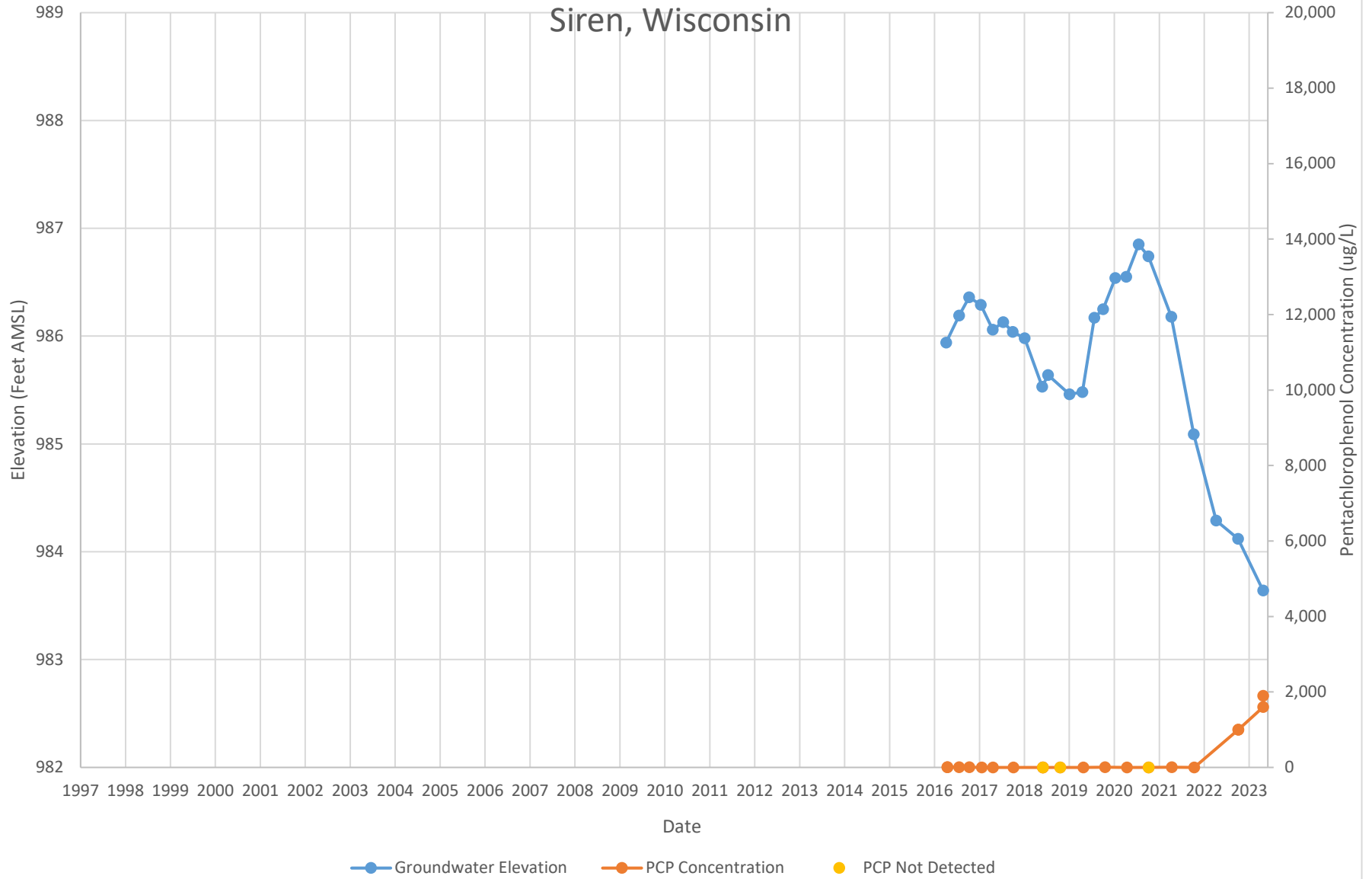
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - EW11D

Penta Wood Products Superfund Site

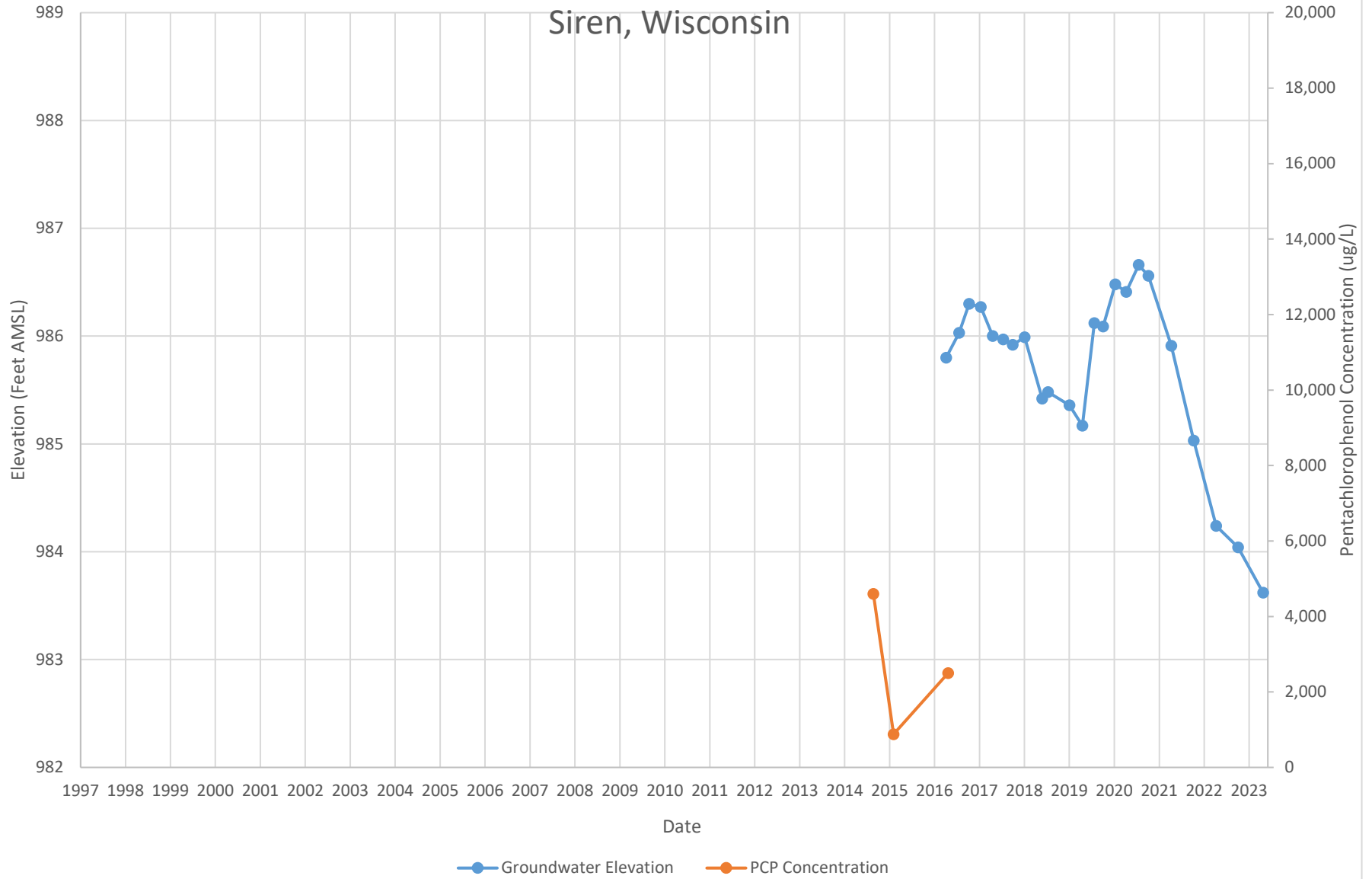
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - EW12D

Penta Wood Products Superfund Site

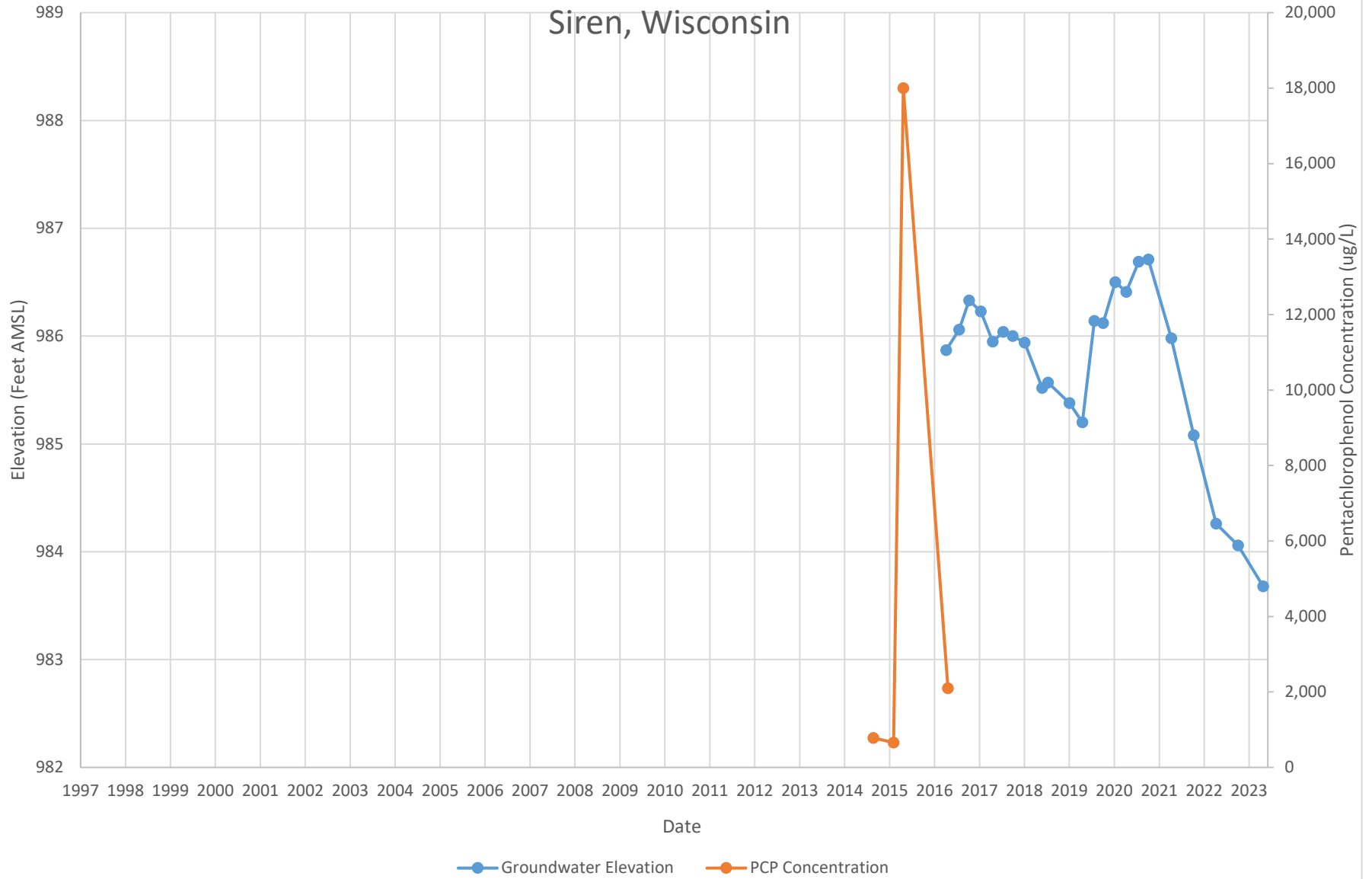
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - EW13D

Penta Wood Products Superfund Site

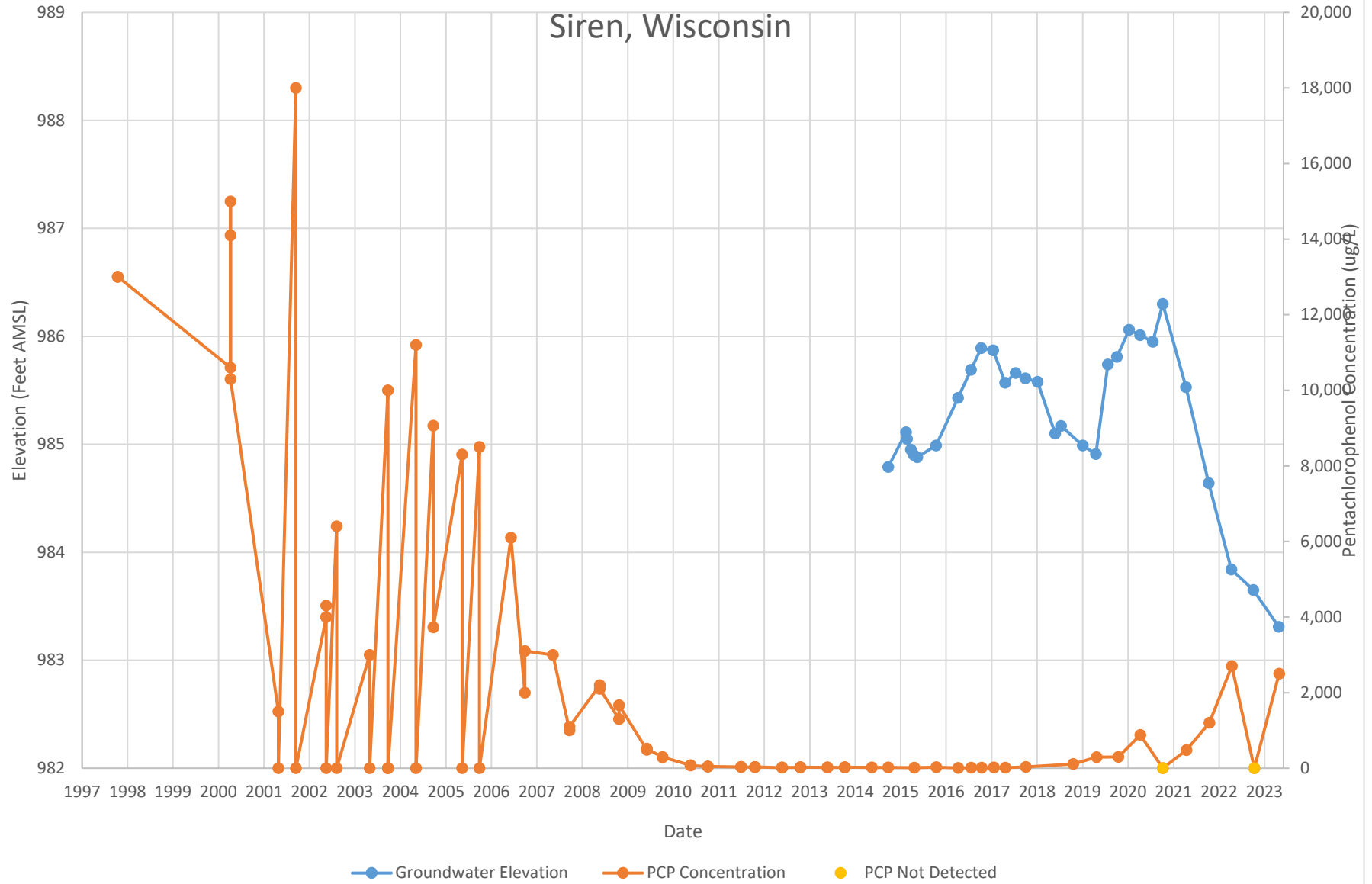
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW12

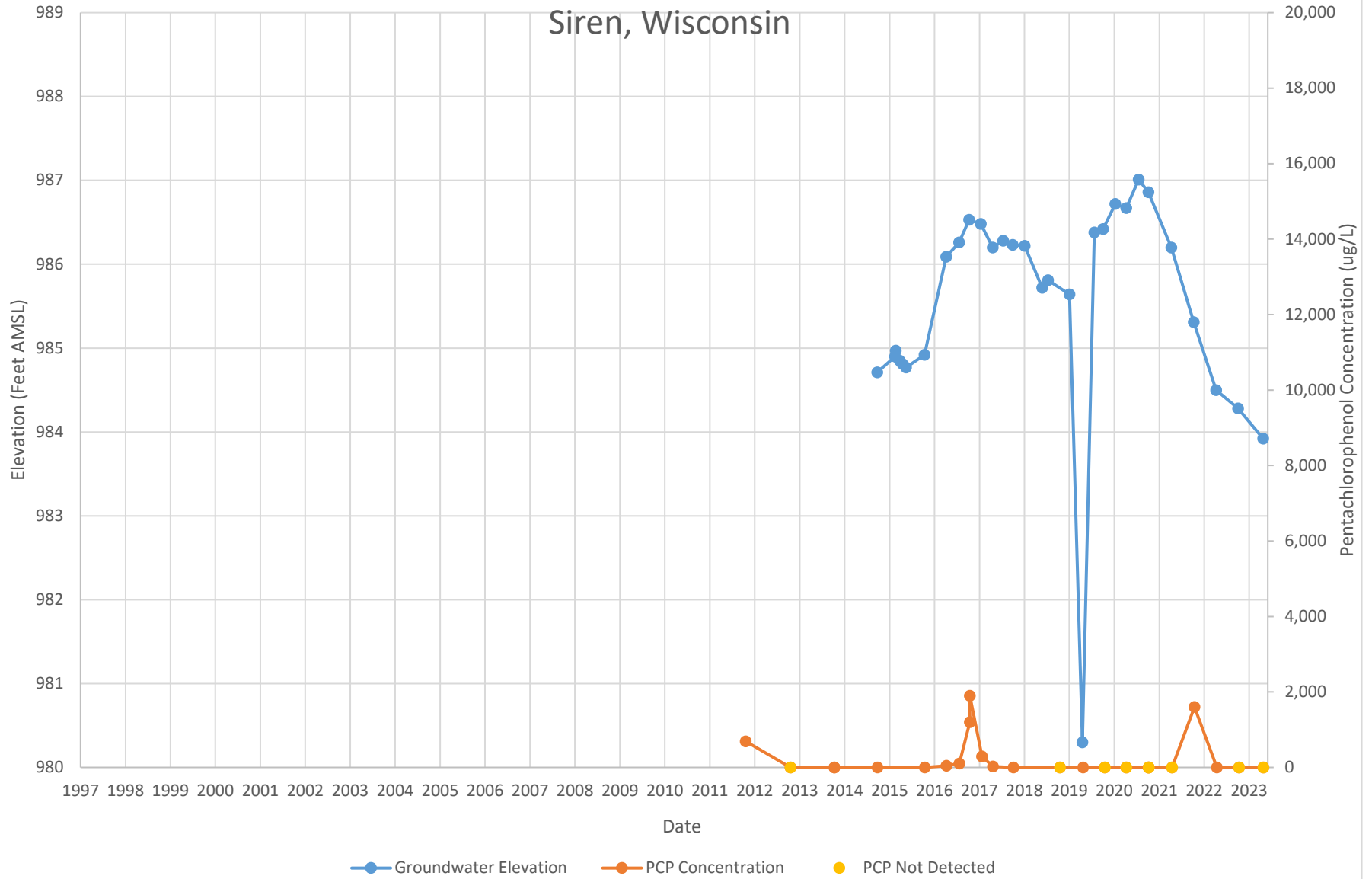
Penta Wood Products Superfund Site

Siren, Wisconsin



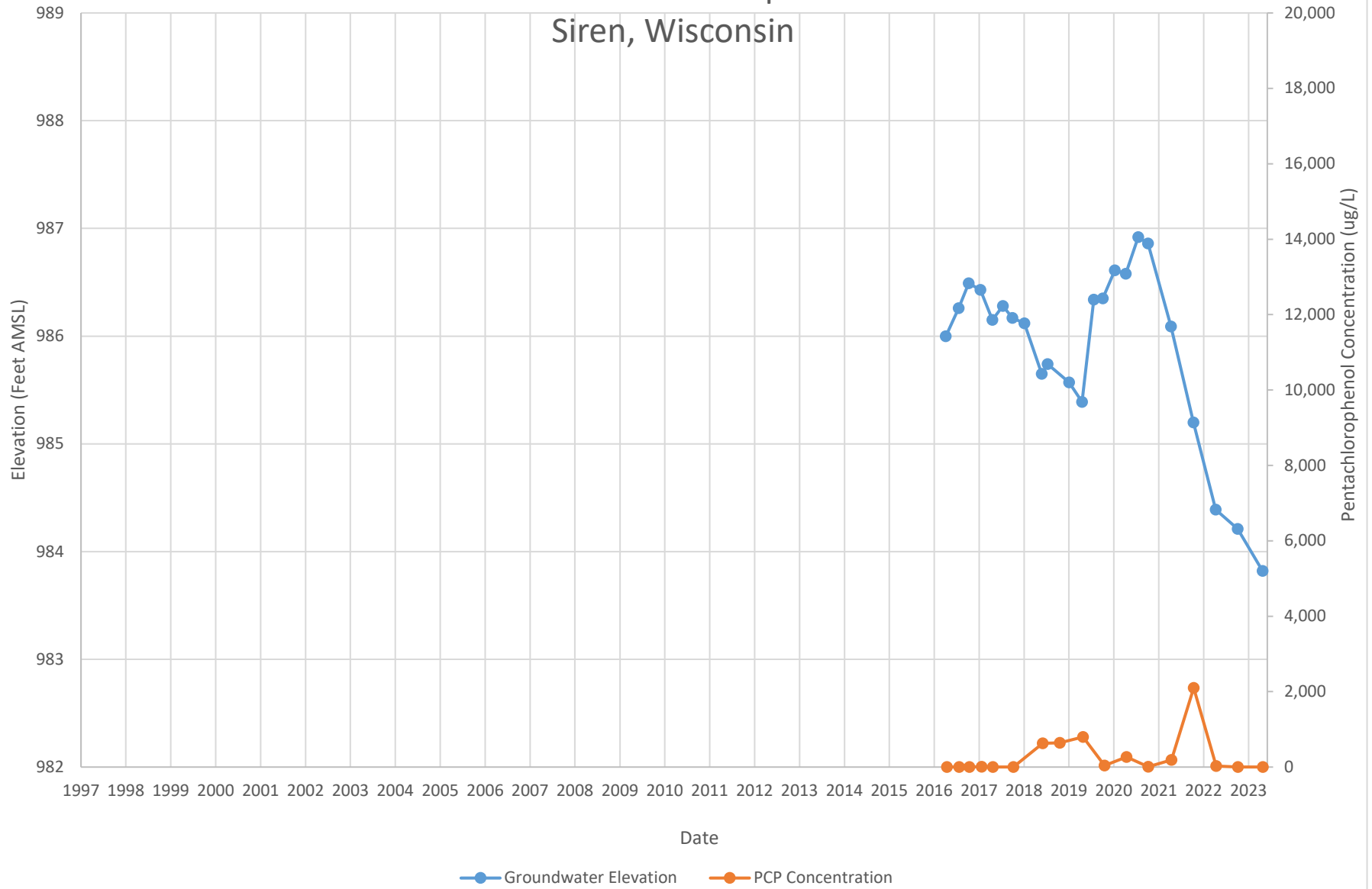
Pentachlorophenol and Groundwater Elevation vs Time Chart - MW28 Penta Wood Products Superfund Site

Siren, Wisconsin



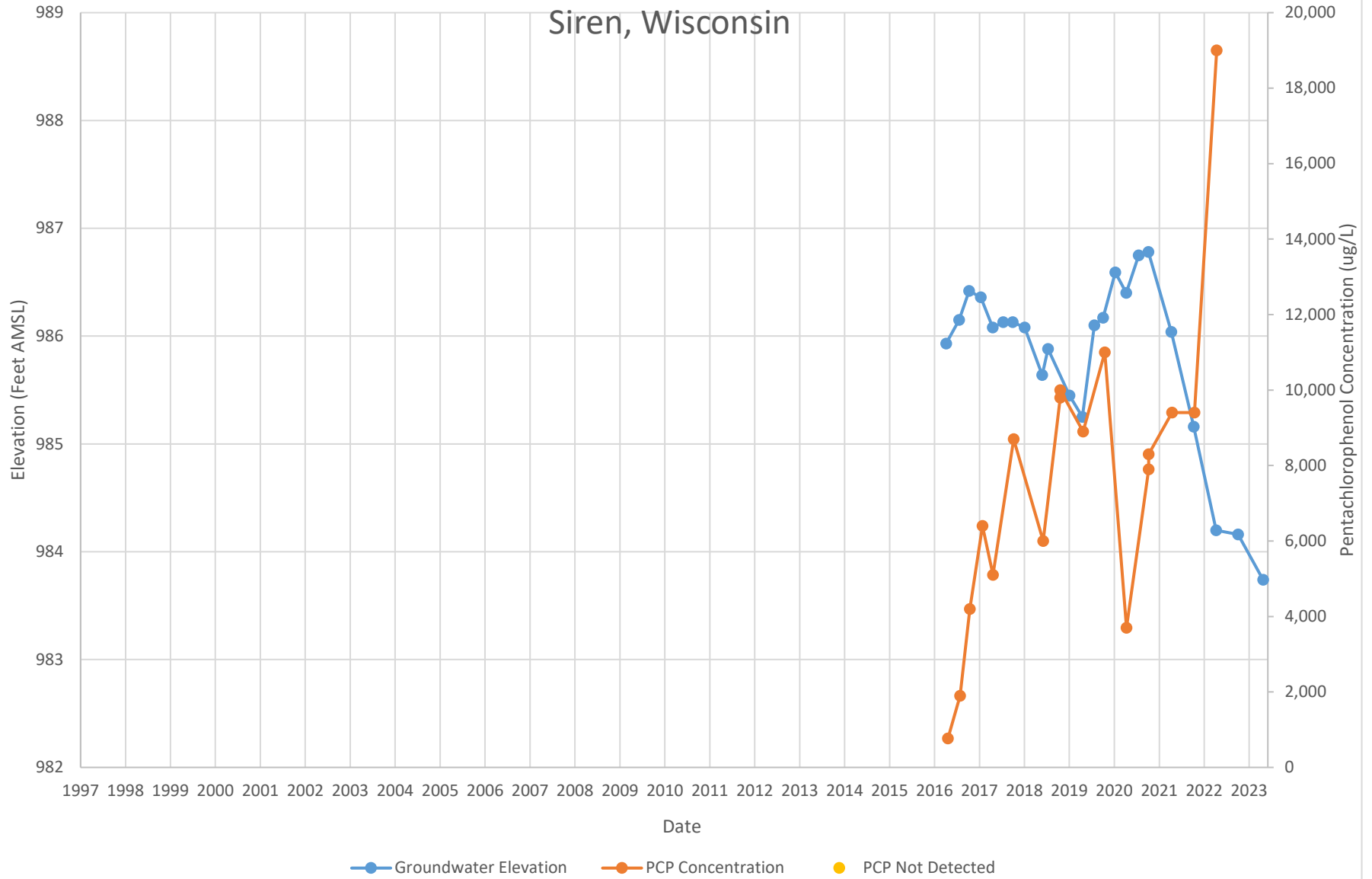
Pentachlorophenol and Groundwater Elevation vs Time Chart - MW30 Penta Wood Products Superfund Site

Siren, Wisconsin



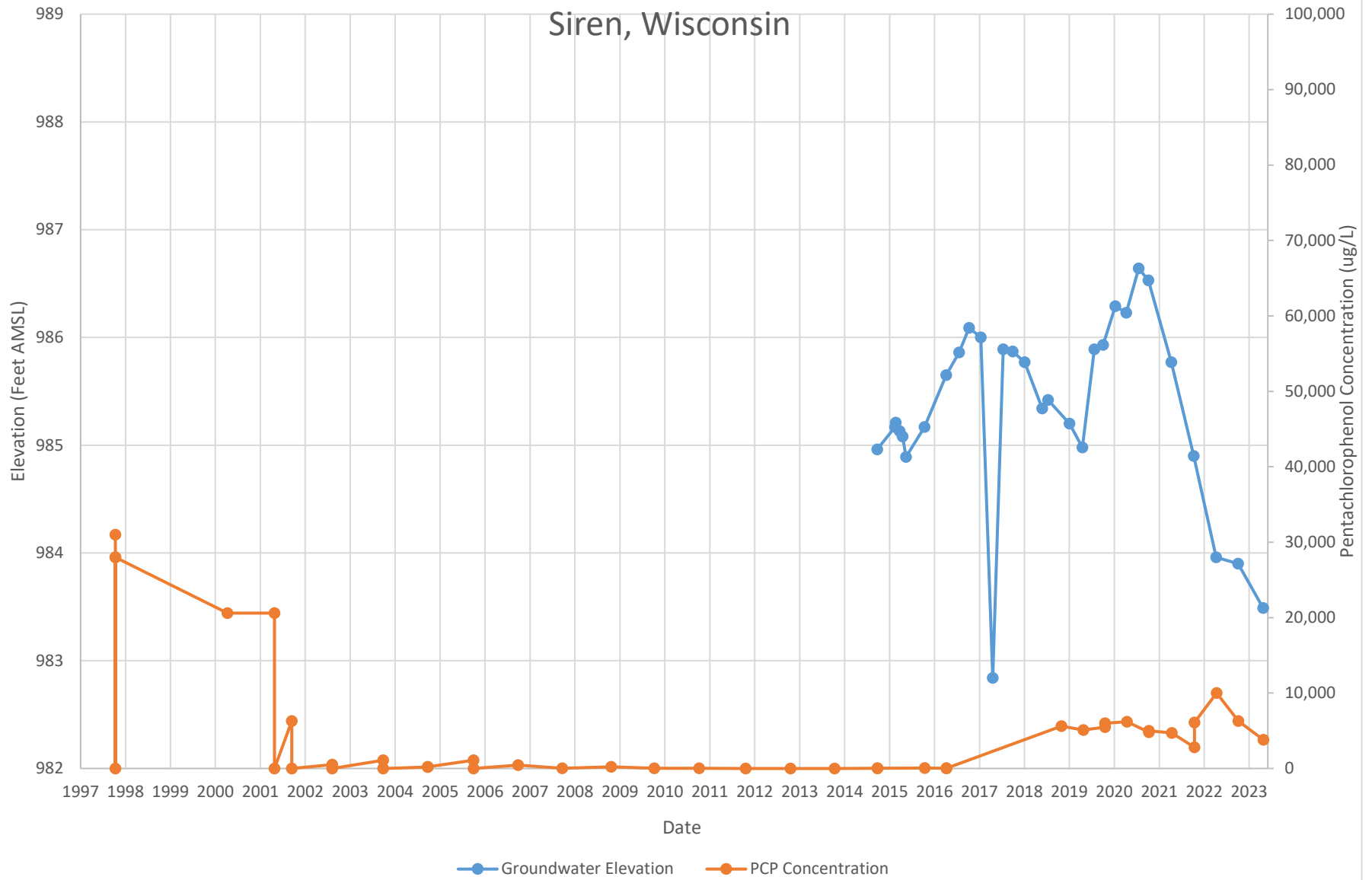
Pentachlorophenol and Groundwater Elevation vs Time Chart - EW13S Penta Wood Products Superfund Site

Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW5 Penta Wood Products Superfund Site

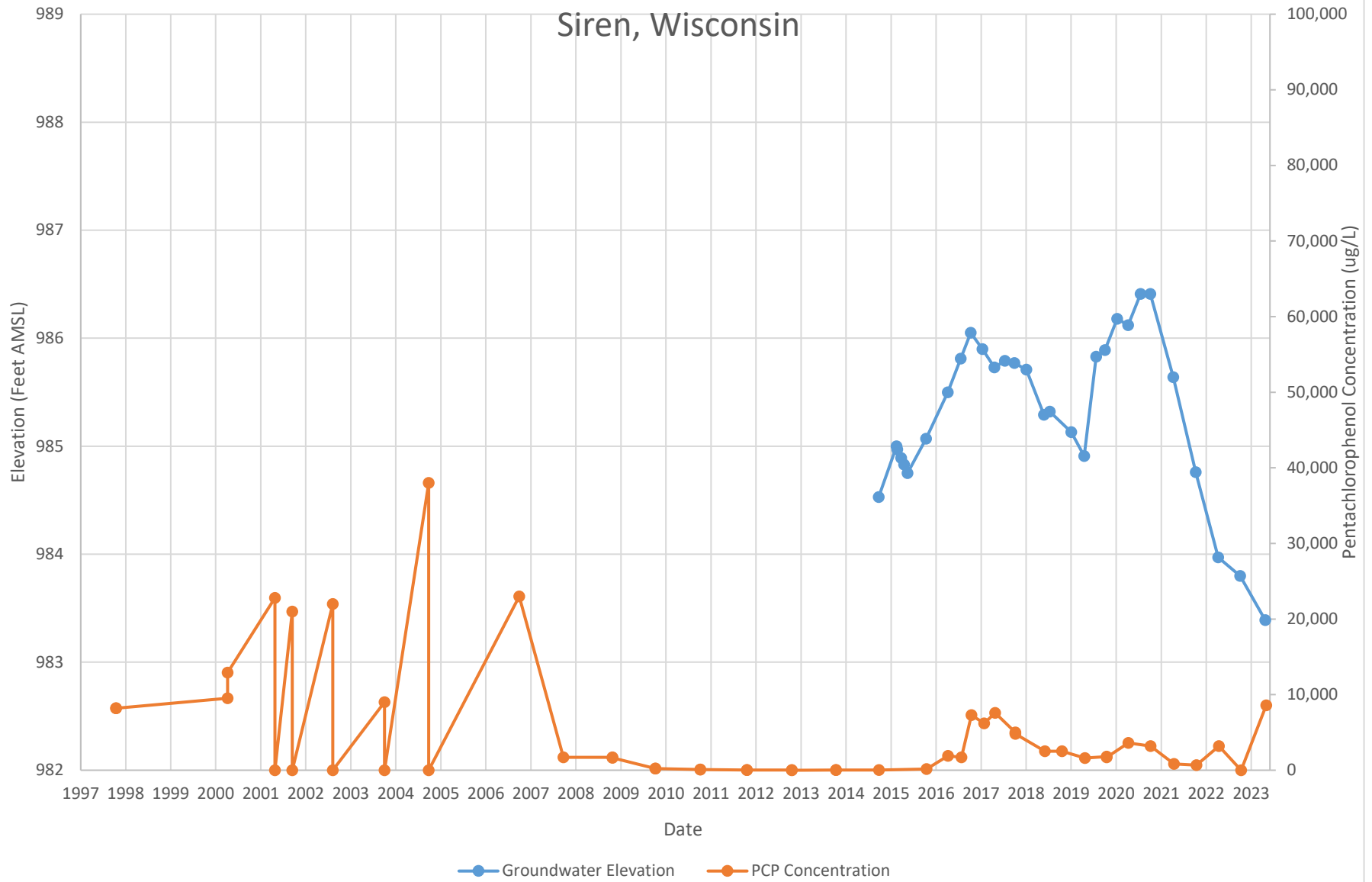
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW10

Penta Wood Products Superfund Site

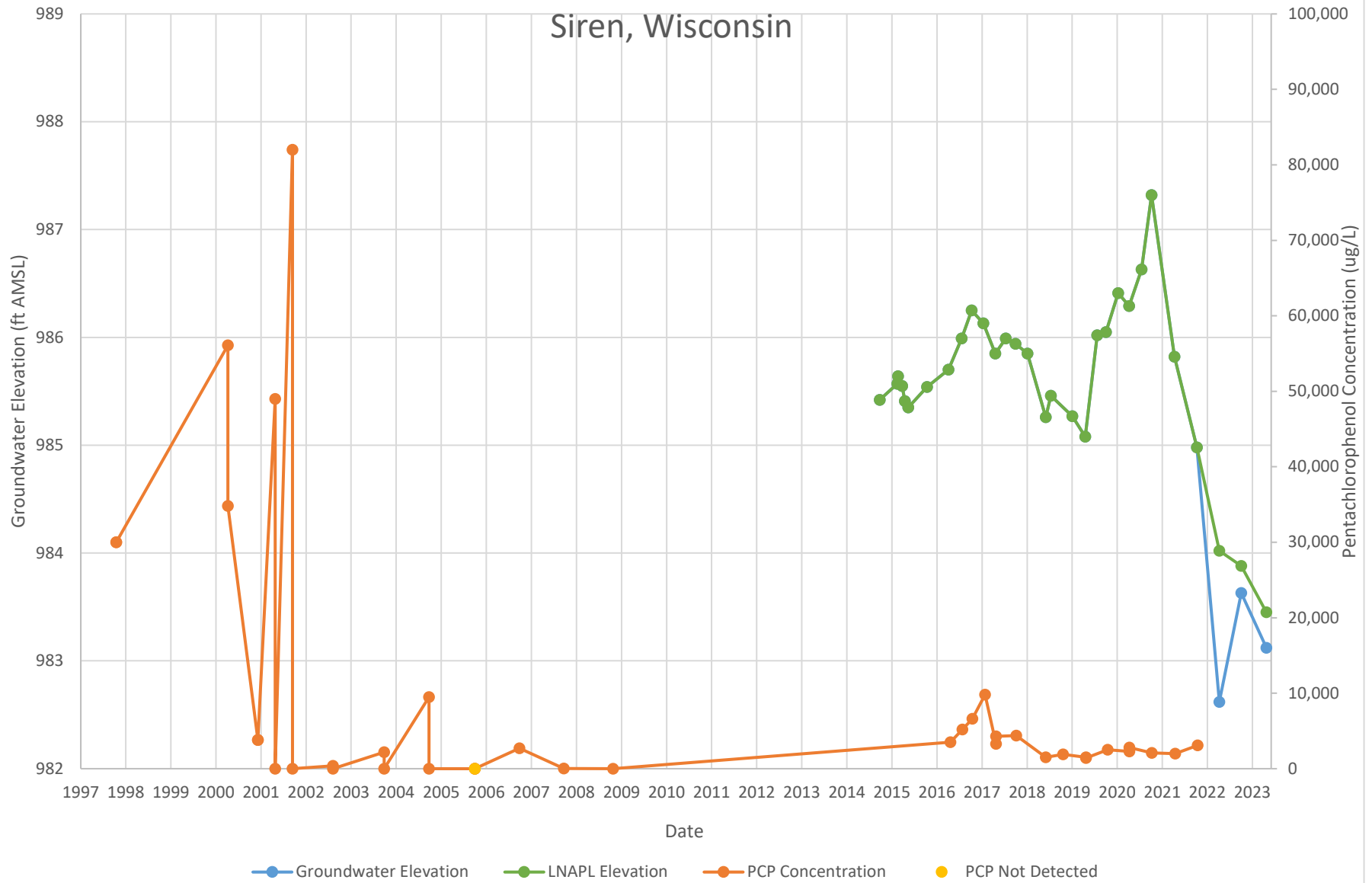
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW10S

Penta Wood Products Superfund Site

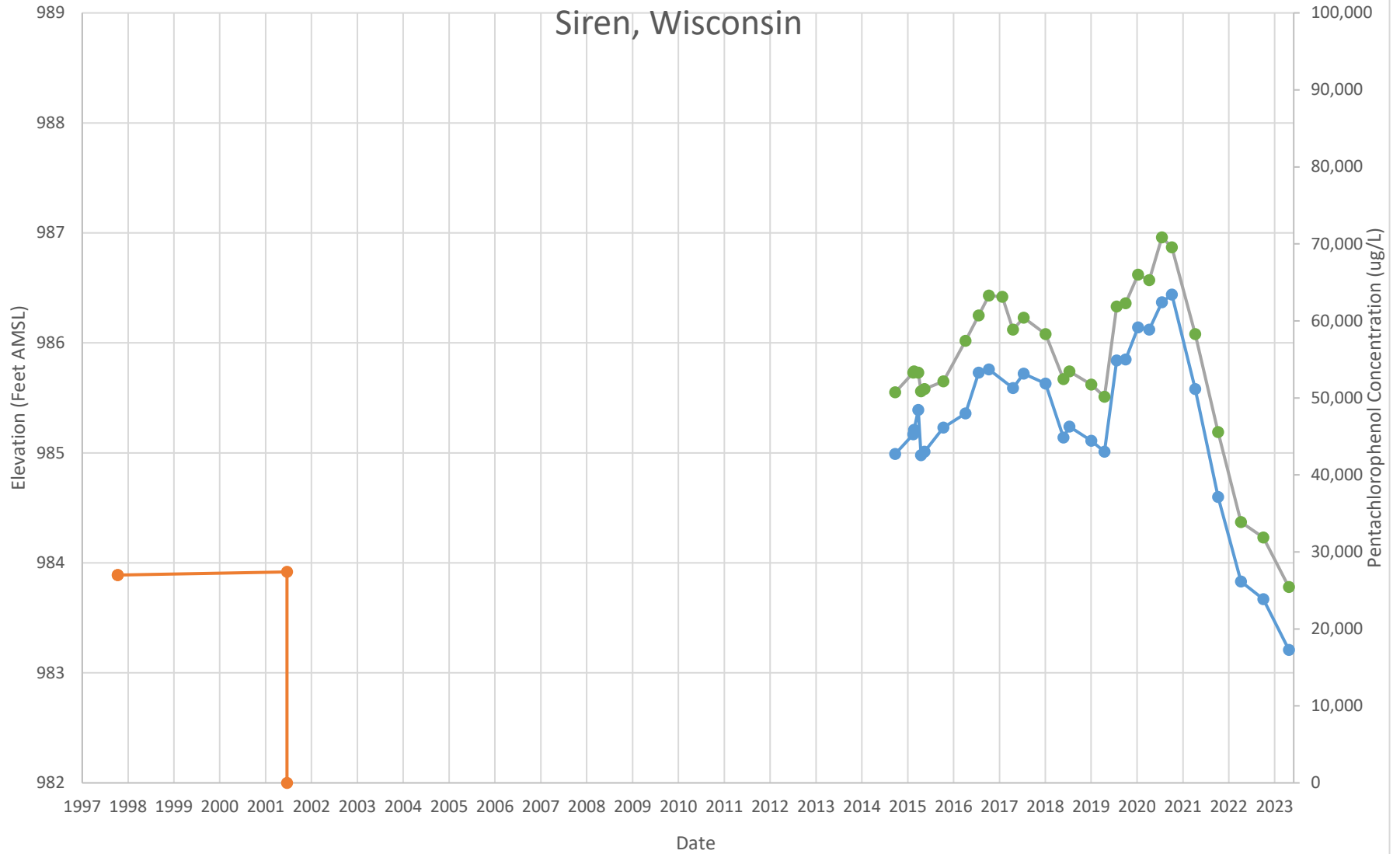
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW18

Penta Wood Products Superfund Site

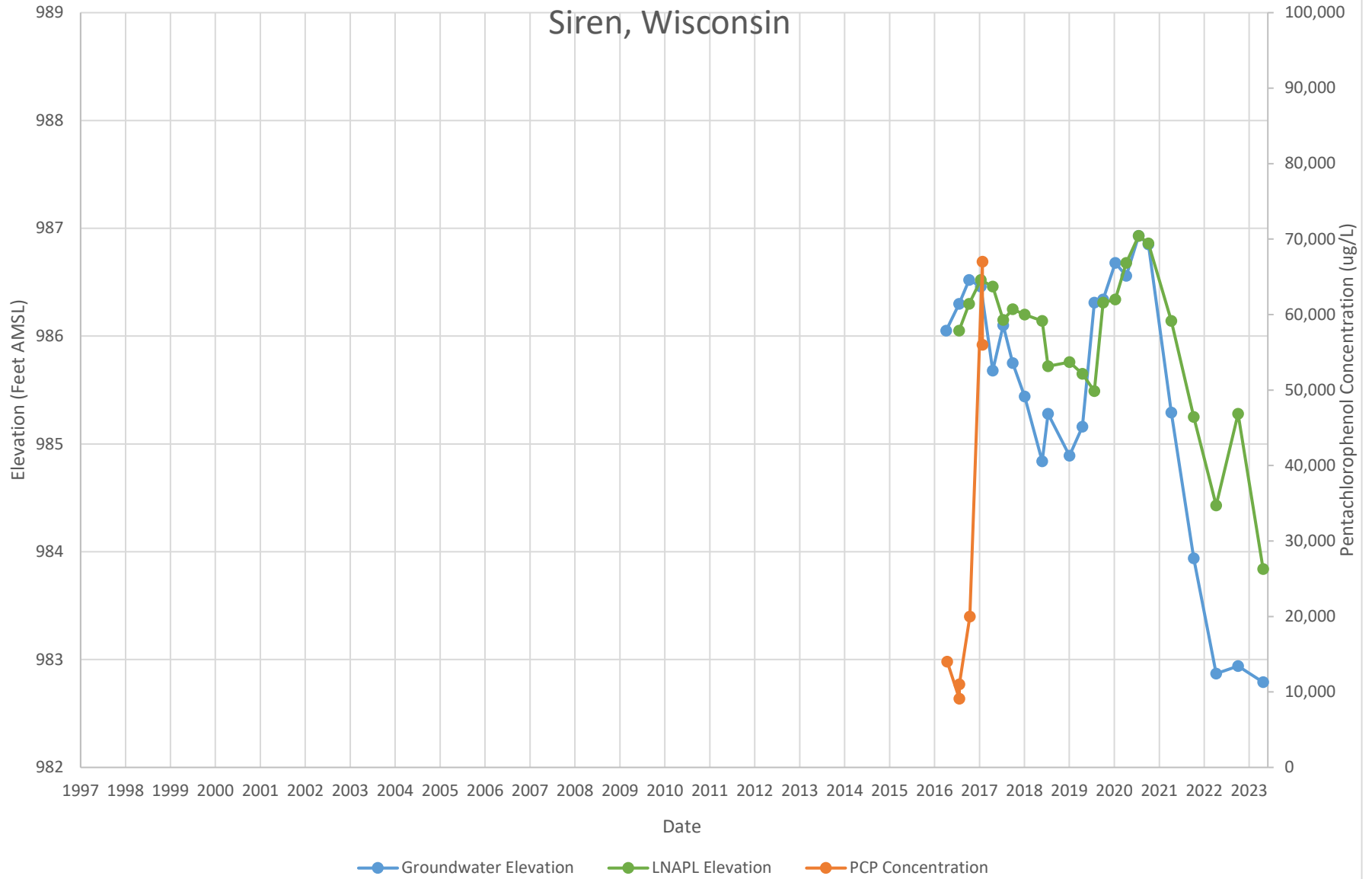
Siren, Wisconsin



● Groundwater Elevation
 ● LNAPL Elevation
 ● PCP Concentration
 ● PCP Not Detected

Pentachlorophenol and Groundwater Elevation vs Time Chart - MW29 Penta Wood Products Superfund Site

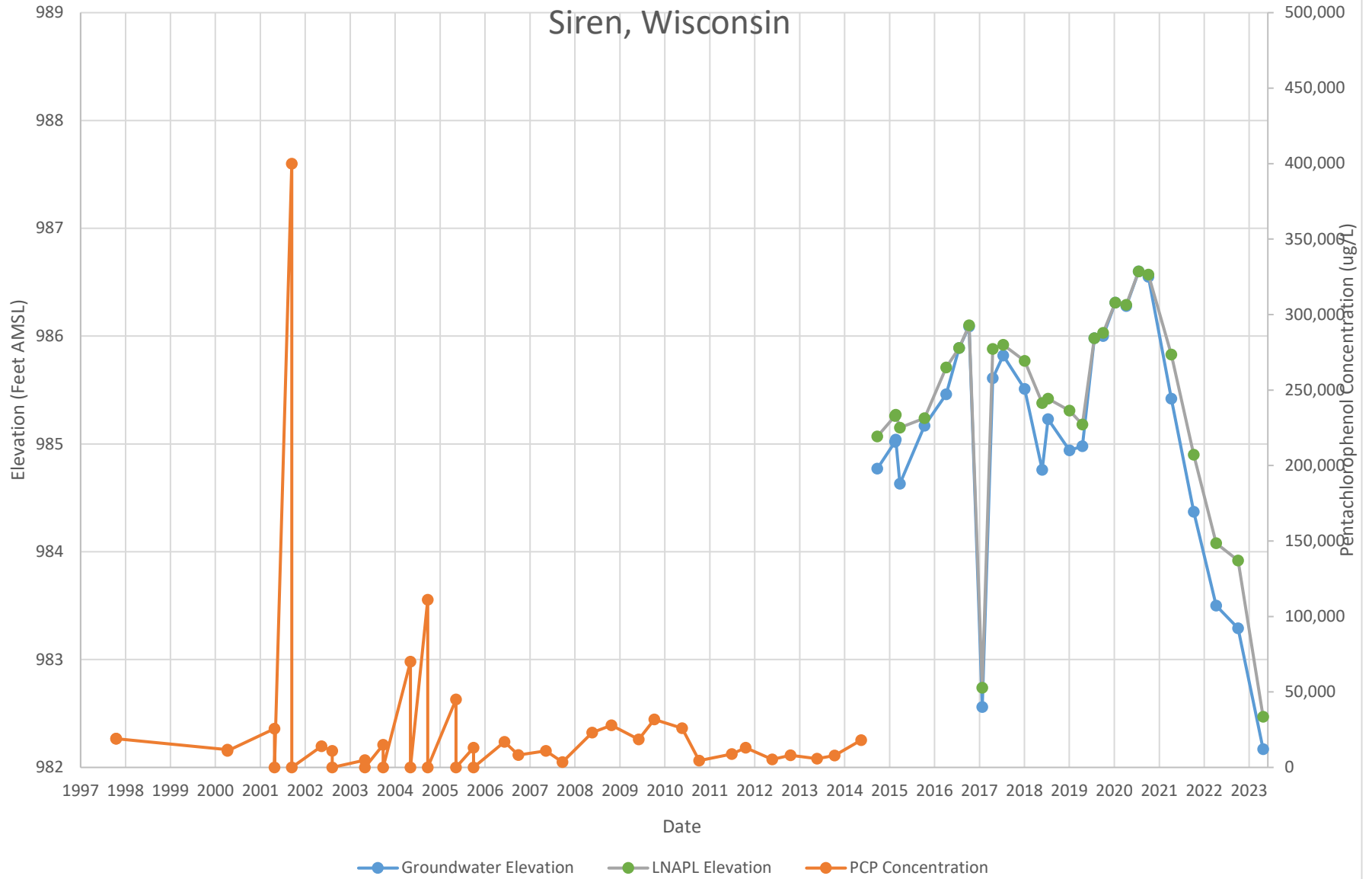
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW19

Penta Wood Products Superfund Site

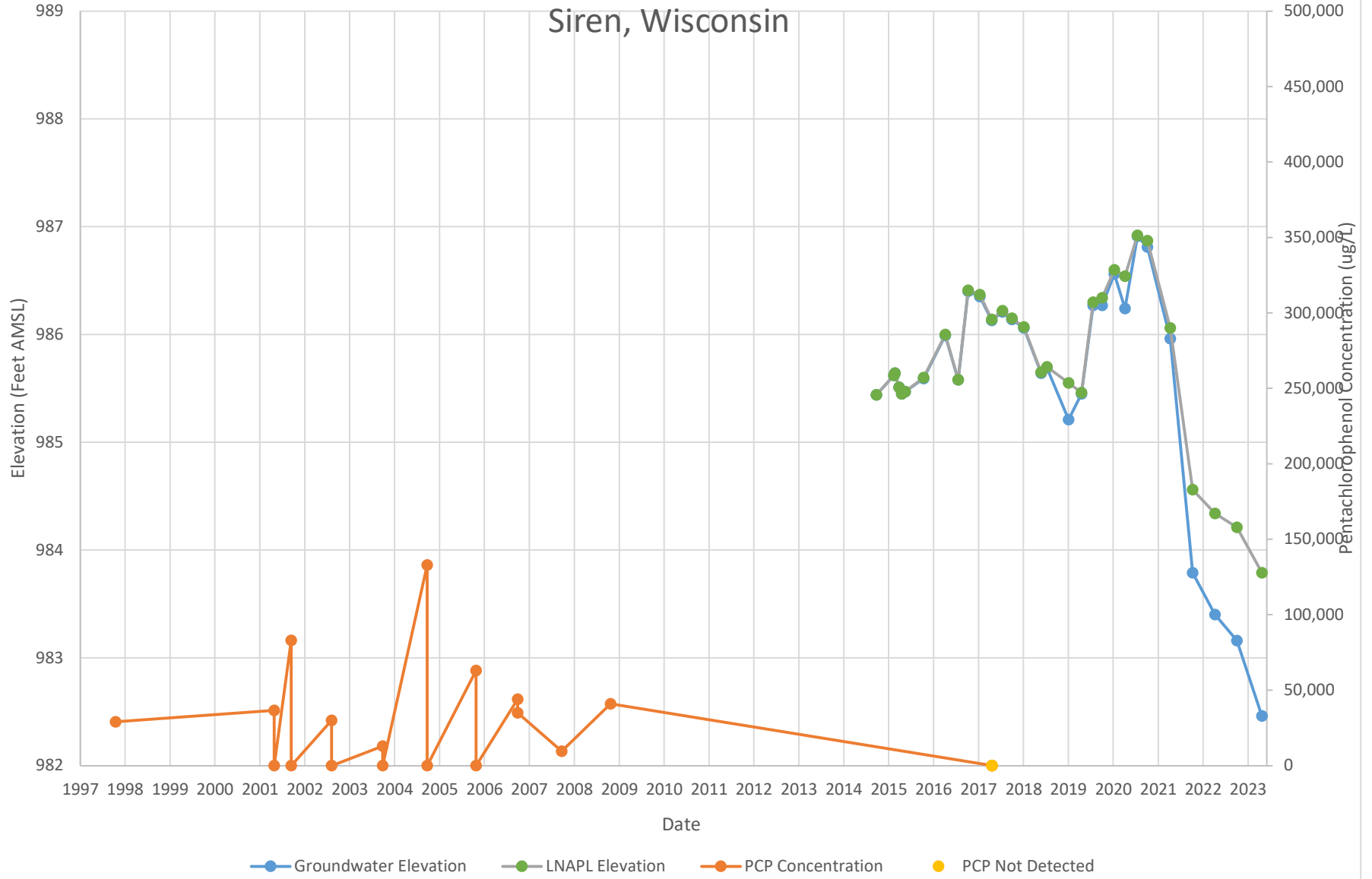
Siren, Wisconsin



Pentachlorophenol and Groundwater Elevation vs Time Chart - MW20

Penta Wood Products Superfund Site

Siren, Wisconsin



Appendix B

**Groundwater Sample Laboratory
Reports – Monitoring, Extraction,
Residential, and Onsite Supply Wells**



ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Grant Anderson
GHD Services Inc.
900 Long Lake Road
Suite 200
New Brighton, Minnesota 55112

Generated 5/16/2023 8:36:35 AM

JOB DESCRIPTION

Penta Wood 11222418

JOB NUMBER

500-232743-1

Eurofins Chicago

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Chicago Project Manager.

Authorization



Generated
5/16/2023 8:36:35 AM

Authorized for release by
Carlene McCutcheon, Senior Project Manager
Carlene.McCutcheon@et.eurofinsus.com
(708)325-6562



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Case Narrative

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232743-1

Job ID: 500-232743-1

Laboratory: Eurofins Chicago

Narrative

Job Narrative 500-232743-1

Receipt

The samples were received on 4/25/2023 9:55 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 2.1° C, 3.4° C, 3.7° C and 3.8° C.

Receipt Exceptions

One or more containers for the following sample(s) was received broken or leaking: Sample #8 Trip Blank one of two voa vials received broken. Trip Blank (500-232743-8).

GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC/MS Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA

Method 8151A: The continuing calibration verification (CCV) associated with batch 500-710851 recovered above the upper control limit for Pentachlorophenol. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported.

Method 8151A: The continuing calibration verification (CCV) standards associated with batch 500-710851 recovered below the control limit for the surrogate DCAA. The samples and associated QC with these CCV's all had acceptable surrogate recoveries; therefore, the data have been reported.

Method 8151A: Spike compounds were inadvertently omitted during the extraction process for the associated laboratory control sample (LCS); therefore, LCS recoveries are unavailable for preparation batch 500-710288 and analytical batch 500-710851. The matrix spike/matrix spike duplicate (MS/MSD) recoveries met acceptance criteria; therefore, the samples are reported. The samples were -re-extracted past hold time and the non-detect results from the original prep was confirmed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232743-1

Client Sample ID: W-230424-TS-01

Lab Sample ID: 500-232743-1

No Detections.

Client Sample ID: W-230424-TS-02

Lab Sample ID: 500-232743-2

No Detections.

Client Sample ID: W-230424-TS-03

Lab Sample ID: 500-232743-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Xylenes, Total	0.46	J	1.0	0.22	ug/L	1		8260B	Total/NA

Client Sample ID: W-230424-TS-04

Lab Sample ID: 500-232743-4

No Detections.

Client Sample ID: W-230424-TS-05

Lab Sample ID: 500-232743-5

No Detections.

Client Sample ID: W-230424-TS-06

Lab Sample ID: 500-232743-6

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Xylenes, Total	0.46	J	1.0	0.22	ug/L	1		8260B	Total/NA

Client Sample ID: W-230424-TS-07

Lab Sample ID: 500-232743-7

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Xylenes, Total	0.35	J	1.0	0.22	ug/L	1		8260B	Total/NA

Client Sample ID: Trip Blank

Lab Sample ID: 500-232743-8

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Method Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232743-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	EET CHI
8151A	Herbicides (GC)	SW846	EET CHI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CHI
5030B	Purge and Trap	SW846	EET CHI
8151A	Extraction (Herbicides)	SW846	EET CHI

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200



Sample Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232743-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-232743-1	W-230424-TS-01	Water	04/24/23 12:21	04/25/23 09:55
500-232743-2	W-230424-TS-02	Water	04/24/23 12:52	04/25/23 09:55
500-232743-3	W-230424-TS-03	Water	04/24/23 12:52	04/25/23 09:55
500-232743-4	W-230424-TS-04	Water	04/24/23 13:15	04/25/23 09:55
500-232743-5	W-230424-TS-05	Water	04/24/23 13:15	04/25/23 09:55
500-232743-6	W-230424-TS-06	Water	04/24/23 13:31	04/25/23 09:55
500-232743-7	W-230424-TS-07	Water	04/24/23 13:49	04/25/23 09:55
500-232743-8	Trip Blank	Water	04/24/23 00:00	04/25/23 09:55

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232743-1

Client Sample ID: W-230424-TS-01

Lab Sample ID: 500-232743-1

Date Collected: 04/24/23 12:21

Matrix: Water

Date Received: 04/25/23 09:55

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/03/23 19:29	1
Toluene	<0.15		0.50	0.15	ug/L			05/03/23 19:29	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/03/23 19:29	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/03/23 19:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		75 - 126		05/03/23 19:29	1
Toluene-d8 (Surr)	95		75 - 120		05/03/23 19:29	1
4-Bromofluorobenzene (Surr)	103		72 - 124		05/03/23 19:29	1
Dibromofluoromethane	93		75 - 120		05/03/23 19:29	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.20		0.65	0.20	ug/L		04/26/23 07:32	04/27/23 20:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	60		36 - 120	04/26/23 07:32	04/27/23 20:17	1
2-Fluorobiphenyl (Surr)	73		34 - 110	04/26/23 07:32	04/27/23 20:17	1
Terphenyl-d14 (Surr)	90		40 - 145	04/26/23 07:32	04/27/23 20:17	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.10	^c *	0.10	0.10	ug/L		04/28/23 07:47	05/03/23 06:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	88	^c	25 - 130	04/28/23 07:47	05/03/23 06:22	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232743-1

Client Sample ID: W-230424-TS-02

Lab Sample ID: 500-232743-2

Date Collected: 04/24/23 12:52

Matrix: Water

Date Received: 04/25/23 09:55

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/03/23 17:51	1
Toluene	<0.15		0.50	0.15	ug/L			05/03/23 17:51	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/03/23 17:51	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/03/23 17:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		75 - 126		05/03/23 17:51	1
Toluene-d8 (Surr)	96		75 - 120		05/03/23 17:51	1
4-Bromofluorobenzene (Surr)	106		72 - 124		05/03/23 17:51	1
Dibromofluoromethane	94		75 - 120		05/03/23 17:51	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.20		0.65	0.20	ug/L		04/26/23 07:32	04/27/23 16:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	66		36 - 120	04/26/23 07:32	04/27/23 16:42	1
2-Fluorobiphenyl (Surr)	79		34 - 110	04/26/23 07:32	04/27/23 16:42	1
Terphenyl-d14 (Surr)	99		40 - 145	04/26/23 07:32	04/27/23 16:42	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.10	^c *	0.10	0.10	ug/L		04/28/23 07:47	05/03/23 07:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	39	^c	25 - 130	04/28/23 07:47	05/03/23 07:39	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232743-1

Client Sample ID: W-230424-TS-03

Lab Sample ID: 500-232743-3

Date Collected: 04/24/23 12:52

Matrix: Water

Date Received: 04/25/23 09:55

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/03/23 18:16	1
Toluene	<0.15		0.50	0.15	ug/L			05/03/23 18:16	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/03/23 18:16	1
Xylenes, Total	0.46	J	1.0	0.22	ug/L			05/03/23 18:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		75 - 126		05/03/23 18:16	1
Toluene-d8 (Surr)	95		75 - 120		05/03/23 18:16	1
4-Bromofluorobenzene (Surr)	108		72 - 124		05/03/23 18:16	1
Dibromofluoromethane	91		75 - 120		05/03/23 18:16	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.19		0.63	0.19	ug/L		04/26/23 07:32	04/27/23 17:30	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Nitrobenzene-d5 (Surr)	71		36 - 120	04/26/23 07:32	04/27/23 17:30	1			
2-Fluorobiphenyl (Surr)	80		34 - 110	04/26/23 07:32	04/27/23 17:30	1			
Terphenyl-d14 (Surr)	104		40 - 145	04/26/23 07:32	04/27/23 17:30	1			

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.10	^c *	0.10	0.10	ug/L		04/28/23 07:47	05/03/23 08:31	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
DCAA	94	^c	25 - 130	04/28/23 07:47	05/03/23 08:31	1			
DCAA	98	^c	25 - 130	04/28/23 07:47	05/03/23 08:31	1			

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232743-1

Client Sample ID: W-230424-TS-04

Lab Sample ID: 500-232743-4

Date Collected: 04/24/23 13:15

Matrix: Water

Date Received: 04/25/23 09:55

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/03/23 18:40	1
Toluene	<0.15		0.50	0.15	ug/L			05/03/23 18:40	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/03/23 18:40	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/03/23 18:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		75 - 126		05/03/23 18:40	1
Toluene-d8 (Surr)	95		75 - 120		05/03/23 18:40	1
4-Bromofluorobenzene (Surr)	105		72 - 124		05/03/23 18:40	1
Dibromofluoromethane	93		75 - 120		05/03/23 18:40	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.19		0.62	0.19	ug/L		04/26/23 07:32	04/27/23 17:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	69		36 - 120	04/26/23 07:32	04/27/23 17:53	1
2-Fluorobiphenyl (Surr)	78		34 - 110	04/26/23 07:32	04/27/23 17:53	1
Terphenyl-d14 (Surr)	101		40 - 145	04/26/23 07:32	04/27/23 17:53	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.10	^c *	0.10	0.10	ug/L		04/28/23 07:47	05/03/23 08:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	91	^c	25 - 130	04/28/23 07:47	05/03/23 08:56	1
DCAA	96	^c	25 - 130	04/28/23 07:47	05/03/23 08:56	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232743-1

Client Sample ID: W-230424-TS-05

Lab Sample ID: 500-232743-5

Date Collected: 04/24/23 13:15

Matrix: Water

Date Received: 04/25/23 09:55

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/03/23 19:04	1
Toluene	<0.15		0.50	0.15	ug/L			05/03/23 19:04	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/03/23 19:04	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/03/23 19:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		75 - 126		05/03/23 19:04	1
Toluene-d8 (Surr)	95		75 - 120		05/03/23 19:04	1
4-Bromofluorobenzene (Surr)	104		72 - 124		05/03/23 19:04	1
Dibromofluoromethane	94		75 - 120		05/03/23 19:04	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.21		0.69	0.21	ug/L		04/26/23 07:32	04/27/23 18:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	68		36 - 120	04/26/23 07:32	04/27/23 18:17	1
2-Fluorobiphenyl (Surr)	78		34 - 110	04/26/23 07:32	04/27/23 18:17	1
Terphenyl-d14 (Surr)	103		40 - 145	04/26/23 07:32	04/27/23 18:17	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.10	^c *	0.10	0.10	ug/L		04/28/23 07:47	05/03/23 09:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	82	^c	25 - 130	04/28/23 07:47	05/03/23 09:22	1
DCAA	85	^c	25 - 130	04/28/23 07:47	05/03/23 09:22	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232743-1

Client Sample ID: W-230424-TS-06

Lab Sample ID: 500-232743-6

Date Collected: 04/24/23 13:31

Matrix: Water

Date Received: 04/25/23 09:55

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/04/23 15:30	1
Toluene	<0.15		0.50	0.15	ug/L			05/04/23 15:30	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/04/23 15:30	1
Xylenes, Total	0.46	J	1.0	0.22	ug/L			05/04/23 15:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		75 - 126		05/04/23 15:30	1
Toluene-d8 (Surr)	95		75 - 120		05/04/23 15:30	1
4-Bromofluorobenzene (Surr)	106		72 - 124		05/04/23 15:30	1
Dibromofluoromethane	97		75 - 120		05/04/23 15:30	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.21		0.67	0.21	ug/L		04/26/23 07:32	04/27/23 19:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	62		36 - 120	04/26/23 07:32	04/27/23 19:05	1
2-Fluorobiphenyl (Surr)	73		34 - 110	04/26/23 07:32	04/27/23 19:05	1
Terphenyl-d14 (Surr)	95		40 - 145	04/26/23 07:32	04/27/23 19:05	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.10	^c *	0.10	0.10	ug/L		04/28/23 07:47	05/03/23 09:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	87	^c	25 - 130	04/28/23 07:47	05/03/23 09:48	1
DCAA	94	^c	25 - 130	04/28/23 07:47	05/03/23 09:48	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232743-1

Client Sample ID: W-230424-TS-07

Lab Sample ID: 500-232743-7

Date Collected: 04/24/23 13:49

Matrix: Water

Date Received: 04/25/23 09:55

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/04/23 15:56	1
Toluene	<0.15		0.50	0.15	ug/L			05/04/23 15:56	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/04/23 15:56	1
Xylenes, Total	0.35	J	1.0	0.22	ug/L			05/04/23 15:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		75 - 126		05/04/23 15:56	1
Toluene-d8 (Surr)	94		75 - 120		05/04/23 15:56	1
4-Bromofluorobenzene (Surr)	106		72 - 124		05/04/23 15:56	1
Dibromofluoromethane	98		75 - 120		05/04/23 15:56	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.22		0.70	0.22	ug/L		04/26/23 07:32	04/27/23 19:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	75		36 - 120	04/26/23 07:32	04/27/23 19:29	1
2-Fluorobiphenyl (Surr)	89		34 - 110	04/26/23 07:32	04/27/23 19:29	1
Terphenyl-d14 (Surr)	109		40 - 145	04/26/23 07:32	04/27/23 19:29	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.10	^c *	0.10	0.10	ug/L		04/28/23 07:47	05/03/23 10:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	98	^c	25 - 130	04/28/23 07:47	05/03/23 10:13	1
DCAA	102	^c	25 - 130	04/28/23 07:47	05/03/23 10:13	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232743-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-232743-8

Date Collected: 04/24/23 00:00

Matrix: Water

Date Received: 04/25/23 09:55

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/04/23 12:52	1
Toluene	<0.15		0.50	0.15	ug/L			05/04/23 12:52	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/04/23 12:52	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/04/23 12:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		75 - 126		05/04/23 12:52	1
Toluene-d8 (Surr)	95		75 - 120		05/04/23 12:52	1
4-Bromofluorobenzene (Surr)	104		72 - 124		05/04/23 12:52	1
Dibromofluoromethane	101		75 - 120		05/04/23 12:52	1

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232743-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Reported value was between the limit of detection and the limit of quantitation.

GC Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
^c	CCV Recovery is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232743-1

GC/MS VOA

Analysis Batch: 711044

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232743-1	W-230424-TS-01	Total/NA	Water	8260B	
500-232743-2	W-230424-TS-02	Total/NA	Water	8260B	
500-232743-3	W-230424-TS-03	Total/NA	Water	8260B	
500-232743-4	W-230424-TS-04	Total/NA	Water	8260B	
500-232743-5	W-230424-TS-05	Total/NA	Water	8260B	
MB 500-711044/7	Method Blank	Total/NA	Water	8260B	
LCS 500-711044/5	Lab Control Sample	Total/NA	Water	8260B	
500-232743-1 MS	W-230424-TS-01	Total/NA	Water	8260B	
500-232743-1 MSD	W-230424-TS-01	Total/NA	Water	8260B	

Analysis Batch: 711318

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232743-6	W-230424-TS-06	Total/NA	Water	8260B	
500-232743-7	W-230424-TS-07	Total/NA	Water	8260B	
500-232743-8	Trip Blank	Total/NA	Water	8260B	
MB 500-711318/7	Method Blank	Total/NA	Water	8260B	
LCS 500-711318/5	Lab Control Sample	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 709750

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232743-1	W-230424-TS-01	Total/NA	Water	3510C	
500-232743-2	W-230424-TS-02	Total/NA	Water	3510C	
500-232743-3	W-230424-TS-03	Total/NA	Water	3510C	
500-232743-4	W-230424-TS-04	Total/NA	Water	3510C	
500-232743-5	W-230424-TS-05	Total/NA	Water	3510C	
500-232743-6	W-230424-TS-06	Total/NA	Water	3510C	
500-232743-7	W-230424-TS-07	Total/NA	Water	3510C	
MB 500-709750/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-709750/2-A	Lab Control Sample	Total/NA	Water	3510C	
500-232743-1 MS	W-230424-TS-01	Total/NA	Water	3510C	
500-232743-1 MSD	W-230424-TS-01	Total/NA	Water	3510C	

Analysis Batch: 710098

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232743-1	W-230424-TS-01	Total/NA	Water	8270D	709750
500-232743-2	W-230424-TS-02	Total/NA	Water	8270D	709750
500-232743-3	W-230424-TS-03	Total/NA	Water	8270D	709750
500-232743-4	W-230424-TS-04	Total/NA	Water	8270D	709750
500-232743-5	W-230424-TS-05	Total/NA	Water	8270D	709750
500-232743-6	W-230424-TS-06	Total/NA	Water	8270D	709750
500-232743-7	W-230424-TS-07	Total/NA	Water	8270D	709750
MB 500-709750/1-A	Method Blank	Total/NA	Water	8270D	709750
LCS 500-709750/2-A	Lab Control Sample	Total/NA	Water	8270D	709750
500-232743-1 MS	W-230424-TS-01	Total/NA	Water	8270D	709750
500-232743-1 MSD	W-230424-TS-01	Total/NA	Water	8270D	709750

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232743-1

GC Semi VOA

Prep Batch: 710288

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232743-1	W-230424-TS-01	Total/NA	Water	8151A	
500-232743-2	W-230424-TS-02	Total/NA	Water	8151A	
500-232743-3	W-230424-TS-03	Total/NA	Water	8151A	
500-232743-4	W-230424-TS-04	Total/NA	Water	8151A	
500-232743-5	W-230424-TS-05	Total/NA	Water	8151A	
500-232743-6	W-230424-TS-06	Total/NA	Water	8151A	
500-232743-7	W-230424-TS-07	Total/NA	Water	8151A	
MB 500-710288/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-710288/2-A	Lab Control Sample	Total/NA	Water	8151A	
500-232743-1 MS	W-230424-TS-01	Total/NA	Water	8151A	
500-232743-1 MSD	W-230424-TS-01	Total/NA	Water	8151A	

Analysis Batch: 710851

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232743-1	W-230424-TS-01	Total/NA	Water	8151A	710288
500-232743-2	W-230424-TS-02	Total/NA	Water	8151A	710288
500-232743-3	W-230424-TS-03	Total/NA	Water	8151A	710288
500-232743-4	W-230424-TS-04	Total/NA	Water	8151A	710288
500-232743-5	W-230424-TS-05	Total/NA	Water	8151A	710288
500-232743-6	W-230424-TS-06	Total/NA	Water	8151A	710288
500-232743-7	W-230424-TS-07	Total/NA	Water	8151A	710288
MB 500-710288/1-A	Method Blank	Total/NA	Water	8151A	710288
LCS 500-710288/2-A	Lab Control Sample	Total/NA	Water	8151A	710288
500-232743-1 MS	W-230424-TS-01	Total/NA	Water	8151A	710288
500-232743-1 MSD	W-230424-TS-01	Total/NA	Water	8151A	710288

Surrogate Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232743-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-126)	TOL (75-120)	BFB (72-124)	DBFM (75-120)
500-232743-1	W-230424-TS-01	94	95	103	93
500-232743-1 MS	W-230424-TS-01	97	95	107	97
500-232743-1 MSD	W-230424-TS-01	95	95	106	96
500-232743-2	W-230424-TS-02	97	96	106	94
500-232743-3	W-230424-TS-03	94	95	108	91
500-232743-4	W-230424-TS-04	97	95	105	93
500-232743-5	W-230424-TS-05	96	95	104	94
500-232743-6	W-230424-TS-06	95	95	106	97
500-232743-7	W-230424-TS-07	97	94	106	98
500-232743-8	Trip Blank	97	95	104	101
LCS 500-711044/5	Lab Control Sample	97	96	106	94
LCS 500-711318/5	Lab Control Sample	95	96	105	96
MB 500-711044/7	Method Blank	96	96	103	93
MB 500-711318/7	Method Blank	98	94	106	99

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		NBZ (36-120)	FBP (34-110)	TPHL (40-145)
500-232743-1	W-230424-TS-01	60	73	90
500-232743-1 MS	W-230424-TS-01	75	92	96
500-232743-1 MSD	W-230424-TS-01	68	84	100
500-232743-2	W-230424-TS-02	66	79	99
500-232743-3	W-230424-TS-03	71	80	104
500-232743-4	W-230424-TS-04	69	78	101
500-232743-5	W-230424-TS-05	68	78	103
500-232743-6	W-230424-TS-06	62	73	95
500-232743-7	W-230424-TS-07	75	89	109
LCS 500-709750/2-A	Lab Control Sample	77	87	102
MB 500-709750/1-A	Method Blank	66	78	97

Surrogate Legend

NBZ = Nitrobenzene-d5 (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TPHL = Terphenyl-d14 (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		DCPAA1 (25-130)	DCPAA2 (25-130)
500-232743-1	W-230424-TS-01	88	^c

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Surrogate Summary

Client: GHD Services Inc.
 Project/Site: Penta Wood 11222418

Job ID: 500-232743-1

Method: 8151A - Herbicides (GC) (Continued)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (25-130)	DCPAA2 (25-130)
500-232743-1 MS	W-230424-TS-01	106	
500-232743-1 MSD	W-230424-TS-01	112	
500-232743-2	W-230424-TS-02	39 ^c	
500-232743-3	W-230424-TS-03	94 ^c	98 ^c
500-232743-4	W-230424-TS-04	91 ^c	96 ^c
500-232743-5	W-230424-TS-05	82 ^c	85 ^c
500-232743-6	W-230424-TS-06	87 ^c	94 ^c
500-232743-7	W-230424-TS-07	98 ^c	102 ^c
LCS 500-710288/2-A	Lab Control Sample	90	
MB 500-710288/1-A	Method Blank	80	

Surrogate Legend

DCPAA = DCAA

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232743-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-711044/7
Matrix: Water
Analysis Batch: 711044

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	<0.15		0.50	0.15	ug/L			05/03/23 11:45	1
Toluene	<0.15		0.50	0.15	ug/L			05/03/23 11:45	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/03/23 11:45	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/03/23 11:45	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	96		75 - 126		05/03/23 11:45	1
Toluene-d8 (Surr)	96		75 - 120		05/03/23 11:45	1
4-Bromofluorobenzene (Surr)	103		72 - 124		05/03/23 11:45	1
Dibromofluoromethane	93		75 - 120		05/03/23 11:45	1

Lab Sample ID: LCS 500-711044/5
Matrix: Water
Analysis Batch: 711044

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	50.0	48.7		ug/L		97	70 - 120
Toluene	50.0	50.0		ug/L		100	70 - 125
Ethylbenzene	50.0	47.3		ug/L		95	70 - 123
Xylenes, Total	100	94.3		ug/L		94	70 - 125

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	97		75 - 126
Toluene-d8 (Surr)	96		75 - 120
4-Bromofluorobenzene (Surr)	106		72 - 124
Dibromofluoromethane	94		75 - 120

Lab Sample ID: 500-232743-1 MS
Matrix: Water
Analysis Batch: 711044

Client Sample ID: W-230424-TS-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
Benzene	<0.15		50.0	46.0		ug/L		92	70 - 120
Toluene	<0.15		50.0	46.6		ug/L		93	70 - 125
Ethylbenzene	<0.18		50.0	43.9		ug/L		88	70 - 123
Xylenes, Total	<0.22		100	86.7		ug/L		87	70 - 125

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	97		75 - 126
Toluene-d8 (Surr)	95		75 - 120
4-Bromofluorobenzene (Surr)	107		72 - 124
Dibromofluoromethane	97		75 - 120

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232743-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-232743-1 MSD
Matrix: Water
Analysis Batch: 711044

Client Sample ID: W-230424-TS-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.15		50.0	47.7		ug/L		95	70 - 120	4	20
Toluene	<0.15		50.0	48.7		ug/L		97	70 - 125	4	20
Ethylbenzene	<0.18		50.0	45.3		ug/L		91	70 - 123	3	20
Xylenes, Total	<0.22		100	90.5		ug/L		91	70 - 125	4	20

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
1,2-Dichloroethane-d4 (Surr)	95		75 - 126
Toluene-d8 (Surr)	95		75 - 120
4-Bromofluorobenzene (Surr)	106		72 - 124
Dibromofluoromethane	96		75 - 120

Lab Sample ID: MB 500-711318/7
Matrix: Water
Analysis Batch: 711318

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/04/23 11:59	1
Toluene	<0.15		0.50	0.15	ug/L			05/04/23 11:59	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/04/23 11:59	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/04/23 11:59	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 126		05/04/23 11:59	1
Toluene-d8 (Surr)	94		75 - 120		05/04/23 11:59	1
4-Bromofluorobenzene (Surr)	106		72 - 124		05/04/23 11:59	1
Dibromofluoromethane	99		75 - 120		05/04/23 11:59	1

Lab Sample ID: LCS 500-711318/5
Matrix: Water
Analysis Batch: 711318

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	40.0	43.2		ug/L		108	70 - 120
Toluene	40.0	43.6		ug/L		109	70 - 125
Ethylbenzene	40.0	44.1		ug/L		110	70 - 123
Xylenes, Total	80.0	83.8		ug/L		105	70 - 125

Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits
1,2-Dichloroethane-d4 (Surr)	95		75 - 126
Toluene-d8 (Surr)	96		75 - 120
4-Bromofluorobenzene (Surr)	105		72 - 124
Dibromofluoromethane	96		75 - 120

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232743-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-709750/1-A
Matrix: Water
Analysis Batch: 710098

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 709750

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Naphthalene	<0.25		0.80	0.25	ug/L		04/26/23 07:32	04/27/23 12:20	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
Nitrobenzene-d5 (Surr)	66		36 - 120			04/26/23 07:32	04/27/23 12:20	1	
2-Fluorobiphenyl (Surr)	78		34 - 110			04/26/23 07:32	04/27/23 12:20	1	
Terphenyl-d14 (Surr)	97		40 - 145			04/26/23 07:32	04/27/23 12:20	1	

Lab Sample ID: LCS 500-709750/2-A
Matrix: Water
Analysis Batch: 710098

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 709750

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Naphthalene	32.0	22.0		ug/L		69	36 - 110
Surrogate	%Recovery	Qualifier	Limits				
Nitrobenzene-d5 (Surr)	77		36 - 120				
2-Fluorobiphenyl (Surr)	87		34 - 110				
Terphenyl-d14 (Surr)	102		40 - 145				

Lab Sample ID: 500-232743-1 MS
Matrix: Water
Analysis Batch: 710098

Client Sample ID: W-230424-TS-01
Prep Type: Total/NA
Prep Batch: 709750

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
Naphthalene	<0.20		25.8	11.5		ug/L		45	36 - 110
Surrogate	%Recovery	Qualifier	Limits						
Nitrobenzene-d5 (Surr)	75		36 - 120						
2-Fluorobiphenyl (Surr)	92		34 - 110						
Terphenyl-d14 (Surr)	96		40 - 145						

Lab Sample ID: 500-232743-1 MSD
Matrix: Water
Analysis Batch: 710098

Client Sample ID: W-230424-TS-01
Prep Type: Total/NA
Prep Batch: 709750

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec Limits	RPD	
				Result	Qualifier					RPD	Limit
Naphthalene	<0.20		25.3	11.1		ug/L		44	36 - 110	4	20
Surrogate	%Recovery	Qualifier	Limits								
Nitrobenzene-d5 (Surr)	68		36 - 120								
2-Fluorobiphenyl (Surr)	84		34 - 110								
Terphenyl-d14 (Surr)	100		40 - 145								

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232743-1

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 500-710288/1-A
Matrix: Water
Analysis Batch: 710851

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 710288

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.099		0.10	0.099	ug/L		04/28/23 07:47	05/02/23 18:21	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	80		25 - 130				04/28/23 07:47	05/02/23 18:21	1

Lab Sample ID: LCS 500-710288/2-A
Matrix: Water
Analysis Batch: 710851

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 710288

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Pentachlorophenol	2.53	<0.099	*	ug/L		0	40 - 122
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
DCAA	90		25 - 130				

Lab Sample ID: 500-232743-1 MS
Matrix: Water
Analysis Batch: 710851

Client Sample ID: W-230424-TS-01
Prep Type: Total/NA
Prep Batch: 710288

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Pentachlorophenol	<0.10	^c *	2.59	2.12		ug/L		82	40 - 122
Surrogate	MS %Recovery	MS Qualifier	Limits						
DCAA	106		25 - 130						

Lab Sample ID: 500-232743-1 MSD
Matrix: Water
Analysis Batch: 710851

Client Sample ID: W-230424-TS-01
Prep Type: Total/NA
Prep Batch: 710288

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Pentachlorophenol	<0.10	^c *	2.62	2.06		ug/L		78	40 - 122	3	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
DCAA	112		25 - 130								

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232743-1

Client Sample ID: W-230424-TS-01

Lab Sample ID: 500-232743-1

Date Collected: 04/24/23 12:21

Matrix: Water

Date Received: 04/25/23 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711044	W1T	EET CHI	05/03/23 19:29
Total/NA	Prep	3510C			709750	TS	EET CHI	04/26/23 07:32
Total/NA	Analysis	8270D		1	710098	SS	EET CHI	04/27/23 20:17
Total/NA	Prep	8151A			710288	TS	EET CHI	04/28/23 07:47
Total/NA	Analysis	8151A		1	710851	MS	EET CHI	05/03/23 06:22

Client Sample ID: W-230424-TS-02

Lab Sample ID: 500-232743-2

Date Collected: 04/24/23 12:52

Matrix: Water

Date Received: 04/25/23 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711044	W1T	EET CHI	05/03/23 17:51
Total/NA	Prep	3510C			709750	TS	EET CHI	04/26/23 07:32
Total/NA	Analysis	8270D		1	710098	SS	EET CHI	04/27/23 16:42
Total/NA	Prep	8151A			710288	TS	EET CHI	04/28/23 07:47
Total/NA	Analysis	8151A		1	710851	MS	EET CHI	05/03/23 07:39

Client Sample ID: W-230424-TS-03

Lab Sample ID: 500-232743-3

Date Collected: 04/24/23 12:52

Matrix: Water

Date Received: 04/25/23 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711044	W1T	EET CHI	05/03/23 18:16
Total/NA	Prep	3510C			709750	TS	EET CHI	04/26/23 07:32
Total/NA	Analysis	8270D		1	710098	SS	EET CHI	04/27/23 17:30
Total/NA	Prep	8151A			710288	TS	EET CHI	04/28/23 07:47
Total/NA	Analysis	8151A		1	710851	MS	EET CHI	05/03/23 08:31

Client Sample ID: W-230424-TS-04

Lab Sample ID: 500-232743-4

Date Collected: 04/24/23 13:15

Matrix: Water

Date Received: 04/25/23 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711044	W1T	EET CHI	05/03/23 18:40
Total/NA	Prep	3510C			709750	TS	EET CHI	04/26/23 07:32
Total/NA	Analysis	8270D		1	710098	SS	EET CHI	04/27/23 17:53
Total/NA	Prep	8151A			710288	TS	EET CHI	04/28/23 07:47
Total/NA	Analysis	8151A		1	710851	MS	EET CHI	05/03/23 08:56

Client Sample ID: W-230424-TS-05

Lab Sample ID: 500-232743-5

Date Collected: 04/24/23 13:15

Matrix: Water

Date Received: 04/25/23 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711044	W1T	EET CHI	05/03/23 19:04

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232743-1

Client Sample ID: W-230424-TS-05

Lab Sample ID: 500-232743-5

Date Collected: 04/24/23 13:15

Matrix: Water

Date Received: 04/25/23 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			709750	TS	EET CHI	04/26/23 07:32
Total/NA	Analysis	8270D		1	710098	SS	EET CHI	04/27/23 18:17
Total/NA	Prep	8151A			710288	TS	EET CHI	04/28/23 07:47
Total/NA	Analysis	8151A		1	710851	MS	EET CHI	05/03/23 09:22

Client Sample ID: W-230424-TS-06

Lab Sample ID: 500-232743-6

Date Collected: 04/24/23 13:31

Matrix: Water

Date Received: 04/25/23 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711318	W1T	EET CHI	05/04/23 15:30
Total/NA	Prep	3510C			709750	TS	EET CHI	04/26/23 07:32
Total/NA	Analysis	8270D		1	710098	SS	EET CHI	04/27/23 19:05
Total/NA	Prep	8151A			710288	TS	EET CHI	04/28/23 07:47
Total/NA	Analysis	8151A		1	710851	MS	EET CHI	05/03/23 09:48

Client Sample ID: W-230424-TS-07

Lab Sample ID: 500-232743-7

Date Collected: 04/24/23 13:49

Matrix: Water

Date Received: 04/25/23 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711318	W1T	EET CHI	05/04/23 15:56
Total/NA	Prep	3510C			709750	TS	EET CHI	04/26/23 07:32
Total/NA	Analysis	8270D		1	710098	SS	EET CHI	04/27/23 19:29
Total/NA	Prep	8151A			710288	TS	EET CHI	04/28/23 07:47
Total/NA	Analysis	8151A		1	710851	MS	EET CHI	05/03/23 10:13

Client Sample ID: Trip Blank

Lab Sample ID: 500-232743-8

Date Collected: 04/24/23 00:00

Matrix: Water

Date Received: 04/25/23 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711318	W1T	EET CHI	05/04/23 12:52

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232743-1

Laboratory: Eurofins Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-23

1

2

3

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11

12

13

14

15

Chain of Custody Record 641482



Environment Testing
America

Address _____

Regulatory Program: DW NPDES RCRA Other

TAL-8210

Client Contact		Project Manager: T Ree		Site Contact: Grant Anderson		Date: 4/24/23		COC No	
Company Name: GHD		Tel/Email		Lab Contact		Carrier		____ of ____ COCs	
Address: 950 Long Lake Rd #200		Analysis Turnaround Time <input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS		TAT if different from Below _____ <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		500-232743 COC		Sampler:	
City/State/Zip: St Paul MN 55112								For Lab Use Only	
Phone								Walk-in Client	
Fax								Lab Sampling	
Project Name: Penta Wood								Job / SDG No	
Site: 11222418								510-732743	
P O #									

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	PCP	BTEX	Naphthalene	Sample Specific Notes
1 W-230424-TS-01	4/24/23	1221	G	GL	21	X	X	X	X		
2 W-230424-TS-02		1253			7		X	X	X		
3 W-230424-TS-03		1252			7		X	X	X		
4 W-230424-TS-04		1315			7		X	X	X		
5 W-230424-TS-05		1315			7		X	X	X		
6 W-230424-TS-06		1331			7		X	X	X		
7 W-230424-TS-07		1349			7		X	X	X		
8 trip leak											

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other

Possible Hazard Identification Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown		<input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months	

Special Instructions/QC Requirements & Comments

4.9→3.8, 4.8→3.7, 3.2→2.1, A5→3.4

Custody Seals Intact <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No		Cooler Temp (°C) Obs'd _____ Corr'd _____		Therm ID No _____	
Relinquished by:		Company: GHD		Date/Time: 4/24 1330		Received by:	
Relinquished by:		Company:		Date/Time:		Received by:	
Relinquished by:		Company:		Date/Time:		Received in Laboratory by: Stephanie Hernandez	
						Company: EEIA	
						Date/Time: 4/25/23 0955	

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-232743-1

Login Number: 232743

List Source: Eurofins Chicago

List Number: 1

Creator: Hernandez, Stephanie

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.8,3.7,2.1,3.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	False	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Grant Anderson
GHD Services Inc.
900 Long Lake Road
Suite 200
New Brighton, Minnesota 55112

Generated 5/17/2023 2:31:40 PM Revision 1

JOB DESCRIPTION

Penta Wood 11222418

JOB NUMBER

500-232805-1

Eurofins Chicago

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Chicago Project Manager.

Authorization



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Revision 1

Authorized for release by
Carlene McCutcheon, Senior Project Manager
Carlene.McCutcheon@et.eurofinsus.com
(708)325-6562



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Case Narrative

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Job ID: 500-232805-1

Laboratory: Eurofins Chicago

Narrative

Job Narrative 500-232805-1

Receipt

The samples were received on 4/26/2023 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 2.8° C, 3.0° C, 3.5° C and 4.2° C.

Receipt Exceptions

Sample #4 COC list 45 containers however only received 42. Did not receive set of voas for Methane for MSD.

GC/MS VOA

Method 8260B: The trip blank had a detect for Xylenes, total below our reporting limit. Trip Blank (500-232805-7).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

HPLC/IC

Method 300.0: The following sample(s) was received with less than 2 days remaining on the holding time or less than one shift (8 hours) remaining on a test with a holding time of 48 hours or less. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: W-230425-TS-10 (500-232805-2), W-230425-TS-11 (500-232805-3), W-230425-TS-12 (500-232805-4), W-230425-TS-13 (500-232805-5) and W-230425-TS-14 (500-232805-6).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Field Service / Mobile Lab

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Client Sample ID: W-230425-TS-08

Lab Sample ID: 500-232805-1

No Detections.

Client Sample ID: W-230425-TS-10

Lab Sample ID: 500-232805-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.21		0.099	0.098	ug/L		1	8151A	Total/NA
Arsenic	0.23	J	1.0	0.23	ug/L		1	6020A	Total Recoverable
Calcium	33900	B	200	44.3	ug/L		1	6020A	Total Recoverable
Copper	1.1	J	2.0	0.50	ug/L		1	6020A	Total Recoverable
Magnesium	12600		200	49.4	ug/L		1	6020A	Total Recoverable
Manganese	1.5	J B	2.5	0.79	ug/L		1	6020A	Total Recoverable
Arsenic	0.25	J	1.0	0.23	ug/L		1	6020A	Dissolved
Calcium	32900		200	44.3	ug/L		1	6020A	Dissolved
Copper	1.2	J	2.0	0.50	ug/L		1	6020A	Dissolved
Magnesium	12200		200	49.4	ug/L		1	6020A	Dissolved
Calcium hardness as CaCO3	84.7		0.50	0.25	mg/L		1	SM 2340B	Total Recoverable
Calcium hardness as CaCO3	82.3		0.50	0.25	mg/L		1	SM 2340B	Dissolved
Chloride	17.9		0.50	0.28	mg/L		1	300.0	Total/NA
Nitrate as N	1.7	H	0.050	0.025	mg/L		1	300.0	Total/NA
Sulfate	4.3		2.0	0.35	mg/L		1	300.0	Total/NA
Total Organic Carbon - Duplicates	0.86	J	1.0	0.47	mg/L		1	9060A	Total/NA
Alkalinity	111		5.0	3.7	mg/L		1	SM 2320B	Total/NA

Client Sample ID: W-230425-TS-11

Lab Sample ID: 500-232805-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.20		0.11	0.10	ug/L		1	8151A	Total/NA
Arsenic	0.25	J	1.0	0.23	ug/L		1	6020A	Total Recoverable
Calcium	33900	B	200	44.3	ug/L		1	6020A	Total Recoverable
Copper	1.1	J	2.0	0.50	ug/L		1	6020A	Total Recoverable
Magnesium	13100		200	49.4	ug/L		1	6020A	Total Recoverable
Manganese	1.5	J B	2.5	0.79	ug/L		1	6020A	Total Recoverable
Arsenic	0.29	J	1.0	0.23	ug/L		1	6020A	Dissolved
Calcium	32900		200	44.3	ug/L		1	6020A	Dissolved
Copper	4.7		2.0	0.50	ug/L		1	6020A	Dissolved
Magnesium	12300		200	49.4	ug/L		1	6020A	Dissolved
Calcium hardness as CaCO3	84.6		0.50	0.25	mg/L		1	SM 2340B	Total Recoverable
Calcium hardness as CaCO3	82.2		0.50	0.25	mg/L		1	SM 2340B	Dissolved
Chloride	17.8		0.50	0.28	mg/L		1	300.0	Total/NA
Nitrate as N	1.7	H	0.050	0.025	mg/L		1	300.0	Total/NA
Sulfate	4.3		2.0	0.35	mg/L		1	300.0	Total/NA
Total Organic Carbon - Duplicates	0.79	J	1.0	0.47	mg/L		1	9060A	Total/NA
Alkalinity	110		5.0	3.7	mg/L		1	SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Client Sample ID: W-230425-TS-12

Lab Sample ID: 500-232805-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.32		0.10	0.10	ug/L	1		8151A	Total/NA
Calcium	13000	B	200	44.3	ug/L	1		6020A	Total Recoverable
Copper	2.1		2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	151		100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	5090		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	4.4	B	2.5	0.79	ug/L	1		6020A	Total Recoverable
Arsenic	0.23	J	1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	12500		200	44.3	ug/L	1		6020A	Dissolved
Copper	2.1		2.0	0.50	ug/L	1		6020A	Dissolved
Magnesium	4790		200	49.4	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	32.5		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	31.1		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	0.64		0.50	0.28	mg/L	1		300.0	Total/NA
Nitrate as N	0.51	H	0.050	0.025	mg/L	1		300.0	Total/NA
Sulfate	1.9	J	2.0	0.35	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	2.1		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	52.9		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-230425-TS-13

Lab Sample ID: 500-232805-5

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	1.4		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	0.30		0.11	0.11	ug/L	1		8151A	Total/NA
Arsenic	0.44	J	1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	9210	B	200	44.3	ug/L	1		6020A	Total Recoverable
Copper	6.4		2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	2660		100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	4200		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	37.5	B	2.5	0.79	ug/L	1		6020A	Total Recoverable
Zinc	7.6	J	20.0	6.9	ug/L	1		6020A	Total Recoverable
Calcium	9920		200	44.3	ug/L	1		6020A	Dissolved
Copper	0.70	J	2.0	0.50	ug/L	1		6020A	Dissolved
Iron	291		100	46.7	ug/L	1		6020A	Dissolved
Magnesium	3750		200	49.4	ug/L	1		6020A	Dissolved
Manganese	33.0		2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	23.0		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	24.8		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	0.56		0.50	0.28	mg/L	1		300.0	Total/NA
Nitrate as N	0.35	H	0.050	0.025	mg/L	1		300.0	Total/NA
Sulfate	2.5		2.0	0.35	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	1.1		1.0	0.47	mg/L	1		9060A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Client Sample ID: W-230425-TS-13 (Continued)

Lab Sample ID: 500-232805-5

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	38.2		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-230425-TS-14

Lab Sample ID: 500-232805-6

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.27		0.097	0.096	ug/L	1		8151A	Total/NA
Calcium	38700	B	200	44.3	ug/L	1		6020A	Total Recoverable
Copper	1.1	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	202		100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	13700		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	6.1	B	2.5	0.79	ug/L	1		6020A	Total Recoverable
Calcium	37900		200	44.3	ug/L	1		6020A	Dissolved
Copper	6.8		2.0	0.50	ug/L	1		6020A	Dissolved
Magnesium	13300		200	49.4	ug/L	1		6020A	Dissolved
Manganese	1.1	J	2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	96.5		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	94.7		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	0.28	J	0.50	0.28	mg/L	1		300.0	Total/NA
Nitrate as N	0.50	H	0.050	0.025	mg/L	1		300.0	Total/NA
Sulfate	1.3	J	2.0	0.35	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.57	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	148		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: Trip Blank

Lab Sample ID: 500-232805-7

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Xylenes, Total	0.42	J	1.0	0.22	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

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Method Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	EET CHI
RSK-175	Dissolved Gases (GC)	RSK	EET CLE
8151A	Herbicides (GC)	SW846	EET CHI
6020A	Metals (ICP/MS)	SW846	EET CHI
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	EET CHI
300.0	Anions, Ion Chromatography	EPA	EET BUF
9060A	Organic Carbon, Total (TOC)	SW846	EET CHI
SM 2320B	Alkalinity	SM	EET CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CHI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CHI
5030B	Purge and Trap	SW846	EET CHI
8151A	Extraction (Herbicides)	SW846	EET CHI

Protocol References:

EPA = US Environmental Protection Agency

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-232805-1	W-230425-TS-08	Water	04/25/23 13:52	04/26/23 10:00
500-232805-2	W-230425-TS-10	Water	04/25/23 11:20	04/26/23 10:00
500-232805-3	W-230425-TS-11	Water	04/25/23 11:20	04/26/23 10:00
500-232805-4	W-230425-TS-12	Water	04/25/23 13:40	04/26/23 10:00
500-232805-5	W-230425-TS-13	Water	04/25/23 12:55	04/26/23 10:00
500-232805-6	W-230425-TS-14	Water	04/25/23 14:36	04/26/23 10:00
500-232805-7	Trip Blank	Water	04/25/23 00:00	04/26/23 10:00

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Client Sample ID: W-230425-TS-08

Lab Sample ID: 500-232805-1

Date Collected: 04/25/23 13:52

Matrix: Water

Date Received: 04/26/23 10:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/03/23 14:16	1
Toluene	<0.15		0.50	0.15	ug/L			05/03/23 14:16	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/03/23 14:16	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/03/23 14:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		75 - 126		05/03/23 14:16	1
Toluene-d8 (Surr)	108		75 - 120		05/03/23 14:16	1
4-Bromofluorobenzene (Surr)	106		72 - 124		05/03/23 14:16	1
Dibromofluoromethane	97		75 - 120		05/03/23 14:16	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.24		0.78	0.24	ug/L		04/26/23 13:55	04/28/23 16:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	75		36 - 120	04/26/23 13:55	04/28/23 16:51	1
2-Fluorobiphenyl (Surr)	70		34 - 110	04/26/23 13:55	04/28/23 16:51	1
Terphenyl-d14 (Surr)	89		40 - 145	04/26/23 13:55	04/28/23 16:51	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.10		0.10	0.10	ug/L		04/27/23 07:25	04/28/23 16:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	80		25 - 130	04/27/23 07:25	04/28/23 16:49	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Client Sample ID: W-230425-TS-10

Lab Sample ID: 500-232805-2

Date Collected: 04/25/23 11:20

Matrix: Water

Date Received: 04/26/23 10:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/03/23 14:39	1
Toluene	<0.15		0.50	0.15	ug/L			05/03/23 14:39	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/03/23 14:39	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/03/23 14:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		75 - 126		05/03/23 14:39	1
Toluene-d8 (Surr)	108		75 - 120		05/03/23 14:39	1
4-Bromofluorobenzene (Surr)	106		72 - 124		05/03/23 14:39	1
Dibromofluoromethane	100		75 - 120		05/03/23 14:39	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.20		0.64	0.20	ug/L		04/26/23 13:55	04/28/23 17:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	48		36 - 120	04/26/23 13:55	04/28/23 17:15	1
2-Fluorobiphenyl (Surr)	44		34 - 110	04/26/23 13:55	04/28/23 17:15	1
Terphenyl-d14 (Surr)	79		40 - 145	04/26/23 13:55	04/28/23 17:15	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			05/02/23 04:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	102		60 - 140		05/02/23 04:56	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.21		0.099	0.098	ug/L		04/27/23 07:25	04/28/23 17:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	73		25 - 130	04/27/23 07:25	04/28/23 17:15	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.23	J	1.0	0.23	ug/L		05/08/23 09:37	05/09/23 14:15	1
Calcium	33900	B	200	44.3	ug/L		05/08/23 09:37	05/08/23 20:05	1
Copper	1.1	J	2.0	0.50	ug/L		05/08/23 09:37	05/08/23 20:05	1
Iron	<46.7		100	46.7	ug/L		05/08/23 09:37	05/08/23 20:05	1
Magnesium	12600		200	49.4	ug/L		05/08/23 09:37	05/09/23 14:15	1
Manganese	1.5	J B	2.5	0.79	ug/L		05/08/23 09:37	05/08/23 20:05	1
Zinc	<6.9		20.0	6.9	ug/L		05/08/23 09:37	05/08/23 20:05	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.25	J	1.0	0.23	ug/L		05/08/23 09:40	05/08/23 18:07	1
Calcium	32900		200	44.3	ug/L		05/08/23 09:40	05/08/23 18:07	1
Copper	1.2	J	2.0	0.50	ug/L		05/08/23 09:40	05/08/23 18:07	1
Iron	<46.7		100	46.7	ug/L		05/08/23 09:40	05/08/23 18:07	1
Magnesium	12200		200	49.4	ug/L		05/08/23 09:40	05/08/23 18:07	1
Manganese	<0.79		2.5	0.79	ug/L		05/08/23 09:40	05/08/23 18:07	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Client Sample ID: W-230425-TS-10

Lab Sample ID: 500-232805-2

Date Collected: 04/25/23 11:20

Matrix: Water

Date Received: 04/26/23 10:00

Method: SW846 6020A - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		05/08/23 09:40	05/08/23 18:07	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	84.7		0.50	0.25	mg/L		05/08/23 09:37	05/09/23 20:04	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	82.3		0.50	0.25	mg/L		05/08/23 09:40	05/09/23 20:04	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	17.9		0.50	0.28	mg/L			04/28/23 21:22	1
Nitrate as N (EPA 300.0)	1.7	H	0.050	0.025	mg/L			04/28/23 21:22	1
Sulfate (EPA 300.0)	4.3		2.0	0.35	mg/L			04/28/23 21:22	1
Total Organic Carbon - Duplicates (SW846 9060A)	0.86	J	1.0	0.47	mg/L			05/08/23 18:24	1
Alkalinity (SM 2320B)	111		5.0	3.7	mg/L			05/07/23 17:50	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Client Sample ID: W-230425-TS-11

Lab Sample ID: 500-232805-3

Date Collected: 04/25/23 11:20

Matrix: Water

Date Received: 04/26/23 10:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/03/23 15:01	1
Toluene	<0.15		0.50	0.15	ug/L			05/03/23 15:01	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/03/23 15:01	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/03/23 15:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		75 - 126		05/03/23 15:01	1
Toluene-d8 (Surr)	106		75 - 120		05/03/23 15:01	1
4-Bromofluorobenzene (Surr)	106		72 - 124		05/03/23 15:01	1
Dibromofluoromethane	97		75 - 120		05/03/23 15:01	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.19		0.63	0.19	ug/L		04/26/23 13:55	04/28/23 18:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	55		36 - 120	04/26/23 13:55	04/28/23 18:02	1
2-Fluorobiphenyl (Surr)	52		34 - 110	04/26/23 13:55	04/28/23 18:02	1
Terphenyl-d14 (Surr)	80		40 - 145	04/26/23 13:55	04/28/23 18:02	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			05/02/23 05:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	100		60 - 140		05/02/23 05:13	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.20		0.11	0.10	ug/L		04/27/23 07:25	04/28/23 17:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	92		25 - 130	04/27/23 07:25	04/28/23 17:40	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.25	J	1.0	0.23	ug/L		05/08/23 09:37	05/09/23 14:18	1
Calcium	33900	B	200	44.3	ug/L		05/08/23 09:37	05/08/23 20:09	1
Copper	1.1	J	2.0	0.50	ug/L		05/08/23 09:37	05/08/23 20:09	1
Iron	<46.7		100	46.7	ug/L		05/08/23 09:37	05/08/23 20:09	1
Magnesium	13100		200	49.4	ug/L		05/08/23 09:37	05/09/23 14:18	1
Manganese	1.5	J B	2.5	0.79	ug/L		05/08/23 09:37	05/08/23 20:09	1
Zinc	<6.9		20.0	6.9	ug/L		05/08/23 09:37	05/08/23 20:09	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.29	J	1.0	0.23	ug/L		05/08/23 09:40	05/08/23 18:12	1
Calcium	32900		200	44.3	ug/L		05/08/23 09:40	05/08/23 18:12	1
Copper	4.7		2.0	0.50	ug/L		05/08/23 09:40	05/08/23 18:12	1
Iron	<46.7		100	46.7	ug/L		05/08/23 09:40	05/08/23 18:12	1
Magnesium	12300		200	49.4	ug/L		05/08/23 09:40	05/08/23 18:12	1
Manganese	<0.79		2.5	0.79	ug/L		05/08/23 09:40	05/08/23 18:12	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Client Sample ID: W-230425-TS-11

Lab Sample ID: 500-232805-3

Date Collected: 04/25/23 11:20

Matrix: Water

Date Received: 04/26/23 10:00

Method: SW846 6020A - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		05/08/23 09:40	05/08/23 18:12	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	84.6		0.50	0.25	mg/L		05/08/23 09:37	05/09/23 20:04	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	82.2		0.50	0.25	mg/L		05/08/23 09:40	05/10/23 08:28	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	17.8		0.50	0.28	mg/L			04/28/23 21:42	1
Nitrate as N (EPA 300.0)	1.7	H	0.050	0.025	mg/L			04/28/23 21:42	1
Sulfate (EPA 300.0)	4.3		2.0	0.35	mg/L			04/28/23 21:42	1
Total Organic Carbon - Duplicates (SW846 9060A)	0.79	J	1.0	0.47	mg/L			05/08/23 18:42	1
Alkalinity (SM 2320B)	110		5.0	3.7	mg/L			05/07/23 17:59	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Client Sample ID: W-230425-TS-12

Lab Sample ID: 500-232805-4

Date Collected: 04/25/23 13:40

Matrix: Water

Date Received: 04/26/23 10:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/03/23 20:32	1
Toluene	<0.15		0.50	0.15	ug/L			05/03/23 20:32	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/03/23 20:32	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/03/23 20:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		75 - 126					05/03/23 20:32	1
Toluene-d8 (Surr)	96		75 - 120					05/03/23 20:32	1
4-Bromofluorobenzene (Surr)	95		72 - 124					05/03/23 20:32	1
Dibromofluoromethane	95		75 - 120					05/03/23 20:32	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.21		0.69	0.21	ug/L		04/26/23 13:55	04/28/23 20:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	77		36 - 120				04/26/23 13:55	04/28/23 20:22	1
2-Fluorobiphenyl (Surr)	73		34 - 110				04/26/23 13:55	04/28/23 20:22	1
Terphenyl-d14 (Surr)	92		40 - 145				04/26/23 13:55	04/28/23 20:22	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			05/02/23 05:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	101		60 - 140					05/02/23 05:30	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.32		0.10	0.10	ug/L		04/27/23 07:25	04/28/23 18:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	94		25 - 130				04/27/23 07:25	04/28/23 18:06	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		05/08/23 09:37	05/09/23 14:22	1
Calcium	13000	B	200	44.3	ug/L		05/08/23 09:37	05/08/23 20:13	1
Copper	2.1		2.0	0.50	ug/L		05/08/23 09:37	05/08/23 20:13	1
Iron	151		100	46.7	ug/L		05/08/23 09:37	05/08/23 20:13	1
Magnesium	5090		200	49.4	ug/L		05/08/23 09:37	05/09/23 14:22	1
Manganese	4.4	B	2.5	0.79	ug/L		05/08/23 09:37	05/08/23 20:13	1
Zinc	<6.9		20.0	6.9	ug/L		05/08/23 09:37	05/08/23 20:13	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.23	J	1.0	0.23	ug/L		05/08/23 09:40	05/08/23 18:16	1
Calcium	12500		200	44.3	ug/L		05/08/23 09:40	05/08/23 18:16	1
Copper	2.1		2.0	0.50	ug/L		05/08/23 09:40	05/08/23 18:16	1
Iron	<46.7		100	46.7	ug/L		05/08/23 09:40	05/08/23 18:16	1
Magnesium	4790		200	49.4	ug/L		05/08/23 09:40	05/08/23 18:16	1
Manganese	<0.79		2.5	0.79	ug/L		05/08/23 09:40	05/08/23 18:16	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Client Sample ID: W-230425-TS-12

Lab Sample ID: 500-232805-4

Date Collected: 04/25/23 13:40

Matrix: Water

Date Received: 04/26/23 10:00

Method: SW846 6020A - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		05/08/23 09:40	05/08/23 18:16	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	32.5		0.50	0.25	mg/L		05/08/23 09:37	05/09/23 20:04	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	31.1		0.50	0.25	mg/L		05/08/23 09:40	05/10/23 08:28	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	0.64		0.50	0.28	mg/L			04/28/23 23:00	1
Nitrate as N (EPA 300.0)	0.51	H	0.050	0.025	mg/L			04/28/23 23:00	1
Sulfate (EPA 300.0)	1.9	J	2.0	0.35	mg/L			04/28/23 23:00	1
Total Organic Carbon - Duplicates (SW846 9060A)	2.1		1.0	0.47	mg/L			05/08/23 18:55	1
Alkalinity (SM 2320B)	52.9		5.0	3.7	mg/L			05/07/23 18:10	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Client Sample ID: W-230425-TS-13

Lab Sample ID: 500-232805-5

Date Collected: 04/25/23 12:55

Matrix: Water

Date Received: 04/26/23 10:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/03/23 15:24	1
Toluene	<0.15		0.50	0.15	ug/L			05/03/23 15:24	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/03/23 15:24	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/03/23 15:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		75 - 126		05/03/23 15:24	1
Toluene-d8 (Surr)	106		75 - 120		05/03/23 15:24	1
4-Bromofluorobenzene (Surr)	112		72 - 124		05/03/23 15:24	1
Dibromofluoromethane	96		75 - 120		05/03/23 15:24	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.20		0.64	0.20	ug/L		04/26/23 13:55	04/28/23 18:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	69		36 - 120	04/26/23 13:55	04/28/23 18:26	1
2-Fluorobiphenyl (Surr)	67		34 - 110	04/26/23 13:55	04/28/23 18:26	1
Terphenyl-d14 (Surr)	87		40 - 145	04/26/23 13:55	04/28/23 18:26	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	1.4		1.0	0.17	ug/L			05/02/23 06:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	102		60 - 140		05/02/23 06:21	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.30		0.11	0.11	ug/L		04/27/23 07:25	04/28/23 19:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	116		25 - 130	04/27/23 07:25	04/28/23 19:47	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.44	J	1.0	0.23	ug/L		05/08/23 09:37	05/09/23 14:39	1
Calcium	9210	B	200	44.3	ug/L		05/08/23 09:37	05/08/23 20:42	1
Copper	6.4		2.0	0.50	ug/L		05/08/23 09:37	05/08/23 20:42	1
Iron	2660		100	46.7	ug/L		05/08/23 09:37	05/08/23 20:42	1
Magnesium	4200		200	49.4	ug/L		05/08/23 09:37	05/09/23 14:39	1
Manganese	37.5	B	2.5	0.79	ug/L		05/08/23 09:37	05/08/23 20:42	1
Zinc	7.6	J	20.0	6.9	ug/L		05/08/23 09:37	05/08/23 20:42	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		05/08/23 09:40	05/08/23 18:37	1
Calcium	9920		200	44.3	ug/L		05/08/23 09:40	05/08/23 18:37	1
Copper	0.70	J	2.0	0.50	ug/L		05/08/23 09:40	05/08/23 18:37	1
Iron	291		100	46.7	ug/L		05/08/23 09:40	05/08/23 18:37	1
Magnesium	3750		200	49.4	ug/L		05/08/23 09:40	05/08/23 18:37	1
Manganese	33.0		2.5	0.79	ug/L		05/08/23 09:40	05/08/23 18:37	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Client Sample ID: W-230425-TS-13

Lab Sample ID: 500-232805-5

Date Collected: 04/25/23 12:55

Matrix: Water

Date Received: 04/26/23 10:00

Method: SW846 6020A - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		05/08/23 09:40	05/08/23 18:37	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	23.0		0.50	0.25	mg/L		05/08/23 09:37	05/09/23 20:04	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	24.8		0.50	0.25	mg/L		05/08/23 09:40	05/10/23 08:28	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	0.56		0.50	0.28	mg/L			04/28/23 22:02	1
Nitrate as N (EPA 300.0)	0.35	H	0.050	0.025	mg/L			04/28/23 22:02	1
Sulfate (EPA 300.0)	2.5		2.0	0.35	mg/L			04/28/23 22:02	1
Total Organic Carbon - Duplicates (SW846 9060A)	1.1		1.0	0.47	mg/L			05/08/23 19:41	1
Alkalinity (SM 2320B)	38.2		5.0	3.7	mg/L			05/07/23 18:18	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Client Sample ID: W-230425-TS-14

Lab Sample ID: 500-232805-6

Date Collected: 04/25/23 14:36

Matrix: Water

Date Received: 04/26/23 10:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/03/23 20:56	1
Toluene	<0.15		0.50	0.15	ug/L			05/03/23 20:56	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/03/23 20:56	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/03/23 20:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		75 - 126		05/03/23 20:56	1
Toluene-d8 (Surr)	95		75 - 120		05/03/23 20:56	1
4-Bromofluorobenzene (Surr)	102		72 - 124		05/03/23 20:56	1
Dibromofluoromethane	94		75 - 120		05/03/23 20:56	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.21		0.69	0.21	ug/L		04/26/23 13:55	04/28/23 18:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	52		36 - 120	04/26/23 13:55	04/28/23 18:49	1
2-Fluorobiphenyl (Surr)	51		34 - 110	04/26/23 13:55	04/28/23 18:49	1
Terphenyl-d14 (Surr)	83		40 - 145	04/26/23 13:55	04/28/23 18:49	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			05/02/23 06:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	102		60 - 140		05/02/23 06:39	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.27		0.097	0.096	ug/L		04/27/23 07:25	04/28/23 20:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	114		25 - 130	04/27/23 07:25	04/28/23 20:13	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		05/08/23 09:37	05/09/23 14:42	1
Calcium	38700	B	200	44.3	ug/L		05/08/23 09:37	05/08/23 20:47	1
Copper	1.1	J	2.0	0.50	ug/L		05/08/23 09:37	05/08/23 20:47	1
Iron	202		100	46.7	ug/L		05/08/23 09:37	05/08/23 20:47	1
Magnesium	13700		200	49.4	ug/L		05/08/23 09:37	05/09/23 14:42	1
Manganese	6.1	B	2.5	0.79	ug/L		05/08/23 09:37	05/08/23 20:47	1
Zinc	<6.9		20.0	6.9	ug/L		05/08/23 09:37	05/08/23 20:47	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		05/08/23 09:40	05/08/23 18:50	1
Calcium	37900		200	44.3	ug/L		05/08/23 09:40	05/08/23 18:50	1
Copper	6.8		2.0	0.50	ug/L		05/08/23 09:40	05/08/23 18:50	1
Iron	<46.7		100	46.7	ug/L		05/08/23 09:40	05/08/23 18:50	1
Magnesium	13300		200	49.4	ug/L		05/08/23 09:40	05/08/23 18:50	1
Manganese	1.1	J	2.5	0.79	ug/L		05/08/23 09:40	05/08/23 18:50	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Client Sample ID: W-230425-TS-14

Lab Sample ID: 500-232805-6

Date Collected: 04/25/23 14:36

Matrix: Water

Date Received: 04/26/23 10:00

Method: SW846 6020A - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		05/08/23 09:40	05/08/23 18:50	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	96.5		0.50	0.25	mg/L		05/08/23 09:37	05/09/23 20:04	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	94.7		0.50	0.25	mg/L		05/08/23 09:40	05/10/23 08:28	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	0.28	J	0.50	0.28	mg/L			04/28/23 22:21	1
Nitrate as N (EPA 300.0)	0.50	H	0.050	0.025	mg/L			04/28/23 22:21	1
Sulfate (EPA 300.0)	1.3	J	2.0	0.35	mg/L			04/28/23 22:21	1
Total Organic Carbon - Duplicates (SW846 9060A)	0.57	J	1.0	0.47	mg/L			05/08/23 19:58	1
Alkalinity (SM 2320B)	148		5.0	3.7	mg/L			05/07/23 18:26	1

Client Sample Results

Client: GHD Services Inc.
 Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-232805-7

Date Collected: 04/25/23 00:00

Matrix: Water

Date Received: 04/26/23 10:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/03/23 14:55	1
Toluene	<0.15		0.50	0.15	ug/L			05/03/23 14:55	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/03/23 14:55	1
Xylenes, Total	0.42	J	1.0	0.22	ug/L			05/03/23 14:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 126		05/03/23 14:55	1
Toluene-d8 (Surr)	95		75 - 120		05/03/23 14:55	1
4-Bromofluorobenzene (Surr)	100		72 - 124		05/03/23 14:55	1
Dibromofluoromethane	94		75 - 120		05/03/23 14:55	1

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Reported value was between the limit of detection and the limit of quantitation.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Reported value was between the limit of detection and the limit of quantitation.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.
J	Reported value was between the limit of detection and the limit of quantitation.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

GC/MS VOA

Analysis Batch: 711025

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232805-1	W-230425-TS-08	Total/NA	Water	8260B	
500-232805-2	W-230425-TS-10	Total/NA	Water	8260B	
500-232805-3	W-230425-TS-11	Total/NA	Water	8260B	
500-232805-5	W-230425-TS-13	Total/NA	Water	8260B	
MB 500-711025/7	Method Blank	Total/NA	Water	8260B	
LCS 500-711025/5	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 711031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232805-4	W-230425-TS-12	Total/NA	Water	8260B	
500-232805-6	W-230425-TS-14	Total/NA	Water	8260B	
500-232805-7	Trip Blank	Total/NA	Water	8260B	
MB 500-711031/7	Method Blank	Total/NA	Water	8260B	
LCS 500-711031/5	Lab Control Sample	Total/NA	Water	8260B	
500-232805-4 MS	W-230425-TS-12	Total/NA	Water	8260B	
500-232805-4 MSD	W-230425-TS-12	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 709910

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232805-1	W-230425-TS-08	Total/NA	Water	3510C	
500-232805-2	W-230425-TS-10	Total/NA	Water	3510C	
500-232805-3	W-230425-TS-11	Total/NA	Water	3510C	
500-232805-4	W-230425-TS-12	Total/NA	Water	3510C	
500-232805-5	W-230425-TS-13	Total/NA	Water	3510C	
500-232805-6	W-230425-TS-14	Total/NA	Water	3510C	
MB 500-709910/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-709910/2-A	Lab Control Sample	Total/NA	Water	3510C	
500-232805-4 MS	W-230425-TS-12	Total/NA	Water	3510C	
500-232805-4 MSD	W-230425-TS-12	Total/NA	Water	3510C	

Analysis Batch: 710350

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232805-1	W-230425-TS-08	Total/NA	Water	8270D	709910
500-232805-2	W-230425-TS-10	Total/NA	Water	8270D	709910
500-232805-3	W-230425-TS-11	Total/NA	Water	8270D	709910
500-232805-4	W-230425-TS-12	Total/NA	Water	8270D	709910
500-232805-5	W-230425-TS-13	Total/NA	Water	8270D	709910
500-232805-6	W-230425-TS-14	Total/NA	Water	8270D	709910
MB 500-709910/1-A	Method Blank	Total/NA	Water	8270D	709910
LCS 500-709910/2-A	Lab Control Sample	Total/NA	Water	8270D	709910
500-232805-4 MS	W-230425-TS-12	Total/NA	Water	8270D	709910
500-232805-4 MSD	W-230425-TS-12	Total/NA	Water	8270D	709910

GC VOA

Analysis Batch: 571604

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232805-2	W-230425-TS-10	Total/NA	Water	RSK-175	
500-232805-3	W-230425-TS-11	Total/NA	Water	RSK-175	
500-232805-4	W-230425-TS-12	Total/NA	Water	RSK-175	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

GC VOA (Continued)

Analysis Batch: 571604 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232805-5	W-230425-TS-13	Total/NA	Water	RSK-175	
500-232805-6	W-230425-TS-14	Total/NA	Water	RSK-175	
MB 240-571604/31	Method Blank	Total/NA	Water	RSK-175	
LCS 240-571604/32	Lab Control Sample	Total/NA	Water	RSK-175	
500-232805-4 MS	W-230425-TS-12	Total/NA	Water	RSK-175	
500-232805-4 MSD	W-230425-TS-12	Total/NA	Water	RSK-175	

GC Semi VOA

Prep Batch: 710003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232805-1	W-230425-TS-08	Total/NA	Water	8151A	
500-232805-2	W-230425-TS-10	Total/NA	Water	8151A	
500-232805-3	W-230425-TS-11	Total/NA	Water	8151A	
500-232805-4	W-230425-TS-12	Total/NA	Water	8151A	
500-232805-5	W-230425-TS-13	Total/NA	Water	8151A	
500-232805-6	W-230425-TS-14	Total/NA	Water	8151A	
MB 500-710003/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-710003/2-A	Lab Control Sample	Total/NA	Water	8151A	
500-232805-4 MS	W-230425-TS-12	Total/NA	Water	8151A	
500-232805-4 MSD	W-230425-TS-12	Total/NA	Water	8151A	

Analysis Batch: 710301

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232805-1	W-230425-TS-08	Total/NA	Water	8151A	710003
500-232805-2	W-230425-TS-10	Total/NA	Water	8151A	710003
500-232805-3	W-230425-TS-11	Total/NA	Water	8151A	710003
500-232805-4	W-230425-TS-12	Total/NA	Water	8151A	710003
500-232805-5	W-230425-TS-13	Total/NA	Water	8151A	710003
500-232805-6	W-230425-TS-14	Total/NA	Water	8151A	710003
MB 500-710003/1-A	Method Blank	Total/NA	Water	8151A	710003
LCS 500-710003/2-A	Lab Control Sample	Total/NA	Water	8151A	710003
500-232805-4 MS	W-230425-TS-12	Total/NA	Water	8151A	710003
500-232805-4 MSD	W-230425-TS-12	Total/NA	Water	8151A	710003

Metals

Prep Batch: 711932

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232805-2	W-230425-TS-10	Total Recoverable	Water	3005A	
500-232805-3	W-230425-TS-11	Total Recoverable	Water	3005A	
500-232805-4	W-230425-TS-12	Total Recoverable	Water	3005A	
500-232805-5	W-230425-TS-13	Total Recoverable	Water	3005A	
500-232805-6	W-230425-TS-14	Total Recoverable	Water	3005A	
MB 500-711932/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-711932/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
500-232805-4 MS	W-230425-TS-12	Total Recoverable	Water	3005A	
500-232805-4 MSD	W-230425-TS-12	Total Recoverable	Water	3005A	
500-232805-4 DU	W-230425-TS-12	Total Recoverable	Water	3005A	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Metals

Prep Batch: 711934

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232805-2	W-230425-TS-10	Dissolved	Water	3005A	
500-232805-3	W-230425-TS-11	Dissolved	Water	3005A	
500-232805-4	W-230425-TS-12	Dissolved	Water	3005A	
500-232805-5	W-230425-TS-13	Dissolved	Water	3005A	
500-232805-6	W-230425-TS-14	Dissolved	Water	3005A	
MB 500-711934/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-711934/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
500-232805-4 MS	W-230425-TS-12	Dissolved	Water	3005A	
500-232805-4 MSD	W-230425-TS-12	Dissolved	Water	3005A	
500-232805-4 DU	W-230425-TS-12	Dissolved	Water	3005A	

Analysis Batch: 712199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232805-2	W-230425-TS-10	Dissolved	Water	6020A	711934
500-232805-2	W-230425-TS-10	Total Recoverable	Water	6020A	711932
500-232805-3	W-230425-TS-11	Dissolved	Water	6020A	711934
500-232805-3	W-230425-TS-11	Total Recoverable	Water	6020A	711932
500-232805-4	W-230425-TS-12	Dissolved	Water	6020A	711934
500-232805-4	W-230425-TS-12	Total Recoverable	Water	6020A	711932
500-232805-5	W-230425-TS-13	Dissolved	Water	6020A	711934
500-232805-5	W-230425-TS-13	Total Recoverable	Water	6020A	711932
500-232805-6	W-230425-TS-14	Dissolved	Water	6020A	711934
500-232805-6	W-230425-TS-14	Total Recoverable	Water	6020A	711932
MB 500-711932/1-A	Method Blank	Total Recoverable	Water	6020A	711932
MB 500-711934/1-A	Method Blank	Total Recoverable	Water	6020A	711934
LCS 500-711932/2-A	Lab Control Sample	Total Recoverable	Water	6020A	711932
LCS 500-711934/2-A	Lab Control Sample	Total Recoverable	Water	6020A	711934
500-232805-4 MS	W-230425-TS-12	Dissolved	Water	6020A	711934
500-232805-4 MS	W-230425-TS-12	Total Recoverable	Water	6020A	711932
500-232805-4 MSD	W-230425-TS-12	Dissolved	Water	6020A	711934
500-232805-4 MSD	W-230425-TS-12	Total Recoverable	Water	6020A	711932
500-232805-4 DU	W-230425-TS-12	Dissolved	Water	6020A	711934
500-232805-4 DU	W-230425-TS-12	Total Recoverable	Water	6020A	711932

Analysis Batch: 712295

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232805-2	W-230425-TS-10	Total Recoverable	Water	6020A	711932
500-232805-3	W-230425-TS-11	Total Recoverable	Water	6020A	711932
500-232805-4	W-230425-TS-12	Total Recoverable	Water	6020A	711932
500-232805-5	W-230425-TS-13	Total Recoverable	Water	6020A	711932
500-232805-6	W-230425-TS-14	Total Recoverable	Water	6020A	711932
MB 500-711932/1-A	Method Blank	Total Recoverable	Water	6020A	711932
LCS 500-711932/2-A	Lab Control Sample	Total Recoverable	Water	6020A	711932
500-232805-4 MS	W-230425-TS-12	Total Recoverable	Water	6020A	711932
500-232805-4 MSD	W-230425-TS-12	Total Recoverable	Water	6020A	711932
500-232805-4 DU	W-230425-TS-12	Total Recoverable	Water	6020A	711932

Analysis Batch: 712297

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232805-2	W-230425-TS-10	Dissolved	Water	SM 2340B	711934
500-232805-2	W-230425-TS-10	Total Recoverable	Water	SM 2340B	711932

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Metals (Continued)

Analysis Batch: 712297 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232805-3	W-230425-TS-11	Dissolved	Water	SM 2340B	711934
500-232805-3	W-230425-TS-11	Total Recoverable	Water	SM 2340B	711932
500-232805-4	W-230425-TS-12	Dissolved	Water	SM 2340B	711934
500-232805-4	W-230425-TS-12	Total Recoverable	Water	SM 2340B	711932
500-232805-5	W-230425-TS-13	Dissolved	Water	SM 2340B	711934
500-232805-5	W-230425-TS-13	Total Recoverable	Water	SM 2340B	711932
500-232805-6	W-230425-TS-14	Dissolved	Water	SM 2340B	711934
500-232805-6	W-230425-TS-14	Total Recoverable	Water	SM 2340B	711932

General Chemistry

Analysis Batch: 667336

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232805-2	W-230425-TS-10	Total/NA	Water	300.0	
500-232805-3	W-230425-TS-11	Total/NA	Water	300.0	
500-232805-4	W-230425-TS-12	Total/NA	Water	300.0	
500-232805-5	W-230425-TS-13	Total/NA	Water	300.0	
500-232805-6	W-230425-TS-14	Total/NA	Water	300.0	
MB 480-667336/28	Method Blank	Total/NA	Water	300.0	
LCS 480-667336/29	Lab Control Sample	Total/NA	Water	300.0	
500-232805-4 MS	W-230425-TS-12	Total/NA	Water	300.0	
500-232805-4 MSD	W-230425-TS-12	Total/NA	Water	300.0	

Analysis Batch: 667339

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232805-2	W-230425-TS-10	Total/NA	Water	300.0	
500-232805-3	W-230425-TS-11	Total/NA	Water	300.0	
500-232805-4	W-230425-TS-12	Total/NA	Water	300.0	
500-232805-5	W-230425-TS-13	Total/NA	Water	300.0	
500-232805-6	W-230425-TS-14	Total/NA	Water	300.0	
MB 480-667339/28	Method Blank	Total/NA	Water	300.0	
LCS 480-667339/29	Lab Control Sample	Total/NA	Water	300.0	
500-232805-4 MS	W-230425-TS-12	Total/NA	Water	300.0	
500-232805-4 MSD	W-230425-TS-12	Total/NA	Water	300.0	

Analysis Batch: 711910

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232805-2	W-230425-TS-10	Total/NA	Water	SM 2320B	
500-232805-3	W-230425-TS-11	Total/NA	Water	SM 2320B	
500-232805-4	W-230425-TS-12	Total/NA	Water	SM 2320B	
500-232805-5	W-230425-TS-13	Total/NA	Water	SM 2320B	
500-232805-6	W-230425-TS-14	Total/NA	Water	SM 2320B	
MB 500-711910/28	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-711910/29	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 712510

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232805-2	W-230425-TS-10	Total/NA	Water	9060A	
500-232805-3	W-230425-TS-11	Total/NA	Water	9060A	
500-232805-4	W-230425-TS-12	Total/NA	Water	9060A	
500-232805-5	W-230425-TS-13	Total/NA	Water	9060A	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

General Chemistry (Continued)

Analysis Batch: 712510 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232805-6	W-230425-TS-14	Total/NA	Water	9060A	
MB 500-712510/4	Method Blank	Total/NA	Water	9060A	
LCS 500-712510/5	Lab Control Sample	Total/NA	Water	9060A	
500-232805-4 MS	W-230425-TS-12	Total/NA	Water	9060A	
500-232805-4 MSD	W-230425-TS-12	Total/NA	Water	9060A	

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Surrogate Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-126)	TOL (75-120)	BFB (72-124)	DBFM (75-120)
500-232805-1	W-230425-TS-08	102	108	106	97
500-232805-2	W-230425-TS-10	104	108	106	100
500-232805-3	W-230425-TS-11	101	106	106	97
500-232805-4	W-230425-TS-12	104	96	95	95
500-232805-4 MS	W-230425-TS-12	99	95	96	96
500-232805-4 MSD	W-230425-TS-12	98	96	98	98
500-232805-5	W-230425-TS-13	102	106	112	96
500-232805-6	W-230425-TS-14	101	95	102	94
500-232805-7	Trip Blank	98	95	100	94
LCS 500-711025/5	Lab Control Sample	99	107	110	96
LCS 500-711031/5	Lab Control Sample	99	95	96	97
MB 500-711025/7	Method Blank	103	104	112	96
MB 500-711031/7	Method Blank	100	97	103	94

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		NBZ (36-120)	FBP (34-110)	TPHL (40-145)
500-232805-1	W-230425-TS-08	75	70	89
500-232805-2	W-230425-TS-10	48	44	79
500-232805-3	W-230425-TS-11	55	52	80
500-232805-4	W-230425-TS-12	77	73	92
500-232805-4 MS	W-230425-TS-12	79	71	86
500-232805-4 MSD	W-230425-TS-12	77	69	82
500-232805-5	W-230425-TS-13	69	67	87
500-232805-6	W-230425-TS-14	52	51	83
LCS 500-709910/2-A	Lab Control Sample	81	74	87
MB 500-709910/1-A	Method Blank	76	76	85

Surrogate Legend

NBZ = Nitrobenzene-d5 (Surr)

FBP = 2-Fluorobiphenyl (Surr)

TPHL = Terphenyl-d14 (Surr)

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		TFE1 (60-140)
500-232805-2	W-230425-TS-10	102
500-232805-3	W-230425-TS-11	100
500-232805-4	W-230425-TS-12	101

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Surrogate Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TFE1 (60-140)
500-232805-4 MS	W-230425-TS-12	101
500-232805-4 MSD	W-230425-TS-12	102
500-232805-5	W-230425-TS-13	102
500-232805-6	W-230425-TS-14	102
LCS 240-571604/32	Lab Control Sample	102
MB 240-571604/31	Method Blank	106

Surrogate Legend

TFE = 1,1,1-Trifluoroethane

Method: 8151A - Herbicides (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (25-130)
500-232805-1	W-230425-TS-08	80
500-232805-2	W-230425-TS-10	73
500-232805-3	W-230425-TS-11	92
500-232805-4	W-230425-TS-12	94
500-232805-4 MS	W-230425-TS-12	108
500-232805-4 MSD	W-230425-TS-12	109
500-232805-5	W-230425-TS-13	116
500-232805-6	W-230425-TS-14	114
LCS 500-710003/2-A	Lab Control Sample	113
MB 500-710003/1-A	Method Blank	85

Surrogate Legend

DCPAA = DCAA

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-711025/7
Matrix: Water
Analysis Batch: 711025

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	<0.15		0.50	0.15	ug/L			05/03/23 10:29	1
Toluene	<0.15		0.50	0.15	ug/L			05/03/23 10:29	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/03/23 10:29	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/03/23 10:29	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	103		75 - 126		05/03/23 10:29	1
Toluene-d8 (Surr)	104		75 - 120		05/03/23 10:29	1
4-Bromofluorobenzene (Surr)	112		72 - 124		05/03/23 10:29	1
Dibromofluoromethane	96		75 - 120		05/03/23 10:29	1

Lab Sample ID: LCS 500-711025/5
Matrix: Water
Analysis Batch: 711025

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	50.0	43.8		ug/L		88	70 - 120
Toluene	50.0	43.0		ug/L		86	70 - 125
Ethylbenzene	50.0	42.7		ug/L		85	70 - 123
Xylenes, Total	100	90.7		ug/L		91	70 - 125

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	99		75 - 126
Toluene-d8 (Surr)	107		75 - 120
4-Bromofluorobenzene (Surr)	110		72 - 124
Dibromofluoromethane	96		75 - 120

Lab Sample ID: MB 500-711031/7
Matrix: Water
Analysis Batch: 711031

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	<0.15		0.50	0.15	ug/L			05/03/23 13:43	1
Toluene	<0.15		0.50	0.15	ug/L			05/03/23 13:43	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/03/23 13:43	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/03/23 13:43	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	100		75 - 126		05/03/23 13:43	1
Toluene-d8 (Surr)	97		75 - 120		05/03/23 13:43	1
4-Bromofluorobenzene (Surr)	103		72 - 124		05/03/23 13:43	1
Dibromofluoromethane	94		75 - 120		05/03/23 13:43	1

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-711031/5
Matrix: Water
Analysis Batch: 711031

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	50.0	44.1		ug/L		88	70 - 120
Toluene	50.0	45.0		ug/L		90	70 - 125
Ethylbenzene	50.0	45.7		ug/L		91	70 - 123
Xylenes, Total	100	90.9		ug/L		91	70 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		75 - 126
Toluene-d8 (Surr)	95		75 - 120
4-Bromofluorobenzene (Surr)	96		72 - 124
Dibromofluoromethane	97		75 - 120

Lab Sample ID: 500-232805-4 MS
Matrix: Water
Analysis Batch: 711031

Client Sample ID: W-230425-TS-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.15		50.0	45.8		ug/L		92	70 - 120
Toluene	<0.15		50.0	46.7		ug/L		93	70 - 125
Ethylbenzene	<0.18		50.0	46.3		ug/L		93	70 - 123
Xylenes, Total	<0.22		100	93.9		ug/L		94	70 - 125

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		75 - 126
Toluene-d8 (Surr)	95		75 - 120
4-Bromofluorobenzene (Surr)	96		72 - 124
Dibromofluoromethane	96		75 - 120

Lab Sample ID: 500-232805-4 MSD
Matrix: Water
Analysis Batch: 711031

Client Sample ID: W-230425-TS-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.15		50.0	46.2		ug/L		92	70 - 120	1	20
Toluene	<0.15		50.0	47.1		ug/L		94	70 - 125	1	20
Ethylbenzene	<0.18		50.0	45.6		ug/L		91	70 - 123	1	20
Xylenes, Total	<0.22		100	91.4		ug/L		91	70 - 125	3	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		75 - 126
Toluene-d8 (Surr)	96		75 - 120
4-Bromofluorobenzene (Surr)	98		72 - 124
Dibromofluoromethane	98		75 - 120

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-709910/1-A
Matrix: Water
Analysis Batch: 710350

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 709910

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Naphthalene	<0.25		0.80	0.25	ug/L		04/26/23 13:55	04/28/23 13:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	76		36 - 120				04/26/23 13:55	04/28/23 13:45	1
2-Fluorobiphenyl (Surr)	76		34 - 110				04/26/23 13:55	04/28/23 13:45	1
Terphenyl-d14 (Surr)	85		40 - 145				04/26/23 13:55	04/28/23 13:45	1

Lab Sample ID: LCS 500-709910/2-A
Matrix: Water
Analysis Batch: 710350

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 709910

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Naphthalene	32.0	20.6		ug/L		64	36 - 110
Surrogate	%Recovery	Qualifier	Limits				
Nitrobenzene-d5 (Surr)	81		36 - 120				
2-Fluorobiphenyl (Surr)	74		34 - 110				
Terphenyl-d14 (Surr)	87		40 - 145				

Lab Sample ID: 500-232805-4 MS
Matrix: Water
Analysis Batch: 710350

Client Sample ID: W-230425-TS-12
Prep Type: Total/NA
Prep Batch: 709910

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
Naphthalene	<0.21		27.6	15.4		ug/L		56	36 - 110
Surrogate	%Recovery	Qualifier	Limits						
Nitrobenzene-d5 (Surr)	79		36 - 120						
2-Fluorobiphenyl (Surr)	71		34 - 110						
Terphenyl-d14 (Surr)	86		40 - 145						

Lab Sample ID: 500-232805-4 MSD
Matrix: Water
Analysis Batch: 710350

Client Sample ID: W-230425-TS-12
Prep Type: Total/NA
Prep Batch: 709910

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec Limits	RPD	
				Result	Qualifier					RPD	Limit
Naphthalene	<0.21		28.0	15.8		ug/L		56	36 - 110	2	20
Surrogate	%Recovery	Qualifier	Limits								
Nitrobenzene-d5 (Surr)	77		36 - 120								
2-Fluorobiphenyl (Surr)	69		34 - 110								
Terphenyl-d14 (Surr)	82		40 - 145								

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 240-571604/31
Matrix: Water
Analysis Batch: 571604

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			05/01/23 23:15	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	106		60 - 140					05/01/23 23:15	1

Lab Sample ID: LCS 240-571604/32
Matrix: Water
Analysis Batch: 571604

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methane	284	294		ug/L		104	80 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,1,1-Trifluoroethane	102		60 - 140				

Lab Sample ID: 500-232805-4 MS
Matrix: Water
Analysis Batch: 571604

Client Sample ID: W-230425-TS-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Methane	<0.17		284	280		ug/L		98	50 - 150
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,1,1-Trifluoroethane	101		60 - 140						

Lab Sample ID: 500-232805-4 MSD
Matrix: Water
Analysis Batch: 571604

Client Sample ID: W-230425-TS-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methane	<0.17		284	285		ug/L		100	50 - 150	2	30
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1,1,1-Trifluoroethane	102		60 - 140								

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 500-710003/1-A
Matrix: Water
Analysis Batch: 710301

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 710003

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.099		0.10	0.099	ug/L		04/27/23 07:25	04/28/23 10:23	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	85		25 - 130				04/27/23 07:25	04/28/23 10:23	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: LCS 500-710003/2-A
Matrix: Water
Analysis Batch: 710301

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 710003

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Pentachlorophenol	2.53	2.03		ug/L		81	40 - 122
Surrogate	%Recovery	LCS Qualifier	Limits				
DCAA	113		25 - 130				

Lab Sample ID: 500-232805-4 MS
Matrix: Water
Analysis Batch: 710301

Client Sample ID: W-230425-TS-12
Prep Type: Total/NA
Prep Batch: 710003

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Pentachlorophenol	0.32		2.48	2.26		ug/L		78	40 - 122
Surrogate	%Recovery	MS Qualifier	Limits						
DCAA	108		25 - 130						

Lab Sample ID: 500-232805-4 MSD
Matrix: Water
Analysis Batch: 710301

Client Sample ID: W-230425-TS-12
Prep Type: Total/NA
Prep Batch: 710003

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Pentachlorophenol	0.32		2.65	2.28		ug/L		74	40 - 122	1	20
Surrogate	%Recovery	MSD Qualifier	Limits								
DCAA	109		25 - 130								

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 500-711932/1-A
Matrix: Water
Analysis Batch: 712199

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 711932

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	122.2	J	200	44.3	ug/L		05/08/23 09:37	05/08/23 19:56	1
Copper	<0.50		2.0	0.50	ug/L		05/08/23 09:37	05/08/23 19:56	1
Iron	<46.7		100	46.7	ug/L		05/08/23 09:37	05/08/23 19:56	1
Manganese	2.43	J	2.5	0.79	ug/L		05/08/23 09:37	05/08/23 19:56	1
Zinc	<6.9		20.0	6.9	ug/L		05/08/23 09:37	05/08/23 19:56	1

Lab Sample ID: MB 500-711932/1-A
Matrix: Water
Analysis Batch: 712295

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 711932

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		05/08/23 09:37	05/09/23 13:16	1
Magnesium	<49.4		200	49.4	ug/L		05/08/23 09:37	05/09/23 13:16	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 500-711932/2-A
Matrix: Water
Analysis Batch: 712199

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 711932

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	10000	10070		ug/L		101	80 - 120
Copper	250	275.6		ug/L		110	80 - 120
Iron	1000	1043		ug/L		104	80 - 120
Manganese	500	515.3		ug/L		103	80 - 120
Zinc	500	561.5		ug/L		112	80 - 120

Lab Sample ID: LCS 500-711932/2-A
Matrix: Water
Analysis Batch: 712295

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 711932

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	100	102.5		ug/L		103	80 - 120
Magnesium	10000	10630		ug/L		106	80 - 120

Lab Sample ID: 500-232805-4 MS
Matrix: Water
Analysis Batch: 712199

Client Sample ID: W-230425-TS-12
Prep Type: Total Recoverable
Prep Batch: 711932

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	13000	B	10000	21890		ug/L		89	75 - 125
Copper	2.1		250	255.7		ug/L		101	75 - 125
Iron	151		1000	1130		ug/L		98	75 - 125
Manganese	4.4	B	500	516.4		ug/L		102	75 - 125
Zinc	<6.9		500	495.4		ug/L		99	75 - 125

Lab Sample ID: 500-232805-4 MS
Matrix: Water
Analysis Batch: 712295

Client Sample ID: W-230425-TS-12
Prep Type: Total Recoverable
Prep Batch: 711932

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	<0.23		100	99.34		ug/L		99	75 - 125
Magnesium	5090		10000	15870		ug/L		108	75 - 125

Lab Sample ID: 500-232805-4 MSD
Matrix: Water
Analysis Batch: 712199

Client Sample ID: W-230425-TS-12
Prep Type: Total Recoverable
Prep Batch: 711932

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Calcium	13000	B	10000	21390		ug/L		84	75 - 125	2	20
Copper	2.1		250	261.9		ug/L		104	75 - 125	2	20
Iron	151		1000	1099		ug/L		95	75 - 125	3	20
Manganese	4.4	B	500	511.4		ug/L		101	75 - 125	1	20
Zinc	<6.9		500	503.8		ug/L		101	75 - 125	2	20

Lab Sample ID: 500-232805-4 MSD
Matrix: Water
Analysis Batch: 712295

Client Sample ID: W-230425-TS-12
Prep Type: Total Recoverable
Prep Batch: 711932

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Arsenic	<0.23		100	98.79		ug/L		99	75 - 125	1	20

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 500-232805-4 MSD
Matrix: Water
Analysis Batch: 712295

Client Sample ID: W-230425-TS-12
Prep Type: Total Recoverable
Prep Batch: 711932

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Magnesium	5090		10000	15750		ug/L		107	75 - 125	1	20

Lab Sample ID: 500-232805-4 DU
Matrix: Water
Analysis Batch: 712199

Client Sample ID: W-230425-TS-12
Prep Type: Total Recoverable
Prep Batch: 711932

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Calcium	13000	B	12640		ug/L		3	20
Copper	2.1		2.09		ug/L		0.6	20
Iron	151		157.4		ug/L		4	20
Manganese	4.4	B	4.42		ug/L		0.3	20
Zinc	<6.9		<6.9		ug/L		NC	20

Lab Sample ID: 500-232805-4 DU
Matrix: Water
Analysis Batch: 712295

Client Sample ID: W-230425-TS-12
Prep Type: Total Recoverable
Prep Batch: 711932

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	<0.23		<0.23		ug/L		NC	20
Magnesium	5090		4993		ug/L		2	20

Lab Sample ID: MB 500-711934/1-A
Matrix: Water
Analysis Batch: 712199

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 711934

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		05/08/23 09:40	05/08/23 17:58	1
Calcium	<44.3		200	44.3	ug/L		05/08/23 09:40	05/08/23 17:58	1
Copper	<0.50		2.0	0.50	ug/L		05/08/23 09:40	05/08/23 17:58	1
Iron	<46.7		100	46.7	ug/L		05/08/23 09:40	05/08/23 17:58	1
Magnesium	<49.4		200	49.4	ug/L		05/08/23 09:40	05/08/23 17:58	1
Manganese	<0.79		2.5	0.79	ug/L		05/08/23 09:40	05/08/23 17:58	1
Zinc	<6.9		20.0	6.9	ug/L		05/08/23 09:40	05/08/23 17:58	1

Lab Sample ID: LCS 500-711934/2-A
Matrix: Water
Analysis Batch: 712199

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 711934

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	100	103.2		ug/L		103	80 - 120
Calcium	10000	9704		ug/L		97	80 - 120
Copper	250	262.8		ug/L		105	80 - 120
Iron	1000	1038		ug/L		104	80 - 120
Magnesium	10000	10100		ug/L		101	80 - 120
Manganese	500	503.4		ug/L		101	80 - 120
Zinc	500	538.8		ug/L		108	80 - 120

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 500-232805-4 MS
Matrix: Water
Analysis Batch: 712199

Client Sample ID: W-230425-TS-12
Prep Type: Dissolved
Prep Batch: 711934

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	
	Result	Qualifier	Added	Result	Qualifier				Limits	
Arsenic	0.23	J	100	104.6		ug/L		105	75 - 125	
Calcium	12500		10000	21370		ug/L		89	75 - 125	
Copper	2.1		250	264.3		ug/L		105	75 - 125	
Iron	<46.7		1000	1051		ug/L		105	75 - 125	
Magnesium	4790		10000	14720		ug/L		99	75 - 125	
Manganese	<0.79		500	508.3		ug/L		102	75 - 125	
Zinc	<6.9		500	542.7		ug/L		109	75 - 125	

Lab Sample ID: 500-232805-4 MSD
Matrix: Water
Analysis Batch: 712199

Client Sample ID: W-230425-TS-12
Prep Type: Dissolved
Prep Batch: 711934

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec		RPD	
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD	Limit	
Arsenic	0.23	J	100	101.8		ug/L		102	75 - 125		3	20
Calcium	12500		10000	21150		ug/L		87	75 - 125		1	20
Copper	2.1		250	258.9		ug/L		103	75 - 125		2	20
Iron	<46.7		1000	1036		ug/L		104	75 - 125		1	20
Magnesium	4790		10000	14670		ug/L		99	75 - 125		0	20
Manganese	<0.79		500	502.8		ug/L		101	75 - 125		1	20
Zinc	<6.9		500	529.5		ug/L		106	75 - 125		2	20

Lab Sample ID: 500-232805-4 DU
Matrix: Water
Analysis Batch: 712199

Client Sample ID: W-230425-TS-12
Prep Type: Dissolved
Prep Batch: 711934

Analyte	Sample	Sample	DU		Unit	D	Prepared	RPD	
	Result	Qualifier	Result	Qualifier				RPD	Limit
Arsenic	0.23	J	<0.23		ug/L			NC	20
Calcium	12500		12850		ug/L			3	20
Copper	2.1		1.94	J	ug/L			6	20
Iron	<46.7		<46.7		ug/L			NC	20
Magnesium	4790		4937		ug/L			3	20
Manganese	<0.79		<0.79		ug/L			NC	20
Zinc	<6.9		8.33	J	ug/L			NC	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 480-667336/28
Matrix: Water
Analysis Batch: 667336

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	<0.28		0.50	0.28	mg/L			04/28/23 20:43	1
Sulfate	<0.35		2.0	0.35	mg/L			04/28/23 20:43	1

Lab Sample ID: LCS 480-667336/29
Matrix: Water
Analysis Batch: 667336

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec	
	Added	Result	Qualifier				Limits	
Chloride	50.1	48.88		mg/L		98	90 - 110	

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 480-667336/29
Matrix: Water
Analysis Batch: 667336

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	50.1	49.47		mg/L		99	90 - 110

Lab Sample ID: 500-232805-4 MS
Matrix: Water
Analysis Batch: 667336

Client Sample ID: W-230425-TS-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	0.64		50.1	49.84		mg/L		98	81 - 120
Sulfate	1.9	J	50.1	51.79		mg/L		100	80 - 120

Lab Sample ID: 500-232805-4 MSD
Matrix: Water
Analysis Batch: 667336

Client Sample ID: W-230425-TS-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	0.64		50.1	50.06		mg/L		99	81 - 120	0	15
Sulfate	1.9	J	50.1	51.89		mg/L		100	80 - 120	0	15

Lab Sample ID: MB 480-667339/28
Matrix: Water
Analysis Batch: 667339

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.025		0.050	0.025	mg/L			04/28/23 20:43	1

Lab Sample ID: LCS 480-667339/29
Matrix: Water
Analysis Batch: 667339

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	5.01	4.84		mg/L		97	90 - 110

Lab Sample ID: 500-232805-4 MS
Matrix: Water
Analysis Batch: 667339

Client Sample ID: W-230425-TS-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	0.51	H	5.01	5.44	H	mg/L		99	80 - 120

Lab Sample ID: 500-232805-4 MSD
Matrix: Water
Analysis Batch: 667339

Client Sample ID: W-230425-TS-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	0.51	H	5.01	5.47	H	mg/L		99	80 - 120	1	15

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-712510/4
Matrix: Water
Analysis Batch: 712510

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	<0.47		1.0	0.47	mg/L			05/08/23 17:38	1

Lab Sample ID: LCS 500-712510/5
Matrix: Water
Analysis Batch: 712510

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon - Duplicates	50.0	49.34		mg/L		99	86 - 116

Lab Sample ID: 500-232805-4 MS
Matrix: Water
Analysis Batch: 712510

Client Sample ID: W-230425-TS-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon - Duplicates	2.1		50.0	51.38		mg/L		99	75 - 125

Lab Sample ID: 500-232805-4 MSD
Matrix: Water
Analysis Batch: 712510

Client Sample ID: W-230425-TS-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	2.1		50.0	51.75		mg/L		99	75 - 125	1	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-711910/28
Matrix: Water
Analysis Batch: 711910

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	<3.7		5.0	3.7	mg/L			05/07/23 15:52	1

Lab Sample ID: LCS 500-711910/29
Matrix: Water
Analysis Batch: 711910

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	100	107.6		mg/L		108	90 - 110

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Client Sample ID: W-230425-TS-08

Lab Sample ID: 500-232805-1

Date Collected: 04/25/23 13:52

Matrix: Water

Date Received: 04/26/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711025	W1T	EET CHI	05/03/23 14:16
Total/NA	Prep	3510C			709910	TS	EET CHI	04/26/23 13:55
Total/NA	Analysis	8270D		1	710350	SS	EET CHI	04/28/23 16:51
Total/NA	Prep	8151A			710003	TS	EET CHI	04/27/23 07:25
Total/NA	Analysis	8151A		1	710301	SS	EET CHI	04/28/23 16:49

Client Sample ID: W-230425-TS-10

Lab Sample ID: 500-232805-2

Date Collected: 04/25/23 11:20

Matrix: Water

Date Received: 04/26/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711025	W1T	EET CHI	05/03/23 14:39
Total/NA	Prep	3510C			709910	TS	EET CHI	04/26/23 13:55
Total/NA	Analysis	8270D		1	710350	SS	EET CHI	04/28/23 17:15
Total/NA	Analysis	RSK-175		1	571604	JBN	EET CLE	05/02/23 04:56
Total/NA	Prep	8151A			710003	TS	EET CHI	04/27/23 07:25
Total/NA	Analysis	8151A		1	710301	SS	EET CHI	04/28/23 17:15
Dissolved	Prep	3005A			711934	BDE	EET CHI	05/08/23 09:40 - 05/08/23 10:10 ¹
Dissolved	Analysis	6020A		1	712199	FXG	EET CHI	05/08/23 18:07
Total Recoverable	Prep	3005A			711932	BDE	EET CHI	05/08/23 09:37 - 05/08/23 10:07 ¹
Total Recoverable	Analysis	6020A		1	712199	FXG	EET CHI	05/08/23 20:05
Total Recoverable	Prep	3005A			711932	BDE	EET CHI	05/08/23 09:37 - 05/08/23 10:07 ¹
Total Recoverable	Analysis	6020A		1	712295	FXG	EET CHI	05/09/23 14:15
Dissolved	Prep	3005A			711934	BDE	EET CHI	05/08/23 09:40 - 05/08/23 10:10 ¹
Dissolved	Analysis	SM 2340B		1	712297	FXG	EET CHI	05/09/23 20:04
Total Recoverable	Prep	3005A			711932	BDE	EET CHI	05/08/23 09:37 - 05/08/23 10:07 ¹
Total Recoverable	Analysis	SM 2340B		1	712297	FXG	EET CHI	05/09/23 20:04
Total/NA	Analysis	300.0		1	667336	RJS	EET BUF	04/28/23 21:22
Total/NA	Analysis	300.0		1	667339	RJS	EET BUF	04/28/23 21:22
Total/NA	Analysis	9060A		1	712510	BC	EET CHI	05/08/23 18:24
Total/NA	Analysis	SM 2320B		1	711910	EH	EET CHI	05/07/23 17:50

Client Sample ID: W-230425-TS-11

Lab Sample ID: 500-232805-3

Date Collected: 04/25/23 11:20

Matrix: Water

Date Received: 04/26/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711025	W1T	EET CHI	05/03/23 15:01
Total/NA	Prep	3510C			709910	TS	EET CHI	04/26/23 13:55
Total/NA	Analysis	8270D		1	710350	SS	EET CHI	04/28/23 18:02
Total/NA	Analysis	RSK-175		1	571604	JBN	EET CLE	05/02/23 05:13
Total/NA	Prep	8151A			710003	TS	EET CHI	04/27/23 07:25
Total/NA	Analysis	8151A		1	710301	SS	EET CHI	04/28/23 17:40

Eurofins Chicago

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Client Sample ID: W-230425-TS-11

Lab Sample ID: 500-232805-3

Date Collected: 04/25/23 11:20

Matrix: Water

Date Received: 04/26/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			711934	BDE	EET CHI	05/08/23 09:40 - 05/08/23 10:10 ¹
Dissolved	Analysis	6020A		1	712199	FXG	EET CHI	05/08/23 18:12
Total Recoverable	Prep	3005A			711932	BDE	EET CHI	05/08/23 09:37 - 05/08/23 10:07 ¹
Total Recoverable	Analysis	6020A		1	712199	FXG	EET CHI	05/08/23 20:09
Total Recoverable	Prep	3005A			711932	BDE	EET CHI	05/08/23 09:37 - 05/08/23 10:07 ¹
Total Recoverable	Analysis	6020A		1	712295	FXG	EET CHI	05/09/23 14:18
Dissolved	Prep	3005A			711934	BDE	EET CHI	05/08/23 09:40 - 05/08/23 10:10 ¹
Dissolved	Analysis	SM 2340B		1	712297	FXG	EET CHI	05/10/23 08:28
Total Recoverable	Prep	3005A			711932	BDE	EET CHI	05/08/23 09:37 - 05/08/23 10:07 ¹
Total Recoverable	Analysis	SM 2340B		1	712297	FXG	EET CHI	05/09/23 20:04
Total/NA	Analysis	300.0		1	667336	RJS	EET BUF	04/28/23 21:42
Total/NA	Analysis	300.0		1	667339	RJS	EET BUF	04/28/23 21:42
Total/NA	Analysis	9060A		1	712510	BC	EET CHI	05/08/23 18:42
Total/NA	Analysis	SM 2320B		1	711910	EH	EET CHI	05/07/23 17:59

Client Sample ID: W-230425-TS-12

Lab Sample ID: 500-232805-4

Date Collected: 04/25/23 13:40

Matrix: Water

Date Received: 04/26/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711031	W1T	EET CHI	05/03/23 20:32
Total/NA	Prep	3510C			709910	TS	EET CHI	04/26/23 13:55
Total/NA	Analysis	8270D		1	710350	SS	EET CHI	04/28/23 20:22
Total/NA	Analysis	RSK-175		1	571604	JBN	EET CLE	05/02/23 05:30
Total/NA	Prep	8151A			710003	TS	EET CHI	04/27/23 07:25
Total/NA	Analysis	8151A		1	710301	SS	EET CHI	04/28/23 18:06
Dissolved	Prep	3005A			711934	BDE	EET CHI	05/08/23 09:40 - 05/08/23 10:10 ¹
Dissolved	Analysis	6020A		1	712199	FXG	EET CHI	05/08/23 18:16
Total Recoverable	Prep	3005A			711932	BDE	EET CHI	05/08/23 09:37 - 05/08/23 10:07 ¹
Total Recoverable	Analysis	6020A		1	712199	FXG	EET CHI	05/08/23 20:13
Total Recoverable	Prep	3005A			711932	BDE	EET CHI	05/08/23 09:37 - 05/08/23 10:07 ¹
Total Recoverable	Analysis	6020A		1	712295	FXG	EET CHI	05/09/23 14:22
Dissolved	Prep	3005A			711934	BDE	EET CHI	05/08/23 09:40 - 05/08/23 10:10 ¹
Dissolved	Analysis	SM 2340B		1	712297	FXG	EET CHI	05/10/23 08:28
Total Recoverable	Prep	3005A			711932	BDE	EET CHI	05/08/23 09:37 - 05/08/23 10:07 ¹
Total Recoverable	Analysis	SM 2340B		1	712297	FXG	EET CHI	05/09/23 20:04
Total/NA	Analysis	300.0		1	667336	RJS	EET BUF	04/28/23 23:00
Total/NA	Analysis	300.0		1	667339	RJS	EET BUF	04/28/23 23:00
Total/NA	Analysis	9060A		1	712510	BC	EET CHI	05/08/23 18:55
Total/NA	Analysis	SM 2320B		1	711910	EH	EET CHI	05/07/23 18:10

Eurofins Chicago

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Client Sample ID: W-230425-TS-13

Lab Sample ID: 500-232805-5

Date Collected: 04/25/23 12:55

Matrix: Water

Date Received: 04/26/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711025	W1T	EET CHI	05/03/23 15:24
Total/NA	Prep	3510C			709910	TS	EET CHI	04/26/23 13:55
Total/NA	Analysis	8270D		1	710350	SS	EET CHI	04/28/23 18:26
Total/NA	Analysis	RSK-175		1	571604	JBN	EET CLE	05/02/23 06:21
Total/NA	Prep	8151A			710003	TS	EET CHI	04/27/23 07:25
Total/NA	Analysis	8151A		1	710301	SS	EET CHI	04/28/23 19:47
Dissolved	Prep	3005A			711934	BDE	EET CHI	05/08/23 09:40 - 05/08/23 10:10 ¹
Dissolved	Analysis	6020A		1	712199	FXG	EET CHI	05/08/23 18:37
Total Recoverable	Prep	3005A			711932	BDE	EET CHI	05/08/23 09:37 - 05/08/23 10:07 ¹
Total Recoverable	Analysis	6020A		1	712199	FXG	EET CHI	05/08/23 20:42
Total Recoverable	Prep	3005A			711932	BDE	EET CHI	05/08/23 09:37 - 05/08/23 10:07 ¹
Total Recoverable	Analysis	6020A		1	712295	FXG	EET CHI	05/09/23 14:39
Dissolved	Prep	3005A			711934	BDE	EET CHI	05/08/23 09:40 - 05/08/23 10:10 ¹
Dissolved	Analysis	SM 2340B		1	712297	FXG	EET CHI	05/10/23 08:28
Total Recoverable	Prep	3005A			711932	BDE	EET CHI	05/08/23 09:37 - 05/08/23 10:07 ¹
Total Recoverable	Analysis	SM 2340B		1	712297	FXG	EET CHI	05/09/23 20:04
Total/NA	Analysis	300.0		1	667336	RJS	EET BUF	04/28/23 22:02
Total/NA	Analysis	300.0		1	667339	RJS	EET BUF	04/28/23 22:02
Total/NA	Analysis	9060A		1	712510	BC	EET CHI	05/08/23 19:41
Total/NA	Analysis	SM 2320B		1	711910	EH	EET CHI	05/07/23 18:18

Client Sample ID: W-230425-TS-14

Lab Sample ID: 500-232805-6

Date Collected: 04/25/23 14:36

Matrix: Water

Date Received: 04/26/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711031	W1T	EET CHI	05/03/23 20:56
Total/NA	Prep	3510C			709910	TS	EET CHI	04/26/23 13:55
Total/NA	Analysis	8270D		1	710350	SS	EET CHI	04/28/23 18:49
Total/NA	Analysis	RSK-175		1	571604	JBN	EET CLE	05/02/23 06:39
Total/NA	Prep	8151A			710003	TS	EET CHI	04/27/23 07:25
Total/NA	Analysis	8151A		1	710301	SS	EET CHI	04/28/23 20:13
Dissolved	Prep	3005A			711934	BDE	EET CHI	05/08/23 09:40 - 05/08/23 10:10 ¹
Dissolved	Analysis	6020A		1	712199	FXG	EET CHI	05/08/23 18:50
Total Recoverable	Prep	3005A			711932	BDE	EET CHI	05/08/23 09:37 - 05/08/23 10:07 ¹
Total Recoverable	Analysis	6020A		1	712199	FXG	EET CHI	05/08/23 20:47
Total Recoverable	Prep	3005A			711932	BDE	EET CHI	05/08/23 09:37 - 05/08/23 10:07 ¹
Total Recoverable	Analysis	6020A		1	712295	FXG	EET CHI	05/09/23 14:42
Dissolved	Prep	3005A			711934	BDE	EET CHI	05/08/23 09:40 - 05/08/23 10:10 ¹
Dissolved	Analysis	SM 2340B		1	712297	FXG	EET CHI	05/10/23 08:28
Total Recoverable	Prep	3005A			711932	BDE	EET CHI	05/08/23 09:37 - 05/08/23 10:07 ¹
Total Recoverable	Analysis	SM 2340B		1	712297	FXG	EET CHI	05/09/23 20:04
Total/NA	Analysis	300.0		1	667336	RJS	EET BUF	04/28/23 22:21

Eurofins Chicago

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Client Sample ID: W-230425-TS-14

Lab Sample ID: 500-232805-6

Date Collected: 04/25/23 14:36

Matrix: Water

Date Received: 04/26/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	667339	RJS	EET BUF	04/28/23 22:21
Total/NA	Analysis	9060A		1	712510	BC	EET CHI	05/08/23 19:58
Total/NA	Analysis	SM 2320B		1	711910	EH	EET CHI	05/07/23 18:26

Client Sample ID: Trip Blank

Lab Sample ID: 500-232805-7

Date Collected: 04/25/23 00:00

Matrix: Water

Date Received: 04/26/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711031	W1T	EET CHI	05/03/23 14:55

¹ This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

Laboratory References:

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600
EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200
EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Laboratory: Eurofins Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-23

Laboratory: Eurofins Buffalo

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	88-0686	07-06-22 *
Connecticut	State	PH-0568	03-31-24
Florida	NELAP	E87672	06-30-23
Georgia	State	10026 (NY)	03-31-24
Georgia	State Program	N/A	03-31-09 *
Georgia (DW)	State	956	03-31-23 *
Illinois	NELAP	200003	09-30-23
Iowa	State	374	03-01-23 *
Iowa	State Program	374	03-01-09 *
Kansas	NELAP	E-10187	02-01-24
Kentucky (DW)	State	90029	01-01-24
Kentucky (UST)	State	30	04-01-23 *
Kentucky (WW)	State	KY90029	12-31-23
Louisiana	NELAP	02031	06-30-23
Louisiana (All)	NELAP	02031	06-30-23
Maine	State	NY00044	12-04-24
Maryland	State	294	03-31-23 *
Massachusetts	State	M-NY044	06-30-23
Michigan	State	9937	03-31-23 *
Michigan	State Program	9937	04-01-09 *
New Hampshire	NELAP	2973	09-11-19 *
New Hampshire	NELAP	2337	11-17-23
New Jersey	NELAP	NY455	06-30-23
New York	NELAP	10026	03-31-24
Pennsylvania	NELAP	68-00281	07-31-23
Rhode Island	State	LAO00328	12-30-23
Texas	NELAP	T104704412-18-10	07-31-23
USDA	US Federal Programs	P330-18-00039	03-25-24
Virginia	NELAP	460185	09-14-23
Washington	State	C784	02-10-23 *
Wisconsin	State	998310390	08-31-23

Laboratory: Eurofins Cleveland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-24
Connecticut	State	PH-0590	06-29-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-28-24
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Chicago

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232805-1

Laboratory: Eurofins Cleveland (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-24
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-28-24
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	05-07-23

ORIGIN ID: JOTA (651) 639-0913
THOR SOLBERG
GHD SERVICES INC.
900 LONG LAKE ROAD
SUITE 200
NEW BRIGHTON, MN 55112
UNITED STATES US

SHIP DATE: 13APR23
ACTWGT: 20.00 LB MAN
CAD: 033264/CAFE3704

TO **SAMPLE LOGIN**
TESTAMERICA LABS
2417 BOND ST

UNIVERSITY PARK IL 60484

(708) 534-6200

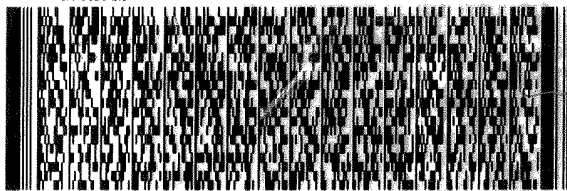
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DEPT:

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581G3/78CF/FF2B

J2310221102010V

TRK# 6180 7194 8272

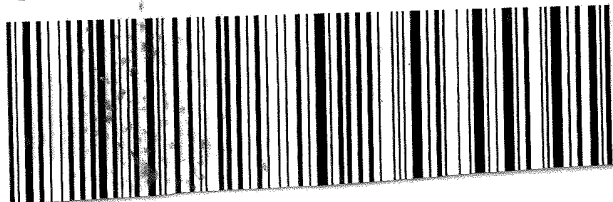
FedEx

TRK#

0221

6180 7194 8272

AC JOTA



RETURNS MON-SAT

WED - 26 APR AA
PRIORITY OVERNIGHT

60484
IL-US
ORD

4

ORIGIN ID: JOTA (651) 639-0913
THOR SOLBERG
GHD SERVICES INC.
900 LONG LAKE ROAD
SUITE 200
NEW BRIGHTON, MN 55112
UNITED STATES US

SHIP DATE: 13APR23
ACTWGT: 20.00 LB 1
CAD: 033264/CAFE3

500-232805 Waybr



TO **SAMPLE LOGIN**
TESTAMERICA LABS
2417 BOND ST

UNIVERSITY PARK IL 60484

(708) 534-6200

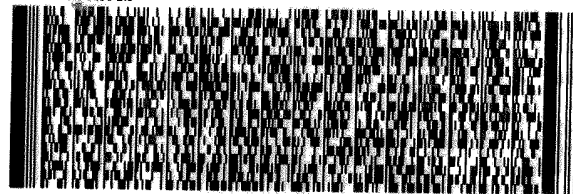
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PO:

REF:

DEPT:

RMA: ||| ||| |||



581G3/78CF/FF2B

J2310221102010V

TRK# 6180 7194 8283

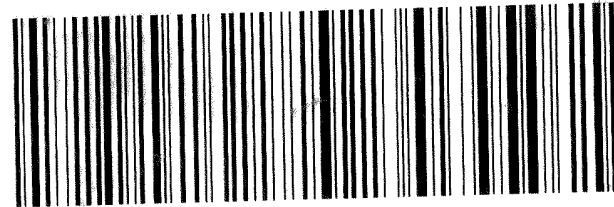
FedEx

TRK#

0221

6180 7194 8283

AC JOTA



80701 25Apr2023 JOTA 581G3/78CF/C088



RETURNS MON-SAT
PRIORITY OVERNIGHT
WED - 26 APR AA
PRIORITY OVERNIGHT

60484
IL-US
ORD

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14
15

ORIGIN ID: JOTA (651) 639-0913
THOR SOLBERG
GHD SERVICES INC.
900 LONG LAKE ROAD
SUITE 200
NEW BRIGHTON, MN 55112
UNITED STATES US

SHIP DATE: 13APR23
ACTWT: 20.00 LB MAN
CAD: 093264/CAFE3704

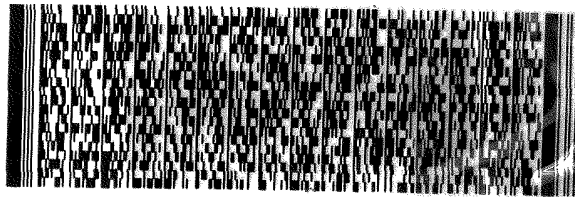
TO **SAMPLE LOGIN**
TESTAMERICA LABS
2417 BOND ST

UNIVERSITY PARK

(708) 634-5200

INVT: REF:
PQ:

RMA: ||| ||| |||



FedEx
J2310221102014

TRK# 6180 7194 8294
0221

RETURNS MON-TUE
PRIORITY OVERNIGHT

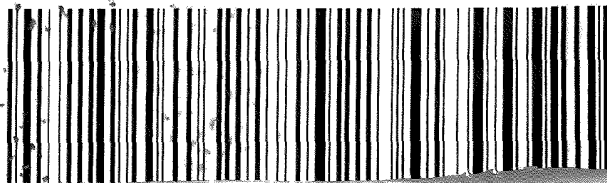
84

FedEx
TRK# 6180 7194 8294
0221

WED - 26 APR AA
PRIORITY OVERNIGHT

60484
IL-US
ORD

AC JOTA



ORIGIN ID: JOTA (651) 639-0913
THOR SOLBERG
GHD SERVICES INC.
900 LONG LAKE ROAD
SUITE 200
NEW BRIGHTON, MN 55112
UNITED STATES US

SHIP DATE: 13APR23
ACTWT: 20.00 LB MAN
CAD: 093264/CAFE3704

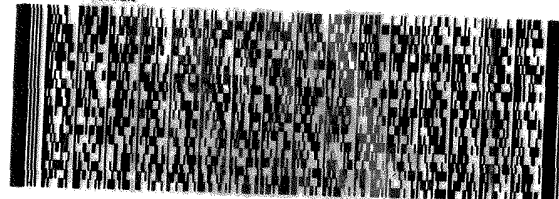
TO **SAMPLE LOGIN**
TESTAMERICA LABS
2417 BOND ST

UNIVERSITY PARK IL 60484

(708) 634-5200

INVT: REF:
PQ:

RMA: ||| ||| |||



FedEx
Express
E
J2310221102014

TRK# 6180 7194 8261
FedEx
TRK# 6180 7194 8261
0221

RETURNS MON-SAT
PRIORITY OVERNIGHT
WED - 26 APR AA
PRIORITY OVERNIGHT

AC JOTA

60484
IL-US
ORD



Chain of Custody Record



Environment Testing



0.4/0.6

Client Information (Sub Contract Lab)		Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:						
Shipping/Receiving		Phone:	McCUTCHEON, Carlene	Wisconsin	500-173267.1						
Company: Eurofins Environment Testing North Cent		E-Mail:	Carlene.McCutcheon@et.eurofins.com	State of Origin:	Page:						
Address: 180 S. Van Buren Avenue.		Accreditations Required (See note):		Wisconsin	Page 1 of 1						
City: Barberton	Due Date Requested: 5/9/2023	Job #: 500-232805-1									
State: OH, 44203	TAT Requested (days):	Preservation Codes:									
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	FO #:	A - HCL M - Hexane N - None O - AshNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecylaldehyde U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (Specify)									
Email:	WO #:	Other:									
Project Name: Penta Wood 11222418	Project #:										
Site:	SSOW#:										
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Water, Solid, Other, etc.)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175 (MOD) Methane	Analysis Requested	Total Number of Containers	Special Instructions/Note:
W-230425-TS-10 (500-232805-2)	4/25/23	11:20 Central	Water	Water	X	3	WI				
W-230425-TS-11 (500-232805-3)	4/25/23	11:20 Central	Water	Water	X	3	WI				
W-230425-TS-12 (500-232805-4)	4/25/23	13:40 Central	Water	Water	X	3	WI				
W-230425-TS-12 (500-232805-4MS)	4/25/23	13:40 Central	Water	MS	X	3	WI				
W-230425-TS-12 (500-232805-4MSD)	4/25/23	13:40 Central	Water	MSD	X	3	WI				
W-230425-TS-13 (500-232805-5)	4/25/23	12:55 Central	Water	Water	X	3	WI				
W-230425-TS-14 (500-232805-6)	4/25/23	14:36 Central	Water	Water	X	3	WI				

Note: Since laboratory accreditations are subject to change, Eurofins Chicago places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins Chicago laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Chicago attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Chicago.

Possible Hazard Identification
 Unconfirmed
 Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2
 Empty Kit Relinquished by: Date: Time: Method of Shipment:
 Relinquished by: Date/Time: Company: Received by: Date/Time: Company: Months
 Relinquished by: Date/Time: Company: Received by: Date/Time: Company: Months
 Relinquished by: Date/Time: Company: Received by: Date/Time: Company: Months

Custody Seals Intact: Yes No No
 Cooler Temperature(s) °C and Other Remarks:



Eurofins - Canton Sample Receipt Form/Narrative
Barberton Facility

Login # : _____

Client ETA Site Name _____

Cooler unpacked by:
Leah M. Smith

Cooler Received on 04-27-23 Opened on 04-27-23

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # 222 Foam Box _____ Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag _____ None _____ Other _____

COOLANT: Wet Ice _____ Blue Ice _____ Dry Ice _____ Water None _____

1. Cooler temperature upon receipt See Multiple Cooler Form

IR GUN # 13 (CF 10.2 °C) Observed Cooler Temp. 16.7 °C Corrected Cooler Temp. 16.9 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity _____ Yes No

-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA

-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No

-Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No

4. Did custody papers accompany the sample(s)? Yes No

5. Were the custody papers relinquished & signed in the appropriate place? Yes No

6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No

7. Did all bottles arrive in good condition (Unbroken)? Yes No

8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No

9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No

10. Were correct bottle(s) used for the test(s) indicated? Yes No

11. Sufficient quantity received to perform indicated analyses? Yes No

12. Are these work share samples and all listed on the COC? Yes No

If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC203864

14. Were VOAs on the COC? Yes No

15. Were air bubbles >6 mm in any VOA vials? Yes No NA

← Larger than this.

16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No

17. Was a LL Hg or Me Hg trip blank present? Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by: _____

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Chain of Custody Record



Client Information (Sub Contract Lab)		Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:
Shipping/Receiving		Phone:	McCUTCHEON, Carlene		500-173275.1
Company:		E-Mail:	McCUTCHEON, Carlene	State of Origin:	Page:
Eurofins Environment Testing Northeast,		Address:	10 Hazelwood Drive,	Wisconsin	Page 1 of 1
City:		Due Date Requested:	Amherst	Accreditations Required (See note):	Job #:
State, Zip:		TAT Requested (days):	NY, 14228-2298	State Program - Wisconsin	500-232805-1
Phone:		PO #:	716-691-2600(Tel) 716-691-7991(Fax)	Analysis Requested	Preservation Codes:
Email:		WO #:			M - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)
Project Name:		Project #:	Pentia Wood 11222418		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:
Site:		SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oli, BT=tissue, A=air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	300 48HR/ Anions, Nitrate	Total Number of Containers	Special Instructions/Note:
W-230425-TS-10 (500-232805-2)	4/25/23	11:20 Central		Water	X	X		1	
W-230425-TS-11 (500-232805-3)	4/25/23	11:20 Central		Water	X	X		1	
W-230425-TS-12 (500-232805-4)	4/25/23	13:40 Central		Water	X	X		1	
W-230425-TS-12 (500-232805-4MS)	4/25/23	13:40 Central	MS	Water	X	X		1	
W-230425-TS-12 (500-232805-4MSD)	4/25/23	13:40 Central	MSD	Water	X	X		1	
W-230425-TS-13 (500-232805-5)	4/25/23	12:55 Central		Water	X	X		1	
W-230425-TS-14 (500-232805-6)	4/25/23	14:36 Central		Water	X	X		1	

Note: Since laboratory accreditations are subject to change, Eurofins Chicago places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins Chicago laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Chicago attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Chicago.

Possible Hazard Identification
Unconfirmed

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Empty Kit Relinquished by: _____ Date: _____

Relinquished by: *Stephanie Hemondy* Date/Time: 4/20/23 1000 Company: EEIA

Relinquished by: _____ Date/Time: _____ Company: _____

Relinquished by: _____ Date/Time: _____ Company: _____

Custody Seals Intact: Yes No Custody Seal No.: _____

Method of Shipment: _____ Date/Time: 4-27-23 1000 Company: TIA/B

Special Instructions/QC Requirements: _____ Date/Time: _____ Company: _____

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months



Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-232805-1

Login Number: 232805

List Source: Eurofins Chicago

List Number: 1

Creator: Hernandez, Stephanie

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.5,4.2,3.0,2.8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	False	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-232805-1

Login Number: 232805

List Number: 2

Creator: Yeager, Brian A

List Source: Eurofins Buffalo

List Creation: 04/27/23 03:08 PM

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.6 ICE
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	True	

 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Mr. Grant Anderson
GHD Services Inc.
900 Long Lake Road
Suite 200
New Brighton, Minnesota 55112

Generated 5/17/2023 12:23:38 AM

JOB DESCRIPTION

Penta Wood 11222418

JOB NUMBER

500-232888-1

Eurofins Chicago

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Chicago Project Manager.

Authorization



Generated
5/17/2023 12:23:38 AM

Authorized for release by
Carlene McCutcheon, Senior Project Manager
Carlene.McCutcheon@et.eurofinsus.com
(708)325-6562



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Case Narrative

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Job ID: 500-232888-1

Laboratory: Eurofins Chicago

Narrative

Job Narrative 500-232888-1

Comments

No additional comments.

Receipt

The samples were received on 4/27/2023 9:40 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 5 coolers at receipt time were -0.9° C, -0.4° C, 0.4° C, 1.3° C and 3.9° C.

GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC/MS Semi VOA

Method 8270D: Three surrogates are used for this analysis. The laboratory's SOP allows one of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The following samples contained an allowable number of surrogate compounds outside limits: W-230426-TS-20 (500-232888-5) and W-230426-TS-24 (500-232888-8). These results have been reported and qualified.

Method 8270D: The following samples were diluted due to the nature of the sample matrix: W-230426-TS-20 (500-232888-5) and W-230426-TS-24 (500-232888-8). Elevated reporting limits (RLs) are provided.

Method 8270D: Internal standard responses were outside of acceptance limits for the following sample: W-230426-TS-24 (500-232888-8). The sample(s) shows evidence of matrix interference. No target analytes are associated with this internal standard.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA

Method 8151A: The following samples required a dilution due to the nature of the sample matrix: W-230425-TS-17 (500-232888-2), W-230425-TS-18 (500-232888-3), W-230426-TS-19 (500-232888-4), W-230426-TS-20 (500-232888-5) and W-230426-TS-24 (500-232888-8). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method 8151A: Spike compounds were inadvertently omitted during the extraction process for the associated laboratory control sample (LCS); therefore, LCS recoveries are unavailable for preparation batch 500-710288 and analytical batch 500-710851. The matrix spike/matrix spike duplicate (MS/MSD) recoveries in this batch met acceptance criteria; therefore, the samples are reported. The samples were re-extracted past hold time and the target compound results from the original prep was confirmed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 6020A: The closing CCVL recovered outside the upper range for Mg. The associated samples had either hits for Mg 10x the concentration of the CCVL or were non-detect. The bracketing CCV which have a higher concentration than the CCVL recovered within control limits. The data has been qualified and reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Field Service / Mobile Lab

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Case Narrative

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Job ID: 500-232888-1 (Continued)

Laboratory: Eurofins Chicago (Continued)

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

1

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Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Client Sample ID: W-230425-TS-16

Lab Sample ID: 500-232888-1

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.13	*	0.096	0.095	ug/L	1		8151A	Total/NA

Client Sample ID: W-230425-TS-17

Lab Sample ID: 500-232888-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Xylenes, Total	0.44	J	1.0	0.22	ug/L	1		8260B	Total/NA
Methane	91		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	1600	*	51	50	ug/L	500		8151A	Total/NA
Arsenic	0.93	J	1.0	0.23	ug/L	1		6020A	Total Recoverable
Copper	3.4		2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	27900		100	46.7	ug/L	1		6020A	Total Recoverable
Manganese	191		2.5	0.79	ug/L	1		6020A	Total Recoverable
Zinc	67.9		20.0	6.9	ug/L	1		6020A	Total Recoverable
Copper	0.75	J	2.0	0.50	ug/L	1		6020A	Dissolved
Iron	2230		100	46.7	ug/L	1		6020A	Dissolved
Manganese	165		2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	112		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	112		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	1.7		1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	0.71	J	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	7.4		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	4.7		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	187		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-230425-TS-18

Lab Sample ID: 500-232888-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Xylenes, Total	0.30	J	1.0	0.22	ug/L	1		8260B	Total/NA
Methane	97		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	1900	*	50	49	ug/L	500		8151A	Total/NA
Arsenic	2.7		1.0	0.23	ug/L	1		6020A	Total Recoverable
Copper	7.6		2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	91100		100	46.7	ug/L	1		6020A	Total Recoverable
Manganese	326		2.5	0.79	ug/L	1		6020A	Total Recoverable
Zinc	222		20.0	6.9	ug/L	1		6020A	Total Recoverable
Copper	3.5		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	3770		100	46.7	ug/L	1		6020A	Dissolved
Manganese	202		2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	104		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	108		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	1.8		1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	0.73	J	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	6.9		1.0	0.21	mg/L	1		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Client Sample ID: W-230425-TS-18 (Continued)

Lab Sample ID: 500-232888-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon - Duplicates	5.3		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	196		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-230426-TS-19

Lab Sample ID: 500-232888-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	250	*	9.9	9.8	ug/L	100		8151A	Total/NA
Arsenic	0.40	J	1.0	0.23	ug/L	1		6020A	Total Recoverable
Copper	3.2		2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	153		100	46.7	ug/L	1		6020A	Total Recoverable
Manganese	10.9		2.5	0.79	ug/L	1		6020A	Total Recoverable
Arsenic	0.24	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	3.0		2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	2.1	J	2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	50.6		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	47.1		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	1.2		1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	2.4		1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	10.6		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	3.3		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	73.8		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-230426-TS-20

Lab Sample ID: 500-232888-5

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.21	J	0.50	0.15	ug/L	1		8260B	Total/NA
Ethylbenzene	0.61		0.50	0.18	ug/L	1		8260B	Total/NA
Xylenes, Total	5.8		1.0	0.22	ug/L	1		8260B	Total/NA
Naphthalene	7.3		3.3	1.0	ug/L	5		8270D	Total/NA
Methane	39		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	3800	*	200	200	ug/L	2000		8151A	Total/NA
Arsenic	0.96	J	1.0	0.23	ug/L	1		6020A	Total Recoverable
Copper	3.4		2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	19500		100	46.7	ug/L	1		6020A	Total Recoverable
Manganese	6940		25.0	7.9	ug/L	10		6020A	Total Recoverable
Arsenic	0.71	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	0.58	J	2.0	0.50	ug/L	1		6020A	Dissolved
Iron	15400		100	46.7	ug/L	1		6020A	Dissolved
Manganese	6820		25.0	7.9	ug/L	10		6020A	Dissolved
Calcium hardness as CaCO3	177		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	178		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	19.6		1.0	0.12	mg/L	1		300.0	Total/NA
Sulfate	14.9		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	22.4		1.0	0.47	mg/L	1		9060A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Client Sample ID: W-230426-TS-20 (Continued)

Lab Sample ID: 500-232888-5

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	273		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-230426-TS-21

Lab Sample ID: 500-232888-6

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	3.1	*	0.096	0.095	ug/L	1		8151A	Total/NA
Copper	1.4	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Manganese	2.1	J	2.5	0.79	ug/L	1		6020A	Total Recoverable
Copper	0.62	J	2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	2.2	J	2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	56.3		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	57.5		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	0.43	J	1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	0.41	J	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	1.5		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.99	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	96.5		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-230426-TS-23

Lab Sample ID: 500-232888-7

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.61	J	1.0	0.23	ug/L	1		6020A	Total Recoverable
Copper	9.0		2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	2070		100	46.7	ug/L	1		6020A	Total Recoverable
Manganese	105		2.5	0.79	ug/L	1		6020A	Total Recoverable
Zinc	9.0	J	20.0	6.9	ug/L	1		6020A	Total Recoverable
Copper	7.2		2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	1.9	J	2.5	0.79	ug/L	1		6020A	Dissolved
Zinc	13.8	J	20.0	6.9	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	54.6		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	54.4		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	8.2		1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	0.93	J	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	3.4		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.73	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	83.1		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-230426-TS-24

Lab Sample ID: 500-232888-8

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.87		0.50	0.15	ug/L	1		8260B	Total/NA
Ethylbenzene	1.0		0.50	0.18	ug/L	1		8260B	Total/NA
Xylenes, Total	17		1.0	0.22	ug/L	1		8260B	Total/NA
Naphthalene	13		3.4	1.1	ug/L	5		8270D	Total/NA
Methane	6.1		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	12000	*	490	490	ug/L	5000		8151A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Client Sample ID: W-230426-TS-24 (Continued)

Lab Sample ID: 500-232888-8

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	21.0		1.0	0.23	ug/L	1		6020A	Total Recoverable
Copper	45.6		2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	40100		100	46.7	ug/L	1		6020A	Total Recoverable
Manganese	3580		2.5	0.79	ug/L	1		6020A	Total Recoverable
Zinc	26.9		20.0	6.9	ug/L	1		6020A	Total Recoverable
Arsenic	7.8		1.0	0.23	ug/L	1		6020A	Dissolved
Copper	3.4		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	29000		100	46.7	ug/L	1		6020A	Dissolved
Manganese	3670		2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	189		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	204		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	34.9		1.0	0.12	mg/L	1		300.0	Total/NA
Sulfate	11.5		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	30.1		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	281		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: TRIP BLANK

Lab Sample ID: 500-232888-9

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Xylenes, Total	0.38	J	1.0	0.22	ug/L	1		8260B	Total/NA

Client Sample ID: W-230425-TS-15

Lab Sample ID: 500-232888-10

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Copper	1.3	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	298		100	46.7	ug/L	1		6020A	Total Recoverable
Manganese	5.0		2.5	0.79	ug/L	1		6020A	Total Recoverable
Calcium hardness as CaCO3	0.99		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable

This Detection Summary does not include radiochemical test results.

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Method Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	EET CHI
RSK-175	Dissolved Gases (GC)	RSK	EET CLE
8151A	Herbicides (GC)	SW846	EET CHI
6020A	Metals (ICP/MS)	SW846	EET CHI
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	EET CHI
300.0	Anions, Ion Chromatography	EPA	EET CHI
9060A	Organic Carbon, Total (TOC)	SW846	EET CHI
SM 2320B	Alkalinity	SM	EET CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CHI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CHI
5030B	Purge and Trap	SW846	EET CHI
8151A	Extraction (Herbicides)	SW846	EET CHI

Protocol References:

EPA = US Environmental Protection Agency

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-232888-1	W-230425-TS-16	Water	04/25/23 16:37	04/27/23 09:40
500-232888-2	W-230425-TS-17	Water	04/25/23 15:55	04/27/23 09:40
500-232888-3	W-230425-TS-18	Water	04/25/23 15:55	04/27/23 09:40
500-232888-4	W-230426-TS-19	Water	04/26/23 09:57	04/27/23 09:40
500-232888-5	W-230426-TS-20	Water	04/26/23 10:56	04/27/23 09:40
500-232888-6	W-230426-TS-21	Water	04/26/23 12:08	04/27/23 09:40
500-232888-7	W-230426-TS-23	Water	04/26/23 13:50	04/27/23 09:40
500-232888-8	W-230426-TS-24	Water	04/26/23 14:32	04/27/23 09:40
500-232888-9	TRIP BLANK	Water	04/25/23 00:00	04/27/23 09:40
500-232888-10	W-230425-TS-15	Water	04/25/23 14:57	04/27/23 09:40

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Client Sample ID: W-230425-TS-16

Lab Sample ID: 500-232888-1

Date Collected: 04/25/23 16:37

Matrix: Water

Date Received: 04/27/23 09:40

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/04/23 19:04	1
Toluene	<0.15		0.50	0.15	ug/L			05/04/23 19:04	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/04/23 19:04	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/04/23 19:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		75 - 126		05/04/23 19:04	1
Toluene-d8 (Surr)	95		75 - 120		05/04/23 19:04	1
4-Bromofluorobenzene (Surr)	106		72 - 124		05/04/23 19:04	1
Dibromofluoromethane	97		75 - 120		05/04/23 19:04	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.21		0.68	0.21	ug/L		04/27/23 16:37	04/28/23 13:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	57		36 - 120	04/27/23 16:37	04/28/23 13:47	1
2-Fluorobiphenyl (Surr)	67		34 - 110	04/27/23 16:37	04/28/23 13:47	1
Terphenyl-d14 (Surr)	94		40 - 145	04/27/23 16:37	04/28/23 13:47	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.13	*	0.096	0.095	ug/L		04/28/23 07:47	05/04/23 16:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	89		25 - 130	04/28/23 07:47	05/04/23 16:17	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		05/09/23 09:35	05/09/23 21:05	1
Copper	<0.50		2.0	0.50	ug/L		05/09/23 09:35	05/09/23 21:05	1
Iron	<46.7		100	46.7	ug/L		05/09/23 09:35	05/09/23 21:05	1
Manganese	<0.79		2.5	0.79	ug/L		05/09/23 09:35	05/09/23 21:05	1
Zinc	<6.9		20.0	6.9	ug/L		05/09/23 09:35	05/09/23 21:05	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		05/09/23 09:35	05/09/23 21:22	1
Copper	<0.50		2.0	0.50	ug/L		05/09/23 09:35	05/09/23 21:22	1
Iron	<46.7		100	46.7	ug/L		05/09/23 09:35	05/09/23 21:22	1
Manganese	<0.79		2.5	0.79	ug/L		05/09/23 09:35	05/09/23 21:22	1
Zinc	<6.9		20.0	6.9	ug/L		05/09/23 09:35	05/09/23 21:22	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	<0.25		0.50	0.25	mg/L		05/09/23 09:35	05/10/23 11:20	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	<0.25		0.50	0.25	mg/L		05/09/23 09:35	05/10/23 11:20	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Client Sample ID: W-230425-TS-17

Lab Sample ID: 500-232888-2

Date Collected: 04/25/23 15:55

Matrix: Water

Date Received: 04/27/23 09:40

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/04/23 19:28	1
Toluene	<0.15		0.50	0.15	ug/L			05/04/23 19:28	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/04/23 19:28	1
Xylenes, Total	0.44	J	1.0	0.22	ug/L			05/04/23 19:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		75 - 126		05/04/23 19:28	1
Toluene-d8 (Surr)	94		75 - 120		05/04/23 19:28	1
4-Bromofluorobenzene (Surr)	107		72 - 124		05/04/23 19:28	1
Dibromofluoromethane	98		75 - 120		05/04/23 19:28	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.21		0.68	0.21	ug/L		04/27/23 16:37	04/28/23 14:11	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Nitrobenzene-d5 (Surr)	39		36 - 120	04/27/23 16:37	04/28/23 14:11	1			
2-Fluorobiphenyl (Surr)	47		34 - 110	04/27/23 16:37	04/28/23 14:11	1			
Terphenyl-d14 (Surr)	61		40 - 145	04/27/23 16:37	04/28/23 14:11	1			

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	91		1.0	0.17	ug/L			05/04/23 15:32	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
1,1,1-Trifluoroethane	101		60 - 140		05/04/23 15:32	1			

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	1600	*	51	50	ug/L		04/28/23 07:47	05/04/23 17:31	500
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
DCAA	0	X	25 - 130	04/28/23 07:47	05/04/23 17:31	500			

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.93	J	1.0	0.23	ug/L		05/09/23 09:35	05/09/23 21:26	1
Copper	3.4		2.0	0.50	ug/L		05/09/23 09:35	05/09/23 21:26	1
Iron	27900		100	46.7	ug/L		05/09/23 09:35	05/09/23 21:26	1
Manganese	191		2.5	0.79	ug/L		05/09/23 09:35	05/09/23 21:26	1
Zinc	67.9		20.0	6.9	ug/L		05/09/23 09:35	05/09/23 21:26	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		05/09/23 09:35	05/09/23 21:29	1
Copper	0.75	J	2.0	0.50	ug/L		05/09/23 09:35	05/09/23 21:29	1
Iron	2230		100	46.7	ug/L		05/09/23 09:35	05/09/23 21:29	1
Manganese	165		2.5	0.79	ug/L		05/09/23 09:35	05/09/23 21:29	1
Zinc	<6.9		20.0	6.9	ug/L		05/09/23 09:35	05/09/23 21:29	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Client Sample ID: W-230425-TS-17

Lab Sample ID: 500-232888-2

Date Collected: 04/25/23 15:55

Matrix: Water

Date Received: 04/27/23 09:40

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	112		0.50	0.25	mg/L		05/09/23 09:35	05/10/23 11:20	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	112		0.50	0.25	mg/L		05/09/23 09:35	05/10/23 11:30	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	1.7		1.0	0.12	mg/L			04/27/23 13:05	1
Nitrate as N (EPA 300.0)	0.71	J	1.0	0.043	mg/L			04/27/23 13:05	1
Sulfate (EPA 300.0)	7.4		1.0	0.21	mg/L			04/27/23 13:05	1
Total Organic Carbon - Duplicates (SW846 9060A)	4.7		1.0	0.47	mg/L			05/08/23 20:44	1
Alkalinity (SM 2320B)	187		5.0	3.7	mg/L			05/09/23 08:14	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Client Sample ID: W-230425-TS-18

Lab Sample ID: 500-232888-3

Date Collected: 04/25/23 15:55

Matrix: Water

Date Received: 04/27/23 09:40

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/04/23 20:17	1
Toluene	<0.15		0.50	0.15	ug/L			05/04/23 20:17	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/04/23 20:17	1
Xylenes, Total	0.30	J	1.0	0.22	ug/L			05/04/23 20:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		75 - 126		05/04/23 20:17	1
Toluene-d8 (Surr)	95		75 - 120		05/04/23 20:17	1
4-Bromofluorobenzene (Surr)	108		72 - 124		05/04/23 20:17	1
Dibromofluoromethane	97		75 - 120		05/04/23 20:17	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.23		0.75	0.23	ug/L		04/27/23 16:37	04/28/23 14:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	55		36 - 120	04/27/23 16:37	04/28/23 14:34	1
2-Fluorobiphenyl (Surr)	64		34 - 110	04/27/23 16:37	04/28/23 14:34	1
Terphenyl-d14 (Surr)	90		40 - 145	04/27/23 16:37	04/28/23 14:34	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	97		1.0	0.17	ug/L			05/04/23 15:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	103		60 - 140		05/04/23 15:49	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	1900	*	50	49	ug/L		04/28/23 07:47	05/04/23 17:50	500

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	0	X	25 - 130	04/28/23 07:47	05/04/23 17:50	500

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.7		1.0	0.23	ug/L		05/09/23 09:35	05/09/23 21:39	1
Copper	7.6		2.0	0.50	ug/L		05/09/23 09:35	05/09/23 21:39	1
Iron	91100		100	46.7	ug/L		05/09/23 09:35	05/09/23 21:39	1
Manganese	326		2.5	0.79	ug/L		05/09/23 09:35	05/09/23 21:39	1
Zinc	222		20.0	6.9	ug/L		05/09/23 09:35	05/09/23 21:39	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		05/09/23 09:35	05/09/23 21:43	1
Copper	3.5		2.0	0.50	ug/L		05/09/23 09:35	05/09/23 21:43	1
Iron	3770		100	46.7	ug/L		05/09/23 09:35	05/09/23 21:43	1
Manganese	202		2.5	0.79	ug/L		05/09/23 09:35	05/09/23 21:43	1
Zinc	<6.9		20.0	6.9	ug/L		05/09/23 09:35	05/09/23 21:43	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Client Sample ID: W-230425-TS-18

Lab Sample ID: 500-232888-3

Date Collected: 04/25/23 15:55

Matrix: Water

Date Received: 04/27/23 09:40

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	104		0.50	0.25	mg/L		05/09/23 09:35	05/10/23 11:20	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	108		0.50	0.25	mg/L		05/09/23 09:35	05/10/23 11:30	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	1.8		1.0	0.12	mg/L			04/27/23 13:20	1
Nitrate as N (EPA 300.0)	0.73	J	1.0	0.043	mg/L			04/27/23 13:20	1
Sulfate (EPA 300.0)	6.9		1.0	0.21	mg/L			04/27/23 13:20	1
Total Organic Carbon - Duplicates (SW846 9060A)	5.3		1.0	0.47	mg/L			05/08/23 20:58	1
Alkalinity (SM 2320B)	196		5.0	3.7	mg/L			05/09/23 08:14	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Client Sample ID: W-230426-TS-19

Lab Sample ID: 500-232888-4

Date Collected: 04/26/23 09:57

Matrix: Water

Date Received: 04/27/23 09:40

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/04/23 20:41	1
Toluene	<0.15		0.50	0.15	ug/L			05/04/23 20:41	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/04/23 20:41	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/04/23 20:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		75 - 126		05/04/23 20:41	1
Toluene-d8 (Surr)	94		75 - 120		05/04/23 20:41	1
4-Bromofluorobenzene (Surr)	109		72 - 124		05/04/23 20:41	1
Dibromofluoromethane	97		75 - 120		05/04/23 20:41	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.22		0.70	0.22	ug/L		04/27/23 16:37	04/28/23 14:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	59		36 - 120	04/27/23 16:37	04/28/23 14:58	1
2-Fluorobiphenyl (Surr)	70		34 - 110	04/27/23 16:37	04/28/23 14:58	1
Terphenyl-d14 (Surr)	93		40 - 145	04/27/23 16:37	04/28/23 14:58	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			05/04/23 16:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	93		60 - 140		05/04/23 16:06	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	250	*	9.9	9.8	ug/L		04/28/23 07:47	05/04/23 18:08	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	0	X	25 - 130	04/28/23 07:47	05/04/23 18:08	100

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.40	J	1.0	0.23	ug/L		05/09/23 09:35	05/09/23 21:46	1
Copper	3.2		2.0	0.50	ug/L		05/09/23 09:35	05/09/23 21:46	1
Iron	153		100	46.7	ug/L		05/09/23 09:35	05/09/23 21:46	1
Manganese	10.9		2.5	0.79	ug/L		05/09/23 09:35	05/09/23 21:46	1
Zinc	<6.9		20.0	6.9	ug/L		05/09/23 09:35	05/09/23 21:46	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.24	J	1.0	0.23	ug/L		05/09/23 09:35	05/09/23 21:50	1
Copper	3.0		2.0	0.50	ug/L		05/09/23 09:35	05/09/23 21:50	1
Iron	<46.7		100	46.7	ug/L		05/09/23 09:35	05/09/23 21:50	1
Manganese	2.1	J	2.5	0.79	ug/L		05/09/23 09:35	05/09/23 21:50	1
Zinc	<6.9		20.0	6.9	ug/L		05/09/23 09:35	05/09/23 21:50	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Client Sample ID: W-230426-TS-19

Lab Sample ID: 500-232888-4

Date Collected: 04/26/23 09:57

Matrix: Water

Date Received: 04/27/23 09:40

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	50.6		0.50	0.25	mg/L		05/09/23 09:35	05/10/23 11:20	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	47.1		0.50	0.25	mg/L		05/09/23 09:35	05/10/23 11:30	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	1.2		1.0	0.12	mg/L			04/27/23 14:54	1
Nitrate as N (EPA 300.0)	2.4		1.0	0.043	mg/L			04/27/23 14:54	1
Sulfate (EPA 300.0)	10.6		1.0	0.21	mg/L			04/27/23 14:54	1
Total Organic Carbon - Duplicates (SW846 9060A)	3.3		1.0	0.47	mg/L			05/08/23 21:16	1
Alkalinity (SM 2320B)	73.8		5.0	3.7	mg/L			05/10/23 16:38	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Client Sample ID: W-230426-TS-20

Lab Sample ID: 500-232888-5

Date Collected: 04/26/23 10:56

Matrix: Water

Date Received: 04/27/23 09:40

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/04/23 21:05	1
Toluene	0.21	J	0.50	0.15	ug/L			05/04/23 21:05	1
Ethylbenzene	0.61		0.50	0.18	ug/L			05/04/23 21:05	1
Xylenes, Total	5.8		1.0	0.22	ug/L			05/04/23 21:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		75 - 126		05/04/23 21:05	1
Toluene-d8 (Surr)	92		75 - 120		05/04/23 21:05	1
4-Bromofluorobenzene (Surr)	105		72 - 124		05/04/23 21:05	1
Dibromofluoromethane	100		75 - 120		05/04/23 21:05	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	7.3		3.3	1.0	ug/L		04/27/23 16:37	04/28/23 15:22	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	33	X	36 - 120	04/27/23 16:37	04/28/23 15:22	5
2-Fluorobiphenyl (Surr)	43		34 - 110	04/27/23 16:37	04/28/23 15:22	5
Terphenyl-d14 (Surr)	84		40 - 145	04/27/23 16:37	04/28/23 15:22	5

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	39		1.0	0.17	ug/L			05/04/23 16:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	100		60 - 140		05/04/23 16:23	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	3800	*	200	200	ug/L		04/28/23 07:47	05/04/23 18:27	2000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	0	X	25 - 130	04/28/23 07:47	05/04/23 18:27	2000

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.96	J	1.0	0.23	ug/L		05/09/23 09:35	05/09/23 21:53	1
Copper	3.4		2.0	0.50	ug/L		05/09/23 09:35	05/09/23 21:53	1
Iron	19500		100	46.7	ug/L		05/09/23 09:35	05/09/23 21:53	1
Manganese	6940		25.0	7.9	ug/L		05/09/23 09:35	05/10/23 14:01	10
Zinc	<6.9		20.0	6.9	ug/L		05/09/23 09:35	05/09/23 21:53	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.71	J	1.0	0.23	ug/L		05/09/23 09:35	05/09/23 21:57	1
Copper	0.58	J	2.0	0.50	ug/L		05/09/23 09:35	05/09/23 21:57	1
Iron	15400		100	46.7	ug/L		05/09/23 09:35	05/09/23 21:57	1
Manganese	6820		25.0	7.9	ug/L		05/09/23 09:35	05/10/23 14:05	10
Zinc	<6.9		20.0	6.9	ug/L		05/09/23 09:35	05/09/23 21:57	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Client Sample ID: W-230426-TS-20

Lab Sample ID: 500-232888-5

Date Collected: 04/26/23 10:56

Matrix: Water

Date Received: 04/27/23 09:40

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	177		0.50	0.25	mg/L		05/09/23 09:35	05/10/23 11:20	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	178		0.50	0.25	mg/L		05/09/23 09:35	05/10/23 11:30	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	19.6		1.0	0.12	mg/L			04/27/23 15:41	1
Nitrate as N (EPA 300.0)	<0.043		1.0	0.043	mg/L			04/27/23 15:41	1
Sulfate (EPA 300.0)	14.9		1.0	0.21	mg/L			04/27/23 15:41	1
Total Organic Carbon - Duplicates (SW846 9060A)	22.4		1.0	0.47	mg/L			05/08/23 21:29	1
Alkalinity (SM 2320B)	273		5.0	3.7	mg/L			05/10/23 16:38	1



Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Client Sample ID: W-230426-TS-21

Lab Sample ID: 500-232888-6

Date Collected: 04/26/23 12:08

Matrix: Water

Date Received: 04/27/23 09:40

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/04/23 21:30	1
Toluene	<0.15		0.50	0.15	ug/L			05/04/23 21:30	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/04/23 21:30	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/04/23 21:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		75 - 126		05/04/23 21:30	1
Toluene-d8 (Surr)	94		75 - 120		05/04/23 21:30	1
4-Bromofluorobenzene (Surr)	108		72 - 124		05/04/23 21:30	1
Dibromofluoromethane	99		75 - 120		05/04/23 21:30	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.22		0.70	0.22	ug/L		04/27/23 16:37	04/28/23 15:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	56		36 - 120	04/27/23 16:37	04/28/23 15:45	1
2-Fluorobiphenyl (Surr)	64		34 - 110	04/27/23 16:37	04/28/23 15:45	1
Terphenyl-d14 (Surr)	102		40 - 145	04/27/23 16:37	04/28/23 15:45	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			05/04/23 16:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	103		60 - 140		05/04/23 16:40	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	3.1	*	0.096	0.095	ug/L		04/28/23 07:47	05/04/23 16:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	90		25 - 130	04/28/23 07:47	05/04/23 16:36	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		05/09/23 09:35	05/09/23 22:00	1
Copper	1.4	J	2.0	0.50	ug/L		05/09/23 09:35	05/09/23 22:00	1
Iron	<46.7		100	46.7	ug/L		05/09/23 09:35	05/09/23 22:00	1
Manganese	2.1	J	2.5	0.79	ug/L		05/09/23 09:35	05/09/23 22:00	1
Zinc	<6.9		20.0	6.9	ug/L		05/09/23 09:35	05/09/23 22:00	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		05/09/23 09:35	05/09/23 22:03	1
Copper	0.62	J	2.0	0.50	ug/L		05/09/23 09:35	05/09/23 22:03	1
Iron	<46.7		100	46.7	ug/L		05/09/23 09:35	05/09/23 22:03	1
Manganese	2.2	J	2.5	0.79	ug/L		05/09/23 09:35	05/09/23 22:03	1
Zinc	<6.9		20.0	6.9	ug/L		05/09/23 09:35	05/09/23 22:03	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Client Sample ID: W-230426-TS-21

Lab Sample ID: 500-232888-6

Date Collected: 04/26/23 12:08

Matrix: Water

Date Received: 04/27/23 09:40

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	56.3		0.50	0.25	mg/L		05/09/23 09:35	05/10/23 11:20	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	57.5		0.50	0.25	mg/L		05/09/23 09:35	05/10/23 11:30	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	0.43	J	1.0	0.12	mg/L			04/27/23 15:57	1
Nitrate as N (EPA 300.0)	0.41	J	1.0	0.043	mg/L			04/27/23 15:57	1
Sulfate (EPA 300.0)	1.5		1.0	0.21	mg/L			04/27/23 15:57	1
Total Organic Carbon - Duplicates (SW846 9060A)	0.99	J	1.0	0.47	mg/L			05/08/23 21:47	1
Alkalinity (SM 2320B)	96.5		5.0	3.7	mg/L			05/10/23 16:38	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Client Sample ID: W-230426-TS-23

Lab Sample ID: 500-232888-7

Date Collected: 04/26/23 13:50

Matrix: Water

Date Received: 04/27/23 09:40

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/04/23 21:55	1
Toluene	<0.15		0.50	0.15	ug/L			05/04/23 21:55	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/04/23 21:55	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/04/23 21:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		75 - 126		05/04/23 21:55	1
Toluene-d8 (Surr)	91		75 - 120		05/04/23 21:55	1
4-Bromofluorobenzene (Surr)	107		72 - 124		05/04/23 21:55	1
Dibromofluoromethane	102		75 - 120		05/04/23 21:55	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.19		0.62	0.19	ug/L		04/27/23 16:37	04/28/23 16:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	61		36 - 120	04/27/23 16:37	04/28/23 16:09	1
2-Fluorobiphenyl (Surr)	75		34 - 110	04/27/23 16:37	04/28/23 16:09	1
Terphenyl-d14 (Surr)	93		40 - 145	04/27/23 16:37	04/28/23 16:09	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			05/04/23 16:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	102		60 - 140		05/04/23 16:57	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.095	*	0.096	0.095	ug/L		04/28/23 07:47	05/04/23 16:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	87		25 - 130	04/28/23 07:47	05/04/23 16:54	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.61	J	1.0	0.23	ug/L		05/09/23 09:35	05/09/23 22:07	1
Copper	9.0		2.0	0.50	ug/L		05/09/23 09:35	05/09/23 22:07	1
Iron	2070		100	46.7	ug/L		05/09/23 09:35	05/09/23 22:07	1
Manganese	105		2.5	0.79	ug/L		05/09/23 09:35	05/09/23 22:07	1
Zinc	9.0	J	20.0	6.9	ug/L		05/09/23 09:35	05/09/23 22:07	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		05/09/23 09:35	05/09/23 22:10	1
Copper	7.2		2.0	0.50	ug/L		05/09/23 09:35	05/09/23 22:10	1
Iron	<46.7		100	46.7	ug/L		05/09/23 09:35	05/09/23 22:10	1
Manganese	1.9	J	2.5	0.79	ug/L		05/09/23 09:35	05/09/23 22:10	1
Zinc	13.8	J	20.0	6.9	ug/L		05/09/23 09:35	05/09/23 22:10	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Client Sample ID: W-230426-TS-23

Lab Sample ID: 500-232888-7

Date Collected: 04/26/23 13:50

Matrix: Water

Date Received: 04/27/23 09:40

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	54.6		0.50	0.25	mg/L		05/09/23 09:35	05/10/23 11:20	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	54.4		0.50	0.25	mg/L		05/09/23 09:35	05/10/23 11:30	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	8.2		1.0	0.12	mg/L			04/27/23 16:44	1
Nitrate as N (EPA 300.0)	0.93	J	1.0	0.043	mg/L			04/27/23 16:44	1
Sulfate (EPA 300.0)	3.4		1.0	0.21	mg/L			04/27/23 16:44	1
Total Organic Carbon - Duplicates (SW846 9060A)	0.73	J	1.0	0.47	mg/L			05/08/23 22:05	1
Alkalinity (SM 2320B)	83.1		5.0	3.7	mg/L			05/10/23 16:38	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Client Sample ID: W-230426-TS-24

Lab Sample ID: 500-232888-8

Date Collected: 04/26/23 14:32

Matrix: Water

Date Received: 04/27/23 09:40

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/04/23 22:19	1
Toluene	0.87		0.50	0.15	ug/L			05/04/23 22:19	1
Ethylbenzene	1.0		0.50	0.18	ug/L			05/04/23 22:19	1
Xylenes, Total	17		1.0	0.22	ug/L			05/04/23 22:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		75 - 126		05/04/23 22:19	1
Toluene-d8 (Surr)	94		75 - 120		05/04/23 22:19	1
4-Bromofluorobenzene (Surr)	109		72 - 124		05/04/23 22:19	1
Dibromofluoromethane	98		75 - 120		05/04/23 22:19	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	13		3.4	1.1	ug/L		04/27/23 16:37	04/28/23 16:33	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	32	X	36 - 120	04/27/23 16:37	04/28/23 16:33	5
2-Fluorobiphenyl (Surr)	37	*	34 - 110	04/27/23 16:37	04/28/23 16:33	5
Terphenyl-d14 (Surr)	44	*	40 - 145	04/27/23 16:37	04/28/23 16:33	5

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	6.1		1.0	0.17	ug/L			05/04/23 17:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	100		60 - 140		05/04/23 17:14	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	12000	*	490	490	ug/L		04/28/23 07:47	05/04/23 18:45	5000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	0	X	25 - 130	04/28/23 07:47	05/04/23 18:45	5000

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	21.0		1.0	0.23	ug/L		05/09/23 09:35	05/09/23 22:21	1
Copper	45.6		2.0	0.50	ug/L		05/09/23 09:35	05/09/23 22:21	1
Iron	40100		100	46.7	ug/L		05/09/23 09:35	05/09/23 22:21	1
Manganese	3580		2.5	0.79	ug/L		05/09/23 09:35	05/09/23 22:21	1
Zinc	26.9		20.0	6.9	ug/L		05/09/23 09:35	05/09/23 22:21	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	7.8		1.0	0.23	ug/L		05/09/23 09:35	05/09/23 22:24	1
Copper	3.4		2.0	0.50	ug/L		05/09/23 09:35	05/09/23 22:24	1
Iron	29000		100	46.7	ug/L		05/09/23 09:35	05/09/23 22:24	1
Manganese	3670		2.5	0.79	ug/L		05/09/23 09:35	05/09/23 22:24	1
Zinc	<6.9		20.0	6.9	ug/L		05/09/23 09:35	05/09/23 22:24	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Client Sample ID: W-230426-TS-24

Lab Sample ID: 500-232888-8

Date Collected: 04/26/23 14:32

Matrix: Water

Date Received: 04/27/23 09:40

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	189		0.50	0.25	mg/L		05/09/23 09:35	05/10/23 11:20	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	204		0.50	0.25	mg/L		05/09/23 09:35	05/10/23 11:30	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	34.9		1.0	0.12	mg/L			04/27/23 16:59	1
Nitrate as N (EPA 300.0)	<0.043		1.0	0.043	mg/L			04/27/23 16:59	1
Sulfate (EPA 300.0)	11.5		1.0	0.21	mg/L			04/27/23 16:59	1
Total Organic Carbon - Duplicates (SW846 9060A)	30.1		1.0	0.47	mg/L			05/08/23 22:18	1
Alkalinity (SM 2320B)	281		5.0	3.7	mg/L			05/10/23 16:38	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 500-232888-9

Date Collected: 04/25/23 00:00

Matrix: Water

Date Received: 04/27/23 09:40

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/04/23 17:26	1
Toluene	<0.15		0.50	0.15	ug/L			05/04/23 17:26	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/04/23 17:26	1
Xylenes, Total	0.38	J	1.0	0.22	ug/L			05/04/23 17:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		75 - 126		05/04/23 17:26	1
Toluene-d8 (Surr)	94		75 - 120		05/04/23 17:26	1
4-Bromofluorobenzene (Surr)	106		72 - 124		05/04/23 17:26	1
Dibromofluoromethane	98		75 - 120		05/04/23 17:26	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Client Sample ID: W-230425-TS-15

Lab Sample ID: 500-232888-10

Date Collected: 04/25/23 14:57

Matrix: Water

Date Received: 04/27/23 09:40

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/04/23 22:44	1
Toluene	<0.15		0.50	0.15	ug/L			05/04/23 22:44	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/04/23 22:44	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/04/23 22:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		75 - 126		05/04/23 22:44	1
Toluene-d8 (Surr)	95		75 - 120		05/04/23 22:44	1
4-Bromofluorobenzene (Surr)	109		72 - 124		05/04/23 22:44	1
Dibromofluoromethane	99		75 - 120		05/04/23 22:44	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.21		0.67	0.21	ug/L		04/27/23 16:37	04/28/23 16:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	52		36 - 120	04/27/23 16:37	04/28/23 16:56	1
2-Fluorobiphenyl (Surr)	61		34 - 110	04/27/23 16:37	04/28/23 16:56	1
Terphenyl-d14 (Surr)	94		40 - 145	04/27/23 16:37	04/28/23 16:56	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.094	*	0.095	0.094	ug/L		04/28/23 07:47	05/04/23 17:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	90		25 - 130	04/28/23 07:47	05/04/23 17:13	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		05/09/23 09:35	05/09/23 22:28	1
Copper	1.3	J	2.0	0.50	ug/L		05/09/23 09:35	05/09/23 22:28	1
Iron	298		100	46.7	ug/L		05/09/23 09:35	05/09/23 22:28	1
Manganese	5.0		2.5	0.79	ug/L		05/09/23 09:35	05/09/23 22:28	1
Zinc	<6.9		20.0	6.9	ug/L		05/09/23 09:35	05/09/23 22:28	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		05/09/23 09:35	05/09/23 22:31	1
Copper	<0.50		2.0	0.50	ug/L		05/09/23 09:35	05/09/23 22:31	1
Iron	<46.7		100	46.7	ug/L		05/09/23 09:35	05/09/23 22:31	1
Manganese	<0.79		2.5	0.79	ug/L		05/09/23 09:35	05/09/23 22:31	1
Zinc	<6.9		20.0	6.9	ug/L		05/09/23 09:35	05/09/23 22:31	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	0.99		0.50	0.25	mg/L		05/09/23 09:35	05/10/23 11:20	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	<0.25		0.50	0.25	mg/L		05/09/23 09:35	05/10/23 11:30	1

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Definitions/Glossary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Reported value was between the limit of detection and the limit of quantitation.

GC/MS Semi VOA

Qualifier	Qualifier Description
*	ISTD response or retention time outside acceptable limits
X	Surrogate recovery exceeds control limits

GC Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
X	Surrogate recovery exceeds control limits

Metals

Qualifier	Qualifier Description
J	Reported value was between the limit of detection and the limit of quantitation.

General Chemistry

Qualifier	Qualifier Description
J	Reported value was between the limit of detection and the limit of quantitation.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

GC/MS VOA

Analysis Batch: 711306

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232888-1	W-230425-TS-16	Total/NA	Water	8260B	
500-232888-2	W-230425-TS-17	Total/NA	Water	8260B	
500-232888-3	W-230425-TS-18	Total/NA	Water	8260B	
500-232888-4	W-230426-TS-19	Total/NA	Water	8260B	
500-232888-5	W-230426-TS-20	Total/NA	Water	8260B	
500-232888-6	W-230426-TS-21	Total/NA	Water	8260B	
500-232888-7	W-230426-TS-23	Total/NA	Water	8260B	
500-232888-8	W-230426-TS-24	Total/NA	Water	8260B	
500-232888-9	TRIP BLANK	Total/NA	Water	8260B	
500-232888-10	W-230425-TS-15	Total/NA	Water	8260B	
MB 500-711306/7	Method Blank	Total/NA	Water	8260B	
LCS 500-711306/5	Lab Control Sample	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 710187

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232888-1	W-230425-TS-16	Total/NA	Water	3510C	
500-232888-2	W-230425-TS-17	Total/NA	Water	3510C	
500-232888-3	W-230425-TS-18	Total/NA	Water	3510C	
500-232888-4	W-230426-TS-19	Total/NA	Water	3510C	
500-232888-5	W-230426-TS-20	Total/NA	Water	3510C	
500-232888-6	W-230426-TS-21	Total/NA	Water	3510C	
500-232888-7	W-230426-TS-23	Total/NA	Water	3510C	
500-232888-8	W-230426-TS-24	Total/NA	Water	3510C	
500-232888-10	W-230425-TS-15	Total/NA	Water	3510C	
MB 500-710187/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-710187/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 500-710187/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 710313

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232888-1	W-230425-TS-16	Total/NA	Water	8270D	710187
500-232888-2	W-230425-TS-17	Total/NA	Water	8270D	710187
500-232888-3	W-230425-TS-18	Total/NA	Water	8270D	710187
500-232888-4	W-230426-TS-19	Total/NA	Water	8270D	710187
500-232888-5	W-230426-TS-20	Total/NA	Water	8270D	710187
500-232888-6	W-230426-TS-21	Total/NA	Water	8270D	710187
500-232888-7	W-230426-TS-23	Total/NA	Water	8270D	710187
500-232888-8	W-230426-TS-24	Total/NA	Water	8270D	710187
500-232888-10	W-230425-TS-15	Total/NA	Water	8270D	710187
MB 500-710187/1-A	Method Blank	Total/NA	Water	8270D	710187

Analysis Batch: 710498

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 500-710187/2-A	Lab Control Sample	Total/NA	Water	8270D	710187
LCS 500-710187/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	710187

QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

GC VOA

Analysis Batch: 572110

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232888-2	W-230425-TS-17	Total/NA	Water	RSK-175	
500-232888-3	W-230425-TS-18	Total/NA	Water	RSK-175	
500-232888-4	W-230426-TS-19	Total/NA	Water	RSK-175	
500-232888-5	W-230426-TS-20	Total/NA	Water	RSK-175	
500-232888-6	W-230426-TS-21	Total/NA	Water	RSK-175	
500-232888-7	W-230426-TS-23	Total/NA	Water	RSK-175	
500-232888-8	W-230426-TS-24	Total/NA	Water	RSK-175	
MB 240-572110/3	Method Blank	Total/NA	Water	RSK-175	
LCS 240-572110/4	Lab Control Sample	Total/NA	Water	RSK-175	

GC Semi VOA

Prep Batch: 710288

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232888-1	W-230425-TS-16	Total/NA	Water	8151A	
500-232888-2	W-230425-TS-17	Total/NA	Water	8151A	
500-232888-3	W-230425-TS-18	Total/NA	Water	8151A	
500-232888-4	W-230426-TS-19	Total/NA	Water	8151A	
500-232888-5	W-230426-TS-20	Total/NA	Water	8151A	
500-232888-6	W-230426-TS-21	Total/NA	Water	8151A	
500-232888-7	W-230426-TS-23	Total/NA	Water	8151A	
500-232888-8	W-230426-TS-24	Total/NA	Water	8151A	
500-232888-10	W-230425-TS-15	Total/NA	Water	8151A	
MB 500-710288/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-710288/2-A	Lab Control Sample	Total/NA	Water	8151A	

Analysis Batch: 710851

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-710288/1-A	Method Blank	Total/NA	Water	8151A	710288
LCS 500-710288/2-A	Lab Control Sample	Total/NA	Water	8151A	710288

Analysis Batch: 711425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232888-1	W-230425-TS-16	Total/NA	Water	8151A	710288
500-232888-2	W-230425-TS-17	Total/NA	Water	8151A	710288
500-232888-3	W-230425-TS-18	Total/NA	Water	8151A	710288
500-232888-4	W-230426-TS-19	Total/NA	Water	8151A	710288
500-232888-5	W-230426-TS-20	Total/NA	Water	8151A	710288
500-232888-6	W-230426-TS-21	Total/NA	Water	8151A	710288
500-232888-7	W-230426-TS-23	Total/NA	Water	8151A	710288
500-232888-8	W-230426-TS-24	Total/NA	Water	8151A	710288
500-232888-10	W-230425-TS-15	Total/NA	Water	8151A	710288

Metals

Prep Batch: 712191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232888-1	W-230425-TS-16	Dissolved	Water	3005A	
500-232888-1	W-230425-TS-16	Total Recoverable	Water	3005A	
500-232888-2	W-230425-TS-17	Dissolved	Water	3005A	
500-232888-2	W-230425-TS-17	Total Recoverable	Water	3005A	
500-232888-3	W-230425-TS-18	Dissolved	Water	3005A	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Metals (Continued)

Prep Batch: 712191 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232888-3	W-230425-TS-18	Total Recoverable	Water	3005A	
500-232888-4	W-230426-TS-19	Dissolved	Water	3005A	
500-232888-4	W-230426-TS-19	Total Recoverable	Water	3005A	
500-232888-5	W-230426-TS-20	Dissolved	Water	3005A	
500-232888-5	W-230426-TS-20	Total Recoverable	Water	3005A	
500-232888-6	W-230426-TS-21	Dissolved	Water	3005A	
500-232888-6	W-230426-TS-21	Total Recoverable	Water	3005A	
500-232888-7	W-230426-TS-23	Dissolved	Water	3005A	
500-232888-7	W-230426-TS-23	Total Recoverable	Water	3005A	
500-232888-8	W-230426-TS-24	Dissolved	Water	3005A	
500-232888-8	W-230426-TS-24	Total Recoverable	Water	3005A	
500-232888-10	W-230425-TS-15	Dissolved	Water	3005A	
500-232888-10	W-230425-TS-15	Total Recoverable	Water	3005A	
MB 500-712191/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-712191/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
500-232888-1 MS	W-230425-TS-16	Total Recoverable	Water	3005A	
500-232888-1 MSD	W-230425-TS-16	Total Recoverable	Water	3005A	
500-232888-1 DU	W-230425-TS-16	Total Recoverable	Water	3005A	

Analysis Batch: 712439

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232888-1	W-230425-TS-16	Dissolved	Water	6020A	712191
500-232888-1	W-230425-TS-16	Total Recoverable	Water	6020A	712191
500-232888-2	W-230425-TS-17	Dissolved	Water	6020A	712191
500-232888-2	W-230425-TS-17	Total Recoverable	Water	6020A	712191
500-232888-3	W-230425-TS-18	Dissolved	Water	6020A	712191
500-232888-3	W-230425-TS-18	Total Recoverable	Water	6020A	712191
500-232888-4	W-230426-TS-19	Dissolved	Water	6020A	712191
500-232888-4	W-230426-TS-19	Total Recoverable	Water	6020A	712191
500-232888-5	W-230426-TS-20	Dissolved	Water	6020A	712191
500-232888-5	W-230426-TS-20	Total Recoverable	Water	6020A	712191
500-232888-6	W-230426-TS-21	Dissolved	Water	6020A	712191
500-232888-6	W-230426-TS-21	Total Recoverable	Water	6020A	712191
500-232888-7	W-230426-TS-23	Dissolved	Water	6020A	712191
500-232888-7	W-230426-TS-23	Total Recoverable	Water	6020A	712191
500-232888-8	W-230426-TS-24	Dissolved	Water	6020A	712191
500-232888-8	W-230426-TS-24	Total Recoverable	Water	6020A	712191
500-232888-10	W-230425-TS-15	Dissolved	Water	6020A	712191
500-232888-10	W-230425-TS-15	Total Recoverable	Water	6020A	712191
MB 500-712191/1-A	Method Blank	Total Recoverable	Water	6020A	712191
LCS 500-712191/2-A	Lab Control Sample	Total Recoverable	Water	6020A	712191
500-232888-1 MS	W-230425-TS-16	Total Recoverable	Water	6020A	712191
500-232888-1 MSD	W-230425-TS-16	Total Recoverable	Water	6020A	712191
500-232888-1 DU	W-230425-TS-16	Total Recoverable	Water	6020A	712191

Analysis Batch: 712461

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232888-1	W-230425-TS-16	Dissolved	Water	SM 2340B	712191
500-232888-1	W-230425-TS-16	Total Recoverable	Water	SM 2340B	712191
500-232888-2	W-230425-TS-17	Dissolved	Water	SM 2340B	712191
500-232888-2	W-230425-TS-17	Total Recoverable	Water	SM 2340B	712191

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Metals (Continued)

Analysis Batch: 712461 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232888-3	W-230425-TS-18	Dissolved	Water	SM 2340B	712191
500-232888-3	W-230425-TS-18	Total Recoverable	Water	SM 2340B	712191
500-232888-4	W-230426-TS-19	Dissolved	Water	SM 2340B	712191
500-232888-4	W-230426-TS-19	Total Recoverable	Water	SM 2340B	712191
500-232888-5	W-230426-TS-20	Dissolved	Water	SM 2340B	712191
500-232888-5	W-230426-TS-20	Total Recoverable	Water	SM 2340B	712191
500-232888-6	W-230426-TS-21	Dissolved	Water	SM 2340B	712191
500-232888-6	W-230426-TS-21	Total Recoverable	Water	SM 2340B	712191
500-232888-7	W-230426-TS-23	Dissolved	Water	SM 2340B	712191
500-232888-7	W-230426-TS-23	Total Recoverable	Water	SM 2340B	712191
500-232888-8	W-230426-TS-24	Dissolved	Water	SM 2340B	712191
500-232888-8	W-230426-TS-24	Total Recoverable	Water	SM 2340B	712191
500-232888-10	W-230425-TS-15	Dissolved	Water	SM 2340B	712191
500-232888-10	W-230425-TS-15	Total Recoverable	Water	SM 2340B	712191

Analysis Batch: 712506

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232888-5	W-230426-TS-20	Dissolved	Water	6020A	712191
500-232888-5	W-230426-TS-20	Total Recoverable	Water	6020A	712191

General Chemistry

Analysis Batch: 710114

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232888-2	W-230425-TS-17	Total/NA	Water	300.0	
500-232888-3	W-230425-TS-18	Total/NA	Water	300.0	
500-232888-4	W-230426-TS-19	Total/NA	Water	300.0	
500-232888-5	W-230426-TS-20	Total/NA	Water	300.0	
500-232888-6	W-230426-TS-21	Total/NA	Water	300.0	
500-232888-7	W-230426-TS-23	Total/NA	Water	300.0	
500-232888-8	W-230426-TS-24	Total/NA	Water	300.0	
MB 500-710114/11	Method Blank	Total/NA	Water	300.0	
LCS 500-710114/12	Lab Control Sample	Total/NA	Water	300.0	
500-232888-4 MS	W-230426-TS-19	Total/NA	Water	300.0	
500-232888-4 MSD	W-230426-TS-19	Total/NA	Water	300.0	
500-232888-6 MS	W-230426-TS-21	Total/NA	Water	300.0	
500-232888-6 MSD	W-230426-TS-21	Total/NA	Water	300.0	

Analysis Batch: 710115

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232888-2	W-230425-TS-17	Total/NA	Water	300.0	
500-232888-3	W-230425-TS-18	Total/NA	Water	300.0	
500-232888-4	W-230426-TS-19	Total/NA	Water	300.0	
500-232888-5	W-230426-TS-20	Total/NA	Water	300.0	
500-232888-6	W-230426-TS-21	Total/NA	Water	300.0	
500-232888-7	W-230426-TS-23	Total/NA	Water	300.0	
500-232888-8	W-230426-TS-24	Total/NA	Water	300.0	
MB 500-710115/11	Method Blank	Total/NA	Water	300.0	
LCS 500-710115/12	Lab Control Sample	Total/NA	Water	300.0	
500-232888-4 MS	W-230426-TS-19	Total/NA	Water	300.0	
500-232888-4 MSD	W-230426-TS-19	Total/NA	Water	300.0	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

General Chemistry (Continued)

Analysis Batch: 710115 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232888-6 MS	W-230426-TS-21	Total/NA	Water	300.0	
500-232888-6 MSD	W-230426-TS-21	Total/NA	Water	300.0	

Analysis Batch: 712384

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232888-2	W-230425-TS-17	Total/NA	Water	SM 2320B	
500-232888-3	W-230425-TS-18	Total/NA	Water	SM 2320B	
MB 500-712384/53	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-712384/54	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 712510

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232888-2	W-230425-TS-17	Total/NA	Water	9060A	
500-232888-3	W-230425-TS-18	Total/NA	Water	9060A	
500-232888-4	W-230426-TS-19	Total/NA	Water	9060A	
500-232888-5	W-230426-TS-20	Total/NA	Water	9060A	
500-232888-6	W-230426-TS-21	Total/NA	Water	9060A	
500-232888-7	W-230426-TS-23	Total/NA	Water	9060A	
500-232888-8	W-230426-TS-24	Total/NA	Water	9060A	
MB 500-712510/4	Method Blank	Total/NA	Water	9060A	
LCS 500-712510/5	Lab Control Sample	Total/NA	Water	9060A	

Analysis Batch: 712631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232888-4	W-230426-TS-19	Total/NA	Water	SM 2320B	
500-232888-5	W-230426-TS-20	Total/NA	Water	SM 2320B	
500-232888-6	W-230426-TS-21	Total/NA	Water	SM 2320B	
500-232888-7	W-230426-TS-23	Total/NA	Water	SM 2320B	
500-232888-8	W-230426-TS-24	Total/NA	Water	SM 2320B	
MB 500-712631/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-712631/4	Lab Control Sample	Total/NA	Water	SM 2320B	

Surrogate Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-126)	TOL (75-120)	BFB (72-124)	DBFM (75-120)
500-232888-1	W-230425-TS-16	107	95	106	97
500-232888-2	W-230425-TS-17	108	94	107	98
500-232888-3	W-230425-TS-18	107	95	108	97
500-232888-4	W-230426-TS-19	107	94	109	97
500-232888-5	W-230426-TS-20	109	92	105	100
500-232888-6	W-230426-TS-21	109	94	108	99
500-232888-7	W-230426-TS-23	111	91	107	102
500-232888-8	W-230426-TS-24	112	94	109	98
500-232888-9	TRIP BLANK	108	94	106	98
500-232888-10	W-230425-TS-15	112	95	109	99
LCS 500-711306/5	Lab Control Sample	107	95	105	99
MB 500-711306/7	Method Blank	109	95	108	99

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		NBZ (36-120)	FBP (34-110)	TPHL (40-145)
500-232888-1	W-230425-TS-16	57	67	94
500-232888-2	W-230425-TS-17	39	47	61
500-232888-3	W-230425-TS-18	55	64	90
500-232888-4	W-230426-TS-19	59	70	93
500-232888-5	W-230426-TS-20	33 X	43	84
500-232888-6	W-230426-TS-21	56	64	102
500-232888-7	W-230426-TS-23	61	75	93
500-232888-8	W-230426-TS-24	32 X	37 *	44 *
500-232888-10	W-230425-TS-15	52	61	94
LCS 500-710187/2-A	Lab Control Sample	64	54	68
LCSD 500-710187/3-A	Lab Control Sample Dup	56	46	60
MB 500-710187/1-A	Method Blank	59	63	97

Surrogate Legend

NBZ = Nitrobenzene-d5 (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TPHL = Terphenyl-d14 (Surr)

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		TFE1 (60-140)
500-232888-2	W-230425-TS-17	101
500-232888-3	W-230425-TS-18	103

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Surrogate Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TFE1 (60-140)
500-232888-4	W-230426-TS-19	93
500-232888-5	W-230426-TS-20	100
500-232888-6	W-230426-TS-21	103
500-232888-7	W-230426-TS-23	102
500-232888-8	W-230426-TS-24	100
LCS 240-572110/4	Lab Control Sample	108
MB 240-572110/3	Method Blank	108

Surrogate Legend

TFE = 1,1,1-Trifluoroethane

Method: 8151A - Herbicides (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (25-130)
500-232888-1	W-230425-TS-16	89
500-232888-2	W-230425-TS-17	0 X
500-232888-3	W-230425-TS-18	0 X
500-232888-4	W-230426-TS-19	0 X
500-232888-5	W-230426-TS-20	0 X
500-232888-7	W-230426-TS-23	87
500-232888-8	W-230426-TS-24	0 X
500-232888-10	W-230425-TS-15	90
LCS 500-710288/2-A	Lab Control Sample	90
MB 500-710288/1-A	Method Blank	80

Surrogate Legend

DCPAA = DCAA

Method: 8151A - Herbicides (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA2 (25-130)
500-232888-6	W-230426-TS-21	90

Surrogate Legend

DCPAA = DCAA

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-711306/7
Matrix: Water
Analysis Batch: 711306

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	<0.15		0.50	0.15	ug/L			05/04/23 17:02	1
Toluene	<0.15		0.50	0.15	ug/L			05/04/23 17:02	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/04/23 17:02	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/04/23 17:02	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	109		75 - 126		05/04/23 17:02	1
Toluene-d8 (Surr)	95		75 - 120		05/04/23 17:02	1
4-Bromofluorobenzene (Surr)	108		72 - 124		05/04/23 17:02	1
Dibromofluoromethane	99		75 - 120		05/04/23 17:02	1

Lab Sample ID: LCS 500-711306/5
Matrix: Water
Analysis Batch: 711306

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	50.0	49.5		ug/L		99	70 - 120
Toluene	50.0	49.6		ug/L		99	70 - 125
Ethylbenzene	50.0	47.3		ug/L		95	70 - 123
Xylenes, Total	100	96.8		ug/L		97	70 - 125

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	107		75 - 126
Toluene-d8 (Surr)	95		75 - 120
4-Bromofluorobenzene (Surr)	105		72 - 124
Dibromofluoromethane	99		75 - 120

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-710187/1-A
Matrix: Water
Analysis Batch: 710313

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 710187

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Naphthalene	<0.25		0.80	0.25	ug/L		04/27/23 16:37	04/28/23 11:49	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Nitrobenzene-d5 (Surr)	59		36 - 120	04/27/23 16:37	04/28/23 11:49	1
2-Fluorobiphenyl (Surr)	63		34 - 110	04/27/23 16:37	04/28/23 11:49	1
Terphenyl-d14 (Surr)	97		40 - 145	04/27/23 16:37	04/28/23 11:49	1

Lab Sample ID: LCS 500-710187/2-A
Matrix: Water
Analysis Batch: 710498

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 710187

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Naphthalene	32.0	15.1		ug/L		47	36 - 110

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-710187/2-A
Matrix: Water
Analysis Batch: 710498

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 710187

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Nitrobenzene-d5 (Surr)	64		36 - 120
2-Fluorobiphenyl (Surr)	54		34 - 110
Terphenyl-d14 (Surr)	68		40 - 145

Lab Sample ID: LCSD 500-710187/3-A
Matrix: Water
Analysis Batch: 710498

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 710187

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Naphthalene	32.0	14.0		ug/L		44	36 - 110	7		20

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
Nitrobenzene-d5 (Surr)	56		36 - 120
2-Fluorobiphenyl (Surr)	46		34 - 110
Terphenyl-d14 (Surr)	60		40 - 145

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 240-572110/3
Matrix: Water
Analysis Batch: 572110

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed		Dil Fac
	Result	Qualifier						Time	Time	
Methane	<0.17		1.0	0.17	ug/L			05/04/23 13:33		1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,1,1-Trifluoroethane	108		60 - 140		05/04/23 13:33	1

Lab Sample ID: LCS 240-572110/4
Matrix: Water
Analysis Batch: 572110

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	RPD
Methane	284	317		ug/L		111	80 - 120	

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,1,1-Trifluoroethane	108		60 - 140

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 500-710288/1-A
Matrix: Water
Analysis Batch: 710851

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 710288

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed		Dil Fac
	Result	Qualifier						Time	Time	
Pentachlorophenol	<0.099		0.10	0.099	ug/L		04/28/23 07:47	05/02/23 18:21		1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: MB 500-710288/1-A
Matrix: Water
Analysis Batch: 710851

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 710288

Surrogate	%Recovery	MB MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	80		25 - 130	04/28/23 07:47	05/02/23 18:21	1

Lab Sample ID: LCS 500-710288/2-A
Matrix: Water
Analysis Batch: 710851

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 710288

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Pentachlorophenol	2.53	<0.099	*	ug/L		0	40 - 122

Surrogate	%Recovery	LCS LCS Qualifier	Limits
DCAA	90		25 - 130

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 500-712191/1-A
Matrix: Water
Analysis Batch: 712439

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 712191

Analyte	MB MB Result Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23	1.0	0.23	ug/L		05/09/23 09:35	05/09/23 20:58	1
Copper	<0.50	2.0	0.50	ug/L		05/09/23 09:35	05/09/23 20:58	1
Iron	<46.7	100	46.7	ug/L		05/09/23 09:35	05/09/23 20:58	1
Manganese	<0.79	2.5	0.79	ug/L		05/09/23 09:35	05/09/23 20:58	1
Zinc	<6.9	20.0	6.9	ug/L		05/09/23 09:35	05/09/23 20:58	1

Lab Sample ID: LCS 500-712191/2-A
Matrix: Water
Analysis Batch: 712439

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 712191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	100	98.19		ug/L		98	80 - 120
Copper	250	250.1		ug/L		100	80 - 120
Iron	1000	1018		ug/L		102	80 - 120
Manganese	500	511.9		ug/L		102	80 - 120
Zinc	500	498.0		ug/L		100	80 - 120

Lab Sample ID: 500-232888-1 MS
Matrix: Water
Analysis Batch: 712439

Client Sample ID: W-230425-TS-16
Prep Type: Total Recoverable
Prep Batch: 712191

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Arsenic	<0.23		100	98.65		ug/L		99	75 - 125
Copper	<0.50		250	253.0		ug/L		101	75 - 125
Iron	<46.7		1000	1052		ug/L		105	75 - 125
Manganese	<0.79		500	522.9		ug/L		105	75 - 125
Zinc	<6.9		500	499.0		ug/L		100	75 - 125

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 500-232888-1 MSD
Matrix: Water
Analysis Batch: 712439

Client Sample ID: W-230425-TS-16
Prep Type: Total Recoverable
Prep Batch: 712191

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier		Result	Qualifier				Limits		
Arsenic	<0.23		100	96.91		ug/L		97	75 - 125	2	20
Copper	<0.50		250	246.9		ug/L		99	75 - 125	2	20
Iron	<46.7		1000	974.8		ug/L		97	75 - 125	8	20
Manganese	<0.79		500	497.8		ug/L		100	75 - 125	5	20
Zinc	<6.9		500	489.3		ug/L		98	75 - 125	2	20

Lab Sample ID: 500-232888-1 DU
Matrix: Water
Analysis Batch: 712439

Client Sample ID: W-230425-TS-16
Prep Type: Total Recoverable
Prep Batch: 712191

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Arsenic	<0.23		<0.23		ug/L		NC	20
Copper	<0.50		<0.50		ug/L		NC	20
Iron	<46.7		<46.7		ug/L		NC	20
Manganese	<0.79		<0.79		ug/L		NC	20
Zinc	<6.9		<6.9		ug/L		NC	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-710114/11
Matrix: Water
Analysis Batch: 710114

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	<0.12		1.0	0.12	mg/L			04/27/23 13:36	1
Sulfate	<0.21		1.0	0.21	mg/L			04/27/23 13:36	1

Lab Sample ID: LCS 500-710114/12
Matrix: Water
Analysis Batch: 710114

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec
							Added
Chloride	20.0	19.05		mg/L		95	90 - 110
Sulfate	20.0	19.34		mg/L		97	90 - 110

Lab Sample ID: 500-232888-4 MS
Matrix: Water
Analysis Batch: 710114

Client Sample ID: W-230426-TS-19
Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec
	Result	Qualifier		Result	Qualifier				Limits
Chloride	1.2		10.0	10.08		mg/L		89	80 - 120
Sulfate	10.6		10.0	19.86		mg/L		93	80 - 120

Lab Sample ID: 500-232888-4 MSD
Matrix: Water
Analysis Batch: 710114

Client Sample ID: W-230426-TS-19
Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier		Result	Qualifier				Limits		
Chloride	1.2		10.0	10.12		mg/L		89	80 - 120	0	20
Sulfate	10.6		10.0	19.84		mg/L		92	80 - 120	0	20

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: 500-232888-6 MS
Matrix: Water
Analysis Batch: 710114

Client Sample ID: W-230426-TS-21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	0.43	J	10.0	9.34		mg/L		89	80 - 120
Sulfate	1.5		10.0	10.95		mg/L		94	80 - 120

Lab Sample ID: 500-232888-6 MSD
Matrix: Water
Analysis Batch: 710114

Client Sample ID: W-230426-TS-21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	0.43	J	10.0	9.37		mg/L		89	80 - 120	0	20
Sulfate	1.5		10.0	10.98		mg/L		95	80 - 120	0	20

Lab Sample ID: MB 500-710115/11
Matrix: Water
Analysis Batch: 710115

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.043		1.0	0.043	mg/L			04/27/23 13:36	1

Lab Sample ID: LCS 500-710115/12
Matrix: Water
Analysis Batch: 710115

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	20.0	18.77		mg/L		94	90 - 110

Lab Sample ID: 500-232888-4 MS
Matrix: Water
Analysis Batch: 710115

Client Sample ID: W-230426-TS-19
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	2.4		10.0	11.00		mg/L		86	80 - 120

Lab Sample ID: 500-232888-4 MSD
Matrix: Water
Analysis Batch: 710115

Client Sample ID: W-230426-TS-19
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	2.4		10.0	11.04		mg/L		86	80 - 120	0	20

Lab Sample ID: 500-232888-6 MS
Matrix: Water
Analysis Batch: 710115

Client Sample ID: W-230426-TS-21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	0.41	J	10.0	8.88		mg/L		85	80 - 120

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 500-232888-6 MSD
Matrix: Water
Analysis Batch: 710115

Client Sample ID: W-230426-TS-21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	0.41	J	10.0	8.88		mg/L		85	80 - 120	0	20

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-712510/4
Matrix: Water
Analysis Batch: 712510

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	<0.47		1.0	0.47	mg/L			05/08/23 17:38	1

Lab Sample ID: LCS 500-712510/5
Matrix: Water
Analysis Batch: 712510

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon - Duplicates	50.0	49.34		mg/L		99	86 - 116

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-712384/53
Matrix: Water
Analysis Batch: 712384

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	<3.7		5.0	3.7	mg/L			05/09/23 08:14	1

Lab Sample ID: LCS 500-712384/54
Matrix: Water
Analysis Batch: 712384

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	100	107.6		mg/L		108	90 - 110

Lab Sample ID: MB 500-712631/3
Matrix: Water
Analysis Batch: 712631

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	<3.7		5.0	3.7	mg/L			05/10/23 16:38	1

Lab Sample ID: LCS 500-712631/4
Matrix: Water
Analysis Batch: 712631

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	100	105.2		mg/L		105	90 - 110

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Client Sample ID: W-230425-TS-16

Lab Sample ID: 500-232888-1

Date Collected: 04/25/23 16:37

Matrix: Water

Date Received: 04/27/23 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711306	W1T	EET CHI	05/04/23 19:04
Total/NA	Prep	3510C			710187	EC	EET CHI	04/27/23 16:37
Total/NA	Analysis	8270D		1	710313	JSB	EET CHI	04/28/23 13:47
Total/NA	Prep	8151A			710288	TS	EET CHI	04/28/23 07:47
Total/NA	Analysis	8151A		1	711425	SS	EET CHI	05/04/23 16:17
Dissolved	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Dissolved	Analysis	6020A		1	712439	FXG	EET CHI	05/09/23 21:22
Total Recoverable	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Total Recoverable	Analysis	6020A		1	712439	FXG	EET CHI	05/09/23 21:05
Dissolved	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Dissolved	Analysis	SM 2340B		1	712461	FXG	EET CHI	05/10/23 11:20
Total Recoverable	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Total Recoverable	Analysis	SM 2340B		1	712461	FXG	EET CHI	05/10/23 11:20

Client Sample ID: W-230425-TS-17

Lab Sample ID: 500-232888-2

Date Collected: 04/25/23 15:55

Matrix: Water

Date Received: 04/27/23 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711306	W1T	EET CHI	05/04/23 19:28
Total/NA	Prep	3510C			710187	EC	EET CHI	04/27/23 16:37
Total/NA	Analysis	8270D		1	710313	JSB	EET CHI	04/28/23 14:11
Total/NA	Analysis	RSK-175		1	572110	BPM	EET CLE	05/04/23 15:32
Total/NA	Prep	8151A			710288	TS	EET CHI	04/28/23 07:47
Total/NA	Analysis	8151A		500	711425	SS	EET CHI	05/04/23 17:31
Dissolved	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Dissolved	Analysis	6020A		1	712439	FXG	EET CHI	05/09/23 21:29
Total Recoverable	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Total Recoverable	Analysis	6020A		1	712439	FXG	EET CHI	05/09/23 21:26
Dissolved	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Dissolved	Analysis	SM 2340B		1	712461	FXG	EET CHI	05/10/23 11:30
Total Recoverable	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Total Recoverable	Analysis	SM 2340B		1	712461	FXG	EET CHI	05/10/23 11:20
Total/NA	Analysis	300.0		1	710114	EH	EET CHI	04/27/23 13:05
Total/NA	Analysis	300.0		1	710115	EH	EET CHI	04/27/23 13:05
Total/NA	Analysis	9060A		1	712510	BC	EET CHI	05/08/23 20:44
Total/NA	Analysis	SM 2320B		1	712384	EH	EET CHI	05/09/23 08:14

Client Sample ID: W-230425-TS-18

Lab Sample ID: 500-232888-3

Date Collected: 04/25/23 15:55

Matrix: Water

Date Received: 04/27/23 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711306	W1T	EET CHI	05/04/23 20:17

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Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Client Sample ID: W-230425-TS-18

Lab Sample ID: 500-232888-3

Date Collected: 04/25/23 15:55

Matrix: Water

Date Received: 04/27/23 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			710187	EC	EET CHI	04/27/23 16:37
Total/NA	Analysis	8270D		1	710313	JSB	EET CHI	04/28/23 14:34
Total/NA	Analysis	RSK-175		1	572110	BPM	EET CLE	05/04/23 15:49
Total/NA	Prep	8151A			710288	TS	EET CHI	04/28/23 07:47
Total/NA	Analysis	8151A		500	711425	SS	EET CHI	05/04/23 17:50
Dissolved	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Dissolved	Analysis	6020A		1	712439	FXG	EET CHI	05/09/23 21:43
Total Recoverable	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Total Recoverable	Analysis	6020A		1	712439	FXG	EET CHI	05/09/23 21:39
Dissolved	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Dissolved	Analysis	SM 2340B		1	712461	FXG	EET CHI	05/10/23 11:30
Total Recoverable	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Total Recoverable	Analysis	SM 2340B		1	712461	FXG	EET CHI	05/10/23 11:20
Total/NA	Analysis	300.0		1	710114	EH	EET CHI	04/27/23 13:20
Total/NA	Analysis	300.0		1	710115	EH	EET CHI	04/27/23 13:20
Total/NA	Analysis	9060A		1	712510	BC	EET CHI	05/08/23 20:58
Total/NA	Analysis	SM 2320B		1	712384	EH	EET CHI	05/09/23 08:14

Client Sample ID: W-230426-TS-19

Lab Sample ID: 500-232888-4

Date Collected: 04/26/23 09:57

Matrix: Water

Date Received: 04/27/23 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711306	W1T	EET CHI	05/04/23 20:41
Total/NA	Prep	3510C			710187	EC	EET CHI	04/27/23 16:37
Total/NA	Analysis	8270D		1	710313	JSB	EET CHI	04/28/23 14:58
Total/NA	Analysis	RSK-175		1	572110	BPM	EET CLE	05/04/23 16:06
Total/NA	Prep	8151A			710288	TS	EET CHI	04/28/23 07:47
Total/NA	Analysis	8151A		100	711425	SS	EET CHI	05/04/23 18:08
Dissolved	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Dissolved	Analysis	6020A		1	712439	FXG	EET CHI	05/09/23 21:50
Total Recoverable	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Total Recoverable	Analysis	6020A		1	712439	FXG	EET CHI	05/09/23 21:46
Dissolved	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Dissolved	Analysis	SM 2340B		1	712461	FXG	EET CHI	05/10/23 11:30
Total Recoverable	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Total Recoverable	Analysis	SM 2340B		1	712461	FXG	EET CHI	05/10/23 11:20
Total/NA	Analysis	300.0		1	710114	EH	EET CHI	04/27/23 14:54
Total/NA	Analysis	300.0		1	710115	EH	EET CHI	04/27/23 14:54
Total/NA	Analysis	9060A		1	712510	BC	EET CHI	05/08/23 21:16
Total/NA	Analysis	SM 2320B		1	712631	EH	EET CHI	05/10/23 16:38

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Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Client Sample ID: W-230426-TS-20
Date Collected: 04/26/23 10:56
Date Received: 04/27/23 09:40

Lab Sample ID: 500-232888-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711306	W1T	EET CHI	05/04/23 21:05
Total/NA	Prep	3510C			710187	EC	EET CHI	04/27/23 16:37
Total/NA	Analysis	8270D		5	710313	JSB	EET CHI	04/28/23 15:22
Total/NA	Analysis	RSK-175		1	572110	BPM	EET CLE	05/04/23 16:23
Total/NA	Prep	8151A			710288	TS	EET CHI	04/28/23 07:47
Total/NA	Analysis	8151A		2000	711425	SS	EET CHI	05/04/23 18:27
Dissolved	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Dissolved	Analysis	6020A		10	712506	FXG	EET CHI	05/10/23 14:05
Dissolved	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Dissolved	Analysis	6020A		1	712439	FXG	EET CHI	05/09/23 21:57
Total Recoverable	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Total Recoverable	Analysis	6020A		10	712506	FXG	EET CHI	05/10/23 14:01
Total Recoverable	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Total Recoverable	Analysis	6020A		1	712439	FXG	EET CHI	05/09/23 21:53
Dissolved	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Dissolved	Analysis	SM 2340B		1	712461	FXG	EET CHI	05/10/23 11:30
Total Recoverable	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Total Recoverable	Analysis	SM 2340B		1	712461	FXG	EET CHI	05/10/23 11:20
Total/NA	Analysis	300.0		1	710114	EH	EET CHI	04/27/23 15:41
Total/NA	Analysis	300.0		1	710115	EH	EET CHI	04/27/23 15:41
Total/NA	Analysis	9060A		1	712510	BC	EET CHI	05/08/23 21:29
Total/NA	Analysis	SM 2320B		1	712631	EH	EET CHI	05/10/23 16:38

Client Sample ID: W-230426-TS-21
Date Collected: 04/26/23 12:08
Date Received: 04/27/23 09:40

Lab Sample ID: 500-232888-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711306	W1T	EET CHI	05/04/23 21:30
Total/NA	Prep	3510C			710187	EC	EET CHI	04/27/23 16:37
Total/NA	Analysis	8270D		1	710313	JSB	EET CHI	04/28/23 15:45
Total/NA	Analysis	RSK-175		1	572110	BPM	EET CLE	05/04/23 16:40
Total/NA	Prep	8151A			710288	TS	EET CHI	04/28/23 07:47
Total/NA	Analysis	8151A		1	711425	SS	EET CHI	05/04/23 16:36
Dissolved	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Dissolved	Analysis	6020A		1	712439	FXG	EET CHI	05/09/23 22:03
Total Recoverable	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Total Recoverable	Analysis	6020A		1	712439	FXG	EET CHI	05/09/23 22:00
Dissolved	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Dissolved	Analysis	SM 2340B		1	712461	FXG	EET CHI	05/10/23 11:30
Total Recoverable	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Total Recoverable	Analysis	SM 2340B		1	712461	FXG	EET CHI	05/10/23 11:20
Total/NA	Analysis	300.0		1	710114	EH	EET CHI	04/27/23 15:57

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Client Sample ID: W-230426-TS-21

Lab Sample ID: 500-232888-6

Date Collected: 04/26/23 12:08

Matrix: Water

Date Received: 04/27/23 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	710115	EH	EET CHI	04/27/23 15:57
Total/NA	Analysis	9060A		1	712510	BC	EET CHI	05/08/23 21:47
Total/NA	Analysis	SM 2320B		1	712631	EH	EET CHI	05/10/23 16:38

Client Sample ID: W-230426-TS-23

Lab Sample ID: 500-232888-7

Date Collected: 04/26/23 13:50

Matrix: Water

Date Received: 04/27/23 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711306	W1T	EET CHI	05/04/23 21:55
Total/NA	Prep	3510C			710187	EC	EET CHI	04/27/23 16:37
Total/NA	Analysis	8270D		1	710313	JSB	EET CHI	04/28/23 16:09
Total/NA	Analysis	RSK-175		1	572110	BPM	EET CLE	05/04/23 16:57
Total/NA	Prep	8151A			710288	TS	EET CHI	04/28/23 07:47
Total/NA	Analysis	8151A		1	711425	SS	EET CHI	05/04/23 16:54
Dissolved	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Dissolved	Analysis	6020A		1	712439	FXG	EET CHI	05/09/23 22:10
Total Recoverable	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Total Recoverable	Analysis	6020A		1	712439	FXG	EET CHI	05/09/23 22:07
Dissolved	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Dissolved	Analysis	SM 2340B		1	712461	FXG	EET CHI	05/10/23 11:30
Total Recoverable	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Total Recoverable	Analysis	SM 2340B		1	712461	FXG	EET CHI	05/10/23 11:20
Total/NA	Analysis	300.0		1	710114	EH	EET CHI	04/27/23 16:44
Total/NA	Analysis	300.0		1	710115	EH	EET CHI	04/27/23 16:44
Total/NA	Analysis	9060A		1	712510	BC	EET CHI	05/08/23 22:05
Total/NA	Analysis	SM 2320B		1	712631	EH	EET CHI	05/10/23 16:38

Client Sample ID: W-230426-TS-24

Lab Sample ID: 500-232888-8

Date Collected: 04/26/23 14:32

Matrix: Water

Date Received: 04/27/23 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711306	W1T	EET CHI	05/04/23 22:19
Total/NA	Prep	3510C			710187	EC	EET CHI	04/27/23 16:37
Total/NA	Analysis	8270D		5	710313	JSB	EET CHI	04/28/23 16:33
Total/NA	Analysis	RSK-175		1	572110	BPM	EET CLE	05/04/23 17:14
Total/NA	Prep	8151A			710288	TS	EET CHI	04/28/23 07:47
Total/NA	Analysis	8151A		5000	711425	SS	EET CHI	05/04/23 18:45
Dissolved	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Dissolved	Analysis	6020A		1	712439	FXG	EET CHI	05/09/23 22:24
Total Recoverable	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Total Recoverable	Analysis	6020A		1	712439	FXG	EET CHI	05/09/23 22:21

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Client Sample ID: W-230426-TS-24

Lab Sample ID: 500-232888-8

Date Collected: 04/26/23 14:32

Matrix: Water

Date Received: 04/27/23 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Dissolved	Analysis	SM 2340B		1	712461	FXG	EET CHI	05/10/23 11:30
Total Recoverable	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Total Recoverable	Analysis	SM 2340B		1	712461	FXG	EET CHI	05/10/23 11:20
Total/NA	Analysis	300.0		1	710114	EH	EET CHI	04/27/23 16:59
Total/NA	Analysis	300.0		1	710115	EH	EET CHI	04/27/23 16:59
Total/NA	Analysis	9060A		1	712510	BC	EET CHI	05/08/23 22:18
Total/NA	Analysis	SM 2320B		1	712631	EH	EET CHI	05/10/23 16:38

Client Sample ID: TRIP BLANK

Lab Sample ID: 500-232888-9

Date Collected: 04/25/23 00:00

Matrix: Water

Date Received: 04/27/23 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711306	W1T	EET CHI	05/04/23 17:26

Client Sample ID: W-230425-TS-15

Lab Sample ID: 500-232888-10

Date Collected: 04/25/23 14:57

Matrix: Water

Date Received: 04/27/23 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711306	W1T	EET CHI	05/04/23 22:44
Total/NA	Prep	3510C			710187	EC	EET CHI	04/27/23 16:37
Total/NA	Analysis	8270D		1	710313	JSB	EET CHI	04/28/23 16:56
Total/NA	Prep	8151A			710288	TS	EET CHI	04/28/23 07:47
Total/NA	Analysis	8151A		1	711425	SS	EET CHI	05/04/23 17:13
Dissolved	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Dissolved	Analysis	6020A		1	712439	FXG	EET CHI	05/09/23 22:31
Total Recoverable	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Total Recoverable	Analysis	6020A		1	712439	FXG	EET CHI	05/09/23 22:28
Dissolved	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Dissolved	Analysis	SM 2340B		1	712461	FXG	EET CHI	05/10/23 11:30
Total Recoverable	Prep	3005A			712191	BDE	EET CHI	05/09/23 09:35 - 05/09/23 10:05 ¹
Total Recoverable	Analysis	SM 2340B		1	712461	FXG	EET CHI	05/10/23 11:20

¹ This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200
EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232888-1

Laboratory: Eurofins Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-23

Laboratory: Eurofins Cleveland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-24
Connecticut	State	PH-0590	06-29-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-28-24
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-24
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-24
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-28-24
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	05-07-23

Chain of Custody Record 641481



Environment Testing
America

Address _____

Regulatory Program: DW NPDES RCRA Other

500 232888 COC

TAL-8210

Client Contact		Project Manager: TIM REE		Site Contact:		Date: 4/26/23		
Company Name: GHD		Tel/Email: TIM.REE@GHD.COM		Lab Contact:		Carrier: FEDEX		
Address: 900 LONG LAKE RD		Analysis Turnaround Time		Filtered Sample (Y/N) Perform MS / MSD (Y/N) ALKALINITY, ANIONS PCB BTEX NAPHTHALENE TOSS METALS TOTAL METALS TOC METHANE		Sampler: THOMAS SOLBERG		
City/State/Zip: ST PAUL / MN / 55112		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS				For Lab Use Only		
Phone: 612 213 7452		TAT if different from Below _____				Walk-in Client		
Project Name: PENTA WOOD		<input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day				Lab Sampling		
Site: 11222418						Job / SDG No		
PO #						500-232888		
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Sample Specific Notes
1 W-230425-TS-16	4/25	16:37	G	GW	9	N	N	X X X X X
2 W-230425-TS-17	↓	15:55			15			X X X X X X X X
3 W-230425-TS-18	↓	15:55			15			X X X X X X X X
4 W-230426-TS-19	4/26	09:57			15			X X X X X X X X
5 V-230426-TS-20	↓	10:56			15			X X X X X X X X
6 V-230426-TS-21	↓	12:00			15			X X X X X X X X
7 V-230426-TS-23	↓	13:50			15			X X X X X X X X
8 W-230426-TS-24	↓	14:32			15			X X X X X X X X
9 TRIP BLANK								
10 W-230425-TS-15	4/25	14:51	G	GW	9	N	N	X X X X X
Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other								
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample				Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)				
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown				<input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months				
Special Instructions/QC Requirements & Comments:								
(4.0-3.9)(-1.2--0.9)(0.0-0.4)(0.9-0.8)(0.8-0.4)								
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No		Cooler Temp (°C) Obs'd		Therm ID No		
Relinquished by: <i>[Signature]</i>		Company: GHD		Date/Time: 4/26 16:50		Received by: <i>[Signature]</i>		
Relinquished by:		Company:		Date/Time:		Received by:		
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		

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500-232888 Waybi

FedEx
Express *Package*
US Airbill

FedEx Tracking Number **8166 8556 3542**

Form ID No. **0200**

fedex.com 1800 GoFedEx 1800 463.3339

1 From

Date _____

Sender's Name _____ Phone _____

Company _____

Address _____ Dept./Floor/Suite/Room _____

City _____ State _____ ZIP _____

2 Your Internal Billing Reference

3 To

Recipient's Name _____ Phone _____

Company _____

Address _____ Dept./Floor/Suite/Room _____

Address _____ Dept./Floor/Suite/Room _____

City _____ State _____ ZIP _____

Hold Weekday
FedEx location address REQUIRED. NOT available for FedEx First Overnight.

Hold Saturday
FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.



8166 8556 3542

4 Express Package Service * To most locations. *Packages up to 150 lbs. For packages over 150 lbs. use the FedEx Express Freight US Airbill.*

Next Business Day

FedEx First Overnight
Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Priority Overnight
Next business morning * Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Standard Overnight
Next business afternoon * Saturday Delivery NOT available.

2 or 3 Business Days

FedEx 2Day A.M.
Second business morning * Saturday Delivery NOT available.

FedEx 2Day
Second business afternoon * Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Express Saver
Third business day * Saturday Delivery NOT available.

5 Packaging * Declared value limit \$500.

FedEx Envelope* FedEx Pak* FedEx Box FedEx Tube Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver.

No Signature Required
Package may be left without obtaining a signature for delivery.

Direct Signature
Someone at recipient's address may sign for delivery.

Indirect Signature
If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

No Yes As per attached Shipper's Declaration. Yes Shipper's Declaration not required. Dry Ice Dry ice, 9, UN 1845 _____ x _____ kg

Restrictions apply for dangerous goods --- see the current FedEx Service Guide. **Cargo Aircraft Only**

7 Payment Bill to:

Enter FedEx Acct. No. below. _____ Ex Ac

Sender Acct. No. in Section 1 will be billed. **Recipient** **Third Party**

Total Packages _____ Total Weight _____ lbs.

*Our liability is limited to US\$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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FedEx Tracking Number 8166 8556 3520

Form ID No: 0200

fedex.com 1800 GoFedEx 1800 463 3339

fedex.com 1800 GoFedEx 1800 463 3339

1 From

Date _____

Sender's Name _____ Phone _____

Company _____

Address _____ Dept./Floor/Suite/Room _____

City _____ State _____ ZIP _____

2 Your Internal Billing Reference

3 To

Recipient's Name _____ Phone _____

Company _____

Address _____ Dept./Floor/Suite/Room _____

Address _____

City _____ State _____ ZIP _____

Hold Weekday
FedEx location address
REQUIRED. NOT available for
FedEx First Overnight.

Hold Saturday
FedEx location address
REQUIRED. Available ONLY for
FedEx Priority Overnight and
FedEx 2Day to select locations.



8166 8556 3520

4 Express Package Service * To most locations. Packages up to 150 lbs. For packages over 150 lbs., use the FedEx Express Freight US Airbill.

Next Business Day	2 or 3 Business Days
<input type="checkbox"/> FedEx First Overnight Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.	<input type="checkbox"/> FedEx 2Day A.M. Second business morning.* Saturday Delivery NOT available.
<input type="checkbox"/> FedEx Priority Overnight Next business morning.* Friday shipments will be delivered on Monday unless Saturday Delivery is selected.	<input type="checkbox"/> FedEx 2Day Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.
<input type="checkbox"/> FedEx Standard Overnight Next business afternoon.* Saturday Delivery NOT available.	<input type="checkbox"/> FedEx Express Saver Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit \$500.

FedEx Envelope* FedEx Pak* FedEx Box FedEx Tube Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver.

No Signature Required
Package may be left without obtaining a signature for delivery.

Direct Signature
Someone at recipient's address may sign for delivery.

Indirect Signature
If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

No Yes As per attached Shipper's Declaration. Yes Shipper's Declaration not required. Dry Ice Dry Ice, 9 UN 1845 _____ x _____ kg

Restrictions apply for dangerous goods — see the current FedEx Service Guide. **Cargo Aircraft Only**

7 Payment Bill to:

Enter FedEx Acct. No. below. A BC

Sender Acct. No. in Section 1 will be billed. **Recipient** **Third Party**

Total Packages _____ Total Weight _____ lbs.

*Our liability is limited to US\$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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Package
US Airbill

FedEx
Tracking
Number

8161 0791 7936

Form
ID No. 0200

fedex.com 1800 GoFedEx 1800 463.3339

1 From

Date _____

Sender's Name _____ Phone _____

Company _____

Address _____ Dept./Floor/Suite/Room _____

City _____ State _____ ZIP _____

2 Your Internal Billing Reference

3 To

Recipient's Name _____ Phone _____

Company _____

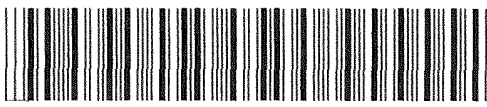
Address _____ Dept./Floor/Suite/Room _____

Address _____

City _____ State _____ ZIP _____

Hold Weekday
FedEx location address
REQUIRED. NOT available for
FedEx First Overnight.

Hold Saturday
FedEx location address
REQUIRED. Available ONLY for
FedEx Priority Overnight and
FedEx 2Day to select locations.



8161 0791 7936



4 Express Package Service * To most locations. **Packages up to 150 lbs.**
For packages over 150 lbs. use the
FedEx Express Freight US Airbill.

Next Business Day

FedEx First Overnight
Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Priority Overnight
Next business morning. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Standard Overnight
Next business afternoon. Saturday Delivery NOT available.

2 or 3 Business Days

FedEx 2Day A.M.
Second business morning. Saturday Delivery NOT available.

FedEx 2Day
Second business afternoon. Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Express Saver
Third business day. Saturday Delivery NOT available.

5 Packaging * Declared value limit \$500.

FedEx Envelope* FedEx Pak* FedEx Box FedEx Tube Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver.

No Signature Required
Package may be left without obtaining a signature for delivery.

Direct Signature
Someone at recipient's address may sign for delivery.

Indirect Signature
If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

No Yes As per attached Shipper's Declaration Yes Shipper's Declaration not required. **Dry Ice** Dry Ice, 9, UN 1845 _____ x _____ kg

Restrictions apply for dangerous goods see the current FedEx Service Guide. **Cargo Aircraft Only**

7 Payment Bill to:

Enter FedEx Acct. No. below.

Sender Acct. No. in Section 1 will be billed. **Recipient** **Third Party**

Total Packages _____ Total Weight _____ lbs.

*Our liability is limited to US\$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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Package
US Airbill

FedEx Tracking Number 8166 8556 3531

Form ID No. 0200

1 From

Date _____

Sender's Name _____ Phone _____

Company _____

Address _____ Dept./Floor/Suite/Room _____

City _____ State _____ ZIP _____

2 Your Internal Billing Reference

3 To

Recipient's Name _____ Phone _____

Company _____

Address _____ Dept./Floor/Suite/Room _____

Address _____

City _____ State _____ ZIP _____

Hold Weekday
FedEx location address
REQUIRED. NOT available for
FedEx First Overnight.

Hold Saturday
FedEx location address
REQUIRED. Available ONLY for
FedEx Priority Overnight and
FedEx 2Day to select locations.



8166 8556 3531

4 Express Package Service * To most locations. **Packages up to 150 lbs.**
For packages over 150 lbs., use the FedEx Express Freight US Airbill.

Next Business Day

FedEx First Overnight
Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Priority Overnight
Next business morning * Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Standard Overnight
Next business afternoon * Saturday Delivery NOT available.

2 or 3 Business Days

FedEx 2Day A.M.
Second business morning * Saturday Delivery NOT available.

FedEx 2Day
Second business afternoon * Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Express Saver
Third business day * Saturday Delivery NOT available.

5 Packaging * Declared value limit \$500.

FedEx Envelope* FedEx Pak* FedEx Box FedEx Tube Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver.

No Signature Required
Package may be left without obtaining a signature for delivery.

Direct Signature
Someone at recipient's address may sign for delivery.

Indirect Signature
If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

No Yes As per attached Shipper's Declaration. Yes Shipper's Declaration not required. Dry Ice Dry Ice, UN 1845 _____ x _____ kg

Restrictions apply for dangerous goods — see the current FedEx Service Guide. Cargo Aircraft Only

7 Payment Bill to:

Enter FedEx Acct. No. below. L ec E At JO

Sender Acct. No. in Section 1 will be billed. **Recipient** **Third Party**

Total Packages _____ Total Weight _____ lbs.

644

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FedEx Tracking Number

8131 9058 0416

Form ID No.

0200

fedex.com 1.800.GoFedEx 1.800.463.3339

fedex.com 1.800.GoFedEx 1.800.463.3339

1 From Date

Sender's Name Phone

Company

Address Dept./Floor/Suite/Room

City State ZIP

2 Your Internal Billing Reference

3 To Recipient's Name Phone

Company

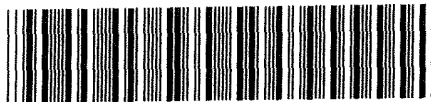
Address We cannot deliver to PO boxes or PO ZIP codes. Dept./Floor/Suite/Room

Address Use this line for the HOLD location address or for continuation of your shipping address.

City State ZIP

Hold Weekday FedEx location address REQUIRED. NOT available for FedEx First Overnight.

Hold Saturday FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.



8131 9058 0416

4 Express Package Service * To most locations. Packages up to 150 lbs. For packages over 150 lbs. use the FedEx Express Freight US Airbill.

Next Business Day

- Next Business Day options: FedEx First Overnight, FedEx Priority Overnight, FedEx Standard Overnight

2 or 3 Business Days

- 2 or 3 Business Days options: FedEx 2Day A.M., FedEx 2Day, FedEx Express Saver

5 Packaging * Declared value limit \$500.

- Packaging options: FedEx Envelope, FedEx Pak, FedEx Box, FedEx Tube, Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

- Signature options: Saturday Delivery, No Signature Required, Direct Signature, Indirect Signature

Does this shipment contain dangerous goods? No, Yes (As per attached Shipper's Declaration), Yes (Shipper's Declaration not required), Dry Ice, Cargo Aircraft Only

7 Payment Bill to: Enter FedEx Acct. No. or Credit Card No. below. Obtain recip Acct. No.

- Payment options: Sender Acct. No. in Section, Recipient, Third Party, Credit Card, Cash/Check

Total Packages Total Weight Credit Card Auth.

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3-3/3.5

Client Information (Sub Contract Lab)		Lab PM: McCutcheon, Carlene	Lab Tracking No(s): 500-173308.1																																																																																														
Client Contact: Shipping/Receiving		E-Mail: Carlene.McCutcheon@et.eurofins.com	Page: 1 of 1																																																																																														
Company: Eurofins Environment Testing North Cent		Accreditations Required (See note): State Program - Wisconsin	Job #: 500-232888-1																																																																																														
Address: 180 S. Van Buren Avenue.		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AshNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 X - Trizma Z - other (specify)																																																																																															
City: Barberton	Due Date Requested: 5/10/2023	<table border="1"> <thead> <tr> <th>Sample Identification - Client ID (Lab ID)</th> <th>Sample Date</th> <th>Sample Time</th> <th>Sample Type (C=Comp, G=grab)</th> <th>MATRIX (H=water, S=solid, O=water/oil, B=issue, A=AI)</th> <th>Field Filtered Sample (Yes or No)</th> <th>Perform MS/MSD (Yes or No)</th> <th>Risk 175/ (MOD) Methane</th> <th>Total Number of Containers</th> <th>Special Instructions/Note:</th> </tr> </thead> <tbody> <tr> <td>W-230425-TS-17 (500-232888-2)</td> <td>4/25/23</td> <td>15:55 Central</td> <td>Water</td> <td>Water</td> <td>X</td> <td>X</td> <td>3</td> <td rowspan="10">RSK</td> </tr> <tr> <td>W-230425-TS-18 (500-232888-3)</td> <td>4/25/23</td> <td>15:55 Central</td> <td>Water</td> <td>Water</td> <td>X</td> <td>X</td> <td>3</td> </tr> <tr> <td>W-230426-TS-19 (500-232888-4)</td> <td>4/26/23</td> <td>09:57 Central</td> <td>Water</td> <td>Water</td> <td>X</td> <td>X</td> <td>3</td> </tr> <tr> <td>W-230426-TS-20 (500-232888-5)</td> <td>4/26/23</td> <td>10:56 Central</td> <td>Water</td> <td>Water</td> <td>X</td> <td>X</td> <td>3</td> </tr> <tr> <td>W-230426-TS-21 (500-232888-6)</td> <td>4/26/23</td> <td>12:08 Central</td> <td>Water</td> <td>Water</td> <td>X</td> <td>X</td> <td>3</td> </tr> <tr> <td>W-230426-TS-22 (500-232888-7)</td> <td>4/26/23</td> <td>13:50 Central</td> <td>Water</td> <td>Water</td> <td>X</td> <td>X</td> <td>3</td> </tr> <tr> <td>W-230426-TS-24 (500-232888-8)</td> <td>4/26/23</td> <td>14:32 Central</td> <td>Water</td> <td>Water</td> <td>X</td> <td>X</td> <td>3</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	MATRIX (H=water, S=solid, O=water/oil, B=issue, A=AI)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Risk 175/ (MOD) Methane	Total Number of Containers	Special Instructions/Note:	W-230425-TS-17 (500-232888-2)	4/25/23	15:55 Central	Water	Water	X	X	3	RSK	W-230425-TS-18 (500-232888-3)	4/25/23	15:55 Central	Water	Water	X	X	3	W-230426-TS-19 (500-232888-4)	4/26/23	09:57 Central	Water	Water	X	X	3	W-230426-TS-20 (500-232888-5)	4/26/23	10:56 Central	Water	Water	X	X	3	W-230426-TS-21 (500-232888-6)	4/26/23	12:08 Central	Water	Water	X	X	3	W-230426-TS-22 (500-232888-7)	4/26/23	13:50 Central	Water	Water	X	X	3	W-230426-TS-24 (500-232888-8)	4/26/23	14:32 Central	Water	Water	X	X	3																											
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City: Barberton	TAT Requested (days):	Note: Since laboratory accreditations are subject to change, Eurofins Chicago places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins Chicago laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Chicago attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Chicago.																																																																																															
State, Zip: OH, 44203	PO #:	Possible Hazard Identification																																																																																															
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	WO #:	Unconfirmed																																																																																															
Email:	Project #: 50013796	Deliverable Requested: I, II, III, IV, Other (specify)																																																																																															
Site: Pentia Wood 11222418	SSOW#:	Primary Deliverable Rank: 2																																																																																															
		Special Instructions/OC Requirements:																																																																																															
		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)																																																																																															
		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months																																																																																															
		Method of Shipment:																																																																																															
		Time:																																																																																															
Relinquished by: <i>Shirley Booth</i>	Date/Time: 4/27/23 16:15	Received by: <i>Leah M. Smith</i>	Date/Time: 04-28-23 9:50																																																																																														
Relinquished by:	Date/Time:	Received by:	Date/Time:																																																																																														
Relinquished by:	Date/Time:	Received by:	Date/Time:																																																																																														
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:																																																																																															



Eurofins - Canton Sample Receipt Form/Narrative
Barberton Facility

Login # : _____

Client ETA Site Name _____

Cooler unpacked by:

Cooler Received on 04-28-23 Opened on 04-28-23

Leah M. Smith

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt See Multiple Cooler Form

IR GUN # 13 (CF 10.2 °C) Observed Cooler Temp. 1.1 °C Corrected Cooler Temp. 1.3 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity _____ Yes No NA
 -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA
 -Were tamper/custody seals intact and uncompromised? Yes No NA

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

3. Shippers' packing slip attached to the cooler(s)? Yes No
 4. Did custody papers accompany the sample(s)? Yes No
 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
 7. Did all bottles arrive in good condition (Unbroken)? Yes No
 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
 9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No
 10. Were correct bottle(s) used for the test(s) indicated? Yes No
 11. Sufficient quantity received to perform indicated analyses? Yes No
 12. Are these work share samples and all listed on the COC? Yes No

If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC208070
 14. Were VOAs on the COC? Yes No
 15. Were air bubbles >6 mm in any VOA vials? Yes No NA **●** ← Larger than this.
 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
 17. Was a LL Hg or Me Hg trip blank present? _____ Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by: _____

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
 Sample(s) _____ were received in a broken container.
 Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
 Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-232888-1

Login Number: 232888

List Number: 1

Creator: James, Jeff A

List Source: Eurofins Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	





ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Grant Anderson
GHD Services Inc.
900 Long Lake Road
Suite 200
New Brighton, Minnesota 55112

Generated 5/22/2023 10:04:28 PM

JOB DESCRIPTION

Penta Wood 11222418

JOB NUMBER

500-232982-1

Eurofins Chicago

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Chicago Project Manager.

Authorization



Generated
5/22/2023 10:04:28 PM

Authorized for release by
Carlene McCutcheon, Senior Project Manager
Carlene.McCutcheon@et.eurofinsus.com
(708)325-6562



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Case Narrative

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Job ID: 500-232982-1

Laboratory: Eurofins Chicago

Narrative

Job Narrative 500-232982-1

Receipt

The samples were received on 4/28/2023 9:45 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 6 coolers at receipt time were 0.6° C, 1.3° C, 1.5° C, 1.8° C, 2.0° C and 2.2° C.

GC/MS VOA

Method 8260B: Surrogate 1,2-Dichloroethane-d4 (Surr) recovery for the following samples was outside the upper control limit: W-230427-TS-25 (500-232982-1), W-230427-TS-26 (500-232982-2), W-230427-TS-27 (500-232982-3), W-230427-TS-28 (500-232982-4), W-230427-TS-29 (500-232982-5), W-230427-TS-31 (500-232982-7) and W-230427-TS-32 (500-232982-8). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA

Method 8151A: The following sample required a dilution due to the nature of the sample matrix: W-230427-TS-33 (500-232982-9). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Field Service / Mobile Lab

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

Method 300.0: Reanalysis of the following samples was performed outside of the analytical holding time due to failure of quality control parameters in the initial analysis. W-230427-TS-25 (500-232982-1), W-230427-TS-26 (500-232982-2), W-230427-TS-27 (500-232982-3), W-230427-TS-28 (500-232982-4), W-230427-TS-28 (500-232982-4[MS]), W-230427-TS-28 (500-232982-4[MSD]), W-230427-TS-29 (500-232982-5), W-230427-TS-30 (500-232982-6), W-230427-TS-31 (500-232982-7), W-230427-TS-32 (500-232982-8) and W-230427-TS-33 (500-232982-9). Since the reanalysis of the samples outside of analytical holding time verified the results run within analytical holding time, the original results are being reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-25

Lab Sample ID: 500-232982-1

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.62		0.11	0.11	ug/L	1		8151A	Total/NA
Arsenic	2.1	B	1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	19000		200	44.3	ug/L	1		6020A	Total Recoverable
Copper	33.7		2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	7250		100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	8570		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	454		2.5	0.79	ug/L	1		6020A	Total Recoverable
Zinc	19.0	J	20.0	6.9	ug/L	1		6020A	Total Recoverable
Arsenic	0.47	J B	1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	20500		200	44.3	ug/L	1		6020A	Dissolved
Copper	5.8		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	106		100	46.7	ug/L	1		6020A	Dissolved
Magnesium	7710		200	49.4	ug/L	1		6020A	Dissolved
Manganese	4.6		2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	47.3		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	51.2		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	62.9		5.0	0.58	mg/L	5		300.0	Total/NA
Nitrate as N	1.6	^	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	4.4		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	1.6		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	70.7		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-230427-TS-26

Lab Sample ID: 500-232982-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.12		0.11	0.10	ug/L	1		8151A	Total/NA
Arsenic	1.3	B	1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	16800		200	44.3	ug/L	1		6020A	Total Recoverable
Copper	17.3		2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	4590		100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	7380		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	181		2.5	0.79	ug/L	1		6020A	Total Recoverable
Zinc	23.6		20.0	6.9	ug/L	1		6020A	Total Recoverable
Arsenic	0.36	J B	1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	17600		200	44.3	ug/L	1		6020A	Dissolved
Copper	0.72	J	2.0	0.50	ug/L	1		6020A	Dissolved
Magnesium	6960		200	49.4	ug/L	1		6020A	Dissolved
Manganese	0.87	J	2.5	0.79	ug/L	1		6020A	Dissolved
Zinc	6.9	J	20.0	6.9	ug/L	1		6020A	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-26 (Continued)

Lab Sample ID: 500-232982-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Calcium hardness as CaCO3	41.8		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	44.1		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	0.47	J	1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	0.35	J ^	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	1.5		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.73	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	77.4		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-230427-TS-27

Lab Sample ID: 500-232982-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.77	J B	1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	34600		200	44.3	ug/L	1		6020A	Total Recoverable
Copper	0.56	J	2.0	0.50	ug/L	1		6020A	Total Recoverable
Magnesium	11300		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	0.82	J	2.5	0.79	ug/L	1		6020A	Total Recoverable
Arsenic	0.64	J B	1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	35800		200	44.3	ug/L	1		6020A	Dissolved
Copper	0.59	J	2.0	0.50	ug/L	1		6020A	Dissolved
Magnesium	11900		200	49.4	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	86.4		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	89.4		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	21.0		1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	2.3	^	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	4.6		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.90	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	121		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-230427-TS-28

Lab Sample ID: 500-232982-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.5	B	1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	42200		200	44.3	ug/L	1		6020A	Total Recoverable
Magnesium	12600		200	49.4	ug/L	1		6020A	Total Recoverable
Arsenic	1.3	B	1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	42900		200	44.3	ug/L	1		6020A	Dissolved
Magnesium	13000		200	49.4	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	105		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	107		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	23.1		1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	1.4	^	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	5.9		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.62	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	127		5.0	3.7	mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-29

Lab Sample ID: 500-232982-5

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	28		1.0	0.17	ug/L	1		RSK-175	Total/NA
Arsenic	1.5	B	1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	37200		200	44.3	ug/L	1		6020A	Total Recoverable
Iron	136		100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	11600		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	30.4		2.5	0.79	ug/L	1		6020A	Total Recoverable
Arsenic	1.4	B	1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	37900		200	44.3	ug/L	1		6020A	Dissolved
Magnesium	12200		200	49.4	ug/L	1		6020A	Dissolved
Manganese	30.8		2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	93.0		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	94.6		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	43.7		1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	0.27	J ^	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	13.5		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.90	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	84.5		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-230427-TS-30

Lab Sample ID: 500-232982-6

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	23		1.0	0.17	ug/L	1		RSK-175	Total/NA
Arsenic	1.5	B	1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	37500		200	44.3	ug/L	1		6020A	Total Recoverable
Iron	71.1	J	100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	11700		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	30.4		2.5	0.79	ug/L	1		6020A	Total Recoverable
Arsenic	1.4	B	1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	37700		200	44.3	ug/L	1		6020A	Dissolved
Magnesium	12300		200	49.4	ug/L	1		6020A	Dissolved
Manganese	30.6		2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	93.8		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	94.1		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	41.1		1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	0.30	J ^	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	13.2		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.82	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	84.7		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-230427-TS-31

Lab Sample ID: 500-232982-7

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	41		1.0	0.17	ug/L	1		RSK-175	Total/NA

This Detection Summary does not include radiochemical test results.

Euofins Chicago

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-31 (Continued)

Lab Sample ID: 500-232982-7

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.22		0.098	0.097	ug/L	1		8151A	Total/NA
Arsenic	0.70	J B	1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	101000		200	44.3	ug/L	1		6020A	Total Recoverable
Iron	2450		100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	29500		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	23.9		2.5	0.79	ug/L	1		6020A	Total Recoverable
Arsenic	0.67	J B	1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	102000		200	44.3	ug/L	1		6020A	Dissolved
Copper	1.1	J	2.0	0.50	ug/L	1		6020A	Dissolved
Iron	2030		100	46.7	ug/L	1		6020A	Dissolved
Magnesium	30500		200	49.4	ug/L	1		6020A	Dissolved
Manganese	23.5		2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	251		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	255		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	18.7		1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	2.8	^	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	5.8		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.90	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	384		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-230427-TS-32

Lab Sample ID: 500-232982-8

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.0	B	1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	66000		200	44.3	ug/L	1		6020A	Total Recoverable
Magnesium	22100		200	49.4	ug/L	1		6020A	Total Recoverable
Arsenic	0.98	J B	1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	66400		200	44.3	ug/L	1		6020A	Dissolved
Magnesium	22200		200	49.4	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	165		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	166		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	46.1		5.0	0.58	mg/L	5		300.0	Total/NA
Nitrate as N	1.9	^	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	8.2		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.90	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	194		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-230427-TS-33

Lab Sample ID: 500-232982-9

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.15	J	0.50	0.15	ug/L	1		8260B	Total/NA
Ethylbenzene	1.0		0.50	0.18	ug/L	1		8260B	Total/NA
Xylenes, Total	5.9		1.0	0.22	ug/L	1		8260B	Total/NA
Naphthalene	5.8		3.4	1.1	ug/L	5		8270D	Total/NA

This Detection Summary does not include radiochemical test results.

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Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-33 (Continued)

Lab Sample ID: 500-232982-9

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	0.47	J	1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	2500		100	99	ug/L	1000		8151A	Total/NA
Arsenic	1.2	B	1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	50800		200	44.3	ug/L	1		6020A	Total Recoverable
Copper	2.8		2.0	0.50	ug/L	1		6020A	Total Recoverable
Magnesium	21100		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	1030		2.5	0.79	ug/L	1		6020A	Total Recoverable
Arsenic	1.2	B	1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	49300		200	44.3	ug/L	1		6020A	Dissolved
Copper	1.8	J	2.0	0.50	ug/L	1		6020A	Dissolved
Magnesium	20400		200	49.4	ug/L	1		6020A	Dissolved
Manganese	847		2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	127		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	123		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	22.5		1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	0.30	J ^	1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	22.5		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	20.0		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	174		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: TRIP BLANK

Lab Sample ID: 500-232982-10

No Detections.

This Detection Summary does not include radiochemical test results.

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Method Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	EET CHI
RSK-175	Dissolved Gases (GC)	RSK	EET CLE
8151A	Herbicides (GC)	SW846	EET CHI
6020A	Metals (ICP/MS)	SW846	EET CHI
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	EET CHI
300.0	Anions, Ion Chromatography	EPA	EET CHI
9060A	Organic Carbon, Total (TOC)	SW846	EET CHI
SM 2320B	Alkalinity	SM	EET CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CHI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CHI
5030B	Purge and Trap	SW846	EET CHI
8151A	Extraction (Herbicides)	SW846	EET CHI

Protocol References:

EPA = US Environmental Protection Agency

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-232982-1	W-230427-TS-25	Water	04/27/23 09:15	04/28/23 09:45
500-232982-2	W-230427-TS-26	Water	04/27/23 10:00	04/28/23 09:45
500-232982-3	W-230427-TS-27	Water	04/27/23 11:45	04/28/23 09:45
500-232982-4	W-230427-TS-28	Water	04/27/23 11:10	04/28/23 09:45
500-232982-5	W-230427-TS-29	Water	04/27/23 12:26	04/28/23 09:45
500-232982-6	W-230427-TS-30	Water	04/27/23 12:28	04/28/23 09:45
500-232982-7	W-230427-TS-31	Water	04/27/23 13:17	04/28/23 09:45
500-232982-8	W-230427-TS-32	Water	04/27/23 13:52	04/28/23 09:45
500-232982-9	W-230427-TS-33	Water	04/27/23 14:47	04/28/23 09:45
500-232982-10	TRIP BLANK	Water	04/27/23 00:00	04/28/23 09:45

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-25

Lab Sample ID: 500-232982-1

Date Collected: 04/27/23 09:15

Matrix: Water

Date Received: 04/28/23 09:45

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/05/23 00:45	1
Toluene	<0.15		0.50	0.15	ug/L			05/05/23 00:45	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/05/23 00:45	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/05/23 00:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	127	X	75 - 126					05/05/23 00:45	1
Toluene-d8 (Surr)	102		75 - 120					05/05/23 00:45	1
4-Bromofluorobenzene (Surr)	102		72 - 124					05/05/23 00:45	1
Dibromofluoromethane	109		75 - 120					05/05/23 00:45	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.22		0.70	0.22	ug/L		04/28/23 16:25	05/02/23 11:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	55		36 - 120				04/28/23 16:25	05/02/23 11:49	1
2-Fluorobiphenyl (Surr)	67		34 - 110				04/28/23 16:25	05/02/23 11:49	1
Terphenyl-d14 (Surr)	81		40 - 145				04/28/23 16:25	05/02/23 11:49	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			05/05/23 16:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	103		60 - 140					05/05/23 16:34	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.62		0.11	0.11	ug/L		05/03/23 12:13	05/05/23 15:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	88		25 - 130				05/03/23 12:13	05/05/23 15:42	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.1	B	1.0	0.23	ug/L		05/10/23 09:23	05/10/23 20:43	1
Calcium	19000		200	44.3	ug/L		05/10/23 09:23	05/10/23 20:43	1
Copper	33.7		2.0	0.50	ug/L		05/10/23 09:23	05/10/23 20:43	1
Iron	7250		100	46.7	ug/L		05/10/23 09:23	05/10/23 20:43	1
Magnesium	8570		200	49.4	ug/L		05/10/23 09:23	05/10/23 20:43	1
Manganese	454		2.5	0.79	ug/L		05/10/23 09:23	05/10/23 20:43	1
Zinc	19.0	J	20.0	6.9	ug/L		05/10/23 09:23	05/10/23 20:43	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.47	J B	1.0	0.23	ug/L		05/10/23 09:24	05/10/23 18:23	1
Calcium	20500		200	44.3	ug/L		05/10/23 09:24	05/10/23 18:23	1
Copper	5.8		2.0	0.50	ug/L		05/10/23 09:24	05/10/23 18:23	1
Iron	106		100	46.7	ug/L		05/10/23 09:24	05/10/23 18:23	1
Magnesium	7710		200	49.4	ug/L		05/10/23 09:24	05/10/23 18:23	1
Manganese	4.6		2.5	0.79	ug/L		05/10/23 09:24	05/10/23 18:23	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-25

Lab Sample ID: 500-232982-1

Date Collected: 04/27/23 09:15

Matrix: Water

Date Received: 04/28/23 09:45

Method: SW846 6020A - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		05/10/23 09:24	05/10/23 18:23	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	47.3		0.50	0.25	mg/L		05/10/23 09:23	05/11/23 13:19	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	51.2		0.50	0.25	mg/L		05/10/23 09:24	05/11/23 13:45	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	62.9		5.0	0.58	mg/L			05/16/23 23:43	5
Nitrate as N (EPA 300.0)	1.6	^	1.0	0.043	mg/L			04/28/23 18:44	1
Sulfate (EPA 300.0)	4.4		1.0	0.21	mg/L			04/28/23 18:44	1
Total Organic Carbon - Duplicates (SW846 9060A)	1.6		1.0	0.47	mg/L			05/10/23 20:55	1
Alkalinity (SM 2320B)	70.7		5.0	3.7	mg/L			05/10/23 16:38	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-26

Lab Sample ID: 500-232982-2

Date Collected: 04/27/23 10:00

Matrix: Water

Date Received: 04/28/23 09:45

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/05/23 01:10	1
Toluene	<0.15		0.50	0.15	ug/L			05/05/23 01:10	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/05/23 01:10	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/05/23 01:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	134	X	75 - 126		05/05/23 01:10	1
Toluene-d8 (Surr)	96		75 - 120		05/05/23 01:10	1
4-Bromofluorobenzene (Surr)	102		72 - 124		05/05/23 01:10	1
Dibromofluoromethane	119		75 - 120		05/05/23 01:10	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.19		0.63	0.19	ug/L		04/28/23 16:25	05/02/23 12:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	61		36 - 120	04/28/23 16:25	05/02/23 12:13	1
2-Fluorobiphenyl (Surr)	76		34 - 110	04/28/23 16:25	05/02/23 12:13	1
Terphenyl-d14 (Surr)	92		40 - 145	04/28/23 16:25	05/02/23 12:13	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			05/05/23 16:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	100		60 - 140		05/05/23 16:51	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.12		0.11	0.10	ug/L		05/03/23 12:13	05/05/23 16:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	86		25 - 130	05/03/23 12:13	05/05/23 16:01	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.3	B	1.0	0.23	ug/L		05/10/23 09:23	05/10/23 20:47	1
Calcium	16800		200	44.3	ug/L		05/10/23 09:23	05/10/23 20:47	1
Copper	17.3		2.0	0.50	ug/L		05/10/23 09:23	05/10/23 20:47	1
Iron	4590		100	46.7	ug/L		05/10/23 09:23	05/10/23 20:47	1
Magnesium	7380		200	49.4	ug/L		05/10/23 09:23	05/10/23 20:47	1
Manganese	181		2.5	0.79	ug/L		05/10/23 09:23	05/10/23 20:47	1
Zinc	23.6		20.0	6.9	ug/L		05/10/23 09:23	05/10/23 20:47	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.36	J B	1.0	0.23	ug/L		05/10/23 09:24	05/10/23 18:27	1
Calcium	17600		200	44.3	ug/L		05/10/23 09:24	05/10/23 18:27	1
Copper	0.72	J	2.0	0.50	ug/L		05/10/23 09:24	05/10/23 18:27	1
Iron	<46.7		100	46.7	ug/L		05/10/23 09:24	05/10/23 18:27	1
Magnesium	6960		200	49.4	ug/L		05/10/23 09:24	05/10/23 18:27	1
Manganese	0.87	J	2.5	0.79	ug/L		05/10/23 09:24	05/10/23 18:27	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-26

Lab Sample ID: 500-232982-2

Date Collected: 04/27/23 10:00

Matrix: Water

Date Received: 04/28/23 09:45

Method: SW846 6020A - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	6.9	J	20.0	6.9	ug/L		05/10/23 09:24	05/10/23 18:27	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	41.8		0.50	0.25	mg/L		05/10/23 09:23	05/11/23 13:19	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	44.1		0.50	0.25	mg/L		05/10/23 09:24	05/11/23 13:45	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	0.47	J	1.0	0.12	mg/L			04/28/23 19:00	1
Nitrate as N (EPA 300.0)	0.35	J ^	1.0	0.043	mg/L			04/28/23 19:00	1
Sulfate (EPA 300.0)	1.5		1.0	0.21	mg/L			04/28/23 19:00	1
Total Organic Carbon - Duplicates (SW846 9060A)	0.73	J	1.0	0.47	mg/L			05/10/23 21:09	1
Alkalinity (SM 2320B)	77.4		5.0	3.7	mg/L			05/10/23 16:38	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-27

Lab Sample ID: 500-232982-3

Date Collected: 04/27/23 11:45

Matrix: Water

Date Received: 04/28/23 09:45

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/05/23 01:34	1
Toluene	<0.15		0.50	0.15	ug/L			05/05/23 01:34	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/05/23 01:34	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/05/23 01:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	131	X	75 - 126					05/05/23 01:34	1
Toluene-d8 (Surr)	100		75 - 120					05/05/23 01:34	1
4-Bromofluorobenzene (Surr)	102		72 - 124					05/05/23 01:34	1
Dibromofluoromethane	115		75 - 120					05/05/23 01:34	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.20		0.66	0.20	ug/L		04/28/23 16:25	05/02/23 12:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	63		36 - 120				04/28/23 16:25	05/02/23 12:37	1
2-Fluorobiphenyl (Surr)	78		34 - 110				04/28/23 16:25	05/02/23 12:37	1
Terphenyl-d14 (Surr)	99		40 - 145				04/28/23 16:25	05/02/23 12:37	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			05/05/23 17:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	103		60 - 140					05/05/23 17:08	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.097		0.098	0.097	ug/L		05/03/23 12:13	05/05/23 16:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	85		25 - 130				05/03/23 12:13	05/05/23 16:19	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.77	J B	1.0	0.23	ug/L		05/10/23 09:23	05/10/23 20:51	1
Calcium	34600		200	44.3	ug/L		05/10/23 09:23	05/10/23 20:51	1
Copper	0.56	J	2.0	0.50	ug/L		05/10/23 09:23	05/10/23 20:51	1
Iron	<46.7		100	46.7	ug/L		05/10/23 09:23	05/10/23 20:51	1
Magnesium	11300		200	49.4	ug/L		05/10/23 09:23	05/10/23 20:51	1
Manganese	0.82	J	2.5	0.79	ug/L		05/10/23 09:23	05/10/23 20:51	1
Zinc	<6.9		20.0	6.9	ug/L		05/10/23 09:23	05/10/23 20:51	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.64	J B	1.0	0.23	ug/L		05/10/23 09:24	05/10/23 18:32	1
Calcium	35800		200	44.3	ug/L		05/10/23 09:24	05/10/23 18:32	1
Copper	0.59	J	2.0	0.50	ug/L		05/10/23 09:24	05/10/23 18:32	1
Iron	<46.7		100	46.7	ug/L		05/10/23 09:24	05/10/23 18:32	1
Magnesium	11900		200	49.4	ug/L		05/10/23 09:24	05/10/23 18:32	1
Manganese	<0.79		2.5	0.79	ug/L		05/10/23 09:24	05/10/23 18:32	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-27

Lab Sample ID: 500-232982-3

Date Collected: 04/27/23 11:45

Matrix: Water

Date Received: 04/28/23 09:45

Method: SW846 6020A - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		05/10/23 09:24	05/10/23 18:32	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	86.4		0.50	0.25	mg/L		05/10/23 09:23	05/11/23 13:19	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	89.4		0.50	0.25	mg/L		05/10/23 09:24	05/11/23 13:45	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	21.0		1.0	0.12	mg/L			04/28/23 19:15	1
Nitrate as N (EPA 300.0)	2.3	^	1.0	0.043	mg/L			04/28/23 19:15	1
Sulfate (EPA 300.0)	4.6		1.0	0.21	mg/L			04/28/23 19:15	1
Total Organic Carbon - Duplicates (SW846 9060A)	0.90	J	1.0	0.47	mg/L			05/10/23 21:22	1
Alkalinity (SM 2320B)	121		5.0	3.7	mg/L			05/10/23 16:38	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-28

Lab Sample ID: 500-232982-4

Date Collected: 04/27/23 11:10

Matrix: Water

Date Received: 04/28/23 09:45

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/05/23 01:59	1
Toluene	<0.15		0.50	0.15	ug/L			05/05/23 01:59	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/05/23 01:59	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/05/23 01:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	130	X	75 - 126		05/05/23 01:59	1
Toluene-d8 (Surr)	101		75 - 120		05/05/23 01:59	1
4-Bromofluorobenzene (Surr)	106		72 - 124		05/05/23 01:59	1
Dibromofluoromethane	109		75 - 120		05/05/23 01:59	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.20		0.65	0.20	ug/L		04/28/23 16:25	05/02/23 15:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	64		36 - 120	04/28/23 16:25	05/02/23 15:09	1
2-Fluorobiphenyl (Surr)	81		34 - 110	04/28/23 16:25	05/02/23 15:09	1
Terphenyl-d14 (Surr)	104		40 - 145	04/28/23 16:25	05/02/23 15:09	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			05/05/23 17:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	102		60 - 140		05/05/23 17:25	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.095		0.096	0.095	ug/L		05/03/23 12:13	05/05/23 16:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	89		25 - 130	05/03/23 12:13	05/05/23 16:37	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.5	B	1.0	0.23	ug/L		05/10/23 09:23	05/10/23 20:55	1
Calcium	42200		200	44.3	ug/L		05/10/23 09:23	05/10/23 20:55	1
Copper	<0.50		2.0	0.50	ug/L		05/10/23 09:23	05/10/23 20:55	1
Iron	<46.7		100	46.7	ug/L		05/10/23 09:23	05/10/23 20:55	1
Magnesium	12600		200	49.4	ug/L		05/10/23 09:23	05/10/23 20:55	1
Manganese	<0.79		2.5	0.79	ug/L		05/10/23 09:23	05/10/23 20:55	1
Zinc	<6.9		20.0	6.9	ug/L		05/10/23 09:23	05/10/23 20:55	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.3	B	1.0	0.23	ug/L		05/10/23 09:24	05/10/23 18:36	1
Calcium	42900		200	44.3	ug/L		05/10/23 09:24	05/10/23 18:36	1
Copper	<0.50		2.0	0.50	ug/L		05/10/23 09:24	05/10/23 18:36	1
Iron	<46.7		100	46.7	ug/L		05/10/23 09:24	05/10/23 18:36	1
Magnesium	13000		200	49.4	ug/L		05/10/23 09:24	05/10/23 18:36	1
Manganese	<0.79		2.5	0.79	ug/L		05/10/23 09:24	05/10/23 18:36	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-28

Lab Sample ID: 500-232982-4

Date Collected: 04/27/23 11:10

Matrix: Water

Date Received: 04/28/23 09:45

Method: SW846 6020A - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		05/10/23 09:24	05/10/23 18:36	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	105		0.50	0.25	mg/L		05/10/23 09:23	05/11/23 13:19	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	107		0.50	0.25	mg/L		05/10/23 09:24	05/11/23 13:45	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	23.1		1.0	0.12	mg/L			04/28/23 19:31	1
Nitrate as N (EPA 300.0)	1.4	^	1.0	0.043	mg/L			04/28/23 19:31	1
Sulfate (EPA 300.0)	5.9		1.0	0.21	mg/L			04/28/23 19:31	1
Total Organic Carbon - Duplicates (SW846 9060A)	0.62	J	1.0	0.47	mg/L			05/10/23 21:36	1
Alkalinity (SM 2320B)	127		5.0	3.7	mg/L			05/10/23 16:38	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-29

Lab Sample ID: 500-232982-5

Date Collected: 04/27/23 12:26

Matrix: Water

Date Received: 04/28/23 09:45

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/05/23 02:23	1
Toluene	<0.15		0.50	0.15	ug/L			05/05/23 02:23	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/05/23 02:23	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/05/23 02:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	132	X	75 - 126		05/05/23 02:23	1
Toluene-d8 (Surr)	96		75 - 120		05/05/23 02:23	1
4-Bromofluorobenzene (Surr)	106		72 - 124		05/05/23 02:23	1
Dibromofluoromethane	116		75 - 120		05/05/23 02:23	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.21		0.70	0.21	ug/L		04/28/23 16:25	05/02/23 13:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	54		36 - 120	04/28/23 16:25	05/02/23 13:11	1
2-Fluorobiphenyl (Surr)	66		34 - 110	04/28/23 16:25	05/02/23 13:11	1
Terphenyl-d14 (Surr)	87		40 - 145	04/28/23 16:25	05/02/23 13:11	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	28		1.0	0.17	ug/L			05/05/23 18:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	103		60 - 140		05/05/23 18:16	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.10		0.10	0.10	ug/L		05/03/23 12:13	05/05/23 17:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	87		25 - 130	05/03/23 12:13	05/05/23 17:50	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.5	B	1.0	0.23	ug/L		05/10/23 09:23	05/10/23 21:24	1
Calcium	37200		200	44.3	ug/L		05/10/23 09:23	05/10/23 21:24	1
Copper	<0.50		2.0	0.50	ug/L		05/10/23 09:23	05/10/23 21:24	1
Iron	136		100	46.7	ug/L		05/10/23 09:23	05/10/23 21:24	1
Magnesium	11600		200	49.4	ug/L		05/10/23 09:23	05/10/23 21:24	1
Manganese	30.4		2.5	0.79	ug/L		05/10/23 09:23	05/10/23 21:24	1
Zinc	<6.9		20.0	6.9	ug/L		05/10/23 09:23	05/10/23 21:24	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.4	B	1.0	0.23	ug/L		05/10/23 09:24	05/10/23 19:05	1
Calcium	37900		200	44.3	ug/L		05/10/23 09:24	05/10/23 19:05	1
Copper	<0.50		2.0	0.50	ug/L		05/10/23 09:24	05/10/23 19:05	1
Iron	<46.7		100	46.7	ug/L		05/10/23 09:24	05/10/23 19:05	1
Magnesium	12200		200	49.4	ug/L		05/10/23 09:24	05/10/23 19:05	1
Manganese	30.8		2.5	0.79	ug/L		05/10/23 09:24	05/10/23 19:05	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-29

Lab Sample ID: 500-232982-5

Date Collected: 04/27/23 12:26

Matrix: Water

Date Received: 04/28/23 09:45

Method: SW846 6020A - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		05/10/23 09:24	05/10/23 19:05	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	93.0		0.50	0.25	mg/L		05/10/23 09:23	05/11/23 13:19	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	94.6		0.50	0.25	mg/L		05/10/23 09:24	05/11/23 13:45	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	43.7		1.0	0.12	mg/L			04/28/23 20:18	1
Nitrate as N (EPA 300.0)	0.27	J ^	1.0	0.043	mg/L			04/28/23 20:18	1
Sulfate (EPA 300.0)	13.5		1.0	0.21	mg/L			04/28/23 20:18	1
Total Organic Carbon - Duplicates (SW846 9060A)	0.90	J	1.0	0.47	mg/L			05/10/23 22:21	1
Alkalinity (SM 2320B)	84.5		5.0	3.7	mg/L			05/10/23 16:38	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-30

Lab Sample ID: 500-232982-6

Date Collected: 04/27/23 12:28

Matrix: Water

Date Received: 04/28/23 09:45

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/05/23 02:48	1
Toluene	<0.15		0.50	0.15	ug/L			05/05/23 02:48	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/05/23 02:48	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/05/23 02:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	126		75 - 126					05/05/23 02:48	1
Toluene-d8 (Surr)	98		75 - 120					05/05/23 02:48	1
4-Bromofluorobenzene (Surr)	107 *		72 - 124					05/05/23 02:48	1
Dibromofluoromethane	114		75 - 120					05/05/23 02:48	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.21		0.68	0.21	ug/L		04/28/23 16:25	05/02/23 13:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	56		36 - 120				04/28/23 16:25	05/02/23 13:35	1
2-Fluorobiphenyl (Surr)	69		34 - 110				04/28/23 16:25	05/02/23 13:35	1
Terphenyl-d14 (Surr)	96		40 - 145				04/28/23 16:25	05/02/23 13:35	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	23		1.0	0.17	ug/L			05/05/23 18:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	102		60 - 140					05/05/23 18:50	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.096		0.097	0.096	ug/L		05/03/23 12:13	05/05/23 18:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	86		25 - 130				05/03/23 12:13	05/05/23 18:08	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.5	B	1.0	0.23	ug/L		05/10/23 09:23	05/10/23 21:28	1
Calcium	37500		200	44.3	ug/L		05/10/23 09:23	05/10/23 21:28	1
Copper	<0.50		2.0	0.50	ug/L		05/10/23 09:23	05/10/23 21:28	1
Iron	71.1	J	100	46.7	ug/L		05/10/23 09:23	05/10/23 21:28	1
Magnesium	11700		200	49.4	ug/L		05/10/23 09:23	05/10/23 21:28	1
Manganese	30.4		2.5	0.79	ug/L		05/10/23 09:23	05/10/23 21:28	1
Zinc	<6.9		20.0	6.9	ug/L		05/10/23 09:23	05/10/23 21:28	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.4	B	1.0	0.23	ug/L		05/10/23 09:24	05/10/23 19:12	1
Calcium	37700		200	44.3	ug/L		05/10/23 09:24	05/10/23 19:12	1
Copper	<0.50		2.0	0.50	ug/L		05/10/23 09:24	05/10/23 19:12	1
Iron	<46.7		100	46.7	ug/L		05/10/23 09:24	05/10/23 19:12	1
Magnesium	12300		200	49.4	ug/L		05/10/23 09:24	05/10/23 19:12	1
Manganese	30.6		2.5	0.79	ug/L		05/10/23 09:24	05/10/23 19:12	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-30

Lab Sample ID: 500-232982-6

Date Collected: 04/27/23 12:28

Matrix: Water

Date Received: 04/28/23 09:45

Method: SW846 6020A - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		05/10/23 09:24	05/10/23 19:12	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	93.8		0.50	0.25	mg/L		05/10/23 09:23	05/11/23 13:19	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	94.1		0.50	0.25	mg/L		05/10/23 09:24	05/11/23 13:45	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	41.1		1.0	0.12	mg/L			04/28/23 20:33	1
Nitrate as N (EPA 300.0)	0.30	J ^	1.0	0.043	mg/L			04/28/23 20:33	1
Sulfate (EPA 300.0)	13.2		1.0	0.21	mg/L			04/28/23 20:33	1
Total Organic Carbon - Duplicates (SW846 9060A)	0.82	J	1.0	0.47	mg/L			05/10/23 22:39	1
Alkalinity (SM 2320B)	84.7		5.0	3.7	mg/L			05/10/23 16:38	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-31

Lab Sample ID: 500-232982-7

Date Collected: 04/27/23 13:17

Matrix: Water

Date Received: 04/28/23 09:45

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/05/23 03:12	1
Toluene	<0.15		0.50	0.15	ug/L			05/05/23 03:12	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/05/23 03:12	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/05/23 03:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	131	X	75 - 126					05/05/23 03:12	1
Toluene-d8 (Surr)	99		75 - 120					05/05/23 03:12	1
4-Bromofluorobenzene (Surr)	103		72 - 124					05/05/23 03:12	1
Dibromofluoromethane	115		75 - 120					05/05/23 03:12	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.21		0.69	0.21	ug/L		04/28/23 16:25	05/02/23 13:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	56		36 - 120				04/28/23 16:25	05/02/23 13:58	1
2-Fluorobiphenyl (Surr)	71		34 - 110				04/28/23 16:25	05/02/23 13:58	1
Terphenyl-d14 (Surr)	95		40 - 145				04/28/23 16:25	05/02/23 13:58	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	41		1.0	0.17	ug/L			05/05/23 19:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	98		60 - 140					05/05/23 19:07	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.22		0.098	0.097	ug/L		05/03/23 12:13	05/05/23 18:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	89		25 - 130				05/03/23 12:13	05/05/23 18:26	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.70	J B	1.0	0.23	ug/L		05/10/23 09:23	05/10/23 21:32	1
Calcium	101000		200	44.3	ug/L		05/10/23 09:23	05/10/23 21:32	1
Copper	<0.50		2.0	0.50	ug/L		05/10/23 09:23	05/10/23 21:32	1
Iron	2450		100	46.7	ug/L		05/10/23 09:23	05/10/23 21:32	1
Magnesium	29500		200	49.4	ug/L		05/10/23 09:23	05/10/23 21:32	1
Manganese	23.9		2.5	0.79	ug/L		05/10/23 09:23	05/10/23 21:32	1
Zinc	<6.9		20.0	6.9	ug/L		05/10/23 09:23	05/10/23 21:32	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.67	J B	1.0	0.23	ug/L		05/10/23 09:24	05/10/23 19:16	1
Calcium	102000		200	44.3	ug/L		05/10/23 09:24	05/10/23 19:16	1
Copper	1.1	J	2.0	0.50	ug/L		05/10/23 09:24	05/10/23 19:16	1
Iron	2030		100	46.7	ug/L		05/10/23 09:24	05/10/23 19:16	1
Magnesium	30500		200	49.4	ug/L		05/10/23 09:24	05/10/23 19:16	1
Manganese	23.5		2.5	0.79	ug/L		05/10/23 09:24	05/10/23 19:16	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-31

Lab Sample ID: 500-232982-7

Date Collected: 04/27/23 13:17

Matrix: Water

Date Received: 04/28/23 09:45

Method: SW846 6020A - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		05/10/23 09:24	05/10/23 19:16	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	251		0.50	0.25	mg/L		05/10/23 09:23	05/11/23 13:19	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	255		0.50	0.25	mg/L		05/10/23 09:24	05/11/23 13:45	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	18.7		1.0	0.12	mg/L			04/28/23 21:20	1
Nitrate as N (EPA 300.0)	2.8	^	1.0	0.043	mg/L			04/28/23 21:20	1
Sulfate (EPA 300.0)	5.8		1.0	0.21	mg/L			04/28/23 21:20	1
Total Organic Carbon - Duplicates (SW846 9060A)	0.90	J	1.0	0.47	mg/L			05/10/23 22:52	1
Alkalinity (SM 2320B)	384		5.0	3.7	mg/L			05/10/23 16:38	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-32

Lab Sample ID: 500-232982-8

Date Collected: 04/27/23 13:52

Matrix: Water

Date Received: 04/28/23 09:45

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/05/23 03:37	1
Toluene	<0.15		0.50	0.15	ug/L			05/05/23 03:37	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/05/23 03:37	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/05/23 03:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	134	X	75 - 126					05/05/23 03:37	1
Toluene-d8 (Surr)	99		75 - 120					05/05/23 03:37	1
4-Bromofluorobenzene (Surr)	103		72 - 124					05/05/23 03:37	1
Dibromofluoromethane	113		75 - 120					05/05/23 03:37	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.21		0.67	0.21	ug/L		04/28/23 16:25	05/02/23 14:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	53		36 - 120				04/28/23 16:25	05/02/23 14:22	1
2-Fluorobiphenyl (Surr)	66		34 - 110				04/28/23 16:25	05/02/23 14:22	1
Terphenyl-d14 (Surr)	87		40 - 145				04/28/23 16:25	05/02/23 14:22	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			05/05/23 19:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	103		60 - 140					05/05/23 19:24	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.095		0.096	0.095	ug/L		05/03/23 12:13	05/05/23 18:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	83		25 - 130				05/03/23 12:13	05/05/23 18:45	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.0	B	1.0	0.23	ug/L		05/10/23 09:23	05/10/23 21:36	1
Calcium	66000		200	44.3	ug/L		05/10/23 09:23	05/10/23 21:36	1
Copper	<0.50		2.0	0.50	ug/L		05/10/23 09:23	05/10/23 21:36	1
Iron	<46.7		100	46.7	ug/L		05/10/23 09:23	05/10/23 21:36	1
Magnesium	22100		200	49.4	ug/L		05/10/23 09:23	05/10/23 21:36	1
Manganese	<0.79		2.5	0.79	ug/L		05/10/23 09:23	05/10/23 21:36	1
Zinc	<6.9		20.0	6.9	ug/L		05/10/23 09:23	05/10/23 21:36	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.98	J B	1.0	0.23	ug/L		05/10/23 09:24	05/10/23 19:20	1
Calcium	66400		200	44.3	ug/L		05/10/23 09:24	05/10/23 19:20	1
Copper	<0.50		2.0	0.50	ug/L		05/10/23 09:24	05/10/23 19:20	1
Iron	<46.7		100	46.7	ug/L		05/10/23 09:24	05/10/23 19:20	1
Magnesium	22200		200	49.4	ug/L		05/10/23 09:24	05/10/23 19:20	1
Manganese	<0.79		2.5	0.79	ug/L		05/10/23 09:24	05/10/23 19:20	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-32

Lab Sample ID: 500-232982-8

Date Collected: 04/27/23 13:52

Matrix: Water

Date Received: 04/28/23 09:45

Method: SW846 6020A - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		05/10/23 09:24	05/10/23 19:20	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	165		0.50	0.25	mg/L		05/10/23 09:23	05/11/23 13:19	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	166		0.50	0.25	mg/L		05/10/23 09:24	05/11/23 13:45	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	46.1		5.0	0.58	mg/L			05/16/23 23:58	5
Nitrate as N (EPA 300.0)	1.9	^	1.0	0.043	mg/L			04/28/23 21:36	1
Sulfate (EPA 300.0)	8.2		1.0	0.21	mg/L			04/28/23 21:36	1
Total Organic Carbon - Duplicates (SW846 9060A)	0.90	J	1.0	0.47	mg/L			05/11/23 05:26	1
Alkalinity (SM 2320B)	194		5.0	3.7	mg/L			05/10/23 16:38	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-33

Lab Sample ID: 500-232982-9

Date Collected: 04/27/23 14:47

Matrix: Water

Date Received: 04/28/23 09:45

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/09/23 14:21	1
Toluene	0.15	J	0.50	0.15	ug/L			05/09/23 14:21	1
Ethylbenzene	1.0		0.50	0.18	ug/L			05/09/23 14:21	1
Xylenes, Total	5.9		1.0	0.22	ug/L			05/09/23 14:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		75 - 126		05/09/23 14:21	1
Toluene-d8 (Surr)	110		75 - 120		05/09/23 14:21	1
4-Bromofluorobenzene (Surr)	112		72 - 124		05/09/23 14:21	1
Dibromofluoromethane	91		75 - 120		05/09/23 14:21	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	5.8		3.4	1.1	ug/L		04/28/23 16:25	05/02/23 14:46	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	48		36 - 120	04/28/23 16:25	05/02/23 14:46	5
2-Fluorobiphenyl (Surr)	61		34 - 110	04/28/23 16:25	05/02/23 14:46	5
Terphenyl-d14 (Surr)	76		40 - 145	04/28/23 16:25	05/02/23 14:46	5

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	0.47	J	1.0	0.17	ug/L			05/05/23 19:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	102		60 - 140		05/05/23 19:41	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	2500		100	99	ug/L		05/03/23 12:13	05/12/23 11:46	1000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	0	X	25 - 130	05/03/23 12:13	05/12/23 11:46	1000

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.2	B	1.0	0.23	ug/L		05/10/23 09:23	05/10/23 21:41	1
Calcium	50800		200	44.3	ug/L		05/10/23 09:23	05/10/23 21:41	1
Copper	2.8		2.0	0.50	ug/L		05/10/23 09:23	05/10/23 21:41	1
Iron	<46.7		100	46.7	ug/L		05/10/23 09:23	05/10/23 21:41	1
Magnesium	21100		200	49.4	ug/L		05/10/23 09:23	05/10/23 21:41	1
Manganese	1030		2.5	0.79	ug/L		05/10/23 09:23	05/10/23 21:41	1
Zinc	<6.9		20.0	6.9	ug/L		05/10/23 09:23	05/10/23 21:41	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.2	B	1.0	0.23	ug/L		05/10/23 09:24	05/10/23 19:24	1
Calcium	49300		200	44.3	ug/L		05/10/23 09:24	05/10/23 19:24	1
Copper	1.8	J	2.0	0.50	ug/L		05/10/23 09:24	05/10/23 19:24	1
Iron	<46.7		100	46.7	ug/L		05/10/23 09:24	05/10/23 19:24	1
Magnesium	20400		200	49.4	ug/L		05/10/23 09:24	05/10/23 19:24	1
Manganese	847		2.5	0.79	ug/L		05/10/23 09:24	05/10/23 19:24	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-33

Lab Sample ID: 500-232982-9

Date Collected: 04/27/23 14:47

Matrix: Water

Date Received: 04/28/23 09:45

Method: SW846 6020A - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		05/10/23 09:24	05/10/23 19:24	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	127		0.50	0.25	mg/L		05/10/23 09:23	05/11/23 13:19	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	123		0.50	0.25	mg/L		05/10/23 09:24	05/11/23 13:45	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	22.5		1.0	0.12	mg/L			04/28/23 21:52	1
Nitrate as N (EPA 300.0)	0.30	J ^	1.0	0.043	mg/L			04/28/23 21:52	1
Sulfate (EPA 300.0)	22.5		1.0	0.21	mg/L			04/28/23 21:52	1
Total Organic Carbon - Duplicates (SW846 9060A)	20.0		1.0	0.47	mg/L			05/11/23 05:40	1
Alkalinity (SM 2320B)	174		5.0	3.7	mg/L			05/10/23 16:38	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 500-232982-10

Date Collected: 04/27/23 00:00

Matrix: Water

Date Received: 04/28/23 09:45

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/05/23 00:21	1
Toluene	<0.15		0.50	0.15	ug/L			05/05/23 00:21	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/05/23 00:21	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/05/23 00:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	120		75 - 126		05/05/23 00:21	1
Toluene-d8 (Surr)	98		75 - 120		05/05/23 00:21	1
4-Bromofluorobenzene (Surr)	104		72 - 124		05/05/23 00:21	1
Dibromofluoromethane	110		75 - 120		05/05/23 00:21	1

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	ISTD response or retention time outside acceptable limits
J	Reported value was between the limit of detection and the limit of quantitation.
X	Surrogate recovery exceeds control limits

GC VOA

Qualifier	Qualifier Description
J	Reported value was between the limit of detection and the limit of quantitation.

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate recovery exceeds control limits

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.
J	Reported value was between the limit of detection and the limit of quantitation.

General Chemistry

Qualifier	Qualifier Description
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
J	Reported value was between the limit of detection and the limit of quantitation.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)

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Definitions/Glossary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

GC/MS VOA

Analysis Batch: 711485

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232982-1	W-230427-TS-25	Total/NA	Water	8260B	
500-232982-2	W-230427-TS-26	Total/NA	Water	8260B	
500-232982-3	W-230427-TS-27	Total/NA	Water	8260B	
500-232982-4	W-230427-TS-28	Total/NA	Water	8260B	
500-232982-5	W-230427-TS-29	Total/NA	Water	8260B	
500-232982-6	W-230427-TS-30	Total/NA	Water	8260B	
500-232982-7	W-230427-TS-31	Total/NA	Water	8260B	
500-232982-8	W-230427-TS-32	Total/NA	Water	8260B	
500-232982-10	TRIP BLANK	Total/NA	Water	8260B	
MB 500-711485/7	Method Blank	Total/NA	Water	8260B	
LCS 500-711485/4	Lab Control Sample	Total/NA	Water	8260B	
500-232982-4 MS	W-230427-TS-28	Total/NA	Water	8260B	
500-232982-4 MSD	W-230427-TS-28	Total/NA	Water	8260B	

Analysis Batch: 712149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232982-9	W-230427-TS-33	Total/NA	Water	8260B	
MB 500-712149/10	Method Blank	Total/NA	Water	8260B	
LCS 500-712149/7	Lab Control Sample	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 710414

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232982-1	W-230427-TS-25	Total/NA	Water	3510C	
500-232982-2	W-230427-TS-26	Total/NA	Water	3510C	
500-232982-3	W-230427-TS-27	Total/NA	Water	3510C	
500-232982-4	W-230427-TS-28	Total/NA	Water	3510C	
500-232982-5	W-230427-TS-29	Total/NA	Water	3510C	
500-232982-6	W-230427-TS-30	Total/NA	Water	3510C	
500-232982-7	W-230427-TS-31	Total/NA	Water	3510C	
500-232982-8	W-230427-TS-32	Total/NA	Water	3510C	
500-232982-9	W-230427-TS-33	Total/NA	Water	3510C	
MB 500-710414/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-710414/2-A	Lab Control Sample	Total/NA	Water	3510C	
500-232982-4 MS	W-230427-TS-28	Total/NA	Water	3510C	
500-232982-4 MSD	W-230427-TS-28	Total/NA	Water	3510C	

Analysis Batch: 710498

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-710414/1-A	Method Blank	Total/NA	Water	8270D	710414
LCS 500-710414/2-A	Lab Control Sample	Total/NA	Water	8270D	710414

Analysis Batch: 710838

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232982-1	W-230427-TS-25	Total/NA	Water	8270D	710414
500-232982-2	W-230427-TS-26	Total/NA	Water	8270D	710414
500-232982-3	W-230427-TS-27	Total/NA	Water	8270D	710414
500-232982-4	W-230427-TS-28	Total/NA	Water	8270D	710414
500-232982-5	W-230427-TS-29	Total/NA	Water	8270D	710414
500-232982-6	W-230427-TS-30	Total/NA	Water	8270D	710414

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

GC/MS Semi VOA (Continued)

Analysis Batch: 710838 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232982-7	W-230427-TS-31	Total/NA	Water	8270D	710414
500-232982-8	W-230427-TS-32	Total/NA	Water	8270D	710414
500-232982-9	W-230427-TS-33	Total/NA	Water	8270D	710414
500-232982-4 MS	W-230427-TS-28	Total/NA	Water	8270D	710414
500-232982-4 MSD	W-230427-TS-28	Total/NA	Water	8270D	710414

GC VOA

Analysis Batch: 572283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232982-1	W-230427-TS-25	Total/NA	Water	RSK-175	
500-232982-2	W-230427-TS-26	Total/NA	Water	RSK-175	
500-232982-3	W-230427-TS-27	Total/NA	Water	RSK-175	
500-232982-4	W-230427-TS-28	Total/NA	Water	RSK-175	
500-232982-5	W-230427-TS-29	Total/NA	Water	RSK-175	
500-232982-6	W-230427-TS-30	Total/NA	Water	RSK-175	
500-232982-7	W-230427-TS-31	Total/NA	Water	RSK-175	
500-232982-8	W-230427-TS-32	Total/NA	Water	RSK-175	
500-232982-9	W-230427-TS-33	Total/NA	Water	RSK-175	
MB 240-572283/3	Method Blank	Total/NA	Water	RSK-175	
LCS 240-572283/4	Lab Control Sample	Total/NA	Water	RSK-175	
500-232982-4 MS	W-230427-TS-28	Total/NA	Water	RSK-175	
500-232982-4 MSD	W-230427-TS-28	Total/NA	Water	RSK-175	

GC Semi VOA

Leach Batch: 710686

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LB 500-710686/1-E	Method Blank	Total/NA	Water	1311	

Prep Batch: 711157

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232982-1	W-230427-TS-25	Total/NA	Water	8151A	
500-232982-2	W-230427-TS-26	Total/NA	Water	8151A	
500-232982-3	W-230427-TS-27	Total/NA	Water	8151A	
500-232982-4	W-230427-TS-28	Total/NA	Water	8151A	
500-232982-5	W-230427-TS-29	Total/NA	Water	8151A	
500-232982-6	W-230427-TS-30	Total/NA	Water	8151A	
500-232982-7	W-230427-TS-31	Total/NA	Water	8151A	
500-232982-8	W-230427-TS-32	Total/NA	Water	8151A	
500-232982-9	W-230427-TS-33	Total/NA	Water	8151A	
LB 500-710686/1-E	Method Blank	Total/NA	Water	8151A	710686
MB 500-711157/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-711157/2-A	Lab Control Sample	Total/NA	Water	8151A	
500-232982-4 MS	W-230427-TS-28	Total/NA	Water	8151A	
500-232982-4 MSD	W-230427-TS-28	Total/NA	Water	8151A	

Analysis Batch: 711334

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LB 500-710686/1-E	Method Blank	Total/NA	Water	8151A	711157
MB 500-711157/1-A	Method Blank	Total/NA	Water	8151A	711157
LCS 500-711157/2-A	Lab Control Sample	Total/NA	Water	8151A	711157

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

GC Semi VOA

Analysis Batch: 711591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232982-1	W-230427-TS-25	Total/NA	Water	8151A	711157
500-232982-2	W-230427-TS-26	Total/NA	Water	8151A	711157
500-232982-3	W-230427-TS-27	Total/NA	Water	8151A	711157
500-232982-4	W-230427-TS-28	Total/NA	Water	8151A	711157
500-232982-5	W-230427-TS-29	Total/NA	Water	8151A	711157
500-232982-6	W-230427-TS-30	Total/NA	Water	8151A	711157
500-232982-7	W-230427-TS-31	Total/NA	Water	8151A	711157
500-232982-8	W-230427-TS-32	Total/NA	Water	8151A	711157
500-232982-4 MS	W-230427-TS-28	Total/NA	Water	8151A	711157
500-232982-4 MSD	W-230427-TS-28	Total/NA	Water	8151A	711157

Analysis Batch: 712956

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232982-9	W-230427-TS-33	Total/NA	Water	8151A	711157

Metals

Prep Batch: 712418

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232982-1	W-230427-TS-25	Total Recoverable	Water	3005A	
500-232982-2	W-230427-TS-26	Total Recoverable	Water	3005A	
500-232982-3	W-230427-TS-27	Total Recoverable	Water	3005A	
500-232982-4	W-230427-TS-28	Total Recoverable	Water	3005A	
500-232982-5	W-230427-TS-29	Total Recoverable	Water	3005A	
500-232982-6	W-230427-TS-30	Total Recoverable	Water	3005A	
500-232982-7	W-230427-TS-31	Total Recoverable	Water	3005A	
500-232982-8	W-230427-TS-32	Total Recoverable	Water	3005A	
500-232982-9	W-230427-TS-33	Total Recoverable	Water	3005A	
MB 500-712418/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-712418/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
500-232982-4 MS	W-230427-TS-28	Total Recoverable	Water	3005A	
500-232982-4 MSD	W-230427-TS-28	Total Recoverable	Water	3005A	
500-232982-4 DU	W-230427-TS-28	Total Recoverable	Water	3005A	

Prep Batch: 712420

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232982-1	W-230427-TS-25	Dissolved	Water	3005A	
500-232982-2	W-230427-TS-26	Dissolved	Water	3005A	
500-232982-3	W-230427-TS-27	Dissolved	Water	3005A	
500-232982-4	W-230427-TS-28	Dissolved	Water	3005A	
500-232982-5	W-230427-TS-29	Dissolved	Water	3005A	
500-232982-6	W-230427-TS-30	Dissolved	Water	3005A	
500-232982-7	W-230427-TS-31	Dissolved	Water	3005A	
500-232982-8	W-230427-TS-32	Dissolved	Water	3005A	
500-232982-9	W-230427-TS-33	Dissolved	Water	3005A	
MB 500-712420/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-712420/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
500-232982-4 MS	W-230427-TS-28	Dissolved	Water	3005A	
500-232982-4 MSD	W-230427-TS-28	Dissolved	Water	3005A	
500-232982-4 DU	W-230427-TS-28	Dissolved	Water	3005A	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Metals

Analysis Batch: 712707

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232982-1	W-230427-TS-25	Dissolved	Water	6020A	712420
500-232982-1	W-230427-TS-25	Total Recoverable	Water	6020A	712418
500-232982-2	W-230427-TS-26	Dissolved	Water	6020A	712420
500-232982-2	W-230427-TS-26	Total Recoverable	Water	6020A	712418
500-232982-3	W-230427-TS-27	Dissolved	Water	6020A	712420
500-232982-3	W-230427-TS-27	Total Recoverable	Water	6020A	712418
500-232982-4	W-230427-TS-28	Dissolved	Water	6020A	712420
500-232982-4	W-230427-TS-28	Total Recoverable	Water	6020A	712418
500-232982-5	W-230427-TS-29	Dissolved	Water	6020A	712420
500-232982-5	W-230427-TS-29	Total Recoverable	Water	6020A	712418
500-232982-6	W-230427-TS-30	Dissolved	Water	6020A	712420
500-232982-6	W-230427-TS-30	Total Recoverable	Water	6020A	712418
500-232982-7	W-230427-TS-31	Dissolved	Water	6020A	712420
500-232982-7	W-230427-TS-31	Total Recoverable	Water	6020A	712418
500-232982-8	W-230427-TS-32	Dissolved	Water	6020A	712420
500-232982-8	W-230427-TS-32	Total Recoverable	Water	6020A	712418
500-232982-9	W-230427-TS-33	Dissolved	Water	6020A	712420
500-232982-9	W-230427-TS-33	Total Recoverable	Water	6020A	712418
MB 500-712418/1-A	Method Blank	Total Recoverable	Water	6020A	712418
MB 500-712420/1-A	Method Blank	Total Recoverable	Water	6020A	712420
LCS 500-712418/2-A	Lab Control Sample	Total Recoverable	Water	6020A	712418
LCS 500-712420/2-A	Lab Control Sample	Total Recoverable	Water	6020A	712420
500-232982-4 MS	W-230427-TS-28	Dissolved	Water	6020A	712420
500-232982-4 MS	W-230427-TS-28	Total Recoverable	Water	6020A	712418
500-232982-4 MSD	W-230427-TS-28	Dissolved	Water	6020A	712420
500-232982-4 MSD	W-230427-TS-28	Total Recoverable	Water	6020A	712418
500-232982-4 DU	W-230427-TS-28	Dissolved	Water	6020A	712420
500-232982-4 DU	W-230427-TS-28	Total Recoverable	Water	6020A	712418

Analysis Batch: 712777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232982-1	W-230427-TS-25	Total Recoverable	Water	SM 2340B	712418
500-232982-2	W-230427-TS-26	Total Recoverable	Water	SM 2340B	712418
500-232982-3	W-230427-TS-27	Total Recoverable	Water	SM 2340B	712418
500-232982-4	W-230427-TS-28	Total Recoverable	Water	SM 2340B	712418
500-232982-5	W-230427-TS-29	Total Recoverable	Water	SM 2340B	712418
500-232982-6	W-230427-TS-30	Total Recoverable	Water	SM 2340B	712418
500-232982-7	W-230427-TS-31	Total Recoverable	Water	SM 2340B	712418
500-232982-8	W-230427-TS-32	Total Recoverable	Water	SM 2340B	712418
500-232982-9	W-230427-TS-33	Total Recoverable	Water	SM 2340B	712418

Analysis Batch: 712781

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232982-1	W-230427-TS-25	Dissolved	Water	SM 2340B	712420
500-232982-2	W-230427-TS-26	Dissolved	Water	SM 2340B	712420
500-232982-3	W-230427-TS-27	Dissolved	Water	SM 2340B	712420
500-232982-4	W-230427-TS-28	Dissolved	Water	SM 2340B	712420
500-232982-5	W-230427-TS-29	Dissolved	Water	SM 2340B	712420
500-232982-6	W-230427-TS-30	Dissolved	Water	SM 2340B	712420
500-232982-7	W-230427-TS-31	Dissolved	Water	SM 2340B	712420
500-232982-8	W-230427-TS-32	Dissolved	Water	SM 2340B	712420

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Metals (Continued)

Analysis Batch: 712781 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232982-9	W-230427-TS-33	Dissolved	Water	SM 2340B	712420

General Chemistry

Analysis Batch: 710383

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232982-1	W-230427-TS-25	Total/NA	Water	300.0	
500-232982-2	W-230427-TS-26	Total/NA	Water	300.0	
500-232982-3	W-230427-TS-27	Total/NA	Water	300.0	
500-232982-4	W-230427-TS-28	Total/NA	Water	300.0	
500-232982-5	W-230427-TS-29	Total/NA	Water	300.0	
500-232982-6	W-230427-TS-30	Total/NA	Water	300.0	
500-232982-7	W-230427-TS-31	Total/NA	Water	300.0	
500-232982-8	W-230427-TS-32	Total/NA	Water	300.0	
500-232982-9	W-230427-TS-33	Total/NA	Water	300.0	
MB 500-710383/3	Method Blank	Total/NA	Water	300.0	
LCS 500-710383/4	Lab Control Sample	Total/NA	Water	300.0	
500-232982-4 MS	W-230427-TS-28	Total/NA	Water	300.0	
500-232982-4 MSD	W-230427-TS-28	Total/NA	Water	300.0	

Analysis Batch: 710384

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232982-1	W-230427-TS-25	Total/NA	Water	300.0	
500-232982-2	W-230427-TS-26	Total/NA	Water	300.0	
500-232982-3	W-230427-TS-27	Total/NA	Water	300.0	
500-232982-4	W-230427-TS-28	Total/NA	Water	300.0	
500-232982-5	W-230427-TS-29	Total/NA	Water	300.0	
500-232982-6	W-230427-TS-30	Total/NA	Water	300.0	
500-232982-7	W-230427-TS-31	Total/NA	Water	300.0	
500-232982-8	W-230427-TS-32	Total/NA	Water	300.0	
500-232982-9	W-230427-TS-33	Total/NA	Water	300.0	
MB 500-710384/3	Method Blank	Total/NA	Water	300.0	
LCS 500-710384/4	Lab Control Sample	Total/NA	Water	300.0	
500-232982-4 MS	W-230427-TS-28	Total/NA	Water	300.0	
500-232982-4 MSD	W-230427-TS-28	Total/NA	Water	300.0	

Analysis Batch: 712631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232982-1	W-230427-TS-25	Total/NA	Water	SM 2320B	
500-232982-2	W-230427-TS-26	Total/NA	Water	SM 2320B	
500-232982-3	W-230427-TS-27	Total/NA	Water	SM 2320B	
500-232982-4	W-230427-TS-28	Total/NA	Water	SM 2320B	
500-232982-5	W-230427-TS-29	Total/NA	Water	SM 2320B	
500-232982-6	W-230427-TS-30	Total/NA	Water	SM 2320B	
500-232982-7	W-230427-TS-31	Total/NA	Water	SM 2320B	
500-232982-8	W-230427-TS-32	Total/NA	Water	SM 2320B	
500-232982-9	W-230427-TS-33	Total/NA	Water	SM 2320B	
MB 500-712631/28	Method Blank	Total/NA	Water	SM 2320B	
MB 500-712631/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-712631/29	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 500-712631/4	Lab Control Sample	Total/NA	Water	SM 2320B	

QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

General Chemistry (Continued)

Analysis Batch: 712631 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232982-3 DU	W-230427-TS-27	Total/NA	Water	SM 2320B	

Analysis Batch: 712690

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232982-1	W-230427-TS-25	Total/NA	Water	9060A	
500-232982-2	W-230427-TS-26	Total/NA	Water	9060A	
500-232982-3	W-230427-TS-27	Total/NA	Water	9060A	
500-232982-4	W-230427-TS-28	Total/NA	Water	9060A	
500-232982-5	W-230427-TS-29	Total/NA	Water	9060A	
500-232982-6	W-230427-TS-30	Total/NA	Water	9060A	
500-232982-7	W-230427-TS-31	Total/NA	Water	9060A	
500-232982-8	W-230427-TS-32	Total/NA	Water	9060A	
500-232982-9	W-230427-TS-33	Total/NA	Water	9060A	
MB 500-712690/28	Method Blank	Total/NA	Water	9060A	
MB 500-712690/4	Method Blank	Total/NA	Water	9060A	
LCS 500-712690/29	Lab Control Sample	Total/NA	Water	9060A	
LCS 500-712690/5	Lab Control Sample	Total/NA	Water	9060A	
500-232982-4 MS	W-230427-TS-28	Total/NA	Water	9060A	
500-232982-4 MSD	W-230427-TS-28	Total/NA	Water	9060A	

Analysis Batch: 713457

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-232982-1	W-230427-TS-25	Total/NA	Water	300.0	
500-232982-8	W-230427-TS-32	Total/NA	Water	300.0	
MB 500-713457/41	Method Blank	Total/NA	Water	300.0	
LCS 500-713457/42	Lab Control Sample	Total/NA	Water	300.0	

Surrogate Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-126)	TOL (75-120)	BFB (72-124)	DBFM (75-120)
500-232982-1	W-230427-TS-25	127 X	102	102	109
500-232982-2	W-230427-TS-26	134 X	96	102	119
500-232982-3	W-230427-TS-27	131 X	100	102	115
500-232982-4	W-230427-TS-28	130 X	101	106	109
500-232982-4 MS	W-230427-TS-28	107	104	93	94
500-232982-4 MSD	W-230427-TS-28	107	104	94	93
500-232982-5	W-230427-TS-29	132 X	96	106	116
500-232982-6	W-230427-TS-30	126	98	107 *	114
500-232982-7	W-230427-TS-31	131 X	99	103	115
500-232982-8	W-230427-TS-32	134 X	99	103	113
500-232982-9	W-230427-TS-33	91	110	112	91
500-232982-10	TRIP BLANK	120	98	104	110
LCS 500-711485/4	Lab Control Sample	106	103	95	95
LCS 500-712149/7	Lab Control Sample	89	120	98	91
MB 500-711485/7	Method Blank	116	101	102	109
MB 500-712149/10	Method Blank	96	108	112	91

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		NBZ (36-120)	FBP (34-110)	TPHL (40-145)
500-232982-1	W-230427-TS-25	55	67	81
500-232982-2	W-230427-TS-26	61	76	92
500-232982-3	W-230427-TS-27	63	78	99
500-232982-4	W-230427-TS-28	64	81	104
500-232982-4 MS	W-230427-TS-28	39	49	72
500-232982-4 MSD	W-230427-TS-28	50	62	81
500-232982-5	W-230427-TS-29	54	66	87
500-232982-6	W-230427-TS-30	56	69	96
500-232982-7	W-230427-TS-31	56	71	95
500-232982-8	W-230427-TS-32	53	66	87
500-232982-9	W-230427-TS-33	48	61	76
LCS 500-710414/2-A	Lab Control Sample	80	65	79
MB 500-710414/1-A	Method Blank	71	59	81

Surrogate Legend

NBZ = Nitrobenzene-d5 (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TPHL = Terphenyl-d14 (Surr)

Surrogate Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TFE1 (60-140)
500-232982-1	W-230427-TS-25	103
500-232982-2	W-230427-TS-26	100
500-232982-3	W-230427-TS-27	103
500-232982-4	W-230427-TS-28	102
500-232982-4 MS	W-230427-TS-28	101
500-232982-4 MSD	W-230427-TS-28	102
500-232982-5	W-230427-TS-29	103
500-232982-6	W-230427-TS-30	102
500-232982-7	W-230427-TS-31	98
500-232982-8	W-230427-TS-32	103
500-232982-9	W-230427-TS-33	102
LCS 240-572283/4	Lab Control Sample	109
MB 240-572283/3	Method Blank	106

Surrogate Legend

TFE = 1,1,1-Trifluoroethane

Method: 8151A - Herbicides (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (25-130)
500-232982-1	W-230427-TS-25	88
500-232982-2	W-230427-TS-26	86
500-232982-3	W-230427-TS-27	85
500-232982-4	W-230427-TS-28	89
500-232982-4 MS	W-230427-TS-28	95
500-232982-4 MSD	W-230427-TS-28	101
500-232982-5	W-230427-TS-29	87
500-232982-6	W-230427-TS-30	86
500-232982-7	W-230427-TS-31	89
500-232982-8	W-230427-TS-32	83
500-232982-9	W-230427-TS-33	0 X
LB 500-710686/1-E	Method Blank	42
LCS 500-711157/2-A	Lab Control Sample	76
MB 500-711157/1-A	Method Blank	82

Surrogate Legend

DCPAA = DCAA

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-711485/7
Matrix: Water
Analysis Batch: 711485

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	<0.15		0.50	0.15	ug/L			05/04/23 22:44	1
Toluene	<0.15		0.50	0.15	ug/L			05/04/23 22:44	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/04/23 22:44	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/04/23 22:44	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	116		75 - 126		05/04/23 22:44	1
Toluene-d8 (Surr)	101		75 - 120		05/04/23 22:44	1
4-Bromofluorobenzene (Surr)	102		72 - 124		05/04/23 22:44	1
Dibromofluoromethane	109		75 - 120		05/04/23 22:44	1

Lab Sample ID: LCS 500-711485/4
Matrix: Water
Analysis Batch: 711485

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	50.0	53.1		ug/L		106	70 - 120
Toluene	50.0	53.9		ug/L		108	70 - 125
Ethylbenzene	50.0	48.7		ug/L		97	70 - 123
Xylenes, Total	100	102		ug/L		102	70 - 125

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	106		75 - 126
Toluene-d8 (Surr)	103		75 - 120
4-Bromofluorobenzene (Surr)	95		72 - 124
Dibromofluoromethane	95		75 - 120

Lab Sample ID: 500-232982-4 MS
Matrix: Water
Analysis Batch: 711485

Client Sample ID: W-230427-TS-28
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
Benzene	<0.15		50.0	53.5		ug/L		107	70 - 120
Toluene	<0.15		50.0	52.4		ug/L		105	70 - 125
Ethylbenzene	<0.18		50.0	46.8		ug/L		94	70 - 123
Xylenes, Total	<0.22		100	98.4		ug/L		98	70 - 125

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	107		75 - 126
Toluene-d8 (Surr)	104		75 - 120
4-Bromofluorobenzene (Surr)	93		72 - 124
Dibromofluoromethane	94		75 - 120

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-232982-4 MSD
Matrix: Water
Analysis Batch: 711485

Client Sample ID: W-230427-TS-28
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.15		50.0	54.6		ug/L		109	70 - 120	2	20
Toluene	<0.15		50.0	55.1		ug/L		110	70 - 125	5	20
Ethylbenzene	<0.18		50.0	47.8		ug/L		96	70 - 123	2	20
Xylenes, Total	<0.22		100	101		ug/L		101	70 - 125	2	20

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
1,2-Dichloroethane-d4 (Surr)	107		75 - 126
Toluene-d8 (Surr)	104		75 - 120
4-Bromofluorobenzene (Surr)	94		72 - 124
Dibromofluoromethane	93		75 - 120

Lab Sample ID: MB 500-712149/10
Matrix: Water
Analysis Batch: 712149

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/09/23 13:14	1
Toluene	<0.15		0.50	0.15	ug/L			05/09/23 13:14	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/09/23 13:14	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/09/23 13:14	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		75 - 126		05/09/23 13:14	1
Toluene-d8 (Surr)	108		75 - 120		05/09/23 13:14	1
4-Bromofluorobenzene (Surr)	112		72 - 124		05/09/23 13:14	1
Dibromofluoromethane	91		75 - 120		05/09/23 13:14	1

Lab Sample ID: LCS 500-712149/7
Matrix: Water
Analysis Batch: 712149

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	50.0	46.6		ug/L		93	70 - 120
Toluene	50.0	54.1		ug/L		108	70 - 125
Ethylbenzene	50.0	47.6		ug/L		95	70 - 123
Xylenes, Total	100	98.5		ug/L		98	70 - 125

Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits
1,2-Dichloroethane-d4 (Surr)	89		75 - 126
Toluene-d8 (Surr)	120		75 - 120
4-Bromofluorobenzene (Surr)	98		72 - 124
Dibromofluoromethane	91		75 - 120

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-710414/1-A
Matrix: Water
Analysis Batch: 710498

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 710414

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Naphthalene	<0.25		0.80	0.25	ug/L		04/28/23 16:25	05/01/23 13:41	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
Nitrobenzene-d5 (Surr)	71		36 - 120			04/28/23 16:25	05/01/23 13:41	1	
2-Fluorobiphenyl (Surr)	59		34 - 110			04/28/23 16:25	05/01/23 13:41	1	
Terphenyl-d14 (Surr)	81		40 - 145			04/28/23 16:25	05/01/23 13:41	1	

Lab Sample ID: LCS 500-710414/2-A
Matrix: Water
Analysis Batch: 710498

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 710414

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Naphthalene	32.0	20.5		ug/L		64	36 - 110
Surrogate	%Recovery	Qualifier	Limits				
Nitrobenzene-d5 (Surr)	80		36 - 120				
2-Fluorobiphenyl (Surr)	65		34 - 110				
Terphenyl-d14 (Surr)	79		40 - 145				

Lab Sample ID: 500-232982-4 MS
Matrix: Water
Analysis Batch: 710838

Client Sample ID: W-230427-TS-28
Prep Type: Total/NA
Prep Batch: 710414

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
Naphthalene	<0.20		26.3	11.0		ug/L		42	36 - 110
Surrogate	%Recovery	Qualifier	Limits						
Nitrobenzene-d5 (Surr)	39		36 - 120						
2-Fluorobiphenyl (Surr)	49		34 - 110						
Terphenyl-d14 (Surr)	72		40 - 145						

Lab Sample ID: 500-232982-4 MSD
Matrix: Water
Analysis Batch: 710838

Client Sample ID: W-230427-TS-28
Prep Type: Total/NA
Prep Batch: 710414

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec Limits	RPD	
				Result	Qualifier					RPD	Limit
Naphthalene	<0.20		27.1	13.3		ug/L		49	36 - 110	19	20
Surrogate	%Recovery	Qualifier	Limits								
Nitrobenzene-d5 (Surr)	50		36 - 120								
2-Fluorobiphenyl (Surr)	62		34 - 110								
Terphenyl-d14 (Surr)	81		40 - 145								

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 240-572283/3
Matrix: Water
Analysis Batch: 572283

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			05/05/23 14:18	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	106		60 - 140					05/05/23 14:18	1

Lab Sample ID: LCS 240-572283/4
Matrix: Water
Analysis Batch: 572283

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methane	284	309		ug/L		109	80 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,1,1-Trifluoroethane	109		60 - 140				

Lab Sample ID: 500-232982-4 MS
Matrix: Water
Analysis Batch: 572283

Client Sample ID: W-230427-TS-28
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Methane	<0.17		284	302		ug/L		106	50 - 150
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,1,1-Trifluoroethane	101		60 - 140						

Lab Sample ID: 500-232982-4 MSD
Matrix: Water
Analysis Batch: 572283

Client Sample ID: W-230427-TS-28
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methane	<0.17		284	302		ug/L		106	50 - 150	0	30
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1,1,1-Trifluoroethane	102		60 - 140								

Method: 8151A - Herbicides (GC)

Lab Sample ID: LB 500-710686/1-E
Matrix: Water
Analysis Batch: 711334

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 711157

Analyte	LB Result	LB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<9.9		10	9.9	ug/L		05/03/23 12:13	05/04/23 10:35	1
Surrogate	LB %Recovery	LB Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	42		25 - 130				05/03/23 12:13	05/04/23 10:35	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: MB 500-711157/1-A
Matrix: Water
Analysis Batch: 711334

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 711157

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Pentachlorophenol	<0.099		0.10	0.099	ug/L		05/03/23 12:13	05/04/23 10:00	1
Surrogate	MB MB		Limits			D	Prepared	Analyzed	Dil Fac
%Recovery	Qualifier								
DCAA	82		25 - 130				05/03/23 12:13	05/04/23 10:00	1

Lab Sample ID: LCS 500-711157/2-A
Matrix: Water
Analysis Batch: 711334

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 711157

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Pentachlorophenol	2.53	1.63		ug/L		64	40 - 122
Surrogate	LCS LCS		Limits			D	%Rec
%Recovery	Qualifier						
DCAA	76		25 - 130				

Lab Sample ID: 500-232982-4 MS
Matrix: Water
Analysis Batch: 711591

Client Sample ID: W-230427-TS-28
Prep Type: Total/NA
Prep Batch: 711157

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
Pentachlorophenol	<0.095		2.51	1.86		ug/L		74	40 - 122
Surrogate	MS MS		Limits			D	%Rec	%Rec	
%Recovery	Qualifier								
DCAA	95		25 - 130						

Lab Sample ID: 500-232982-4 MSD
Matrix: Water
Analysis Batch: 711591

Client Sample ID: W-230427-TS-28
Prep Type: Total/NA
Prep Batch: 711157

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
				Result	Qualifier						
Pentachlorophenol	<0.095		2.52	2.02		ug/L		80	40 - 122	8	20
Surrogate	MSD MSD		Limits			D	%Rec	%Rec			
%Recovery	Qualifier										
DCAA	101		25 - 130								

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 500-712418/1-A
Matrix: Water
Analysis Batch: 712707

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 712418

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	0.332	J	1.0	0.23	ug/L		05/10/23 09:23	05/10/23 20:34	1
Calcium	<44.3		200	44.3	ug/L		05/10/23 09:23	05/10/23 20:34	1
Copper	<0.50		2.0	0.50	ug/L		05/10/23 09:23	05/10/23 20:34	1
Iron	<46.7		100	46.7	ug/L		05/10/23 09:23	05/10/23 20:34	1
Magnesium	<49.4		200	49.4	ug/L		05/10/23 09:23	05/10/23 20:34	1
Manganese	<0.79		2.5	0.79	ug/L		05/10/23 09:23	05/10/23 20:34	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 500-712418/1-A
Matrix: Water
Analysis Batch: 712707

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 712418

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		05/10/23 09:23	05/10/23 20:34	1

Lab Sample ID: LCS 500-712418/2-A
Matrix: Water
Analysis Batch: 712707

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 712418

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	100	93.67		ug/L		94	80 - 120
Calcium	10000	9801		ug/L		98	80 - 120
Copper	250	248.8		ug/L		100	80 - 120
Iron	1000	1035		ug/L		104	80 - 120
Magnesium	10000	9766		ug/L		98	80 - 120
Manganese	500	510.6		ug/L		102	80 - 120
Zinc	500	513.1		ug/L		103	80 - 120

Lab Sample ID: 500-232982-4 MS
Matrix: Water
Analysis Batch: 712707

Client Sample ID: W-230427-TS-28
Prep Type: Total Recoverable
Prep Batch: 712418

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.5	B	100	96.62		ug/L		95	75 - 125
Calcium	42200		10000	50820	4	ug/L		86	75 - 125
Copper	<0.50		250	251.3		ug/L		101	75 - 125
Iron	<46.7		1000	1025		ug/L		103	75 - 125
Magnesium	12600		10000	22070		ug/L		95	75 - 125
Manganese	<0.79		500	505.6		ug/L		101	75 - 125
Zinc	<6.9		500	499.5		ug/L		100	75 - 125

Lab Sample ID: 500-232982-4 MSD
Matrix: Water
Analysis Batch: 712707

Client Sample ID: W-230427-TS-28
Prep Type: Total Recoverable
Prep Batch: 712418

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	1.5	B	100	95.13		ug/L		94	75 - 125	2	20
Calcium	42200		10000	50580	4	ug/L		84	75 - 125	0	20
Copper	<0.50		250	249.0		ug/L		100	75 - 125	1	20
Iron	<46.7		1000	1014		ug/L		101	75 - 125	1	20
Magnesium	12600		10000	21700		ug/L		91	75 - 125	2	20
Manganese	<0.79		500	499.0		ug/L		100	75 - 125	1	20
Zinc	<6.9		500	493.3		ug/L		99	75 - 125	1	20

Lab Sample ID: 500-232982-4 DU
Matrix: Water
Analysis Batch: 712707

Client Sample ID: W-230427-TS-28
Prep Type: Total Recoverable
Prep Batch: 712418

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	1.5	B	1.52		ug/L		3	20
Calcium	42200		41630		ug/L		1	20
Copper	<0.50		<0.50		ug/L		NC	20
Iron	<46.7		<46.7		ug/L		NC	20

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 500-232982-4 DU
Matrix: Water
Analysis Batch: 712707

Client Sample ID: W-230427-TS-28
Prep Type: Total Recoverable
Prep Batch: 712418

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Magnesium	12600		12550		ug/L		0.5	20
Manganese	<0.79		<0.79		ug/L		NC	20
Zinc	<6.9		<6.9		ug/L		NC	20

Lab Sample ID: MB 500-712420/1-A
Matrix: Water
Analysis Batch: 712707

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 712420

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.248	J	1.0	0.23	ug/L		05/10/23 09:24	05/10/23 18:15	1
Calcium	<44.3		200	44.3	ug/L		05/10/23 09:24	05/10/23 18:15	1
Copper	<0.50		2.0	0.50	ug/L		05/10/23 09:24	05/10/23 18:15	1
Iron	<46.7		100	46.7	ug/L		05/10/23 09:24	05/10/23 18:15	1
Magnesium	<49.4		200	49.4	ug/L		05/10/23 09:24	05/10/23 18:15	1
Manganese	<0.79		2.5	0.79	ug/L		05/10/23 09:24	05/10/23 18:15	1
Zinc	<6.9		20.0	6.9	ug/L		05/10/23 09:24	05/10/23 18:15	1

Lab Sample ID: LCS 500-712420/2-A
Matrix: Water
Analysis Batch: 712707

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 712420

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	100	95.01		ug/L		95	80 - 120
Calcium	10000	10140		ug/L		101	80 - 120
Copper	250	261.0		ug/L		104	80 - 120
Iron	1000	1065		ug/L		107	80 - 120
Magnesium	10000	10110		ug/L		101	80 - 120
Manganese	500	514.1		ug/L		103	80 - 120
Zinc	500	523.8		ug/L		105	80 - 120

Lab Sample ID: 500-232982-4 MS
Matrix: Water
Analysis Batch: 712707

Client Sample ID: W-230427-TS-28
Prep Type: Dissolved
Prep Batch: 712420

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.3	B	100	96.22		ug/L		95	75 - 125
Calcium	42900		10000	50710	4	ug/L		78	75 - 125
Copper	<0.50		250	256.5		ug/L		103	75 - 125
Iron	<46.7		1000	1027		ug/L		103	75 - 125
Magnesium	13000		10000	21770		ug/L		87	75 - 125
Manganese	<0.79		500	496.9		ug/L		99	75 - 125
Zinc	<6.9		500	513.9		ug/L		103	75 - 125

Lab Sample ID: 500-232982-4 MSD
Matrix: Water
Analysis Batch: 712707

Client Sample ID: W-230427-TS-28
Prep Type: Dissolved
Prep Batch: 712420

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Arsenic	1.3	B	100	97.16		ug/L		96	75 - 125	1	20
Calcium	42900		10000	51340	4	ug/L		84	75 - 125	1	20

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 500-232982-4 MSD
Matrix: Water
Analysis Batch: 712707

Client Sample ID: W-230427-TS-28
Prep Type: Dissolved
Prep Batch: 712420

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Copper	<0.50		250	260.6		ug/L		104	75 - 125	2	20
Iron	<46.7		1000	1038		ug/L		104	75 - 125	1	20
Magnesium	13000		10000	22010		ug/L		90	75 - 125	1	20
Manganese	<0.79		500	498.1		ug/L		100	75 - 125	0	20
Zinc	<6.9		500	518.1		ug/L		104	75 - 125	1	20

Lab Sample ID: 500-232982-4 DU
Matrix: Water
Analysis Batch: 712707

Client Sample ID: W-230427-TS-28
Prep Type: Dissolved
Prep Batch: 712420

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	1.3	B	1.35		ug/L		0.2	20
Calcium	42900		41540		ug/L		3	20
Copper	<0.50		<0.50		ug/L		NC	20
Iron	<46.7		<46.7		ug/L		NC	20
Magnesium	13000		12670		ug/L		3	20
Manganese	<0.79		<0.79		ug/L		NC	20
Zinc	<6.9		<6.9		ug/L		NC	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-710383/3
Matrix: Water
Analysis Batch: 710383

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.12		1.0	0.12	mg/L			04/28/23 18:12	1
Sulfate	<0.21		1.0	0.21	mg/L			04/28/23 18:12	1

Lab Sample ID: LCS 500-710383/4
Matrix: Water
Analysis Batch: 710383

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	20.0	18.83		mg/L		94	90 - 110
Sulfate	20.0	19.18		mg/L		96	90 - 110

Lab Sample ID: 500-232982-4 MS
Matrix: Water
Analysis Batch: 710383

Client Sample ID: W-230427-TS-28
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	23.1		10.0	32.85		mg/L		97	80 - 120
Sulfate	5.9		10.0	15.17		mg/L		93	80 - 120

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 500-232982-4 MSD
Matrix: Water
Analysis Batch: 710383

Client Sample ID: W-230427-TS-28
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	23.1		10.0	32.83		mg/L		97	80 - 120	0	20
Sulfate	5.9		10.0	15.18		mg/L		93	80 - 120	0	20

Lab Sample ID: MB 500-710384/3
Matrix: Water
Analysis Batch: 710384

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.043	^	1.0	0.043	mg/L			04/28/23 18:12	1

Lab Sample ID: LCS 500-710384/4
Matrix: Water
Analysis Batch: 710384

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	20.0	18.55	^	mg/L		93	90 - 110

Lab Sample ID: 500-232982-4 MS
Matrix: Water
Analysis Batch: 710384

Client Sample ID: W-230427-TS-28
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	1.4	^	10.0	9.80	^	mg/L		84	80 - 120

Lab Sample ID: 500-232982-4 MSD
Matrix: Water
Analysis Batch: 710384

Client Sample ID: W-230427-TS-28
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	1.4	^	10.0	9.82	^	mg/L		85	80 - 120	0	20

Lab Sample ID: MB 500-713457/41
Matrix: Water
Analysis Batch: 713457

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.12		1.0	0.12	mg/L			05/16/23 21:22	1

Lab Sample ID: LCS 500-713457/42
Matrix: Water
Analysis Batch: 713457

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	20.0	19.28		mg/L		96	90 - 110

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-712690/28
Matrix: Water
Analysis Batch: 712690

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	<0.47		1.0	0.47	mg/L			05/10/23 23:39	1

Lab Sample ID: MB 500-712690/4
Matrix: Water
Analysis Batch: 712690

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	<0.47		1.0	0.47	mg/L			05/10/23 17:36	1

Lab Sample ID: LCS 500-712690/29
Matrix: Water
Analysis Batch: 712690

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon - Duplicates	50.0	49.69		mg/L		99	86 - 116

Lab Sample ID: LCS 500-712690/5
Matrix: Water
Analysis Batch: 712690

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon - Duplicates	50.0	49.30		mg/L		99	86 - 116

Lab Sample ID: 500-232982-4 MS
Matrix: Water
Analysis Batch: 712690

Client Sample ID: W-230427-TS-28
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon - Duplicates	0.62	J	50.0	49.69		mg/L		98	75 - 125

Lab Sample ID: 500-232982-4 MSD
Matrix: Water
Analysis Batch: 712690

Client Sample ID: W-230427-TS-28
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	0.62	J	50.0	49.91		mg/L		99	75 - 125	0	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-712631/28
Matrix: Water
Analysis Batch: 712631

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	<3.7		5.0	3.7	mg/L			05/10/23 16:38	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: MB 500-712631/3
Matrix: Water
Analysis Batch: 712631

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	<3.7		5.0	3.7	mg/L			05/10/23 16:38	1

Lab Sample ID: LCS 500-712631/29
Matrix: Water
Analysis Batch: 712631

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	100	106.6		mg/L		107	90 - 110

Lab Sample ID: LCS 500-712631/4
Matrix: Water
Analysis Batch: 712631

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	100	105.2		mg/L		105	90 - 110

Lab Sample ID: 500-232982-3 DU
Matrix: Water
Analysis Batch: 712631

Client Sample ID: W-230427-TS-27
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	121		121.7		mg/L		0.6	20

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-25

Lab Sample ID: 500-232982-1

Date Collected: 04/27/23 09:15

Matrix: Water

Date Received: 04/28/23 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711485	W1T	EET CHI	05/05/23 00:45
Total/NA	Prep	3510C			710414	EC	EET CHI	04/28/23 16:25
Total/NA	Analysis	8270D		1	710838	SS	EET CHI	05/02/23 11:49
Total/NA	Analysis	RSK-175		1	572283	BPM	EET CLE	05/05/23 16:34
Total/NA	Prep	8151A			711157	DAK	EET CHI	05/03/23 12:13
Total/NA	Analysis	8151A		1	711591	JJB	EET CHI	05/05/23 15:42
Dissolved	Prep	3005A			712420	BDE	EET CHI	05/10/23 09:24 - 05/10/23 09:54 ¹
Dissolved	Analysis	6020A		1	712707	FXG	EET CHI	05/10/23 18:23
Total Recoverable	Prep	3005A			712418	BDE	EET CHI	05/10/23 09:23 - 05/10/23 09:53 ¹
Total Recoverable	Analysis	6020A		1	712707	FXG	EET CHI	05/10/23 20:43
Dissolved	Prep	3005A			712420	BDE	EET CHI	05/10/23 09:24 - 05/10/23 09:54 ¹
Dissolved	Analysis	SM 2340B		1	712781	FXG	EET CHI	05/11/23 13:45
Total Recoverable	Prep	3005A			712418	BDE	EET CHI	05/10/23 09:23 - 05/10/23 09:53 ¹
Total Recoverable	Analysis	SM 2340B		1	712777	FXG	EET CHI	05/11/23 13:19
Total/NA	Analysis	300.0		1	710383	EH	EET CHI	04/28/23 18:44
Total/NA	Analysis	300.0		1	710384	MM	EET CHI	04/28/23 18:44
Total/NA	Analysis	300.0		5	713457	EH	EET CHI	05/16/23 23:43
Total/NA	Analysis	9060A		1	712690	BC	EET CHI	05/10/23 20:55
Total/NA	Analysis	SM 2320B		1	712631	EH	EET CHI	05/10/23 16:38

Client Sample ID: W-230427-TS-26

Lab Sample ID: 500-232982-2

Date Collected: 04/27/23 10:00

Matrix: Water

Date Received: 04/28/23 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711485	W1T	EET CHI	05/05/23 01:10
Total/NA	Prep	3510C			710414	EC	EET CHI	04/28/23 16:25
Total/NA	Analysis	8270D		1	710838	SS	EET CHI	05/02/23 12:13
Total/NA	Analysis	RSK-175		1	572283	BPM	EET CLE	05/05/23 16:51
Total/NA	Prep	8151A			711157	DAK	EET CHI	05/03/23 12:13
Total/NA	Analysis	8151A		1	711591	JJB	EET CHI	05/05/23 16:01
Dissolved	Prep	3005A			712420	BDE	EET CHI	05/10/23 09:24 - 05/10/23 09:54 ¹
Dissolved	Analysis	6020A		1	712707	FXG	EET CHI	05/10/23 18:27
Total Recoverable	Prep	3005A			712418	BDE	EET CHI	05/10/23 09:23 - 05/10/23 09:53 ¹
Total Recoverable	Analysis	6020A		1	712707	FXG	EET CHI	05/10/23 20:47
Dissolved	Prep	3005A			712420	BDE	EET CHI	05/10/23 09:24 - 05/10/23 09:54 ¹
Dissolved	Analysis	SM 2340B		1	712781	FXG	EET CHI	05/11/23 13:45
Total Recoverable	Prep	3005A			712418	BDE	EET CHI	05/10/23 09:23 - 05/10/23 09:53 ¹
Total Recoverable	Analysis	SM 2340B		1	712777	FXG	EET CHI	05/11/23 13:19
Total/NA	Analysis	300.0		1	710383	EH	EET CHI	04/28/23 19:00
Total/NA	Analysis	300.0		1	710384	MM	EET CHI	04/28/23 19:00
Total/NA	Analysis	9060A		1	712690	BC	EET CHI	05/10/23 21:09
Total/NA	Analysis	SM 2320B		1	712631	EH	EET CHI	05/10/23 16:38

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Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-27

Lab Sample ID: 500-232982-3

Date Collected: 04/27/23 11:45

Matrix: Water

Date Received: 04/28/23 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711485	W1T	EET CHI	05/05/23 01:34
Total/NA	Prep	3510C			710414	EC	EET CHI	04/28/23 16:25
Total/NA	Analysis	8270D		1	710838	SS	EET CHI	05/02/23 12:37
Total/NA	Analysis	RSK-175		1	572283	BPM	EET CLE	05/05/23 17:08
Total/NA	Prep	8151A			711157	DAK	EET CHI	05/03/23 12:13
Total/NA	Analysis	8151A		1	711591	JJB	EET CHI	05/05/23 16:19
Dissolved	Prep	3005A			712420	BDE	EET CHI	05/10/23 09:24 - 05/10/23 09:54 ¹
Dissolved	Analysis	6020A		1	712707	FXG	EET CHI	05/10/23 18:32
Total Recoverable	Prep	3005A			712418	BDE	EET CHI	05/10/23 09:23 - 05/10/23 09:53 ¹
Total Recoverable	Analysis	6020A		1	712707	FXG	EET CHI	05/10/23 20:51
Dissolved	Prep	3005A			712420	BDE	EET CHI	05/10/23 09:24 - 05/10/23 09:54 ¹
Dissolved	Analysis	SM 2340B		1	712781	FXG	EET CHI	05/11/23 13:45
Total Recoverable	Prep	3005A			712418	BDE	EET CHI	05/10/23 09:23 - 05/10/23 09:53 ¹
Total Recoverable	Analysis	SM 2340B		1	712777	FXG	EET CHI	05/11/23 13:19
Total/NA	Analysis	300.0		1	710383	EH	EET CHI	04/28/23 19:15
Total/NA	Analysis	300.0		1	710384	MM	EET CHI	04/28/23 19:15
Total/NA	Analysis	9060A		1	712690	BC	EET CHI	05/10/23 21:22
Total/NA	Analysis	SM 2320B		1	712631	EH	EET CHI	05/10/23 16:38

Client Sample ID: W-230427-TS-28

Lab Sample ID: 500-232982-4

Date Collected: 04/27/23 11:10

Matrix: Water

Date Received: 04/28/23 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711485	W1T	EET CHI	05/05/23 01:59
Total/NA	Prep	3510C			710414	EC	EET CHI	04/28/23 16:25
Total/NA	Analysis	8270D		1	710838	SS	EET CHI	05/02/23 15:09
Total/NA	Analysis	RSK-175		1	572283	BPM	EET CLE	05/05/23 17:25
Total/NA	Prep	8151A			711157	DAK	EET CHI	05/03/23 12:13
Total/NA	Analysis	8151A		1	711591	JJB	EET CHI	05/05/23 16:37
Dissolved	Prep	3005A			712420	BDE	EET CHI	05/10/23 09:24 - 05/10/23 09:54 ¹
Dissolved	Analysis	6020A		1	712707	FXG	EET CHI	05/10/23 18:36
Total Recoverable	Prep	3005A			712418	BDE	EET CHI	05/10/23 09:23 - 05/10/23 09:53 ¹
Total Recoverable	Analysis	6020A		1	712707	FXG	EET CHI	05/10/23 20:55
Dissolved	Prep	3005A			712420	BDE	EET CHI	05/10/23 09:24 - 05/10/23 09:54 ¹
Dissolved	Analysis	SM 2340B		1	712781	FXG	EET CHI	05/11/23 13:45
Total Recoverable	Prep	3005A			712418	BDE	EET CHI	05/10/23 09:23 - 05/10/23 09:53 ¹
Total Recoverable	Analysis	SM 2340B		1	712777	FXG	EET CHI	05/11/23 13:19
Total/NA	Analysis	300.0		1	710383	EH	EET CHI	04/28/23 19:31
Total/NA	Analysis	300.0		1	710384	MM	EET CHI	04/28/23 19:31
Total/NA	Analysis	9060A		1	712690	BC	EET CHI	05/10/23 21:36
Total/NA	Analysis	SM 2320B		1	712631	EH	EET CHI	05/10/23 16:38

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-29

Lab Sample ID: 500-232982-5

Date Collected: 04/27/23 12:26

Matrix: Water

Date Received: 04/28/23 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711485	W1T	EET CHI	05/05/23 02:23
Total/NA	Prep	3510C			710414	EC	EET CHI	04/28/23 16:25
Total/NA	Analysis	8270D		1	710838	SS	EET CHI	05/02/23 13:11
Total/NA	Analysis	RSK-175		1	572283	BPM	EET CLE	05/05/23 18:16
Total/NA	Prep	8151A			711157	DAK	EET CHI	05/03/23 12:13
Total/NA	Analysis	8151A		1	711591	JJB	EET CHI	05/05/23 17:50
Dissolved	Prep	3005A			712420	BDE	EET CHI	05/10/23 09:24 - 05/10/23 09:54 ¹
Dissolved	Analysis	6020A		1	712707	FXG	EET CHI	05/10/23 19:05
Total Recoverable	Prep	3005A			712418	BDE	EET CHI	05/10/23 09:23 - 05/10/23 09:53 ¹
Total Recoverable	Analysis	6020A		1	712707	FXG	EET CHI	05/10/23 21:24
Dissolved	Prep	3005A			712420	BDE	EET CHI	05/10/23 09:24 - 05/10/23 09:54 ¹
Dissolved	Analysis	SM 2340B		1	712781	FXG	EET CHI	05/11/23 13:45
Total Recoverable	Prep	3005A			712418	BDE	EET CHI	05/10/23 09:23 - 05/10/23 09:53 ¹
Total Recoverable	Analysis	SM 2340B		1	712777	FXG	EET CHI	05/11/23 13:19
Total/NA	Analysis	300.0		1	710383	EH	EET CHI	04/28/23 20:18
Total/NA	Analysis	300.0		1	710384	MM	EET CHI	04/28/23 20:18
Total/NA	Analysis	9060A		1	712690	BC	EET CHI	05/10/23 22:21
Total/NA	Analysis	SM 2320B		1	712631	EH	EET CHI	05/10/23 16:38

Client Sample ID: W-230427-TS-30

Lab Sample ID: 500-232982-6

Date Collected: 04/27/23 12:28

Matrix: Water

Date Received: 04/28/23 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711485	W1T	EET CHI	05/05/23 02:48
Total/NA	Prep	3510C			710414	EC	EET CHI	04/28/23 16:25
Total/NA	Analysis	8270D		1	710838	SS	EET CHI	05/02/23 13:35
Total/NA	Analysis	RSK-175		1	572283	BPM	EET CLE	05/05/23 18:50
Total/NA	Prep	8151A			711157	DAK	EET CHI	05/03/23 12:13
Total/NA	Analysis	8151A		1	711591	JJB	EET CHI	05/05/23 18:08
Dissolved	Prep	3005A			712420	BDE	EET CHI	05/10/23 09:24 - 05/10/23 09:54 ¹
Dissolved	Analysis	6020A		1	712707	FXG	EET CHI	05/10/23 19:12
Total Recoverable	Prep	3005A			712418	BDE	EET CHI	05/10/23 09:23 - 05/10/23 09:53 ¹
Total Recoverable	Analysis	6020A		1	712707	FXG	EET CHI	05/10/23 21:28
Dissolved	Prep	3005A			712420	BDE	EET CHI	05/10/23 09:24 - 05/10/23 09:54 ¹
Dissolved	Analysis	SM 2340B		1	712781	FXG	EET CHI	05/11/23 13:45
Total Recoverable	Prep	3005A			712418	BDE	EET CHI	05/10/23 09:23 - 05/10/23 09:53 ¹
Total Recoverable	Analysis	SM 2340B		1	712777	FXG	EET CHI	05/11/23 13:19
Total/NA	Analysis	300.0		1	710383	EH	EET CHI	04/28/23 20:33
Total/NA	Analysis	300.0		1	710384	MM	EET CHI	04/28/23 20:33
Total/NA	Analysis	9060A		1	712690	BC	EET CHI	05/10/23 22:39
Total/NA	Analysis	SM 2320B		1	712631	EH	EET CHI	05/10/23 16:38

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-31

Lab Sample ID: 500-232982-7

Date Collected: 04/27/23 13:17

Matrix: Water

Date Received: 04/28/23 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711485	W1T	EET CHI	05/05/23 03:12
Total/NA	Prep	3510C			710414	EC	EET CHI	04/28/23 16:25
Total/NA	Analysis	8270D		1	710838	SS	EET CHI	05/02/23 13:58
Total/NA	Analysis	RSK-175		1	572283	BPM	EET CLE	05/05/23 19:07
Total/NA	Prep	8151A			711157	DAK	EET CHI	05/03/23 12:13
Total/NA	Analysis	8151A		1	711591	JJB	EET CHI	05/05/23 18:26
Dissolved	Prep	3005A			712420	BDE	EET CHI	05/10/23 09:24 - 05/10/23 09:54 ¹
Dissolved	Analysis	6020A		1	712707	FXG	EET CHI	05/10/23 19:16
Total Recoverable	Prep	3005A			712418	BDE	EET CHI	05/10/23 09:23 - 05/10/23 09:53 ¹
Total Recoverable	Analysis	6020A		1	712707	FXG	EET CHI	05/10/23 21:32
Dissolved	Prep	3005A			712420	BDE	EET CHI	05/10/23 09:24 - 05/10/23 09:54 ¹
Dissolved	Analysis	SM 2340B		1	712781	FXG	EET CHI	05/11/23 13:45
Total Recoverable	Prep	3005A			712418	BDE	EET CHI	05/10/23 09:23 - 05/10/23 09:53 ¹
Total Recoverable	Analysis	SM 2340B		1	712777	FXG	EET CHI	05/11/23 13:19
Total/NA	Analysis	300.0		1	710383	EH	EET CHI	04/28/23 21:20
Total/NA	Analysis	300.0		1	710384	MM	EET CHI	04/28/23 21:20
Total/NA	Analysis	9060A		1	712690	BC	EET CHI	05/10/23 22:52
Total/NA	Analysis	SM 2320B		1	712631	EH	EET CHI	05/10/23 16:38

Client Sample ID: W-230427-TS-32

Lab Sample ID: 500-232982-8

Date Collected: 04/27/23 13:52

Matrix: Water

Date Received: 04/28/23 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711485	W1T	EET CHI	05/05/23 03:37
Total/NA	Prep	3510C			710414	EC	EET CHI	04/28/23 16:25
Total/NA	Analysis	8270D		1	710838	SS	EET CHI	05/02/23 14:22
Total/NA	Analysis	RSK-175		1	572283	BPM	EET CLE	05/05/23 19:24
Total/NA	Prep	8151A			711157	DAK	EET CHI	05/03/23 12:13
Total/NA	Analysis	8151A		1	711591	JJB	EET CHI	05/05/23 18:45
Dissolved	Prep	3005A			712420	BDE	EET CHI	05/10/23 09:24 - 05/10/23 09:54 ¹
Dissolved	Analysis	6020A		1	712707	FXG	EET CHI	05/10/23 19:20
Total Recoverable	Prep	3005A			712418	BDE	EET CHI	05/10/23 09:23 - 05/10/23 09:53 ¹
Total Recoverable	Analysis	6020A		1	712707	FXG	EET CHI	05/10/23 21:36
Dissolved	Prep	3005A			712420	BDE	EET CHI	05/10/23 09:24 - 05/10/23 09:54 ¹
Dissolved	Analysis	SM 2340B		1	712781	FXG	EET CHI	05/11/23 13:45
Total Recoverable	Prep	3005A			712418	BDE	EET CHI	05/10/23 09:23 - 05/10/23 09:53 ¹
Total Recoverable	Analysis	SM 2340B		1	712777	FXG	EET CHI	05/11/23 13:19
Total/NA	Analysis	300.0		1	710383	EH	EET CHI	04/28/23 21:36
Total/NA	Analysis	300.0		1	710384	MM	EET CHI	04/28/23 21:36
Total/NA	Analysis	300.0		5	713457	EH	EET CHI	05/16/23 23:58
Total/NA	Analysis	9060A		1	712690	BC	EET CHI	05/11/23 05:26
Total/NA	Analysis	SM 2320B		1	712631	EH	EET CHI	05/10/23 16:38

Eurofins Chicago

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Client Sample ID: W-230427-TS-33

Lab Sample ID: 500-232982-9

Date Collected: 04/27/23 14:47

Matrix: Water

Date Received: 04/28/23 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	712149	PMF	EET CHI	05/09/23 14:21
Total/NA	Prep	3510C			710414	EC	EET CHI	04/28/23 16:25
Total/NA	Analysis	8270D		5	710838	SS	EET CHI	05/02/23 14:46
Total/NA	Analysis	RSK-175		1	572283	BPM	EET CLE	05/05/23 19:41
Total/NA	Prep	8151A			711157	DAK	EET CHI	05/03/23 12:13
Total/NA	Analysis	8151A		1000	712956	JJB	EET CHI	05/12/23 11:46
Dissolved	Prep	3005A			712420	BDE	EET CHI	05/10/23 09:24 - 05/10/23 09:54 ¹
Dissolved	Analysis	6020A		1	712707	FXG	EET CHI	05/10/23 19:24
Total Recoverable	Prep	3005A			712418	BDE	EET CHI	05/10/23 09:23 - 05/10/23 09:53 ¹
Total Recoverable	Analysis	6020A		1	712707	FXG	EET CHI	05/10/23 21:41
Dissolved	Prep	3005A			712420	BDE	EET CHI	05/10/23 09:24 - 05/10/23 09:54 ¹
Dissolved	Analysis	SM 2340B		1	712781	FXG	EET CHI	05/11/23 13:45
Total Recoverable	Prep	3005A			712418	BDE	EET CHI	05/10/23 09:23 - 05/10/23 09:53 ¹
Total Recoverable	Analysis	SM 2340B		1	712777	FXG	EET CHI	05/11/23 13:19
Total/NA	Analysis	300.0		1	710383	EH	EET CHI	04/28/23 21:52
Total/NA	Analysis	300.0		1	710384	MM	EET CHI	04/28/23 21:52
Total/NA	Analysis	9060A		1	712690	BC	EET CHI	05/11/23 05:40
Total/NA	Analysis	SM 2320B		1	712631	EH	EET CHI	05/10/23 16:38

Client Sample ID: TRIP BLANK

Lab Sample ID: 500-232982-10

Date Collected: 04/27/23 00:00

Matrix: Water

Date Received: 04/28/23 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	711485	W1T	EET CHI	05/05/23 00:21

¹ This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200
EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-232982-1

Laboratory: Eurofins Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-23

Laboratory: Eurofins Cleveland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-24
Connecticut	State	PH-0590	06-29-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-28-24
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-24
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-24
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-28-24
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	05-07-23

Chain of Custody Record

524988



Environment Testing
TestAmerica

TAL-8210

Address _____



Regulatory Program: DW NPDES RCRA Other

Client Contact 500-232982 COC		Project Manager <u>TIM REE</u>		Site Contact		Date <u>4/27/23</u>		COC No					
Company Name <u>GHD</u>		Tel/Email <u>TIM. REE @ GHD.COM</u>		Lab Contact		Carrier <u>FedEx</u>		1 of 1 COCs					
Address <u>900 LONG LAKE ROAD</u>		Analysis Turnaround Time		Filtered Sample (Y/N) Perform MS / MSD (Y/N) ALKALINITY, AMMONIA PCP BTEX NAPHTHALENE DISS METALS, AMMONIUM TOTAL METALS, HARDNESS TOC METHANE		Sampler <u>THOR SOLBERG</u>		For Lab Use Only					
City/State/Zip <u>ST PAUL / MN / 55112</u>		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS				Walk-in Client		Lab Sampling		Job / SDG No			
Phone <u>612 213 7452</u>		TAT if different from Below _____				<input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day				<u>500-232982</u>			
Project Name <u>PENNA WOODS</u>													
Site <u>11222418</u>													
P O #													
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.					Sample Specific Notes		
1	W-230427-TS-25	4/27	0915	G	GW	15	N	X	X	X	X	X	
2	W-230427-TS-26		10:00			15	N	X	X	X	X	X	
3	W-230427-TS-27		1145			15	N	X	X	X	X	X	
4	W-230427-TS-28		11:10			45	Y	X	X	X	X	X	
5	W-230427-TS-29		1226			15	N	X	X	X	X	X	
6	W-230427-TS-30		1228					X	X	X	X	X	
7	W-230427-TS-31		1317					X	X	X	X	X	
8	W-230427-TS-32		1352					X	X	X	X	X	
9	W-230427-TS-33		1447					X	X	X	X	X	
10	TRIP BLANK								X				
Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other							Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)						
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample							<input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months						
<input type="checkbox"/> Non Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown													
Special Instructions/QC Requirements & Comments:							0.9+1.3, 1.4+1.8, 1.6+2.0, 2.3+2.2, 0.2+0.6, 1.1+1.5						
Custody Seals Intact <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No		Cooler Temp (°C) Obs'd		Corr'd		Therm ID No					
Relinquished by <u>[Signature]</u>		Company <u>GHD</u>		Date/Time <u>4/27 1545</u>		Received by		Company					
Relinquished by		Company		Date/Time		Received by		Company					
Relinquished by		Company		Date/Time		Received in Laboratory by <u>Stephanie Hernandez</u>		Company <u>EETA</u> Date/Time <u>4/28/23 0945</u>					

FedEx Express *Package US Airbill*

FedEx Tracking Number **8166.8556 3461**

Form ID No. **0200** **Recipient's Copy**

1 From

Date _____

Sender's Name _____ Phone _____

Company _____

Address _____ Dept./Floor/Suite/Room _____

City _____ State _____

4 Express Package Service * To most locations.

Next Business Day

FedEx First Overnight
Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Priority Overnight
Next business morning.* Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Standard Overnight
Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

FedEx 2Day A.M.
Second business morning.* Saturday Delivery NOT available.

FedEx 2Day
Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Express Saver
Third business day.* Saturday Delivery NOT available.

500-232982 Waybi

5 Packaging * Declared value limit \$500.

FedEx Envelope* FedEx Pak* FedEx Box FedEx Tube Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver.

No Signature Required
Package may be left without obtaining a signature for delivery.

Direct Signature
Someone at recipient's address may sign for delivery.

Indirect Signature
If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?
One box must be checked.

No Yes As per attached Shipper's Declaration. Yes Shipper's Declaration not required. Dry Ice Dry ice, 5, UN 1845 _____ x _____ kg

Restrictions apply for dangerous goods — see the current FedEx Service Guide. Cargo Aircraft Only

7 Payment Bill to: Enter FedEx Acct. No. below. Obtain recip. FedEx Acct No.

Sender Acct. No. in Section 1 will be billed. Recipient Third Party

Total Packages _____ Total Weight _____ lbs

Our liability is limited to US\$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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FedEx

TRK# **8166 8556 3461**
0200

FRI - 28 APR AA
PRIORITY OVERNIGHT

60484
IL-US
ORD

AC JOTA



80701 27Apr2023 JDTA 581G3/78CF/C088

fedex.com 1800.GoFedEx 1800.463.3339

644

FedEx Express Package US Airbill

FedEx Tracking Number 8166 8556 3483

Form ID No. 0200

Recipient's Copy

1 From
Date
Sender's Name
Company
Address
City State ZIP

2 Your Internal Billing Reference

3 To
Recipient's Name
Company
Address
City

FedEx TRK# 8166 8556 3483

FRI PRIOR 26 APR AA CITY OVERNIGHT



80701 27Apr2023 JDTA 581G3/78CF/C088

4 Express Package Service

Next Business Day
2 or 3 Business Days
FedEx First Overnight
FedEx Priority Overnight
FedEx Standard Overnight
FedEx 2Day A.M.
FedEx 2Day
FedEx Express Saver

5 Packaging
FedEx Envelope
FedEx Pak
FedEx Box
FedEx Tube
Other

6 Special Handling and Delivery Signature Options

Saturday Delivery
No Signature Required
Direct Signature
Indirect Signature
Does this shipment contain dangerous goods?
Dry Ice
Cargo Aircraft Only

7 Payment Bill to:

Sender
Recipient
Third Party
Total Packages
Total Weight

Our liability is limited to US\$100 unless you declare a higher value. See the current FedEx Service Guide for details.

644

fedex.com 1.800.GoFedEx 1.800.463.3339

fedex.com 1.800.GoFedEx 1.800.463.3339

FedEx Express **Package US Airbill**

FedEx Tracking Number **8166 8556 3510**

Form ID No. **0200**

Recipient's Copy

1 From

Date _____

Sender's Name _____ Phone _____

Company _____

Address _____
Dept./Floor/Suite/Room _____

City _____ State _____ ZIP _____

2 Your Internal Billing Reference

3 To

Recipient's Name _____ Phone _____

Company _____

FRI - 28 APR
PRIORITY OVERNIGHT

Hold Weekday
FedEx location address REQUIRED. NOT available for FedEx First Overnight.

Hold Saturday
FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

ZIP _____

fedex.com 1800 GoFedEx 1800 463.3339

FedEx
TRK# **8166 8556 3510**
0200

AC JOTA



85761 27Apr2023 JDTA 581G3/78CF/C088

4 Express Package Service *To most locations. **Packages up to 150 lbs.**
For packages over 150 lbs., use the FedEx Express Freight US Airbill.

Next Business Day

- FedEx First Overnight**
Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Priority Overnight**
Next business morning.* Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Standard Overnight**
Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

- FedEx 2Day A.M.**
Second business morning.* Saturday Delivery NOT available.
- FedEx 2Day**
Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Express Saver**
Third business day.* Saturday Delivery NOT available.

5 Packaging *Declared value limit \$500.

- FedEx Envelope*
- FedEx Pak*
- FedEx Box
- FedEx Tube
- Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

- Saturday Delivery**
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver.
- No Signature Required**
Package may be left without obtaining a signature for delivery.
- Direct Signature**
Someone at recipient's address may sign for delivery.
- Indirect Signature**
If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

- One box must be checked.
- No
 - Yes As per attached Shipper's Declaration.
 - Yes Shipper's Declaration not required.
 - Dry Ice
Dry Ice, S, UN 1845 _____ x _____ kg
 - Cargo Aircraft Only

Restrictions apply for dangerous goods — see the current FedEx Service Guide.

7 Payment Bill to:

- Enter FedEx Acct. No. below. Obtain recip. FedEx Acct No.
- Sender**
Acct. No. in Section 1 will be billed.
 - Recipient**
 - Third Party**

Total Packages _____ Total Weight _____ lbs.

*Our liability is limited to US\$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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644

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Package
US Airbill

FedEx Tracking Number 8166 8556 3472

Form ID No. 0200

Recipient's Copy

1 From

Date _____

Sender's Name _____ Phone _____

Company _____

Address _____
Dept./Floor/Suite/Room _____

City _____ State _____ ZIP _____

2 Your Internal Billing Reference

3 To

Recipient's Name _____ Phone _____

FedEx
TRK#
0200 8166 8556 3472

PRI
PRIORITY

Hold Weekday
FedEx location address
REQUIRED. NOT available for
FedEx First Overnight.

Hold Saturday
FedEx location address
REQUIRED. Available ONLY for
FedEx Priority Overnight and
FedEx 2Day to select locations.

AC JOTA



80701 27Apr2023 JDTA 581G3/78CF/C08B

4 Express Package Service *To most locations. Packages up to 150 lbs. For packages over 150 lbs., use the FedEx Express Freight US Airbill.

Next Business Day

FedEx First Overnight
Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Priority Overnight
Next business morning.* Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Standard Overnight
Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

FedEx 2Day A.M.
Second business morning.* Saturday Delivery NOT available.

FedEx 2Day
Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Express Saver
Third business day.* Saturday Delivery NOT available.

5 Packaging *Declared value limit \$500.

FedEx Envelope* Ex Pak* FedEx Box FedEx Tube Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

No Signature Required
Package may be left without obtaining a signature for delivery.

Direct Signature
Someone at recipient's address may sign for delivery.

Indirect Signature
If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

One box must be checked.

No **Yes** As per attached Shipper's Declaration. **Yes** Shipper's Declaration not required. **Dry Ice** Dry Ice, 9 UN 1845 _____ x _____ kg

Restrictions apply for dangerous goods -- see the current FedEx Service Guide. **Cargo Aircraft Only**

7 Payment Bill to:

Enter FedEx Acct. No. below. Obtain recip. FedEx Acct No.

Sender Acct. No. in Section 1 will be billed. **Recipient** **Third Party**

Total Packages _____ Total Weight _____ lbs.

*Our liability is limited to US\$100 unless you declare a higher value. See the current FedEx Service Guide for details.
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1A
1B
1C
fedex.com 1800 GoFedEx 1.800.463.3339

FedEx Express *Package US Airbill*

FedEx Tracking Number **8166 8556 3494**

Form ID No. **0200**

Recipient's Copy

1 From

To _____

Address _____

City _____ State _____

Sender's Name _____ Phone _____

Company _____

2 Your Internal Billing Reference

3 To

Recipient's Name _____

**FRI - 28 APR AA
PRIORITY OVERNIGHT**

FedEx
TRK# **8166 8556 3494**
0200

60484
IL-US
ORP

AC JOTA



80701 27Apr2023 JOTA 581G3/78CF/C088

4 Express Package Service * To most locations. **Packages up to 150 lbs.** For packages over 150 lbs., use the FedEx Express Freight US Airbill.

Next Business Day

- FedEx First Overnight**
Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Priority Overnight**
Next business morning. Friday shipments will be delivered unless Saturday Delivery.

2 or 3 Business Days

- FedEx 2Day A.M.**
Second business morning.* Saturday Delivery NDT available.
- FedEx 2Day**
Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Express Saver**
Third business day.* Saturday Delivery NDT available.

Overnight
* Not available.

Declared value limit \$500.

- Envelope*
- FedEx Pak*
- FedEx Box
- FedEx Tube
- Other

Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

- Saturday Delivery**
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver.
- No Signature Required**
Package may be left without obtaining a signature for delivery.
- Direct Signature**
Someone at recipient's address may sign for delivery.
- Indirect Signature**
If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

- One box must be checked.
- No
 - Yes
As per attached Shipper's Declaration.
 - Yes
Shipper's Declaration not required.
 - Dry Ice
Dry ice, 3, UN 1845 _____ x _____ kg
 - Cargo Aircraft Only

Restrictions apply for dangerous goods — see the current FedEx Service Guide.

7 Payment Bill to:

- Enter FedEx Acct. No. below. Obtain recip. FedEx Acct. No.
- Sender Acct. No. in Section 1 will be billed.
 - Recipient
 - Third Party

Total Packages _____ Total Weight _____ lbs.

*Our liability is limited to US\$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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FedEx Express Package US Airbill

FedEx Tracking Number 8166 8556 3509

Form 10 No. 0200

Recipient's Copy

1 From

Date _____

Sender's Name _____ Phone _____

Company _____

Address _____
Dept./Floor/Suite/Room _____

City _____ State _____ ZIP _____

2 Your Internal Billing Reference

FedEx TRK# 8166 8556 3509
0200

28 APR
60484
IL-US
ORD

PRIORITY OVERNIGHT

AC JOTA



80701 27Apr2023 JOTA 581G3/7BCF/C0BB

8166 8556 3509

4 Express Package Service *To most locations. Packages up to 150 lbs. For packages over 150 lbs., use the FedEx Express Freight US Airbill.

Next Business Day

FedEx First Overnight
Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Priority Overnight
Next business morning.* Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Standard Overnight
Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

FedEx 2Day A.M.
Second business morning.* Saturday Delivery NOT available.

FedEx 2Day
Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Express Saver
Third business day.* Saturday Delivery NOT available.

5 Packaging *Declared value limit \$500.

FedEx Envelope* FedEx Pak* FedEx Box FedEx Tube Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver.

No Signature Required
Package may be left without obtaining a signature for delivery.

Direct Signature
Someone at recipient's address may sign for delivery.

Indirect Signature
If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?
One box must be checked.

No Yes
As per attached Shipper's Declaration. Yes
Shipper's Declaration not required. Dry Ice
Dry Ice, 9, UN 1845 _____ x _____ kg

Restrictions apply for dangerous goods — see the current FedEx Service Guide. Cargo Aircraft Only

7 Payment Bill to:

Enter FedEx Acct. No. below. Obtain recip. FedEx Acct. No.

Sender Acct. No. in Section 1 will be billed. Recipient Third Party

Total Packages _____ Total Weight _____ lbs.

*Our liability is limited to US\$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-232982-1

Login Number: 232982

List Source: Eurofins Chicago

List Number: 1

Creator: Hernandez, Stephanie

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.3,1.8,2.0,2.2,0.6,1.5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	





ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Grant Anderson
GHD Services Inc.
900 Long Lake Road
Suite 200
New Brighton, Minnesota 55112

Generated 5/22/2023 10:59:42 PM

JOB DESCRIPTION

Penta Wood 11222418

JOB NUMBER

500-233061-1

Eurofins Chicago

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Chicago Project Manager.

Authorization



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Authorized for release by
Carlene McCutcheon, Senior Project Manager
Carlene.McCutcheon@et.eurofinsus.com
(708)325-6562



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Case Narrative

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233061-1

Job ID: 500-233061-1

Laboratory: Eurofins Chicago

Narrative

Job Narrative
500-233061-1

Comments

No additional comments.

Receipt

The samples were received on 4/29/2023 11:40 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.0° C.

GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC/MS Semi VOA

Method 8270D: Perylene-d12 Internal standard (ISTD) response for the following sample was outside of acceptance limits: W-230428-TS-34 (500-233061-1). This internal standard is not associated to the reported analytes; therefore, re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC VOA

Method RSK-175: The method requirement for no headspace was not met. The following volatile samples were analyzed with headspace in the sample containers, (240-184382-AD-8 MS) and (240-184382-AF-8 MSD).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Field Service / Mobile Lab

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

Method 300.0: The CCV prior to the MB and LCS was slightly outside control limits at 88%rec. The MB and LCS were within control limits for Nitrate as N. Samples associated to this MB and LCS were bracketed by CCV within control limits. The MB and LCS have been qualified and the sample reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233061-1

Client Sample ID: W-230428-TS-34

Lab Sample ID: 500-233061-1

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Xylenes, Total	0.24	J	1.0	0.22	ug/L	1		8260B	Total/NA
Arsenic	0.62	J	1.0	0.23	ug/L	1		6020A	Total
Copper	13.9	B	2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	2020		100	46.7	ug/L	1		6020A	Total Recoverable
Manganese	38.8		2.5	0.79	ug/L	1		6020A	Total Recoverable
Zinc	9.4	J	20.0	6.9	ug/L	1		6020A	Total Recoverable
Arsenic	0.35	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	3.5	B	2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	3.0		2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	125		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	126		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	12.6		1.0	0.12	mg/L	1		300.0	Total/NA
Sulfate	9.7		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	3.0		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	207		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-230428-TS-35

Lab Sample ID: 500-233061-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Copper	0.56	J B	2.0	0.50	ug/L	1		6020A	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Method Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233061-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	EET CHI
RSK-175	Dissolved Gases (GC)	RSK	EET CLE
8151A	Herbicides (GC)	SW846	EET CHI
6020A	Metals (ICP/MS)	SW846	EET CHI
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	EET CHI
300.0	Anions, Ion Chromatography	EPA	EET CHI
9060A	Organic Carbon, Total (TOC)	SW846	EET CHI
SM 2320B	Alkalinity	SM	EET CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CHI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CHI
5030B	Purge and Trap	SW846	EET CHI
8151A	Extraction (Herbicides)	SW846	EET CHI

Protocol References:

EPA = US Environmental Protection Agency

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233061-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-233061-1	W-230428-TS-34	Water	04/28/23 10:05	04/29/23 11:40
500-233061-2	W-230428-TS-35	Water	04/28/23 11:20	04/29/23 11:40

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233061-1

Client Sample ID: W-230428-TS-34

Lab Sample ID: 500-233061-1

Date Collected: 04/28/23 10:05

Matrix: Water

Date Received: 04/29/23 11:40

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/10/23 00:33	1
Toluene	<0.15		0.50	0.15	ug/L			05/10/23 00:33	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/10/23 00:33	1
Xylenes, Total	0.24	J	1.0	0.22	ug/L			05/10/23 00:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		75 - 126		05/10/23 00:33	1
Toluene-d8 (Surr)	111		75 - 120		05/10/23 00:33	1
4-Bromofluorobenzene (Surr)	107		72 - 124		05/10/23 00:33	1
Dibromofluoromethane	98		75 - 120		05/10/23 00:33	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.21		0.68	0.21	ug/L		05/03/23 07:55	05/03/23 21:11	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Nitrobenzene-d5 (Surr)	51		36 - 120	05/03/23 07:55	05/03/23 21:11	1			
2-Fluorobiphenyl (Surr)	62		34 - 110	05/03/23 07:55	05/03/23 21:11	1			
Terphenyl-d14 (Surr)	117		40 - 145	05/03/23 07:55	05/03/23 21:11	1			

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			05/06/23 02:45	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
1,1,1-Trifluoroethane	101		60 - 140		05/06/23 02:45	1			

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.097		0.098	0.097	ug/L		05/02/23 07:34	05/05/23 13:53	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
DCAA	73		25 - 130	05/02/23 07:34	05/05/23 13:53	1			

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.62	J	1.0	0.23	ug/L		05/11/23 09:42	05/12/23 14:39	1
Copper	13.9	B	2.0	0.50	ug/L		05/11/23 09:42	05/11/23 21:30	1
Iron	2020		100	46.7	ug/L		05/11/23 09:42	05/11/23 21:30	1
Manganese	38.8		2.5	0.79	ug/L		05/11/23 09:42	05/12/23 14:39	1
Zinc	9.4	J	20.0	6.9	ug/L		05/11/23 09:42	05/11/23 21:30	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.35	J	1.0	0.23	ug/L		05/11/23 09:42	05/12/23 14:43	1
Copper	3.5	B	2.0	0.50	ug/L		05/11/23 09:42	05/11/23 21:34	1
Iron	<46.7		100	46.7	ug/L		05/11/23 09:42	05/11/23 21:34	1
Manganese	3.0		2.5	0.79	ug/L		05/11/23 09:42	05/12/23 14:43	1
Zinc	<6.9		20.0	6.9	ug/L		05/11/23 09:42	05/11/23 21:34	1

Eurofins Chicago

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233061-1

Client Sample ID: W-230428-TS-34

Lab Sample ID: 500-233061-1

Date Collected: 04/28/23 10:05

Matrix: Water

Date Received: 04/29/23 11:40

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	125		0.50	0.25	mg/L		05/11/23 09:42	05/12/23 15:34	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	126		0.50	0.25	mg/L		05/11/23 09:42	05/12/23 15:34	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	12.6		1.0	0.12	mg/L			05/19/23 13:40	1
Nitrate as N (EPA 300.0)	<0.043		1.0	0.043	mg/L			04/29/23 19:21	1
Sulfate (EPA 300.0)	9.7		1.0	0.21	mg/L			05/19/23 13:40	1
Total Organic Carbon - Duplicates (SW846 9060A)	3.0		1.0	0.47	mg/L			05/11/23 00:07	1
Alkalinity (SM 2320B)	207		5.0	3.7	mg/L			05/10/23 16:38	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233061-1

Client Sample ID: W-230428-TS-35

Lab Sample ID: 500-233061-2

Date Collected: 04/28/23 11:20

Matrix: Water

Date Received: 04/29/23 11:40

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/10/23 00:56	1
Toluene	<0.15		0.50	0.15	ug/L			05/10/23 00:56	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/10/23 00:56	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/10/23 00:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		75 - 126		05/10/23 00:56	1
Toluene-d8 (Surr)	104		75 - 120		05/10/23 00:56	1
4-Bromofluorobenzene (Surr)	110		72 - 124		05/10/23 00:56	1
Dibromofluoromethane	101		75 - 120		05/10/23 00:56	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.20		0.63	0.20	ug/L		05/03/23 07:55	05/03/23 21:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	37		36 - 120	05/03/23 07:55	05/03/23 21:34	1
2-Fluorobiphenyl (Surr)	47		34 - 110	05/03/23 07:55	05/03/23 21:34	1
Terphenyl-d14 (Surr)	102		40 - 145	05/03/23 07:55	05/03/23 21:34	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.097		0.098	0.097	ug/L		05/02/23 07:34	05/05/23 14:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	87		25 - 130	05/02/23 07:34	05/05/23 14:29	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		05/11/23 09:42	05/12/23 14:46	1
Copper	<0.50		2.0	0.50	ug/L		05/11/23 09:42	05/11/23 21:37	1
Iron	<46.7		100	46.7	ug/L		05/11/23 09:42	05/11/23 21:37	1
Manganese	<0.79		2.5	0.79	ug/L		05/11/23 09:42	05/12/23 14:46	1
Zinc	<6.9		20.0	6.9	ug/L		05/11/23 09:42	05/11/23 21:37	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		05/11/23 09:42	05/12/23 14:50	1
Copper	0.56	J B	2.0	0.50	ug/L		05/11/23 09:42	05/11/23 21:41	1
Iron	<46.7		100	46.7	ug/L		05/11/23 09:42	05/11/23 21:41	1
Manganese	<0.79		2.5	0.79	ug/L		05/11/23 09:42	05/12/23 14:50	1
Zinc	<6.9		20.0	6.9	ug/L		05/11/23 09:42	05/11/23 21:41	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	<0.25		0.50	0.25	mg/L		05/11/23 09:42	05/12/23 15:34	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	<0.25		0.50	0.25	mg/L		05/11/23 09:42	05/12/23 15:34	1

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Definitions/Glossary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233061-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Reported value was between the limit of detection and the limit of quantitation.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Reported value was between the limit of detection and the limit of quantitation.

General Chemistry

Qualifier	Qualifier Description
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233061-1

GC/MS VOA

Analysis Batch: 712300

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233061-1	W-230428-TS-34	Total/NA	Water	8260B	
500-233061-2	W-230428-TS-35	Total/NA	Water	8260B	
MB 500-712300/6	Method Blank	Total/NA	Water	8260B	
LCS 500-712300/4	Lab Control Sample	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 710979

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233061-1	W-230428-TS-34	Total/NA	Water	3510C	
500-233061-2	W-230428-TS-35	Total/NA	Water	3510C	
MB 500-710979/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-710979/2-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 711095

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233061-1	W-230428-TS-34	Total/NA	Water	8270D	710979
500-233061-2	W-230428-TS-35	Total/NA	Water	8270D	710979
MB 500-710979/1-A	Method Blank	Total/NA	Water	8270D	710979
LCS 500-710979/2-A	Lab Control Sample	Total/NA	Water	8270D	710979

GC VOA

Analysis Batch: 572357

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233061-1	W-230428-TS-34	Total/NA	Water	RSK-175	
MB 240-572357/33	Method Blank	Total/NA	Water	RSK-175	
LCS 240-572357/34	Lab Control Sample	Total/NA	Water	RSK-175	

GC Semi VOA

Prep Batch: 710788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233061-1	W-230428-TS-34	Total/NA	Water	8151A	
500-233061-2	W-230428-TS-35	Total/NA	Water	8151A	
MB 500-710788/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-710788/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 500-710788/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	

Analysis Batch: 711334

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-710788/1-A	Method Blank	Total/NA	Water	8151A	710788
LCS 500-710788/2-A	Lab Control Sample	Total/NA	Water	8151A	710788
LCSD 500-710788/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	710788

Analysis Batch: 711591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233061-1	W-230428-TS-34	Total/NA	Water	8151A	710788
500-233061-2	W-230428-TS-35	Total/NA	Water	8151A	710788

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233061-1

Metals

Prep Batch: 712697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233061-1	W-230428-TS-34	Dissolved	Water	3005A	
500-233061-1	W-230428-TS-34	Total Recoverable	Water	3005A	
500-233061-2	W-230428-TS-35	Dissolved	Water	3005A	
500-233061-2	W-230428-TS-35	Total Recoverable	Water	3005A	
MB 500-712697/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-712697/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 712962

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233061-1	W-230428-TS-34	Dissolved	Water	6020A	712697
500-233061-1	W-230428-TS-34	Total Recoverable	Water	6020A	712697
500-233061-2	W-230428-TS-35	Dissolved	Water	6020A	712697
500-233061-2	W-230428-TS-35	Total Recoverable	Water	6020A	712697
MB 500-712697/1-A	Method Blank	Total Recoverable	Water	6020A	712697
LCS 500-712697/2-A	Lab Control Sample	Total Recoverable	Water	6020A	712697

Analysis Batch: 713055

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233061-1	W-230428-TS-34	Dissolved	Water	SM 2340B	712697
500-233061-1	W-230428-TS-34	Total Recoverable	Water	SM 2340B	712697
500-233061-2	W-230428-TS-35	Dissolved	Water	SM 2340B	712697
500-233061-2	W-230428-TS-35	Total Recoverable	Water	SM 2340B	712697

Analysis Batch: 713284

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233061-1	W-230428-TS-34	Dissolved	Water	6020A	712697
500-233061-1	W-230428-TS-34	Total Recoverable	Water	6020A	712697
500-233061-2	W-230428-TS-35	Dissolved	Water	6020A	712697
500-233061-2	W-230428-TS-35	Total Recoverable	Water	6020A	712697
MB 500-712697/1-A	Method Blank	Total Recoverable	Water	6020A	712697
LCS 500-712697/2-A	Lab Control Sample	Total Recoverable	Water	6020A	712697

General Chemistry

Analysis Batch: 710384

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233061-1	W-230428-TS-34	Total/NA	Water	300.0	
MB 500-710384/65	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 712631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233061-1	W-230428-TS-34	Total/NA	Water	SM 2320B	
MB 500-712631/28	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-712631/29	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 712690

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233061-1	W-230428-TS-34	Total/NA	Water	9060A	
MB 500-712690/28	Method Blank	Total/NA	Water	9060A	
LCS 500-712690/29	Lab Control Sample	Total/NA	Water	9060A	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233061-1

General Chemistry

Analysis Batch: 714280

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233061-1	W-230428-TS-34	Total/NA	Water	300.0	
MB 500-714280/3	Method Blank	Total/NA	Water	300.0	
LCS 500-714280/4	Lab Control Sample	Total/NA	Water	300.0	

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Surrogate Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233061-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA (75-126)	TOL (75-120)	BFB (72-124)	DBFM (75-120)
500-233061-1	W-230428-TS-34	101	111	107	98
500-233061-2	W-230428-TS-35	102	104	110	101
LCS 500-712300/4	Lab Control Sample	100	108	110	99
MB 500-712300/6	Method Blank	103	108	108	99

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	NBZ (36-120)	FBP (34-110)	TPHL (40-145)
500-233061-1	W-230428-TS-34	51	62	117
500-233061-2	W-230428-TS-35	37	47	102
LCS 500-710979/2-A	Lab Control Sample	58	66	92
MB 500-710979/1-A	Method Blank	44	53	79

Surrogate Legend

NBZ = Nitrobenzene-d5 (Surr)

FBP = 2-Fluorobiphenyl (Surr)

TPHL = Terphenyl-d14 (Surr)

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TFE1 (60-140)
500-233061-1	W-230428-TS-34	101
LCS 240-572357/34	Lab Control Sample	106
MB 240-572357/33	Method Blank	106

Surrogate Legend

TFE = 1,1,1-Trifluoroethane

Method: 8151A - Herbicides (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (25-130)
500-233061-1	W-230428-TS-34	73
500-233061-2	W-230428-TS-35	87
LCS 500-710788/2-A	Lab Control Sample	84
LCSD 500-710788/3-A	Lab Control Sample Dup	80
MB 500-710788/1-A	Method Blank	81

Surrogate Legend

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Surrogate Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418
DCPAA = DCAA

Job ID: 500-233061-1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233061-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-712300/6
Matrix: Water
Analysis Batch: 712300

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	<0.15		0.50	0.15	ug/L			05/09/23 23:25	1
Toluene	<0.15		0.50	0.15	ug/L			05/09/23 23:25	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/09/23 23:25	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/09/23 23:25	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	103		75 - 126		05/09/23 23:25	1
Toluene-d8 (Surr)	108		75 - 120		05/09/23 23:25	1
4-Bromofluorobenzene (Surr)	108		72 - 124		05/09/23 23:25	1
Dibromofluoromethane	99		75 - 120		05/09/23 23:25	1

Lab Sample ID: LCS 500-712300/4
Matrix: Water
Analysis Batch: 712300

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	50.0	48.8		ug/L		98	70 - 120
Toluene	50.0	48.0		ug/L		96	70 - 125
Ethylbenzene	50.0	48.6		ug/L		97	70 - 123
Xylenes, Total	100	105		ug/L		105	70 - 125

Surrogate	LCS LCS		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	100		75 - 126			
Toluene-d8 (Surr)	108		75 - 120			
4-Bromofluorobenzene (Surr)	110		72 - 124			
Dibromofluoromethane	99		75 - 120			

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-710979/1-A
Matrix: Water
Analysis Batch: 711095

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 710979

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Naphthalene	<0.25		0.80	0.25	ug/L		05/02/23 17:08	05/03/23 16:28	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Nitrobenzene-d5 (Surr)	44		36 - 120	05/02/23 17:08	05/03/23 16:28	1
2-Fluorobiphenyl (Surr)	53		34 - 110	05/02/23 17:08	05/03/23 16:28	1
Terphenyl-d14 (Surr)	79		40 - 145	05/02/23 17:08	05/03/23 16:28	1

Lab Sample ID: LCS 500-710979/2-A
Matrix: Water
Analysis Batch: 711095

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 710979

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Naphthalene	32.0	19.7		ug/L		62	36 - 110

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233061-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-710979/2-A
Matrix: Water
Analysis Batch: 711095

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 710979

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Nitrobenzene-d5 (Surr)	58		36 - 120
2-Fluorobiphenyl (Surr)	66		34 - 110
Terphenyl-d14 (Surr)	92		40 - 145

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 240-572357/33
Matrix: Water
Analysis Batch: 572357

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			05/05/23 22:47	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,1,1-Trifluoroethane	106		60 - 140		05/05/23 22:47	1

Lab Sample ID: LCS 240-572357/34
Matrix: Water
Analysis Batch: 572357

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methane	284	315		ug/L		111	80 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,1,1-Trifluoroethane	106		60 - 140

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 500-710788/1-A
Matrix: Water
Analysis Batch: 711334

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 710788

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.099		0.10	0.099	ug/L		05/02/23 07:34	05/04/23 13:49	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCAA	81		25 - 130	05/02/23 07:34	05/04/23 13:49	1

Lab Sample ID: LCS 500-710788/2-A
Matrix: Water
Analysis Batch: 711334

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 710788

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Pentachlorophenol	2.53	1.90		ug/L		75	40 - 122

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
DCAA	84		25 - 130

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233061-1

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: LCSD 500-710788/3-A
Matrix: Water
Analysis Batch: 711334

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 710788

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Pentachlorophenol	2.53	1.86		ug/L		74	40 - 122	2	20
Surrogate	%Recovery	LCSD Qualifier	Limits						
DCAA	80		25 - 130						

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 500-712697/1-A
Matrix: Water
Analysis Batch: 712962

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 712697

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.844	J	2.0	0.50	ug/L		05/11/23 09:42	05/11/23 20:15	1
Iron	<46.7		100	46.7	ug/L		05/11/23 09:42	05/11/23 20:15	1
Zinc	<6.9		20.0	6.9	ug/L		05/11/23 09:42	05/11/23 20:15	1

Lab Sample ID: MB 500-712697/1-A
Matrix: Water
Analysis Batch: 713284

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 712697

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		05/11/23 09:42	05/12/23 14:22	1
Manganese	<0.79		2.5	0.79	ug/L		05/11/23 09:42	05/12/23 14:22	1

Lab Sample ID: LCS 500-712697/2-A
Matrix: Water
Analysis Batch: 712962

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 712697

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Copper	250	247.9		ug/L		99	80 - 120
Iron	1000	1021		ug/L		102	80 - 120
Zinc	500	504.5		ug/L		101	80 - 120

Lab Sample ID: LCS 500-712697/2-A
Matrix: Water
Analysis Batch: 713284

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 712697

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	100	104.3		ug/L		104	80 - 120
Manganese	500	532.9		ug/L		107	80 - 120

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-710384/65
Matrix: Water
Analysis Batch: 710384

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.043	^	1.0	0.043	mg/L			04/29/23 10:23	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233061-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 500-714280/3
Matrix: Water
Analysis Batch: 714280

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.12		1.0	0.12	mg/L			05/19/23 10:22	1
Sulfate	<0.21		1.0	0.21	mg/L			05/19/23 10:22	1

Lab Sample ID: LCS 500-714280/4
Matrix: Water
Analysis Batch: 714280

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	20.0	19.29		mg/L		96	90 - 110
Sulfate	20.0	19.79		mg/L		99	90 - 110

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-712690/28
Matrix: Water
Analysis Batch: 712690

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	<0.47		1.0	0.47	mg/L			05/10/23 23:39	1

Lab Sample ID: LCS 500-712690/29
Matrix: Water
Analysis Batch: 712690

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon - Duplicates	50.0	49.69		mg/L		99	86 - 116

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-712631/28
Matrix: Water
Analysis Batch: 712631

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	<3.7		5.0	3.7	mg/L			05/10/23 16:38	1

Lab Sample ID: LCS 500-712631/29
Matrix: Water
Analysis Batch: 712631

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	100	106.6		mg/L		107	90 - 110

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233061-1

Client Sample ID: W-230428-TS-34

Lab Sample ID: 500-233061-1

Date Collected: 04/28/23 10:05

Matrix: Water

Date Received: 04/29/23 11:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	712300	EA	EET CHI	05/10/23 00:33
Total/NA	Prep	3510C			710979	DAK	EET CHI	05/03/23 07:55
Total/NA	Analysis	8270D		1	711095	SS	EET CHI	05/03/23 21:11
Total/NA	Analysis	RSK-175		1	572357	JBN	EET CLE	05/06/23 02:45
Total/NA	Prep	8151A			710788	TS	EET CHI	05/02/23 07:34
Total/NA	Analysis	8151A		1	711591	JJB	EET CHI	05/05/23 13:53
Dissolved	Prep	3005A			712697	BDE	EET CHI	05/11/23 09:42 - 05/11/23 10:12 ¹
Dissolved	Analysis	6020A		1	712962	FXG	EET CHI	05/11/23 21:34
Dissolved	Prep	3005A			712697	BDE	EET CHI	05/11/23 09:42 - 05/11/23 10:12 ¹
Dissolved	Analysis	6020A		1	713284	FXG	EET CHI	05/12/23 14:43
Total Recoverable	Prep	3005A			712697	BDE	EET CHI	05/11/23 09:42 - 05/11/23 10:12 ¹
Total Recoverable	Analysis	6020A		1	712962	FXG	EET CHI	05/11/23 21:30
Total Recoverable	Prep	3005A			712697	BDE	EET CHI	05/11/23 09:42 - 05/11/23 10:12 ¹
Total Recoverable	Analysis	6020A		1	713284	FXG	EET CHI	05/12/23 14:39
Dissolved	Prep	3005A			712697	BDE	EET CHI	05/11/23 09:42 - 05/11/23 10:12 ¹
Dissolved	Analysis	SM 2340B		1	713055	FXG	EET CHI	05/12/23 15:34
Total Recoverable	Prep	3005A			712697	BDE	EET CHI	05/11/23 09:42 - 05/11/23 10:12 ¹
Total Recoverable	Analysis	SM 2340B		1	713055	FXG	EET CHI	05/12/23 15:34
Total/NA	Analysis	300.0		1	714280	MM	EET CHI	05/19/23 13:40
Total/NA	Analysis	300.0		1	710384	MM	EET CHI	04/29/23 19:21
Total/NA	Analysis	9060A		1	712690	BC	EET CHI	05/11/23 00:07
Total/NA	Analysis	SM 2320B		1	712631	EH	EET CHI	05/10/23 16:38

Client Sample ID: W-230428-TS-35

Lab Sample ID: 500-233061-2

Date Collected: 04/28/23 11:20

Matrix: Water

Date Received: 04/29/23 11:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	712300	EA	EET CHI	05/10/23 00:56
Total/NA	Prep	3510C			710979	DAK	EET CHI	05/03/23 07:55
Total/NA	Analysis	8270D		1	711095	SS	EET CHI	05/03/23 21:34
Total/NA	Prep	8151A			710788	TS	EET CHI	05/02/23 07:34
Total/NA	Analysis	8151A		1	711591	JJB	EET CHI	05/05/23 14:29
Dissolved	Prep	3005A			712697	BDE	EET CHI	05/11/23 09:42 - 05/11/23 10:12 ¹
Dissolved	Analysis	6020A		1	712962	FXG	EET CHI	05/11/23 21:41
Dissolved	Prep	3005A			712697	BDE	EET CHI	05/11/23 09:42 - 05/11/23 10:12 ¹
Dissolved	Analysis	6020A		1	713284	FXG	EET CHI	05/12/23 14:50
Total Recoverable	Prep	3005A			712697	BDE	EET CHI	05/11/23 09:42 - 05/11/23 10:12 ¹
Total Recoverable	Analysis	6020A		1	712962	FXG	EET CHI	05/11/23 21:37
Total Recoverable	Prep	3005A			712697	BDE	EET CHI	05/11/23 09:42 - 05/11/23 10:12 ¹
Total Recoverable	Analysis	6020A		1	713284	FXG	EET CHI	05/12/23 14:46
Dissolved	Prep	3005A			712697	BDE	EET CHI	05/11/23 09:42 - 05/11/23 10:12 ¹
Dissolved	Analysis	SM 2340B		1	713055	FXG	EET CHI	05/12/23 15:34

Eurofins Chicago

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233061-1

Client Sample ID: W-230428-TS-35

Lab Sample ID: 500-233061-2

Date Collected: 04/28/23 11:20

Matrix: Water

Date Received: 04/29/23 11:40

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Analyst</u>	<u>Lab</u>	<u>Prepared or Analyzed</u>
Total Recoverable	Prep	3005A			712697	BDE	EET CHI	05/11/23 09:42 - 05/11/23 10:12 ¹
Total Recoverable	Analysis	SM 2340B		1	713055	FXG	EET CHI	05/12/23 15:34

¹ This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233061-1

Laboratory: Eurofins Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-23

Laboratory: Eurofins Cleveland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-24
Connecticut	State	PH-0590	06-29-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-28-24
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-24
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-24
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-28-24
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	05-07-23

Chain of Custody Record

524956



Environment Testing
TestAmerica

TAL-8210

Address _____



Regulatory Program: DW NPDES RCRA Other

Client Contact 500-233061 COC		Project Manager Tim Ree		Site Contact		Date: 4/28/2023		COC No						
Company Name GHD		Tel/Email: TIM.REE@GHD.com		Lab Contact		Carrier FedEx		_____ of _____ COCs						
Address 900 Long Lake Road, Suite 200		Analysis Turnaround Time		Filtered Sample (Y/N) Perform MS / MSD (Y/N) A/Kalinity, Arsenic PCP BTEX Naphthalene Diss. metals, Heavy Total Metals, Hazardous TOC Methane		Sampler Thor Solberg		For Lab Use Only						
City/State/Zip St Paul/MN/55112		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below _____ <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day				Walk-in Client		Lab Sampling		Job / SDG No				
Phone 612-213-7452										500-233061				
Fax														
Project Name Pent Wood														
Site 11222418														
P O #														
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sample Specific Notes							
W-230428-TS-34		4/28/23	10:05	G	GW	15	N	X	X	X	X	X	X	
W-230428-TS-35		4/28/23	11:20	G	GW	9	N	X	X	X	X	X		
S-230428-TS-1		4/28/23	11:40	G	S	11								
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other										Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)				
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample										<input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months				
<input type="checkbox"/> Non Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown														
Special Instructions/QC Requirements & Comments:														
Custody Seals Intact <input type="checkbox"/> Yes <input type="checkbox"/> No					Custody Seal No					Cooler Temp (°C) Obs'd _____ Corr'd _____ Therm ID No _____				
Relinquished by Thor Solberg					Company GHD					Date/Time 4/28 12:15				
Relinquished by					Company					Date/Time				
Relinquished by					Company					Date/Time				
Relinquished by					Company					Date/Time				
					Received in Laboratory by Stephanie Hernandez					Company EETA				
										Date/Time 4/29/23 1140				

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FedEx
TRK# 8157 3513 3530
0200

SATURDAY DELIVERY
PRIORITY OVERNIGHT

60484
IL-US
ORD

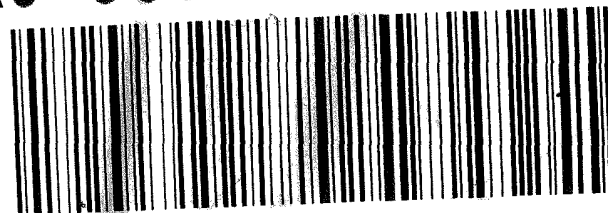
X0 JOTA



500-233061 Waybr

FedEx Express Package US Airbill

FedEx Tracking Number 8157 3513 3



80701 28Apr2023 JOTA 581G3/78CF/C088

1 From

Date [redacted]

Sender's Name [redacted] Phone [redacted]

Company [redacted]

Address [redacted] Dept./Floor/Suite/Room [redacted]

City [redacted] State [redacted] ZIP [redacted]

2 Your Internal Billing Reference 11022 418-1 mt 1/2021

3 To Recipient's Name [redacted] Phone [redacted]

Company [redacted]

Address [redacted] Dept./Floor/Suite/Room [redacted]

Address [redacted] *continuation of your shipping address.

City [redacted] State [redacted] ZIP [redacted]

Hold Weekday
FedEx location address
REQUIRED. NOT available for
FedEx First Overnight.

Hold Saturday
FedEx location address
REQUIRED. Available ONLY for
FedEx Priority Overnight and
FedEx 2Day to select locations.

Next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Priority Overnight
Next business morning. *Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Standard Overnight
Next business afternoon. *Saturday Delivery NOT available.

5 Packaging *Declared value limit \$500.

FedEx Envelope* FedEx Pak*

6 Special Handling and Delivery Signature Options

Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Signature SurePost.

No Signature Required
Package may be left without obtaining a signature for delivery.

Direct Signature
Someone at recipient's address may sign for delivery.

Does this shipment contain dangerous goods?

One box must be checked.
 No Yes As per attached Shipper's Declaration. Yes Shipper's Declaration not required.

7 Payment Bill to:

Sender Acct No. in Section 1 will be billed. Recipient Third Party

Total Packages Total Weight

1 40 lbs.

*Our liability is limited to US\$100 unless you declare a higher value. See the current FedEx Service Guide.

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Put a document and we detail the steps

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04 29



8157 3513 3530

FedEx Express

SDR

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-233061-1

Login Number: 233061

List Source: Eurofins Chicago

List Number: 1

Creator: Hernandez, Stephanie

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	





ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Grant Anderson
GHD Services Inc.
900 Long Lake Road
Suite 200

New Brighton, Minnesota 55112

Generated 5/22/2023 11:06:55 PM Revision 1

JOB DESCRIPTION

Penta Wood 11222418

JOB NUMBER

500-233066-1

Eurofins Chicago

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Chicago Project Manager.

Authorization



Generated
5/22/2023 11:06:55 PM
Revision 1

Authorized for release by
Carlene McCutcheon, Senior Project Manager
Carlene.McCutcheon@et.eurofinsus.com
(708)325-6562



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Case Narrative

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233066-1

Job ID: 500-233066-1

Laboratory: Eurofins Chicago

Narrative

Job Narrative 500-233066-1

Comments

No additional comments.

Receipt

The sample was received on 4/29/2023 11:40 AM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 6.4° C.

Receipt Exceptions

The following sample(s) was received at the laboratory outside the required temperature criteria: Ice present however samples were in a box with the bag of ice on top. This does not meet regulatory requirements

GC/MS VOA

Method 8260B: The following sample was diluted due to the nature of the sample matrix: S-230428-TS-01 (500-233066-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

Method 8270D: The continuing calibration verification (CCV) analyzed in 500-712660 was outside the method criteria for the following analyte(s): 2-Fluorophenol (Surr) and Phenol. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method 8270D: Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for 3 analytes to recover outside criteria for this method when utilizing this list of analytes. The LCS associated with preparation batch 500-712591 and analytical batch 500-712660 had 1 analytes outside control limits: Benzo[g,h,i]perylene. These results have been reported and qualified.

Method 8270D: The following samples contained one acid surrogate outside acceptance limits: S-230428-TS-01 (500-233066-1) and (LB 500-711224/1-D). The laboratory's SOP allows one acid and one base surrogate to be outside acceptance limits; therefore, re-extraction was not performed. These results have been reported and qualified.

Method 8270D: The following sample was diluted due to the nature of the sample matrix: S-230428-TS-01 (500-233066-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233066-1

Client Sample ID: S-230428-TS-01

Lab Sample ID: 500-233066-1

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Barium	0.069	J	0.50	0.050	mg/L	1		6010C	TCLP

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
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- 10
- 11
- 12
- 13
- 14
- 15

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Method Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233066-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	EET CHI
6010C	Metals (ICP)	SW846	EET CHI
7470A	Mercury (CVAA)	SW846	EET CHI
Moisture	Percent Moisture	EPA	EET CHI
1311	TCLP Extraction	SW846	EET CHI
3010A	Preparation, Total Metals	SW846	EET CHI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CHI
5030B	Purge and Trap	SW846	EET CHI
7470A	Preparation, Mercury	SW846	EET CHI

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233066-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-233066-1	S-230428-TS-01	Solid	04/28/23 11:40	04/29/23 11:40

1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233066-1

Client Sample ID: S-230428-TS-01

Lab Sample ID: 500-233066-1

Date Collected: 04/28/23 11:40

Matrix: Solid

Date Received: 04/29/23 11:40

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	<10		20	10	ug/L			05/10/23 07:23	20
1,2-Dichloroethane	<10		20	10	ug/L			05/10/23 07:23	20
1,4-Dichlorobenzene	<10		20	10	ug/L			05/10/23 07:23	20
Benzene	<10		20	10	ug/L			05/10/23 07:23	20
Carbon tetrachloride	<10		20	10	ug/L			05/10/23 07:23	20
Chlorobenzene	<10		20	10	ug/L			05/10/23 07:23	20
Chloroform	<20		40	20	ug/L			05/10/23 07:23	20
Methyl Ethyl Ketone	<50		100	50	ug/L			05/10/23 07:23	20
Tetrachloroethene	<10		20	10	ug/L			05/10/23 07:23	20
Trichloroethene	<10		20	10	ug/L			05/10/23 07:23	20
Vinyl chloride	<10		20	10	ug/L			05/10/23 07:23	20
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		75 - 126					05/10/23 07:23	20
Toluene-d8 (Surr)	105		75 - 120					05/10/23 07:23	20
4-Bromofluorobenzene (Surr)	115		72 - 124					05/10/23 07:23	20
Dibromofluoromethane (Surr)	102		75 - 120					05/10/23 07:23	20

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	<100		100	100	ug/L		05/11/23 07:10	05/11/23 19:38	5
2,4,5-Trichlorophenol	<500		500	500	ug/L		05/11/23 07:10	05/11/23 19:38	5
2,4,6-Trichlorophenol	<250		250	250	ug/L		05/11/23 07:10	05/11/23 19:38	5
2,4-Dinitrotoluene	<50		50	50	ug/L		05/11/23 07:10	05/11/23 19:38	5
2-Methylphenol	<100		100	100	ug/L		05/11/23 07:10	05/11/23 19:38	5
3 & 4 Methylphenol	<100		100	100	ug/L		05/11/23 07:10	05/11/23 19:38	5
Hexachlorobenzene	<25		25	25	ug/L		05/11/23 07:10	05/11/23 19:38	5
Hexachlorobutadiene	<250		250	250	ug/L		05/11/23 07:10	05/11/23 19:38	5
Hexachloroethane	<250		250	250	ug/L		05/11/23 07:10	05/11/23 19:38	5
Nitrobenzene	<50		50	50	ug/L		05/11/23 07:10	05/11/23 19:38	5
Pentachlorophenol	<1000		1000	1000	ug/L		05/11/23 07:10	05/11/23 19:38	5
Pyrene	<50		50	50	ug/L		05/11/23 07:10	05/11/23 19:38	5
Pyridine	<1000		1000	1000	ug/L		05/11/23 07:10	05/11/23 19:38	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorophenol (Surr)	24	X ^c	27 - 110				05/11/23 07:10	05/11/23 19:38	5
Phenol-d5 (Surr)	32		20 - 100				05/11/23 07:10	05/11/23 19:38	5
Nitrobenzene-d5 (Surr)	77		36 - 120				05/11/23 07:10	05/11/23 19:38	5
2-Fluorobiphenyl (Surr)	89		34 - 110				05/11/23 07:10	05/11/23 19:38	5
2,4,6-Tribromophenol (Surr)	73		40 - 145				05/11/23 07:10	05/11/23 19:38	5
Terphenyl-d14 (Surr)	90		40 - 145				05/11/23 07:10	05/11/23 19:38	5

Method: SW846 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.010		0.050	0.010	mg/L		05/04/23 17:28	05/06/23 01:12	1
Barium	0.069	J	0.50	0.050	mg/L		05/04/23 17:28	05/06/23 01:12	1
Cadmium	<0.0020		0.0050	0.0020	mg/L		05/04/23 17:28	05/06/23 01:12	1
Chromium	<0.010		0.025	0.010	mg/L		05/04/23 17:28	05/06/23 01:12	1
Lead	<0.0075		0.050	0.0075	mg/L		05/04/23 17:28	05/06/23 01:12	1
Selenium	<0.020		0.050	0.020	mg/L		05/04/23 17:28	05/06/23 01:12	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233066-1

Client Sample ID: S-230428-TS-01

Lab Sample ID: 500-233066-1

Date Collected: 04/28/23 11:40

Matrix: Solid

Date Received: 04/29/23 11:40

Method: SW846 6010C - Metals (ICP) - TCLP (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.010		0.025	0.010	mg/L		05/04/23 17:28	05/06/23 01:12	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.20		0.20	0.20	ug/L		05/08/23 11:35	05/09/23 11:48	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233066-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
^c	CCV Recovery is outside acceptance limits.
X	Surrogate recovery exceeds control limits

Metals

Qualifier	Qualifier Description
J	Reported value was between the limit of detection and the limit of quantitation.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233066-1

GC/MS VOA

Leach Batch: 711463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233066-1	S-230428-TS-01	TCLP	Solid	1311	
LB 500-711463/1-A	Method Blank	TCLP	Solid	1311	

Analysis Batch: 712300

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233066-1	S-230428-TS-01	TCLP	Solid	8260B	711463
LB 500-711463/1-A	Method Blank	TCLP	Solid	8260B	711463
MB 500-712300/6	Method Blank	Total/NA	Solid	8260B	
LCS 500-712300/4	Lab Control Sample	Total/NA	Solid	8260B	

GC/MS Semi VOA

Leach Batch: 711224

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233066-1	S-230428-TS-01	TCLP	Solid	1311	
LB 500-711224/1-D	Method Blank	TCLP	Solid	1311	

Prep Batch: 712591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233066-1	S-230428-TS-01	TCLP	Solid	3510C	711224
LB 500-711224/1-D	Method Blank	TCLP	Solid	3510C	711224
MB 500-712591/1-A	Method Blank	Total/NA	Solid	3510C	
LCS 500-712591/2-A	Lab Control Sample	Total/NA	Solid	3510C	

Analysis Batch: 712660

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233066-1	S-230428-TS-01	TCLP	Solid	8270D	712591
LB 500-711224/1-D	Method Blank	TCLP	Solid	8270D	712591
MB 500-712591/1-A	Method Blank	Total/NA	Solid	8270D	712591
LCS 500-712591/2-A	Lab Control Sample	Total/NA	Solid	8270D	712591

Metals

Leach Batch: 711224

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233066-1	S-230428-TS-01	TCLP	Solid	1311	
LB 500-711224/1-B	Method Blank	TCLP	Solid	1311	
LB 500-711224/2-B	Method Blank	TCLP	Solid	1311	

Prep Batch: 711472

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233066-1	S-230428-TS-01	TCLP	Solid	3010A	711224
LB 500-711224/1-B	Method Blank	TCLP	Solid	3010A	711224
LCS 500-711472/2-A	Lab Control Sample	Total/NA	Solid	3010A	

Analysis Batch: 711966

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233066-1	S-230428-TS-01	TCLP	Solid	6010C	711472
LB 500-711224/1-B	Method Blank	TCLP	Solid	6010C	711472
LCS 500-711472/2-A	Lab Control Sample	Total/NA	Solid	6010C	711472

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233066-1

Metals

Prep Batch: 711988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233066-1	S-230428-TS-01	TCLP	Solid	7470A	711224
LB 500-711224/2-B	Method Blank	TCLP	Solid	7470A	711224
MB 500-711988/12-A	Method Blank	Total/NA	Solid	7470A	
LCS 500-711988/13-A	Lab Control Sample	Total/NA	Solid	7470A	

Analysis Batch: 712257

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233066-1	S-230428-TS-01	TCLP	Solid	7470A	711988
LB 500-711224/2-B	Method Blank	TCLP	Solid	7470A	711988
MB 500-711988/12-A	Method Blank	Total/NA	Solid	7470A	711988
LCS 500-711988/13-A	Lab Control Sample	Total/NA	Solid	7470A	711988

General Chemistry

Analysis Batch: 711432

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233066-1	S-230428-TS-01	Total/NA	Solid	Moisture	

Surrogate Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233066-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-126)	TOL (75-120)	BFB (72-124)	DBFM (75-120)
LCS 500-712300/4	Lab Control Sample	100	108	110	99
MB 500-712300/6	Method Blank	103	108	108	99

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-126)	TOL (75-120)	BFB (72-124)	DBFM (75-120)
500-233066-1	S-230428-TS-01	106	105	115	102
LB 500-711463/1-A	Method Blank	104	102	111	102

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		2FP (27-110)	PHL (20-100)	NBZ (36-120)	FBP (34-110)	TBP (40-145)	TPHL (40-145)
LCS 500-712591/2-A	Lab Control Sample	63	54	90	86	99	94
MB 500-712591/1-A	Method Blank	43	24	70	75	62	84

Surrogate Legend

2FP = 2-Fluorophenol (Surr)

PHL = Phenol-d5 (Surr)

NBZ = Nitrobenzene-d5 (Surr)

FBP = 2-Fluorobiphenyl (Surr)

TBP = 2,4,6-Tribromophenol (Surr)

TPHL = Terphenyl-d14 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		2FP (27-110)	PHL (20-100)	NBZ (36-120)	FBP (34-110)	TBP (40-145)	TPHL (40-145)
500-233066-1	S-230428-TS-01	24 X ^c	32	77	89	73	90
LB 500-711224/1-D	Method Blank	42	19 X	58	74	48	83

Surrogate Legend

2FP = 2-Fluorophenol (Surr)

PHL = Phenol-d5 (Surr)

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Surrogate Summary

Client: GHD Services Inc.

Project/Site: Penta Wood 11222418

NBZ = Nitrobenzene-d5 (Surr)

FBP = 2-Fluorobiphenyl (Surr)

TBP = 2,4,6-Tribromophenol (Surr)

TPHL = Terphenyl-d14 (Surr)

Job ID: 500-233066-1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233066-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-712300/6
Matrix: Solid
Analysis Batch: 712300

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1-Dichloroethene	<0.50		1.0	0.50	ug/L			05/09/23 23:25	1
1,2-Dichloroethane	<0.50		1.0	0.50	ug/L			05/09/23 23:25	1
1,4-Dichlorobenzene	<0.50		1.0	0.50	ug/L			05/09/23 23:25	1
Benzene	<0.50		1.0	0.50	ug/L			05/09/23 23:25	1
Carbon tetrachloride	<0.50		1.0	0.50	ug/L			05/09/23 23:25	1
Chlorobenzene	<0.50		1.0	0.50	ug/L			05/09/23 23:25	1
Chloroform	<1.0		2.0	1.0	ug/L			05/09/23 23:25	1
Methyl Ethyl Ketone	<2.5		5.0	2.5	ug/L			05/09/23 23:25	1
Tetrachloroethene	<0.50		1.0	0.50	ug/L			05/09/23 23:25	1
Trichloroethene	<0.50		1.0	0.50	ug/L			05/09/23 23:25	1
Vinyl chloride	<0.50		1.0	0.50	ug/L			05/09/23 23:25	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	103		75 - 126		05/09/23 23:25	1
Toluene-d8 (Surr)	108		75 - 120		05/09/23 23:25	1
4-Bromofluorobenzene (Surr)	108		72 - 124		05/09/23 23:25	1
Dibromofluoromethane (Surr)	99		75 - 120		05/09/23 23:25	1

Lab Sample ID: LCS 500-712300/4
Matrix: Solid
Analysis Batch: 712300

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,1-Dichloroethene	50.0	45.2		ug/L		90	67 - 122
1,2-Dichloroethane	50.0	46.9		ug/L		94	68 - 127
1,4-Dichlorobenzene	50.0	52.5		ug/L		105	70 - 120
Benzene	50.0	48.8		ug/L		98	70 - 120
Carbon tetrachloride	50.0	46.7		ug/L		93	59 - 133
Chlorobenzene	50.0	49.7		ug/L		99	70 - 120
Chloroform	50.0	46.4		ug/L		93	70 - 120
Methyl Ethyl Ketone	50.0	39.3		ug/L		79	46 - 144
Tetrachloroethene	50.0	49.6		ug/L		99	70 - 128
Trichloroethene	50.0	47.0		ug/L		94	70 - 125
Vinyl chloride	50.0	57.0		ug/L		114	64 - 126

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	100		75 - 126
Toluene-d8 (Surr)	108		75 - 120
4-Bromofluorobenzene (Surr)	110		72 - 124
Dibromofluoromethane (Surr)	99		75 - 120

Lab Sample ID: LB 500-711463/1-A
Matrix: Solid
Analysis Batch: 712300

Client Sample ID: Method Blank
Prep Type: TCLP

Analyte	LB	LB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1-Dichloroethene	<10		20	10	ug/L			05/09/23 23:48	20
1,2-Dichloroethane	<10		20	10	ug/L			05/09/23 23:48	20

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233066-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LB 500-711463/1-A
Matrix: Solid
Analysis Batch: 712300

Client Sample ID: Method Blank
Prep Type: TCLP

Analyte	LB	LB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dichlorobenzene	<10		20	10	ug/L			05/09/23 23:48	20
Benzene	<10		20	10	ug/L			05/09/23 23:48	20
Carbon tetrachloride	<10		20	10	ug/L			05/09/23 23:48	20
Chlorobenzene	<10		20	10	ug/L			05/09/23 23:48	20
Chloroform	<20		40	20	ug/L			05/09/23 23:48	20
Methyl Ethyl Ketone	<50		100	50	ug/L			05/09/23 23:48	20
Tetrachloroethene	<10		20	10	ug/L			05/09/23 23:48	20
Trichloroethene	<10		20	10	ug/L			05/09/23 23:48	20
Vinyl chloride	<10		20	10	ug/L			05/09/23 23:48	20
Surrogate	LB	LB	Limits				Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
1,2-Dichloroethane-d4 (Surr)	104		75 - 126					05/09/23 23:48	20
Toluene-d8 (Surr)	102		75 - 120					05/09/23 23:48	20
4-Bromofluorobenzene (Surr)	111		72 - 124					05/09/23 23:48	20
Dibromofluoromethane (Surr)	102		75 - 120					05/09/23 23:48	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-712591/1-A
Matrix: Solid
Analysis Batch: 712660

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 712591

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dichlorobenzene	<2.0		2.0	2.0	ug/L		05/11/23 07:10	05/11/23 16:51	1
2,4,5-Trichlorophenol	<10		10	10	ug/L		05/11/23 07:10	05/11/23 16:51	1
2,4,6-Trichlorophenol	<5.0		5.0	5.0	ug/L		05/11/23 07:10	05/11/23 16:51	1
2,4-Dinitrotoluene	<1.0		1.0	1.0	ug/L		05/11/23 07:10	05/11/23 16:51	1
2-Methylphenol	<2.0		2.0	2.0	ug/L		05/11/23 07:10	05/11/23 16:51	1
3 & 4 Methylphenol	<2.0		2.0	2.0	ug/L		05/11/23 07:10	05/11/23 16:51	1
Hexachlorobenzene	<0.50		0.50	0.50	ug/L		05/11/23 07:10	05/11/23 16:51	1
Hexachlorobutadiene	<5.0		5.0	5.0	ug/L		05/11/23 07:10	05/11/23 16:51	1
Hexachloroethane	<5.0		5.0	5.0	ug/L		05/11/23 07:10	05/11/23 16:51	1
Nitrobenzene	<1.0		1.0	1.0	ug/L		05/11/23 07:10	05/11/23 16:51	1
Pentachlorophenol	<20		20	20	ug/L		05/11/23 07:10	05/11/23 16:51	1
Pyrene	<1.0		1.0	1.0	ug/L		05/11/23 07:10	05/11/23 16:51	1
Pyridine	<20		20	20	ug/L		05/11/23 07:10	05/11/23 16:51	1
Surrogate	MB	MB	Limits				Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
2-Fluorophenol (Surr)	43		27 - 110				05/11/23 07:10	05/11/23 16:51	1
Phenol-d5 (Surr)	24		20 - 100				05/11/23 07:10	05/11/23 16:51	1
Nitrobenzene-d5 (Surr)	70		36 - 120				05/11/23 07:10	05/11/23 16:51	1
2-Fluorobiphenyl (Surr)	75		34 - 110				05/11/23 07:10	05/11/23 16:51	1
2,4,6-Tribromophenol (Surr)	62		40 - 145				05/11/23 07:10	05/11/23 16:51	1
Terphenyl-d14 (Surr)	84		40 - 145				05/11/23 07:10	05/11/23 16:51	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233066-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-712591/2-A
Matrix: Solid
Analysis Batch: 712660

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 712591

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dichlorobenzene	40.0	26.5		ug/L		66	23 - 110
2,4,5-Trichlorophenol	40.0	39.1		ug/L		98	63 - 124
2,4,6-Trichlorophenol	40.0	36.7		ug/L		92	62 - 121
2,4-Dinitrotoluene	40.0	38.4		ug/L		96	63 - 129
2-Methylphenol	40.0	34.1		ug/L		85	53 - 115
3 & 4 Methylphenol	40.0	33.2		ug/L		83	50 - 116
Hexachlorobenzene	40.0	38.3		ug/L		96	61 - 126
Hexachlorobutadiene	40.0	21.0		ug/L		53	20 - 100
Hexachloroethane	40.0	25.1		ug/L		63	20 - 100
Nitrobenzene	40.0	36.7		ug/L		92	54 - 121
Pentachlorophenol	80.0	67.5		ug/L		84	42 - 148
Pyrene	40.0	38.2		ug/L		96	70 - 110
Pyridine	80.0	28.3		ug/L		35	15 - 110

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorophenol (Surr)	63		27 - 110
Phenol-d5 (Surr)	54		20 - 100
Nitrobenzene-d5 (Surr)	90		36 - 120
2-Fluorobiphenyl (Surr)	86		34 - 110
2,4,6-Tribromophenol (Surr)	99		40 - 145
Terphenyl-d14 (Surr)	94		40 - 145

Lab Sample ID: LB 500-711224/1-D
Matrix: Solid
Analysis Batch: 712660

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 712591

Analyte	LB Result	LB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	<20		20	20	ug/L		05/11/23 07:10	05/11/23 18:03	1
2,4,5-Trichlorophenol	<100		100	100	ug/L		05/11/23 07:10	05/11/23 18:03	1
2,4,6-Trichlorophenol	<50		50	50	ug/L		05/11/23 07:10	05/11/23 18:03	1
2,4-Dinitrotoluene	<10		10	10	ug/L		05/11/23 07:10	05/11/23 18:03	1
2-Methylphenol	<20		20	20	ug/L		05/11/23 07:10	05/11/23 18:03	1
3 & 4 Methylphenol	<20		20	20	ug/L		05/11/23 07:10	05/11/23 18:03	1
Hexachlorobenzene	<5.0		5.0	5.0	ug/L		05/11/23 07:10	05/11/23 18:03	1
Hexachlorobutadiene	<50		50	50	ug/L		05/11/23 07:10	05/11/23 18:03	1
Hexachloroethane	<50		50	50	ug/L		05/11/23 07:10	05/11/23 18:03	1
Nitrobenzene	<10		10	10	ug/L		05/11/23 07:10	05/11/23 18:03	1
Pentachlorophenol	<200		200	200	ug/L		05/11/23 07:10	05/11/23 18:03	1
Pyrene	<10		10	10	ug/L		05/11/23 07:10	05/11/23 18:03	1
Pyridine	<200		200	200	ug/L		05/11/23 07:10	05/11/23 18:03	1

Surrogate	LB %Recovery	LB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorophenol (Surr)	42		27 - 110	05/11/23 07:10	05/11/23 18:03	1
Phenol-d5 (Surr)	19	X	20 - 100	05/11/23 07:10	05/11/23 18:03	1
Nitrobenzene-d5 (Surr)	58		36 - 120	05/11/23 07:10	05/11/23 18:03	1
2-Fluorobiphenyl (Surr)	74		34 - 110	05/11/23 07:10	05/11/23 18:03	1
2,4,6-Tribromophenol (Surr)	48		40 - 145	05/11/23 07:10	05/11/23 18:03	1
Terphenyl-d14 (Surr)	83		40 - 145	05/11/23 07:10	05/11/23 18:03	1

Eurofins Chicago

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233066-1

Method: 6010C - Metals (ICP)

Lab Sample ID: LCS 500-711472/2-A
Matrix: Solid
Analysis Batch: 711966

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 711472

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.100	0.107		mg/L		107	80 - 120
Barium	0.500	0.504		mg/L		101	80 - 120
Cadmium	0.0500	0.0517		mg/L		103	80 - 120
Chromium	0.200	0.201		mg/L		101	80 - 120
Lead	0.100	0.0999		mg/L		100	80 - 120
Selenium	0.100	0.104		mg/L		104	80 - 120
Silver	0.0500	0.0537		mg/L		107	80 - 120

Lab Sample ID: LB 500-711224/1-B
Matrix: Solid
Analysis Batch: 711966

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 711472

Analyte	LB Result	LB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.010		0.050	0.010	mg/L		05/04/23 17:28	05/06/23 01:02	1
Barium	<0.050		0.50	0.050	mg/L		05/04/23 17:28	05/06/23 01:02	1
Cadmium	<0.0020		0.0050	0.0020	mg/L		05/04/23 17:28	05/06/23 01:02	1
Chromium	<0.010		0.025	0.010	mg/L		05/04/23 17:28	05/06/23 01:02	1
Lead	<0.0075		0.050	0.0075	mg/L		05/04/23 17:28	05/06/23 01:02	1
Selenium	<0.020		0.050	0.020	mg/L		05/04/23 17:28	05/06/23 01:02	1
Silver	<0.010		0.025	0.010	mg/L		05/04/23 17:28	05/06/23 01:02	1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-711988/12-A
Matrix: Solid
Analysis Batch: 712257

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 711988

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.20		0.20	0.20	ug/L		05/08/23 11:35	05/09/23 10:43	1

Lab Sample ID: LCS 500-711988/13-A
Matrix: Solid
Analysis Batch: 712257

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 711988

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	1.98	1.76		ug/L		89	80 - 120

Lab Sample ID: LB 500-711224/2-B
Matrix: Solid
Analysis Batch: 712257

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 711988

Analyte	LB Result	LB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.20		0.20	0.20	ug/L		05/08/23 11:35	05/09/23 10:45	1

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233066-1

Client Sample ID: S-230428-TS-01

Lab Sample ID: 500-233066-1

Date Collected: 04/28/23 11:40

Matrix: Solid

Date Received: 04/29/23 11:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			711463	LM	EET CHI	05/04/23 16:31
TCLP	Analysis	8260B		20	712300	EA	EET CHI	05/10/23 07:23
TCLP	Leach	1311			711224	LM	EET CHI	05/03/23 18:30 - 05/04/23 10:30 ¹
TCLP	Prep	3510C			712591	KL	EET CHI	05/11/23 07:10
TCLP	Analysis	8270D		5	712660	SS	EET CHI	05/11/23 19:38
TCLP	Leach	1311			711224	LM	EET CHI	05/03/23 18:30 - 05/04/23 10:30 ¹
TCLP	Prep	3010A			711472	RN	EET CHI	05/04/23 17:28 - 05/04/23 17:58 ¹
TCLP	Analysis	6010C		1	711966	CMS	EET CHI	05/06/23 01:12
TCLP	Leach	1311			711224	LM	EET CHI	05/03/23 18:30 - 05/04/23 10:30 ¹
TCLP	Prep	7470A			711988	MJG	EET CHI	05/08/23 11:35 - 05/08/23 13:35 ¹
TCLP	Analysis	7470A		1	712257	MJG	EET CHI	05/09/23 11:48
Total/NA	Analysis	Moisture		1	711432	LWN	EET CHI	05/04/23 13:18

¹ This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200



Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233066-1

Laboratory: Eurofins Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-23

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RT 717
6 12:00
A 3529
0129

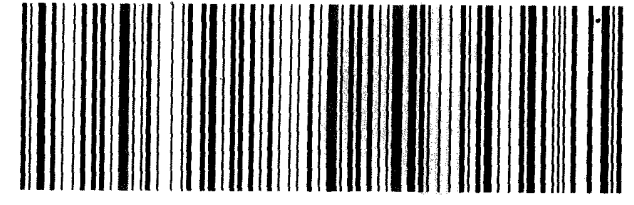
FedEx
TRK# 8157 3513 3529
0200

SATURDAY 12:00P
PRIORITY OVERNIGHT

60484
IL-US
ORD



X0 JOTA



80701 28Apr2023 JOTA 581G3/78CF/C088

FedEx Package Express US Airbill
FedEx Tracking Number 8157 3513

1 From
Date 1/27/2023

Sender's Name The Soldier Phone 615 215-7902

Company SH

Address 100 Long Lake Road Dept./Floor/Suite/Room

City + Paul State MO ZIP 65112

2 Your Internal Billing Reference 11222418

3 To Recipient's Name Same Recipient Phone 716-1-1234

Company The Soldier

Address 417 ... Dept./Floor/Suite/Room

Address Use this line for the HOLD location address or for continuation of your shipping address.

City ... State IL ZIP 61801

Hold Weekday
FedEx location address
REQUIRED. NOT available for
FedEx First Overnight.

Hold Saturday
FedEx location address
REQUIRED. Available ONLY for
FedEx Priority Overnight and
FedEx 2Day to select locations.

FedEx First Overnight
Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Priority Overnight
Next business morning * Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Standard Overnight
Next business afternoon.*
Saturday Delivery NOT available.

5 Packaging *Declared value limit \$500.
 FedEx Envelope* FedEx Pak*

6 Special Handling and Delivery Signature Options
 Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Home Delivery.

No Signature Required
Package may be left without obtaining a signature for delivery.

Direct Signature
Someone at the delivery address must sign for the package.

Does this shipment contain dangerous goods?
One box must be checked.
 No Yes
As per attached Shipper's Declaration. Yes
Shipper's Declaration not required.

7 Payment Bill to: Enter FedEx Acct. No. below.
 Sender Acct. No. in Section 1 will be billed. Recipient Third Party

Total Packages Total Weight



8157 3513 3529



SDR

Put a document and walk through the steps the package

fedex.com 1800.GoFedEx 1800.463.3339

High Open End of Chain Pouch Here



RT 717
6 12:00
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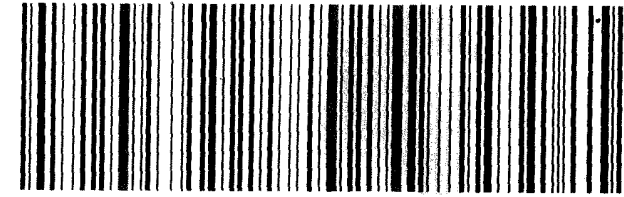
FedEx
TRK# 8157 3513 3529
0200

SATURDAY 12:00P
PRIORITY OVERNIGHT

60484
IL-US
ORD



X0 JOTA



80701 28Apr2023 JOTA 581G3/78CF/C088

FedEx Package Express US Airbill
FedEx Tracking Number 8157 3513

1 From
Date 1/27/2023

Sender's Name The Soldier Phone 615 215-7902

Company SH

Address 100 Long Lake Road

City + Paul State MO ZIP 65112

2 Your Internal Billing Reference 11222418

3 To Recipient's Name Same Recipient Phone 716-1-1234

Company The Soldier

Address 417 ... Dept./Floor/Suite/Room

Address Use this line for the HOLD location address or for continuation of your shipping address.

City ... State IL ZIP 61820

Hold Weekday
FedEx location address
REQUIRED. NOT available for
FedEx First Overnight.

Hold Saturday
FedEx location address
REQUIRED. Available ONLY for
FedEx Priority Overnight and
FedEx 2Day to select locations.

FedEx First Overnight
Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Priority Overnight
Next business morning * Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Standard Overnight
Next business afternoon.*
Saturday Delivery NOT available.

5 Packaging *Declared value limit \$500.
 FedEx Envelope* FedEx Pak*

6 Special Handling and Delivery Signature Options
 Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Signature Overnight.

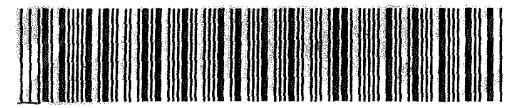
No Signature Required
Package may be left without obtaining a signature for delivery.

Direct Signature
Someone at the delivery address must sign for the package.

Does this shipment contain dangerous goods?
One box must be checked.
 No Yes
As per attached Shipper's Declaration. Yes
Shipper's Declaration not required.

7 Payment Bill to: Enter FedEx Acct. No. below.
 Sender Acct. No. in Section 1 will be billed. Recipient Third Party

Total Packages Total Weight



8157 3513 3529



SDR

Put a document and walk through the steps the package

1A
1B
1C

fedex.com 1800.GoFedEx 1800.463.3339

High Open End of Carton Pouch Here

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Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-233066-1

Login Number: 233066

List Source: Eurofins Chicago

List Number: 1

Creator: Hernandez, Stephanie

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	
Cooler Temperature is recorded.	True	6.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	False	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	False	
Residual Chlorine Checked.	N/A	





ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Grant Anderson
GHD Services Inc.
900 Long Lake Road
Suite 200
New Brighton, Minnesota 55112

Generated 5/24/2023 2:23:59 PM

JOB DESCRIPTION

Penta Wood 11222418

JOB NUMBER

500-233184-1

Eurofins Chicago

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Chicago Project Manager.

Authorization



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5/24/2023 2:23:59 PM

Authorized for release by
Carlene McCutcheon, Senior Project Manager
Carlene.McCutcheon@et.eurofinsus.com
(708)325-6562



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Case Narrative

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233184-1

Job ID: 500-233184-1

Laboratory: Eurofins Chicago

Narrative

Job Narrative 500-233184-1

Receipt

The samples were received on 5/3/2023 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.9° C and 2.1° C.

GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC/MS Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA

Method 8151A: The following sample required a dilution due to the nature of the sample matrix: W-230502-TS-37 (500-233184-2). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Field Service / Mobile Lab

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233184-1

Client Sample ID: W-230502-TS-36

Lab Sample ID: 500-233184-1

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	2.5		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	0.49		0.096	0.095	ug/L	1		8151A	Total/NA
Calcium	34500		200	44.3	ug/L	1		6020A	Total Recoverable
Copper	1.9	J B	2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	281		100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	13700		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	5.2		2.5	0.79	ug/L	1		6020A	Total Recoverable
Calcium	35000		200	44.3	ug/L	1		6020A	Dissolved
Copper	2.5	B	2.0	0.50	ug/L	1		6020A	Dissolved
Magnesium	13700		200	49.4	ug/L	1		6020A	Dissolved
Manganese	0.79	J	2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	86.1		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	87.4		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	24.2		1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	1.5		1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	2.5		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	1.0		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	109		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-230502-TS-37

Lab Sample ID: 500-233184-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Toluene	1.7		0.50	0.15	ug/L	1		8260B	Total/NA
Ethylbenzene	1.9		0.50	0.18	ug/L	1		8260B	Total/NA
Xylenes, Total	14		1.0	0.22	ug/L	1		8260B	Total/NA
Naphthalene	11		6.8	2.1	ug/L	10		8270D	Total/NA
Methane	41		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	8600		240	240	ug/L	2500		8151A	Total/NA
Arsenic	1.3		1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	59100		200	44.3	ug/L	1		6020A	Total Recoverable
Copper	8.6	B	2.0	0.50	ug/L	1		6020A	Total Recoverable
Iron	1060		100	46.7	ug/L	1		6020A	Total Recoverable
Magnesium	18300		200	49.4	ug/L	1		6020A	Total Recoverable
Manganese	1420		2.5	0.79	ug/L	1		6020A	Total Recoverable
Arsenic	1.3		1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	61300		200	44.3	ug/L	1		6020A	Dissolved
Copper	3.1	B	2.0	0.50	ug/L	1		6020A	Dissolved
Iron	782		100	46.7	ug/L	1		6020A	Dissolved
Magnesium	19100		200	49.4	ug/L	1		6020A	Dissolved
Manganese	1460		2.5	0.79	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	148		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	153		0.50	0.25	mg/L	1		SM 2340B	Dissolved

This Detection Summary does not include radiochemical test results.

Euofins Chicago

Detection Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233184-1

Client Sample ID: W-230502-TS-37 (Continued)

Lab Sample ID: 500-233184-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Chloride	29.7		1.0	0.12	mg/L	1		300.0	Total/NA
Sulfate	12.6		1.0	0.21	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	33.1		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	183		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-230502-TS-38

Lab Sample ID: 500-233184-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.76	J	1.0	0.23	ug/L	1		6020A	Total Recoverable
Calcium	70100		200	44.3	ug/L	1		6020A	Total Recoverable
Copper	1.3	J B	2.0	0.50	ug/L	1		6020A	Total Recoverable
Magnesium	26700		200	49.4	ug/L	1		6020A	Total Recoverable
Arsenic	0.70	J	1.0	0.23	ug/L	1		6020A	Dissolved
Calcium	68600		200	44.3	ug/L	1		6020A	Dissolved
Copper	1.7	J B	2.0	0.50	ug/L	1		6020A	Dissolved
Magnesium	26200		200	49.4	ug/L	1		6020A	Dissolved
Calcium hardness as CaCO3	175		0.50	0.25	mg/L	1		SM 2340B	Total Recoverable
Calcium hardness as CaCO3	171		0.50	0.25	mg/L	1		SM 2340B	Dissolved
Chloride	8.6		1.0	0.12	mg/L	1		300.0	Total/NA
Nitrate as N	1.2		1.0	0.043	mg/L	1		300.0	Total/NA
Sulfate	82.9		5.0	1.0	mg/L	5		300.0	Total/NA
Total Organic Carbon - Duplicates	0.56	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	196		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: Trip Blank

Lab Sample ID: 500-233184-4

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

Method Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233184-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	EET CHI
RSK-175	Dissolved Gases (GC)	RSK	EET CLE
8151A	Herbicides (GC)	SW846	EET CHI
6020A	Metals (ICP/MS)	SW846	EET CHI
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	EET CHI
300.0	Anions, Ion Chromatography	EPA	EET CHI
9060A	Organic Carbon, Total (TOC)	SW846	EET CHI
SM 2320B	Alkalinity	SM	EET CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CHI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CHI
5030B	Purge and Trap	SW846	EET CHI
8151A	Extraction (Herbicides)	SW846	EET CHI

Protocol References:

EPA = US Environmental Protection Agency

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233184-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-233184-1	W-230502-TS-36	Water	05/02/23 11:15	05/03/23 10:00
500-233184-2	W-230502-TS-37	Water	05/02/23 10:11	05/03/23 10:00
500-233184-3	W-230502-TS-38	Water	05/02/23 10:39	05/03/23 10:00
500-233184-4	Trip Blank	Water	05/02/23 00:00	05/03/23 10:00

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233184-1

Client Sample ID: W-230502-TS-36

Lab Sample ID: 500-233184-1

Date Collected: 05/02/23 11:15

Matrix: Water

Date Received: 05/03/23 10:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/11/23 12:41	1
Toluene	<0.15		0.50	0.15	ug/L			05/11/23 12:41	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/11/23 12:41	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/11/23 12:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		75 - 126		05/11/23 12:41	1
Toluene-d8 (Surr)	101		75 - 120		05/11/23 12:41	1
4-Bromofluorobenzene (Surr)	107		72 - 124		05/11/23 12:41	1
Dibromofluoromethane	98		75 - 120		05/11/23 12:41	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.22		0.72	0.22	ug/L		05/03/23 14:45	05/04/23 17:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	51		36 - 120	05/03/23 14:45	05/04/23 17:50	1
2-Fluorobiphenyl (Surr)	66		34 - 110	05/03/23 14:45	05/04/23 17:50	1
Terphenyl-d14 (Surr)	81		40 - 145	05/03/23 14:45	05/04/23 17:50	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	2.5		1.0	0.17	ug/L			05/07/23 18:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	101		60 - 140		05/07/23 18:39	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.49		0.096	0.095	ug/L		05/04/23 12:22	05/17/23 12:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	89		25 - 130	05/04/23 12:22	05/17/23 12:30	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		05/11/23 17:31	05/12/23 19:16	1
Calcium	34500		200	44.3	ug/L		05/11/23 17:31	05/12/23 19:16	1
Copper	1.9	J B	2.0	0.50	ug/L		05/11/23 17:31	05/12/23 19:16	1
Iron	281		100	46.7	ug/L		05/11/23 17:31	05/12/23 19:16	1
Magnesium	13700		200	49.4	ug/L		05/11/23 17:31	05/12/23 19:16	1
Manganese	5.2		2.5	0.79	ug/L		05/11/23 17:31	05/12/23 19:16	1
Zinc	<6.9		20.0	6.9	ug/L		05/11/23 17:31	05/12/23 19:16	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		05/11/23 17:31	05/12/23 19:39	1
Calcium	35000		200	44.3	ug/L		05/11/23 17:31	05/12/23 19:39	1
Copper	2.5	B	2.0	0.50	ug/L		05/11/23 17:31	05/12/23 19:39	1
Iron	<46.7		100	46.7	ug/L		05/11/23 17:31	05/12/23 19:39	1
Magnesium	13700		200	49.4	ug/L		05/11/23 17:31	05/12/23 19:39	1
Manganese	0.79	J	2.5	0.79	ug/L		05/11/23 17:31	05/12/23 19:39	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233184-1

Client Sample ID: W-230502-TS-36

Lab Sample ID: 500-233184-1

Date Collected: 05/02/23 11:15

Matrix: Water

Date Received: 05/03/23 10:00

Method: SW846 6020A - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		05/11/23 17:31	05/12/23 19:39	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	86.1		0.50	0.25	mg/L		05/11/23 17:31	05/15/23 10:55	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	87.4		0.50	0.25	mg/L		05/11/23 17:31	05/15/23 10:55	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	24.2		1.0	0.12	mg/L			05/03/23 14:47	1
Nitrate as N (EPA 300.0)	1.5		1.0	0.043	mg/L			05/03/23 14:47	1
Sulfate (EPA 300.0)	2.5		1.0	0.21	mg/L			05/03/23 14:47	1
Total Organic Carbon - Duplicates (SW846 9060A)	1.0		1.0	0.47	mg/L			05/14/23 19:43	1
Alkalinity (SM 2320B)	109		5.0	3.7	mg/L			05/10/23 16:38	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233184-1

Client Sample ID: W-230502-TS-37

Lab Sample ID: 500-233184-2

Date Collected: 05/02/23 10:11

Matrix: Water

Date Received: 05/03/23 10:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/11/23 13:03	1
Toluene	1.7		0.50	0.15	ug/L			05/11/23 13:03	1
Ethylbenzene	1.9		0.50	0.18	ug/L			05/11/23 13:03	1
Xylenes, Total	14		1.0	0.22	ug/L			05/11/23 13:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		75 - 126					05/11/23 13:03	1
Toluene-d8 (Surr)	103		75 - 120					05/11/23 13:03	1
4-Bromofluorobenzene (Surr)	105		72 - 124					05/11/23 13:03	1
Dibromofluoromethane	95		75 - 120					05/11/23 13:03	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	11		6.8	2.1	ug/L		05/03/23 14:45	05/04/23 18:14	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	41		36 - 120				05/03/23 14:45	05/04/23 18:14	10
2-Fluorobiphenyl (Surr)	48		34 - 110				05/03/23 14:45	05/04/23 18:14	10
Terphenyl-d14 (Surr)	69		40 - 145				05/03/23 14:45	05/04/23 18:14	10

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	41		1.0	0.17	ug/L			05/07/23 18:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	99		60 - 140					05/07/23 18:56	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	8600		240	240	ug/L		05/04/23 12:22	05/12/23 12:04	2500
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	0	X	25 - 130				05/04/23 12:22	05/12/23 12:04	2500

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.3		1.0	0.23	ug/L		05/11/23 17:31	05/12/23 19:19	1
Calcium	59100		200	44.3	ug/L		05/11/23 17:31	05/12/23 19:19	1
Copper	8.6	B	2.0	0.50	ug/L		05/11/23 17:31	05/12/23 19:19	1
Iron	1060		100	46.7	ug/L		05/11/23 17:31	05/12/23 19:19	1
Magnesium	18300		200	49.4	ug/L		05/11/23 17:31	05/12/23 19:19	1
Manganese	1420		2.5	0.79	ug/L		05/11/23 17:31	05/12/23 19:19	1
Zinc	<6.9		20.0	6.9	ug/L		05/11/23 17:31	05/12/23 19:19	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.3		1.0	0.23	ug/L		05/11/23 17:31	05/12/23 19:50	1
Calcium	61300		200	44.3	ug/L		05/11/23 17:31	05/12/23 19:50	1
Copper	3.1	B	2.0	0.50	ug/L		05/11/23 17:31	05/12/23 19:50	1
Iron	782		100	46.7	ug/L		05/11/23 17:31	05/12/23 19:50	1
Magnesium	19100		200	49.4	ug/L		05/11/23 17:31	05/12/23 19:50	1
Manganese	1460		2.5	0.79	ug/L		05/11/23 17:31	05/12/23 19:50	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233184-1

Client Sample ID: W-230502-TS-37

Lab Sample ID: 500-233184-2

Date Collected: 05/02/23 10:11

Matrix: Water

Date Received: 05/03/23 10:00

Method: SW846 6020A - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		05/11/23 17:31	05/12/23 19:50	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	148		0.50	0.25	mg/L		05/11/23 17:31	05/15/23 10:55	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	153		0.50	0.25	mg/L		05/11/23 17:31	05/15/23 10:55	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	29.7		1.0	0.12	mg/L			05/03/23 15:03	1
Nitrate as N (EPA 300.0)	<0.043		1.0	0.043	mg/L			05/03/23 15:03	1
Sulfate (EPA 300.0)	12.6		1.0	0.21	mg/L			05/03/23 15:03	1
Total Organic Carbon - Duplicates (SW846 9060A)	33.1		1.0	0.47	mg/L			05/14/23 19:56	1
Alkalinity (SM 2320B)	183		5.0	3.7	mg/L			05/10/23 16:38	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233184-1

Client Sample ID: W-230502-TS-38

Lab Sample ID: 500-233184-3

Date Collected: 05/02/23 10:39

Matrix: Water

Date Received: 05/03/23 10:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/11/23 13:27	1
Toluene	<0.15		0.50	0.15	ug/L			05/11/23 13:27	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/11/23 13:27	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/11/23 13:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		75 - 126		05/11/23 13:27	1
Toluene-d8 (Surr)	103		75 - 120		05/11/23 13:27	1
4-Bromofluorobenzene (Surr)	108		72 - 124		05/11/23 13:27	1
Dibromofluoromethane	97		75 - 120		05/11/23 13:27	1

Method: SW846 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.20		0.66	0.20	ug/L		05/03/23 14:45	05/04/23 18:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	52		36 - 120	05/03/23 14:45	05/04/23 18:37	1
2-Fluorobiphenyl (Surr)	63		34 - 110	05/03/23 14:45	05/04/23 18:37	1
Terphenyl-d14 (Surr)	87		40 - 145	05/03/23 14:45	05/04/23 18:37	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			05/07/23 19:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	100		60 - 140		05/07/23 19:13	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.097		0.098	0.097	ug/L		05/04/23 12:22	05/17/23 12:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	81		25 - 130	05/04/23 12:22	05/17/23 12:48	1

Method: SW846 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.76	J	1.0	0.23	ug/L		05/11/23 17:31	05/12/23 19:36	1
Calcium	70100		200	44.3	ug/L		05/11/23 17:31	05/12/23 19:36	1
Copper	1.3	J B	2.0	0.50	ug/L		05/11/23 17:31	05/12/23 19:36	1
Iron	<46.7		100	46.7	ug/L		05/11/23 17:31	05/12/23 19:36	1
Magnesium	26700		200	49.4	ug/L		05/11/23 17:31	05/12/23 19:36	1
Manganese	<0.79		2.5	0.79	ug/L		05/11/23 17:31	05/12/23 19:36	1
Zinc	<6.9		20.0	6.9	ug/L		05/11/23 17:31	05/12/23 19:36	1

Method: SW846 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.70	J	1.0	0.23	ug/L		05/11/23 17:31	05/12/23 19:53	1
Calcium	68600		200	44.3	ug/L		05/11/23 17:31	05/12/23 19:53	1
Copper	1.7	J B	2.0	0.50	ug/L		05/11/23 17:31	05/12/23 19:53	1
Iron	<46.7		100	46.7	ug/L		05/11/23 17:31	05/12/23 19:53	1
Magnesium	26200		200	49.4	ug/L		05/11/23 17:31	05/12/23 19:53	1
Manganese	<0.79		2.5	0.79	ug/L		05/11/23 17:31	05/12/23 19:53	1

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Client Sample Results

Client: GHD Services Inc.
 Project/Site: Penta Wood 11222418

Job ID: 500-233184-1

Client Sample ID: W-230502-TS-38

Lab Sample ID: 500-233184-3

Date Collected: 05/02/23 10:39

Matrix: Water

Date Received: 05/03/23 10:00

Method: SW846 6020A - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<6.9		20.0	6.9	ug/L		05/11/23 17:31	05/12/23 19:53	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	175		0.50	0.25	mg/L		05/11/23 17:31	05/15/23 10:55	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Calcium hardness as CaCO3	171		0.50	0.25	mg/L		05/11/23 17:31	05/15/23 10:55	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	8.6		1.0	0.12	mg/L			05/03/23 15:18	1
Nitrate as N (EPA 300.0)	1.2		1.0	0.043	mg/L			05/03/23 15:18	1
Sulfate (EPA 300.0)	82.9		5.0	1.0	mg/L			05/19/23 13:55	5
Total Organic Carbon - Duplicates (SW846 9060A)	0.56	J	1.0	0.47	mg/L			05/14/23 20:14	1
Alkalinity (SM 2320B)	196		5.0	3.7	mg/L			05/10/23 16:38	1

Client Sample Results

Client: GHD Services Inc.
 Project/Site: Penta Wood 11222418

Job ID: 500-233184-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-233184-4

Date Collected: 05/02/23 00:00

Matrix: Water

Date Received: 05/03/23 10:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			05/11/23 12:18	1
Toluene	<0.15		0.50	0.15	ug/L			05/11/23 12:18	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/11/23 12:18	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/11/23 12:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		75 - 126		05/11/23 12:18	1
Toluene-d8 (Surr)	104		75 - 120		05/11/23 12:18	1
4-Bromofluorobenzene (Surr)	107		72 - 124		05/11/23 12:18	1
Dibromofluoromethane	95		75 - 120		05/11/23 12:18	1

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233184-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate recovery exceeds control limits

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Reported value was between the limit of detection and the limit of quantitation.

General Chemistry

Qualifier	Qualifier Description
J	Reported value was between the limit of detection and the limit of quantitation.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233184-1

GC/MS VOA

Analysis Batch: 712645

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233184-1	W-230502-TS-36	Total/NA	Water	8260B	
500-233184-2	W-230502-TS-37	Total/NA	Water	8260B	
500-233184-3	W-230502-TS-38	Total/NA	Water	8260B	
500-233184-4	Trip Blank	Total/NA	Water	8260B	
MB 500-712645/7	Method Blank	Total/NA	Water	8260B	
LCS 500-712645/5	Lab Control Sample	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 711197

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233184-1	W-230502-TS-36	Total/NA	Water	3510C	
500-233184-2	W-230502-TS-37	Total/NA	Water	3510C	
500-233184-3	W-230502-TS-38	Total/NA	Water	3510C	
MB 500-711197/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-711197/2-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 711359

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233184-1	W-230502-TS-36	Total/NA	Water	8270D	711197
500-233184-2	W-230502-TS-37	Total/NA	Water	8270D	711197
500-233184-3	W-230502-TS-38	Total/NA	Water	8270D	711197
MB 500-711197/1-A	Method Blank	Total/NA	Water	8270D	711197
LCS 500-711197/2-A	Lab Control Sample	Total/NA	Water	8270D	711197

GC VOA

Analysis Batch: 572354

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233184-1	W-230502-TS-36	Total/NA	Water	RSK-175	
500-233184-2	W-230502-TS-37	Total/NA	Water	RSK-175	
500-233184-3	W-230502-TS-38	Total/NA	Water	RSK-175	
MB 240-572354/3	Method Blank	Total/NA	Water	RSK-175	
LCS 240-572354/4	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 240-572354/5	Lab Control Sample Dup	Total/NA	Water	RSK-175	

GC Semi VOA

Prep Batch: 711420

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233184-1	W-230502-TS-36	Total/NA	Water	8151A	
500-233184-2	W-230502-TS-37	Total/NA	Water	8151A	
500-233184-3	W-230502-TS-38	Total/NA	Water	8151A	
MB 500-711420/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-711420/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 500-711420/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	

Analysis Batch: 712131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-711420/1-A	Method Blank	Total/NA	Water	8151A	711420
LCS 500-711420/2-A	Lab Control Sample	Total/NA	Water	8151A	711420
LCSD 500-711420/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	711420

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233184-1

GC Semi VOA

Analysis Batch: 712956

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233184-2	W-230502-TS-37	Total/NA	Water	8151A	711420

Analysis Batch: 713776

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233184-1	W-230502-TS-36	Total/NA	Water	8151A	711420
500-233184-3	W-230502-TS-38	Total/NA	Water	8151A	711420

Metals

Prep Batch: 712804

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233184-1	W-230502-TS-36	Dissolved	Water	3005A	
500-233184-1	W-230502-TS-36	Total Recoverable	Water	3005A	
500-233184-2	W-230502-TS-37	Dissolved	Water	3005A	
500-233184-2	W-230502-TS-37	Total Recoverable	Water	3005A	
500-233184-3	W-230502-TS-38	Dissolved	Water	3005A	
500-233184-3	W-230502-TS-38	Total Recoverable	Water	3005A	
MB 500-712804/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-712804/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 713284

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233184-1	W-230502-TS-36	Dissolved	Water	6020A	712804
500-233184-1	W-230502-TS-36	Total Recoverable	Water	6020A	712804
500-233184-2	W-230502-TS-37	Dissolved	Water	6020A	712804
500-233184-2	W-230502-TS-37	Total Recoverable	Water	6020A	712804
500-233184-3	W-230502-TS-38	Dissolved	Water	6020A	712804
500-233184-3	W-230502-TS-38	Total Recoverable	Water	6020A	712804
MB 500-712804/1-A	Method Blank	Total Recoverable	Water	6020A	712804
LCS 500-712804/2-A	Lab Control Sample	Total Recoverable	Water	6020A	712804

Analysis Batch: 713295

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233184-1	W-230502-TS-36	Dissolved	Water	SM 2340B	712804
500-233184-1	W-230502-TS-36	Total Recoverable	Water	SM 2340B	712804
500-233184-2	W-230502-TS-37	Dissolved	Water	SM 2340B	712804
500-233184-2	W-230502-TS-37	Total Recoverable	Water	SM 2340B	712804
500-233184-3	W-230502-TS-38	Dissolved	Water	SM 2340B	712804
500-233184-3	W-230502-TS-38	Total Recoverable	Water	SM 2340B	712804

General Chemistry

Analysis Batch: 711141

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233184-1	W-230502-TS-36	Total/NA	Water	300.0	
500-233184-2	W-230502-TS-37	Total/NA	Water	300.0	
500-233184-3	W-230502-TS-38	Total/NA	Water	300.0	
MB 500-711141/3	Method Blank	Total/NA	Water	300.0	
LCS 500-711141/4	Lab Control Sample	Total/NA	Water	300.0	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233184-1

General Chemistry

Analysis Batch: 711142

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233184-1	W-230502-TS-36	Total/NA	Water	300.0	
500-233184-2	W-230502-TS-37	Total/NA	Water	300.0	
500-233184-3	W-230502-TS-38	Total/NA	Water	300.0	
MB 500-711142/3	Method Blank	Total/NA	Water	300.0	
LCS 500-711142/4	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 712631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233184-1	W-230502-TS-36	Total/NA	Water	SM 2320B	
500-233184-2	W-230502-TS-37	Total/NA	Water	SM 2320B	
500-233184-3	W-230502-TS-38	Total/NA	Water	SM 2320B	
MB 500-712631/53	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-712631/54	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 713264

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233184-1	W-230502-TS-36	Total/NA	Water	9060A	
500-233184-2	W-230502-TS-37	Total/NA	Water	9060A	
500-233184-3	W-230502-TS-38	Total/NA	Water	9060A	
MB 500-713264/4	Method Blank	Total/NA	Water	9060A	
LCS 500-713264/5	Lab Control Sample	Total/NA	Water	9060A	

Analysis Batch: 714280

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-233184-3	W-230502-TS-38	Total/NA	Water	300.0	
MB 500-714280/3	Method Blank	Total/NA	Water	300.0	
LCS 500-714280/4	Lab Control Sample	Total/NA	Water	300.0	

Surrogate Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233184-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-126)	TOL (75-120)	BFB (72-124)	DBFM (75-120)
500-233184-1	W-230502-TS-36	92	101	107	98
500-233184-2	W-230502-TS-37	92	103	105	95
500-233184-3	W-230502-TS-38	93	103	108	97
500-233184-4	Trip Blank	92	104	107	95
LCS 500-712645/5	Lab Control Sample	88	105	108	95
MB 500-712645/7	Method Blank	91	102	110	96

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		NBZ (36-120)	FBP (34-110)	TPHL (40-145)
500-233184-1	W-230502-TS-36	51	66	81
500-233184-2	W-230502-TS-37	41	48	69
500-233184-3	W-230502-TS-38	52	63	87
LCS 500-711197/2-A	Lab Control Sample	55	65	83
MB 500-711197/1-A	Method Blank	49	61	84

Surrogate Legend

NBZ = Nitrobenzene-d5 (Surr)

FBP = 2-Fluorobiphenyl (Surr)

TPHL = Terphenyl-d14 (Surr)

Method: RSK-175 - Dissolved Gases (GC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		TFE1 (60-140)
500-233184-1	W-230502-TS-36	101
500-233184-2	W-230502-TS-37	99
500-233184-3	W-230502-TS-38	100
LCS 240-572354/4	Lab Control Sample	108
LCSD 240-572354/5	Lab Control Sample Dup	107
MB 240-572354/3	Method Blank	108

Surrogate Legend

TFE = 1,1,1-Trifluoroethane

Surrogate Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233184-1

Method: 8151A - Herbicides (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (25-130)
500-233184-1	W-230502-TS-36	89
500-233184-2	W-230502-TS-37	0 X
500-233184-3	W-230502-TS-38	81
LCS 500-711420/2-A	Lab Control Sample	53
LCSD 500-711420/3-A	Lab Control Sample Dup	63
MB 500-711420/1-A	Method Blank	84

Surrogate Legend

DCPAA = DCAA

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233184-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-712645/7
Matrix: Water
Analysis Batch: 712645

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	<0.15		0.50	0.15	ug/L			05/11/23 11:55	1
Toluene	<0.15		0.50	0.15	ug/L			05/11/23 11:55	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/11/23 11:55	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/11/23 11:55	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	91		75 - 126		05/11/23 11:55	1
Toluene-d8 (Surr)	102		75 - 120		05/11/23 11:55	1
4-Bromofluorobenzene (Surr)	110		72 - 124		05/11/23 11:55	1
Dibromofluoromethane	96		75 - 120		05/11/23 11:55	1

Lab Sample ID: LCS 500-712645/5
Matrix: Water
Analysis Batch: 712645

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Toluene	50.0	53.4		ug/L		107	70 - 125
Ethylbenzene	50.0	49.2		ug/L		98	70 - 123
Xylenes, Total	100	99.0		ug/L		99	70 - 125

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	88		75 - 126
Toluene-d8 (Surr)	105		75 - 120
4-Bromofluorobenzene (Surr)	108		72 - 124
Dibromofluoromethane	95		75 - 120

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-711197/1-A
Matrix: Water
Analysis Batch: 711359

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 711197

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Naphthalene	<0.25		0.80	0.25	ug/L		05/03/23 14:45	05/04/23 12:25	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Nitrobenzene-d5 (Surr)	49		36 - 120	05/03/23 14:45	05/04/23 12:25	1
2-Fluorobiphenyl (Surr)	61		34 - 110	05/03/23 14:45	05/04/23 12:25	1
Terphenyl-d14 (Surr)	84		40 - 145	05/03/23 14:45	05/04/23 12:25	1

Lab Sample ID: LCS 500-711197/2-A
Matrix: Water
Analysis Batch: 711359

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 711197

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233184-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-711197/2-A
Matrix: Water
Analysis Batch: 711359

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 711197

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Nitrobenzene-d5 (Surr)	55		36 - 120
2-Fluorobiphenyl (Surr)	65		34 - 110
Terphenyl-d14 (Surr)	83		40 - 145

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 240-572354/3
Matrix: Water
Analysis Batch: 572354

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.17		1.0	0.17	ug/L			05/07/23 13:00	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,1,1-Trifluoroethane	108		60 - 140		05/07/23 13:00	1

Lab Sample ID: LCS 240-572354/4
Matrix: Water
Analysis Batch: 572354

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methane	284	307		ug/L		108	80 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,1,1-Trifluoroethane	108		60 - 140

Lab Sample ID: LCSD 240-572354/5
Matrix: Water
Analysis Batch: 572354

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methane	284	304		ug/L		107	80 - 120	1	35

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
1,1,1-Trifluoroethane	107		60 - 140

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 500-711420/1-A
Matrix: Water
Analysis Batch: 712131

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 711420

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.099		0.10	0.099	ug/L		05/04/23 12:22	05/09/23 11:06	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCAA	84		25 - 130	05/04/23 12:22	05/09/23 11:06	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233184-1

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: LCS 500-711420/2-A
Matrix: Water
Analysis Batch: 712131

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 711420

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Pentachlorophenol	2.53	1.06		ug/L		42	40 - 122
Surrogate	%Recovery	LCS Qualifier	Limits				
DCAA	53		25 - 130				

Lab Sample ID: LCSD 500-711420/3-A
Matrix: Water
Analysis Batch: 712131

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 711420

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Pentachlorophenol	2.53	1.28		ug/L		51	40 - 122	19	20
Surrogate	%Recovery	LCSD Qualifier	Limits						
DCAA	63		25 - 130						

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 500-712804/1-A
Matrix: Water
Analysis Batch: 713284

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 712804

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.23		1.0	0.23	ug/L		05/11/23 17:31	05/12/23 19:09	1
Calcium	<44.3		200	44.3	ug/L		05/11/23 17:31	05/12/23 19:09	1
Copper	0.516	J	2.0	0.50	ug/L		05/11/23 17:31	05/12/23 19:09	1
Iron	<46.7		100	46.7	ug/L		05/11/23 17:31	05/12/23 19:09	1
Magnesium	<49.4		200	49.4	ug/L		05/11/23 17:31	05/12/23 19:09	1
Manganese	<0.79		2.5	0.79	ug/L		05/11/23 17:31	05/12/23 19:09	1
Zinc	<6.9		20.0	6.9	ug/L		05/11/23 17:31	05/12/23 19:09	1

Lab Sample ID: LCS 500-712804/2-A
Matrix: Water
Analysis Batch: 713284

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 712804

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	100	102.9		ug/L		103	80 - 120
Calcium	10000	11230		ug/L		112	80 - 120
Copper	250	259.1		ug/L		104	80 - 120
Iron	1000	961.6		ug/L		96	80 - 120
Magnesium	10000	10340		ug/L		103	80 - 120
Manganese	500	520.7		ug/L		104	80 - 120
Zinc	500	527.1		ug/L		105	80 - 120

QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233184-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-711141/3
Matrix: Water
Analysis Batch: 711141

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.12		1.0	0.12	mg/L			05/03/23 11:23	1
Sulfate	<0.21		1.0	0.21	mg/L			05/03/23 11:23	1

Lab Sample ID: LCS 500-711141/4
Matrix: Water
Analysis Batch: 711141

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	20.0	20.42		mg/L		102	90 - 110
Sulfate	20.0	18.65		mg/L		93	90 - 110

Lab Sample ID: MB 500-711142/3
Matrix: Water
Analysis Batch: 711142

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.043		1.0	0.043	mg/L			05/03/23 11:23	1

Lab Sample ID: LCS 500-711142/4
Matrix: Water
Analysis Batch: 711142

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	20.0	19.47		mg/L		97	90 - 110

Lab Sample ID: MB 500-714280/3
Matrix: Water
Analysis Batch: 714280

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.12		1.0	0.12	mg/L			05/19/23 10:22	1
Sulfate	<0.21		1.0	0.21	mg/L			05/19/23 10:22	1

Lab Sample ID: LCS 500-714280/4
Matrix: Water
Analysis Batch: 714280

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	20.0	19.29		mg/L		96	90 - 110
Sulfate	20.0	19.79		mg/L		99	90 - 110

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-713264/4
Matrix: Water
Analysis Batch: 713264

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	<0.47		1.0	0.47	mg/L			05/14/23 15:52	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233184-1

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCS 500-713264/5
Matrix: Water
Analysis Batch: 713264

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon - Duplicates	50.0	49.85		mg/L		100	86 - 116

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-712631/53
Matrix: Water
Analysis Batch: 712631

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	<3.7		5.0	3.7	mg/L			05/10/23 16:38	1

Lab Sample ID: LCS 500-712631/54
Matrix: Water
Analysis Batch: 712631

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	100	105.9		mg/L		106	90 - 110

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233184-1

Client Sample ID: W-230502-TS-36

Lab Sample ID: 500-233184-1

Date Collected: 05/02/23 11:15

Matrix: Water

Date Received: 05/03/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	712645	W1T	EET CHI	05/11/23 12:41
Total/NA	Prep	3510C			711197	TS	EET CHI	05/03/23 14:45
Total/NA	Analysis	8270D		1	711359	SS	EET CHI	05/04/23 17:50
Total/NA	Analysis	RSK-175		1	572354	BPM	EET CLE	05/07/23 18:39
Total/NA	Prep	8151A			711420	TS	EET CHI	05/04/23 12:22
Total/NA	Analysis	8151A		1	713776	JJB	EET CHI	05/17/23 12:30
Dissolved	Prep	3005A			712804	RN	EET CHI	05/11/23 17:31 - 05/11/23 18:01 ¹
Dissolved	Analysis	6020A		1	713284	FXG	EET CHI	05/12/23 19:39
Total Recoverable	Prep	3005A			712804	RN	EET CHI	05/11/23 17:31 - 05/11/23 18:01 ¹
Total Recoverable	Analysis	6020A		1	713284	FXG	EET CHI	05/12/23 19:16
Dissolved	Prep	3005A			712804	RN	EET CHI	05/11/23 17:31 - 05/11/23 18:01 ¹
Dissolved	Analysis	SM 2340B		1	713295	FXG	EET CHI	05/15/23 10:55
Total Recoverable	Prep	3005A			712804	RN	EET CHI	05/11/23 17:31 - 05/11/23 18:01 ¹
Total Recoverable	Analysis	SM 2340B		1	713295	FXG	EET CHI	05/15/23 10:55
Total/NA	Analysis	300.0		1	711141	EH	EET CHI	05/03/23 14:47
Total/NA	Analysis	300.0		1	711142	EH	EET CHI	05/03/23 14:47
Total/NA	Analysis	9060A		1	713264	BC	EET CHI	05/14/23 19:43
Total/NA	Analysis	SM 2320B		1	712631	EH	EET CHI	05/10/23 16:38

Client Sample ID: W-230502-TS-37

Lab Sample ID: 500-233184-2

Date Collected: 05/02/23 10:11

Matrix: Water

Date Received: 05/03/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	712645	W1T	EET CHI	05/11/23 13:03
Total/NA	Prep	3510C			711197	TS	EET CHI	05/03/23 14:45
Total/NA	Analysis	8270D		10	711359	SS	EET CHI	05/04/23 18:14
Total/NA	Analysis	RSK-175		1	572354	BPM	EET CLE	05/07/23 18:56
Total/NA	Prep	8151A			711420	TS	EET CHI	05/04/23 12:22
Total/NA	Analysis	8151A		2500	712956	JJB	EET CHI	05/12/23 12:04
Dissolved	Prep	3005A			712804	RN	EET CHI	05/11/23 17:31 - 05/11/23 18:01 ¹
Dissolved	Analysis	6020A		1	713284	FXG	EET CHI	05/12/23 19:50
Total Recoverable	Prep	3005A			712804	RN	EET CHI	05/11/23 17:31 - 05/11/23 18:01 ¹
Total Recoverable	Analysis	6020A		1	713284	FXG	EET CHI	05/12/23 19:19
Dissolved	Prep	3005A			712804	RN	EET CHI	05/11/23 17:31 - 05/11/23 18:01 ¹
Dissolved	Analysis	SM 2340B		1	713295	FXG	EET CHI	05/15/23 10:55
Total Recoverable	Prep	3005A			712804	RN	EET CHI	05/11/23 17:31 - 05/11/23 18:01 ¹
Total Recoverable	Analysis	SM 2340B		1	713295	FXG	EET CHI	05/15/23 10:55
Total/NA	Analysis	300.0		1	711141	EH	EET CHI	05/03/23 15:03
Total/NA	Analysis	300.0		1	711142	EH	EET CHI	05/03/23 15:03
Total/NA	Analysis	9060A		1	713264	BC	EET CHI	05/14/23 19:56
Total/NA	Analysis	SM 2320B		1	712631	EH	EET CHI	05/10/23 16:38

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233184-1

Client Sample ID: W-230502-TS-38

Lab Sample ID: 500-233184-3

Date Collected: 05/02/23 10:39

Matrix: Water

Date Received: 05/03/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	712645	W1T	EET CHI	05/11/23 13:27
Total/NA	Prep	3510C			711197	TS	EET CHI	05/03/23 14:45
Total/NA	Analysis	8270D		1	711359	SS	EET CHI	05/04/23 18:37
Total/NA	Analysis	RSK-175		1	572354	BPM	EET CLE	05/07/23 19:13
Total/NA	Prep	8151A			711420	TS	EET CHI	05/04/23 12:22
Total/NA	Analysis	8151A		1	713776	JJB	EET CHI	05/17/23 12:48
Dissolved	Prep	3005A			712804	RN	EET CHI	05/11/23 17:31 - 05/11/23 18:01 ¹
Dissolved	Analysis	6020A		1	713284	FXG	EET CHI	05/12/23 19:53
Total Recoverable	Prep	3005A			712804	RN	EET CHI	05/11/23 17:31 - 05/11/23 18:01 ¹
Total Recoverable	Analysis	6020A		1	713284	FXG	EET CHI	05/12/23 19:36
Dissolved	Prep	3005A			712804	RN	EET CHI	05/11/23 17:31 - 05/11/23 18:01 ¹
Dissolved	Analysis	SM 2340B		1	713295	FXG	EET CHI	05/15/23 10:55
Total Recoverable	Prep	3005A			712804	RN	EET CHI	05/11/23 17:31 - 05/11/23 18:01 ¹
Total Recoverable	Analysis	SM 2340B		1	713295	FXG	EET CHI	05/15/23 10:55
Total/NA	Analysis	300.0		5	714280	MM	EET CHI	05/19/23 13:55
Total/NA	Analysis	300.0		1	711141	EH	EET CHI	05/03/23 15:18
Total/NA	Analysis	300.0		1	711142	EH	EET CHI	05/03/23 15:18
Total/NA	Analysis	9060A		1	713264	BC	EET CHI	05/14/23 20:14
Total/NA	Analysis	SM 2320B		1	712631	EH	EET CHI	05/10/23 16:38

Client Sample ID: Trip Blank

Lab Sample ID: 500-233184-4

Date Collected: 05/02/23 00:00

Matrix: Water

Date Received: 05/03/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	712645	W1T	EET CHI	05/11/23 12:18

¹ This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: Penta Wood 11222418

Job ID: 500-233184-1

Laboratory: Eurofins Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-23

Laboratory: Eurofins Cleveland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-24
Connecticut	State	PH-0590	06-29-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-28-24
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-24
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-24
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-28-24
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
West Virginia DEP	State	210	05-07-23

Chain of Custody Record

543325




Environment Testing
TestAmerica

Address _____

Regulatory Program: DW NPDES RCRA Other

TAL-8210

Client Contact		Project Manager <i>Tim Ree</i>		Site Contact		Date <i>4/5/02/2023</i>		COC No	
Company Name <i>GHD</i>		Tel/Email <i>Tim Ree@GHD.com</i>		Lab Contact		Carrier <i>FedEx</i>		_____ of _____ COCs	
Address <i>900 Long Lake Road, Suite 200</i>		Analysis Turnaround Time		Filtered Sample (Y/N) _____ Perform MS/MSD (Y/N) _____ Alkalinity, Anions _____ PCP _____ BTEX _____ Naphthalene _____ Diss Metals, Hardness _____ Total Metals, Hardness _____ TOC _____ Methane _____		 500 233184 COC		Sampler: <i>Thor Solberg</i>	
City/State/Zip <i>St. Paul / MN / 55112</i>		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below _____						For Lab Use Only	
Phone <i>612-213-7452</i>		<input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day						Walk-in Client _____	
Project Name <i>PentaWood</i>								Lab Sampling _____	
Site <i>11222418</i>						Job / SDG No		_____	
P O # _____								<i>500-233184</i>	
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sample Specific Notes		
<i>1</i>	<i>W-230502-TS-36</i>	<i>05/02/2023</i>	<i>11:15</i>	<i>G</i>	<i>GW</i>	<i>15</i>	<i>X</i>	<i>X</i>	
<i>2</i>	<i>W-230502-TS-37</i>	<i>5/2/2023</i>	<i>10:11</i>	<i>G</i>	<i>GW</i>	<i>15</i>	<i>X</i>	<i>X</i>	
<i>3</i>	<i>W-230502-TS-38</i>	<i>5/2/2023</i>	<i>10:11</i>	<i>G</i>	<i>GW</i>	<i>15</i>	<i>X</i>	<i>X</i>	
<i>4</i>	<i>Trip Blank</i>		<i>10:39</i>					<i>X</i>	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other _____									
Possible Hazard Identification					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)				
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample									
<input type="checkbox"/> Non Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown					<input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months				
Special Instructions/QC Requirements & Comments: <i>1.5-19.2.2-2.1</i>									
Custody Seals Intact <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No		Cooler Temp (°C) Obs'd _____ Corr'd _____		Therm ID No _____			
Relinquished by <i>Thor Solberg</i>		Company <i>GHD</i>		Date/Time <i>5/2/23 12:45</i>		Received by _____		Company _____ Date/Time _____	
Relinquished by _____		Company _____		Date/Time _____		Received by _____		Company _____ Date/Time _____	
Relinquished by _____		Company _____		Date/Time _____		Received in Laboratory by <i>Stephanie Hernandez</i>		Company <i>EETA</i> Date/Time <i>5/13/23 1000</i>	



500-233184 Waybill

FedEx FRK# 10200 8157 3513 3518

WED - 03 MAY 10:30A PRIORITY OVERNIGHT

60484 IL-US ORD

NX JOTA

FedEx Express Package US Airbill

FedEx Tracking Number 8157 3513 3518

Form ID No.



80701 02May2023 JOTA 581G3/2BC3/C088

1 From
 Date 05/03/2023
 Sender's Name Tina Alberg Phone 612 215-7452
 Company GHD
 Address 1 N Myrtle Road Suite 200
 City - Intl State MIN ZIP 55112

2 Your Internal Billing Reference Penton Wood 11222418

3 To Recipient's Name nplc Receipt Phone 708 534-7000
 Company US Test Area Chicago Lab
 Address 2117 Bond St
 City Waukegan Park State IL ZIP 60049 5101
 0139073351



8157 3513 3518

4 Expre

Next

FedEx Earliest Location Monday

FedEx Next business morning - Friday shipments delivered on Monday unless Saturday Delivery is selected.

FedEx Standard Overnight Next business afternoon - Saturday Delivery NOT available.

5 Packaging *Declared value limit \$500.

FedEx Envelope* FedEx Pak* Other

6 Special Handling and Delivery Signature Options

Saturday Delivery NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

No Signature Required Package may be left without obtaining a signature for delivery. Direct Signature Someone at recipient's address may sign for delivery.

Does this shipment contain dangerous goods? One box must be checked.

No Yes As per attached Shipper's Declaration. Yes Shipper's Declaration not required.

Restrictions apply for dangerous goods - see the current FedEx Service Guide.

7 Payment Bill to:

Sender Acct. No. in Section 1 will be billed. Recipient Third Party

Total Packages Total Weight

Our liability is limited to US\$100 unless you declare a higher value. See the current FedEx Service Guide.

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fedex.com 1800.GoFedEx 1800.463.3339

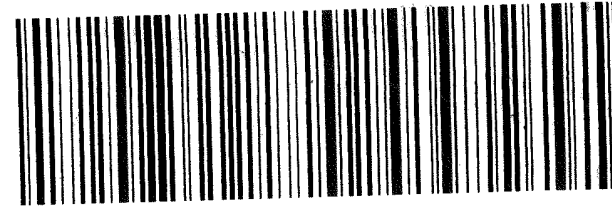
Align Open End of FedEx Pouch Here

TRK# 8172 9535 1664
0200

PRIORITY OVERNIGHT

NX JOTA

60484
IL-US
ORD



80701 02May2023 JOTA 581G3/2BC3/C088

FedEx Express Package US Airbill

FedEx Tracking Number 8172 9535 1664

1 From Date 5/2/2023

Sender's Name TAOR SOLGER, Phone 612 213 7492

Company GHD

Address 900 LONG LAKE ROAD Suite 200

City St. Paul State MN ZIP 55112

2 Your Internal Billing Reference PERIA WOOD 11222418

3 To Recipient's Name SAMPLE RECEIPT. Phone 708 534 5200

Company EXPORTS TLT AMERICA CHICAGO LAB

Address 2419 BONI ST. Dept./Floor/Suite/Room

Address Use this line for the HOLD location address or for continuation of your shipping address.

City WASHINGTON PARK State IL ZIP 60484-3101

0139073351



8172 9535 1664

Next Business Day

FedEx First Overnight
Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Priority Overnight
Next business morning. *Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Standard Overnight
Next business afternoon. Saturday Delivery NOT available.

2 or 3 Business Days

FedEx 2Day A.M.
Second business morning. Saturday Delivery NOT available.

FedEx 2Day
Second business morning. *Friday shipments will be delivered on Monday unless Saturday Delivery is selected.

FedEx Express Saver
Third business day. Saturday Delivery NOT available.

5 Packaging *Declared value limit \$500.

FedEx Envelope* FedEx Pak* FedEx Box FedEx Tube Other

6 Special Handling and Delivery Signature Options

Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver.

No Signature Required
Package may be left without obtaining a signature for delivery.

Direct Signature
Someone at recipient's address may sign for delivery.

Does this shipment contain dangerous goods?

No Yes As per attached Shipper's Declaration. Yes Shipper's Declaration not required. Dry Ice

Restrictions apply for dangerous goods - see the current FedEx Service Guide.

7 Payment Bill to:

Enter FedEx Acct. No. below.
 Sender Acct. No. in Section 1 will be billed. Recipient Third Party

Total Packages 1 Total Weight 30 lbs.

*Our liability is limited to US\$100 unless you declare a higher value. See the current FedEx Service Guide.

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fedex.com 1.800.GoFedEx 1.800.463.3339

Eurofins Chicago

2417 Bond Street
University Park, IL 60484
Phone: 708-534-5200 Fax: 708-534-5211

05/07

Chain of Custody Record



Environment Testing

Client Information (Sub Contract Lab)

Client Contact: Shipping/Receiving
Company: Eurofins Environment Testing North Cent
Address: 180 S. Van Buren Avenue
City: Barberton
State, Zip: OH, 44203
Phone: 330-497-9396(Tel) 330-497-0772(Fax)
Email:
Project Name: Penta Wood 11222418
Site:
Project #: 50013796
SSOW#:
Lab PM: McCutcheon, Carlene
E-Mail: Carlene.McCutcheon@eurofins.com
Accreditations Required (See note): State Program - Wisconsin
Carrier Tracking No(s):
State of Origin: Wisconsin
COC No: 500-173495-1
Page: Page 1 of 1
Job #: 500-233184-1

Analysis Requested

Due Date Requested: 5/16/2023
TAT Requested (days):
Matrix:
Sample Type (G=comp, G=grab):
Preservation Code:
Field Filtered Sample (Yes or No):
Perform MS/MSD (Yes or No):
RSK_175/ (MOD) Methane
Total Number of containers:
Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - NaOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexamine
N - None
O - ASNQ2
P - Na2CO3
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4.5
Y - Trizma
Z - other (specify)
Other:
Special Instructions/Note:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (G=comp, G=grab)	Preservation Code	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175/ (MOD) Methane	Total Number of containers	Special Instructions/Note:
W-230502-TS-36 (500-233184-1)	5/2/23	11:15 Central	Water		X			3	
W-230502-TS-37 (500-233184-2)	5/2/23	10:11 Central	Water		X			3	
W-230502-TS-38 (500-233184-3)	5/2/23	10:39 Central	Water		X			3	

Note: Since laboratory accreditations are subject to change, Eurofins Chicago places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins Chicago laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Chicago attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Chicago.

Possible Hazard Identification
Unconfirmed
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2
Special Instructions/QC Requirements:
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months

Empty Kit Relinquished by:
Relinquished by:
Relinquished by:
Relinquished by:
Custody Seals Intact:
A Yes A No
Custody Seal No.:
Date:
Time:
Method of Shipment:
Received by:
Received by:
Date/Time:
Date/Time:
Company:
Company:
Company:
Company:
Cooler Temperature(s) °C and Other Remarks:

Eurofins - Canton Sample Receipt Form/Narrative
Barberton Facility

Login # : _____

Client ETA Site Name _____

Cooler unpacked by:

Leah M. Smith

Cooler Received on 05-04-23 Opened on 05-04-23

FedEx: 1st Grd UPS FAS Clipper Client Drop Off Eurofins Courier Other _____

Receipt After-hours: Drop-off Date/Time _____

Storage Location _____

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt See Multiple Cooler Form

IR GUN # 13 (CF+0.2 °C) Observed Cooler Temp. 0.5 °C Corrected Cooler Temp. 0.7 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity _____ Yes No

-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA

-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No

-Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No

4. Did custody papers accompany the sample(s)? Yes No

5. Were the custody papers relinquished & signed in the appropriate place? Yes No

6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No

7. Did all bottles arrive in good condition (Unbroken)? Yes No

8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No

9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? Yes No

10. Were correct bottle(s) used for the test(s) indicated? Yes No

11. Sufficient quantity received to perform indicated analyses? Yes No

12. Are these work share samples and all listed on the COC? Yes No

If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC208070

14. Were VOAs on the COC? Yes No

15. Were air bubbles >6 mm in any VOA vials? Yes No NA  ← Larger than this.

16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No

17. Was a LL Hg or Me Hg trip blank present? Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by: _____

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Part # 159469-434 MTTW EXP 01/24

estAmerica

LEADER IN ENVIRONMENTAL TESTING

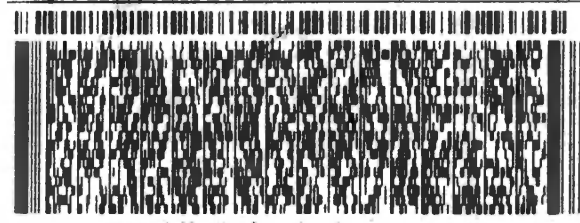
ORIGIN: JOTA (708) 534-5200
 SAMPLE LOGIN
 TESTAMERICA LABS
 2417 BOND ST
 UNIVERSITY PARK, IL 60484
 UNITED STATES US

SHIP DATE: 03MAY23
 ACTWGT: 33.00 LB MAN
 CAD: 033264/CAFE3704
 BILL SENDER

**TO SAMPLE RECEIVING
 EUROFINS - CANTON
 180 S. VAN BUREN AVENUE**

BARBERTON OH 44203

(330) 497-9306
 REF: 233184 185 SS

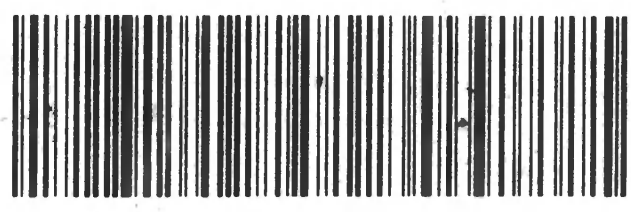


1 of 2
 TRK# 6180 7195 4072
 0201
 ## MASTER ##

**THU - 04 MAY 10:30A
 PRIORITY OVERNIGHT**

NX CAKA

**44203
 OH-US CLE**



Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-233184-1

Login Number: 233184

List Source: Eurofins Chicago

List Number: 1

Creator: Hernandez, Stephanie

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.9.2.1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	False	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Appendix C

**Residential Well and Onsite Supply
Well Water Sample Data Validation**

Data Verification Report

June 09, 2023

To	Tim Ree, GHD	Project No.	11222418-05.05
Copy to	Thor Solberg, GHD	Email	grant.anderson@ghd.com
From	Grant Anderson/lg/6	Contact No.	612-524-6836
Project Name	Penta Wood Products Superfund Site		
Subject	Analytical Results and Data Verification Residential Water Sampling Event Penta Wood Products Superfund Site Siren, Wisconsin April 2023		

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

1. Introduction

This document details a data verification of analytical results for residential water samples collected at the Penta Wood Products Superfund Site during April 2023. Samples were submitted to Eurofins Chicago located in University Park, Illinois. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Table 2. A summary of the analytical methodology is presented in Table 3.

Standard GHD report deliverables were submitted by the laboratory. The final results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody form, finished report forms, method blank data, recovery data from surrogate spikes, laboratory control samples (LCS)/matrix spikes (MS) and field QA/QC samples.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 3 and applicable guidance from the documents entitled:

1. "Quality Assurance Project Plan, Long Term Response Action", Rev. II, February 2005 with addendums
2. "National Functional Guidelines for Organic Superfund Methods Data Review", EPA 540-R-20-005, November 2020
3. "National Functional Guidelines for Inorganic Superfund Methods Data Review", EPA 542-R-20-006, November 2020.

Items 2. and 3. will subsequently be referred to as the "Guidelines" in this report.

2. Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in Table 3. The sample chain of custody document and the analytical report were used to determine sample holding times. All samples were analyzed within the required holding times.

All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

3. Laboratory Method Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

Laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

All method blank results were non-detect, indicating that laboratory contamination was not a factor for this investigation.

4. Surrogate Spike Recoveries - Organic Analyses

In accordance with the methods employed, all samples, blanks, and QC samples analyzed for organics are spiked with surrogate compounds prior to sample analysis. Surrogate recoveries provide a means to evaluate the effects of laboratory performance on individual sample matrices.

All samples submitted for benzene, toluene, ethylbenzene, and xylenes (BTEX), naphthalene, and pentachlorophenol analyses were spiked with the appropriate number of surrogate compounds prior to sample extraction or analysis.

Each individual surrogate compound is expected to meet the laboratory control limits with the exception of semi-volatile organic compound (SVOC) analyses. According to the "Guidelines" for SVOC analyses, up to one outlying surrogate in the base/neutral fraction is acceptable as long as the recovery is at least 10 percent.

Surrogate recoveries were assessed against laboratory control limits. All surrogate recoveries met the above criteria.

5. Laboratory Control Sample Analyses

LCS are prepared and analyzed as samples to assess the analytical efficiencies of the method employed, independent of sample matrix effects.

The LCS contained all compounds of interest. The laboratory admitted to inadvertently not spiking the LCS sample associated with batch 500-710288; therefore, the LCS recovery was zero. The associated MS/MSD recoveries were within the control limits; therefore, the data was deemed acceptable. All remaining LCS recoveries were within the laboratory control limits, demonstrating acceptable analytical accuracy.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

To evaluate the effects of sample matrices on the preparation process, measurement procedures, and accuracy of a particular analysis, samples are spiked with known concentrations of the analytes of concern and analyzed as MS/MSD samples. The relative percent difference (RPD) between the MS and MSD is used to assess analytical precision.

MS/MSD analyses were performed as specified in Table 1.

The MS/MSD samples were spiked with all compounds of interest. All percent recoveries and RPD values were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision.

7. Field QA/QC Samples

The field QA/QC consisted of one trip blank sample, one field blank sample and one field duplicate sample set.

Trip Blank Sample Analysis

To evaluate contamination from sample collection, transportation, storage, and analytical activities, one trip blank sample was submitted to the laboratory for BTEX analysis. All results were non-detect for the compounds of interest.

Field Blank Sample Analysis

To assess ambient conditions at the site a field blank was submitted for analysis, as identified in Table 1. All results were non-detect for the analytes of interest.

Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, one field duplicate sample set was collected and submitted "blind" to the laboratory, as specified in Table 1. The RPDs associated with these duplicate samples must be less than 50 percent. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criteria is one times the RL value.

All field duplicate results were within acceptable agreement, demonstrating acceptable sampling and analytical precision.

8. Analyte Reporting

Non-detect data were reported down to the laboratory's sample-specific MDL for each analyte. Positive analyte detections less than the RL but greater than the sample-specific MDL were qualified as estimated (J) in Table 2.

Non-detect results were presented as non-detect at the RL in Table 2.

9. Conclusion

Based on the assessment detailed in the foregoing, the data are acceptable without qualification.

Regards,



Grant Anderson
Analyst

Table 1

**Sample Collection and Analysis Summary
Residential Water Sampling Event
Penta Wood Products Superfund Site
Siren, Wisconsin
April 2023**

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters			Comments
					BTEX	Naphthalene	Pentachlorophenol	
W-230424-TS-01	RW05	water	04/24/2023	12:21	X	X	X	MS/MSD
W-230424-TS-02	RW06	water	04/24/2023	12:52	X	X	X	
W-230424-TS-03	RW06	water	04/24/2023	12:52	X	X	X	Duplicate (TS-02)
W-230424-TS-04	RW03	water	04/24/2023	13:15	X	X	X	
W-230424-TS-05	RW03	water	04/24/2023	13:15	X	X	X	Field Blank
W-230424-TS-06	RW04	water	04/24/2023	13:31	X	X	X	
W-230424-TS-07	RW02	water	04/24/2023	13:49	X	X	X	
Trip Blank	Lab	water	04/24/2023	00:00	X			Trip Blank

Notes:

MS/MSD - Matrix Spike/Matrix Spike Duplicate

BTEX - Benzene, Toluene, Ethylbenzene, and Xylenes (total)

**Validated Analytical Results Summary
Residential Water Sampling Event
Penta Wood Products Superfund Site
Siren, Wisconsin
April 2023**

Location ID:	RW02	RW03	RW03	RW04	RW05	RW06	RW06
Sample Name:	W-230424-TS-07	W-230424-TS-04	W-230424-TS-05	W-230424-TS-06	W-230424-TS-01	W-230424-TS-02	W-230424-TS-03
Sample Date:	04/24/2023	04/24/2023	04/24/2023	04/24/2023	04/24/2023	04/24/2023	04/24/2023 Duplicate

Parameters	Unit							
Volatile Organic Compounds								
Benzene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Ethylbenzene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Xylenes (total)	µg/L	0.35 J	1.0 U	1.0 U	0.46 J	1.0 U	1.0 U	0.46 J
Semivolatile Organic Compounds								
Naphthalene	µg/L	0.70 U	0.62 U	0.69 U	0.67 U	0.65 U	0.65 U	0.63 U
Herbicides								
Pentachlorophenol	µg/L	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U

Notes:

- U – Not detected at the associated reporting limit
- J - Estimated concentration

Table 3

**Analytical Methods and Holding Time Criteria
Residential Water Sampling Event
Penta Wood Products Superfund Site
Siren, Wisconsin
April 2023**

Parameter	Method	Matrix	Holding Time	
			Collection to Extraction (Days)	Collection or Extraction to Analysis (Days)
BTEX	SW 8260B	Water	-	14
Naphthalene	SW 8270D	Water	7	40
Pentachlorophenol	SW 8151A	Water	7	40

Notes:

BTEX - Benzene, Toluene, Ethylbenzene, and Xylenes (total)

Method References:

SW-846 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, 1986, with subsequent revisions

Appendix D

Site Inspection Forms

**Continuing Obligations Inspection Form
Penta Wood Products Superfund Site
Siren, Wisconsin**

Verified

Notes

Verify Site Conditions

- CAMU area fence condition is satisfactory
- CAMU signage is present/visible at all fence gates
- CAMU surface soil condition is satisfactory and does not require erosion/settlement repairs
- Perimeter area fence is satisfactory and does not require repairs
- Perimeter signage is present/visible
- Site access is limited and all perimeter fence locks in working order
- NaOH tank condition is satisfactory with no signs of leaks
- FeSO4 tank condition is satisfactory with no signs of leaks

X	
X	
X	
X	
X	
X	
X	
X	

Verify situations have not and are not occurring

- 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
- Change in use or occupancy of the property

X	
X	
X	
X	
X	
X	
X	

Inspected By: TS

Date: 4/24/2023

Notes:

Site locks are all working alright, but some are becoming difficult to operate / close
 Forest area in SE of Site could use a trim. Trees along roads are crowding paths for vehicles.



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