



Semiannual Report

January through June 2021

Wisconsin Department of Natural Resources

October 14, 2021

GHD





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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, and the Site plan is shown on Figure 1.2. This Report presents the results of the activities conducted at the Site during January through June 2021 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 2021 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 9, 2021. 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 2021 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 2021 event, LNAPL was present in monitoring wells MW18, MW19, MW20 and MW29 at measurable thicknesses, and LNAPL was not present in well MW10S. 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 2021 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 0.006 ft/ft (MW10/MW10S) and 0.015 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 12 through 15, 2021 and consisted of collecting groundwater samples from twenty one (21) monitoring wells (MW1, MW2, MW3, MW4, MW5, MW6S, MW10, MW10S, MW12, MW13, MW14, MW16, MW17, MW21, MW22, MW23, MW25, MW28, MW30, MW31, and MW32) and three (3) extraction wells (EW11D, EW11S, and EW13S). Wells MW20 and MW29 were not sampled due to the presence of LNAPL in the wells. 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), 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 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 metals included arsenic, copper, iron, manganese, and zinc. The 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 TestAmerica (TestAmerica) 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 are included in Appendix A.

2.2.1 Naphthalene and BTEX analytical data

The April 2021 naphthalene and BTEX analytical data are summarized in Table 2.4. Naphthalene and BTEX was not detected at concentrations that exceeded the ESs.

2.2.2 PCP analytical data

The April 2021 PCP analytical data are summarized in Table 2.4. PCP was detected in nine (9) wells (MW5, MW6S, MW10, MW10S, MW12, MW30, EW11S, EW11D, 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 limited to the immediate vicinity of the LNAPL area in the unconfined and semiconfined aquifers, which indicates the plume has remained stable.

2.2.3 Dissolved arsenic analytical data

The April 2021 dissolved arsenic analytical data are summarized in Table 2.4. Arsenic was not detected at concentrations that exceeded the ES (10 µg/L). Figure 2.6 shows the arsenic concentrations in the unconfined (upper) aquifer wells. Figure 2.7 shows the arsenic concentrations in the semiconfined (lower) aquifer wells.

Consistent with monitoring data since prior to shutdown of the remediation system in 2015, arsenic concentrations (i.e., greater than 1 µg/L) 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 dissolved metals analytical data

The October 2020 dissolved metals analytical data are summarized in Table 2.4. Zinc and copper were not detected at concentrations that exceeded the ESs.

Iron was detected in eight (8) wells at concentrations exceeding the ES (300 µg/L). Manganese was detected in seven (7) wells at concentrations exceeding the ES (50 µg/L). 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 2021, water samples were collected from seven 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 and is currently only used as a supply for sampling equipment decontamination water. The pump within the supply well was not functioning and a sample could not be collected during April 2021.

The residential well and onsite water supply well locations are shown on Figure 3.1. Residential well water samples were collected on April 14, 15, and 26, 2021 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. These results are 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 2021. GHD continues to collect and containerize PPE and other waste produced during sampling events onsite. Historical hazardous waste disposal is summarized in Appendix A.

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 land owners 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
 - 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 9, 2021 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/vegetation were in good condition during this monitoring period and did not require repairs; erosion, subsidence, and ponding water were not observed on the CAMU.

Site well inspections were completed on April 9, 2021 and a copy of the well inspection form is included in Appendix D.

6. Conclusions and Recommendations

Based on the January through June 2021 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
- PCP concentration contours indicate that the plume did not migrate following shutdown of the remediation system in 2015 and indicate overall plume stability.
- Dissolved PCP concentrations greater than 1,000 µg/L are limited to the immediate vicinity of the LNAPL area
- 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 would not likely occur beyond the property boundaries
- The current monitoring well network is sufficient to monitor plume conditions

The above lines of evidence support selection of Monitored Natural Attenuation (MNA) as an effective groundwater remedy at this Site. As compared to the currently selected remedial alternative of active remediation, natural attenuation will achieve performance goals within a reasonable (i.e., comparable) period of time.

Following USEPA's review of the Semiannual Report and Alternate Remedy Recommendation (GHD; March 17, 2020), USEPA, WDNR, and GHD have held discussions regarding potential future remedial actions at the Site. USEPA has requested that a remedial alternatives evaluation be conducted to assess potential future remedial actions. WDNR and GHD will begin the evaluation following receipt of funding from USEPA.

While future potential actions are assessed, WDNR recommends continued 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

Two modifications to the previous monitoring and sampling plan are recommended as follows:

- Analyze groundwater samples collected from monitoring and extraction wells for total metals in addition to dissolved metals during future semiannual events

- Exclude groundwater sampling and analysis at the onsite water supply well (DW01) during future semiannual events since the well no longer provides a water supply to the building and the pump is no longer functioning

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 quarterly basis in January, April, July, and October in 2020, will change to semiannual basis in April and October 2021.
- 2 Groundwater sampling conducted on a semiannual basis in April and October
- 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.

**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	4/9/2021	1129.44	143.70	ND	985.74	NA	0.00
MW4	4/9/2021	1087.72	102.46	ND	985.26	NA	0.00
MW6	4/9/2021	1109.11	123.49	ND	985.62	NA	0.00
MW7	4/9/2021	1096.25	110.87	ND	985.38	NA	0.00
MW8	4/9/2021	1091.13	105.54	ND	985.59	NA	0.00
MW10	4/9/2021	1089.01	103.37	ND	985.64	NA	0.00
MW11	4/9/2021	1085.48	100.46	ND	985.02	NA	0.00
MW12	4/9/2021	1080.91	95.38	ND	985.53	NA	0.00
MW14	4/9/2021	1078.25	92.99	ND	985.26	NA	0.00
MW15	4/9/2021	1127.09	141.02	ND	986.07	NA	0.00
MW17	4/9/2021	1084.43	98.89	ND	985.54	NA	0.00
MW23	4/9/2021	1017.16	31.81	ND	985.35	NA	0.00
EW02D	4/9/2021	1083.00	97.19	ND	985.81	NA	0.00
EW03D	4/9/2021	1089.48	103.64	ND	985.84	NA	0.00
EW04D	4/9/2021	1101.09	115.15	ND	985.94	NA	0.00
EW05D	4/9/2021	1076.99	91.19	ND	985.80	NA	0.00
EW06D	4/9/2021	1083.39	97.35	ND	986.04	NA	0.00
EW07D	4/9/2021	1087.52	101.44	ND	986.08	NA	0.00
EW10D	4/9/2021	1088.55	102.68	ND	985.87	NA	0.00
EW11D	4/9/2021	1048.19	62.01	ND	986.18	NA	0.00
EW12D	4/9/2021	1086.41	100.50	ND	985.91	NA	0.00
EW13D	4/9/2021	1092.88	106.90	ND	985.98	NA	0.00
EW14D	4/9/2021	1098.28	112.38	ND	985.90	NA	0.00
Unconfined Aquifer (Upper)							
MW1	4/9/2021	1072.27	86.13	ND	986.14	NA	0.00
MW2	4/9/2021	1065.03	78.52	ND	986.51	NA	0.00
MW5	4/9/2021	1071.42	85.65	ND	985.77	NA	0.00
MW6S	4/9/2021	1108.35	122.02	ND	986.33	NA	0.00
MW9	4/9/2021	1019.58	33.53	ND	986.05	NA	0.00
MW10S	4/9/2021	1090.12	104.30	ND	985.82	NA	0.00
MW13	4/9/2021	1005.81	19.77	ND	986.04	NA	0.00
MW16	4/9/2021	1081.95	95.93	ND	986.02	NA	0.00
MW18	4/9/2021	1071.96	86.38	85.88	985.58	986.08	0.50
MW19	4/9/2021	1087.96	102.54	102.13	985.42	985.83	0.41
MW20	4/9/2021	1098.16	112.20	112.10	985.96	986.06	0.10
MW21	4/9/2021	1095.82	109.64	ND	986.18	NA	0.00
MW22	4/9/2021	1084.65	98.53	ND	986.12	NA	0.00
MW24	4/9/2021	1084.04	98.44	ND	985.60	NA	0.00
MW25	4/9/2021	1095.25	109.69	ND	985.56	NA	0.00
MW26	4/9/2021	1086.87	101.34	ND	985.53	NA	0.00
MW27	4/9/2021	1110.96	124.74	ND	986.22	NA	0.00
MW28	4/9/2021	1083.52	97.32	ND	986.20	NA	0.00
MW29	4/9/2021	1070.24	84.95	84.10	985.29	986.14	0.85

**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							
MW30	4/9/2021	1048.98	62.89	ND	986.09	NA	0.00
MW31	4/9/2021	1076.34	90.29	ND	986.05	NA	0.00
MW32	4/9/2021	1021.02	35.03	ND	985.99	NA	0.00
EW02S	4/9/2021	1082.25	96.19	ND	986.06	NA	0.00
EW03S	4/9/2021	1088.66	102.73	ND	985.93	NA	0.00
EW04S	4/9/2021	1101.01	114.97	ND	986.04	NA	0.00
EW05S	4/9/2021	1077.04	92.03	90.99	985.01	986.05	1.04
EW06S	4/9/2021	1083.61	100.89	97.36	982.72	986.25	3.53
EW07S	4/9/2021	1087.49	101.76	101.47	985.73	986.02	0.29
EW10S	4/9/2021	1088.72	107.38	102.69	981.34	986.03	4.69
EW11S	4/9/2021	1047.23	61.17	ND	986.06	NA	0.00
EW12S	4/9/2021	1086.31	104.60	100.30	981.71	986.01	4.30
EW13S	4/9/2021	1092.88	106.84	ND	986.04	NA	0.00
EW14S	4/9/2021	1098.32	113.00	112.39	985.32	985.93	0.61

Notes:

- feet btoc - Feet below top of casing
 feet AMSL - Feet above mean sea level
 NA - Not applicable
 ND - LNAPL was not detected in a measurable 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 Conductance (µS)	Turbidity (NTU)	Dissolved		Total Iron (mg/L)	Total Sulfide (mg/L)
									Oxygen (mg/L)	ORP (mV)		
MW21	4/12/2021	W-210412-RA-01 Sample Time: 10:22	10:02	0.0	7.55	10.3	400	15.7	10.1	88	0.5	0
			10:07	0.1	7.18	10.12	392	0.8	10.14	114		
			10:12	0.3	7.06	10.57	390	0	10.46	145		
			10:17	0.4	7.02	10.49	391	0	10.41	149		
			10:22	0.5	6.99	10.52	391	0	10.21	155		
MW1	4/12/2021	W-210412-RA-02 Sample Time: 11:13	10:53	0.0	7.44	10.34	205	32.9	8.86	135	0	0
			10:58	0.1	7.46	10.2	197	19.5	9.04	134		
			11:03	0.3	7.48	10.15	194	10	8.47	137		
			11:08	0.4	7.48	10.15	193	9.9	8.33	136		
			11:13	0.5	7.50	10.21	186	4.7	8.36	137		
MW31	4/12/2021	W-210412-RA-03 Sample Time: 12:13	11:53	0.0	7.02	9.91	388	18.7	5.48	148	0.5	0
			11:58	0.1	6.88	9.91	389	9.5	5.35	152		
			12:03	0.3	6.85	10.49	391	5.2	5.26	153		
			12:08	0.4	6.85	10.51	391	4.5	5.2	153		
			12:13	0.5	6.84	10.57	390	3.9	5.14	154		
MW13	4/12/2021	W-210412-RA-04 Sample Time: 12:47 Duplicate: W-210412-RA-05	12:32	0.0	6.40	9.15	116	34.3	8.49	149	0	0
			12:37	0.1	6.17	8.9	124	7.7	7.9	166		
			12:42	0.3	6.14	8.87	123	3.2	7.66	169		
			12:47	0.4	6.14	8.86	123	3.2	7.62	169		

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)			
MW32	4/12/2021	W-210412-RA-06 Sample Time: 13:23	13:08	0.0	6.46	8.6	79	222	7.11	109	0.5	0
			13:13	0.1	6.47	8.62	80	123	6.77	121		
			13:18	0.3	6.45	8.59	80	128	6.96	123		
			13:23	0.4	6.46	8.53	81	120	6.79	125		
MW5	4/13/2021	W-210413-RA-08 Sample Time: 10:37	10:12	0.0	6.51	9.29	695	183	3.94	-145	1.5	0
			10:17	0.1	6.54	9.72	691	81.4	1.85	-147		
			10:22	0.3	6.56	9.63	690	51.6	0.82	-147		
			10:27	0.4	6.57	9.79	690	43.2	0	-145		
			10:32	0.5	6.57	9.76	688	40	0	-144		
			10:37	0.7	6.57	9.86	689	39.7	0	-144		
MW2	4/13/2021	W-210413-RA-09 Sample Time: 10:52	10:52	0.0	6.91	7.32	0	338	0	-69	1.2	0
EW11D	4/13/2021	W-210413-RA-10 Sample Time: 12:23	12:03	0.0	6.07	8.23	154	208	2.23	-6	4.5	0
			12:08	0.1	5.98	8.32	158	116	2.15	35		
			12:13	0.3	6.07	8.36	157	84.3	1.87	40		
			12:18	0.4	6.01	8.29	158	86.1	1.69	34		
			12:23	0.5	6.01	8.27	158	82.3	1.69	33		
EW11S	4/13/2021	W-210413-RA-11 Sample Time: 12:56	12:39	0.0	6.04	7.44	371	27.7	0.55	38	0.2	0
			12:46	0.1	6.54	7.7	316	12.6	1.47	89		
			12:51	0.3	6.54	7.8	315	11.9	1.44	91		
			12:56	0.4	6.53	7.78	315	11.8	1.44	93		
MW30	4/13/2021	W-210413-RA-13 Sample Time: 1:39	13:27	0.0	6.63	8.65	249	30.1	0.37	77	0.5	0
			1:32	0.1	6.61	8.54	248	30.1	0	89		
			13:39	0.3	6.60	8.8	248	31.8	0	93		
MW22	4/13/2021	W-210413-RA-12 Sample Time: 13:53	13:53	0.0	7.01	7.62	191	596	8.55	63	0.2	0
MW25	4/14/2021	W-210414-RA-14 Sample Time: 9:43	9:28	0.0	7.09	6.03	805	55	10.45	106	0.2	0
			9:33	0.1	7.06	11.39	739	67.8	7.43	87		
			9:38	0.3	7.06	11.68	733	64.5	7.15	80		
			9:43	0.4	7.06	11.88	730	62.9	7.19	77		
MW16	4/14/2021	W-210414-RA-15 Sample Time: 10:20	10:05	0.0	7.25	11.61	174	6.4	7.91	49	0	0
			10:10	0.1	7.10	12.63	168	5.7	7.82	66		
			10:15	0.3	7.09	12.79	168	5.3	7.94	67		
			10:20	0.4	7.07	12.93	168	5	7.97	71		

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		Total Iron (mg/L)	Total Sulfide (mg/L)
									Oxygen (mg/L)	ORP (mV)		
MW12	4/14/2021	W-210414-RA-16 Sample Time: 11:05	10:35	0.0	7.76	10.76	320	7.9	5.65	60	0	0
			10:45	0.1	7.85	11.45	361	6.9	9.43	57		
			10:55	0.3	7.78	12.2	391	7.1	0.73	59		
			11:00	0.4	7.74	12.02	396	7.6	0	58		
			11:05	0.5	7.73	11.94	397	7.4	0	58		
MW3	4/14/2021	W-210414-RA-17 Sample Time: 12:10 Duplicate: W-210414-RA-18	12:00	0.0	7.44	12.1	979	34.2	0	-19	0	0
			12:05	0.1	7.40	12.24	995	35.2	0	-30		
			12:10	0.3	7.37	12.4	1000	19.5	0	-40		
			12:15	0.4	7.36	12.42	1000	17.4	0	-42		
			12:20	0.5	7.35	12.48	1010	18	0	-44		
MW10D	4/14/2021	W-210414-RA-20 Sample Time: 13:00	12:40	0.0	7.78	11.24	385	41.8	4.94	-156	1.5	0
			12:45	0.1	7.69	11.88	382	44.5	4.25	-151		
			12:50	0.3	7.68	12.34	383	46.7	4.01	-146		
			12:55	0.4	7.66	13.36	379	41.3	0	-149		
			13:00	0.5	7.67	13.68	378	41.9	0	-152		
MW10S	4/14/2021	W-210414-RA-21 Sample Time: 13:30	13:20	0.0	6.44	14.53	796	29.3	0	15	1	0
			13:25	0.1	6.44	14.65	793	26.4	0	21		
			13:30	0.3	6.44	14.74	790	25.7	0	24		
MW17	4/14/2021	W-210414-RA-22 Sample Time: 14:23	14:13	0.0	7.82	12.77	621	0	8.68	39	0	0
			14:18	0.1	7.82	12.77	621	0	8.6	39		
			14:23	0.3	7.82	12.76	621	0	8.56	39		
MW4	4/15/2021	W-210415-RA-23 Sample Time: 9:20	8:55	0.0	8.68	10.76	357	10.2	5.21	-161	0.5	0
			9:10	0.1	8.67	10.77	357	7.3	3.44	-160		
			9:15	0.3	8.67	10.78	356	6.9	3.19	-159		
			9:20	0.4	8.66	10.79	350	7.4	3.16	-159		
MW28	4/15/2021	W-210415-RA-25 Sample Time: 10:00	9:45	0.0	8.15	9.35	342	7	5.95	34	0.1	0
			9:50	0.1	8.12	11.69	340	11.9	6.15	-7		
			9:55	0.3	8.12	11.67	340	10.2	6.37	-5		
			10:00	0.4	8.10	11.87	340	9.9	6	-5		

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		Total Iron (mg/L)	Total Sulfide (mg/L)
									Oxygen (mg/L)	ORP (mV)		
MW14	4/15/2021	W-210415-RA-26 Sample Time: 10:50 Duplicate: W-210415-RA-27	10:30	0.0	8.18	11.48	323	15	9.9	-12	0.1	0
			10:35	0.1	8.20	11.54	325	9.7	9.07	-16		
			10:40	0.3	8.20	11.63	325	5.5	8.3	-21		
			10:45	0.4	8.21	11.69	328	6.7	7.9	-23		
			10:50	0.5	8.21	11.68	326	4.9	7.81	-23		
MW23	4/15/2021	W-210415-RA-28 Sample Time: 12:25	12:15	0.0	8.05	9.76	560	0.9	5.55	25	0	0
			12:20	0.1	8.05	9.79	560	0.5	5.48	26		
			12:25	0.3	8.05	9.87	560	0	5.03	26		
MW6S	4/15/2021	W-210415-RA-30 Sample Time: 13:15	12:50	0.0	6.46	15.88	599	48.2	0.24	95	0	0
			12:55	0.1	6.60	16.27	586	47.5	5.22	92		
			13:00	0.3	6.50	14.61	587	25.1	7.2	109		
			13:05	0.4	6.49	14.26	588	9.7	7.08	114		
			13:10	0.5	6.49	14.19	577	6.1	6.67	117		
			13:15	0.7	6.48	14.13	579	6.3	6.44	13		
MW13S	4/15/2021	W-210415-RA-29 Sample Time: 13:30	13:30	0.0	7.07	13.37	715	318	3.93	-121	7	0

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 MW20 and MW29 were not sampled due to the presence of LNAPL

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, 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	Copper (dissolved) ug/L	Iron (dissolved) ug/L	Manganese (dissolved) ug/L	Zinc (dissolved) ug/L	Pentachlorophenol ug/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L
Semiconfined Aquifer (Lower)																					
EW11D	W-210413-RA-10	04/13/2021		101	1.3	2.3	20.8	7.4	75.8	1.0 U	0.50 J	18.9	3470	208	37.8	3.2	0.79 U	0.50 U	0.50 U	0.50 U	1.0 U
MW3	W-210414-RA-17	04/14/2021		465	73.8	1.9	6.7	1.1	406	5.4	0.27 J	1.0 J	731	15.7	20.0 U	0.097 U	0.82 U	0.50 U	0.50 U	0.50 U	1.0 U
MW3	(duplicate) W-210414-RA-18	04/14/2021		456	74.9	1.9	6.7	1.1	412	4.4	0.30 J	0.81 J	759	16.3	8.0 JB	0.098 U	0.79 U	0.50 U	0.50 U	0.50 U	1.0 U
MW4	W-210415-RA-23	04/15/2021		146	46.7	0.20	13.1	0.67 J	78.4	18	1.1	2.0 U	138	36.8	18.7 JF3	0.099 U	0.77 U	0.50 U	0.50 U	0.50 U	1.0 U
MW10	W-210414-RA-20	04/14/2021		165	25.2	0.20 U	8.8	13.6	135	120	0.91 J	1.6 J	1070	882	20.0 U	840	3.1	0.50 U	0.42 J	0.55	3.4
MW12	W-210414-RA-16	04/14/2021		188	11.3	0.31	27.9	5.3	155	1.0 U	0.65 J	1.5 J	100 U	143	20.0 U	480	0.31 J	0.50 U	0.50 U	0.50 U	1.2
MW14	W-210415-RA-26	04/15/2021		145	20.2	1.5	5.6	0.69 J	122	1.0 U	1.0	0.53 JB	100 U	1.2 J	20.0 U	0.095 U	0.82 U	0.50 U	0.50 U	0.50 U	1.0 U
MW14	(duplicate) W-210415-RA-27	04/15/2021		143	18.1	1.5	6.2	0.68 J	121	1.0 U	1.0	2.0 U	100 U	1.2 J	20.4	0.095 U	0.78 U	0.50 U	0.50 U	0.50 U	1.0 U
MW17	W-210415-RA-22	04/15/2021		317	11.0	1.5	113	0.56 J	188	1.0 U	0.68 J	1.3 JB	100 U	2.5 U	20.0 U	0.30	0.78 U	0.50 U	0.50 U	0.50 U	1.0 U
MW23	W-210415-RA-28	04/15/2021		255	45.4	2.2	8.8	0.76 J	190	1.0 U	0.53 J	0.54 JB	100 U	2.5 U	11.6 J	0.096 U	0.77 U	0.50 U	0.50 U	0.50 U	1.0 U
Unconfined Aquifer (Upper)																					
EW11S	W-210413-RA-11	04/13/2021		134	4.5	6.5 H	21.0	2.5	97.3	1.0 U	1.0 U	20.9	100 U	5.4	12.5 JB	1.2	0.78 U	0.50 U	0.50 U	0.50 U	1.0 U
EW13S	W-210415-RA-29	04/15/2021		301	27.1	0.088 J	13.5	4.5	278	5.5	3.6	1.2 JB	18900	3410	11.0 J	9400	20	0.50 U	0.99	0.94	16
MW1	W-210412-RA-02	04/12/2021		87.7	6.6	1.3	5.0	0.87 J	75.5	1.0 U	0.34 J	16.6 B	100 U	1.0 JB	8.0 J	0.41	0.88 U	0.50 U	0.50 U	0.50 U	1.0 U
MW2	W-210413-RA-09	04/13/2021		106	0.33	0.33	1.4	0.91 J	86.6	1.0 U	0.39 J	10.5	2540	108	20.0	0.10 U	0.82 U	0.50 U	0.50 U	0.50 U	1.0 U
MW5	W-210413-RA-08	04/13/2021		310	25.2	0.069 J	22.6	63.7	258	9.7	0.70 J	2.1	16100	8010	10.6 JB	4700	35	0.50 U	0.81	0.85	7.7
MW6S	W-210415-RA-30	04/15/2021		280	10.5	4.9 H	7.3	1.4	257	1.0 U	1.0 U	4.6 B	100 U	3.2	17.3 J	1.1	0.78 U	0.50 U	0.50 U	0.50 U	1.0 U
MW10S	W-210414-RA-21	04/14/2021		401	42.7	0.20 U	34.8	60.8	317	0.51 J	0.77 J	2.8	980	6360	20.0 U	2000	15	0.50 U	0.69	0.21 J	10
MW13	W-210412-RA-04	04/12/2021		52.5	0.61	0.37	2.5	1.8	55.1	1.0 U	1.0 U	13.0 B	97.6 J	1.8 JB	20.0 U	0.25	0.82 U	0.50 U	0.50 U	0.50 U	1.0 U
MW13	(duplicate) W-210412-RA-05	04/12/2021		52.8	0.61	0.37	2.5	1.9	62.3	1.0 U	1.0 U	10.4 B	58.2 J	1.7 JB	20.0 U	0.26	0.83 U	0.50 U	0.50 U	0.50 U	1.0 U
MW16	W-210414-RA-15	04/14/2021		61.5	0.91	0.55	2.6	0.84 J	76.6	1.0 U	0.31 J	3.6	100 U	2.5 U	20.0 U	0.096 U	0.76 U	0.50 U	0.50 U	0.50 U	1.0 U
MW21	W-210412-RA-01	04/12/2021		89.7	76.5	1.8	5.5	0.82 J	48.5	1.0 U	1.0 U	71.0 B	77.7 J	3.8 B	20.0 U	0.65	0.90 U	0.27 J	0.50 U	0.50 U	1.0 U
MW22	W-210413-RA-12	04/13/2021		117	6.5	0.68	3.3	0.75 J	74.3	1.0 U	0.23 J	4.8	389	22.9	9.6 JB	0.10 U	0.84 U	0.50 U	0.50 U	0.50 U	1.0 U
MW25	W-210414-RA-14	04/14/2021		363	4.3	1.6	3.5	1.2	354	1.0 U	0.31 J	1.4 J	100 U	2.5 U	9.4 JB	0.095 U	0.79 U	0.50 U	0.50 U	0.50 U	1.0 U
MW28	W-210415-RA-25	04/15/2021		128	35.0	1.5	3.8	0.89 J	101	1.0 U	0.30 J	0.90 JB	100 U	2.5 U	12.4 J	0.098 U	0.77 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 PAL ²	Hardness, carbonate mg/L	Chloride ³ mg/L	Nitrate (as N) mg/L	Sulfate ³ mg/L	TOC averages mg/L	Alkalinity, total (as CaCO ₃) mg/L	Methane (dissolved) ug/L	Arsenic (dissolved) ug/L	Copper (dissolved) ug/L	Iron (dissolved) ug/L	Manganese (dissolved) ug/L	Zinc (dissolved) ug/L	Pentachlorophenol ug/L	Naphthalene ug/L	Benzene ug/L	Ethylbenzene ug/L	Toluene ug/L	Xylenes (total) ug/L
Unconfined Aquifer (Upper)																					
MW30	W-210413-RA-13	04/13/2021		115	0.74	1.1	2.9	2.2	123	1.0 U	1.0 U	36.0	59.2 J	22.2	20.0 U	190	3.1	0.50 U	0.50 U	0.50 U	0.56 J
MW31	W-210412-RA-03	04/12/2021		201	0.48	0.66	1.8	0.62 J	194	1.0 U	1.0 U	42.3 B	100 U	2.2 JB	9.4 J	0.19	0.78 U	0.50 U	0.50 U	0.50 U	1.0 U
MW32	W-210412-RA-06	04/12/2021		34.9	0.59	0.57	3.7	0.88 J	28.2	8.9	1.0 U	10.6 B	62.2 J	2.2 JB	20.0 U	0.20	0.76 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
- Concentration exceeds the ES
- Concentration exceeds the PAL

Wells MW20 and MW29 were not sampled due to the presence of LNAPL

Table 3.1

**Groundwater Analytical Data - Residential Wells and Onsite Supply Well
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
1 RW05	W-210414-RA-100	04/14/2021	0.099 U	0.80 U	0.50 U	0.50 U	0.50 U	1.0 U
2 RW03	W-210414-RA-101	04/14/2021	0.10 U	0.78 U	0.50 U	0.50 U	0.50 U	1.0 U
3 RW03 (duplicate)	W-210414-RA-102	04/14/2021	0.098 U	0.85 U	0.50 U	0.50 U	0.50 U	1.0 U
4 RW04	W-210414-RA-103	04/14/2021	0.096 U	0.75 U	0.50 U	0.50 U	0.50 U	1.0 U
5 RW01	W-210415-RA-104	04/15/2021	0.10 U	0.83 U	0.50 U	0.50 U	0.50 U	1.0 U
6 RW02	W-210415-RA-106	04/15/2021	0.096 U	0.79 U	0.50 U	0.50 U	0.50 U	1.0 U
7 RW06	W-210426-RA-07	04/26/2021	0.096 U	0.76 U	0.50 U	0.50 U	0.50 U	1.0 U
8 RW06 SHOP	W-210426-RA-08	04/26/2021	0.097 U	0.77 U	0.50 U	0.50 U	0.50 U	1.0 U

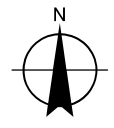
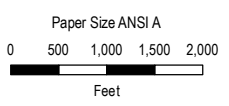
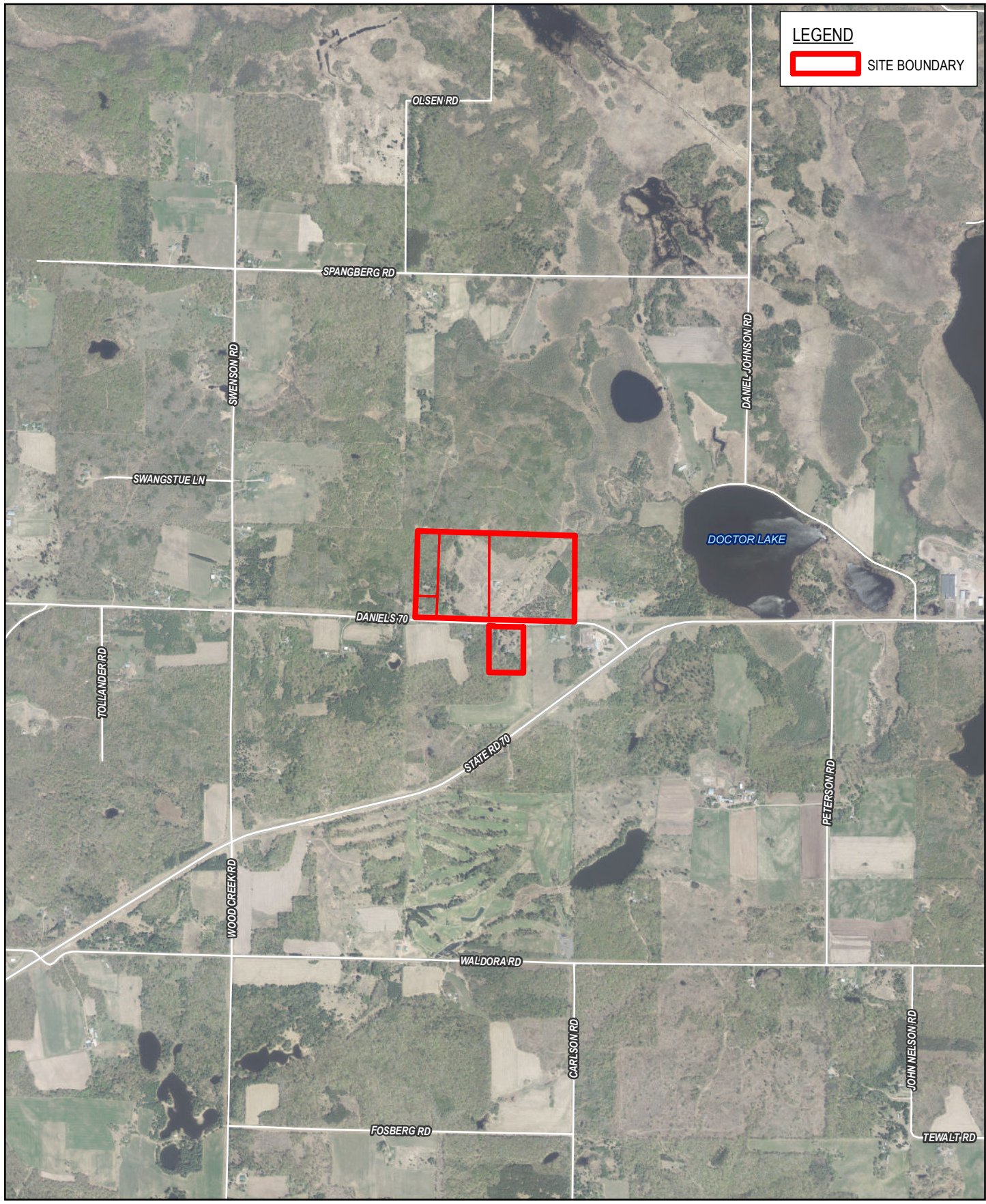
Notes:

- 1 - Enforcement Standard (ES) criteria adapted from Table 1 referred to and incorporated by NR 140.10
- 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

Figures

LEGEND

 SITE BOUNDARY



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

Project No. 11222418-01
Revision No. -
Date 05/13/2021

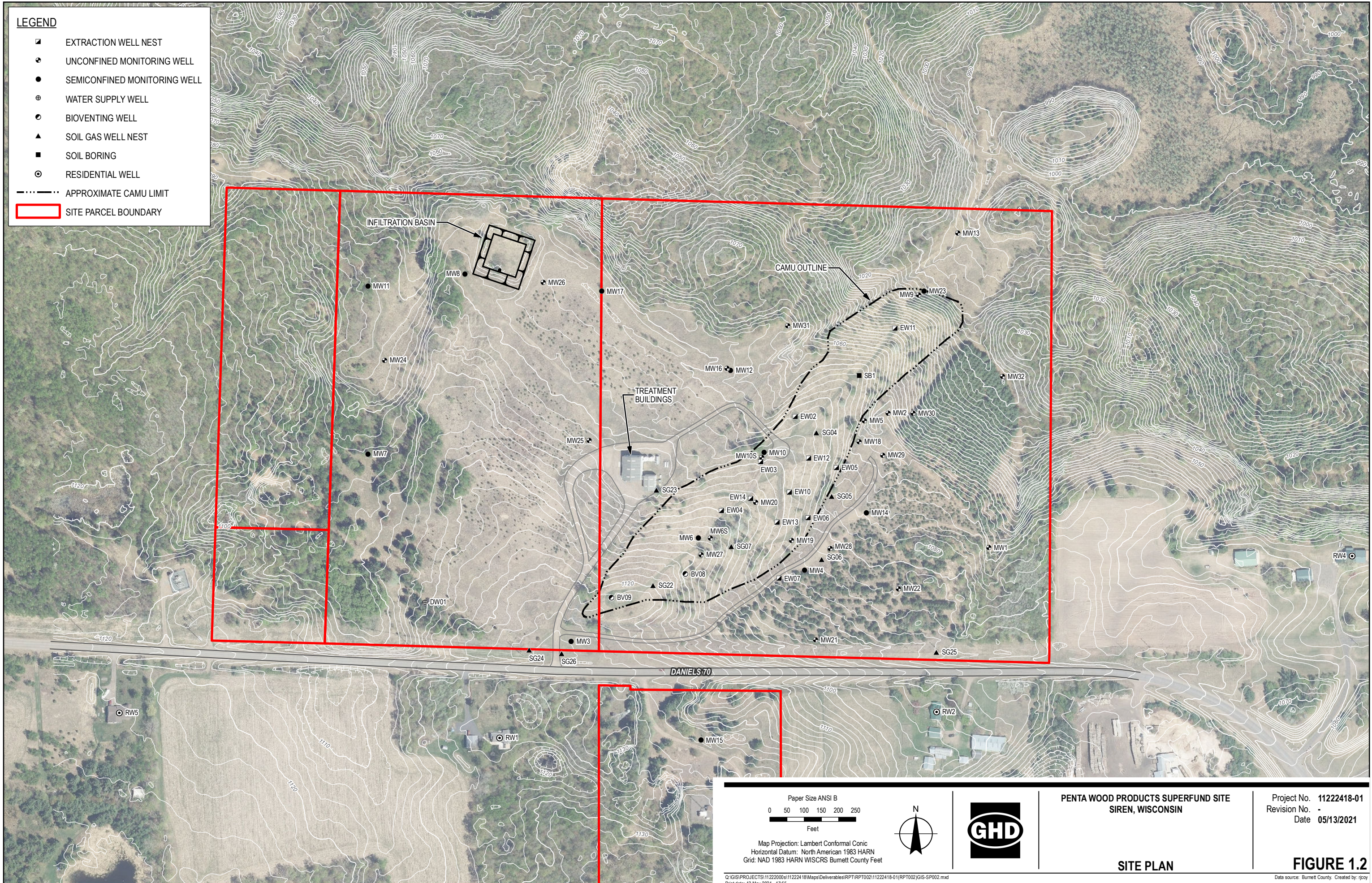
Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983 HARN
Grid: NAD 1983 HARN WISCRS Burnett County Feet

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



Paper Size ANSI B
 0 50 100 150 200 250
 Feet

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

GHD

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

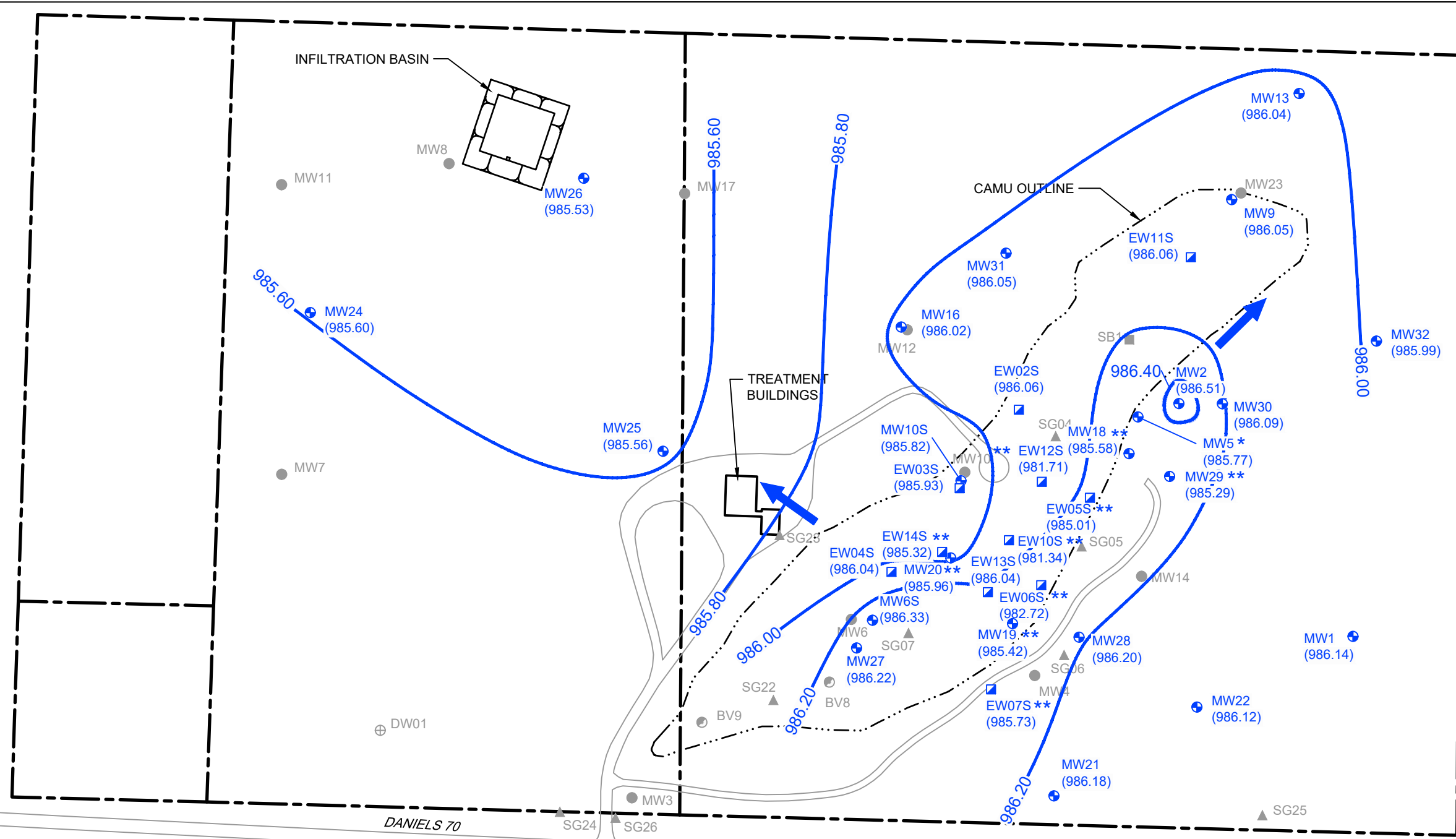
Project No. 11222418-01
 Revision No. -
 Date 05/13/2021

SITE PLAN

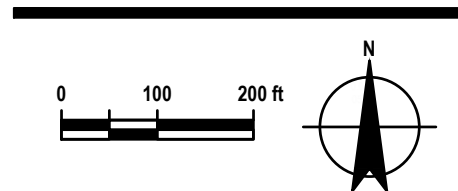
FIGURE 1.2

Data source: Burnett County. Created by: jrcy

Q:\GIS\PROJECTS\11222000s\11222418\Maps\Deliverables\RPT\RPT002\11222418-01\RPT002\GIS-SP002.mxd
 Print date: 13 May 2021 - 17:55



- 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
 - (986.22) GROUNDWATER ELEVATION
 - 986.20 GROUNDWATER ELEVATION CONTOUR
 - GROUNDWATER FLOW DIRECTION
 - * WELL NOT UTILIZED TO INFER GROUNDWATER ELEVATION CONTOURS
 - ** LNAPL PRESENT IN WELL, WELL NOT UTILIZED TO INFER GROUNDWATER ELEVATION CONTOURS

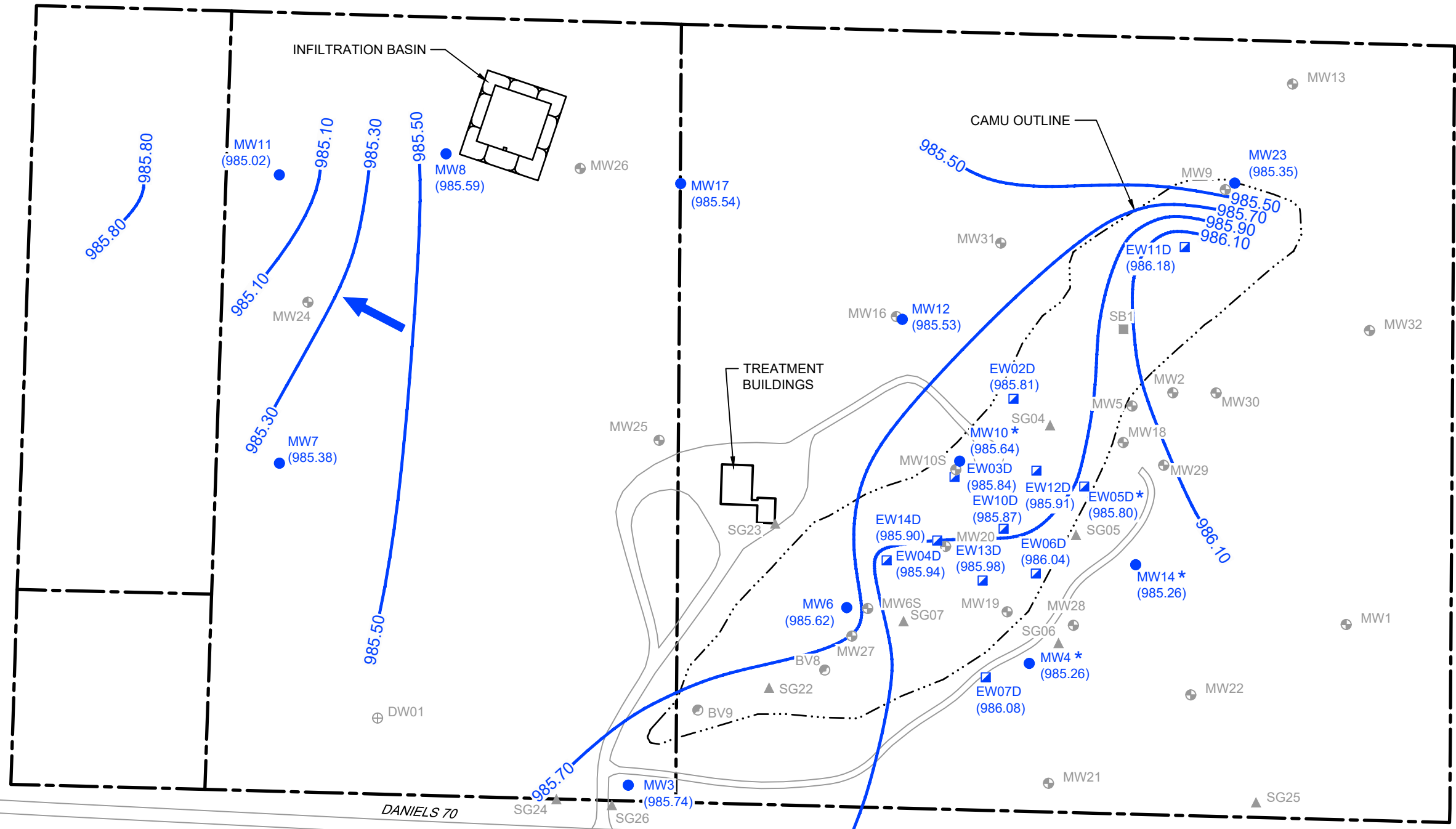


PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

**UNCONFINED (UPPER) AQUIFER
GROUNDWATER CONTOURS
- APRIL 2021**

Project No. 11222418
Date September 2021

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
(985.74)	GROUNDWATER ELEVATION
985.70	GROUNDWATER ELEVATION CONTOUR
→	GROUNDWATER FLOW DIRECTION
*	WELL NOT UTILIZED TO INFER GROUNDWATER ELEVATION CONTOURS

0 100 200 ft

PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

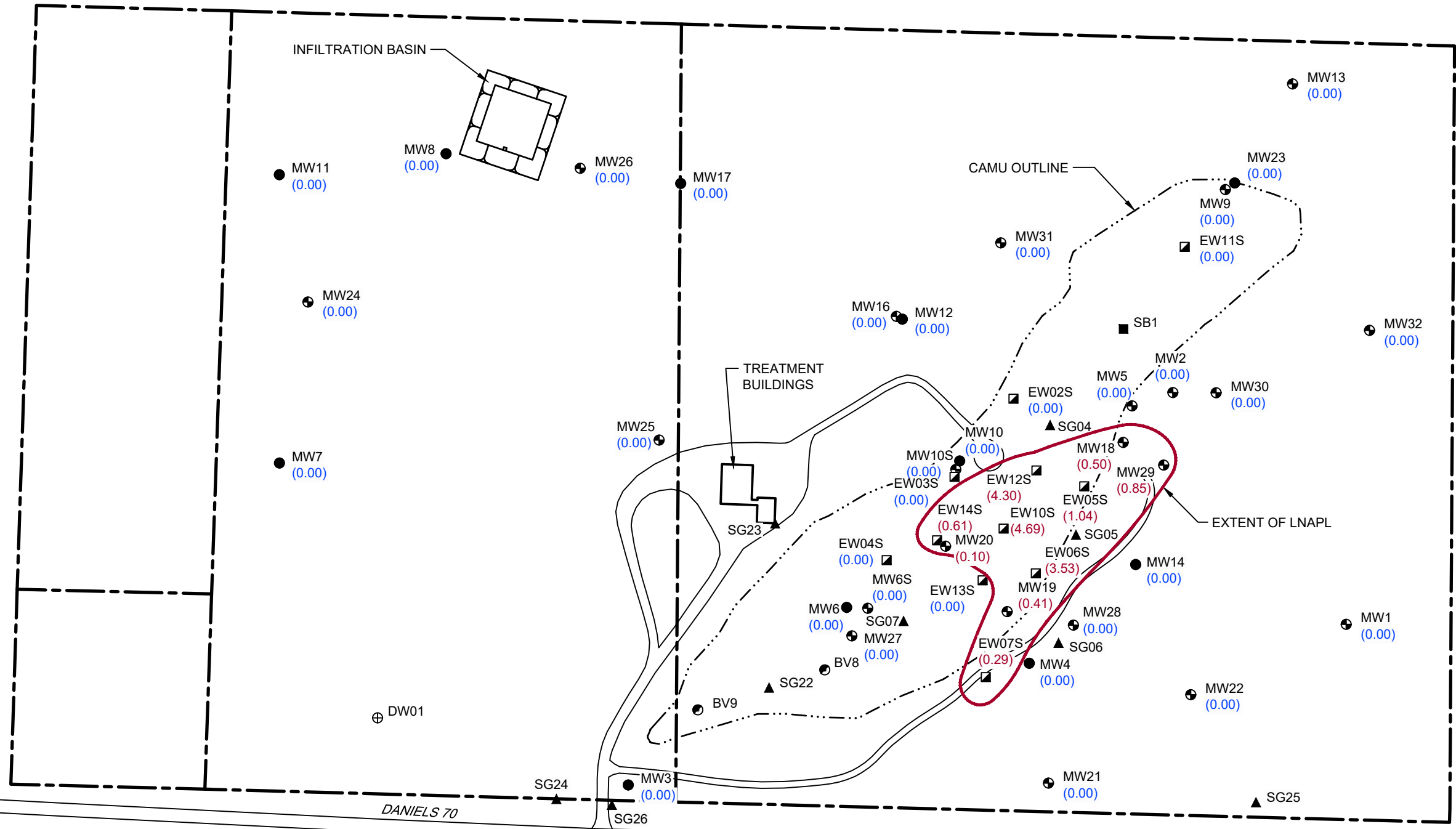
SEMICONFINED (LOWER) AQUIFER
GROUNDWATER CONTOURS
- APRIL 2021

Project No. 11222418
Date May 2021

FIGURE 2.2

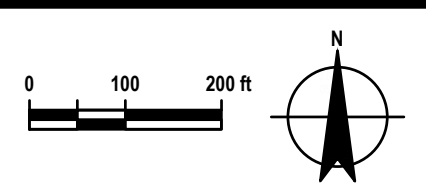
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Plot Date: 14 May 2021 12:50 PM

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

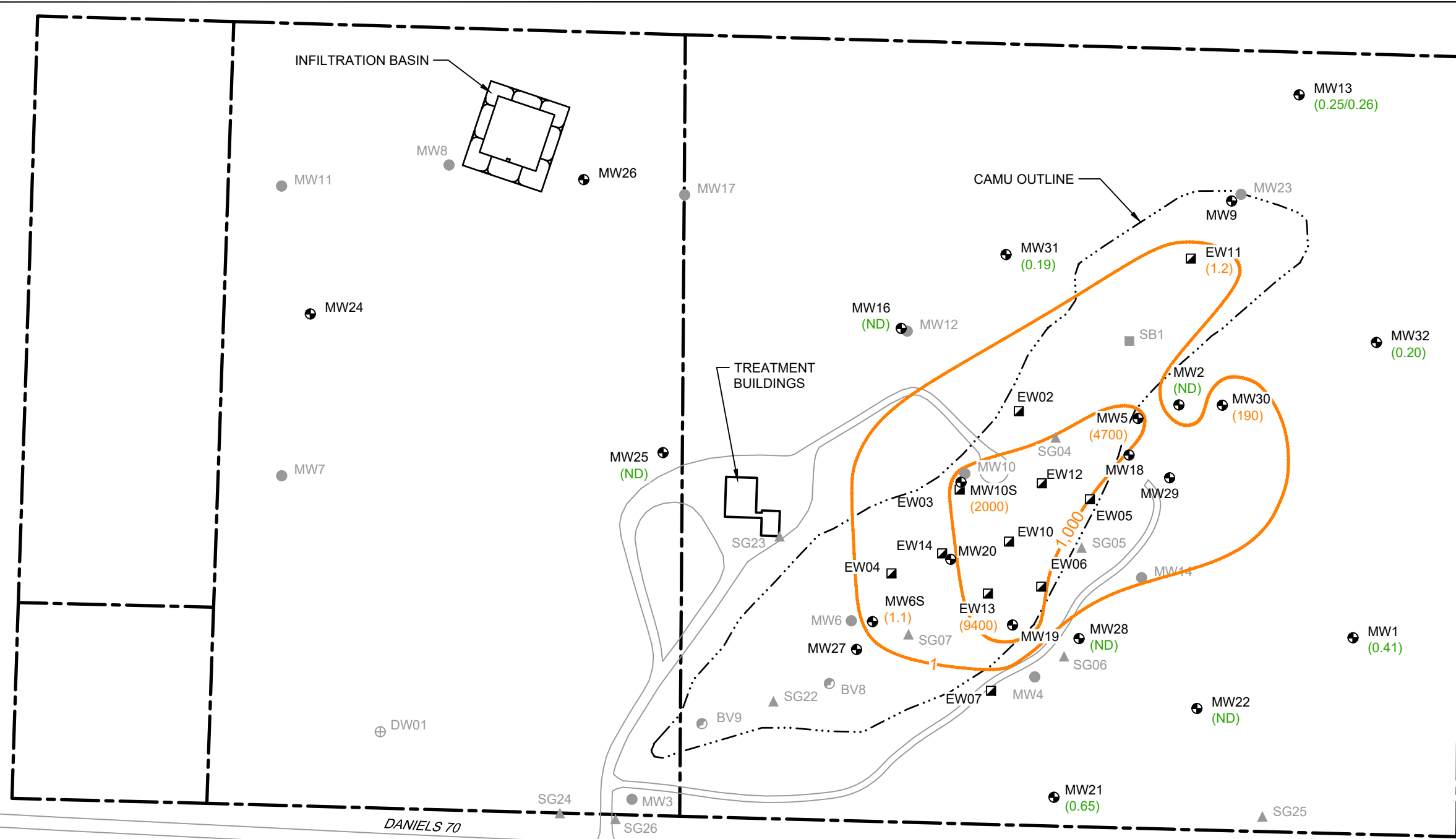


LEGEND

---	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
(0.00)	LNAPL NOT PRESENT
(0.50)	LNAPL THICKNESS (FEET)
—	EXTENT OF LNAPL



	PENTA WOOD PRODUCTS SUPERFUND SITE SIREN, WISCONSIN	Project No. 11222418 Date October 2021
	LNAPL THICKNESS - APRIL 2021	FIGURE 2.3



LEGEND

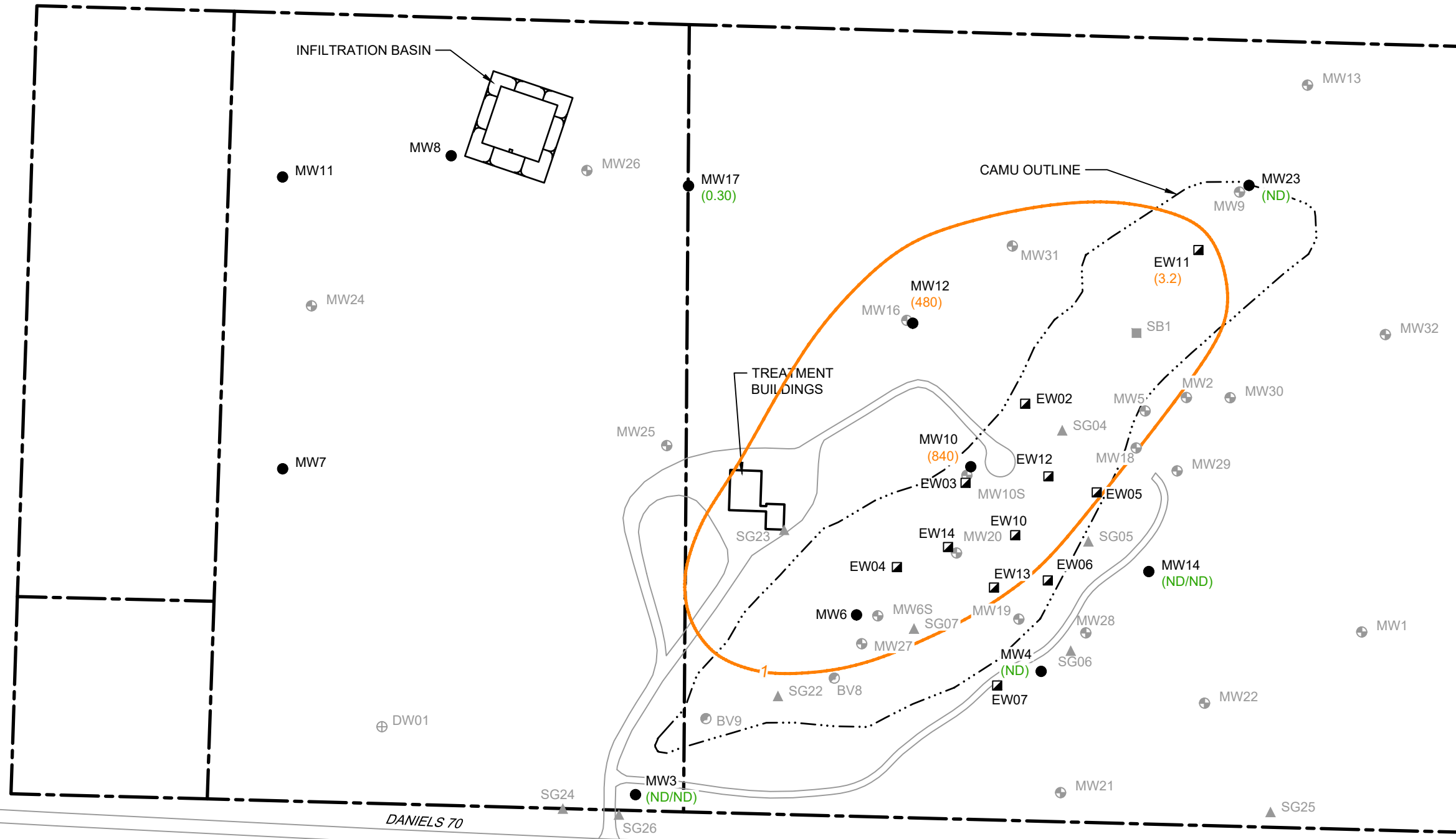
- ▬ PARCEL BOUNDARY
- EW11 EXTRACTION WELL NEST
- BV09 BIOVENTING WELL
- ▲ SG05 SOIL GAS WELL NEST
- ⊕ MW27 UNCONFINED MONITORING WELL LOCATION
- MW7 SEMICONFINED MONITORING WELL LOCATION
- ⊕ DW01 WATER SUPPLY WELL LOCATION
- SB1 SOIL BORING LOCATION
- RW1 RESIDENTIAL WELL
- (0.65) PENTACHLOROPHENOL CONCENTRATION (µg/L)
- (0.25/0.26) PENTACHLOROPHENOL / DUPLICATE CONCENTRATION (µg/L)
- 1 — PENTACHLOROPHENOL CONCENTRATION CONTOUR (µg/L)
- (ND) NOT DETECTED
- (0.41) PENTACHLOROPHENOL CONCENTRATION (µg/L) MEETS ENFORCEMENT STANDARD OF 1.0 µg/L
- (2000) 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 2021**

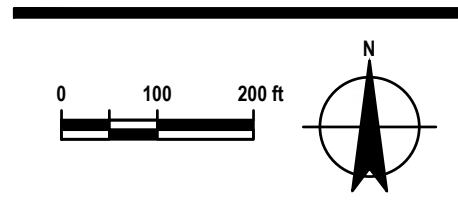
Project No. 11222418
Date October 2021

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
- (0.30) PENTACHLOROPHENOL CONCENTRATION (µg/L)
- (ND/ND) PENTACHLOROPHENOL / DUPLICATE CONCENTRATION (µg/L)
- 1 — PENTACHLOROPHENOL CONCENTRATION CONTOUR (µg/L)
- (ND) NOT DETECTED
- (0.30) PENTACHLOROPHENOL CONCENTRATION (µg/L) MEETS ENFORCEMENT STANDARD OF 1.0 µg/L
- (480) PENTACHLOROPHENOL CONCENTRATION (µg/L) EXCEEDS ENFORCEMENT STANDARD OF 1.0 µg/L

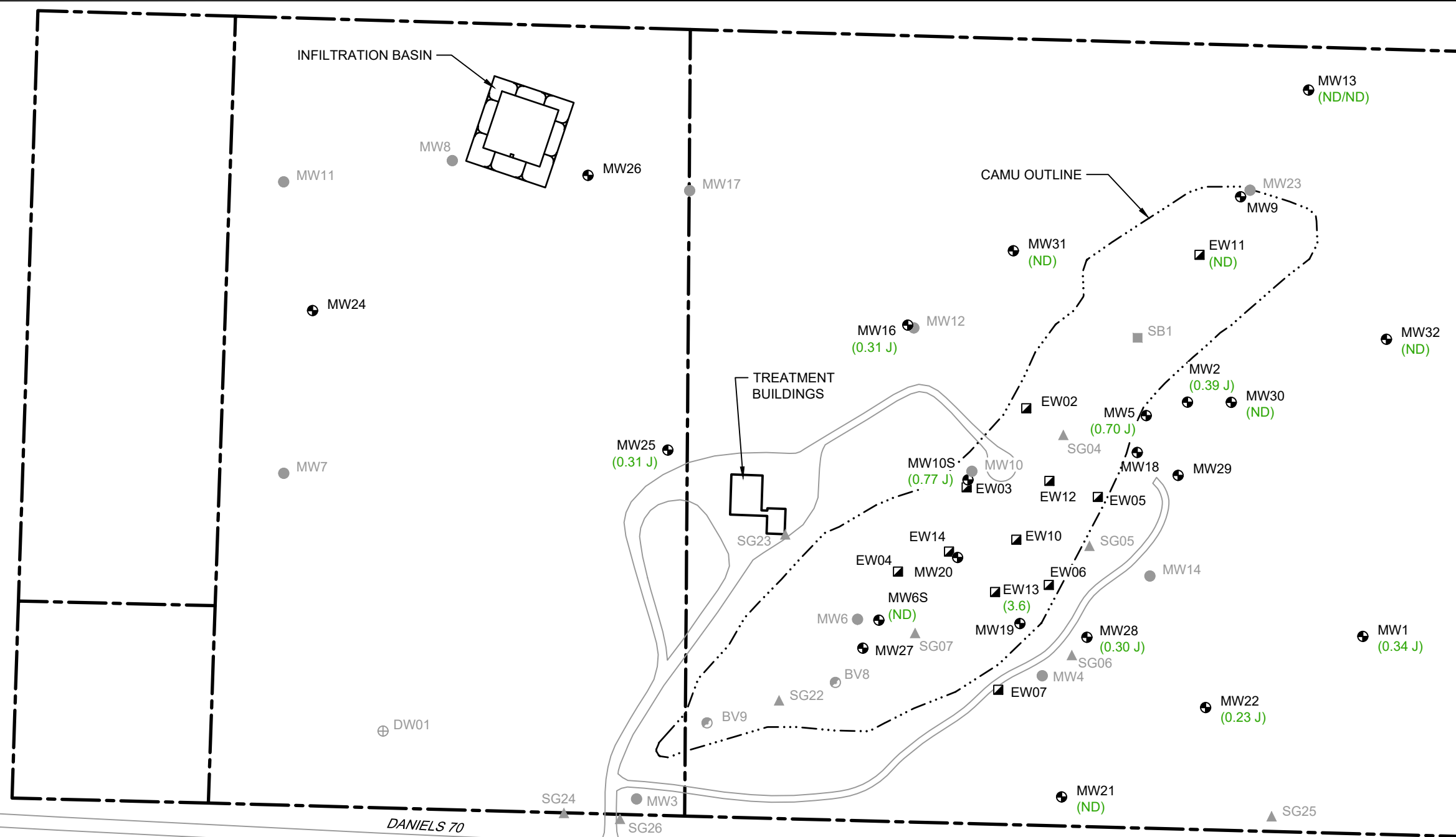


PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

**SEMICONFINED (LOWER) AQUIFER
PENTACHLOROPHENOL
CONCENTRATIONS - APRIL 2021**

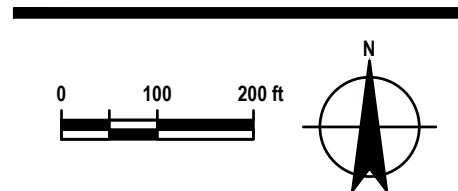
Project No. 11222418
Date October 2021

FIGURE 2.5



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) ARSENIC CONCENTRATION (µg/L)
- (ND/ND) ARSENIC / DUPLICATE CONCENTRATION (µg/L)
- (ND) NOT DETECTED
- J CONCENTRATION WAS BETWEEN THE LIMIT OF DETECTION AND LIMIT OF QUANTITATION
- (3.6) ARSENIC CONCENTRATION (µg/L) MEETS ENFORCEMENT STANDARD OF 10 µg/L

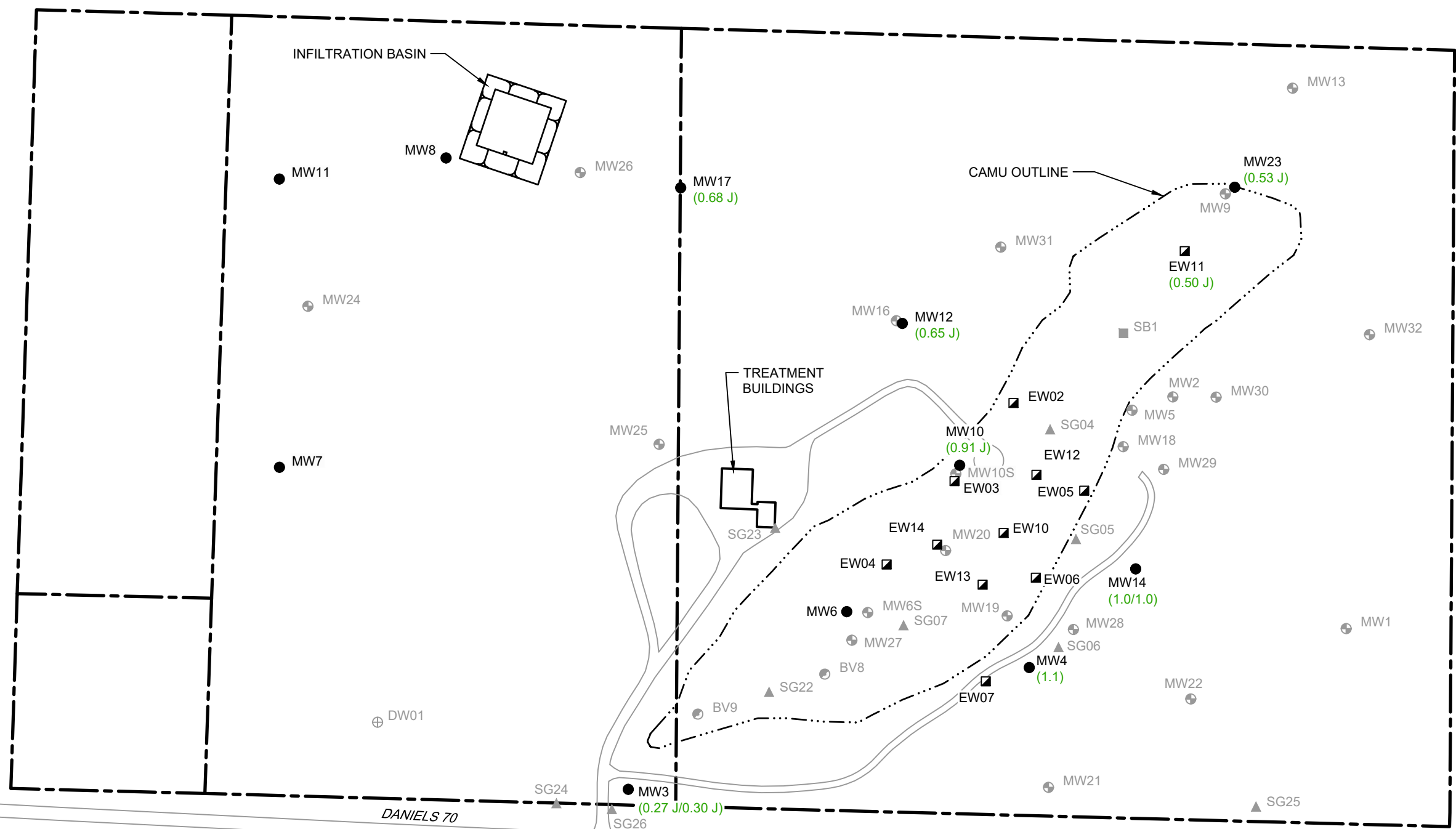


PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

**UNCONFINED (UPPER) AQUIFER
ARSENIC CONCENTRATIONS**
- APRIL 2021

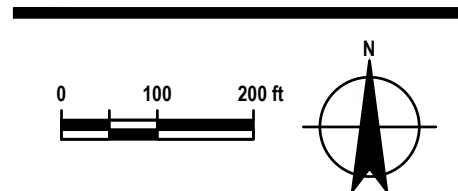
Project No. 11222418
Date October 2021

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
- (1.1) ARSENIC CONCENTRATION (µg/L)
- (1.0/1.0) ARSENIC / DUPLICATE CONCENTRATION (µg/L)
- (ND) NOT DETECTED
- J CONCENTRATION WAS BETWEEN THE LIMIT OF DETECTION AND LIMIT OF QUANTITATION
- (1.1) ARSENIC CONCENTRATION (µg/L) MEETS ENFORCEMENT STANDARD OF 10 µg/L

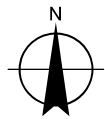
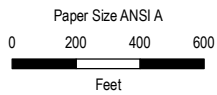


PENTA WOOD PRODUCTS SUPERFUND SITE
SIREN, WISCONSIN

**SEMICONFINED (LOWER) AQUIFER
ARSENIC CONCENTRATIONS**
- APRIL 2021

Project No. 11222418
Date October 2021

FIGURE 2.7



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. 11222418-01
Revision No. -
Date 05/13/2021

RESIDENTIAL WELL LOCATIONS

FIGURE 3.1

Appendices

Appendix A

Historical Site Data

Appendix A.1

Historical Groundwater Analytical 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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 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	2	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	1 U	50 UJ		5 U	40													
DW01	5/4/2004	N	10.0 U	0.102 UB	0.243 J	61.5 R	194 R	27300	108 R	2710 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		58.0 R	2590 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		4.0 UJ	1900 J		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		15 J	1500 J		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		10 UB	620 J		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		2.4 J	1100		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	33000 J	4.6 J	81.2 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							

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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											2.1 J	
EW02D	4/23/2015	N		17																			
EW02D	4/14/2016	N	0.15 J	370	0.49 J	3.8	299		384	46.7		1.7	0.50 U	1.0 U	1.0 U	2.0 U	55.0	12.1	70.6	0.70		8.7	4.8
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	

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Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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
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

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Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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
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
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

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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
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
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							
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													

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Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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
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

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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
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	0.22 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

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L	
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	
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	

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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
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
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

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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
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

Appendix A.1

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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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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
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
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

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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
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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 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													

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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
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

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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																		3.8 J			
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
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

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Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 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	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
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							570				
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													

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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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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
MW10S	10/24/2008	N	2.0 UJ									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
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											

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Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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											
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

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MW12	5/14/2002	N2		4300	1.5 J	5 J	11.2 U		1670	9.3 J									520				
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

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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
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

Appendix A.1

Historical Groundwater Analytical Data
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Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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
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	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
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

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Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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
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
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			

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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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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													
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

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Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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
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													
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

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Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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
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

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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											
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

Appendix A.1

Historical Groundwater Analytical Data
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Siren, Wisconsin

Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L	
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										1.25 U				
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	
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	

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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
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							

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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	0.22 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
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
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

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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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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
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
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										5			
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										30 =			
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	3.2		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

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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									300				
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	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	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													
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

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 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	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	100 UJ		2.5 U	20 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

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Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
MW28	10/17/2012	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																		2.2 J			
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
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
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

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Penta Wood Products Superfund Site
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Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L	
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	
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	
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	
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	
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																				

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Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
RW01	4/23/2001	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							
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											

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Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L	
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																				

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Location	Date ²	Compound ¹ Units Type ³	Methane ug/L	Pentachlorophenol ug/L	Arsenic ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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							
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							
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							

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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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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							
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							

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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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							
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							
RW03	9/18/2007	N		0.093 UJ								0.93 R	1.0 U	1.0 U	1.0 U	2.0 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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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							

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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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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							
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																			

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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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
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							
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																			
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							

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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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L
RW05	5/19/2010	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							
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							
RW06	10/10/2016	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 ug/L	Copper ug/L	Iron ug/L	Magnesium ug/L	Manganese ug/L	Zinc 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 mg/L	Nitrate (as N) mg/L	Oil and grease (HEM), polar mg/L	Sulfate mg/L	Total organic carbon (TOC) mg/L	
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 SHOP	4/17/2018	N		0.024 U								0.79 U	0.50 U	0.50 U	1.5	1.0 U								
RW06 SHOP	10/16/2018	N		0.095 U								0.75 U	0.50 U	0.50 U	1.7	1.0 U								
RW06 SHOP	4/22/2019	N		0.095 U								0.23 U	0.15 U	0.18 U	0.50 U	0.22 U								
RW06 SHOP	10/1/2019	N		0.086 U								0.25 U	0.15 U	0.18 U	0.15 U	0.22 U								
RW06 SHOP	4/26/2021	N		0.097 U								0.77 U	0.50 U	0.50 U	0.50 U	1.0 U								

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.
- UJ Compound was not detected above the estimated reporting limit.

Appendix A.2

**Historical LNAPL Thickness – Monitoring
Wells**

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

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
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

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

**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

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

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

Note:

* - 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

Appendix A.6

**LNAPL Thickness and Recovery
Summary – Extraction Wells**

**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 Groundwater extraction system remained shutdown pending carbon change-out Groundwater extraction system remained shutdown pending carbon change-out Groundwater extraction system restarted after 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		Groundwater extraction rate increased to 10 gpm
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		

**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	Temporary system shutdown due to alarm condition
EW06	11/12/2014	107.80	98.30	9.50	NA	
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	
EW06	12/11/2014	100.35	98.40	1.95	12.0	
EW06	12/15/2014	108.40	98.01	10.39	NA	Measurements recorded prior to LNAPL removal Measurements recorded immediately after LNAPL removal, groundwater extraction system shutdown pending carbon change-out
EW06	12/23/2014	109.35	98.01	11.34	NA	
EW06	12/23/2014	99.50	98.35	1.15	13.0	
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

Appendix B

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

ANALYTICAL REPORT

Eurofins TestAmerica, Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

Laboratory Job ID: 500-197485-1
Client Project/Site: Penta Wood 11222418

For:
GHD Services Inc.
1801 Old Highway 8 NW
Suite 114
St. Paul, Minnesota 55112

Attn: Mr. Grant Anderson

Jodie Bracken

Authorized for release by:
4/29/2021 4:17:36 PM

Jodie Bracken, Project Management Assistant II
Jodie.Bracken@Eurofinset.com

Designee for
Richard Wright, Senior Project Manager
(708)746-0045
Richard.Wright@Eurofinset.com

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

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

Job ID: 500-197485-1

Job ID: 500-197485-1

Laboratory: Eurofins TestAmerica, Chicago

Narrative

Job Narrative 500-197485-1

Receipt

The samples were received on 4/13/2021 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 5 coolers at receipt time were 2.9° C, 4.3° C, 4.7° C, 4.8° C and 5.0° C.

Receipt Exceptions

A trip blank was submitted for analysis with these samples; however, it was not listed on the Chain of Custody (COC). The trip blank was added to the COC as sample #7 by TestAmerica personnel and logged in for analysis.

One or more containers for the following sample(s) was received empty: Sample #6 "W-210412-RA-06" nitric container for total metals and hardness. Poured off from amber 1-liter and preserved.

The following metals sample was received unpreserved and was preserved by the laboratory: Sample #6 "W-210412-RA-06" Regulatory documents require a 24-hour waiting period from the time of the addition of the acid preservative to the time of digestion. Preserved 4/13/21 1120.

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

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

Metals

Method SM 2340B: The method blank for preparation batch 500-593409 and analytical batch 500-593567 contained Calcium above the reporting limit (RL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

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

General Chemistry

Methods 9060A, SM 5310C: The method blank for analytical batch 500-594634 was above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Methods 9060A, SM 5310C: Sample: W-210412-RA-02 (500-197485-2) was rerun due to an RPD value that was not within ten percent of the two reported results. Due so insufficient sample volume to run the sample a third time, the data has been 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: 500-197485-1

Client Sample ID: W-210412-RA-01

Lab Sample ID: 500-197485-1

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.27	J	0.50	0.15	ug/L	1		8260B	Total/NA
Pentachlorophenol	0.65		0.095	0.086	ug/L	1		8151A	Total/NA
Copper	71.0	B	2.0	0.50	ug/L	1		6020A	Dissolved
Iron	77.7	J	100	46.7	ug/L	1		6020A	Dissolved
Manganese	3.8	B	2.5	0.79	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	89.7		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	76.5		5.0	4.3	mg/L	25		300.0	Total/NA
Nitrate as N	1.8		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	5.5		0.20	0.095	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	48.5		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-210412-RA-02

Lab Sample ID: 500-197485-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.41		0.096	0.086	ug/L	1		8151A	Total/NA
Arsenic	0.34	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	16.6	B	2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	1.0	J B	2.5	0.79	ug/L	1		6020A	Dissolved
Zinc	8.0	J	20.0	6.9	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	87.7		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	6.6		0.40	0.34	mg/L	2		300.0	Total/NA
Nitrate as N	1.3		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	5.0		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.87	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	75.5		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-210412-RA-03

Lab Sample ID: 500-197485-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.19		0.097	0.087	ug/L	1		8151A	Total/NA
Copper	42.3	B	2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	2.2	J B	2.5	0.79	ug/L	1		6020A	Dissolved
Zinc	9.4	J	20.0	6.9	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	201		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	0.48		0.20	0.17	mg/L	1		300.0	Total/NA
Nitrate as N	0.66		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	1.8		0.20	0.095	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	194		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-210412-RA-04

Lab Sample ID: 500-197485-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.25		0.096	0.087	ug/L	1		8151A	Total/NA
Copper	13.0	B	2.0	0.50	ug/L	1		6020A	Dissolved
Iron	97.6	J	100	46.7	ug/L	1		6020A	Dissolved
Manganese	1.8	J B	2.5	0.79	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	52.5		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	0.61		0.20	0.17	mg/L	1		300.0	Total/NA
Nitrate as N	0.37		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	2.5		0.20	0.095	mg/L	1		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

Detection Summary

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

Job ID: 500-197485-1

Client Sample ID: W-210412-RA-04 (Continued)

Lab Sample ID: 500-197485-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon - Duplicates	1.8		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	55.1		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-210412-RA-05

Lab Sample ID: 500-197485-5

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.26		0.096	0.087	ug/L	1		8151A	Total/NA
Copper	10.4	B	2.0	0.50	ug/L	1		6020A	Dissolved
Iron	58.2	J	100	46.7	ug/L	1		6020A	Dissolved
Manganese	1.7	J B	2.5	0.79	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	52.8		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	0.61		0.20	0.17	mg/L	1		300.0	Total/NA
Nitrate as N	0.37		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	2.5		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	1.9		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	62.3		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-210412-RA-06

Lab Sample ID: 500-197485-6

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	8.9		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	0.20		0.099	0.089	ug/L	1		8151A	Total/NA
Copper	10.6	B	2.0	0.50	ug/L	1		6020A	Dissolved
Iron	62.2	J	100	46.7	ug/L	1		6020A	Dissolved
Manganese	2.2	J B	2.5	0.79	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	34.9		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	0.59		0.20	0.17	mg/L	1		300.0	Total/NA
Nitrate as N	0.57		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	3.7		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.88	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	28.2		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: Trip Blank

Lab Sample ID: 500-197485-7

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

Method Summary

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

Job ID: 500-197485-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CHI
RSK-175	Dissolved Gases (GC)	RSK	TAL CAN
8151A	Herbicides (GC)	SW846	TAL CHI
6020A	Metals (ICP/MS)	SW846	TAL CHI
SM 2340B	Total Hardness (as CaCO ₃) by calculation	SM	TAL CHI
300.0	Anions, Ion Chromatography	MCAWW	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
SM 2320B	Alkalinity	SM	TAL CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CHI
3010A	Preparation, Total Metals	SW846	TAL CHI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL CHI
5030B	Purge and Trap	SW846	TAL CHI
8151A	Extraction (Herbicides)	SW846	TAL CHI

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL CHI = Eurofins TestAmerica, 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: 500-197485-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
500-197485-1	W-210412-RA-01	Water	04/12/21 10:22	04/13/21 09:55	
500-197485-2	W-210412-RA-02	Water	04/12/21 11:13	04/13/21 09:55	
500-197485-3	W-210412-RA-03	Water	04/12/21 12:13	04/13/21 09:55	
500-197485-4	W-210412-RA-04	Water	04/12/21 12:13	04/13/21 09:55	
500-197485-5	W-210412-RA-05	Water	04/12/21 12:47	04/13/21 09:55	
500-197485-6	W-210412-RA-06	Water	04/12/21 13:23	04/13/21 09:55	
500-197485-7	Trip Blank	Water	04/12/21 00:00	04/13/21 09:55	

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Client Sample Results

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

Job ID: 500-197485-1

Client Sample ID: W-210412-RA-01

Lab Sample ID: 500-197485-1

Date Collected: 04/12/21 10:22

Matrix: Water

Date Received: 04/13/21 09:55

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.27	J	0.50	0.15	ug/L			04/20/21 13:58	1
Toluene	<0.15		0.50	0.15	ug/L			04/20/21 13:58	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/20/21 13:58	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/20/21 13:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	117		75 - 126		04/20/21 13:58	1
Toluene-d8 (Surr)	98		75 - 120		04/20/21 13:58	1
4-Bromofluorobenzene (Surr)	83		72 - 124		04/20/21 13:58	1
Dibromofluoromethane	115		75 - 120		04/20/21 13:58	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.28		0.90	0.28	ug/L		04/15/21 18:20	04/16/21 10:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	88		36 - 120	04/15/21 18:20	04/16/21 10:23	1
2-Fluorobiphenyl (Surr)	81		34 - 110	04/15/21 18:20	04/16/21 10:23	1
Terphenyl-d14 (Surr)	96		40 - 145	04/15/21 18:20	04/16/21 10:23	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			04/19/21 12:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	111		60 - 140		04/19/21 12:01	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.65		0.095	0.086	ug/L		04/19/21 08:10	04/20/21 00:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	96		25 - 130	04/19/21 08:10	04/20/21 00:06	1

Method: 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		04/13/21 18:56	04/21/21 00:26	1
Copper	71.0	B	2.0	0.50	ug/L		04/13/21 18:56	04/21/21 00:26	1
Iron	77.7	J	100	46.7	ug/L		04/13/21 18:56	04/21/21 00:26	1
Manganese	3.8	B	2.5	0.79	ug/L		04/13/21 18:56	04/21/21 00:26	1
Zinc	<6.9		20.0	6.9	ug/L		04/13/21 18:56	04/21/21 00:26	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	89.7		0.91	0.46	mg/L		04/15/21 07:57	04/16/21 07:44	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	76.5		5.0	4.3	mg/L			04/14/21 22:47	25
Nitrate as N	1.8		0.20	0.068	mg/L			04/13/21 18:24	1
Sulfate	5.5		0.20	0.095	mg/L			04/13/21 18:24	1
Total Organic Carbon - Duplicates	0.82	J	1.0	0.47	mg/L			04/19/21 09:13	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-197485-1

Client Sample ID: W-210412-RA-01

Lab Sample ID: 500-197485-1

Date Collected: 04/12/21 10:22

Matrix: Water

Date Received: 04/13/21 09:55

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	48.5		5.0	3.7	mg/L			04/14/21 16:35	1

Client Sample Results

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

Job ID: 500-197485-1

Client Sample ID: W-210412-RA-02

Lab Sample ID: 500-197485-2

Date Collected: 04/12/21 11:13

Matrix: Water

Date Received: 04/13/21 09:55

Method: 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			04/20/21 15:23	1
Toluene	<0.15		0.50	0.15	ug/L			04/20/21 15:23	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/20/21 15:23	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/20/21 15:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	117		75 - 126		04/20/21 15:23	1
Toluene-d8 (Surr)	99		75 - 120		04/20/21 15:23	1
4-Bromofluorobenzene (Surr)	83		72 - 124		04/20/21 15:23	1
Dibromofluoromethane	115		75 - 120		04/20/21 15:23	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.27		0.88	0.27	ug/L		04/15/21 18:20	04/16/21 10:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	81		36 - 120	04/15/21 18:20	04/16/21 10:50	1
2-Fluorobiphenyl (Surr)	75		34 - 110	04/15/21 18:20	04/16/21 10:50	1
Terphenyl-d14 (Surr)	90		40 - 145	04/15/21 18:20	04/16/21 10:50	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			04/19/21 12:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	108		60 - 140		04/19/21 12:53	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.41		0.096	0.086	ug/L		04/19/21 08:10	04/20/21 01:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	97		25 - 130	04/19/21 08:10	04/20/21 01:04	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.34	J	1.0	0.23	ug/L		04/13/21 18:56	04/21/21 00:50	1
Copper	16.6	B	2.0	0.50	ug/L		04/13/21 18:56	04/21/21 00:50	1
Iron	<46.7		100	46.7	ug/L		04/13/21 18:56	04/21/21 00:50	1
Manganese	1.0	J B	2.5	0.79	ug/L		04/13/21 18:56	04/21/21 00:50	1
Zinc	8.0	J	20.0	6.9	ug/L		04/13/21 18:56	04/21/21 00:50	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	87.7		0.91	0.46	mg/L		04/15/21 07:57	04/16/21 07:44	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.6		0.40	0.34	mg/L			04/14/21 23:25	2
Nitrate as N	1.3		0.20	0.068	mg/L			04/13/21 19:04	1
Sulfate	5.0		0.20	0.095	mg/L			04/13/21 19:04	1
Total Organic Carbon - Duplicates	0.87	J	1.0	0.47	mg/L			04/25/21 16:32	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-197485-1

Client Sample ID: W-210412-RA-02

Lab Sample ID: 500-197485-2

Date Collected: 04/12/21 11:13

Matrix: Water

Date Received: 04/13/21 09:55

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	75.5		5.0	3.7	mg/L			04/14/21 16:51	1

Client Sample Results

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

Job ID: 500-197485-1

Client Sample ID: W-210412-RA-03

Lab Sample ID: 500-197485-3

Date Collected: 04/12/21 12:13

Matrix: Water

Date Received: 04/13/21 09:55

Method: 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			04/20/21 15:51	1
Toluene	<0.15		0.50	0.15	ug/L			04/20/21 15:51	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/20/21 15:51	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/20/21 15:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	117		75 - 126		04/20/21 15:51	1
Toluene-d8 (Surr)	98		75 - 120		04/20/21 15:51	1
4-Bromofluorobenzene (Surr)	84		72 - 124		04/20/21 15:51	1
Dibromofluoromethane	116		75 - 120		04/20/21 15:51	1

Method: 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		04/15/21 18:20	04/16/21 11:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	74		36 - 120	04/15/21 18:20	04/16/21 11:17	1
2-Fluorobiphenyl (Surr)	67		34 - 110	04/15/21 18:20	04/16/21 11:17	1
Terphenyl-d14 (Surr)	96		40 - 145	04/15/21 18:20	04/16/21 11:17	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			04/19/21 13:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	109		60 - 140		04/19/21 13:27	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.19		0.097	0.087	ug/L		04/19/21 08:10	04/20/21 01:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	111		25 - 130	04/19/21 08:10	04/20/21 01:24	1

Method: 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		04/13/21 18:56	04/21/21 00:54	1
Copper	42.3	B	2.0	0.50	ug/L		04/13/21 18:56	04/21/21 00:54	1
Iron	<46.7		100	46.7	ug/L		04/13/21 18:56	04/21/21 00:54	1
Manganese	2.2	J B	2.5	0.79	ug/L		04/13/21 18:56	04/21/21 00:54	1
Zinc	9.4	J	20.0	6.9	ug/L		04/13/21 18:56	04/21/21 00:54	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	201		0.91	0.46	mg/L		04/15/21 07:57	04/16/21 07:44	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.48		0.20	0.17	mg/L			04/13/21 19:18	1
Nitrate as N	0.66		0.20	0.068	mg/L			04/13/21 19:18	1
Sulfate	1.8		0.20	0.095	mg/L			04/13/21 19:18	1
Total Organic Carbon - Duplicates	0.62	J	1.0	0.47	mg/L			04/25/21 17:08	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-197485-1

Client Sample ID: W-210412-RA-03

Lab Sample ID: 500-197485-3

Date Collected: 04/12/21 12:13

Matrix: Water

Date Received: 04/13/21 09:55

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	194		5.0	3.7	mg/L			04/14/21 16:57	1

Client Sample Results

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

Job ID: 500-197485-1

Client Sample ID: W-210412-RA-04

Lab Sample ID: 500-197485-4

Date Collected: 04/12/21 12:13

Matrix: Water

Date Received: 04/13/21 09:55

Method: 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			04/20/21 16:20	1
Toluene	<0.15		0.50	0.15	ug/L			04/20/21 16:20	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/20/21 16:20	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/20/21 16:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	119		75 - 126		04/20/21 16:20	1
Toluene-d8 (Surr)	98		75 - 120		04/20/21 16:20	1
4-Bromofluorobenzene (Surr)	84		72 - 124		04/20/21 16:20	1
Dibromofluoromethane	115		75 - 120		04/20/21 16:20	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.82	0.25	ug/L		04/15/21 18:20	04/16/21 11:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	88		36 - 120	04/15/21 18:20	04/16/21 11:44	1
2-Fluorobiphenyl (Surr)	80		34 - 110	04/15/21 18:20	04/16/21 11:44	1
Terphenyl-d14 (Surr)	95		40 - 145	04/15/21 18:20	04/16/21 11:44	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			04/19/21 13:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	112		60 - 140		04/19/21 13:44	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.25		0.096	0.087	ug/L		04/19/21 08:10	04/20/21 01:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	111		25 - 130	04/19/21 08:10	04/20/21 01:43	1

Method: 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		04/13/21 18:56	04/21/21 00:57	1
Copper	13.0	B	2.0	0.50	ug/L		04/13/21 18:56	04/21/21 00:57	1
Iron	97.6	J	100	46.7	ug/L		04/13/21 18:56	04/21/21 00:57	1
Manganese	1.8	J B	2.5	0.79	ug/L		04/13/21 18:56	04/21/21 00:57	1
Zinc	<6.9		20.0	6.9	ug/L		04/13/21 18:56	04/21/21 00:57	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	52.5		0.91	0.46	mg/L		04/15/21 07:57	04/16/21 07:44	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.61		0.20	0.17	mg/L			04/13/21 19:32	1
Nitrate as N	0.37		0.20	0.068	mg/L			04/13/21 19:32	1
Sulfate	2.5		0.20	0.095	mg/L			04/13/21 19:32	1
Total Organic Carbon - Duplicates	1.8		1.0	0.47	mg/L			04/25/21 17:24	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-197485-1

Client Sample ID: W-210412-RA-04

Lab Sample ID: 500-197485-4

Date Collected: 04/12/21 12:13

Matrix: Water

Date Received: 04/13/21 09:55

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	55.1		5.0	3.7	mg/L			04/14/21 17:03	1

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

Client Sample Results

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

Job ID: 500-197485-1

Client Sample ID: W-210412-RA-05

Lab Sample ID: 500-197485-5

Date Collected: 04/12/21 12:47

Matrix: Water

Date Received: 04/13/21 09:55

Method: 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			04/20/21 16:48	1
Toluene	<0.15		0.50	0.15	ug/L			04/20/21 16:48	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/20/21 16:48	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/20/21 16:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	118		75 - 126		04/20/21 16:48	1
Toluene-d8 (Surr)	98		75 - 120		04/20/21 16:48	1
4-Bromofluorobenzene (Surr)	83		72 - 124		04/20/21 16:48	1
Dibromofluoromethane	116		75 - 120		04/20/21 16:48	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.26		0.83	0.26	ug/L		04/15/21 18:20	04/16/21 19:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	100		36 - 120	04/15/21 18:20	04/16/21 19:25	1
2-Fluorobiphenyl (Surr)	94		34 - 110	04/15/21 18:20	04/16/21 19:25	1
Terphenyl-d14 (Surr)	109		40 - 145	04/15/21 18:20	04/16/21 19:25	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			04/19/21 14:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	109		60 - 140		04/19/21 14:01	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.26		0.096	0.087	ug/L		04/19/21 08:10	04/20/21 02:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	118		25 - 130	04/19/21 08:10	04/20/21 02:03	1

Method: 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		04/13/21 18:56	04/21/21 01:01	1
Copper	10.4	B	2.0	0.50	ug/L		04/13/21 18:56	04/21/21 01:01	1
Iron	58.2	J	100	46.7	ug/L		04/13/21 18:56	04/21/21 01:01	1
Manganese	1.7	J B	2.5	0.79	ug/L		04/13/21 18:56	04/21/21 01:01	1
Zinc	<6.9		20.0	6.9	ug/L		04/13/21 18:56	04/21/21 01:01	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	52.8		0.91	0.46	mg/L		04/15/21 07:57	04/16/21 07:44	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.61		0.20	0.17	mg/L			04/13/21 19:45	1
Nitrate as N	0.37		0.20	0.068	mg/L			04/13/21 19:45	1
Sulfate	2.5		0.20	0.095	mg/L			04/13/21 19:45	1
Total Organic Carbon - Duplicates	1.9		1.0	0.47	mg/L			04/25/21 17:41	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-197485-1

Client Sample ID: W-210412-RA-05

Lab Sample ID: 500-197485-5

Date Collected: 04/12/21 12:47

Matrix: Water

Date Received: 04/13/21 09:55

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	62.3		5.0	3.7	mg/L			04/14/21 17:10	1

Client Sample Results

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

Job ID: 500-197485-1

Client Sample ID: W-210412-RA-06

Lab Sample ID: 500-197485-6

Date Collected: 04/12/21 13:23

Matrix: Water

Date Received: 04/13/21 09:55

Method: 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			04/20/21 17:17	1
Toluene	<0.15		0.50	0.15	ug/L			04/20/21 17:17	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/20/21 17:17	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/20/21 17:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	117		75 - 126		04/20/21 17:17	1
Toluene-d8 (Surr)	98		75 - 120		04/20/21 17:17	1
4-Bromofluorobenzene (Surr)	82		72 - 124		04/20/21 17:17	1
Dibromofluoromethane	115		75 - 120		04/20/21 17:17	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.23		0.76	0.23	ug/L		04/15/21 18:20	04/16/21 16:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	96		36 - 120	04/15/21 18:20	04/16/21 16:43	1
2-Fluorobiphenyl (Surr)	89		34 - 110	04/15/21 18:20	04/16/21 16:43	1
Terphenyl-d14 (Surr)	106		40 - 145	04/15/21 18:20	04/16/21 16:43	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	8.9		1.0	0.17	ug/L			04/19/21 14:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	110		60 - 140		04/19/21 14:18	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.20		0.099	0.089	ug/L		04/19/21 08:10	04/20/21 02:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	103		25 - 130	04/19/21 08:10	04/20/21 02:22	1

Method: 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		04/13/21 18:56	04/21/21 01:04	1
Copper	10.6	B	2.0	0.50	ug/L		04/13/21 18:56	04/21/21 01:04	1
Iron	62.2	J	100	46.7	ug/L		04/13/21 18:56	04/21/21 01:04	1
Manganese	2.2	J B	2.5	0.79	ug/L		04/13/21 18:56	04/21/21 01:04	1
Zinc	<6.9		20.0	6.9	ug/L		04/13/21 18:56	04/21/21 01:04	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	34.9		0.91	0.46	mg/L		04/15/21 07:57	04/16/21 07:44	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.59		0.20	0.17	mg/L			04/13/21 19:59	1
Nitrate as N	0.57		0.20	0.068	mg/L			04/13/21 19:59	1
Sulfate	3.7		0.20	0.095	mg/L			04/13/21 19:59	1
Total Organic Carbon - Duplicates	0.88	J	1.0	0.47	mg/L			04/25/21 18:17	1

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Client Sample Results

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

Job ID: 500-197485-1

Client Sample ID: W-210412-RA-06

Lab Sample ID: 500-197485-6

Date Collected: 04/12/21 13:23

Matrix: Water

Date Received: 04/13/21 09:55

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	28.2		5.0	3.7	mg/L			04/14/21 14:17	1

1

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Client Sample Results

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

Job ID: 500-197485-1

Client Sample ID: Trip Blank
Date Collected: 04/12/21 00:00
Date Received: 04/13/21 09:55

Lab Sample ID: 500-197485-7
Matrix: Water

Method: 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			04/20/21 17:45	1
Toluene	<0.15		0.50	0.15	ug/L			04/20/21 17:45	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/20/21 17:45	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/20/21 17:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	119		75 - 126		04/20/21 17:45	1
Toluene-d8 (Surr)	99		75 - 120		04/20/21 17:45	1
4-Bromofluorobenzene (Surr)	83		72 - 124		04/20/21 17:45	1
Dibromofluoromethane	117		75 - 120		04/20/21 17:45	1



Definitions/Glossary

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

Job ID: 500-197485-1

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.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL, and the absolute difference between results is < the upper reporting limits for both.
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: 500-197485-1

GC/MS VOA

Analysis Batch: 594048

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197485-1	W-210412-RA-01	Total/NA	Water	8260B	
500-197485-2	W-210412-RA-02	Total/NA	Water	8260B	
500-197485-3	W-210412-RA-03	Total/NA	Water	8260B	
500-197485-4	W-210412-RA-04	Total/NA	Water	8260B	
500-197485-5	W-210412-RA-05	Total/NA	Water	8260B	
500-197485-6	W-210412-RA-06	Total/NA	Water	8260B	
500-197485-7	Trip Blank	Total/NA	Water	8260B	
MB 500-594048/6	Method Blank	Total/NA	Water	8260B	
LCS 500-594048/4	Lab Control Sample	Total/NA	Water	8260B	
500-197485-1 MS	W-210412-RA-01	Total/NA	Water	8260B	
500-197485-1 MSD	W-210412-RA-01	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 593534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197485-1	W-210412-RA-01	Total/NA	Water	3510C	
500-197485-2	W-210412-RA-02	Total/NA	Water	3510C	
500-197485-3	W-210412-RA-03	Total/NA	Water	3510C	
500-197485-4	W-210412-RA-04	Total/NA	Water	3510C	
500-197485-5	W-210412-RA-05	Total/NA	Water	3510C	
500-197485-6	W-210412-RA-06	Total/NA	Water	3510C	
MB 500-593534/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-593534/2-A	Lab Control Sample	Total/NA	Water	3510C	
500-197485-1 MS	W-210412-RA-01	Total/NA	Water	3510C	
500-197485-1 MSD	W-210412-RA-01	Total/NA	Water	3510C	

Analysis Batch: 593586

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197485-1	W-210412-RA-01	Total/NA	Water	8270D	593534
500-197485-2	W-210412-RA-02	Total/NA	Water	8270D	593534
500-197485-3	W-210412-RA-03	Total/NA	Water	8270D	593534
500-197485-4	W-210412-RA-04	Total/NA	Water	8270D	593534
500-197485-5	W-210412-RA-05	Total/NA	Water	8270D	593534
500-197485-6	W-210412-RA-06	Total/NA	Water	8270D	593534
500-197485-1 MS	W-210412-RA-01	Total/NA	Water	8270D	593534
500-197485-1 MSD	W-210412-RA-01	Total/NA	Water	8270D	593534

Analysis Batch: 593626

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-593534/1-A	Method Blank	Total/NA	Water	8270D	593534
LCS 500-593534/2-A	Lab Control Sample	Total/NA	Water	8270D	593534

GC VOA

Analysis Batch: 481671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197485-1	W-210412-RA-01	Total/NA	Water	RSK-175	
500-197485-2	W-210412-RA-02	Total/NA	Water	RSK-175	
500-197485-3	W-210412-RA-03	Total/NA	Water	RSK-175	
500-197485-4	W-210412-RA-04	Total/NA	Water	RSK-175	
500-197485-5	W-210412-RA-05	Total/NA	Water	RSK-175	

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QC Association Summary

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

Job ID: 500-197485-1

GC VOA (Continued)

Analysis Batch: 481671 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197485-6	W-210412-RA-06	Total/NA	Water	RSK-175	
MB 240-481671/3	Method Blank	Total/NA	Water	RSK-175	
LCS 240-481671/4	Lab Control Sample	Total/NA	Water	RSK-175	
500-197485-1 MS	W-210412-RA-01	Total/NA	Water	RSK-175	
500-197485-1 MSD	W-210412-RA-01	Total/NA	Water	RSK-175	

GC Semi VOA

Prep Batch: 593888

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197485-1	W-210412-RA-01	Total/NA	Water	8151A	
500-197485-2	W-210412-RA-02	Total/NA	Water	8151A	
500-197485-3	W-210412-RA-03	Total/NA	Water	8151A	
500-197485-4	W-210412-RA-04	Total/NA	Water	8151A	
500-197485-5	W-210412-RA-05	Total/NA	Water	8151A	
500-197485-6	W-210412-RA-06	Total/NA	Water	8151A	
MB 500-593888/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-593888/2-A	Lab Control Sample	Total/NA	Water	8151A	
500-197485-1 MS	W-210412-RA-01	Total/NA	Water	8151A	
500-197485-1 MSD	W-210412-RA-01	Total/NA	Water	8151A	

Analysis Batch: 594024

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197485-1	W-210412-RA-01	Total/NA	Water	8151A	593888
500-197485-2	W-210412-RA-02	Total/NA	Water	8151A	593888
500-197485-3	W-210412-RA-03	Total/NA	Water	8151A	593888
500-197485-4	W-210412-RA-04	Total/NA	Water	8151A	593888
500-197485-5	W-210412-RA-05	Total/NA	Water	8151A	593888
500-197485-6	W-210412-RA-06	Total/NA	Water	8151A	593888
MB 500-593888/1-A	Method Blank	Total/NA	Water	8151A	593888
LCS 500-593888/2-A	Lab Control Sample	Total/NA	Water	8151A	593888
500-197485-1 MS	W-210412-RA-01	Total/NA	Water	8151A	593888
500-197485-1 MSD	W-210412-RA-01	Total/NA	Water	8151A	593888

Metals

Prep Batch: 593101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197485-1	W-210412-RA-01	Dissolved	Water	3005A	
500-197485-2	W-210412-RA-02	Dissolved	Water	3005A	
500-197485-3	W-210412-RA-03	Dissolved	Water	3005A	
500-197485-4	W-210412-RA-04	Dissolved	Water	3005A	
500-197485-5	W-210412-RA-05	Dissolved	Water	3005A	
500-197485-6	W-210412-RA-06	Dissolved	Water	3005A	
MB 500-593101/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-593101/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
500-197485-1 MS	W-210412-RA-01	Dissolved	Water	3005A	
500-197485-1 MSD	W-210412-RA-01	Dissolved	Water	3005A	
500-197485-1 DU	W-210412-RA-01	Dissolved	Water	3005A	

QC Association Summary

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

Job ID: 500-197485-1

Metals

Prep Batch: 593409

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197485-1	W-210412-RA-01	Total/NA	Water	3010A	
500-197485-2	W-210412-RA-02	Total/NA	Water	3010A	
500-197485-3	W-210412-RA-03	Total/NA	Water	3010A	
500-197485-4	W-210412-RA-04	Total/NA	Water	3010A	
500-197485-5	W-210412-RA-05	Total/NA	Water	3010A	
500-197485-6	W-210412-RA-06	Total/NA	Water	3010A	

Analysis Batch: 593601

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197485-1	W-210412-RA-01	Total/NA	Water	SM 2340B	593409
500-197485-2	W-210412-RA-02	Total/NA	Water	SM 2340B	593409
500-197485-3	W-210412-RA-03	Total/NA	Water	SM 2340B	593409
500-197485-4	W-210412-RA-04	Total/NA	Water	SM 2340B	593409
500-197485-5	W-210412-RA-05	Total/NA	Water	SM 2340B	593409
500-197485-6	W-210412-RA-06	Total/NA	Water	SM 2340B	593409

Analysis Batch: 594355

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197485-1	W-210412-RA-01	Dissolved	Water	6020A	593101
500-197485-2	W-210412-RA-02	Dissolved	Water	6020A	593101
500-197485-3	W-210412-RA-03	Dissolved	Water	6020A	593101
500-197485-4	W-210412-RA-04	Dissolved	Water	6020A	593101
500-197485-5	W-210412-RA-05	Dissolved	Water	6020A	593101
500-197485-6	W-210412-RA-06	Dissolved	Water	6020A	593101
MB 500-593101/1-A	Method Blank	Total Recoverable	Water	6020A	593101
LCS 500-593101/2-A	Lab Control Sample	Total Recoverable	Water	6020A	593101
500-197485-1 MS	W-210412-RA-01	Dissolved	Water	6020A	593101
500-197485-1 MSD	W-210412-RA-01	Dissolved	Water	6020A	593101
500-197485-1 DU	W-210412-RA-01	Dissolved	Water	6020A	593101

General Chemistry

Analysis Batch: 593094

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197485-1	W-210412-RA-01	Total/NA	Water	300.0	
500-197485-2	W-210412-RA-02	Total/NA	Water	300.0	
500-197485-3	W-210412-RA-03	Total/NA	Water	300.0	
500-197485-4	W-210412-RA-04	Total/NA	Water	300.0	
500-197485-5	W-210412-RA-05	Total/NA	Water	300.0	
500-197485-6	W-210412-RA-06	Total/NA	Water	300.0	
MB 500-593094/3	Method Blank	Total/NA	Water	300.0	
LCS 500-593094/4	Lab Control Sample	Total/NA	Water	300.0	
500-197485-1 MS	W-210412-RA-01	Total/NA	Water	300.0	
500-197485-1 MSD	W-210412-RA-01	Total/NA	Water	300.0	

Analysis Batch: 593313

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197485-1	W-210412-RA-01	Total/NA	Water	300.0	
500-197485-2	W-210412-RA-02	Total/NA	Water	300.0	
MB 500-593313/3	Method Blank	Total/NA	Water	300.0	
LCS 500-593313/4	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: 500-197485-1

General Chemistry (Continued)

Analysis Batch: 593313 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197485-1 MS	W-210412-RA-01	Total/NA	Water	300.0	
500-197485-1 MSD	W-210412-RA-01	Total/NA	Water	300.0	

Analysis Batch: 593372

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197485-1	W-210412-RA-01	Total/NA	Water	SM 2320B	
500-197485-2	W-210412-RA-02	Total/NA	Water	SM 2320B	
500-197485-3	W-210412-RA-03	Total/NA	Water	SM 2320B	
500-197485-4	W-210412-RA-04	Total/NA	Water	SM 2320B	
500-197485-5	W-210412-RA-05	Total/NA	Water	SM 2320B	
500-197485-6	W-210412-RA-06	Total/NA	Water	SM 2320B	
MB 500-593372/28	Method Blank	Total/NA	Water	SM 2320B	
MB 500-593372/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-593372/29	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 500-593372/4	Lab Control Sample	Total/NA	Water	SM 2320B	
500-197485-1 DU	W-210412-RA-01	Total/NA	Water	SM 2320B	

Analysis Batch: 594140

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197485-1	W-210412-RA-01	Total/NA	Water	9060A	
MB 500-594140/4	Method Blank	Total/NA	Water	9060A	
LCS 500-594140/5	Lab Control Sample	Total/NA	Water	9060A	
500-197485-1 MS	W-210412-RA-01	Total/NA	Water	9060A	
500-197485-1 MSD	W-210412-RA-01	Total/NA	Water	9060A	

Analysis Batch: 595245

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197485-2	W-210412-RA-02	Total/NA	Water	9060A	
500-197485-3	W-210412-RA-03	Total/NA	Water	9060A	
500-197485-4	W-210412-RA-04	Total/NA	Water	9060A	
500-197485-5	W-210412-RA-05	Total/NA	Water	9060A	
500-197485-6	W-210412-RA-06	Total/NA	Water	9060A	
MB 500-595245/4	Method Blank	Total/NA	Water	9060A	
LCS 500-595245/5	Lab Control Sample	Total/NA	Water	9060A	
500-197485-5 MS	W-210412-RA-05	Total/NA	Water	9060A	
500-197485-5 MSD	W-210412-RA-05	Total/NA	Water	9060A	

Surrogate Summary

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

Job ID: 500-197485-1

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)
500-197485-1	W-210412-RA-01	117	98	83	115
500-197485-1 MS	W-210412-RA-01	113	99	80	110
500-197485-1 MSD	W-210412-RA-01	113	99	78	111
500-197485-2	W-210412-RA-02	117	99	83	115
500-197485-3	W-210412-RA-03	117	98	84	116
500-197485-4	W-210412-RA-04	119	98	84	115
500-197485-5	W-210412-RA-05	118	98	83	116
500-197485-6	W-210412-RA-06	117	98	82	115
500-197485-7	Trip Blank	119	99	83	117
LCS 500-594048/4	Lab Control Sample	108	100	80	108
MB 500-594048/6	Method Blank	117	98	83	115

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)
500-197485-1	W-210412-RA-01	88	81	96
500-197485-1 MS	W-210412-RA-01	68	64	89
500-197485-1 MSD	W-210412-RA-01	78	73	97
500-197485-2	W-210412-RA-02	81	75	90
500-197485-3	W-210412-RA-03	74	67	96
500-197485-4	W-210412-RA-04	88	80	95
500-197485-5	W-210412-RA-05	100	94	109
500-197485-6	W-210412-RA-06	96	89	106
LCS 500-593534/2-A	Lab Control Sample	85	92	101
MB 500-593534/1-A	Method Blank	82	87	106

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)
500-197485-1	W-210412-RA-01	111
500-197485-1 MS	W-210412-RA-01	111
500-197485-1 MSD	W-210412-RA-01	108
500-197485-2	W-210412-RA-02	108
500-197485-3	W-210412-RA-03	109

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Surrogate Summary

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

Job ID: 500-197485-1

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)
500-197485-4	W-210412-RA-04	112
500-197485-5	W-210412-RA-05	109
500-197485-6	W-210412-RA-06	110
LCS 240-481671/4	Lab Control Sample	113
MB 240-481671/3	Method Blank	113

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	DCPAA2 (25-130)
500-197485-1	W-210412-RA-01	96
500-197485-1 MS	W-210412-RA-01	95
500-197485-1 MSD	W-210412-RA-01	96
500-197485-2	W-210412-RA-02	97
500-197485-3	W-210412-RA-03	111
500-197485-4	W-210412-RA-04	111
500-197485-5	W-210412-RA-05	118
500-197485-6	W-210412-RA-06	103
LCS 500-593888/2-A	Lab Control Sample	96
MB 500-593888/1-A	Method Blank	89

Surrogate Legend

DCPAA = DCAA

QC Sample Results

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

Job ID: 500-197485-1

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

Lab Sample ID: MB 500-594048/6
Matrix: Water
Analysis Batch: 594048

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			04/20/21 11:07	1
Toluene	<0.15		0.50	0.15	ug/L			04/20/21 11:07	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/20/21 11:07	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/20/21 11:07	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	117		75 - 126		04/20/21 11:07	1
Toluene-d8 (Surr)	98		75 - 120		04/20/21 11:07	1
4-Bromofluorobenzene (Surr)	83		72 - 124		04/20/21 11:07	1
Dibromofluoromethane	115		75 - 120		04/20/21 11:07	1

Lab Sample ID: LCS 500-594048/4
Matrix: Water
Analysis Batch: 594048

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	46.1		ug/L		92	70 - 120
Toluene	50.0	47.0		ug/L		94	70 - 125
Ethylbenzene	50.0	48.1		ug/L		96	70 - 123
Xylenes, Total	100	96.4		ug/L		96	70 - 125

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	108		75 - 126
Toluene-d8 (Surr)	100		75 - 120
4-Bromofluorobenzene (Surr)	80		72 - 124
Dibromofluoromethane	108		75 - 120

Lab Sample ID: 500-197485-1 MS
Matrix: Water
Analysis Batch: 594048

Client Sample ID: W-210412-RA-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
				Result	Qualifier				
Benzene	0.27	J	50.0	47.3		ug/L		94	70 - 120
Toluene	<0.15		50.0	47.9		ug/L		96	70 - 125
Ethylbenzene	<0.18		50.0	49.4		ug/L		99	70 - 123
Xylenes, Total	<0.22		100	98.3		ug/L		98	70 - 125

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	113		75 - 126
Toluene-d8 (Surr)	99		75 - 120
4-Bromofluorobenzene (Surr)	80		72 - 124
Dibromofluoromethane	110		75 - 120

QC Sample Results

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

Job ID: 500-197485-1

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

Lab Sample ID: 500-197485-1 MSD
Matrix: Water
Analysis Batch: 594048

Client Sample ID: W-210412-RA-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	0.27	J	50.0	43.7		ug/L		87	70 - 120	8	20
Toluene	<0.15		50.0	44.2		ug/L		88	70 - 125	8	20
Ethylbenzene	<0.18		50.0	45.4		ug/L		91	70 - 123	9	20
Xylenes, Total	<0.22		100	90.7		ug/L		91	70 - 125	8	20

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
1,2-Dichloroethane-d4 (Surr)	113		75 - 126
Toluene-d8 (Surr)	99		75 - 120
4-Bromofluorobenzene (Surr)	78		72 - 124
Dibromofluoromethane	111		75 - 120

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

Lab Sample ID: MB 500-593534/1-A
Matrix: Water
Analysis Batch: 593626

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 593534

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.80	0.25	ug/L		04/15/21 18:20	04/16/21 13:01	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	82		36 - 120	04/15/21 18:20	04/16/21 13:01	1
2-Fluorobiphenyl (Surr)	87		34 - 110	04/15/21 18:20	04/16/21 13:01	1
Terphenyl-d14 (Surr)	106		40 - 145	04/15/21 18:20	04/16/21 13:01	1

Lab Sample ID: LCS 500-593534/2-A
Matrix: Water
Analysis Batch: 593626

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 593534

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	32.0	24.3		ug/L		76	36 - 110

Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits
Nitrobenzene-d5 (Surr)	85		36 - 120
2-Fluorobiphenyl (Surr)	92		34 - 110
Terphenyl-d14 (Surr)	101		40 - 145

Lab Sample ID: 500-197485-1 MS
Matrix: Water
Analysis Batch: 593586

Client Sample ID: W-210412-RA-01
Prep Type: Total/NA
Prep Batch: 593534

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	<0.28		32.3	19.3		ug/L		60	36 - 110

Surrogate	MS %Recovery	MS Qualifier	MS Limits
Nitrobenzene-d5 (Surr)	68		36 - 120
2-Fluorobiphenyl (Surr)	64		34 - 110

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QC Sample Results

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

Job ID: 500-197485-1

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

Lab Sample ID: 500-197485-1 MS
Matrix: Water
Analysis Batch: 593586

Client Sample ID: W-210412-RA-01
Prep Type: Total/NA
Prep Batch: 593534

	<i>MS</i>	<i>MS</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Terphenyl-d14 (Surr)	89		40 - 145

Lab Sample ID: 500-197485-1 MSD
Matrix: Water
Analysis Batch: 593586

Client Sample ID: W-210412-RA-01
Prep Type: Total/NA
Prep Batch: 593534

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>	<i>RPD</i>	<i>Limit</i>
Naphthalene	<0.28		31.7	22.0		ug/L		69	36 - 110	13	20

	<i>MSD</i>	<i>MSD</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Nitrobenzene-d5 (Surr)	78		36 - 120
2-Fluorobiphenyl (Surr)	73		34 - 110
Terphenyl-d14 (Surr)	97		40 - 145

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 240-481671/3
Matrix: Water
Analysis Batch: 481671

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

<i>Analyte</i>	<i>MB Result</i>	<i>MB Qualifier</i>	<i>LOQ</i>	<i>LOD</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Methane	<0.17		1.0	0.17	ug/L			04/19/21 10:09	1

	<i>MB</i>	<i>MB</i>		<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
1,1,1-Trifluoroethane	113		60 - 140		04/19/21 10:09	1

Lab Sample ID: LCS 240-481671/4
Matrix: Water
Analysis Batch: 481671

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

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>
Methane	409	445		ug/L		109	80 - 120

	<i>LCS</i>	<i>LCS</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
1,1,1-Trifluoroethane	113		60 - 140

Lab Sample ID: 500-197485-1 MS
Matrix: Water
Analysis Batch: 481671

Client Sample ID: W-210412-RA-01
Prep Type: Total/NA

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS Result</i>	<i>MS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>
Methane	<0.17		284	287		ug/L		101	50 - 150

	<i>MS</i>	<i>MS</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
1,1,1-Trifluoroethane	111		60 - 140

QC Sample Results

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

Job ID: 500-197485-1

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

Lab Sample ID: 500-197485-1 MSD
Matrix: Water
Analysis Batch: 481671

Client Sample ID: W-210412-RA-01
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	280		ug/L		99	50 - 150	2	30
Surrogate	%Recovery	MSD Qualifier	MSD Limits								
1,1,1-Trifluoroethane	108		60 - 140								

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 500-593888/1-A
Matrix: Water
Analysis Batch: 594024

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 593888

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac	
Pentachlorophenol	<0.090		0.10	0.090	ug/L		04/19/21 08:10	04/19/21 23:27	1	
Surrogate	%Recovery	MB Qualifier	MB Limits							
DCAA	89		25 - 130							
				Prepared	Analyzed	Dil Fac				
				04/19/21 08:10	04/19/21 23:27	1				

Lab Sample ID: LCS 500-593888/2-A
Matrix: Water
Analysis Batch: 594024

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 593888

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Pentachlorophenol	2.53	1.65		ug/L		65	40 - 122
Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits				
DCAA	96		25 - 130				

Lab Sample ID: 500-197485-1 MS
Matrix: Water
Analysis Batch: 594024

Client Sample ID: W-210412-RA-01
Prep Type: Total/NA
Prep Batch: 593888

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Pentachlorophenol	0.65		2.67	1.98		ug/L		50	40 - 122
Surrogate	MS %Recovery	MS Qualifier	MS Limits						
DCAA	95		25 - 130						

Lab Sample ID: 500-197485-1 MSD
Matrix: Water
Analysis Batch: 594024

Client Sample ID: W-210412-RA-01
Prep Type: Total/NA
Prep Batch: 593888

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Pentachlorophenol	0.65		2.43	1.77		ug/L		46	40 - 122	11	20
Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits								
DCAA	96		25 - 130								

Eurofins TestAmerica, Chicago

QC Sample Results

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

Job ID: 500-197485-1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 500-593101/1-A
Matrix: Water
Analysis Batch: 594355

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 593101

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	<0.23		1.0	0.23	ug/L		04/13/21 18:56	04/21/21 00:15	1
Copper	1.84	J	2.0	0.50	ug/L		04/13/21 18:56	04/21/21 00:15	1
Iron	<46.7		100	46.7	ug/L		04/13/21 18:56	04/21/21 00:15	1
Manganese	1.60	J	2.5	0.79	ug/L		04/13/21 18:56	04/21/21 00:15	1
Zinc	<6.9		20.0	6.9	ug/L		04/13/21 18:56	04/21/21 00:15	1

Lab Sample ID: LCS 500-593101/2-A
Matrix: Water
Analysis Batch: 594355

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 593101

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	250	252.6		ug/L		101	80 - 120
Iron	1000	1098		ug/L		110	80 - 120
Manganese	500	542.5		ug/L		108	80 - 120
Zinc	500	496.5		ug/L		99	80 - 120

Lab Sample ID: 500-197485-1 MS
Matrix: Water
Analysis Batch: 594355

Client Sample ID: W-210412-RA-01
Prep Type: Dissolved
Prep Batch: 593101

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	71.0	B	250	329.9		ug/L		104	75 - 125
Iron	77.7	J	1000	1077		ug/L		100	75 - 125
Manganese	3.8	B	500	522.9		ug/L		104	75 - 125
Zinc	<6.9		500	522.2		ug/L		104	75 - 125

Lab Sample ID: 500-197485-1 MSD
Matrix: Water
Analysis Batch: 594355

Client Sample ID: W-210412-RA-01
Prep Type: Dissolved
Prep Batch: 593101

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	
										RPD	Limit
Arsenic	<0.23		100	97.53		ug/L		98	75 - 125	0	20
Copper	71.0	B	250	319.7		ug/L		99	75 - 125	3	20
Iron	77.7	J	1000	1055		ug/L		98	75 - 125	2	20
Manganese	3.8	B	500	524.6		ug/L		104	75 - 125	0	20
Zinc	<6.9		500	511.6		ug/L		102	75 - 125	2	20

Lab Sample ID: 500-197485-1 DU
Matrix: Water
Analysis Batch: 594355

Client Sample ID: W-210412-RA-01
Prep Type: Dissolved
Prep Batch: 593101

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD	
								RPD	Limit
Arsenic	<0.23		<0.23		ug/L			NC	20
Copper	71.0	B	72.20		ug/L			2	20
Iron	77.7	J	<46.7		ug/L			NC	20
Manganese	3.8	B	2.75	F5	ug/L			32	20
Zinc	<6.9		<6.9		ug/L			NC	20

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QC Sample Results

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

Job ID: 500-197485-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-593094/3
Matrix: Water
Analysis Batch: 593094

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

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	<0.17		0.20	0.17	mg/L			04/13/21 17:56	1
Nitrate as N	<0.068		0.20	0.068	mg/L			04/13/21 17:56	1
Sulfate	<0.095		0.20	0.095	mg/L			04/13/21 17:56	1

Lab Sample ID: LCS 500-593094/4
Matrix: Water
Analysis Batch: 593094

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	2.00	1.99		mg/L		100	90 - 110
Sulfate	5.00	4.93		mg/L		99	90 - 110

Lab Sample ID: 500-197485-1 MS
Matrix: Water
Analysis Batch: 593094

Client Sample ID: W-210412-RA-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.5		2.50	8.17		mg/L		105	80 - 120

Lab Sample ID: 500-197485-1 MSD
Matrix: Water
Analysis Batch: 593094

Client Sample ID: W-210412-RA-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	5.5		2.50	8.09		mg/L		102	80 - 120	1	20

Lab Sample ID: MB 500-593313/3
Matrix: Water
Analysis Batch: 593313

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

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	<0.17		0.20	0.17	mg/L			04/14/21 16:52	1
Nitrate as N	<0.068		0.20	0.068	mg/L			04/14/21 16:52	1
Sulfate	<0.095		0.20	0.095	mg/L			04/14/21 16:52	1

Lab Sample ID: LCS 500-593313/4
Matrix: Water
Analysis Batch: 593313

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	2.00	1.95		mg/L		98	90 - 110
Sulfate	5.00	5.12		mg/L		102	90 - 110

QC Sample Results

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

Job ID: 500-197485-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 500-197485-1 MS
Matrix: Water
Analysis Batch: 593313

Client Sample ID: W-210412-RA-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	76.5		25.0	100.5		mg/L		96	80 - 120

Lab Sample ID: 500-197485-1 MSD
Matrix: Water
Analysis Batch: 593313

Client Sample ID: W-210412-RA-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	76.5		25.0	106.1		mg/L		118	80 - 120	5	20

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

Lab Sample ID: MB 500-594140/4
Matrix: Water
Analysis Batch: 594140

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			04/19/21 08:21	1

Lab Sample ID: LCS 500-594140/5
Matrix: Water
Analysis Batch: 594140

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	10.0	8.30		mg/L		83	80 - 120

Lab Sample ID: 500-197485-1 MS
Matrix: Water
Analysis Batch: 594140

Client Sample ID: W-210412-RA-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	0.82	J	10.0	11.26		mg/L		104	75 - 125

Lab Sample ID: 500-197485-1 MSD
Matrix: Water
Analysis Batch: 594140

Client Sample ID: W-210412-RA-01
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	0.82	J	10.0	11.83		mg/L		110	75 - 125	5	20

Lab Sample ID: MB 500-595245/4
Matrix: Water
Analysis Batch: 595245

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			04/25/21 13:56	1

QC Sample Results

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

Job ID: 500-197485-1

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

Lab Sample ID: LCS 500-595245/5
Matrix: Water
Analysis Batch: 595245

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	10.0	9.84		mg/L		98	80 - 120

Lab Sample ID: 500-197485-5 MS
Matrix: Water
Analysis Batch: 595245

Client Sample ID: W-210412-RA-05
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	1.9		10.0	11.04		mg/L		92	75 - 125

Lab Sample ID: 500-197485-5 MSD
Matrix: Water
Analysis Batch: 595245

Client Sample ID: W-210412-RA-05
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	1.9		10.0	11.16		mg/L		93	75 - 125	1	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-593372/28
Matrix: Water
Analysis Batch: 593372

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			04/14/21 14:38	1

Lab Sample ID: MB 500-593372/3
Matrix: Water
Analysis Batch: 593372

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			04/14/21 11:37	1

Lab Sample ID: LCS 500-593372/29
Matrix: Water
Analysis Batch: 593372

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	98.34		mg/L		98	90 - 110

Lab Sample ID: LCS 500-593372/4
Matrix: Water
Analysis Batch: 593372

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	102.1		mg/L		102	90 - 110

QC Sample Results

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

Job ID: 500-197485-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: 500-197485-1 DU
Matrix: Water
Analysis Batch: 593372

Client Sample ID: W-210412-RA-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	48.5		49.17		mg/L		1	20

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

Lab Chronicle

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

Job ID: 500-197485-1

Client Sample ID: W-210412-RA-01

Lab Sample ID: 500-197485-1

Date Collected: 04/12/21 10:22

Matrix: Water

Date Received: 04/13/21 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	594048	04/20/21 13:58	PMF	TAL CHI
Total/NA	Prep	3510C			593534	04/15/21 18:20	JP1	TAL CHI
Total/NA	Analysis	8270D		1	593586	04/16/21 10:23	AJD	TAL CHI
Total/NA	Analysis	RSK-175		1	481671	04/19/21 12:01	JBN	TAL CAN
Total/NA	Prep	8151A			593888	04/19/21 08:10	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594024	04/20/21 00:06	JBK	TAL CHI
Dissolved	Prep	3005A			593101	04/13/21 18:56	LMN	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/21/21 00:26	FXG	TAL CHI
Total/NA	Prep	3010A			593409	04/15/21 07:57	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	593601	04/16/21 07:44	EEN	TAL CHI
Total/NA	Analysis	300.0		1	593094	04/13/21 18:24	PSP	TAL CHI
Total/NA	Analysis	300.0		25	593313	04/14/21 22:47	PSP	TAL CHI
Total/NA	Analysis	9060A		1	594140	04/19/21 09:13	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	593372	04/14/21 16:35	SMO	TAL CHI

Client Sample ID: W-210412-RA-02

Lab Sample ID: 500-197485-2

Date Collected: 04/12/21 11:13

Matrix: Water

Date Received: 04/13/21 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	594048	04/20/21 15:23	PMF	TAL CHI
Total/NA	Prep	3510C			593534	04/15/21 18:20	JP1	TAL CHI
Total/NA	Analysis	8270D		1	593586	04/16/21 10:50	AJD	TAL CHI
Total/NA	Analysis	RSK-175		1	481671	04/19/21 12:53	JBN	TAL CAN
Total/NA	Prep	8151A			593888	04/19/21 08:10	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594024	04/20/21 01:04	JBK	TAL CHI
Dissolved	Prep	3005A			593101	04/13/21 18:56	LMN	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/21/21 00:50	FXG	TAL CHI
Total/NA	Prep	3010A			593409	04/15/21 07:57	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	593601	04/16/21 07:44	EEN	TAL CHI
Total/NA	Analysis	300.0		1	593094	04/13/21 19:04	PSP	TAL CHI
Total/NA	Analysis	300.0		2	593313	04/14/21 23:25	PSP	TAL CHI
Total/NA	Analysis	9060A		1	595245	04/25/21 16:32	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	593372	04/14/21 16:51	SMO	TAL CHI

Client Sample ID: W-210412-RA-03

Lab Sample ID: 500-197485-3

Date Collected: 04/12/21 12:13

Matrix: Water

Date Received: 04/13/21 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	594048	04/20/21 15:51	PMF	TAL CHI
Total/NA	Prep	3510C			593534	04/15/21 18:20	JP1	TAL CHI
Total/NA	Analysis	8270D		1	593586	04/16/21 11:17	AJD	TAL CHI

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Lab Chronicle

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

Job ID: 500-197485-1

Client Sample ID: W-210412-RA-03

Lab Sample ID: 500-197485-3

Date Collected: 04/12/21 12:13

Matrix: Water

Date Received: 04/13/21 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	RSK-175		1	481671	04/19/21 13:27	JBN	TAL CAN
Total/NA	Prep	8151A			593888	04/19/21 08:10	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594024	04/20/21 01:24	JB	TAL CHI
Dissolved	Prep	3005A			593101	04/13/21 18:56	LMN	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/21/21 00:54	FXG	TAL CHI
Total/NA	Prep	3010A			593409	04/15/21 07:57	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	593601	04/16/21 07:44	EEN	TAL CHI
Total/NA	Analysis	300.0		1	593094	04/13/21 19:18	PSP	TAL CHI
Total/NA	Analysis	9060A		1	595245	04/25/21 17:08	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	593372	04/14/21 16:57	SMO	TAL CHI

Client Sample ID: W-210412-RA-04

Lab Sample ID: 500-197485-4

Date Collected: 04/12/21 12:13

Matrix: Water

Date Received: 04/13/21 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	594048	04/20/21 16:20	PMF	TAL CHI
Total/NA	Prep	3510C			593534	04/15/21 18:20	JP1	TAL CHI
Total/NA	Analysis	8270D		1	593586	04/16/21 11:44	AJD	TAL CHI
Total/NA	Analysis	RSK-175		1	481671	04/19/21 13:44	JBN	TAL CAN
Total/NA	Prep	8151A			593888	04/19/21 08:10	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594024	04/20/21 01:43	JB	TAL CHI
Dissolved	Prep	3005A			593101	04/13/21 18:56	LMN	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/21/21 00:57	FXG	TAL CHI
Total/NA	Prep	3010A			593409	04/15/21 07:57	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	593601	04/16/21 07:44	EEN	TAL CHI
Total/NA	Analysis	300.0		1	593094	04/13/21 19:32	PSP	TAL CHI
Total/NA	Analysis	9060A		1	595245	04/25/21 17:24	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	593372	04/14/21 17:03	SMO	TAL CHI

Client Sample ID: W-210412-RA-05

Lab Sample ID: 500-197485-5

Date Collected: 04/12/21 12:47

Matrix: Water

Date Received: 04/13/21 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	594048	04/20/21 16:48	PMF	TAL CHI
Total/NA	Prep	3510C			593534	04/15/21 18:20	JP1	TAL CHI
Total/NA	Analysis	8270D		1	593586	04/16/21 19:25	AJD	TAL CHI
Total/NA	Analysis	RSK-175		1	481671	04/19/21 14:01	JBN	TAL CAN
Total/NA	Prep	8151A			593888	04/19/21 08:10	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594024	04/20/21 02:03	JB	TAL CHI
Dissolved	Prep	3005A			593101	04/13/21 18:56	LMN	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/21/21 01:01	FXG	TAL CHI

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Lab Chronicle

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

Job ID: 500-197485-1

Client Sample ID: W-210412-RA-05

Lab Sample ID: 500-197485-5

Date Collected: 04/12/21 12:47

Matrix: Water

Date Received: 04/13/21 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			593409	04/15/21 07:57	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	593601	04/16/21 07:44	EEN	TAL CHI
Total/NA	Analysis	300.0		1	593094	04/13/21 19:45	PSP	TAL CHI
Total/NA	Analysis	9060A		1	595245	04/25/21 17:41	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	593372	04/14/21 17:10	SMO	TAL CHI

Client Sample ID: W-210412-RA-06

Lab Sample ID: 500-197485-6

Date Collected: 04/12/21 13:23

Matrix: Water

Date Received: 04/13/21 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	594048	04/20/21 17:17	PMF	TAL CHI
Total/NA	Prep	3510C			593534	04/15/21 18:20	JP1	TAL CHI
Total/NA	Analysis	8270D		1	593586	04/16/21 16:43	AJD	TAL CHI
Total/NA	Analysis	RSK-175		1	481671	04/19/21 14:18	JBN	TAL CAN
Total/NA	Prep	8151A			593888	04/19/21 08:10	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594024	04/20/21 02:22	JBK	TAL CHI
Dissolved	Prep	3005A			593101	04/13/21 18:56	LMN	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/21/21 01:04	FXG	TAL CHI
Total/NA	Prep	3010A			593409	04/15/21 07:57	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	593601	04/16/21 07:44	EEN	TAL CHI
Total/NA	Analysis	300.0		1	593094	04/13/21 19:59	PSP	TAL CHI
Total/NA	Analysis	9060A		1	595245	04/25/21 18:17	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	593372	04/14/21 14:17	SMO	TAL CHI

Client Sample ID: Trip Blank

Lab Sample ID: 500-197485-7

Date Collected: 04/12/21 00:00

Matrix: Water

Date Received: 04/13/21 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	594048	04/20/21 17:45	PMF	TAL CHI

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL CHI = Eurofins TestAmerica, 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: 500-197485-1

Laboratory: Eurofins TestAmerica, Chicago

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-21

Laboratory: Eurofins TestAmerica, Canton

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	02-23-22
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-22
Illinois	NELAP	004498	07-31-21
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21
Kentucky (UST)	State	112225	02-23-21 *
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-22
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-21
Texas	NELAP	T104704517-18-10	08-31-21
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-21
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21


* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Chain of Custody Record 496201

Address _____

Regulatory Program: DW NPDES RCRA Other

TAL-8210

Client Contact Company Name: <u>GH</u> Address: <u>1801 012 Highway 8NW 117</u> City/State/Zip: <u>St Paul MN 55112</u> Phone: <u>6516390913</u> Fax: _____ Project Name: <u>Penta Wood</u> Site: _____ PO #: _____		Project Manager: <u>Ree</u> Tel/Email: _____		Site Contact: Lab Contact: _____		Date: _____ Carrier: _____		COC No: _____ of _____ COCs Sampler: _____ For Lab Use Only Walk-in Client: <input type="checkbox"/> Lab Sampling: _____ Job / SDG No: <u>500-197485</u>																																																																																																																											
		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		Filtered Sample (Y/N) _____ Perform MS/MSD (Y/N) _____ Pentachlorophenol _____ BTEX _____ Volatiles _____ Dissolves Metals _____ Aik Arsenic _____ Total Metals Hardness _____ TOC _____ Dissolves Methane _____		 500-197485 COC																																																																																																																													
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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 <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input checked="" type="checkbox"/> Poison B <input type="checkbox"/> Unknown								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																																																																																																																											
Special Instructions/QC Requirements & Comments: <div style="text-align: right; font-weight: bold;">5.1→4.3, 5.6→4.8, 3.7→2.9, 5.5→4.7, 5.4→5.0</div>																																																																																																																																			
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>GH</u>				Date/Time <u>4/13/21 1500</u>				Received by _____																																																																																																																							
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500-197485 Wayb

Fed Express **Package US Airbill** FedEx Tracking Number **8142 2234 3065** Form ID No. **0200**

1 From Please print and press hard.
Date _____ Sender's FedEx Account Number **1 242-3320 8**
Sender's Name **6HD Services** Phone () _____
Company **1801 Old Highway 8 NW**
Address **Suite 114** Dept./Floor/Suite/Room _____
City **St Paul** State **MN** ZIP **55114**

2 Your Internal Billing Reference First 24 characters will appear on invoice. **11222418-01-02**

3 To
Recipient's Name **Sample Receiving** Phone () _____
Company **Eurotins TA-Chicago**
Address **2417 Bond St** Dept./Floor/Suite/Room _____
We cannot deliver to P.O. boxes or P.O. ZIP codes.
Address _____
Use this line for the HOLD location address or for continuation of your shipping address.
City **University Park** State **IL** ZIP **60484**

4 Express Package Service * To most locations. **Packages up to 150 lbs.** For packages over 150 lbs., use the FedEx Express Freight US Airbill.

- 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.
- 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
FedEx Standard Overnight, FedEx 2Day A.M. or FedEx Express Saver.

- No Signature Required
Package may be left without signature.
- 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 addresses only.

FedEx 5 of 5
MPS# **0260 8082 6026 0597**
Mstr# **8142 2234 3065 0200**
AC JOTA

TUE - 13 APR AA
PRIORITY OVERNIGHT
60484
IL-US
ORD



fedex.com 1800 GoFedEx 1.800.463.3339

PULL AND R TA N H S CDP F JAR F LA N Y T H PA de MAD POUH NE ZED

FedEx Express *Package US Airbill*

FedEx Tracking Number **8142 2234 3065**

Form ID No. **0200**

fedex.com 1.800.GoFedEx 1.800.463.3339

fedex.com 1.800.GoFedEx 1.800.463.3339

1 From 4-22 [Redacted]
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 P.O. boxes or P.O. 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.

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 will 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

Cargo Aircraft Only

Restrictions apply for dangerous goods — see the current FedEx Service Guide.

7 Payment Bill to:

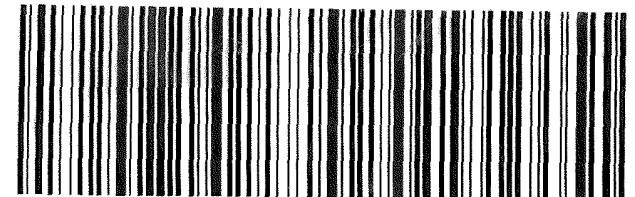
Enter FedEx Acct. No. or Credit Card No. below. or No

Sender Acct. No. in Section 1 will be billed. Recipient Third Party Credit Card Cash/Check



8142 2234 3065

FedEx TRK# **8142 2234 3065** **PRIORITY OVERNIGHT**
MASTER #
AC JOTA **60484**
IL-US **ORD**



Fed Express *Package* **US Airbill** FedEx Tracking Number **8142 2234 3065**

Form ID No. **0200**

1 From Please print and press hard.
 Date _____ Sender's FedEx Account Number **1 242-3320-8**
 Sender's Name **6HD Services** Phone () _____
 Company **1801 Old Highway 8 NW**
 Address **Suite 114** Dept./Floor/Suite/Room _____
 City **St Paul** State **MN** ZIP **55112**

2 Your Internal Billing Reference First 24 characters will appear on invoice. **11222418-01-02**

3 To
 Recipient's Name **Sample Receiving** Phone () _____
 Company **Eurotrans TA-Chicago**
 Address **2417 Bond St** Dept./Floor/Suite/Room _____
 We cannot deliver to P.O. boxes or P.O. ZIP codes.
 Address _____
 Use this line for the HOLD location address or for continuation of your shipping address.
 City **University Park** State **IL** ZIP **60**

4 Express Package Service *To most locations. Packages up to 150 lbs. For packages over 150 lbs., use the FedEx Express Freight US Airbill.

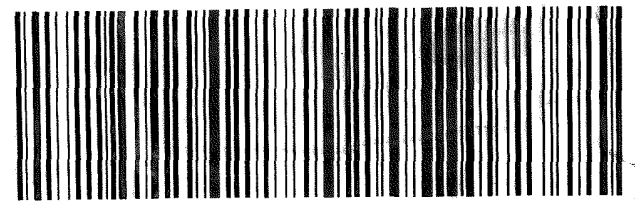
- FedEx First Overnight
Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Priority Overnight
Next business morning.* Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
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Next business afternoon.* Saturday Delivery NOT available.
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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
 No Signature Required Direct Signature Indirect Signature
If you have an account with recipient's shipping company, For

FedEx 3 of 5
 MPS# **0260 8082 6026 9575**
 Mstr# **8142 2234 3065 0200**
AC JOTA

TUE - 13 APR AA
PRIORITY OVERNIGHT
 kg _____
60484
 IL-US
ORD
 /Check _____



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DU AND RETAIN THIS COPY FOR AIR MAIL MAILING INFORMATION





Package US Airbill

FedEx Tracking Number 8142 2234 3065

Form ID No. 0200

1 From Please print and press hard.

Date Sender's FedEx Account Number 1 242-3320 8

Sender's Name GHD Services Phone ()

Company 1801 Old Highway 8 NW

Address Suite 114 Dept/Floor/Suite/Room

City St Paul State MN ZIP 55112

2 Your Internal Billing Reference

First 24 characters will appear on invoice. 11222418-01-02

3 To

Recipient's Name Sample Receiving Phone ()

Company Evotins TA-Chicago

Address 2417 Bond St Dept/Floor/Suite/Room

Address Use this line for the HOLD location address or for continuation of your shipping address.

City University Park State IL ZIP 60484

4 Express Package Service

* To most locations.

Packages up to 150 lbs. For packages over 150 lbs., use the FedEx Express Freight US Airbill.

- FedEx First Overnight, FedEx Priority Overnight, FedEx Standard Overnight

- FedEx 2Day A.M., FedEx 2Day, FedEx Express Saver

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.

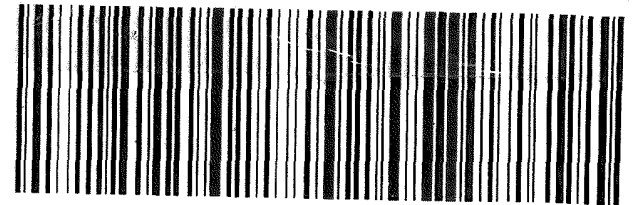
- Saturday Delivery, No Signature Required, Direct Signature, Indirect Signature

fedex 2 of 5 MPS# 0260 8082 6026 0564 Mstr# 8142 2234 3065 0200

TUE - 13 APR AA PRIORITY OVERNIGHT

AC JOTA

60484 IL-US ORD



387267 12 Apr 2021 JOTA 56DG2 /5FC2 /1R23

fedex.com 1.800.GoFedEx 1.800.463.3339



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Fed Express *Package* **US Airbill** FedEx Tracking Number **8142 2234 3065** Form ID No. **0200**

1 From Please print and press hard.
 Date _____ Sender's FedEx Account Number **1 242-3320-8**
 Sender's Name **6HD Services** Phone () _____
 Company **1801 Old Highway 8 NW**
 Address **Suite 114** Dept./Floor/Suite/Room _____
 City **St Paul** State **MN** ZIP **55114**

2 Your Internal Billing Reference First 24 characters will appear on invoice. **11222418-01-02**

3 To
 Recipient's Name **Sample Receiving** Phone () _____
 Company **Eurotrans TA-Chicago**
 Address **2417 Bond St** Dept./Floor/Suite/Room _____
 We cannot deliver to P.O. boxes or P.O. ZIP codes.
 Address _____
 Use this line for the HOLD location address or for continuation of your shipping address.
 City **University Park** State **IL** ZIP **606**

4 Express Package Service *To most locations. Packages up to 150 lbs. For packages over 150 lbs., use the FedEx Express Freight US Airbill.

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.

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
 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.

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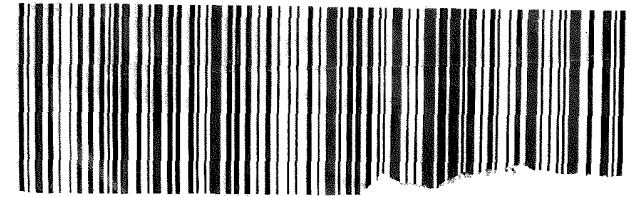
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 Mstr# **8142 2234 3065 0200**

AC JOTA

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Eurofins TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility

Login # : _____

Client ETA Site Name _____

Cooler unpacked by:

Cooler Received on 4-14-21 Opened on 4-14-21

Matts

FedEx: 1st Grd UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # 78 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# IR-11 (CF +0.1 °C) Observed Cooler Temp. 0.1 °C Corrected Cooler Temp. 0.2 °C
 IR GUN #IR-12 (CF +0.2 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 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 NA
 -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 forms share samples and all listed on the COC? Yes No

Tests that are not checked for pH by Receiving:
 VOAs
 Oil and Grease
 TOC

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# HC022887
 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
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- 15

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-197485-1

Login Number: 197485

List Source: Eurofins TestAmerica, 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	4.3,4.8,2.9,4.7,5.0
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.	False	Received Trip Blank(s) not listed on COC.
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	Refer to Job Narrative for details.
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

Eurofins TestAmerica, Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

Laboratory Job ID: 500-197560-1
Client Project/Site: Penta Wood 11222418

For:
GHD Services Inc.
1801 Old Highway 8 NW
Suite 114
St. Paul, Minnesota 55112

Attn: Mr. Grant Anderson



Authorized for release by:
4/28/2021 5:09:40 PM

Richard Wright, Senior Project Manager
(708)746-0045
Richard.Wright@Eurofinset.com

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

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

Job ID: 500-197560-1

Job ID: 500-197560-1

Laboratory: Eurofins TestAmerica, Chicago

Narrative

Job Narrative 500-197560-1

Receipt

The samples were received on 4/14/2021 9:25 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 1.4° C, 2.6° C, 2.8° C and 3.6° C. A trip blank was submitted for analysis with these samples; however, it was not listed on the Chain of Custody (COC). Added to COC and logged in.

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: The following sample was diluted due to the nature of the sample matrix: W-210413-RA-08 (500-197560-2). 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 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-210413-RA-08 (500-197560-2) and W-210413-RA-13 (500-197560-7). 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: The following samples were reported from the primary column due to Pentachlorophenol recovering outside control limits for the continuing calibration verification (CCV) on the secondary column; therefore, the higher of the two results have been reported.

W-210413-RA-07 (500-197560-1), W-210413-RA-08 (500-197560-2), W-210413-RA-10 (500-197560-4), W-210413-RA-11 (500-197560-5), W-210413-RA-13 (500-197560-7), (CCV 500-594261/11), (CCV 500-594261/28), (CCV 500-594261/39), (CCV 500-594261/1), (LCS 500-594076/2-A) and (MB 500-594076/1-A)

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

Method 300.0: Reanalysis of the following sample was performed outside of the analytical holding time due to the sample requiring a dilution : W-210413-RA-11 (500-197560-5).

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: 500-197560-1

Client Sample ID: W-210413-RA-07

Lab Sample ID: 500-197560-1

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.26		0.11	0.10	ug/L	1		8151A	Total/NA
Copper	8.3		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	1100		100	46.7	ug/L	1		6020A	Dissolved
Manganese	38.4		2.5	0.79	ug/L	1		6020A	Dissolved
Zinc	14.5	J B	20.0	6.9	ug/L	1		6020A	Dissolved

Client Sample ID: W-210413-RA-08

Lab Sample ID: 500-197560-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.85		0.50	0.15	ug/L	1		8260B	Total/NA
Ethylbenzene	0.81		0.50	0.18	ug/L	1		8260B	Total/NA
Xylenes, Total	7.7		1.0	0.22	ug/L	1		8260B	Total/NA
Naphthalene	35		8.5	2.6	ug/L	10		8270D	Total/NA
Methane	9.7		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	4700		410	370	ug/L	4000		8151A	Total/NA
Arsenic	0.70	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	2.1		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	16100		100	46.7	ug/L	1		6020A	Dissolved
Manganese	8010		25.0	7.9	ug/L	10		6020A	Dissolved
Zinc	10.6	J B	20.0	6.9	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	310		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	25.2		1.0	0.85	mg/L	5		300.0	Total/NA
Nitrate as N	0.069	J	0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	22.6		1.0	0.48	mg/L	5		300.0	Total/NA
Total Organic Carbon - Duplicates	63.7		10.0	4.7	mg/L	10		9060A	Total/NA
Alkalinity	258		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-210413-RA-09

Lab Sample ID: 500-197560-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.39	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	10.5		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	2540		100	46.7	ug/L	1		6020A	Dissolved
Manganese	108		2.5	0.79	ug/L	1		6020A	Dissolved
Zinc	20.0		20.0	6.9	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	106		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	0.33		0.20	0.17	mg/L	1		300.0	Total/NA
Nitrate as N	0.33		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	1.4		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.91	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	86.6		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-210413-RA-10

Lab Sample ID: 500-197560-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	3.2		0.096	0.087	ug/L	1		8151A	Total/NA
Arsenic	0.50	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	18.9		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	3470		100	46.7	ug/L	1		6020A	Dissolved
Manganese	208		2.5	0.79	ug/L	1		6020A	Dissolved
Zinc	37.8		20.0	6.9	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	101		0.91	0.46	mg/L	1		SM 2340B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

Detection Summary

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

Job ID: 500-197560-1

Client Sample ID: W-210413-RA-10 (Continued)

Lab Sample ID: 500-197560-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Chloride	1.3		0.20	0.17	mg/L	1		300.0	Total/NA
Nitrate as N	2.3		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	20.8		1.0	0.48	mg/L	5		300.0	Total/NA
Total Organic Carbon - Duplicates	7.4		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	75.8		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-210413-RA-11

Lab Sample ID: 500-197560-5

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	1.2		0.096	0.086	ug/L	1		8151A	Total/NA
Copper	20.9		2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	5.4		2.5	0.79	ug/L	1		6020A	Dissolved
Zinc	12.5	J B	20.0	6.9	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	134		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	4.5		0.20	0.17	mg/L	1		300.0	Total/NA
Nitrate as N	6.5	H	1.0	0.34	mg/L	5		300.0	Total/NA
Sulfate	21.0		1.0	0.48	mg/L	5		300.0	Total/NA
Total Organic Carbon - Duplicates	2.5		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	97.3		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-210413-RA-12

Lab Sample ID: 500-197560-6

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.23	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	4.8		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	389		100	46.7	ug/L	1		6020A	Dissolved
Manganese	22.9		2.5	0.79	ug/L	1		6020A	Dissolved
Zinc	9.6	J B	20.0	6.9	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	117		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	6.5		0.40	0.34	mg/L	2		300.0	Total/NA
Nitrate as N	0.68		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	3.3		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.75	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	74.3		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-210413-RA-13

Lab Sample ID: 500-197560-7

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Xylenes, Total	0.56	J	1.0	0.22	ug/L	1		8260B	Total/NA
Naphthalene	3.1		0.86	0.27	ug/L	1		8270D	Total/NA
Pentachlorophenol	190		44	39	ug/L	400		8151A	Total/NA
Copper	36.0		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	59.2	J	100	46.7	ug/L	1		6020A	Dissolved
Manganese	22.2		2.5	0.79	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	115		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	0.74		0.20	0.17	mg/L	1		300.0	Total/NA
Nitrate as N	1.1		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	2.9		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	2.2		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	123		5.0	3.7	mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

Detection Summary

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

Job ID: 500-197560-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-197560-8

No Detections.

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This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

Method Summary

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

Job ID: 500-197560-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CHI
RSK-175	Dissolved Gases (GC)	RSK	TAL CAN
8151A	Herbicides (GC)	SW846	TAL CHI
6020A	Metals (ICP/MS)	SW846	TAL CHI
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	TAL CHI
300.0	Anions, Ion Chromatography	MCAWW	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
SM 2320B	Alkalinity	SM	TAL CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CHI
3010A	Preparation, Total Metals	SW846	TAL CHI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL CHI
5030B	Purge and Trap	SW846	TAL CHI
8151A	Extraction (Herbicides)	SW846	TAL CHI

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL CHI = Eurofins TestAmerica, 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: 500-197560-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
500-197560-1	W-210413-RA-07	Water	04/13/21 10:37	04/14/21 09:25	
500-197560-2	W-210413-RA-08	Water	04/13/21 10:37	04/14/21 09:25	
500-197560-3	W-210413-RA-09	Water	04/13/21 10:52	04/14/21 09:25	
500-197560-4	W-210413-RA-10	Water	04/13/21 12:23	04/14/21 09:25	
500-197560-5	W-210413-RA-11	Water	04/13/21 12:56	04/14/21 09:25	
500-197560-6	W-210413-RA-12	Water	04/13/21 13:53	04/14/21 09:25	
500-197560-7	W-210413-RA-13	Water	04/13/21 13:39	04/14/21 09:25	
500-197560-8	Trip Blank	Water	04/13/21 00:00	04/14/21 09:25	

Client Sample Results

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

Job ID: 500-197560-1

Client Sample ID: W-210413-RA-07

Lab Sample ID: 500-197560-1

Date Collected: 04/13/21 10:37

Matrix: Water

Date Received: 04/14/21 09:25

Method: 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			04/20/21 18:14	1
Toluene	<0.15		0.50	0.15	ug/L			04/20/21 18:14	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/20/21 18:14	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/20/21 18:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	119		75 - 126		04/20/21 18:14	1
Toluene-d8 (Surr)	98		75 - 120		04/20/21 18:14	1
4-Bromofluorobenzene (Surr)	86		72 - 124		04/20/21 18:14	1
Dibromofluoromethane	115		75 - 120		04/20/21 18:14	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.28		0.89	0.28	ug/L		04/16/21 21:43	04/19/21 10:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	78		36 - 120	04/16/21 21:43	04/19/21 10:48	1
2-Fluorobiphenyl (Surr)	73		34 - 110	04/16/21 21:43	04/19/21 10:48	1
Terphenyl-d14 (Surr)	90		40 - 145	04/16/21 21:43	04/19/21 10:48	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.26		0.11	0.10	ug/L		04/20/21 08:03	04/21/21 00:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	87		25 - 130	04/20/21 08:03	04/21/21 00:15	1

Method: 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		04/18/21 18:38	04/20/21 20:20	1
Copper	8.3		2.0	0.50	ug/L		04/18/21 18:38	04/20/21 20:20	1
Iron	1100		100	46.7	ug/L		04/18/21 18:38	04/20/21 20:20	1
Manganese	38.4		2.5	0.79	ug/L		04/18/21 18:38	04/20/21 20:20	1
Zinc	14.5	J B	20.0	6.9	ug/L		04/18/21 18:38	04/20/21 20:20	1

Client Sample Results

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

Job ID: 500-197560-1

Client Sample ID: W-210413-RA-08

Lab Sample ID: 500-197560-2

Date Collected: 04/13/21 10:37

Matrix: Water

Date Received: 04/14/21 09:25

Method: 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			04/20/21 18:42	1
Toluene	0.85		0.50	0.15	ug/L			04/20/21 18:42	1
Ethylbenzene	0.81		0.50	0.18	ug/L			04/20/21 18:42	1
Xylenes, Total	7.7		1.0	0.22	ug/L			04/20/21 18:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	120		75 - 126		04/20/21 18:42	1
Toluene-d8 (Surr)	98		75 - 120		04/20/21 18:42	1
4-Bromofluorobenzene (Surr)	80		72 - 124		04/20/21 18:42	1
Dibromofluoromethane	119		75 - 120		04/20/21 18:42	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	35		8.5	2.6	ug/L		04/16/21 21:43	04/19/21 11:15	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	108		36 - 120	04/16/21 21:43	04/19/21 11:15	10
2-Fluorobiphenyl (Surr)	96		34 - 110	04/16/21 21:43	04/19/21 11:15	10
Terphenyl-d14 (Surr)	99		40 - 145	04/16/21 21:43	04/19/21 11:15	10

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	9.7		1.0	0.17	ug/L			04/19/21 15:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	110		60 - 140		04/19/21 15:44	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	4700		410	370	ug/L		04/20/21 08:03	04/21/21 09:56	4000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	0	D	25 - 130	04/20/21 08:03	04/21/21 09:56	4000

Method: 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		04/18/21 18:38	04/20/21 20:24	1
Copper	2.1		2.0	0.50	ug/L		04/18/21 18:38	04/20/21 20:24	1
Iron	16100		100	46.7	ug/L		04/18/21 18:38	04/20/21 20:24	1
Manganese	8010		25.0	7.9	ug/L		04/18/21 18:38	04/21/21 13:35	10
Zinc	10.6	J B	20.0	6.9	ug/L		04/18/21 18:38	04/20/21 20:24	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	310		0.91	0.46	mg/L		04/15/21 07:59	04/16/21 07:16	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	25.2		1.0	0.85	mg/L			04/27/21 09:46	5
Nitrate as N	0.069	J	0.20	0.068	mg/L			04/14/21 18:01	1
Sulfate	22.6		1.0	0.48	mg/L			04/27/21 09:46	5
Total Organic Carbon - Duplicates	63.7		10.0	4.7	mg/L			04/19/21 15:55	10

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-197560-1

Client Sample ID: W-210413-RA-08

Lab Sample ID: 500-197560-2

Date Collected: 04/13/21 10:37

Matrix: Water

Date Received: 04/14/21 09:25

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	258		5.0	3.7	mg/L			04/15/21 10:16	1

1

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Client Sample Results

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

Job ID: 500-197560-1

Client Sample ID: W-210413-RA-09

Lab Sample ID: 500-197560-3

Date Collected: 04/13/21 10:52

Matrix: Water

Date Received: 04/14/21 09:25

Method: 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			04/20/21 19:10	1
Toluene	<0.15		0.50	0.15	ug/L			04/20/21 19:10	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/20/21 19:10	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/20/21 19:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	118		75 - 126		04/20/21 19:10	1
Toluene-d8 (Surr)	97		75 - 120		04/20/21 19:10	1
4-Bromofluorobenzene (Surr)	81		72 - 124		04/20/21 19:10	1
Dibromofluoromethane	117		75 - 120		04/20/21 19:10	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.82	0.25	ug/L		04/16/21 21:43	04/19/21 11:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	93		36 - 120	04/16/21 21:43	04/19/21 11:42	1
2-Fluorobiphenyl (Surr)	88		34 - 110	04/16/21 21:43	04/19/21 11:42	1
Terphenyl-d14 (Surr)	96		40 - 145	04/16/21 21:43	04/19/21 11:42	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			04/19/21 16:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	109		60 - 140		04/19/21 16:01	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.090		0.10	0.090	ug/L		04/20/21 08:03	04/21/21 00:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	107		25 - 130	04/20/21 08:03	04/21/21 00:54	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.39	J	1.0	0.23	ug/L		04/18/21 18:38	04/20/21 20:27	1
Copper	10.5		2.0	0.50	ug/L		04/18/21 18:38	04/20/21 20:27	1
Iron	2540		100	46.7	ug/L		04/18/21 18:38	04/20/21 20:27	1
Manganese	108		2.5	0.79	ug/L		04/18/21 18:38	04/20/21 20:27	1
Zinc	20.0		20.0	6.9	ug/L		04/23/21 09:17	04/23/21 21:15	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	106		0.91	0.46	mg/L		04/15/21 07:59	04/16/21 07:16	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.33		0.20	0.17	mg/L			04/14/21 18:14	1
Nitrate as N	0.33		0.20	0.068	mg/L			04/14/21 18:14	1
Sulfate	1.4		0.20	0.095	mg/L			04/14/21 18:14	1
Total Organic Carbon - Duplicates	0.91	J	1.0	0.47	mg/L			04/19/21 16:02	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-197560-1

Client Sample ID: W-210413-RA-09

Lab Sample ID: 500-197560-3

Date Collected: 04/13/21 10:52

Matrix: Water

Date Received: 04/14/21 09:25

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	86.6		5.0	3.7	mg/L			04/15/21 10:55	1

Client Sample Results

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

Job ID: 500-197560-1

Client Sample ID: W-210413-RA-10

Lab Sample ID: 500-197560-4

Date Collected: 04/13/21 12:23

Matrix: Water

Date Received: 04/14/21 09:25

Method: 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			04/20/21 19:39	1
Toluene	<0.15		0.50	0.15	ug/L			04/20/21 19:39	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/20/21 19:39	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/20/21 19:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	118		75 - 126		04/20/21 19:39	1
Toluene-d8 (Surr)	98		75 - 120		04/20/21 19:39	1
4-Bromofluorobenzene (Surr)	83		72 - 124		04/20/21 19:39	1
Dibromofluoromethane	116		75 - 120		04/20/21 19:39	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.24		0.79	0.24	ug/L		04/16/21 21:43	04/19/21 12:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	87		36 - 120	04/16/21 21:43	04/19/21 12:09	1
2-Fluorobiphenyl (Surr)	75		34 - 110	04/16/21 21:43	04/19/21 12:09	1
Terphenyl-d14 (Surr)	87		40 - 145	04/16/21 21:43	04/19/21 12:09	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			04/19/21 16:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	112		60 - 140		04/19/21 16:36	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	3.2		0.096	0.087	ug/L		04/20/21 08:03	04/21/21 01:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	94		25 - 130	04/20/21 08:03	04/21/21 01:14	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.50	J	1.0	0.23	ug/L		04/18/21 18:38	04/20/21 20:31	1
Copper	18.9		2.0	0.50	ug/L		04/18/21 18:38	04/20/21 20:31	1
Iron	3470		100	46.7	ug/L		04/18/21 18:38	04/20/21 20:31	1
Manganese	208		2.5	0.79	ug/L		04/18/21 18:38	04/20/21 20:31	1
Zinc	37.8		20.0	6.9	ug/L		04/23/21 09:17	04/23/21 21:18	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	101		0.91	0.46	mg/L		04/15/21 07:59	04/16/21 07:16	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.3		0.20	0.17	mg/L			04/14/21 18:55	1
Nitrate as N	2.3		0.20	0.068	mg/L			04/14/21 18:55	1
Sulfate	20.8		1.0	0.48	mg/L			04/27/21 10:00	5
Total Organic Carbon - Duplicates	7.4		1.0	0.47	mg/L			04/19/21 16:09	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-197560-1

Client Sample ID: W-210413-RA-10

Lab Sample ID: 500-197560-4

Date Collected: 04/13/21 12:23

Matrix: Water

Date Received: 04/14/21 09:25

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	75.8		5.0	3.7	mg/L			04/15/21 11:01	1

Client Sample Results

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

Job ID: 500-197560-1

Client Sample ID: W-210413-RA-11

Lab Sample ID: 500-197560-5

Date Collected: 04/13/21 12:56

Matrix: Water

Date Received: 04/14/21 09:25

Method: 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			04/23/21 01:42	1
Toluene	<0.15		0.50	0.15	ug/L			04/23/21 01:42	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/23/21 01:42	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/23/21 01:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		75 - 126		04/23/21 01:42	1
Toluene-d8 (Surr)	99		75 - 120		04/23/21 01:42	1
4-Bromofluorobenzene (Surr)	95		72 - 124		04/23/21 01:42	1
Dibromofluoromethane	107		75 - 120		04/23/21 01:42	1

Method: 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		04/16/21 21:43	04/19/21 12:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	78		36 - 120	04/16/21 21:43	04/19/21 12:36	1
2-Fluorobiphenyl (Surr)	71		34 - 110	04/16/21 21:43	04/19/21 12:36	1
Terphenyl-d14 (Surr)	78		40 - 145	04/16/21 21:43	04/19/21 12:36	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			04/19/21 16:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	111		60 - 140		04/19/21 16:53	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	1.2		0.096	0.086	ug/L		04/20/21 08:03	04/21/21 01:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	69		25 - 130	04/20/21 08:03	04/21/21 01:33	1

Method: 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		04/18/21 18:38	04/20/21 20:34	1
Copper	20.9		2.0	0.50	ug/L		04/18/21 18:38	04/20/21 20:34	1
Iron	<46.7		100	46.7	ug/L		04/18/21 18:38	04/20/21 20:34	1
Manganese	5.4		2.5	0.79	ug/L		04/18/21 18:38	04/20/21 20:34	1
Zinc	12.5	J B	20.0	6.9	ug/L		04/18/21 18:38	04/20/21 20:34	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	134		0.91	0.46	mg/L		04/15/21 07:59	04/16/21 07:16	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.5		0.20	0.17	mg/L			04/14/21 19:09	1
Nitrate as N	6.5	H	1.0	0.34	mg/L			04/27/21 10:14	5
Sulfate	21.0		1.0	0.48	mg/L			04/27/21 10:14	5
Total Organic Carbon - Duplicates	2.5		1.0	0.47	mg/L			04/19/21 16:17	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-197560-1

Client Sample ID: W-210413-RA-11

Lab Sample ID: 500-197560-5

Date Collected: 04/13/21 12:56

Matrix: Water

Date Received: 04/14/21 09:25

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	97.3		5.0	3.7	mg/L			04/15/21 16:27	1

Client Sample Results

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

Job ID: 500-197560-1

Client Sample ID: W-210413-RA-12

Lab Sample ID: 500-197560-6

Date Collected: 04/13/21 13:53

Matrix: Water

Date Received: 04/14/21 09:25

Method: 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			04/23/21 02:10	1
Toluene	<0.15		0.50	0.15	ug/L			04/23/21 02:10	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/23/21 02:10	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/23/21 02:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		75 - 126					04/23/21 02:10	1
Toluene-d8 (Surr)	98		75 - 120					04/23/21 02:10	1
4-Bromofluorobenzene (Surr)	95		72 - 124					04/23/21 02:10	1
Dibromofluoromethane	107		75 - 120					04/23/21 02:10	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.26		0.84	0.26	ug/L		04/16/21 21:43	04/19/21 13:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	93		36 - 120				04/16/21 21:43	04/19/21 13:04	1
2-Fluorobiphenyl (Surr)	86		34 - 110				04/16/21 21:43	04/19/21 13:04	1
Terphenyl-d14 (Surr)	84		40 - 145				04/16/21 21:43	04/19/21 13:04	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			04/19/21 17:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	110		60 - 140					04/19/21 17:10	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.090		0.10	0.090	ug/L		04/20/21 08:03	04/21/21 01:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	90		25 - 130				04/20/21 08:03	04/21/21 01:52	1

Method: 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		04/18/21 18:38	04/20/21 20:38	1
Copper	4.8		2.0	0.50	ug/L		04/18/21 18:38	04/20/21 20:38	1
Iron	389		100	46.7	ug/L		04/18/21 18:38	04/20/21 20:38	1
Manganese	22.9		2.5	0.79	ug/L		04/18/21 18:38	04/20/21 20:38	1
Zinc	9.6	J B	20.0	6.9	ug/L		04/18/21 18:38	04/20/21 20:38	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	117		0.91	0.46	mg/L		04/15/21 07:59	04/16/21 07:16	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.5		0.40	0.34	mg/L			04/27/21 10:27	2
Nitrate as N	0.68		0.20	0.068	mg/L			04/14/21 19:22	1
Sulfate	3.3		0.20	0.095	mg/L			04/14/21 19:22	1
Total Organic Carbon - Duplicates	0.75	J	1.0	0.47	mg/L			04/19/21 16:46	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-197560-1

Client Sample ID: W-210413-RA-12

Lab Sample ID: 500-197560-6

Date Collected: 04/13/21 13:53

Matrix: Water

Date Received: 04/14/21 09:25

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	74.3		5.0	3.7	mg/L			04/15/21 10:23	1

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Client Sample Results

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

Job ID: 500-197560-1

Client Sample ID: W-210413-RA-13

Lab Sample ID: 500-197560-7

Date Collected: 04/13/21 13:39

Matrix: Water

Date Received: 04/14/21 09:25

Method: 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			04/23/21 02:38	1
Toluene	<0.15		0.50	0.15	ug/L			04/23/21 02:38	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/23/21 02:38	1
Xylenes, Total	0.56	J	1.0	0.22	ug/L			04/23/21 02:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		75 - 126		04/23/21 02:38	1
Toluene-d8 (Surr)	99		75 - 120		04/23/21 02:38	1
4-Bromofluorobenzene (Surr)	92		72 - 124		04/23/21 02:38	1
Dibromofluoromethane	108		75 - 120		04/23/21 02:38	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	3.1		0.86	0.27	ug/L		04/16/21 21:43	04/19/21 13:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	81		36 - 120	04/16/21 21:43	04/19/21 13:31	1
2-Fluorobiphenyl (Surr)	74		34 - 110	04/16/21 21:43	04/19/21 13:31	1
Terphenyl-d14 (Surr)	75		40 - 145	04/16/21 21:43	04/19/21 13:31	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			04/19/21 17:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	110		60 - 140		04/19/21 17:28	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	190		44	39	ug/L		04/20/21 08:03	04/21/21 10:15	400

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	0	D	25 - 130	04/20/21 08:03	04/21/21 10:15	400

Method: 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		04/18/21 18:38	04/20/21 20:41	1
Copper	36.0		2.0	0.50	ug/L		04/18/21 18:38	04/20/21 20:41	1
Iron	59.2	J	100	46.7	ug/L		04/18/21 18:38	04/20/21 20:41	1
Manganese	22.2		2.5	0.79	ug/L		04/18/21 18:38	04/20/21 20:41	1
Zinc	<6.9		20.0	6.9	ug/L		04/23/21 09:17	04/23/21 21:22	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	115		0.91	0.46	mg/L		04/15/21 07:59	04/16/21 07:16	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.74		0.20	0.17	mg/L			04/14/21 19:36	1
Nitrate as N	1.1		0.20	0.068	mg/L			04/14/21 19:36	1
Sulfate	2.9		0.20	0.095	mg/L			04/14/21 19:36	1
Total Organic Carbon - Duplicates	2.2		1.0	0.47	mg/L			04/19/21 16:58	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-197560-1

Client Sample ID: W-210413-RA-13

Lab Sample ID: 500-197560-7

Date Collected: 04/13/21 13:39

Matrix: Water

Date Received: 04/14/21 09:25

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	123		5.0	3.7	mg/L			04/15/21 16:34	1

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Client Sample Results

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

Job ID: 500-197560-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-197560-8

Date Collected: 04/13/21 00:00

Matrix: Water

Date Received: 04/14/21 09:25

Method: 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			04/23/21 00:45	1
Toluene	<0.15		0.50	0.15	ug/L			04/23/21 00:45	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/23/21 00:45	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/23/21 00:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		75 - 126		04/23/21 00:45	1
Toluene-d8 (Surr)	101		75 - 120		04/23/21 00:45	1
4-Bromofluorobenzene (Surr)	98		72 - 124		04/23/21 00:45	1
Dibromofluoromethane	107		75 - 120		04/23/21 00:45	1

Definitions/Glossary

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

Job ID: 500-197560-1

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
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.

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
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: 500-197560-1

GC/MS VOA

Analysis Batch: 594048

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197560-1	W-210413-RA-07	Total/NA	Water	8260B	
500-197560-2	W-210413-RA-08	Total/NA	Water	8260B	
500-197560-3	W-210413-RA-09	Total/NA	Water	8260B	
500-197560-4	W-210413-RA-10	Total/NA	Water	8260B	
MB 500-594048/6	Method Blank	Total/NA	Water	8260B	
LCS 500-594048/4	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 594599

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197560-5	W-210413-RA-11	Total/NA	Water	8260B	
500-197560-6	W-210413-RA-12	Total/NA	Water	8260B	
500-197560-7	W-210413-RA-13	Total/NA	Water	8260B	
500-197560-8	Trip Blank	Total/NA	Water	8260B	
MB 500-594599/5	Method Blank	Total/NA	Water	8260B	
LCS 500-594599/3	Lab Control Sample	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 593749

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197560-1	W-210413-RA-07	Total/NA	Water	3510C	
500-197560-2	W-210413-RA-08	Total/NA	Water	3510C	
500-197560-3	W-210413-RA-09	Total/NA	Water	3510C	
500-197560-4	W-210413-RA-10	Total/NA	Water	3510C	
500-197560-5	W-210413-RA-11	Total/NA	Water	3510C	
500-197560-6	W-210413-RA-12	Total/NA	Water	3510C	
500-197560-7	W-210413-RA-13	Total/NA	Water	3510C	
MB 500-593749/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-593749/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-593749/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 593899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-593749/1-A	Method Blank	Total/NA	Water	8270D	593749
LCS 500-593749/2-A	Lab Control Sample	Total/NA	Water	8270D	593749
LCSD 500-593749/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	593749

Analysis Batch: 593917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197560-1	W-210413-RA-07	Total/NA	Water	8270D	593749
500-197560-2	W-210413-RA-08	Total/NA	Water	8270D	593749
500-197560-3	W-210413-RA-09	Total/NA	Water	8270D	593749
500-197560-4	W-210413-RA-10	Total/NA	Water	8270D	593749
500-197560-5	W-210413-RA-11	Total/NA	Water	8270D	593749
500-197560-6	W-210413-RA-12	Total/NA	Water	8270D	593749
500-197560-7	W-210413-RA-13	Total/NA	Water	8270D	593749

GC VOA

Analysis Batch: 481671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197560-2	W-210413-RA-08	Total/NA	Water	RSK-175	

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QC Association Summary

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

Job ID: 500-197560-1

GC VOA (Continued)

Analysis Batch: 481671 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197560-3	W-210413-RA-09	Total/NA	Water	RSK-175	
500-197560-4	W-210413-RA-10	Total/NA	Water	RSK-175	
500-197560-5	W-210413-RA-11	Total/NA	Water	RSK-175	
500-197560-6	W-210413-RA-12	Total/NA	Water	RSK-175	
500-197560-7	W-210413-RA-13	Total/NA	Water	RSK-175	
MB 240-481671/3	Method Blank	Total/NA	Water	RSK-175	
LCS 240-481671/4	Lab Control Sample	Total/NA	Water	RSK-175	

GC Semi VOA

Prep Batch: 594076

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197560-1	W-210413-RA-07	Total/NA	Water	8151A	
500-197560-2	W-210413-RA-08	Total/NA	Water	8151A	
500-197560-3	W-210413-RA-09	Total/NA	Water	8151A	
500-197560-4	W-210413-RA-10	Total/NA	Water	8151A	
500-197560-5	W-210413-RA-11	Total/NA	Water	8151A	
500-197560-6	W-210413-RA-12	Total/NA	Water	8151A	
500-197560-7	W-210413-RA-13	Total/NA	Water	8151A	
MB 500-594076/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-594076/2-A	Lab Control Sample	Total/NA	Water	8151A	

Analysis Batch: 594261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197560-1	W-210413-RA-07	Total/NA	Water	8151A	594076
500-197560-2	W-210413-RA-08	Total/NA	Water	8151A	594076
500-197560-3	W-210413-RA-09	Total/NA	Water	8151A	594076
500-197560-4	W-210413-RA-10	Total/NA	Water	8151A	594076
500-197560-5	W-210413-RA-11	Total/NA	Water	8151A	594076
500-197560-6	W-210413-RA-12	Total/NA	Water	8151A	594076
500-197560-7	W-210413-RA-13	Total/NA	Water	8151A	594076
MB 500-594076/1-A	Method Blank	Total/NA	Water	8151A	594076
LCS 500-594076/2-A	Lab Control Sample	Total/NA	Water	8151A	594076

Metals

Prep Batch: 593410

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197560-2	W-210413-RA-08	Total/NA	Water	3010A	
500-197560-3	W-210413-RA-09	Total/NA	Water	3010A	
500-197560-4	W-210413-RA-10	Total/NA	Water	3010A	
500-197560-5	W-210413-RA-11	Total/NA	Water	3010A	
500-197560-6	W-210413-RA-12	Total/NA	Water	3010A	
500-197560-7	W-210413-RA-13	Total/NA	Water	3010A	

Analysis Batch: 593573

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197560-2	W-210413-RA-08	Total/NA	Water	SM 2340B	593410
500-197560-3	W-210413-RA-09	Total/NA	Water	SM 2340B	593410
500-197560-4	W-210413-RA-10	Total/NA	Water	SM 2340B	593410
500-197560-5	W-210413-RA-11	Total/NA	Water	SM 2340B	593410
500-197560-6	W-210413-RA-12	Total/NA	Water	SM 2340B	593410

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QC Association Summary

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

Job ID: 500-197560-1

Metals (Continued)

Analysis Batch: 593573 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197560-7	W-210413-RA-13	Total/NA	Water	SM 2340B	593410

Prep Batch: 593794

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197560-1	W-210413-RA-07	Dissolved	Water	3005A	
500-197560-2	W-210413-RA-08	Dissolved	Water	3005A	
500-197560-3	W-210413-RA-09	Dissolved	Water	3005A	
500-197560-4	W-210413-RA-10	Dissolved	Water	3005A	
500-197560-5	W-210413-RA-11	Dissolved	Water	3005A	
500-197560-6	W-210413-RA-12	Dissolved	Water	3005A	
500-197560-7	W-210413-RA-13	Dissolved	Water	3005A	
MB 500-593794/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-593794/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 594355

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197560-1	W-210413-RA-07	Dissolved	Water	6020A	593794
500-197560-2	W-210413-RA-08	Dissolved	Water	6020A	593794
500-197560-3	W-210413-RA-09	Dissolved	Water	6020A	593794
500-197560-4	W-210413-RA-10	Dissolved	Water	6020A	593794
500-197560-5	W-210413-RA-11	Dissolved	Water	6020A	593794
500-197560-6	W-210413-RA-12	Dissolved	Water	6020A	593794
500-197560-7	W-210413-RA-13	Dissolved	Water	6020A	593794
MB 500-593794/1-A	Method Blank	Total Recoverable	Water	6020A	593794
LCS 500-593794/2-A	Lab Control Sample	Total Recoverable	Water	6020A	593794

Analysis Batch: 594574

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197560-2	W-210413-RA-08	Dissolved	Water	6020A	593794

Prep Batch: 594807

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197560-3	W-210413-RA-09	Dissolved	Water	3005A	
500-197560-4	W-210413-RA-10	Dissolved	Water	3005A	
500-197560-7	W-210413-RA-13	Dissolved	Water	3005A	
MB 500-594807/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-594807/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 595183

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197560-3	W-210413-RA-09	Dissolved	Water	6020A	594807
500-197560-4	W-210413-RA-10	Dissolved	Water	6020A	594807
500-197560-7	W-210413-RA-13	Dissolved	Water	6020A	594807
MB 500-594807/1-A	Method Blank	Total Recoverable	Water	6020A	594807
LCS 500-594807/2-A	Lab Control Sample	Total Recoverable	Water	6020A	594807

General Chemistry

Analysis Batch: 593265

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197560-2	W-210413-RA-08	Total/NA	Water	300.0	

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QC Association Summary

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

Job ID: 500-197560-1

General Chemistry (Continued)

Analysis Batch: 593265 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197560-3	W-210413-RA-09	Total/NA	Water	300.0	
500-197560-4	W-210413-RA-10	Total/NA	Water	300.0	
500-197560-5	W-210413-RA-11	Total/NA	Water	300.0	
500-197560-6	W-210413-RA-12	Total/NA	Water	300.0	
500-197560-7	W-210413-RA-13	Total/NA	Water	300.0	
MB 500-593265/3	Method Blank	Total/NA	Water	300.0	
LCS 500-593265/4	Lab Control Sample	Total/NA	Water	300.0	
500-197560-7 MS	W-210413-RA-13	Total/NA	Water	300.0	
500-197560-7 MSD	W-210413-RA-13	Total/NA	Water	300.0	

Analysis Batch: 593602

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197560-2	W-210413-RA-08	Total/NA	Water	SM 2320B	
500-197560-3	W-210413-RA-09	Total/NA	Water	SM 2320B	
500-197560-4	W-210413-RA-10	Total/NA	Water	SM 2320B	
500-197560-5	W-210413-RA-11	Total/NA	Water	SM 2320B	
500-197560-6	W-210413-RA-12	Total/NA	Water	SM 2320B	
500-197560-7	W-210413-RA-13	Total/NA	Water	SM 2320B	
MB 500-593602/28	Method Blank	Total/NA	Water	SM 2320B	
MB 500-593602/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-593602/29	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 500-593602/4	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 594140

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197560-2	W-210413-RA-08	Total/NA	Water	9060A	
500-197560-3	W-210413-RA-09	Total/NA	Water	9060A	
500-197560-4	W-210413-RA-10	Total/NA	Water	9060A	
500-197560-5	W-210413-RA-11	Total/NA	Water	9060A	
500-197560-6	W-210413-RA-12	Total/NA	Water	9060A	
500-197560-7	W-210413-RA-13	Total/NA	Water	9060A	
MB 500-594140/41	Method Blank	Total/NA	Water	9060A	
LCS 500-594140/42	Lab Control Sample	Total/NA	Water	9060A	

Analysis Batch: 595297

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197560-2	W-210413-RA-08	Total/NA	Water	300.0	
500-197560-4	W-210413-RA-10	Total/NA	Water	300.0	
500-197560-5	W-210413-RA-11	Total/NA	Water	300.0	
500-197560-6	W-210413-RA-12	Total/NA	Water	300.0	
MB 500-595297/3	Method Blank	Total/NA	Water	300.0	
LCS 500-595297/4	Lab Control Sample	Total/NA	Water	300.0	

Surrogate Summary

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

Job ID: 500-197560-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (75-126)	TOL (75-120)	BFB (72-124)	DBFM (75-120)
500-197560-1	W-210413-RA-07	119	98	86	115
500-197560-2	W-210413-RA-08	120	98	80	119
500-197560-3	W-210413-RA-09	118	97	81	117
500-197560-4	W-210413-RA-10	118	98	83	116
500-197560-5	W-210413-RA-11	99	99	95	107
500-197560-6	W-210413-RA-12	100	98	95	107
500-197560-7	W-210413-RA-13	100	99	92	108
500-197560-8	Trip Blank	96	101	98	107
LCS 500-594048/4	Lab Control Sample	108	100	80	108
LCS 500-594599/3	Lab Control Sample	94	100	91	101
MB 500-594048/6	Method Blank	117	98	83	115
MB 500-594599/5	Method Blank	96	99	97	106

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	Percent Surrogate Recovery (Acceptance Limits)		
		NBZ (36-120)	FBP (34-110)	TPHL (40-145)
500-197560-1	W-210413-RA-07	78	73	90
500-197560-2	W-210413-RA-08	108	96	99
500-197560-3	W-210413-RA-09	93	88	96
500-197560-4	W-210413-RA-10	87	75	87
500-197560-5	W-210413-RA-11	78	71	78
500-197560-6	W-210413-RA-12	93	86	84
500-197560-7	W-210413-RA-13	81	74	75
LCS 500-593749/2-A	Lab Control Sample	79	81	92
LCSD 500-593749/3-A	Lab Control Sample Dup	79	85	94
MB 500-593749/1-A	Method Blank	77	66	99

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	Percent Surrogate Recovery (Acceptance Limits)
		TFE1 (60-140)
500-197560-2	W-210413-RA-08	110
500-197560-3	W-210413-RA-09	109
500-197560-4	W-210413-RA-10	112
500-197560-5	W-210413-RA-11	111

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Surrogate Summary

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

Job ID: 500-197560-1

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)
500-197560-6	W-210413-RA-12	110
500-197560-7	W-210413-RA-13	110
LCS 240-481671/4	Lab Control Sample	113
MB 240-481671/3	Method Blank	113

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	DCPAA2 (25-130)
500-197560-1	W-210413-RA-07	87
500-197560-2	W-210413-RA-08	0 D
500-197560-3	W-210413-RA-09	107
500-197560-4	W-210413-RA-10	94
500-197560-5	W-210413-RA-11	69
500-197560-6	W-210413-RA-12	90
500-197560-7	W-210413-RA-13	0 D
LCS 500-594076/2-A	Lab Control Sample	89
MB 500-594076/1-A	Method Blank	81

Surrogate Legend

DCPAA = DCAA

QC Sample Results

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

Job ID: 500-197560-1

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

Lab Sample ID: MB 500-594048/6
Matrix: Water
Analysis Batch: 594048

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			04/20/21 11:07	1
Toluene	<0.15		0.50	0.15	ug/L			04/20/21 11:07	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/20/21 11:07	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/20/21 11:07	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	117		75 - 126		04/20/21 11:07	1
Toluene-d8 (Surr)	98		75 - 120		04/20/21 11:07	1
4-Bromofluorobenzene (Surr)	83		72 - 124		04/20/21 11:07	1
Dibromofluoromethane	115		75 - 120		04/20/21 11:07	1

Lab Sample ID: LCS 500-594048/4
Matrix: Water
Analysis Batch: 594048

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	47.0		ug/L		94	70 - 125
Ethylbenzene	50.0	48.1		ug/L		96	70 - 123
Xylenes, Total	100	96.4		ug/L		96	70 - 125

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	108		75 - 126
Toluene-d8 (Surr)	100		75 - 120
4-Bromofluorobenzene (Surr)	80		72 - 124
Dibromofluoromethane	108		75 - 120

Lab Sample ID: MB 500-594599/5
Matrix: Water
Analysis Batch: 594599

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			04/23/21 00:17	1
Toluene	<0.15		0.50	0.15	ug/L			04/23/21 00:17	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/23/21 00:17	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/23/21 00:17	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	96		75 - 126		04/23/21 00:17	1
Toluene-d8 (Surr)	99		75 - 120		04/23/21 00:17	1
4-Bromofluorobenzene (Surr)	97		72 - 124		04/23/21 00:17	1
Dibromofluoromethane	106		75 - 120		04/23/21 00:17	1

QC Sample Results

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

Job ID: 500-197560-1

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

Lab Sample ID: LCS 500-594599/3
Matrix: Water
Analysis Batch: 594599

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	55.3		ug/L		111	70 - 120
Toluene	50.0	53.4		ug/L		107	70 - 125
Ethylbenzene	50.0	50.8		ug/L		102	70 - 123
Xylenes, Total	100	100		ug/L		100	70 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		75 - 126
Toluene-d8 (Surr)	100		75 - 120
4-Bromofluorobenzene (Surr)	91		72 - 124
Dibromofluoromethane	101		75 - 120

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

Lab Sample ID: MB 500-593749/1-A
Matrix: Water
Analysis Batch: 593899

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 593749

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.80	0.25	ug/L		04/16/21 21:43	04/19/21 13:21	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	77		36 - 120	04/16/21 21:43	04/19/21 13:21	1
2-Fluorobiphenyl (Surr)	66		34 - 110	04/16/21 21:43	04/19/21 13:21	1
Terphenyl-d14 (Surr)	99		40 - 145	04/16/21 21:43	04/19/21 13:21	1

Lab Sample ID: LCS 500-593749/2-A
Matrix: Water
Analysis Batch: 593899

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 593749

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	32.0	18.2		ug/L		57	36 - 110

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Nitrobenzene-d5 (Surr)	79		36 - 120
2-Fluorobiphenyl (Surr)	81		34 - 110
Terphenyl-d14 (Surr)	92		40 - 145

Lab Sample ID: LCSD 500-593749/3-A
Matrix: Water
Analysis Batch: 593899

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 593749

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Naphthalene	32.0	17.7		ug/L		55	36 - 110	3	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Nitrobenzene-d5 (Surr)	79		36 - 120
2-Fluorobiphenyl (Surr)	85		34 - 110

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QC Sample Results

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

Job ID: 500-197560-1

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

Lab Sample ID: LCSD 500-593749/3-A
Matrix: Water
Analysis Batch: 593899

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 593749

Surrogate	LCS D %Recovery	LCS D Qualifier	Limits
Terphenyl-d14 (Surr)	94		40 - 145

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 240-481671/3
Matrix: Water
Analysis Batch: 481671

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			04/19/21 10:09	1
Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac			
1,1,1-Trifluoroethane	113		60 - 140		04/19/21 10:09	1			

Lab Sample ID: LCS 240-481671/4
Matrix: Water
Analysis Batch: 481671

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane	409	445		ug/L		109	80 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,1,1-Trifluoroethane	113		60 - 140				

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 500-594076/1-A
Matrix: Water
Analysis Batch: 594261

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 594076

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.090		0.10	0.090	ug/L		04/20/21 08:03	04/20/21 23:37	1
Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac			
DCAA	81		25 - 130		04/20/21 08:03	04/20/21 23:37	1		

Lab Sample ID: LCS 500-594076/2-A
Matrix: Water
Analysis Batch: 594261

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 594076

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Pentachlorophenol	2.53	1.71		ug/L		68	40 - 122
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
DCAA	89		25 - 130				

QC Sample Results

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

Job ID: 500-197560-1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 500-593794/1-A
Matrix: Water
Analysis Batch: 594355

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 593794

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	<0.23		1.0	0.23	ug/L		04/18/21 18:38	04/20/21 19:39	1
Copper	<0.50		2.0	0.50	ug/L		04/18/21 18:38	04/20/21 19:39	1
Iron	<46.7		100	46.7	ug/L		04/18/21 18:38	04/20/21 19:39	1
Manganese	<0.79		2.5	0.79	ug/L		04/18/21 18:38	04/20/21 19:39	1
Zinc	32.49		20.0	6.9	ug/L		04/18/21 18:38	04/20/21 19:39	1

Lab Sample ID: LCS 500-593794/2-A
Matrix: Water
Analysis Batch: 594355

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 593794

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	250	265.5		ug/L		106	80 - 120
Iron	1000	1104		ug/L		110	80 - 120
Manganese	500	532.0		ug/L		106	80 - 120
Zinc	500	562.4		ug/L		112	80 - 120

Lab Sample ID: MB 500-594807/1-A
Matrix: Water
Analysis Batch: 595183

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 594807

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Zinc	<6.9		20.0	6.9	ug/L		04/23/21 09:17	04/23/21 19:47	1

Lab Sample ID: LCS 500-594807/2-A
Matrix: Water
Analysis Batch: 595183

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 594807

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-593265/3
Matrix: Water
Analysis Batch: 593265

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

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	<0.17		0.20	0.17	mg/L			04/14/21 13:29	1
Nitrate as N	<0.068		0.20	0.068	mg/L			04/14/21 13:29	1
Sulfate	<0.095		0.20	0.095	mg/L			04/14/21 13:29	1

Lab Sample ID: LCS 500-593265/4
Matrix: Water
Analysis Batch: 593265

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	2.00	2.06		mg/L		103	90 - 110
Sulfate	5.00	4.98		mg/L		100	90 - 110

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QC Sample Results

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

Job ID: 500-197560-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: 500-197560-7 MS
Matrix: Water
Analysis Batch: 593265

Client Sample ID: W-210413-RA-13
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	0.74		1.00	1.76		mg/L		102	80 - 120
Nitrate as N	1.1		1.00	2.12		mg/L		101	80 - 120
Sulfate	2.9		2.50	5.47		mg/L		102	80 - 120

Lab Sample ID: 500-197560-7 MSD
Matrix: Water
Analysis Batch: 593265

Client Sample ID: W-210413-RA-13
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	0.74		1.00	1.75		mg/L		101	80 - 120	1	20
Nitrate as N	1.1		1.00	2.06		mg/L		96	80 - 120	3	20
Sulfate	2.9		2.50	5.37		mg/L		98	80 - 120	2	20

Lab Sample ID: MB 500-595297/3
Matrix: Water
Analysis Batch: 595297

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.17		0.20	0.17	mg/L			04/27/21 06:08	1
Sulfate	<0.095		0.20	0.095	mg/L			04/27/21 06:08	1

Lab Sample ID: LCS 500-595297/4
Matrix: Water
Analysis Batch: 595297

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3.00	2.87		mg/L		96	90 - 110
Sulfate	5.00	5.06		mg/L		101	90 - 110

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

Lab Sample ID: MB 500-594140/41
Matrix: Water
Analysis Batch: 594140

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			04/19/21 15:41	1

Lab Sample ID: LCS 500-594140/42
Matrix: Water
Analysis Batch: 594140

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	10.0	9.07		mg/L		91	80 - 120

QC Sample Results

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

Job ID: 500-197560-1

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-593602/28
Matrix: Water
Analysis Batch: 593602

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			04/15/21 13:50	1

Lab Sample ID: MB 500-593602/3
Matrix: Water
Analysis Batch: 593602

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			04/15/21 10:03	1

Lab Sample ID: LCS 500-593602/29
Matrix: Water
Analysis Batch: 593602

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	101.0		mg/L		101	90 - 110

Lab Sample ID: LCS 500-593602/4
Matrix: Water
Analysis Batch: 593602

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	95.09		mg/L		95	90 - 110

Lab Chronicle

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

Job ID: 500-197560-1

Client Sample ID: W-210413-RA-07

Lab Sample ID: 500-197560-1

Date Collected: 04/13/21 10:37

Matrix: Water

Date Received: 04/14/21 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	594048	04/20/21 18:14	PMF	TAL CHI
Total/NA	Prep	3510C			593749	04/16/21 21:43	ACK	TAL CHI
Total/NA	Analysis	8270D		1	593917	04/19/21 10:48	AJD	TAL CHI
Total/NA	Prep	8151A			594076	04/20/21 08:03	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594261	04/21/21 00:15	JBj	TAL CHI
Dissolved	Prep	3005A			593794	04/18/21 18:38	LMN	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/20/21 20:20	FXG	TAL CHI

Client Sample ID: W-210413-RA-08

Lab Sample ID: 500-197560-2

Date Collected: 04/13/21 10:37

Matrix: Water

Date Received: 04/14/21 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	594048	04/20/21 18:42	PMF	TAL CHI
Total/NA	Prep	3510C			593749	04/16/21 21:43	ACK	TAL CHI
Total/NA	Analysis	8270D		10	593917	04/19/21 11:15	AJD	TAL CHI
Total/NA	Analysis	RSK-175		1	481671	04/19/21 15:44	JBN	TAL CAN
Total/NA	Prep	8151A			594076	04/20/21 08:03	DAK	TAL CHI
Total/NA	Analysis	8151A		4000	594261	04/21/21 09:56	JBj	TAL CHI
Dissolved	Prep	3005A			593794	04/18/21 18:38	LMN	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/20/21 20:24	FXG	TAL CHI
Dissolved	Prep	3005A			593794	04/18/21 18:38	LMN	TAL CHI
Dissolved	Analysis	6020A		10	594574	04/21/21 13:35	FXG	TAL CHI
Total/NA	Prep	3010A			593410	04/15/21 07:59	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	593573	04/16/21 07:16	EEN	TAL CHI
Total/NA	Analysis	300.0		5	595297	04/27/21 09:46	EAT	TAL CHI
Total/NA	Analysis	300.0		1	593265	04/14/21 18:01	PSP	TAL CHI
Total/NA	Analysis	9060A		10	594140	04/19/21 15:55	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	593602	04/15/21 10:16	SMO	TAL CHI

Client Sample ID: W-210413-RA-09

Lab Sample ID: 500-197560-3

Date Collected: 04/13/21 10:52

Matrix: Water

Date Received: 04/14/21 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	594048	04/20/21 19:10	PMF	TAL CHI
Total/NA	Prep	3510C			593749	04/16/21 21:43	ACK	TAL CHI
Total/NA	Analysis	8270D		1	593917	04/19/21 11:42	AJD	TAL CHI
Total/NA	Analysis	RSK-175		1	481671	04/19/21 16:01	JBN	TAL CAN
Total/NA	Prep	8151A			594076	04/20/21 08:03	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594261	04/21/21 00:54	JBj	TAL CHI
Dissolved	Prep	3005A			593794	04/18/21 18:38	LMN	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/20/21 20:27	FXG	TAL CHI

Lab Chronicle

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

Job ID: 500-197560-1

Client Sample ID: W-210413-RA-09

Lab Sample ID: 500-197560-3

Date Collected: 04/13/21 10:52

Matrix: Water

Date Received: 04/14/21 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			594807	04/23/21 09:17	BDE	TAL CHI
Dissolved	Analysis	6020A		1	595183	04/23/21 21:15	FXG	TAL CHI
Total/NA	Prep	3010A			593410	04/15/21 07:59	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	593573	04/16/21 07:16	EEN	TAL CHI
Total/NA	Analysis	300.0		1	593265	04/14/21 18:14	PSP	TAL CHI
Total/NA	Analysis	9060A		1	594140	04/19/21 16:02	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	593602	04/15/21 10:55	SMO	TAL CHI

Client Sample ID: W-210413-RA-10

Lab Sample ID: 500-197560-4

Date Collected: 04/13/21 12:23

Matrix: Water

Date Received: 04/14/21 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	594048	04/20/21 19:39	PMF	TAL CHI
Total/NA	Prep	3510C			593749	04/16/21 21:43	ACK	TAL CHI
Total/NA	Analysis	8270D		1	593917	04/19/21 12:09	AJD	TAL CHI
Total/NA	Analysis	RSK-175		1	481671	04/19/21 16:36	JBN	TAL CAN
Total/NA	Prep	8151A			594076	04/20/21 08:03	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594261	04/21/21 01:14	JBK	TAL CHI
Dissolved	Prep	3005A			593794	04/18/21 18:38	LMN	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/20/21 20:31	FXG	TAL CHI
Dissolved	Prep	3005A			594807	04/23/21 09:17	BDE	TAL CHI
Dissolved	Analysis	6020A		1	595183	04/23/21 21:18	FXG	TAL CHI
Total/NA	Prep	3010A			593410	04/15/21 07:59	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	593573	04/16/21 07:16	EEN	TAL CHI
Total/NA	Analysis	300.0		5	595297	04/27/21 10:00	EAT	TAL CHI
Total/NA	Analysis	300.0		1	593265	04/14/21 18:55	PSP	TAL CHI
Total/NA	Analysis	9060A		1	594140	04/19/21 16:09	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	593602	04/15/21 11:01	SMO	TAL CHI

Client Sample ID: W-210413-RA-11

Lab Sample ID: 500-197560-5

Date Collected: 04/13/21 12:56

Matrix: Water

Date Received: 04/14/21 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	594599	04/23/21 01:42	PMF	TAL CHI
Total/NA	Prep	3510C			593749	04/16/21 21:43	ACK	TAL CHI
Total/NA	Analysis	8270D		1	593917	04/19/21 12:36	AJD	TAL CHI
Total/NA	Analysis	RSK-175		1	481671	04/19/21 16:53	JBN	TAL CAN
Total/NA	Prep	8151A			594076	04/20/21 08:03	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594261	04/21/21 01:33	JBK	TAL CHI
Dissolved	Prep	3005A			593794	04/18/21 18:38	LMN	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/20/21 20:34	FXG	TAL CHI

Lab Chronicle

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

Job ID: 500-197560-1

Client Sample ID: W-210413-RA-11

Lab Sample ID: 500-197560-5

Date Collected: 04/13/21 12:56

Matrix: Water

Date Received: 04/14/21 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			593410	04/15/21 07:59	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	593573	04/16/21 07:16	EEN	TAL CHI
Total/NA	Analysis	300.0		5	595297	04/27/21 10:14	EAT	TAL CHI
Total/NA	Analysis	300.0		1	593265	04/14/21 19:09	PSP	TAL CHI
Total/NA	Analysis	9060A		1	594140	04/19/21 16:17	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	593602	04/15/21 16:27	SMO	TAL CHI

Client Sample ID: W-210413-RA-12

Lab Sample ID: 500-197560-6

Date Collected: 04/13/21 13:53

Matrix: Water

Date Received: 04/14/21 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	594599	04/23/21 02:10	PMF	TAL CHI
Total/NA	Prep	3510C			593749	04/16/21 21:43	ACK	TAL CHI
Total/NA	Analysis	8270D		1	593917	04/19/21 13:04	AJD	TAL CHI
Total/NA	Analysis	RSK-175		1	481671	04/19/21 17:10	JBN	TAL CAN
Total/NA	Prep	8151A			594076	04/20/21 08:03	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594261	04/21/21 01:52	JBj	TAL CHI
Dissolved	Prep	3005A			593794	04/18/21 18:38	LMN	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/20/21 20:38	FXG	TAL CHI
Total/NA	Prep	3010A			593410	04/15/21 07:59	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	593573	04/16/21 07:16	EEN	TAL CHI
Total/NA	Analysis	300.0		2	595297	04/27/21 10:27	EAT	TAL CHI
Total/NA	Analysis	300.0		1	593265	04/14/21 19:22	PSP	TAL CHI
Total/NA	Analysis	9060A		1	594140	04/19/21 16:46	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	593602	04/15/21 10:23	SMO	TAL CHI

Client Sample ID: W-210413-RA-13

Lab Sample ID: 500-197560-7

Date Collected: 04/13/21 13:39

Matrix: Water

Date Received: 04/14/21 09:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	594599	04/23/21 02:38	PMF	TAL CHI
Total/NA	Prep	3510C			593749	04/16/21 21:43	ACK	TAL CHI
Total/NA	Analysis	8270D		1	593917	04/19/21 13:31	AJD	TAL CHI
Total/NA	Analysis	RSK-175		1	481671	04/19/21 17:28	JBN	TAL CAN
Total/NA	Prep	8151A			594076	04/20/21 08:03	DAK	TAL CHI
Total/NA	Analysis	8151A		400	594261	04/21/21 10:15	JBj	TAL CHI
Dissolved	Prep	3005A			593794	04/18/21 18:38	LMN	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/20/21 20:41	FXG	TAL CHI
Dissolved	Prep	3005A			594807	04/23/21 09:17	BDE	TAL CHI
Dissolved	Analysis	6020A		1	595183	04/23/21 21:22	FXG	TAL CHI
Total/NA	Prep	3010A			593410	04/15/21 07:59	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	593573	04/16/21 07:16	EEN	TAL CHI

Eurofins TestAmerica, Chicago

Lab Chronicle

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

Job ID: 500-197560-1

Client Sample ID: W-210413-RA-13

Lab Sample ID: 500-197560-7

Date Collected: 04/13/21 13:39

Matrix: Water

Date Received: 04/14/21 09:25

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Prepared or Analyzed</u>	<u>Analyst</u>	<u>Lab</u>
Total/NA	Analysis	300.0		1	593265	04/14/21 19:36	PSP	TAL CHI
Total/NA	Analysis	9060A		1	594140	04/19/21 16:58	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	593602	04/15/21 16:34	SMO	TAL CHI

Client Sample ID: Trip Blank

Lab Sample ID: 500-197560-8

Date Collected: 04/13/21 00:00

Matrix: Water

Date Received: 04/14/21 09:25

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Prepared or Analyzed</u>	<u>Analyst</u>	<u>Lab</u>
Total/NA	Analysis	8260B		1	594599	04/23/21 00:45	PMF	TAL CHI

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL CHI = Eurofins TestAmerica, 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: 500-197560-1

Laboratory: Eurofins TestAmerica, Chicago

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-21

Laboratory: Eurofins TestAmerica, Canton

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	02-23-22
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-22
Illinois	NELAP	004498	07-31-21
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21
Kentucky (UST)	State	112225	02-23-21 *
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-22
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-21
Texas	NELAP	T104704517-18-10	08-31-21
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-21
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21


* Accreditation/Certification renewal pending - accreditation/certification considered valid.



Address _____

Regulatory Program: DW NPDES RCRA Other

TAL-8210

Client Contact		Project Manager:		Site Contact:		Date:		COC No			
Company Name: <u>GHD</u>		Tel/Email:		Lab Contact:		Carrier:		_____ of _____ COCs			
Address: <u>1801 Old Highway 8 N 114</u>		Analysis Turnaround Time		Filtered Sample (Y/N) Perform MS / MSD (Y/N) <u>PCP</u> <u>PTX</u> <u>Naphthalene</u> <u>Dissolved Metals</u> <u>Alk anions</u> <u>Total Metals/Anions</u> <u>TOL</u> <u>Dissolved Methane</u>		 500-197560 COC		Sampler:			
City/State/Zip: <u>St Paul MN 55112</u>		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS						For Lab Use Only:		Walk-in Client	
Phone: <u>651 639 0913</u>		TAT if different from Below _____						Lab Sampling			
Fax:		<input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day						Job / SDG No		<u>500-197560</u>	
Project Name: <u>Penta Wood</u>								Sample Specific Notes			
Site: <u>11222918-01-04</u>											
P O #											
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.					
1	<u>W-210413-PA-07</u>	<u>4/13/21</u>	<u>1037</u>	<u>6</u>	<u>6W</u>	<u>8</u>			<u>Dissolved metals</u>		
2	<u>W-210413-PA-08</u>		<u>1037</u>			<u>15</u>			<u>was field filtered</u>		
3	<u>W-210413-PA-09</u>		<u>1052</u>								
4	<u>W-210413-PA-10</u>		<u>1223</u>								
5	<u>W-210413-PA-11</u>		<u>1256</u>								
6	<u>W-210413-PA-12</u>		<u>1353</u>								
7	<u>W-210413-PA-13</u>		<u>1339</u>								
8	<u>Trip Blank</u>					<u>2</u>			<u>Added by JH</u>		
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: <u>3.0 → 2.6, 1.4, 3.2 → 2.8, 4.4 → 3.6</u>											
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>4/13/21 1600</u>		Received by:		Company: _____ Date/Time: _____			
Relinquished by:		Company:		Date/Time:		Received by:		Company: _____ Date/Time: _____			
Relinquished by:		Company:		Date/Time:		Received by: <u>Shaw Scott</u>		Company: <u>ETACAT</u> Date/Time: <u>4/14/21 0925</u>			



500-197560 Wayb

FedEx Package
Express US Airbill

FedEx Tracking Number 8161 0804 8823

Form ID No. 0200

1 From

Date 4/13/21

Sender's Name Ron Agmut Phone

Company GAW

Address 1801 0134 H, W, ZIP

City St. Paul State ZIP

2 Your Internal Billing Reference 11-22-13

3 To

Recipient's Name E-15, T- Phone

Company

Address 2417 Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

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.



8161 0804 8823

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.

Sender Acct. No. in Section 7 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 for details.

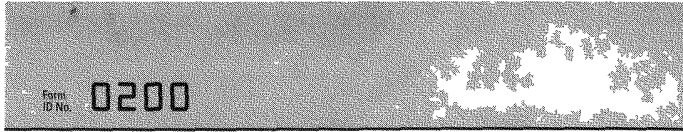
644

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fedex.com 1800 GoFedEx 1800.463.3339

FedEx Express **Package US Airbill**

FedEx Tracking Number **8164 6265 0538**



1 From
Date **4/13/21**

Sender's Name **Ryan Aamo** Phone **612-39 1212**

Company **GAD**

Address **1801 01 H, ...** Dept./Floor/Suite/Room **14**

City **St Paul** State **MN** ZIP **55112**

2 Your Internal Billing Reference **222117 124**

3 To
Recipient's Name **Scott ...** Phone

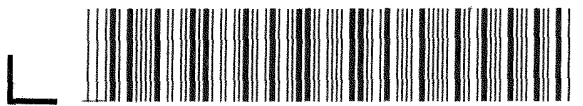
Company **...**

Address **217 15 ...** Dept./Floor/Suite/Room

Address Use this line for the HOLD location address or for continuation of your shipping address.

City **...** State **IL** ZIP **60181**

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.



8164 6265 0538

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
 FedEx Priority Overnight
 FedEx Standard Overnight
2 or 3 Business Days
 FedEx 2Day A.M.
 FedEx 2Day
 FedEx Express Saver

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
 No Signature Required
 Direct Signature
 Indirect Signature
Does this shipment contain dangerous goods?
 No Yes
 Dry Ice Cargo Aircraft Only

7 Payment Bill to: Obtain recip. FedEx Acc No
 Sender Recipient Third Party

Total Packages **1** Total Weight **4.2** lbs.

644

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.com 1800.GoFedEx 1800.463.3339

FedEx Express *Package US Airbill*

FedEx Tracking Number **8161 0804 8845**

Form To No. **0200**

1 From

Date 11/11/19

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

[Redacted]

3 To

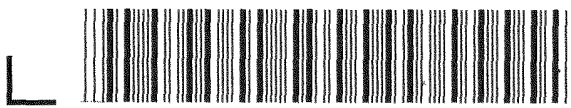
Recipient's Name [Redacted] Phone [Redacted]

Company [Redacted]

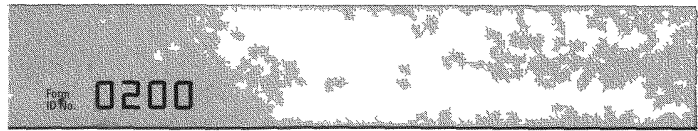
Address [Redacted] Dept./Floor/Suite/Room [Redacted]
We cannot deliver to PO boxes or PO ZIP codes.

Address [Redacted] Dept./Floor/Suite/Room [Redacted]
Use this line for the HOLD location address or for continuation of your shipping address.

City [Redacted] State [Redacted] ZIP [Redacted]



8161 0804 8845



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 <small>Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.</small>	<input type="checkbox"/> FedEx 2Day A.M. <small>Second business morning. Saturday Delivery NOT available.</small>
<input checked="" type="checkbox"/> FedEx Priority Overnight <small>Next business morning. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.</small>	<input type="checkbox"/> FedEx 2Day <small>Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.</small>
<input type="checkbox"/> FedEx Standard Overnight <small>Next business afternoon. Saturday Delivery NOT available.</small>	<input type="checkbox"/> FedEx Express Saver <small>Third business day. Saturday Delivery NOT available.</small>

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

Cargo Aircraft Only

Restrictions apply for dangerous goods — see the current FedEx Service Guide.

7 Payment Bill to:

Enter FedEx Acct No. below. [Redacted]

Sender Acct. No. in Section I will be billed.
 Recipient
 Third Party

Total Packages [Redacted] Total Weight [Redacted] 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.com 1800 GoFedEx 1800 463 3339

644

500-197560 Wayb

FedEx Express **Package US Airbill**

FedEx Tracking Number: **8161 0804 8823**

Form ID No: **0200**

Recipient's Copy

1 From
 Date: **4/13/21**
 Sender's Name: **Ryan Argent** Phone: **612 239 7872**
 Company: **G4D**
 Address: **1801 Old Hwy 8 NW** Dept./Floor/Suite/Room: **114**
 City: **St. Paul** State: **MN** ZIP: **55112**

2 Your Internal Billing Reference **11222418-01-07**

3 To
 Recipient's Name: **EuroSai TA** Phone:
 Company:

Address: **2417 Bond St** Dept./Floor/Suite/Room:
 We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address:
 Use this line for the HOLD location address or for continuation of your shipping address.
 City: **University Park** State: **IL** ZIP: **60484**

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 0804 8823

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: **1** Total Weight: **90** 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 8164 6265 0538

Form ID No. 0200

Recipient's Copy

1 From
Date 4/13/21

Sender's Name Ryan Agmat Phone 612239-7872

Company GAD

Address 1801 Old Highway 8 NW 114
City St. Paul State MN ZIP 55112

2 Your Internal Billing Reference 11222418-01-04

3 To
Recipient's Name Sample Receiving Phone

Company Evolution, TA

Address 2417 Bond St
We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room

Address University Park
Use this line for the HOLD location address or for continuation of your shipping address.
City IL State IL ZIP 60484



8164 6265 0538

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 lbs. 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 1 Total Weight 40 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

8161 0804 8845

Form
ID No. 0200

Recipient's Copy

1 From
Date 1/13/21
Sender's Name Ryan Adams Phone 612 239 7872
Company GHD
Address 1801 Old Highway 8 NW Dept./Floor/Suite/Room 114
City S.P. State MN ZIP 5540

2 Your Internal Billing Reference 11222418-01-04

3 To
Recipient's Name Sample Receiving Phone
Company Euclys TA
Address We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room
Address 217 Bond St
Use this line for the HOLD location address or for continuation of your shipping address.
City University Park State IL ZIP 60184



8161 0804 8845

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
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

Cargo Aircraft Only

Restrictions apply for dangerous goods — see the current FedEx Service Guide.

7 Payment Bill to: Obtain recip. FedEx Acct No.

Enter FedEx Acct. No. below.

Sender Acct. No. in Section I will be billed. Recipient Third Party

Total Packages 1 Total Weight 40 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# 8161 0804 8834
0200

WED - 14 APR AA
PRIORITY OVERNIGHT

60484
W-L-US
ORD

AC JOTA



FID: 88701 13Apr2021 JDTA 560G2/5EF2/1B23

1 Open pre-sealed purple flap.

PEEL HERE

FedEx Express

Package USAirbill

FedEx Tracking Number

8161 0804 8834

Form ID No 0200

Recipient's Copy

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

Cargo Aircraft Only

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 40 lbs.

644

*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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Align FedEx Pouch Here

Align Open End of FedEx Pouch Here

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8161 0804 8834

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Eurofins TestAmerica Canton Sample Receipt Form/Narrative		Login # : _____
Canton Facility		
Client <u>Chicago</u>	Site Name _____	Cooler unpacked by:
Cooler Received on <u>4-15-21</u>	Opened on <u>4-15-21</u>	
FedEx: 1 st Grd <input checked="" type="checkbox"/> Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____		
Receipt After-hours: Drop-off Date/Time		Storage Location
TestAmerica Cooler # <u>7A</u>	Foam Box _____	Client Cooler _____
Packing material used: <u>Bubble</u> Wrap	Foam _____	Plastic Bag _____
COOLANT: <u>Wet Ice</u>	Blue Ice _____	Dry Ice _____
<input type="checkbox"/> See Multiple Cooler Form 1. Cooler temperature upon receipt IR GUN# IR-11 (CF +0.1 °C) Observed Cooler Temp. <u>3.9</u> °C Corrected Cooler Temp. <u>4.0</u> °C IR GUN #IR-12 (CF +0.2 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C		
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity <u>1</u>	<input checked="" type="checkbox"/> Yes	No
-Were the seals on the outside of the cooler(s) signed & dated?	<input checked="" type="checkbox"/> Yes	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	<input checked="" type="checkbox"/> Yes	No NA
-Were tamper/custody seals intact and uncompromised?	<input checked="" type="checkbox"/> Yes	No NA
3. Shippers' packing slip attached to the cooler(s)?	<input checked="" type="checkbox"/> Yes	No
4. Did custody papers accompany the sample(s)?	<input checked="" type="checkbox"/> Yes	No
5. Were the custody papers relinquished & signed in the appropriate place?	<input checked="" type="checkbox"/> Yes	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	<input checked="" type="checkbox"/> Yes	No
7. Did all bottles arrive in good condition (Unbroken)?	<input checked="" type="checkbox"/> Yes	No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?	<input checked="" type="checkbox"/> 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)?	<input checked="" type="checkbox"/> Yes	No
10. Were correct bottle(s) used for the test(s) indicated?	<input checked="" type="checkbox"/> Yes	No
11. Sufficient quantity received to perform indicated analyses?	<input checked="" type="checkbox"/> Yes	No
12. Are these work share samples and all listed on the COC?	<input checked="" type="checkbox"/> 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?	<input checked="" type="checkbox"/> Yes	No NA pH Strip Lot# <u>HC022887</u>
14. Were VOAs on the COC?	<input checked="" type="checkbox"/> Yes	No
15. Were air bubbles >6 mm in any VOA vials? ← Larger than this.	<input checked="" type="checkbox"/> Yes	No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____	<input checked="" type="checkbox"/> Yes	No
17. Was a LL Hg or Me Hg trip blank present? _____	<input checked="" type="checkbox"/> Yes	No
Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____		
Concerning _____		

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES <input type="checkbox"/> 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: 500-197560-1

Login Number: 197560

List Source: Eurofins TestAmerica, Chicago

List Number: 1

Creator: Scott, Sherri L

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	2.6,1.4,2.8,3.6
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 <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

Eurofins TestAmerica, Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

Laboratory Job ID: 500-197620-1
Client Project/Site: Penta Wood 11222418

For:
GHD Services Inc.
1801 Old Highway 8 NW
Suite 114
St. Paul, Minnesota 55112

Attn: Mr. Grant Anderson

Jodie Bracken

Authorized for release by:
4/29/2021 4:31:11 PM
Jodie Bracken, Project Management Assistant II
Jodie.Bracken@Eurofinset.com

Designee for
Richard Wright, Senior Project Manager
(708)746-0045
Richard.Wright@Eurofinset.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

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

Job ID: 500-197620-1

Job ID: 500-197620-1

Laboratory: Eurofins TestAmerica, Chicago

Narrative

Job Narrative 500-197620-1

Receipt

The samples were received on 4/15/2021 9:05 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 0.5° C, 2.6° C, 3.0° C and 3.0° 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: The following sample was diluted due to the nature of the sample matrix: W-210414-RA-21 (500-197620-8). 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 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-210414-RA-16 (500-197620-3), W-210414-RA-20 (500-197620-7) and W-210414-RA-21 (500-197620-8). 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: The following samples were reported from the primary column due to Pentachlorophenol recovering outside control limits for the continuing calibration verification (CCV) on the secondary column; therefore, the higher of the two results have been reported. W-210414-RA-16 (500-197620-3), W-210414-RA-20 (500-197620-7), W-210414-RA-21 (500-197620-8), (CCV 500-594261/11), (CCV 500-594261/20), (CCV 500-594261/28), (CCV 500-594261/39), (CCV 500-594261/1), (LCS 500-594076/2-A) and (MB 500-594076/1-A)

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

Metals

Method 6020A: The method blank for preparation batch 500-594092 contained Zinc above the reporting limit (RL). None of the samples associated with this method blank contained the target compound; therefore, re-extraction and/or re-analysis of samples were not performed.

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

General Chemistry

Methods 9060A, SM 5310C: Sample: W-210414-RA-14 (500-197620-1) was rerun due to an RPD value that was not within ten percent of the two reported results. There was insufficient sample volume remaining to run the sample a third time; the data has been 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: 500-197620-1

Client Sample ID: W-210414-RA-14

Lab Sample ID: 500-197620-1

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.31	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	1.4	J	2.0	0.50	ug/L	1		6020A	Dissolved
Zinc	9.4	J B	20.0	6.9	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	363		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	4.3		0.20	0.17	mg/L	1		300.0	Total/NA
Nitrate as N	1.6		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	3.5		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	1.2		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	354		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-210414-RA-15

Lab Sample ID: 500-197620-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.31	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	3.6		2.0	0.50	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	61.5		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	0.91		0.20	0.17	mg/L	1		300.0	Total/NA
Nitrate as N	0.55		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	2.6		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.84	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	76.6		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-210414-RA-16

Lab Sample ID: 500-197620-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Xylenes, Total	1.2		1.0	0.22	ug/L	1		8260B	Total/NA
Naphthalene	0.31	J	0.80	0.25	ug/L	1		8270D	Total/NA
Pentachlorophenol	480		38	34	ug/L	400		8151A	Total/NA
Arsenic	0.65	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	1.5	J	2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	143		2.5	0.79	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	188		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	11.3		0.40	0.34	mg/L	2		300.0	Total/NA
Nitrate as N	0.31		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	27.9		1.0	0.48	mg/L	5		300.0	Total/NA
Total Organic Carbon - Duplicates	5.3		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	155		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-210414-RA-17

Lab Sample ID: 500-197620-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	5.4		1.0	0.17	ug/L	1		RSK-175	Total/NA
Arsenic	0.27	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	1.0	J	2.0	0.50	ug/L	1		6020A	Dissolved
Iron	731		100	46.7	ug/L	1		6020A	Dissolved
Manganese	15.7		2.5	0.79	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	465		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	73.8		4.0	3.4	mg/L	20		300.0	Total/NA
Nitrate as N	1.9		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	6.7		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	1.1		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	406		5.0	3.7	mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

Detection Summary

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

Job ID: 500-197620-1

Client Sample ID: W-210414-RA-18

Lab Sample ID: 500-197620-5

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	4.4		1.0	0.17	ug/L	1		RSK-175	Total/NA
Arsenic	0.30	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	0.81	J	2.0	0.50	ug/L	1		6020A	Dissolved
Iron	759		100	46.7	ug/L	1		6020A	Dissolved
Manganese	16.3		2.5	0.79	ug/L	1		6020A	Dissolved
Zinc	8.0	J B	20.0	6.9	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	456		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	74.9		4.0	3.4	mg/L	20		300.0	Total/NA
Nitrate as N	1.9		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	6.7		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	1.1		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	412		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-210414-RA-19

Lab Sample ID: 500-197620-6

No Detections.

Client Sample ID: W-210414-RA-20

Lab Sample ID: 500-197620-7

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.55		0.50	0.15	ug/L	1		8260B	Total/NA
Ethylbenzene	0.42	J	0.50	0.18	ug/L	1		8260B	Total/NA
Xylenes, Total	3.4		1.0	0.22	ug/L	1		8260B	Total/NA
Naphthalene	3.1		0.83	0.26	ug/L	1		8270D	Total/NA
Methane	120		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	840		19	17	ug/L	200		8151A	Total/NA
Arsenic	0.91	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	1.6	J	2.0	0.50	ug/L	1		6020A	Dissolved
Iron	1070		100	46.7	ug/L	1		6020A	Dissolved
Manganese	882		2.5	0.79	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	165		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	25.2		1.0	0.85	mg/L	5		300.0	Total/NA
Sulfate	8.8		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	13.6		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	135		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-210414-RA-21

Lab Sample ID: 500-197620-8

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	0.69		0.50	0.18	ug/L	1		8260B	Total/NA
Xylenes, Total	10		1.0	0.22	ug/L	1		8260B	Total/NA
Naphthalene	15		7.9	2.4	ug/L	10		8270D	Total/NA
Methane	0.51	J	1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	2000		380	340	ug/L	4000		8151A	Total/NA
Arsenic	0.77	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	2.8		2.0	0.50	ug/L	1		6020A	Dissolved
Iron	980		100	46.7	ug/L	1		6020A	Dissolved
Manganese	6360		25.0	7.9	ug/L	10		6020A	Dissolved
Hardness as calcium carbonate	401		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	42.7		2.0	1.7	mg/L	10		300.0	Total/NA
Sulfate	34.8		2.0	0.95	mg/L	10		300.0	Total/NA
Total Organic Carbon - Duplicates	60.8		40.0	18.8	mg/L	40		9060A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

Detection Summary

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

Job ID: 500-197620-1

Client Sample ID: W-210414-RA-21 (Continued)

Lab Sample ID: 500-197620-8

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	317		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: Trip Blank

Lab Sample ID: 500-197620-9

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

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Method Summary

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

Job ID: 500-197620-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CHI
RSK-175	Dissolved Gases (GC)	RSK	TAL CAN
8151A	Herbicides (GC)	SW846	TAL CHI
6020A	Metals (ICP/MS)	SW846	TAL CHI
SM 2340B	Total Hardness (as CaCO ₃) by calculation	SM	TAL CHI
300.0	Anions, Ion Chromatography	MCAWW	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
SM 2320B	Alkalinity	SM	TAL CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CHI
3010A	Preparation, Total Metals	SW846	TAL CHI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL CHI
5030B	Purge and Trap	SW846	TAL CHI
8151A	Extraction (Herbicides)	SW846	TAL CHI

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL CHI = Eurofins TestAmerica, 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: 500-197620-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
500-197620-1	W-210414-RA-14	Water	04/14/21 09:43	04/15/21 09:05	
500-197620-2	W-210414-RA-15	Water	04/14/21 10:20	04/15/21 09:05	
500-197620-3	W-210414-RA-16	Water	04/14/21 11:05	04/15/21 09:05	
500-197620-4	W-210414-RA-17	Water	04/14/21 12:10	04/15/21 09:05	
500-197620-5	W-210414-RA-18	Water	04/14/21 12:10	04/15/21 09:05	
500-197620-6	W-210414-RA-19	Water	04/14/21 13:00	04/15/21 09:05	
500-197620-7	W-210414-RA-20	Water	04/14/21 13:00	04/15/21 09:05	
500-197620-8	W-210414-RA-21	Water	04/14/21 13:30	04/15/21 09:05	
500-197620-9	Trip Blank	Water	04/14/21 00:00	04/15/21 09:05	

Client Sample Results

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

Job ID: 500-197620-1

Client Sample ID: W-210414-RA-14

Lab Sample ID: 500-197620-1

Date Collected: 04/14/21 09:43

Matrix: Water

Date Received: 04/15/21 09:05

Method: 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			04/26/21 15:12	1
Toluene	<0.15		0.50	0.15	ug/L			04/26/21 15:12	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/26/21 15:12	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/26/21 15:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		75 - 126		04/26/21 15:12	1
Toluene-d8 (Surr)	99		75 - 120		04/26/21 15:12	1
4-Bromofluorobenzene (Surr)	99		72 - 124		04/26/21 15:12	1
Dibromofluoromethane	110		75 - 120		04/26/21 15:12	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.24		0.79	0.24	ug/L		04/16/21 21:43	04/19/21 13:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	85		36 - 120	04/16/21 21:43	04/19/21 13:58	1
2-Fluorobiphenyl (Surr)	72		34 - 110	04/16/21 21:43	04/19/21 13:58	1
Terphenyl-d14 (Surr)	89		40 - 145	04/16/21 21:43	04/19/21 13:58	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			04/20/21 18:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	108		60 - 140		04/20/21 18:16	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.086		0.095	0.086	ug/L		04/20/21 08:03	04/21/21 02:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	94		25 - 130	04/20/21 08:03	04/21/21 02:51	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.31	J	1.0	0.23	ug/L		04/20/21 08:22	04/20/21 23:26	1
Copper	1.4	J	2.0	0.50	ug/L		04/20/21 08:22	04/20/21 23:26	1
Iron	<46.7		100	46.7	ug/L		04/20/21 08:22	04/20/21 23:26	1
Manganese	<0.79		2.5	0.79	ug/L		04/20/21 08:22	04/20/21 23:26	1
Zinc	9.4	J B	20.0	6.9	ug/L		04/20/21 08:22	04/20/21 23:26	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	363		0.91	0.46	mg/L		04/16/21 10:01	04/19/21 08:04	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.3		0.20	0.17	mg/L			04/23/21 22:40	1
Nitrate as N	1.6		0.20	0.068	mg/L			04/15/21 22:55	1
Sulfate	3.5		0.20	0.095	mg/L			04/15/21 22:55	1
Total Organic Carbon - Duplicates	1.2		1.0	0.47	mg/L			04/22/21 07:08	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-197620-1

Client Sample ID: W-210414-RA-14

Lab Sample ID: 500-197620-1

Date Collected: 04/14/21 09:43

Matrix: Water

Date Received: 04/15/21 09:05

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	354		5.0	3.7	mg/L			04/20/21 15:57	1

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Client Sample Results

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

Job ID: 500-197620-1

Client Sample ID: W-210414-RA-15

Lab Sample ID: 500-197620-2

Date Collected: 04/14/21 10:20

Matrix: Water

Date Received: 04/15/21 09:05

Method: 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			04/26/21 15:38	1
Toluene	<0.15		0.50	0.15	ug/L			04/26/21 15:38	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/26/21 15:38	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/26/21 15:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	117		75 - 126		04/26/21 15:38	1
Toluene-d8 (Surr)	98		75 - 120		04/26/21 15:38	1
4-Bromofluorobenzene (Surr)	98		72 - 124		04/26/21 15:38	1
Dibromofluoromethane	113		75 - 120		04/26/21 15:38	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.23		0.76	0.23	ug/L		04/16/21 21:43	04/19/21 14:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	83		36 - 120	04/16/21 21:43	04/19/21 14:25	1
2-Fluorobiphenyl (Surr)	79		34 - 110	04/16/21 21:43	04/19/21 14:25	1
Terphenyl-d14 (Surr)	91		40 - 145	04/16/21 21:43	04/19/21 14:25	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			04/20/21 18:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	111		60 - 140		04/20/21 18:33	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.086		0.096	0.086	ug/L		04/20/21 08:03	04/21/21 03:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	82		25 - 130	04/20/21 08:03	04/21/21 03:10	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.31	J	1.0	0.23	ug/L		04/20/21 08:22	04/20/21 23:44	1
Copper	3.6		2.0	0.50	ug/L		04/20/21 08:22	04/20/21 23:44	1
Iron	<46.7		100	46.7	ug/L		04/20/21 08:22	04/20/21 23:44	1
Manganese	<0.79		2.5	0.79	ug/L		04/20/21 08:22	04/20/21 23:44	1
Zinc	<6.9		20.0	6.9	ug/L		04/20/21 08:22	04/20/21 23:44	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	61.5		0.91	0.46	mg/L		04/16/21 10:01	04/19/21 08:04	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.91		0.20	0.17	mg/L			04/23/21 22:53	1
Nitrate as N	0.55		0.20	0.068	mg/L			04/15/21 23:09	1
Sulfate	2.6		0.20	0.095	mg/L			04/15/21 23:09	1
Total Organic Carbon - Duplicates	0.84	J	1.0	0.47	mg/L			04/19/21 17:24	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-197620-1

Client Sample ID: W-210414-RA-15

Lab Sample ID: 500-197620-2

Date Collected: 04/14/21 10:20

Matrix: Water

Date Received: 04/15/21 09:05

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	76.6		5.0	3.7	mg/L			04/21/21 12:45	1

Client Sample Results

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

Job ID: 500-197620-1

Client Sample ID: W-210414-RA-16

Lab Sample ID: 500-197620-3

Date Collected: 04/14/21 11:05

Matrix: Water

Date Received: 04/15/21 09:05

Method: 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			04/26/21 16:30	1
Toluene	<0.15		0.50	0.15	ug/L			04/26/21 16:30	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/26/21 16:30	1
Xylenes, Total	1.2		1.0	0.22	ug/L			04/26/21 16:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	117		75 - 126		04/26/21 16:30	1
Toluene-d8 (Surr)	99		75 - 120		04/26/21 16:30	1
4-Bromofluorobenzene (Surr)	97		72 - 124		04/26/21 16:30	1
Dibromofluoromethane	113		75 - 120		04/26/21 16:30	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	0.31	J	0.80	0.25	ug/L		04/16/21 21:43	04/19/21 14:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	92		36 - 120	04/16/21 21:43	04/19/21 14:52	1
2-Fluorobiphenyl (Surr)	79		34 - 110	04/16/21 21:43	04/19/21 14:52	1
Terphenyl-d14 (Surr)	88		40 - 145	04/16/21 21:43	04/19/21 14:52	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			04/20/21 18:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	111		60 - 140		04/20/21 18:50	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	480		38	34	ug/L		04/20/21 08:03	04/21/21 10:35	400

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	0	D	25 - 130	04/20/21 08:03	04/21/21 10:35	400

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.65	J	1.0	0.23	ug/L		04/20/21 08:22	04/20/21 23:47	1
Copper	1.5	J	2.0	0.50	ug/L		04/20/21 08:22	04/20/21 23:47	1
Iron	<46.7		100	46.7	ug/L		04/20/21 08:22	04/20/21 23:47	1
Manganese	143		2.5	0.79	ug/L		04/20/21 08:22	04/20/21 23:47	1
Zinc	<6.9		20.0	6.9	ug/L		04/20/21 08:22	04/20/21 23:47	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	188		0.91	0.46	mg/L		04/16/21 10:01	04/19/21 08:04	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11.3		0.40	0.34	mg/L			04/23/21 23:34	2
Nitrate as N	0.31		0.20	0.068	mg/L			04/15/21 23:22	1
Sulfate	27.9		1.0	0.48	mg/L			04/27/21 18:53	5
Total Organic Carbon - Duplicates	5.3		1.0	0.47	mg/L			04/19/21 17:40	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-197620-1

Client Sample ID: W-210414-RA-16

Lab Sample ID: 500-197620-3

Date Collected: 04/14/21 11:05

Matrix: Water

Date Received: 04/15/21 09:05

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	155		5.0	3.7	mg/L			04/21/21 12:58	1

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Client Sample Results

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

Job ID: 500-197620-1

Client Sample ID: W-210414-RA-17

Lab Sample ID: 500-197620-4

Date Collected: 04/14/21 12:10

Matrix: Water

Date Received: 04/15/21 09:05

Method: 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			04/27/21 11:44	1
Toluene	<0.15		0.50	0.15	ug/L			04/27/21 11:44	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/27/21 11:44	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/27/21 11:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		75 - 126		04/27/21 11:44	1
Toluene-d8 (Surr)	102		75 - 120		04/27/21 11:44	1
4-Bromofluorobenzene (Surr)	100		72 - 124		04/27/21 11:44	1
Dibromofluoromethane	111		75 - 120		04/27/21 11:44	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.82	0.25	ug/L		04/16/21 21:43	04/19/21 15:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	90		36 - 120	04/16/21 21:43	04/19/21 15:20	1
2-Fluorobiphenyl (Surr)	81		34 - 110	04/16/21 21:43	04/19/21 15:20	1
Terphenyl-d14 (Surr)	98		40 - 145	04/16/21 21:43	04/19/21 15:20	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	5.4		1.0	0.17	ug/L			04/20/21 19:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	111		60 - 140		04/20/21 19:07	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.087		0.097	0.087	ug/L		04/20/21 08:03	04/21/21 03:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	71		25 - 130	04/20/21 08:03	04/21/21 03:49	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.27	J	1.0	0.23	ug/L		04/20/21 08:22	04/20/21 23:51	1
Copper	1.0	J	2.0	0.50	ug/L		04/20/21 08:22	04/20/21 23:51	1
Iron	731		100	46.7	ug/L		04/20/21 08:22	04/20/21 23:51	1
Manganese	15.7		2.5	0.79	ug/L		04/20/21 08:22	04/20/21 23:51	1
Zinc	<6.9		20.0	6.9	ug/L		04/20/21 08:22	04/20/21 23:51	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	465		0.91	0.46	mg/L		04/16/21 10:01	04/19/21 08:04	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	73.8		4.0	3.4	mg/L			04/23/21 23:48	20
Nitrate as N	1.9		0.20	0.068	mg/L			04/15/21 23:36	1
Sulfate	6.7		0.20	0.095	mg/L			04/15/21 23:36	1
Total Organic Carbon - Duplicates	1.1		1.0	0.47	mg/L			04/19/21 17:57	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-197620-1

Client Sample ID: W-210414-RA-17

Lab Sample ID: 500-197620-4

Date Collected: 04/14/21 12:10

Matrix: Water

Date Received: 04/15/21 09:05

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	406		5.0	3.7	mg/L			04/21/21 13:19	1

Client Sample Results

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

Job ID: 500-197620-1

Client Sample ID: W-210414-RA-18

Lab Sample ID: 500-197620-5

Date Collected: 04/14/21 12:10

Matrix: Water

Date Received: 04/15/21 09:05

Method: 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			04/26/21 16:56	1
Toluene	<0.15		0.50	0.15	ug/L			04/26/21 16:56	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/26/21 16:56	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/26/21 16:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	118		75 - 126		04/26/21 16:56	1
Toluene-d8 (Surr)	97		75 - 120		04/26/21 16:56	1
4-Bromofluorobenzene (Surr)	101		72 - 124		04/26/21 16:56	1
Dibromofluoromethane	115		75 - 120		04/26/21 16:56	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.24		0.79	0.24	ug/L		04/16/21 21:43	04/19/21 15:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	84		36 - 120	04/16/21 21:43	04/19/21 15:47	1
2-Fluorobiphenyl (Surr)	81		34 - 110	04/16/21 21:43	04/19/21 15:47	1
Terphenyl-d14 (Surr)	88		40 - 145	04/16/21 21:43	04/19/21 15:47	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	4.4		1.0	0.17	ug/L			04/20/21 20:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	111		60 - 140		04/20/21 20:50	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.088		0.098	0.088	ug/L		04/20/21 08:03	04/21/21 04:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	78		25 - 130	04/20/21 08:03	04/21/21 04:08	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.30	J	1.0	0.23	ug/L		04/20/21 08:22	04/21/21 00:01	1
Copper	0.81	J	2.0	0.50	ug/L		04/20/21 08:22	04/21/21 00:01	1
Iron	759		100	46.7	ug/L		04/20/21 08:22	04/21/21 00:01	1
Manganese	16.3		2.5	0.79	ug/L		04/20/21 08:22	04/21/21 00:01	1
Zinc	8.0	J B	20.0	6.9	ug/L		04/20/21 08:22	04/21/21 00:01	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	456		0.91	0.46	mg/L		04/16/21 10:01	04/19/21 08:04	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	74.9		4.0	3.4	mg/L			04/24/21 00:01	20
Nitrate as N	1.9		0.20	0.068	mg/L			04/15/21 23:49	1
Sulfate	6.7		0.20	0.095	mg/L			04/15/21 23:49	1
Total Organic Carbon - Duplicates	1.1		1.0	0.47	mg/L			04/19/21 18:13	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-197620-1

Client Sample ID: W-210414-RA-18

Lab Sample ID: 500-197620-5

Date Collected: 04/14/21 12:10

Matrix: Water

Date Received: 04/15/21 09:05

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	412		5.0	3.7	mg/L			04/21/21 13:28	1

Client Sample Results

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

Job ID: 500-197620-1

Client Sample ID: W-210414-RA-19

Lab Sample ID: 500-197620-6

Date Collected: 04/14/21 13:00

Matrix: Water

Date Received: 04/15/21 09:05

Method: 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			04/26/21 17:23	1
Toluene	<0.15		0.50	0.15	ug/L			04/26/21 17:23	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/26/21 17:23	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/26/21 17:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	118		75 - 126		04/26/21 17:23	1
Toluene-d8 (Surr)	97		75 - 120		04/26/21 17:23	1
4-Bromofluorobenzene (Surr)	98		72 - 124		04/26/21 17:23	1
Dibromofluoromethane	114		75 - 120		04/26/21 17:23	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.82	0.25	ug/L		04/16/21 21:43	04/19/21 16:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	86		36 - 120	04/16/21 21:43	04/19/21 16:14	1
2-Fluorobiphenyl (Surr)	80		34 - 110	04/16/21 21:43	04/19/21 16:14	1
Terphenyl-d14 (Surr)	95		40 - 145	04/16/21 21:43	04/19/21 16:14	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.086		0.096	0.086	ug/L		04/20/21 08:03	04/21/21 04:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	77		25 - 130	04/20/21 08:03	04/21/21 04:28	1

Method: 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		04/20/21 08:22	04/21/21 00:05	1
Copper	<0.50		2.0	0.50	ug/L		04/20/21 08:22	04/21/21 00:05	1
Iron	<46.7		100	46.7	ug/L		04/20/21 08:22	04/21/21 00:05	1
Manganese	<0.79		2.5	0.79	ug/L		04/20/21 08:22	04/21/21 00:05	1
Zinc	<6.9		20.0	6.9	ug/L		04/20/21 08:22	04/21/21 00:05	1

Client Sample Results

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

Job ID: 500-197620-1

Client Sample ID: W-210414-RA-20

Lab Sample ID: 500-197620-7

Date Collected: 04/14/21 13:00

Matrix: Water

Date Received: 04/15/21 09:05

Method: 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			04/26/21 17:50	1
Toluene	0.55		0.50	0.15	ug/L			04/26/21 17:50	1
Ethylbenzene	0.42	J	0.50	0.18	ug/L			04/26/21 17:50	1
Xylenes, Total	3.4		1.0	0.22	ug/L			04/26/21 17:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	122		75 - 126		04/26/21 17:50	1
Toluene-d8 (Surr)	97		75 - 120		04/26/21 17:50	1
4-Bromofluorobenzene (Surr)	97		72 - 124		04/26/21 17:50	1
Dibromofluoromethane	113		75 - 120		04/26/21 17:50	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	3.1		0.83	0.26	ug/L		04/16/21 21:43	04/19/21 17:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	88		36 - 120	04/16/21 21:43	04/19/21 17:36	1
2-Fluorobiphenyl (Surr)	55		34 - 110	04/16/21 21:43	04/19/21 17:36	1
Terphenyl-d14 (Surr)	83		40 - 145	04/16/21 21:43	04/19/21 17:36	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	120		1.0	0.17	ug/L			04/20/21 21:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	109		60 - 140		04/20/21 21:07	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	840		19	17	ug/L		04/20/21 08:03	04/21/21 09:18	200

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	0	D	25 - 130	04/20/21 08:03	04/21/21 09:18	200

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.91	J	1.0	0.23	ug/L		04/20/21 08:22	04/21/21 00:08	1
Copper	1.6	J	2.0	0.50	ug/L		04/20/21 08:22	04/21/21 00:08	1
Iron	1070		100	46.7	ug/L		04/20/21 08:22	04/21/21 00:08	1
Manganese	882		2.5	0.79	ug/L		04/20/21 08:22	04/21/21 00:08	1
Zinc	<6.9		20.0	6.9	ug/L		04/20/21 08:22	04/21/21 00:08	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	165		0.91	0.46	mg/L		04/16/21 10:01	04/19/21 08:04	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	25.2		1.0	0.85	mg/L			04/27/21 19:07	5
Nitrate as N	<0.068		0.20	0.068	mg/L			04/16/21 00:03	1
Sulfate	8.8		0.20	0.095	mg/L			04/16/21 00:03	1
Total Organic Carbon - Duplicates	13.6		1.0	0.47	mg/L			04/19/21 19:22	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-197620-1

Client Sample ID: W-210414-RA-20

Lab Sample ID: 500-197620-7

Date Collected: 04/14/21 13:00

Matrix: Water

Date Received: 04/15/21 09:05

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	135		5.0	3.7	mg/L			04/21/21 11:07	1

Client Sample Results

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

Job ID: 500-197620-1

Client Sample ID: W-210414-RA-21

Lab Sample ID: 500-197620-8

Date Collected: 04/14/21 13:30

Matrix: Water

Date Received: 04/15/21 09:05

Method: 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			04/26/21 18:15	1
Toluene	0.21	J	0.50	0.15	ug/L			04/26/21 18:15	1
Ethylbenzene	0.69		0.50	0.18	ug/L			04/26/21 18:15	1
Xylenes, Total	10		1.0	0.22	ug/L			04/26/21 18:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	117		75 - 126		04/26/21 18:15	1
Toluene-d8 (Surr)	100		75 - 120		04/26/21 18:15	1
4-Bromofluorobenzene (Surr)	98		72 - 124		04/26/21 18:15	1
Dibromofluoromethane	112		75 - 120		04/26/21 18:15	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	15		7.9	2.4	ug/L		04/16/21 21:43	04/19/21 18:03	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	93		36 - 120	04/16/21 21:43	04/19/21 18:03	10
2-Fluorobiphenyl (Surr)	92		34 - 110	04/16/21 21:43	04/19/21 18:03	10
Terphenyl-d14 (Surr)	82		40 - 145	04/16/21 21:43	04/19/21 18:03	10

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	0.51	J	1.0	0.17	ug/L			04/20/21 21:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	107		60 - 140		04/20/21 21:24	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	2000		380	340	ug/L		04/20/21 08:03	04/21/21 11:13	4000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	0	D	25 - 130	04/20/21 08:03	04/21/21 11:13	4000

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.77	J	1.0	0.23	ug/L		04/20/21 08:22	04/21/21 00:12	1
Copper	2.8		2.0	0.50	ug/L		04/20/21 08:22	04/21/21 00:12	1
Iron	980		100	46.7	ug/L		04/20/21 08:22	04/21/21 00:12	1
Manganese	6360		25.0	7.9	ug/L		04/20/21 08:22	04/21/21 12:40	10
Zinc	<6.9		20.0	6.9	ug/L		04/20/21 08:22	04/21/21 00:12	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	401		0.91	0.46	mg/L		04/16/21 10:01	04/19/21 08:04	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	42.7		2.0	1.7	mg/L			04/27/21 20:15	10
Nitrate as N	<0.068		0.20	0.068	mg/L			04/16/21 00:17	1
Sulfate	34.8		2.0	0.95	mg/L			04/27/21 20:15	10
Total Organic Carbon - Duplicates	60.8		40.0	18.8	mg/L			04/19/21 19:38	40

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-197620-1

Client Sample ID: W-210414-RA-21

Lab Sample ID: 500-197620-8

Date Collected: 04/14/21 13:30

Matrix: Water

Date Received: 04/15/21 09:05

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	317		5.0	3.7	mg/L			04/21/21 10:36	1

1

2

3

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15

Client Sample Results

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

Job ID: 500-197620-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-197620-9

Date Collected: 04/14/21 00:00

Matrix: Water

Date Received: 04/15/21 09:05

Method: 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			04/26/21 12:32	1
Toluene	<0.15		0.50	0.15	ug/L			04/26/21 12:32	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/26/21 12:32	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/26/21 12:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		75 - 126		04/26/21 12:32	1
Toluene-d8 (Surr)	101		75 - 120		04/26/21 12:32	1
4-Bromofluorobenzene (Surr)	99		72 - 124		04/26/21 12:32	1
Dibromofluoromethane	113		75 - 120		04/26/21 12:32	1

Definitions/Glossary

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

Job ID: 500-197620-1

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

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
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL, and the absolute difference between results is < the upper reporting limits for both.
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.
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.
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

Eurofins TestAmerica, Chicago

Definitions/Glossary

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

Job ID: 500-197620-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
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

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QC Association Summary

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

Job ID: 500-197620-1

GC/MS VOA

Analysis Batch: 595090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197620-1	W-210414-RA-14	Total/NA	Water	8260B	
500-197620-2	W-210414-RA-15	Total/NA	Water	8260B	
500-197620-3	W-210414-RA-16	Total/NA	Water	8260B	
500-197620-5	W-210414-RA-18	Total/NA	Water	8260B	
500-197620-6	W-210414-RA-19	Total/NA	Water	8260B	
500-197620-7	W-210414-RA-20	Total/NA	Water	8260B	
500-197620-8	W-210414-RA-21	Total/NA	Water	8260B	
500-197620-9	Trip Blank	Total/NA	Water	8260B	
MB 500-595090/6	Method Blank	Total/NA	Water	8260B	
LCS 500-595090/4	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 595315

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197620-4	W-210414-RA-17	Total/NA	Water	8260B	
MB 500-595315/6	Method Blank	Total/NA	Water	8260B	
LCS 500-595315/4	Lab Control Sample	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 593749

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197620-1	W-210414-RA-14	Total/NA	Water	3510C	
500-197620-2	W-210414-RA-15	Total/NA	Water	3510C	
500-197620-3	W-210414-RA-16	Total/NA	Water	3510C	
500-197620-4	W-210414-RA-17	Total/NA	Water	3510C	
500-197620-5	W-210414-RA-18	Total/NA	Water	3510C	
500-197620-6	W-210414-RA-19	Total/NA	Water	3510C	
500-197620-7	W-210414-RA-20	Total/NA	Water	3510C	
500-197620-8	W-210414-RA-21	Total/NA	Water	3510C	
MB 500-593749/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-593749/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-593749/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 593899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-593749/1-A	Method Blank	Total/NA	Water	8270D	593749
LCS 500-593749/2-A	Lab Control Sample	Total/NA	Water	8270D	593749
LCSD 500-593749/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	593749

Analysis Batch: 593917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197620-1	W-210414-RA-14	Total/NA	Water	8270D	593749
500-197620-2	W-210414-RA-15	Total/NA	Water	8270D	593749
500-197620-3	W-210414-RA-16	Total/NA	Water	8270D	593749
500-197620-4	W-210414-RA-17	Total/NA	Water	8270D	593749
500-197620-5	W-210414-RA-18	Total/NA	Water	8270D	593749
500-197620-6	W-210414-RA-19	Total/NA	Water	8270D	593749
500-197620-7	W-210414-RA-20	Total/NA	Water	8270D	593749
500-197620-8	W-210414-RA-21	Total/NA	Water	8270D	593749

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QC Association Summary

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

Job ID: 500-197620-1

GC VOA

Analysis Batch: 481936

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197620-1	W-210414-RA-14	Total/NA	Water	RSK-175	
500-197620-2	W-210414-RA-15	Total/NA	Water	RSK-175	
500-197620-3	W-210414-RA-16	Total/NA	Water	RSK-175	
500-197620-4	W-210414-RA-17	Total/NA	Water	RSK-175	
MB 240-481936/3	Method Blank	Total/NA	Water	RSK-175	
LCS 240-481936/4	Lab Control Sample	Total/NA	Water	RSK-175	

Analysis Batch: 481937

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197620-5	W-210414-RA-18	Total/NA	Water	RSK-175	
500-197620-7	W-210414-RA-20	Total/NA	Water	RSK-175	
500-197620-8	W-210414-RA-21	Total/NA	Water	RSK-175	
MB 240-481937/33	Method Blank	Total/NA	Water	RSK-175	
LCS 240-481937/34	Lab Control Sample	Total/NA	Water	RSK-175	

GC Semi VOA

Prep Batch: 594076

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197620-1	W-210414-RA-14	Total/NA	Water	8151A	
500-197620-2	W-210414-RA-15	Total/NA	Water	8151A	
500-197620-3	W-210414-RA-16	Total/NA	Water	8151A	
500-197620-4	W-210414-RA-17	Total/NA	Water	8151A	
500-197620-5	W-210414-RA-18	Total/NA	Water	8151A	
500-197620-6	W-210414-RA-19	Total/NA	Water	8151A	
500-197620-7	W-210414-RA-20	Total/NA	Water	8151A	
500-197620-8	W-210414-RA-21	Total/NA	Water	8151A	
MB 500-594076/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-594076/2-A	Lab Control Sample	Total/NA	Water	8151A	

Analysis Batch: 594261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197620-1	W-210414-RA-14	Total/NA	Water	8151A	594076
500-197620-2	W-210414-RA-15	Total/NA	Water	8151A	594076
500-197620-3	W-210414-RA-16	Total/NA	Water	8151A	594076
500-197620-4	W-210414-RA-17	Total/NA	Water	8151A	594076
500-197620-5	W-210414-RA-18	Total/NA	Water	8151A	594076
500-197620-6	W-210414-RA-19	Total/NA	Water	8151A	594076
500-197620-7	W-210414-RA-20	Total/NA	Water	8151A	594076
500-197620-8	W-210414-RA-21	Total/NA	Water	8151A	594076
MB 500-594076/1-A	Method Blank	Total/NA	Water	8151A	594076
LCS 500-594076/2-A	Lab Control Sample	Total/NA	Water	8151A	594076

Metals

Prep Batch: 593656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197620-1	W-210414-RA-14	Total/NA	Water	3010A	
500-197620-2	W-210414-RA-15	Total/NA	Water	3010A	
500-197620-3	W-210414-RA-16	Total/NA	Water	3010A	
500-197620-4	W-210414-RA-17	Total/NA	Water	3010A	
500-197620-5	W-210414-RA-18	Total/NA	Water	3010A	

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QC Association Summary

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

Job ID: 500-197620-1

Metals (Continued)

Prep Batch: 593656 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197620-7	W-210414-RA-20	Total/NA	Water	3010A	
500-197620-8	W-210414-RA-21	Total/NA	Water	3010A	

Analysis Batch: 593886

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197620-1	W-210414-RA-14	Total/NA	Water	SM 2340B	593656
500-197620-2	W-210414-RA-15	Total/NA	Water	SM 2340B	593656
500-197620-3	W-210414-RA-16	Total/NA	Water	SM 2340B	593656
500-197620-4	W-210414-RA-17	Total/NA	Water	SM 2340B	593656
500-197620-5	W-210414-RA-18	Total/NA	Water	SM 2340B	593656
500-197620-7	W-210414-RA-20	Total/NA	Water	SM 2340B	593656
500-197620-8	W-210414-RA-21	Total/NA	Water	SM 2340B	593656

Prep Batch: 594092

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197620-1	W-210414-RA-14	Dissolved	Water	3005A	
500-197620-2	W-210414-RA-15	Dissolved	Water	3005A	
500-197620-3	W-210414-RA-16	Dissolved	Water	3005A	
500-197620-4	W-210414-RA-17	Dissolved	Water	3005A	
500-197620-5	W-210414-RA-18	Dissolved	Water	3005A	
500-197620-6	W-210414-RA-19	Dissolved	Water	3005A	
500-197620-7	W-210414-RA-20	Dissolved	Water	3005A	
500-197620-8	W-210414-RA-21	Dissolved	Water	3005A	
MB 500-594092/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-594092/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
500-197620-1 MS	W-210414-RA-14	Dissolved	Water	3005A	
500-197620-1 MSD	W-210414-RA-14	Dissolved	Water	3005A	
500-197620-1 DU	W-210414-RA-14	Dissolved	Water	3005A	

Analysis Batch: 594355

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197620-1	W-210414-RA-14	Dissolved	Water	6020A	594092
500-197620-2	W-210414-RA-15	Dissolved	Water	6020A	594092
500-197620-3	W-210414-RA-16	Dissolved	Water	6020A	594092
500-197620-4	W-210414-RA-17	Dissolved	Water	6020A	594092
500-197620-5	W-210414-RA-18	Dissolved	Water	6020A	594092
500-197620-6	W-210414-RA-19	Dissolved	Water	6020A	594092
500-197620-7	W-210414-RA-20	Dissolved	Water	6020A	594092
500-197620-8	W-210414-RA-21	Dissolved	Water	6020A	594092
MB 500-594092/1-A	Method Blank	Total Recoverable	Water	6020A	594092
LCS 500-594092/2-A	Lab Control Sample	Total Recoverable	Water	6020A	594092
500-197620-1 MS	W-210414-RA-14	Dissolved	Water	6020A	594092
500-197620-1 MSD	W-210414-RA-14	Dissolved	Water	6020A	594092
500-197620-1 DU	W-210414-RA-14	Dissolved	Water	6020A	594092

Analysis Batch: 594574

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197620-8	W-210414-RA-21	Dissolved	Water	6020A	594092

QC Association Summary

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

Job ID: 500-197620-1

General Chemistry

Analysis Batch: 593536

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197620-1	W-210414-RA-14	Total/NA	Water	300.0	
500-197620-2	W-210414-RA-15	Total/NA	Water	300.0	
500-197620-3	W-210414-RA-16	Total/NA	Water	300.0	
500-197620-4	W-210414-RA-17	Total/NA	Water	300.0	
500-197620-5	W-210414-RA-18	Total/NA	Water	300.0	
500-197620-7	W-210414-RA-20	Total/NA	Water	300.0	
500-197620-8	W-210414-RA-21	Total/NA	Water	300.0	
MB 500-593536/3	Method Blank	Total/NA	Water	300.0	
LCS 500-593536/4	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 594158

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197620-2	W-210414-RA-15	Total/NA	Water	9060A	
500-197620-3	W-210414-RA-16	Total/NA	Water	9060A	
500-197620-4	W-210414-RA-17	Total/NA	Water	9060A	
500-197620-5	W-210414-RA-18	Total/NA	Water	9060A	
500-197620-7	W-210414-RA-20	Total/NA	Water	9060A	
500-197620-8	W-210414-RA-21	Total/NA	Water	9060A	
MB 500-594158/25	Method Blank	Total/NA	Water	9060A	
MB 500-594158/4	Method Blank	Total/NA	Water	9060A	
LCS 500-594158/26	Lab Control Sample	Total/NA	Water	9060A	
LCS 500-594158/5	Lab Control Sample	Total/NA	Water	9060A	

Analysis Batch: 594284

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197620-1	W-210414-RA-14	Total/NA	Water	SM 2320B	
MB 500-594284/28	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-594284/29	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 594436

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197620-2	W-210414-RA-15	Total/NA	Water	SM 2320B	
500-197620-3	W-210414-RA-16	Total/NA	Water	SM 2320B	
500-197620-4	W-210414-RA-17	Total/NA	Water	SM 2320B	
500-197620-5	W-210414-RA-18	Total/NA	Water	SM 2320B	
500-197620-7	W-210414-RA-20	Total/NA	Water	SM 2320B	
500-197620-8	W-210414-RA-21	Total/NA	Water	SM 2320B	
MB 500-594436/28	Method Blank	Total/NA	Water	SM 2320B	
MB 500-594436/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-594436/29	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 500-594436/4	Lab Control Sample	Total/NA	Water	SM 2320B	
500-197620-2 DU	W-210414-RA-15	Total/NA	Water	SM 2320B	

Analysis Batch: 594634

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197620-1	W-210414-RA-14	Total/NA	Water	9060A	
MB 500-594634/52	Method Blank	Total/NA	Water	9060A	
LCS 500-594634/53	Lab Control Sample	Total/NA	Water	9060A	

QC Association Summary

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

Job ID: 500-197620-1

General Chemistry

Analysis Batch: 594914

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197620-1	W-210414-RA-14	Total/NA	Water	300.0	
500-197620-2	W-210414-RA-15	Total/NA	Water	300.0	
500-197620-3	W-210414-RA-16	Total/NA	Water	300.0	
500-197620-4	W-210414-RA-17	Total/NA	Water	300.0	
500-197620-5	W-210414-RA-18	Total/NA	Water	300.0	
MB 500-594914/3	Method Blank	Total/NA	Water	300.0	
LCS 500-594914/4	Lab Control Sample	Total/NA	Water	300.0	
500-197620-2 MS	W-210414-RA-15	Total/NA	Water	300.0	
500-197620-2 MSD	W-210414-RA-15	Total/NA	Water	300.0	

Analysis Batch: 595356

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197620-3	W-210414-RA-16	Total/NA	Water	300.0	
500-197620-7	W-210414-RA-20	Total/NA	Water	300.0	
500-197620-8	W-210414-RA-21	Total/NA	Water	300.0	
MB 500-595356/3	Method Blank	Total/NA	Water	300.0	
LCS 500-595356/4	Lab Control Sample	Total/NA	Water	300.0	
500-197620-7 MS	W-210414-RA-20	Total/NA	Water	300.0	
500-197620-7 MSD	W-210414-RA-20	Total/NA	Water	300.0	

Surrogate Summary

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

Job ID: 500-197620-1

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)
500-197620-1	W-210414-RA-14	114	99	99	110
500-197620-2	W-210414-RA-15	117	98	98	113
500-197620-3	W-210414-RA-16	117	99	97	113
500-197620-4	W-210414-RA-17	110	102	100	111
500-197620-5	W-210414-RA-18	118	97	101	115
500-197620-6	W-210414-RA-19	118	97	98	114
500-197620-7	W-210414-RA-20	122	97	97	113
500-197620-8	W-210414-RA-21	117	100	98	112
500-197620-9	Trip Blank	113	101	99	113
LCS 500-595090/4	Lab Control Sample	108	103	97	105
LCS 500-595315/4	Lab Control Sample	108	102	99	105
MB 500-595090/6	Method Blank	115	100	101	114
MB 500-595315/6	Method Blank	117	100	98	112

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)
500-197620-1	W-210414-RA-14	85	72	89
500-197620-2	W-210414-RA-15	83	79	91
500-197620-3	W-210414-RA-16	92	79	88
500-197620-4	W-210414-RA-17	90	81	98
500-197620-5	W-210414-RA-18	84	81	88
500-197620-6	W-210414-RA-19	86	80	95
500-197620-7	W-210414-RA-20	88	55	83
500-197620-8	W-210414-RA-21	93	92	82
LCS 500-593749/2-A	Lab Control Sample	79	81	92
LCSD 500-593749/3-A	Lab Control Sample Dup	79	85	94
MB 500-593749/1-A	Method Blank	77	66	99

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)
500-197620-1	W-210414-RA-14	108
500-197620-2	W-210414-RA-15	111

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Surrogate Summary

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

Job ID: 500-197620-1

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)
500-197620-3	W-210414-RA-16	111
500-197620-4	W-210414-RA-17	111
500-197620-5	W-210414-RA-18	111
500-197620-7	W-210414-RA-20	109
500-197620-8	W-210414-RA-21	107
LCS 240-481936/4	Lab Control Sample	112
LCS 240-481937/34	Lab Control Sample	114
MB 240-481936/3	Method Blank	113
MB 240-481937/33	Method Blank	114

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	DCPAA2 (25-130)
500-197620-1	W-210414-RA-14	94
500-197620-2	W-210414-RA-15	82
500-197620-3	W-210414-RA-16	0 D
500-197620-4	W-210414-RA-17	71
500-197620-5	W-210414-RA-18	78
500-197620-6	W-210414-RA-19	77
500-197620-7	W-210414-RA-20	0 D
500-197620-8	W-210414-RA-21	0 D
LCS 500-594076/2-A	Lab Control Sample	89
MB 500-594076/1-A	Method Blank	81

Surrogate Legend

DCPAA = DCAA

QC Sample Results

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

Job ID: 500-197620-1

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

Lab Sample ID: MB 500-595090/6
Matrix: Water
Analysis Batch: 595090

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			04/26/21 11:39	1
Toluene	<0.15		0.50	0.15	ug/L			04/26/21 11:39	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/26/21 11:39	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/26/21 11:39	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	115		75 - 126		04/26/21 11:39	1
Toluene-d8 (Surr)	100		75 - 120		04/26/21 11:39	1
4-Bromofluorobenzene (Surr)	101		72 - 124		04/26/21 11:39	1
Dibromofluoromethane	114		75 - 120		04/26/21 11:39	1

Lab Sample ID: LCS 500-595090/4
Matrix: Water
Analysis Batch: 595090

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	48.5		ug/L		97	70 - 125
Ethylbenzene	50.0	46.8		ug/L		94	70 - 123
Xylenes, Total	100	98.8		ug/L		99	70 - 125

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	108		75 - 126
Toluene-d8 (Surr)	103		75 - 120
4-Bromofluorobenzene (Surr)	97		72 - 124
Dibromofluoromethane	105		75 - 120

Lab Sample ID: MB 500-595315/6
Matrix: Water
Analysis Batch: 595315

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			04/27/21 11:18	1
Toluene	<0.15		0.50	0.15	ug/L			04/27/21 11:18	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/27/21 11:18	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/27/21 11:18	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	117		75 - 126		04/27/21 11:18	1
Toluene-d8 (Surr)	100		75 - 120		04/27/21 11:18	1
4-Bromofluorobenzene (Surr)	98		72 - 124		04/27/21 11:18	1
Dibromofluoromethane	112		75 - 120		04/27/21 11:18	1

QC Sample Results

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

Job ID: 500-197620-1

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

Lab Sample ID: LCS 500-595315/4
Matrix: Water
Analysis Batch: 595315

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	47.3		ug/L		95	70 - 120
Toluene	50.0	50.9		ug/L		102	70 - 125
Ethylbenzene	50.0	49.0		ug/L		98	70 - 123
Xylenes, Total	100	104		ug/L		104	70 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	108		75 - 126
Toluene-d8 (Surr)	102		75 - 120
4-Bromofluorobenzene (Surr)	99		72 - 124
Dibromofluoromethane	105		75 - 120

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

Lab Sample ID: MB 500-593749/1-A
Matrix: Water
Analysis Batch: 593899

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 593749

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.80	0.25	ug/L		04/16/21 21:43	04/19/21 13:21	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	77		36 - 120	04/16/21 21:43	04/19/21 13:21	1
2-Fluorobiphenyl (Surr)	66		34 - 110	04/16/21 21:43	04/19/21 13:21	1
Terphenyl-d14 (Surr)	99		40 - 145	04/16/21 21:43	04/19/21 13:21	1

Lab Sample ID: LCS 500-593749/2-A
Matrix: Water
Analysis Batch: 593899

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 593749

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	32.0	18.2		ug/L		57	36 - 110

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Nitrobenzene-d5 (Surr)	79		36 - 120
2-Fluorobiphenyl (Surr)	81		34 - 110
Terphenyl-d14 (Surr)	92		40 - 145

Lab Sample ID: LCSD 500-593749/3-A
Matrix: Water
Analysis Batch: 593899

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 593749

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Naphthalene	32.0	17.7		ug/L		55	36 - 110	3	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Nitrobenzene-d5 (Surr)	79		36 - 120
2-Fluorobiphenyl (Surr)	85		34 - 110

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QC Sample Results

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

Job ID: 500-197620-1

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

Lab Sample ID: LCSD 500-593749/3-A
Matrix: Water
Analysis Batch: 593899

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 593749

Surrogate	LCS D %Recovery	LCS D Qualifier	Limits
Terphenyl-d14 (Surr)	94		40 - 145

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 240-481936/3
Matrix: Water
Analysis Batch: 481936

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			04/20/21 11:44	1
Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac			
1,1,1-Trifluoroethane	113		60 - 140		04/20/21 11:44	1			

Lab Sample ID: LCS 240-481936/4
Matrix: Water
Analysis Batch: 481936

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane	409	445		ug/L		109	80 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,1,1-Trifluoroethane	112		60 - 140				

Lab Sample ID: MB 240-481937/33
Matrix: Water
Analysis Batch: 481937

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			04/20/21 20:16	1
Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac			
1,1,1-Trifluoroethane	114		60 - 140		04/20/21 20:16	1			

Lab Sample ID: LCS 240-481937/34
Matrix: Water
Analysis Batch: 481937

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane	409	451		ug/L		110	80 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,1,1-Trifluoroethane	114		60 - 140				

QC Sample Results

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

Job ID: 500-197620-1

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 500-594076/1-A
Matrix: Water
Analysis Batch: 594261

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 594076

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Pentachlorophenol	<0.090		0.10	0.090	ug/L		04/20/21 08:03	04/20/21 23:37	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	81		25 - 130				04/20/21 08:03	04/20/21 23:37	1

Lab Sample ID: LCS 500-594076/2-A
Matrix: Water
Analysis Batch: 594261

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 594076

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
DCAA	89		25 - 130				

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 500-594092/1-A
Matrix: Water
Analysis Batch: 594355

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 594092

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	<0.23		1.0	0.23	ug/L		04/20/21 08:22	04/20/21 23:19	1
Copper	<0.50		2.0	0.50	ug/L		04/20/21 08:22	04/20/21 23:19	1
Iron	<46.7		100	46.7	ug/L		04/20/21 08:22	04/20/21 23:19	1
Manganese	<0.79		2.5	0.79	ug/L		04/20/21 08:22	04/20/21 23:19	1
Zinc	26.45		20.0	6.9	ug/L		04/20/21 08:22	04/20/21 23:19	1

Lab Sample ID: LCS 500-594092/2-A
Matrix: Water
Analysis Batch: 594355

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 594092

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	250	247.9		ug/L		99	80 - 120
Iron	1000	1049		ug/L		105	80 - 120
Manganese	500	518.7		ug/L		104	80 - 120
Zinc	500	499.7		ug/L		100	80 - 120

Lab Sample ID: 500-197620-1 MS
Matrix: Water
Analysis Batch: 594355

Client Sample ID: W-210414-RA-14
Prep Type: Dissolved
Prep Batch: 594092

Analyte	Sample	Sample	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier							
Arsenic	0.31	J	100	91.21		ug/L		91	75 - 125
Copper	1.4	J	250	247.3		ug/L		98	75 - 125
Iron	<46.7		1000	986.0		ug/L		99	75 - 125
Manganese	<0.79		500	477.0		ug/L		95	75 - 125
Zinc	9.4	J B	500	487.0		ug/L		96	75 - 125

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QC Sample Results

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

Job ID: 500-197620-1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: 500-197620-1 MSD
Matrix: Water
Analysis Batch: 594355

Client Sample ID: W-210414-RA-14
Prep Type: Dissolved
Prep Batch: 594092

Analyte	Sample	Sample	Spike	MSD		Unit	D	%Rec	%Rec.		RPD	Limit
	Result	Qualifier		Result	Qualifier				Limits	RPD		
Arsenic	0.31	J	100	91.38		ug/L		91	75 - 125	0	20	
Copper	1.4	J	250	239.6		ug/L		95	75 - 125	3	20	
Iron	<46.7		1000	991.5		ug/L		99	75 - 125	1	20	
Manganese	<0.79		500	484.0		ug/L		97	75 - 125	1	20	
Zinc	9.4	J B	500	472.8		ug/L		93	75 - 125	3	20	

Lab Sample ID: 500-197620-1 DU
Matrix: Water
Analysis Batch: 594355

Client Sample ID: W-210414-RA-14
Prep Type: Dissolved
Prep Batch: 594092

Analyte	Sample	Sample	DU		Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Arsenic	0.31	J	0.374	J	ug/L		20	20
Copper	1.4	J	1.36	J	ug/L		5	20
Iron	<46.7		<46.7		ug/L		NC	20
Manganese	<0.79		<0.79		ug/L		NC	20
Zinc	9.4	J B	22.62	F5	ug/L		82	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-593536/3
Matrix: Water
Analysis Batch: 593536

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

Analyte	MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	<0.17	^	0.20	0.17	mg/L			04/15/21 19:58	1
Nitrate as N	<0.068		0.20	0.068	mg/L			04/15/21 19:58	1
Sulfate	<0.095		0.20	0.095	mg/L			04/15/21 19:58	1

Lab Sample ID: LCS 500-593536/4
Matrix: Water
Analysis Batch: 593536

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

Analyte	Spike	LCS		Unit	D	%Rec	%Rec.	
		Result	Qualifier				Limits	RPD
Chloride	3.00	3.18	^	mg/L		106	90 - 110	
Nitrate as N	2.00	2.07		mg/L		104	90 - 110	
Sulfate	5.00	5.09		mg/L		102	90 - 110	

Lab Sample ID: MB 500-594914/3
Matrix: Water
Analysis Batch: 594914

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

Analyte	MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	<0.17		0.20	0.17	mg/L			04/23/21 16:46	1
Nitrate as N	<0.068		0.20	0.068	mg/L			04/23/21 16:46	1
Sulfate	<0.095	^	0.20	0.095	mg/L			04/23/21 16:46	1

QC Sample Results

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

Job ID: 500-197620-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 500-594914/4
Matrix: Water
Analysis Batch: 594914

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3.00	3.11		mg/L		104	90 - 110
Nitrate as N	2.00	2.04		mg/L		102	90 - 110
Sulfate	5.00	5.07	^	mg/L		101	90 - 110

Lab Sample ID: 500-197620-2 MS
Matrix: Water
Analysis Batch: 594914

Client Sample ID: W-210414-RA-15
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	0.91		1.00	1.88		mg/L		97	80 - 120

Lab Sample ID: 500-197620-2 MSD
Matrix: Water
Analysis Batch: 594914

Client Sample ID: W-210414-RA-15
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	0.91		1.00	1.89		mg/L		98	80 - 120	0	20

Lab Sample ID: MB 500-595356/3
Matrix: Water
Analysis Batch: 595356

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

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.17		0.20	0.17	mg/L			04/27/21 14:33	1
Sulfate	<0.095		0.20	0.095	mg/L			04/27/21 14:33	1

Lab Sample ID: LCS 500-595356/4
Matrix: Water
Analysis Batch: 595356

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3.00	2.86		mg/L		95	90 - 110
Sulfate	5.00	5.02		mg/L		100	90 - 110

Lab Sample ID: 500-197620-7 MS
Matrix: Water
Analysis Batch: 595356

Client Sample ID: W-210414-RA-20
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.2		5.00	30.92	4	mg/L		115	80 - 120

Lab Sample ID: 500-197620-7 MSD
Matrix: Water
Analysis Batch: 595356

Client Sample ID: W-210414-RA-20
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	25.2		5.00	30.66	4	mg/L		110	80 - 120	1	20

QC Sample Results

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

Job ID: 500-197620-1

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

Lab Sample ID: MB 500-594158/25
Matrix: Water
Analysis Batch: 594158

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			04/19/21 18:49	1

Lab Sample ID: MB 500-594158/4
Matrix: Water
Analysis Batch: 594158

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			04/19/21 12:55	1

Lab Sample ID: LCS 500-594158/26
Matrix: Water
Analysis Batch: 594158

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	10.0	9.89		mg/L		99	80 - 120

Lab Sample ID: LCS 500-594158/5
Matrix: Water
Analysis Batch: 594158

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	10.0	10.01		mg/L		100	80 - 120

Lab Sample ID: MB 500-594634/52
Matrix: Water
Analysis Batch: 594634

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			04/22/21 02:05	1

Lab Sample ID: LCS 500-594634/53
Matrix: Water
Analysis Batch: 594634

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	10.0	10.42		mg/L		104	80 - 120

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-594284/28
Matrix: Water
Analysis Batch: 594284

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			04/20/21 14:12	1

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QC Sample Results

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

Job ID: 500-197620-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCS 500-594284/29
Matrix: Water
Analysis Batch: 594284

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	99.79		mg/L		100	90 - 110

Lab Sample ID: MB 500-594436/28
Matrix: Water
Analysis Batch: 594436

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			04/21/21 13:04	1

Lab Sample ID: MB 500-594436/3
Matrix: Water
Analysis Batch: 594436

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			04/21/21 10:14	1

Lab Sample ID: LCS 500-594436/29
Matrix: Water
Analysis Batch: 594436

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	100.4		mg/L		100	90 - 110

Lab Sample ID: LCS 500-594436/4
Matrix: Water
Analysis Batch: 594436

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	97.51		mg/L		98	90 - 110

Lab Sample ID: 500-197620-2 DU
Matrix: Water
Analysis Batch: 594436

Client Sample ID: W-210414-RA-15
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	76.6		75.16		mg/L		2	20

Lab Chronicle

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

Job ID: 500-197620-1

Client Sample ID: W-210414-RA-14

Lab Sample ID: 500-197620-1

Date Collected: 04/14/21 09:43

Matrix: Water

Date Received: 04/15/21 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	595090	04/26/21 15:12	PMF	TAL CHI
Total/NA	Prep	3510C			593749	04/16/21 21:43	ACK	TAL CHI
Total/NA	Analysis	8270D		1	593917	04/19/21 13:58	AJD	TAL CHI
Total/NA	Analysis	RSK-175		1	481936	04/20/21 18:16	JBN	TAL CAN
Total/NA	Prep	8151A			594076	04/20/21 08:03	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594261	04/21/21 02:51	JBK	TAL CHI
Dissolved	Prep	3005A			594092	04/20/21 08:22	BDE	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/20/21 23:26	FXG	TAL CHI
Total/NA	Prep	3010A			593656	04/16/21 10:01	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	593886	04/19/21 08:04	EEN	TAL CHI
Total/NA	Analysis	300.0		1	593536	04/15/21 22:55	PSP	TAL CHI
Total/NA	Analysis	300.0		1	594914	04/23/21 22:40	PSP	TAL CHI
Total/NA	Analysis	9060A		1	594634	04/22/21 07:08	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	594284	04/20/21 15:57	SMO	TAL CHI

Client Sample ID: W-210414-RA-15

Lab Sample ID: 500-197620-2

Date Collected: 04/14/21 10:20

Matrix: Water

Date Received: 04/15/21 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	595090	04/26/21 15:38	PMF	TAL CHI
Total/NA	Prep	3510C			593749	04/16/21 21:43	ACK	TAL CHI
Total/NA	Analysis	8270D		1	593917	04/19/21 14:25	AJD	TAL CHI
Total/NA	Analysis	RSK-175		1	481936	04/20/21 18:33	JBN	TAL CAN
Total/NA	Prep	8151A			594076	04/20/21 08:03	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594261	04/21/21 03:10	JBK	TAL CHI
Dissolved	Prep	3005A			594092	04/20/21 08:22	BDE	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/20/21 23:44	FXG	TAL CHI
Total/NA	Prep	3010A			593656	04/16/21 10:01	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	593886	04/19/21 08:04	EEN	TAL CHI
Total/NA	Analysis	300.0		1	593536	04/15/21 23:09	PSP	TAL CHI
Total/NA	Analysis	300.0		1	594914	04/23/21 22:53	PSP	TAL CHI
Total/NA	Analysis	9060A		1	594158	04/19/21 17:24	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	594436	04/21/21 12:45	SMO	TAL CHI

Client Sample ID: W-210414-RA-16

Lab Sample ID: 500-197620-3

Date Collected: 04/14/21 11:05

Matrix: Water

Date Received: 04/15/21 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	595090	04/26/21 16:30	PMF	TAL CHI
Total/NA	Prep	3510C			593749	04/16/21 21:43	ACK	TAL CHI
Total/NA	Analysis	8270D		1	593917	04/19/21 14:52	AJD	TAL CHI

Eurofins TestAmerica, Chicago

Lab Chronicle

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

Job ID: 500-197620-1

Client Sample ID: W-210414-RA-16

Lab Sample ID: 500-197620-3

Date Collected: 04/14/21 11:05

Matrix: Water

Date Received: 04/15/21 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	RSK-175		1	481936	04/20/21 18:50	JBN	TAL CAN
Total/NA	Prep	8151A			594076	04/20/21 08:03	DAK	TAL CHI
Total/NA	Analysis	8151A		400	594261	04/21/21 10:35	JBK	TAL CHI
Dissolved	Prep	3005A			594092	04/20/21 08:22	BDE	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/20/21 23:47	FXG	TAL CHI
Total/NA	Prep	3010A			593656	04/16/21 10:01	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	593886	04/19/21 08:04	EEN	TAL CHI
Total/NA	Analysis	300.0		5	595356	04/27/21 18:53	EAT	TAL CHI
Total/NA	Analysis	300.0		1	593536	04/15/21 23:22	PSP	TAL CHI
Total/NA	Analysis	300.0		2	594914	04/23/21 23:34	PSP	TAL CHI
Total/NA	Analysis	9060A		1	594158	04/19/21 17:40	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	594436	04/21/21 12:58	SMO	TAL CHI

Client Sample ID: W-210414-RA-17

Lab Sample ID: 500-197620-4

Date Collected: 04/14/21 12:10

Matrix: Water

Date Received: 04/15/21 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	595315	04/27/21 11:44	PMF	TAL CHI
Total/NA	Prep	3510C			593749	04/16/21 21:43	ACK	TAL CHI
Total/NA	Analysis	8270D		1	593917	04/19/21 15:20	AJD	TAL CHI
Total/NA	Analysis	RSK-175		1	481936	04/20/21 19:07	JBN	TAL CAN
Total/NA	Prep	8151A			594076	04/20/21 08:03	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594261	04/21/21 03:49	JBK	TAL CHI
Dissolved	Prep	3005A			594092	04/20/21 08:22	BDE	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/20/21 23:51	FXG	TAL CHI
Total/NA	Prep	3010A			593656	04/16/21 10:01	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	593886	04/19/21 08:04	EEN	TAL CHI
Total/NA	Analysis	300.0		1	593536	04/15/21 23:36	PSP	TAL CHI
Total/NA	Analysis	300.0		20	594914	04/23/21 23:48	PSP	TAL CHI
Total/NA	Analysis	9060A		1	594158	04/19/21 17:57	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	594436	04/21/21 13:19	SMO	TAL CHI

Client Sample ID: W-210414-RA-18

Lab Sample ID: 500-197620-5

Date Collected: 04/14/21 12:10

Matrix: Water

Date Received: 04/15/21 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	595090	04/26/21 16:56	PMF	TAL CHI
Total/NA	Prep	3510C			593749	04/16/21 21:43	ACK	TAL CHI
Total/NA	Analysis	8270D		1	593917	04/19/21 15:47	AJD	TAL CHI
Total/NA	Analysis	RSK-175		1	481937	04/20/21 20:50	JBN	TAL CAN

Eurofins TestAmerica, Chicago

Lab Chronicle

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

Job ID: 500-197620-1

Client Sample ID: W-210414-RA-18

Lab Sample ID: 500-197620-5

Date Collected: 04/14/21 12:10

Matrix: Water

Date Received: 04/15/21 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			594076	04/20/21 08:03	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594261	04/21/21 04:08	JBK	TAL CHI
Dissolved	Prep	3005A			594092	04/20/21 08:22	BDE	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/21/21 00:01	FXG	TAL CHI
Total/NA	Prep	3010A			593656	04/16/21 10:01	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	593886	04/19/21 08:04	EEN	TAL CHI
Total/NA	Analysis	300.0		1	593536	04/15/21 23:49	PSP	TAL CHI
Total/NA	Analysis	300.0		20	594914	04/24/21 00:01	PSP	TAL CHI
Total/NA	Analysis	9060A		1	594158	04/19/21 18:13	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	594436	04/21/21 13:28	SMO	TAL CHI

Client Sample ID: W-210414-RA-19

Lab Sample ID: 500-197620-6

Date Collected: 04/14/21 13:00

Matrix: Water

Date Received: 04/15/21 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	595090	04/26/21 17:23	PMF	TAL CHI
Total/NA	Prep	3510C			593749	04/16/21 21:43	ACK	TAL CHI
Total/NA	Analysis	8270D		1	593917	04/19/21 16:14	AJD	TAL CHI
Total/NA	Prep	8151A			594076	04/20/21 08:03	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594261	04/21/21 04:28	JBK	TAL CHI
Dissolved	Prep	3005A			594092	04/20/21 08:22	BDE	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/21/21 00:05	FXG	TAL CHI

Client Sample ID: W-210414-RA-20

Lab Sample ID: 500-197620-7

Date Collected: 04/14/21 13:00

Matrix: Water

Date Received: 04/15/21 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	595090	04/26/21 17:50	PMF	TAL CHI
Total/NA	Prep	3510C			593749	04/16/21 21:43	ACK	TAL CHI
Total/NA	Analysis	8270D		1	593917	04/19/21 17:36	AJD	TAL CHI
Total/NA	Analysis	RSK-175		1	481937	04/20/21 21:07	JBN	TAL CAN
Total/NA	Prep	8151A			594076	04/20/21 08:03	DAK	TAL CHI
Total/NA	Analysis	8151A		200	594261	04/21/21 09:18	JBK	TAL CHI
Dissolved	Prep	3005A			594092	04/20/21 08:22	BDE	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/21/21 00:08	FXG	TAL CHI
Total/NA	Prep	3010A			593656	04/16/21 10:01	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	593886	04/19/21 08:04	EEN	TAL CHI
Total/NA	Analysis	300.0		5	595356	04/27/21 19:07	EAT	TAL CHI
Total/NA	Analysis	300.0		1	593536	04/16/21 00:03	PSP	TAL CHI
Total/NA	Analysis	9060A		1	594158	04/19/21 19:22	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	594436	04/21/21 11:07	SMO	TAL CHI

Eurofins TestAmerica, Chicago

Lab Chronicle

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

Job ID: 500-197620-1

Client Sample ID: W-210414-RA-21

Lab Sample ID: 500-197620-8

Date Collected: 04/14/21 13:30

Matrix: Water

Date Received: 04/15/21 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	595090	04/26/21 18:15	PMF	TAL CHI
Total/NA	Prep	3510C			593749	04/16/21 21:43	ACK	TAL CHI
Total/NA	Analysis	8270D		10	593917	04/19/21 18:03	AJD	TAL CHI
Total/NA	Analysis	RSK-175		1	481937	04/20/21 21:24	JBN	TAL CAN
Total/NA	Prep	8151A			594076	04/20/21 08:03	DAK	TAL CHI
Total/NA	Analysis	8151A		4000	594261	04/21/21 11:13	JBK	TAL CHI
Dissolved	Prep	3005A			594092	04/20/21 08:22	BDE	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/21/21 00:12	FXG	TAL CHI
Dissolved	Prep	3005A			594092	04/20/21 08:22	BDE	TAL CHI
Dissolved	Analysis	6020A		10	594574	04/21/21 12:40	FXG	TAL CHI
Total/NA	Prep	3010A			593656	04/16/21 10:01	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	593886	04/19/21 08:04	EEN	TAL CHI
Total/NA	Analysis	300.0		10	595356	04/27/21 20:15	EAT	TAL CHI
Total/NA	Analysis	300.0		1	593536	04/16/21 00:17	PSP	TAL CHI
Total/NA	Analysis	9060A		40	594158	04/19/21 19:38	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	594436	04/21/21 10:36	SMO	TAL CHI

Client Sample ID: Trip Blank

Lab Sample ID: 500-197620-9

Date Collected: 04/14/21 00:00

Matrix: Water

Date Received: 04/15/21 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	595090	04/26/21 12:32	PMF	TAL CHI

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL CHI = Eurofins TestAmerica, 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: 500-197620-1

Laboratory: Eurofins TestAmerica, Chicago

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-21

Laboratory: Eurofins TestAmerica, Canton

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	02-23-22
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-22
Illinois	NELAP	004498	07-31-21
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21
Kentucky (UST)	State	112225	02-23-21 *
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-22
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-21
Texas	NELAP	T104704517-18-10	08-31-21
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-21
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Address _____

Regulatory Program: DW NPDES RCRA Other

TAL-8210

Client Contact		Project Manager:			Site Contact:			Date:			COC No					
Company Name GHD		Tel/Email			Lab Contact:			Carrier:			_____ of _____ COCs					
Address 1701 Old Highway 8 NW 114		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			Filtered Sample (Y/N) Perform MS/MSD (Y/N) PCP BTEX Napthalene Dissolved metals Alk, Anions Total metals/Hardness TOC Dissolved methane			 500-197620 COC			Sampler					
City/State/Zip St Paul, MN 55112											For Lab Use Only: Walk-in Client. _____ Lab Sampling _____					
Phone 651 639 7872		Project Name Penta wood			Job / SDG No			500-197620			Sample Specific Notes					
Fax _____		Site 11222918-01-04			Sample Identification			Sample Date			Sample Time					
P O # _____		Sample Type (C=Comp, G=Grab)			# of Cont.			Matrix			Sample Specific Notes					
		1 W-210414-RA-14			4/14/21			943			G GL 15 Y X X X X X X X			Dissolved metals		
		2 W-210414-RA-15			4/14/21			1020			G GL 15 Y Y X X X X X X			were fields f. Hove		
		3 W-210414-RA-16			4/14/21			1105			G GL 15 Y X X X X X X X					
		4 W-210414-RA-17			4/14/21			1210			G GL 15 Y Y X X X X X X					
		5 W-210414-RA-18			4/14/21			1210			G GL 15 Y X X X X X X X					
		6 W-210414-RA-19			4/14/21			1300			G GL 8 Y X X X X					
		7 W-210414-RA-20			4/14/21			1300			G GL 15 Y X X X X X X X					
		8 W-210414-RA-21			4/14/21			1330			G GL 15 Y X X X X X X X					
		9 triple k														
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. 3.4 → 2.4, 1.8 → 2.0, 3.4 → 3.0, 3.8 → 3.0																
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 4/14/21 1500						
Relinquished by _____					Company _____					Date/Time _____						
Relinquished by _____					Company _____					Date/Time _____						
Relinquished by _____					Company _____					Date/Time 4/15/21 0905						



500 197620 Wayb

FedEx Express *Package US Airbill*

FedEx Tracking Number **8161 0804 8890**

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 _____

We cannot deliver to P.O. boxes or P.O. ZIP codes.

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.



8161 0804 8890



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 3 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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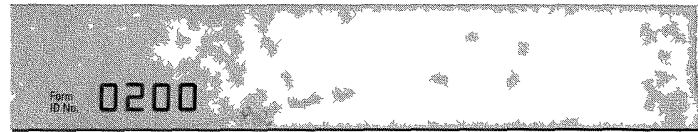
644

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 **8161 0804 8710**



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 _____
We cannot deliver to P.O. boxes or P.O. ZIP codes.
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.



AC J

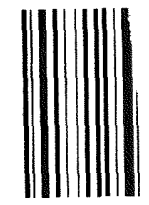


FIG: 88701 14Apr?

48 qt.

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 or 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 JUN 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. **644**

*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.com 1800 GoFedEx 1800 463 3339



Package US Airbill

FedEx Tracking Number 8161 0804 8672

Form 10 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 _____ 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.



8161 0804 8672

48 qt.

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. 644

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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 _____

We cannot deliver to P.O. boxes or P.D. ZIP codes.

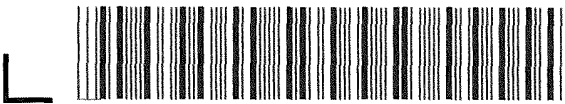
Address _____

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.



8161 0804 8709

48qt,

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 **Direct Signature** **Indirect Signature**
Package may be left without obtaining a signature for delivery. Someone at recipient's address may sign for delivery. 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:

Emer FedEx Acct. No. below. A.

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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Eurofins TestAmerica Canton Sample Receipt Form/Narrative Login # : _____

Canton Facility

Client ETA Site Name _____ Cooler unpacked by: MathSnuder

Cooler Received on 4-16-21 Opened on 4-16-21

FedEx: 1st Grd (Exp) UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time **Storage Location**

TestAmerica Cooler # 74 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# IR-11 (CF +0.1 °C) Observed Cooler Temp 3.0 °C Corrected Cooler Temp. 3.1 °C
 IR GUN #IR-12 (CF +0.2°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 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 NA
 -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# HC022887

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 _____

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

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: 500-197620-1

Login Number: 197620

List Source: Eurofins TestAmerica, Chicago

List Number: 1

Creator: Scott, Sherri L

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	2.6,0.5,3.0,3.0
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 <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

Eurofins TestAmerica, Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

Laboratory Job ID: 500-197621-1
Client Project/Site: Penta Wood 11222418

For:
GHD Services Inc.
1801 Old Highway 8 NW
Suite 114
St. Paul, Minnesota 55112

Attn: Mr. Grant Anderson



Authorized for release by:
4/27/2021 1:58:37 PM

Richard Wright, Senior Project Manager
(708)746-0045
Richard.Wright@Eurofinset.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

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

Job ID: 500-197621-1

Job ID: 500-197621-1

Laboratory: Eurofins TestAmerica, Chicago

Narrative

Job Narrative 500-197621-1

Receipt

The samples were received on 4/15/2021 9:05 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 3.7° C, 3.8° C and 4.2° 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 Semi VOA

Method 8151A: The following samples were reported from the primary column due to Pentachlorophenol recovering outside control limits for the continuing calibration verification (CCV) on the secondary column; therefore, the higher of the two results have been reported. (CCV 500-594261/11), (CCV 500-594261/20), (CCV 500-594261/28), (CCV 500-594261/1), (LCS 500-594076/2-A) and (MB 500-594076/1-A)

Method 8151A: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 500-594076 and analytical batch 500-594261 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) precision was within acceptance limits.

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: 500-197621-1

Client Sample ID: W-210414-RA-100 **Lab Sample ID: 500-197621-1**

No Detections.

Client Sample ID: W-210414-RA-101 **Lab Sample ID: 500-197621-2**

No Detections.

Client Sample ID: W-210414-RA-102 **Lab Sample ID: 500-197621-3**

No Detections.

Client Sample ID: W-210414-RA-103 **Lab Sample ID: 500-197621-4**

No Detections.

Client Sample ID: W-210414-RA-105 **Lab Sample ID: 500-197621-5**

No Detections.

Client Sample ID: Trip Blank **Lab Sample ID: 500-197621-6**

No Detections.

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This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

Method Summary

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

Job ID: 500-197621-1

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

Protocol References:

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

Laboratory References:

TAL CHI = Eurofins TestAmerica, 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: 500-197621-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
500-197621-1	W-210414-RA-100	Water	04/14/21 10:20	04/15/21 09:05	
500-197621-2	W-210414-RA-101	Water	04/14/21 10:52	04/15/21 09:05	
500-197621-3	W-210414-RA-102	Water	04/14/21 10:52	04/15/21 09:05	
500-197621-4	W-210414-RA-103	Water	04/14/21 11:07	04/15/21 09:05	
500-197621-5	W-210414-RA-105	Water	04/14/21 11:07	04/15/21 09:05	
500-197621-6	Trip Blank	Water	04/14/21 00:00	04/15/21 09:05	

Client Sample Results

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

Job ID: 500-197621-1

Client Sample ID: W-210414-RA-100

Lab Sample ID: 500-197621-1

Date Collected: 04/14/21 10:20

Matrix: Water

Date Received: 04/15/21 09:05

Method: 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			04/26/21 12:59	1
Toluene	<0.15		0.50	0.15	ug/L			04/26/21 12:59	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/26/21 12:59	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/26/21 12:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		75 - 126		04/26/21 12:59	1
Toluene-d8 (Surr)	100		75 - 120		04/26/21 12:59	1
4-Bromofluorobenzene (Surr)	102		72 - 124		04/26/21 12:59	1
Dibromofluoromethane	110		75 - 120		04/26/21 12:59	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.80	0.25	ug/L		04/17/21 08:24	04/19/21 13:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	82		36 - 120	04/17/21 08:24	04/19/21 13:11	1
2-Fluorobiphenyl (Surr)	77		34 - 110	04/17/21 08:24	04/19/21 13:11	1
Terphenyl-d14 (Surr)	109		40 - 145	04/17/21 08:24	04/19/21 13:11	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.089		0.099	0.089	ug/L		04/20/21 08:03	04/21/21 05:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	92		25 - 130	04/20/21 08:03	04/21/21 05:45	1

Client Sample Results

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

Job ID: 500-197621-1

Client Sample ID: W-210414-RA-101

Lab Sample ID: 500-197621-2

Date Collected: 04/14/21 10:52

Matrix: Water

Date Received: 04/15/21 09:05

Method: 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			04/26/21 13:25	1
Toluene	<0.15		0.50	0.15	ug/L			04/26/21 13:25	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/26/21 13:25	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/26/21 13:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		75 - 126		04/26/21 13:25	1
Toluene-d8 (Surr)	101		75 - 120		04/26/21 13:25	1
4-Bromofluorobenzene (Surr)	99		72 - 124		04/26/21 13:25	1
Dibromofluoromethane	110		75 - 120		04/26/21 13:25	1

Method: 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		04/17/21 08:24	04/19/21 13:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	84		36 - 120	04/17/21 08:24	04/19/21 13:34	1
2-Fluorobiphenyl (Surr)	78		34 - 110	04/17/21 08:24	04/19/21 13:34	1
Terphenyl-d14 (Surr)	109		40 - 145	04/17/21 08:24	04/19/21 13:34	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.092		0.10	0.092	ug/L		04/20/21 08:03	04/21/21 06:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	56		25 - 130	04/20/21 08:03	04/21/21 06:43	1

Client Sample Results

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

Job ID: 500-197621-1

Client Sample ID: W-210414-RA-102

Lab Sample ID: 500-197621-3

Date Collected: 04/14/21 10:52

Matrix: Water

Date Received: 04/15/21 09:05

Method: 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			04/26/21 13:50	1
Toluene	<0.15		0.50	0.15	ug/L			04/26/21 13:50	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/26/21 13:50	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/26/21 13:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		75 - 126		04/26/21 13:50	1
Toluene-d8 (Surr)	102		75 - 120		04/26/21 13:50	1
4-Bromofluorobenzene (Surr)	99		72 - 124		04/26/21 13:50	1
Dibromofluoromethane	110		75 - 120		04/26/21 13:50	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.26		0.85	0.26	ug/L		04/17/21 08:24	04/19/21 13:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	82		36 - 120	04/17/21 08:24	04/19/21 13:57	1
2-Fluorobiphenyl (Surr)	77		34 - 110	04/17/21 08:24	04/19/21 13:57	1
Terphenyl-d14 (Surr)	114		40 - 145	04/17/21 08:24	04/19/21 13:57	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.088		0.098	0.088	ug/L		04/20/21 08:03	04/21/21 07:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	79		25 - 130	04/20/21 08:03	04/21/21 07:03	1

Client Sample Results

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

Job ID: 500-197621-1

Client Sample ID: W-210414-RA-103

Lab Sample ID: 500-197621-4

Date Collected: 04/14/21 11:07

Matrix: Water

Date Received: 04/15/21 09:05

Method: 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			04/26/21 14:17	1
Toluene	<0.15		0.50	0.15	ug/L			04/26/21 14:17	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/26/21 14:17	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/26/21 14:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		75 - 126		04/26/21 14:17	1
Toluene-d8 (Surr)	99		75 - 120		04/26/21 14:17	1
4-Bromofluorobenzene (Surr)	99		72 - 124		04/26/21 14:17	1
Dibromofluoromethane	111		75 - 120		04/26/21 14:17	1

Method: 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		04/17/21 08:24	04/19/21 14:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	86		36 - 120	04/17/21 08:24	04/19/21 14:20	1
2-Fluorobiphenyl (Surr)	84		34 - 110	04/17/21 08:24	04/19/21 14:20	1
Terphenyl-d14 (Surr)	117		40 - 145	04/17/21 08:24	04/19/21 14:20	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.086		0.096	0.086	ug/L		04/20/21 08:03	04/21/21 07:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	52		25 - 130	04/20/21 08:03	04/21/21 07:22	1

Client Sample Results

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

Job ID: 500-197621-1

Client Sample ID: W-210414-RA-105

Lab Sample ID: 500-197621-5

Date Collected: 04/14/21 11:07

Matrix: Water

Date Received: 04/15/21 09:05

Method: 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			04/26/21 14:44	1
Toluene	<0.15		0.50	0.15	ug/L			04/26/21 14:44	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/26/21 14:44	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/26/21 14:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	117		75 - 126		04/26/21 14:44	1
Toluene-d8 (Surr)	100		75 - 120		04/26/21 14:44	1
4-Bromofluorobenzene (Surr)	98		72 - 124		04/26/21 14:44	1
Dibromofluoromethane	113		75 - 120		04/26/21 14:44	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.24		0.79	0.24	ug/L		04/17/21 08:24	04/19/21 14:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	87		36 - 120	04/17/21 08:24	04/19/21 14:44	1
2-Fluorobiphenyl (Surr)	83		34 - 110	04/17/21 08:24	04/19/21 14:44	1
Terphenyl-d14 (Surr)	116		40 - 145	04/17/21 08:24	04/19/21 14:44	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.088		0.098	0.088	ug/L		04/20/21 08:03	04/21/21 07:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	78		25 - 130	04/20/21 08:03	04/21/21 07:42	1

Client Sample Results

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

Job ID: 500-197621-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-197621-6

Date Collected: 04/14/21 00:00

Matrix: Water

Date Received: 04/15/21 09:05

Method: 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			04/26/21 12:05	1
Toluene	<0.15		0.50	0.15	ug/L			04/26/21 12:05	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/26/21 12:05	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/26/21 12:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		75 - 126		04/26/21 12:05	1
Toluene-d8 (Surr)	101		75 - 120		04/26/21 12:05	1
4-Bromofluorobenzene (Surr)	99		72 - 124		04/26/21 12:05	1
Dibromofluoromethane	107		75 - 120		04/26/21 12:05	1

Definitions/Glossary

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

Job ID: 500-197621-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
F2	MS/MSD RPD exceeds control 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: 500-197621-1

GC/MS VOA

Analysis Batch: 595090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197621-1	W-210414-RA-100	Total/NA	Water	8260B	
500-197621-2	W-210414-RA-101	Total/NA	Water	8260B	
500-197621-3	W-210414-RA-102	Total/NA	Water	8260B	
500-197621-4	W-210414-RA-103	Total/NA	Water	8260B	
500-197621-5	W-210414-RA-105	Total/NA	Water	8260B	
500-197621-6	Trip Blank	Total/NA	Water	8260B	
MB 500-595090/6	Method Blank	Total/NA	Water	8260B	
LCS 500-595090/4	Lab Control Sample	Total/NA	Water	8260B	
500-197621-1 MS	W-210414-RA-100	Total/NA	Water	8260B	
500-197621-1 MSD	W-210414-RA-100	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 593767

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197621-1	W-210414-RA-100	Total/NA	Water	3510C	
500-197621-2	W-210414-RA-101	Total/NA	Water	3510C	
500-197621-3	W-210414-RA-102	Total/NA	Water	3510C	
500-197621-4	W-210414-RA-103	Total/NA	Water	3510C	
500-197621-5	W-210414-RA-105	Total/NA	Water	3510C	
MB 500-593767/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-593767/2-A	Lab Control Sample	Total/NA	Water	3510C	
500-197621-1 MS	W-210414-RA-100	Total/NA	Water	3510C	
500-197621-1 MSD	W-210414-RA-100	Total/NA	Water	3510C	

Analysis Batch: 593899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-593767/1-A	Method Blank	Total/NA	Water	8270D	593767
LCS 500-593767/2-A	Lab Control Sample	Total/NA	Water	8270D	593767

Analysis Batch: 593909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197621-1	W-210414-RA-100	Total/NA	Water	8270D	593767
500-197621-2	W-210414-RA-101	Total/NA	Water	8270D	593767
500-197621-3	W-210414-RA-102	Total/NA	Water	8270D	593767
500-197621-4	W-210414-RA-103	Total/NA	Water	8270D	593767
500-197621-5	W-210414-RA-105	Total/NA	Water	8270D	593767
500-197621-1 MS	W-210414-RA-100	Total/NA	Water	8270D	593767
500-197621-1 MSD	W-210414-RA-100	Total/NA	Water	8270D	593767

GC Semi VOA

Prep Batch: 594076

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197621-1	W-210414-RA-100	Total/NA	Water	8151A	
500-197621-2	W-210414-RA-101	Total/NA	Water	8151A	
500-197621-3	W-210414-RA-102	Total/NA	Water	8151A	
500-197621-4	W-210414-RA-103	Total/NA	Water	8151A	
500-197621-5	W-210414-RA-105	Total/NA	Water	8151A	
MB 500-594076/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-594076/2-A	Lab Control Sample	Total/NA	Water	8151A	
500-197621-1 MS	W-210414-RA-100	Total/NA	Water	8151A	

Eurofins TestAmerica, Chicago

QC Association Summary

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

Job ID: 500-197621-1

GC Semi VOA (Continued)

Prep Batch: 594076 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197621-1 MSD	W-210414-RA-100	Total/NA	Water	8151A	

Analysis Batch: 594261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197621-1	W-210414-RA-100	Total/NA	Water	8151A	594076
500-197621-2	W-210414-RA-101	Total/NA	Water	8151A	594076
500-197621-3	W-210414-RA-102	Total/NA	Water	8151A	594076
500-197621-4	W-210414-RA-103	Total/NA	Water	8151A	594076
500-197621-5	W-210414-RA-105	Total/NA	Water	8151A	594076
MB 500-594076/1-A	Method Blank	Total/NA	Water	8151A	594076
LCS 500-594076/2-A	Lab Control Sample	Total/NA	Water	8151A	594076
500-197621-1 MS	W-210414-RA-100	Total/NA	Water	8151A	594076
500-197621-1 MSD	W-210414-RA-100	Total/NA	Water	8151A	594076

Surrogate Summary

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

Job ID: 500-197621-1

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)
500-197621-1	W-210414-RA-100	112	100	102	110
500-197621-1 MS	W-210414-RA-100	113	100	100	111
500-197621-1 MSD	W-210414-RA-100	117	100	99	110
500-197621-2	W-210414-RA-101	112	101	99	110
500-197621-3	W-210414-RA-102	112	102	99	110
500-197621-4	W-210414-RA-103	113	99	99	111
500-197621-5	W-210414-RA-105	117	100	98	113
500-197621-6	Trip Blank	109	101	99	107
LCS 500-595090/4	Lab Control Sample	108	103	97	105
MB 500-595090/6	Method Blank	115	100	101	114

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)
500-197621-1	W-210414-RA-100	82	77	109
500-197621-1 MS	W-210414-RA-100	87	83	96
500-197621-1 MSD	W-210414-RA-100	85	84	95
500-197621-2	W-210414-RA-101	84	78	109
500-197621-3	W-210414-RA-102	82	77	114
500-197621-4	W-210414-RA-103	86	84	117
500-197621-5	W-210414-RA-105	87	83	116
LCS 500-593767/2-A	Lab Control Sample	87	87	100
MB 500-593767/1-A	Method Blank	83	76	107

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)
		DCPAA2 (25-130)
500-197621-1	W-210414-RA-100	92
500-197621-1 MS	W-210414-RA-100	81
500-197621-1 MSD	W-210414-RA-100	112
500-197621-2	W-210414-RA-101	56
500-197621-3	W-210414-RA-102	79
500-197621-4	W-210414-RA-103	52
500-197621-5	W-210414-RA-105	78

Eurofins TestAmerica, Chicago

Surrogate Summary

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

Job ID: 500-197621-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA2 (25-130)
LCS 500-594076/2-A	Lab Control Sample	89
MB 500-594076/1-A	Method Blank	81

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: 500-197621-1

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

Lab Sample ID: MB 500-595090/6
Matrix: Water
Analysis Batch: 595090

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			04/26/21 11:39	1
Toluene	<0.15		0.50	0.15	ug/L			04/26/21 11:39	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/26/21 11:39	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/26/21 11:39	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	115		75 - 126		04/26/21 11:39	1
Toluene-d8 (Surr)	100		75 - 120		04/26/21 11:39	1
4-Bromofluorobenzene (Surr)	101		72 - 124		04/26/21 11:39	1
Dibromofluoromethane	114		75 - 120		04/26/21 11:39	1

Lab Sample ID: LCS 500-595090/4
Matrix: Water
Analysis Batch: 595090

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	45.1		ug/L		90	70 - 120
Toluene	50.0	48.5		ug/L		97	70 - 125
Ethylbenzene	50.0	46.8		ug/L		94	70 - 123
Xylenes, Total	100	98.8		ug/L		99	70 - 125

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	108		75 - 126
Toluene-d8 (Surr)	103		75 - 120
4-Bromofluorobenzene (Surr)	97		72 - 124
Dibromofluoromethane	105		75 - 120

Lab Sample ID: 500-197621-1 MS
Matrix: Water
Analysis Batch: 595090

Client Sample ID: W-210414-RA-100
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	45.2		ug/L		90	70 - 120
Toluene	<0.15		50.0	46.8		ug/L		94	70 - 125
Ethylbenzene	<0.18		50.0	45.3		ug/L		91	70 - 123
Xylenes, Total	<0.22		100	95.5		ug/L		96	70 - 125

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	113		75 - 126
Toluene-d8 (Surr)	100		75 - 120
4-Bromofluorobenzene (Surr)	100		72 - 124
Dibromofluoromethane	111		75 - 120

QC Sample Results

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

Job ID: 500-197621-1

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

Lab Sample ID: 500-197621-1 MSD
Matrix: Water
Analysis Batch: 595090

Client Sample ID: W-210414-RA-100
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	45.1		ug/L		90	70 - 120	0	20
Toluene	<0.15		50.0	45.3		ug/L		91	70 - 125	3	20
Ethylbenzene	<0.18		50.0	44.1		ug/L		88	70 - 123	3	20
Xylenes, Total	<0.22		100	94.3		ug/L		94	70 - 125	1	20

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
1,2-Dichloroethane-d4 (Surr)	117		75 - 126
Toluene-d8 (Surr)	100		75 - 120
4-Bromofluorobenzene (Surr)	99		72 - 124
Dibromofluoromethane	110		75 - 120

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

Lab Sample ID: MB 500-593767/1-A
Matrix: Water
Analysis Batch: 593899

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 593767

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.80	0.25	ug/L		04/17/21 08:24	04/19/21 13:48	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	83		36 - 120	04/17/21 08:24	04/19/21 13:48	1
2-Fluorobiphenyl (Surr)	76		34 - 110	04/17/21 08:24	04/19/21 13:48	1
Terphenyl-d14 (Surr)	107		40 - 145	04/17/21 08:24	04/19/21 13:48	1

Lab Sample ID: LCS 500-593767/2-A
Matrix: Water
Analysis Batch: 593899

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 593767

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	32.0	21.8		ug/L		68	36 - 110

Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits
Nitrobenzene-d5 (Surr)	87		36 - 120
2-Fluorobiphenyl (Surr)	87		34 - 110
Terphenyl-d14 (Surr)	100		40 - 145

Lab Sample ID: 500-197621-1 MS
Matrix: Water
Analysis Batch: 593909

Client Sample ID: W-210414-RA-100
Prep Type: Total/NA
Prep Batch: 593767

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	<0.25		31.5	19.5		ug/L		62	36 - 110

Surrogate	MS %Recovery	MS Qualifier	MS Limits
Nitrobenzene-d5 (Surr)	87		36 - 120
2-Fluorobiphenyl (Surr)	83		34 - 110

Eurofins TestAmerica, Chicago

QC Sample Results

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

Job ID: 500-197621-1

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

Lab Sample ID: 500-197621-1 MS
Matrix: Water
Analysis Batch: 593909

Client Sample ID: W-210414-RA-100
Prep Type: Total/NA
Prep Batch: 593767

	<i>MS</i>	<i>MS</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Terphenyl-d14 (Surr)	96		40 - 145

Lab Sample ID: 500-197621-1 MSD
Matrix: Water
Analysis Batch: 593909

Client Sample ID: W-210414-RA-100
Prep Type: Total/NA
Prep Batch: 593767

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>	<i>RPD</i>	<i>Limit</i>
Naphthalene	<0.25		30.9	18.8		ug/L		61	36 - 110	4	20

	<i>MSD</i>	<i>MSD</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Nitrobenzene-d5 (Surr)	85		36 - 120
2-Fluorobiphenyl (Surr)	84		34 - 110
Terphenyl-d14 (Surr)	95		40 - 145

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 500-594076/1-A
Matrix: Water
Analysis Batch: 594261

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 594076

<i>Analyte</i>	<i>MB Result</i>	<i>MB Qualifier</i>	<i>LOQ</i>	<i>LOD</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Pentachlorophenol	<0.090		0.10	0.090	ug/L		04/20/21 08:03	04/20/21 23:37	1

	<i>MB</i>	<i>MB</i>		<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
DCAA	81		25 - 130	04/20/21 08:03	04/20/21 23:37	1

Lab Sample ID: LCS 500-594076/2-A
Matrix: Water
Analysis Batch: 594261

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 594076

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>
Pentachlorophenol	2.53	1.71		ug/L		68	40 - 122

	<i>LCS</i>	<i>LCS</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
DCAA	89		25 - 130

Lab Sample ID: 500-197621-1 MS
Matrix: Water
Analysis Batch: 594261

Client Sample ID: W-210414-RA-100
Prep Type: Total/NA
Prep Batch: 594076

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS Result</i>	<i>MS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>
Pentachlorophenol	<0.089		2.46	1.51		ug/L		62	40 - 122

	<i>MS</i>	<i>MS</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
DCAA	81		25 - 130

QC Sample Results

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

Job ID: 500-197621-1

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

Lab Sample ID: 500-197621-1 MSD

Matrix: Water

Analysis Batch: 594261

Client Sample ID: W-210414-RA-100

Prep Type: Total/NA

Prep Batch: 594076

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD	Limit
Pentachlorophenol	<0.089		2.49	2.00	F2	ug/L		80	40 - 122	28	20
		<i>MSD</i>	<i>MSD</i>								
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>								
DCAA	112		25 - 130								



Lab Chronicle

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

Job ID: 500-197621-1

Client Sample ID: W-210414-RA-100

Lab Sample ID: 500-197621-1

Date Collected: 04/14/21 10:20

Matrix: Water

Date Received: 04/15/21 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	595090	04/26/21 12:59	PMF	TAL CHI
Total/NA	Prep	3510C			593767	04/17/21 08:24	DAK	TAL CHI
Total/NA	Analysis	8270D		1	593909	04/19/21 13:11	AJD	TAL CHI
Total/NA	Prep	8151A			594076	04/20/21 08:03	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594261	04/21/21 05:45	JBj	TAL CHI

Client Sample ID: W-210414-RA-101

Lab Sample ID: 500-197621-2

Date Collected: 04/14/21 10:52

Matrix: Water

Date Received: 04/15/21 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	595090	04/26/21 13:25	PMF	TAL CHI
Total/NA	Prep	3510C			593767	04/17/21 08:24	DAK	TAL CHI
Total/NA	Analysis	8270D		1	593909	04/19/21 13:34	AJD	TAL CHI
Total/NA	Prep	8151A			594076	04/20/21 08:03	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594261	04/21/21 06:43	JBj	TAL CHI

Client Sample ID: W-210414-RA-102

Lab Sample ID: 500-197621-3

Date Collected: 04/14/21 10:52

Matrix: Water

Date Received: 04/15/21 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	595090	04/26/21 13:50	PMF	TAL CHI
Total/NA	Prep	3510C			593767	04/17/21 08:24	DAK	TAL CHI
Total/NA	Analysis	8270D		1	593909	04/19/21 13:57	AJD	TAL CHI
Total/NA	Prep	8151A			594076	04/20/21 08:03	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594261	04/21/21 07:03	JBj	TAL CHI

Client Sample ID: W-210414-RA-103

Lab Sample ID: 500-197621-4

Date Collected: 04/14/21 11:07

Matrix: Water

Date Received: 04/15/21 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	595090	04/26/21 14:17	PMF	TAL CHI
Total/NA	Prep	3510C			593767	04/17/21 08:24	DAK	TAL CHI
Total/NA	Analysis	8270D		1	593909	04/19/21 14:20	AJD	TAL CHI
Total/NA	Prep	8151A			594076	04/20/21 08:03	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594261	04/21/21 07:22	JBj	TAL CHI

Client Sample ID: W-210414-RA-105

Lab Sample ID: 500-197621-5

Date Collected: 04/14/21 11:07

Matrix: Water

Date Received: 04/15/21 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	595090	04/26/21 14:44	PMF	TAL CHI

Eurofins TestAmerica, Chicago

Lab Chronicle

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

Job ID: 500-197621-1

Client Sample ID: W-210414-RA-105

Lab Sample ID: 500-197621-5

Date Collected: 04/14/21 11:07

Matrix: Water

Date Received: 04/15/21 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			593767	04/17/21 08:24	DAK	TAL CHI
Total/NA	Analysis	8270D		1	593909	04/19/21 14:44	AJD	TAL CHI
Total/NA	Prep	8151A			594076	04/20/21 08:03	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594261	04/21/21 07:42	JB	TAL CHI

Client Sample ID: Trip Blank

Lab Sample ID: 500-197621-6

Date Collected: 04/14/21 00:00

Matrix: Water

Date Received: 04/15/21 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	595090	04/26/21 12:05	PMF	TAL CHI

Laboratory References:

TAL CHI = Eurofins TestAmerica, 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: 500-197621-1

Laboratory: Eurofins TestAmerica, Chicago

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-21

1

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Address _____

Regulatory Program: DW NPDES RCRA Other

Client Contact		Project Manager: <u>Ree</u>		Site Contact:		Date:		COC No			
Company Name <u>640</u>		Tel/Email:		Lab Contact:		Carrier:		1 of 1 COCs			
Address <u>18810 1/2 Highway 8 NW 114</u>		Analysis Turnaround Time		Filtered Sample (Y/N) Perform MS / MSD (Y/N) PCP Naphthalene BTEX  500-197621 COC		Sampler		For Lab Use Only:			
City/State/Zip <u>St Paul MN 55112</u>		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below _____				Walk-in Client		Lab Sampling		Job / SDG No	
Phone <u>6516390913</u>		<input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day				500-197621		Sample Specific Notes			
Fax											
Project Name <u>Penta Wood</u>											
Site <u>11222418-01-05</u>											
PO#											
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-210414-RA-100		4/14/21	1020	G SW	21		X	Y Y Y			
2 W-210414-RA-101		4/14/21	1052	G SW	7			Y X X			
3 W-210414-RA-102		4/14/21	1052	G SW	7			Y X X			
4 W-210414-RA-103		4/14/21	1107	G SW	7			Y X X			
5 W-210414-RA-105		4/14/21	1107	G SW	7			Y X X			
6 Trip S/C-K											
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.											
50 → 4.2, 4.5 → 3.7, 4.6 → 3.8											
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>640</u>		Date/Time <u>4/14/21 1500</u>		Received by		Company			
Relinquished by		Company		Date/Time		Received by		Company			
Relinquished by		Company		Date/Time		Received in Laboratory by <u>[Signature]</u>		Company <u>ETA-CHT</u> Date/Time <u>4/15/21 0905</u>			

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-197621-1

Login Number: 197621

List Source: Eurofins TestAmerica, Chicago

List Number: 1

Creator: Scott, Sherri L

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	4.2,3.7,3.8
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.	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

Eurofins TestAmerica, Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

Laboratory Job ID: 500-197699-1
Client Project/Site: Penta Wood 11222418

For:
GHD Services Inc.
1801 Old Highway 8 NW
Suite 114
St. Paul, Minnesota 55112

Attn: Mr. Grant Anderson

Jodie Bracken

Authorized for release by:
4/30/2021 9:02:36 AM
Jodie Bracken, Project Management Assistant II
Jodie.Bracken@Eurofinset.com

Designee for
Richard Wright, Senior Project Manager
(708)746-0045
Richard.Wright@Eurofinset.com

LINKS

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results through
TotalAccess

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www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

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

Job ID: 500-197699-1

Job ID: 500-197699-1

Laboratory: Eurofins TestAmerica, Chicago

Narrative

Job Narrative 500-197699-1

Receipt

The samples were received on 4/16/2021 9:15 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 0.3° C, 2.5° C, 3.2° C, 3.4° C, 4.0° C and 4.6° 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-210415-RA-29 (500-197699-8). 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.

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

Method 300.0: Reanalysis of the following sample was performed outside of the analytical holding time due to the sample requiring a higher dilution : W-210415-RA-30 (500-197699-9).

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: 500-197699-1

Client Sample ID: W-210415-RA-22

Lab Sample ID: 500-197699-1

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	0.30		0.095	0.086	ug/L	1		8151A	Total/NA
Arsenic	0.68	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	1.3	J B	2.0	0.50	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	317		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	11.0		1.0	0.85	mg/L	5		300.0	Total/NA
Nitrate as N	1.5		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	113		4.0	1.9	mg/L	20		300.0	Total/NA
Total Organic Carbon - Duplicates	0.56	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	188		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-210415-RA-23

Lab Sample ID: 500-197699-2

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Methane	18		1.0	0.17	ug/L	1		RSK-175	Total/NA
Arsenic	1.1		1.0	0.23	ug/L	1		6020A	Dissolved
Iron	138		100	46.7	ug/L	1		6020A	Dissolved
Manganese	36.8		2.5	0.79	ug/L	1		6020A	Dissolved
Zinc	18.7	J F3	20.0	6.9	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	146		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	46.7		2.0	1.7	mg/L	10		300.0	Total/NA
Nitrate as N	0.20		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	13.1		2.0	0.95	mg/L	10		300.0	Total/NA
Total Organic Carbon - Duplicates	0.67	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	78.4		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-210415-RA-24

Lab Sample ID: 500-197699-3

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Zinc	38.2		20.0	6.9	ug/L	1		6020A	Dissolved

Client Sample ID: W-210415-RA-25

Lab Sample ID: 500-197699-4

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.30	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	0.90	J B	2.0	0.50	ug/L	1		6020A	Dissolved
Zinc	12.4	J	20.0	6.9	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	128		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	35.0		2.0	1.7	mg/L	10		300.0	Total/NA
Nitrate as N	1.5		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	3.8		0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.89	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	101		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-210415-RA-26

Lab Sample ID: 500-197699-5

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.0		1.0	0.23	ug/L	1		6020A	Dissolved
Copper	0.53	J B	2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	1.2	J	2.5	0.79	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	145		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	20.2		1.0	0.85	mg/L	5		300.0	Total/NA
Nitrate as N	1.5		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	5.6		0.20	0.095	mg/L	1		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

Detection Summary

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

Job ID: 500-197699-1

Client Sample ID: W-210415-RA-26 (Continued)

Lab Sample ID: 500-197699-5

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon - Duplicates	0.69	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	122		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-210415-RA-27

Lab Sample ID: 500-197699-6

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	1.0		1.0	0.23	ug/L	1		6020A	Dissolved
Manganese	1.2	J	2.5	0.79	ug/L	1		6020A	Dissolved
Zinc	20.4		20.0	6.9	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	143		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	18.1		1.0	0.85	mg/L	5		300.0	Total/NA
Nitrate as N	1.5		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	6.2	^	0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.68	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-210415-RA-28

Lab Sample ID: 500-197699-7

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.53	J	1.0	0.23	ug/L	1		6020A	Dissolved
Copper	0.54	J B	2.0	0.50	ug/L	1		6020A	Dissolved
Zinc	11.6	J	20.0	6.9	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	255		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	45.4		4.0	3.4	mg/L	20		300.0	Total/NA
Nitrate as N	2.2		0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	8.8	^	0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	0.76	J	1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	190		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: W-210415-RA-29

Lab Sample ID: 500-197699-8

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.94		0.50	0.15	ug/L	1		8260B	Total/NA
Ethylbenzene	0.99		0.50	0.18	ug/L	1		8260B	Total/NA
Xylenes, Total	16		1.0	0.22	ug/L	1		8260B	Total/NA
Naphthalene	20		0.88	0.27	ug/L	1		8270D	Total/NA
Methane	5.5		1.0	0.17	ug/L	1		RSK-175	Total/NA
Pentachlorophenol	9400		830	740	ug/L	8000		8151A	Total/NA
Arsenic	3.6		1.0	0.23	ug/L	1		6020A	Dissolved
Copper	1.2	J B	2.0	0.50	ug/L	1		6020A	Dissolved
Iron	18900		100	46.7	ug/L	1		6020A	Dissolved
Manganese	3410		2.5	0.79	ug/L	1		6020A	Dissolved
Zinc	11.0	J	20.0	6.9	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	301		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	27.1	F1 F2	2.0	1.7	mg/L	10		300.0	Total/NA
Nitrate as N	0.088	J	0.20	0.068	mg/L	1		300.0	Total/NA
Sulfate	13.5	F1	2.0	0.95	mg/L	10		300.0	Total/NA
Total Organic Carbon - Duplicates	4.5		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	278		5.0	3.7	mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

Detection Summary

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

Job ID: 500-197699-1

Client Sample ID: W-210415-RA-30

Lab Sample ID: 500-197699-9

Analyte	Result	Qualifier	LOQ	LOD	Unit	Dil Fac	D	Method	Prep Type
Pentachlorophenol	1.1		0.11	0.098	ug/L	1		8151A	Total/NA
Copper	4.6	B	2.0	0.50	ug/L	1		6020A	Dissolved
Manganese	3.2		2.5	0.79	ug/L	1		6020A	Dissolved
Zinc	17.3	J	20.0	6.9	ug/L	1		6020A	Dissolved
Hardness as calcium carbonate	280		0.91	0.46	mg/L	1		SM 2340B	Total/NA
Chloride	10.5		0.40	0.34	mg/L	2		300.0	Total/NA
Nitrate as N	4.9	H	0.40	0.14	mg/L	2		300.0	Total/NA
Sulfate	7.3	^	0.20	0.095	mg/L	1		300.0	Total/NA
Total Organic Carbon - Duplicates	1.4		1.0	0.47	mg/L	1		9060A	Total/NA
Alkalinity	257		5.0	3.7	mg/L	1		SM 2320B	Total/NA

Client Sample ID: Trip Blank

Lab Sample ID: 500-197699-10

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

Method Summary

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

Job ID: 500-197699-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CHI
RSK-175	Dissolved Gases (GC)	RSK	TAL CAN
8151A	Herbicides (GC)	SW846	TAL CHI
6020A	Metals (ICP/MS)	SW846	TAL CHI
SM 2340B	Total Hardness (as CaCO ₃) by calculation	SM	TAL CHI
300.0	Anions, Ion Chromatography	MCAWW	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
SM 2320B	Alkalinity	SM	TAL CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CHI
3010A	Preparation, Total Metals	SW846	TAL CHI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL CHI
5030B	Purge and Trap	SW846	TAL CHI
8151A	Extraction (Herbicides)	SW846	TAL CHI

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL CHI = Eurofins TestAmerica, 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: 500-197699-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
500-197699-1	W-210415-RA-22	Water	04/15/21 14:23	04/16/21 07:45	
500-197699-2	W-210415-RA-23	Water	04/15/21 09:20	04/16/21 07:45	
500-197699-3	W-210415-RA-24	Water	04/15/21 10:00	04/16/21 07:45	
500-197699-4	W-210415-RA-25	Water	04/15/21 10:00	04/16/21 07:45	
500-197699-5	W-210415-RA-26	Water	04/15/21 10:50	04/16/21 07:45	
500-197699-6	W-210415-RA-27	Water	04/15/21 10:50	04/16/21 07:45	
500-197699-7	W-210415-RA-28	Water	04/15/21 12:25	04/16/21 07:45	
500-197699-8	W-210415-RA-29	Water	04/15/21 13:30	04/16/21 07:45	
500-197699-9	W-210415-RA-30	Water	04/15/21 13:15	04/16/21 07:45	
500-197699-10	Trip Blank	Water	04/15/21 00:00	04/16/21 07:45	

Client Sample Results

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

Job ID: 500-197699-1

Client Sample ID: W-210415-RA-22

Lab Sample ID: 500-197699-1

Date Collected: 04/15/21 14:23

Matrix: Water

Date Received: 04/16/21 07:45

Method: 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			04/27/21 14:57	1
Toluene	<0.15		0.50	0.15	ug/L			04/27/21 14:57	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/27/21 14:57	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/27/21 14:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		75 - 126		04/27/21 14:57	1
Toluene-d8 (Surr)	99		75 - 120		04/27/21 14:57	1
4-Bromofluorobenzene (Surr)	90		72 - 124		04/27/21 14:57	1
Dibromofluoromethane	108		75 - 120		04/27/21 14:57	1

Method: 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		04/19/21 12:28	04/19/21 21:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	96		36 - 120	04/19/21 12:28	04/19/21 21:37	1
2-Fluorobiphenyl (Surr)	104		34 - 110	04/19/21 12:28	04/19/21 21:37	1
Terphenyl-d14 (Surr)	121		40 - 145	04/19/21 12:28	04/19/21 21:37	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			04/21/21 11:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	111		60 - 140		04/21/21 11:39	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	0.30		0.095	0.086	ug/L		04/21/21 10:25	04/22/21 02:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	79		25 - 130	04/21/21 10:25	04/22/21 02:15	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.68	J	1.0	0.23	ug/L		04/20/21 08:24	04/20/21 21:20	1
Copper	1.3	J B	2.0	0.50	ug/L		04/20/21 08:24	04/20/21 21:20	1
Iron	<46.7		100	46.7	ug/L		04/20/21 08:24	04/20/21 21:20	1
Manganese	<0.79		2.5	0.79	ug/L		04/20/21 08:24	04/20/21 21:20	1
Zinc	<6.9		20.0	6.9	ug/L		04/20/21 08:24	04/20/21 21:20	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	317		0.91	0.46	mg/L		04/20/21 08:27	04/23/21 08:21	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11.0		1.0	0.85	mg/L			04/28/21 15:40	5
Nitrate as N	1.5		0.20	0.068	mg/L			04/16/21 15:27	1
Sulfate	113		4.0	1.9	mg/L			04/28/21 15:54	20
Total Organic Carbon - Duplicates	0.56	J	1.0	0.47	mg/L			04/20/21 03:12	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-197699-1

Client Sample ID: W-210415-RA-22

Lab Sample ID: 500-197699-1

Date Collected: 04/15/21 14:23

Matrix: Water

Date Received: 04/16/21 07:45

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	188		5.0	3.7	mg/L			04/21/21 13:35	1

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Client Sample Results

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

Job ID: 500-197699-1

Client Sample ID: W-210415-RA-23

Lab Sample ID: 500-197699-2

Date Collected: 04/15/21 09:20

Matrix: Water

Date Received: 04/16/21 07:45

Method: 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			04/27/21 15:25	1
Toluene	<0.15		0.50	0.15	ug/L			04/27/21 15:25	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/27/21 15:25	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/27/21 15:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		75 - 126		04/27/21 15:25	1
Toluene-d8 (Surr)	98		75 - 120		04/27/21 15:25	1
4-Bromofluorobenzene (Surr)	92		72 - 124		04/27/21 15:25	1
Dibromofluoromethane	109		75 - 120		04/27/21 15:25	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.24		0.77	0.24	ug/L		04/19/21 12:28	04/19/21 22:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	92		36 - 120	04/19/21 12:28	04/19/21 22:04	1
2-Fluorobiphenyl (Surr)	97		34 - 110	04/19/21 12:28	04/19/21 22:04	1
Terphenyl-d14 (Surr)	114		40 - 145	04/19/21 12:28	04/19/21 22:04	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	18		1.0	0.17	ug/L			04/20/21 22:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	109		60 - 140		04/20/21 22:49	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.089		0.099	0.089	ug/L		04/21/21 10:25	04/22/21 02:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	78		25 - 130	04/21/21 10:25	04/22/21 02:34	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.1		1.0	0.23	ug/L		04/20/21 08:24	04/20/21 21:24	1
Copper	<0.50		2.0	0.50	ug/L		04/20/21 08:24	04/20/21 21:24	1
Iron	138		100	46.7	ug/L		04/20/21 08:24	04/20/21 21:24	1
Manganese	36.8		2.5	0.79	ug/L		04/20/21 08:24	04/20/21 21:24	1
Zinc	18.7	J F3	20.0	6.9	ug/L		04/20/21 08:24	04/20/21 21:24	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	146		0.91	0.46	mg/L		04/20/21 08:27	04/23/21 08:21	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	46.7		2.0	1.7	mg/L			04/28/21 16:07	10
Nitrate as N	0.20		0.20	0.068	mg/L			04/16/21 15:40	1
Sulfate	13.1		2.0	0.95	mg/L			04/28/21 16:07	10
Total Organic Carbon - Duplicates	0.67	J	1.0	0.47	mg/L			04/20/21 03:48	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-197699-1

Client Sample ID: W-210415-RA-23

Lab Sample ID: 500-197699-2

Date Collected: 04/15/21 09:20

Matrix: Water

Date Received: 04/16/21 07:45

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	78.4		5.0	3.7	mg/L			04/21/21 13:41	1

Client Sample Results

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

Job ID: 500-197699-1

Client Sample ID: W-210415-RA-24

Lab Sample ID: 500-197699-3

Date Collected: 04/15/21 10:00

Matrix: Water

Date Received: 04/16/21 07:45

Method: 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			04/27/21 15:53	1
Toluene	<0.15		0.50	0.15	ug/L			04/27/21 15:53	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/27/21 15:53	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/27/21 15:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		75 - 126		04/27/21 15:53	1
Toluene-d8 (Surr)	98		75 - 120		04/27/21 15:53	1
4-Bromofluorobenzene (Surr)	91		72 - 124		04/27/21 15:53	1
Dibromofluoromethane	108		75 - 120		04/27/21 15:53	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.27		0.88	0.27	ug/L		04/19/21 12:28	04/19/21 22:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	91		36 - 120	04/19/21 12:28	04/19/21 22:31	1
2-Fluorobiphenyl (Surr)	95		34 - 110	04/19/21 12:28	04/19/21 22:31	1
Terphenyl-d14 (Surr)	118		40 - 145	04/19/21 12:28	04/19/21 22:31	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.093		0.10	0.093	ug/L		04/21/21 10:25	04/22/21 03:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	81		25 - 130	04/21/21 10:25	04/22/21 03:32	1

Method: 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		04/20/21 08:24	04/20/21 21:48	1
Copper	<0.50		2.0	0.50	ug/L		04/20/21 08:24	04/20/21 21:48	1
Iron	<46.7		100	46.7	ug/L		04/20/21 08:24	04/20/21 21:48	1
Manganese	<0.79		2.5	0.79	ug/L		04/20/21 08:24	04/20/21 21:48	1
Zinc	38.2		20.0	6.9	ug/L		04/20/21 08:24	04/20/21 21:48	1

Client Sample Results

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

Job ID: 500-197699-1

Client Sample ID: W-210415-RA-25

Lab Sample ID: 500-197699-4

Date Collected: 04/15/21 10:00

Matrix: Water

Date Received: 04/16/21 07:45

Method: 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			04/27/21 16:22	1
Toluene	<0.15		0.50	0.15	ug/L			04/27/21 16:22	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/27/21 16:22	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/27/21 16:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		75 - 126		04/27/21 16:22	1
Toluene-d8 (Surr)	99		75 - 120		04/27/21 16:22	1
4-Bromofluorobenzene (Surr)	92		72 - 124		04/27/21 16:22	1
Dibromofluoromethane	107		75 - 120		04/27/21 16:22	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.24		0.77	0.24	ug/L		04/19/21 12:28	04/19/21 22:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	95		36 - 120	04/19/21 12:28	04/19/21 22:57	1
2-Fluorobiphenyl (Surr)	95		34 - 110	04/19/21 12:28	04/19/21 22:57	1
Terphenyl-d14 (Surr)	130		40 - 145	04/19/21 12:28	04/19/21 22:57	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			04/20/21 23:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	110		60 - 140		04/20/21 23:57	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.088		0.098	0.088	ug/L		04/21/21 10:25	04/22/21 03:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	84		25 - 130	04/21/21 10:25	04/22/21 03:51	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.30	J	1.0	0.23	ug/L		04/20/21 08:24	04/20/21 21:52	1
Copper	0.90	J B	2.0	0.50	ug/L		04/20/21 08:24	04/20/21 21:52	1
Iron	<46.7		100	46.7	ug/L		04/20/21 08:24	04/20/21 21:52	1
Manganese	<0.79		2.5	0.79	ug/L		04/20/21 08:24	04/20/21 21:52	1
Zinc	12.4	J	20.0	6.9	ug/L		04/20/21 08:24	04/20/21 21:52	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	128		0.91	0.46	mg/L		04/20/21 08:27	04/23/21 08:21	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	35.0		2.0	1.7	mg/L			04/28/21 17:02	10
Nitrate as N	1.5		0.20	0.068	mg/L			04/16/21 16:18	1
Sulfate	3.8		0.20	0.095	mg/L			04/28/21 16:48	1
Total Organic Carbon - Duplicates	0.89	J	1.0	0.47	mg/L			04/20/21 04:25	1

Euofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-197699-1

Client Sample ID: W-210415-RA-25

Lab Sample ID: 500-197699-4

Date Collected: 04/15/21 10:00

Matrix: Water

Date Received: 04/16/21 07:45

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	101		5.0	3.7	mg/L			04/21/21 13:47	1

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

Client Sample Results

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

Job ID: 500-197699-1

Client Sample ID: W-210415-RA-26

Lab Sample ID: 500-197699-5

Date Collected: 04/15/21 10:50

Matrix: Water

Date Received: 04/16/21 07:45

Method: 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			04/27/21 16:51	1
Toluene	<0.15		0.50	0.15	ug/L			04/27/21 16:51	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/27/21 16:51	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/27/21 16:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		75 - 126		04/27/21 16:51	1
Toluene-d8 (Surr)	98		75 - 120		04/27/21 16:51	1
4-Bromofluorobenzene (Surr)	91		72 - 124		04/27/21 16:51	1
Dibromofluoromethane	108		75 - 120		04/27/21 16:51	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.82	0.25	ug/L		04/19/21 12:28	04/19/21 23:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	96		36 - 120	04/19/21 12:28	04/19/21 23:24	1
2-Fluorobiphenyl (Surr)	97		34 - 110	04/19/21 12:28	04/19/21 23:24	1
Terphenyl-d14 (Surr)	125		40 - 145	04/19/21 12:28	04/19/21 23:24	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			04/21/21 00:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	106		60 - 140		04/21/21 00:14	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.085		0.095	0.085	ug/L		04/21/21 10:25	04/22/21 04:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	83		25 - 130	04/21/21 10:25	04/22/21 04:10	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.0		1.0	0.23	ug/L		04/20/21 08:24	04/20/21 21:55	1
Copper	0.53	J B	2.0	0.50	ug/L		04/20/21 08:24	04/20/21 21:55	1
Iron	<46.7		100	46.7	ug/L		04/20/21 08:24	04/20/21 21:55	1
Manganese	1.2	J	2.5	0.79	ug/L		04/20/21 08:24	04/20/21 21:55	1
Zinc	<6.9		20.0	6.9	ug/L		04/20/21 08:24	04/20/21 21:55	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	145		0.91	0.46	mg/L		04/20/21 08:27	04/23/21 08:21	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	20.2		1.0	0.85	mg/L			04/28/21 17:57	5
Nitrate as N	1.5		0.20	0.068	mg/L			04/16/21 16:31	1
Sulfate	5.6		0.20	0.095	mg/L			04/28/21 17:16	1
Total Organic Carbon - Duplicates	0.69	J	1.0	0.47	mg/L			04/20/21 04:42	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-197699-1

Client Sample ID: W-210415-RA-26

Lab Sample ID: 500-197699-5

Date Collected: 04/15/21 10:50

Matrix: Water

Date Received: 04/16/21 07:45

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	122		5.0	3.7	mg/L			04/21/21 13:58	1

Client Sample Results

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

Job ID: 500-197699-1

Client Sample ID: W-210415-RA-27

Lab Sample ID: 500-197699-6

Date Collected: 04/15/21 10:50

Matrix: Water

Date Received: 04/16/21 07:45

Method: 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			04/27/21 17:19	1
Toluene	<0.15		0.50	0.15	ug/L			04/27/21 17:19	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/27/21 17:19	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/27/21 17:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		75 - 126					04/27/21 17:19	1
Toluene-d8 (Surr)	98		75 - 120					04/27/21 17:19	1
4-Bromofluorobenzene (Surr)	92		72 - 124					04/27/21 17:19	1
Dibromofluoromethane	109		75 - 120					04/27/21 17:19	1

Method: 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		04/19/21 12:28	04/19/21 23:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	96		36 - 120				04/19/21 12:28	04/19/21 23:51	1
2-Fluorobiphenyl (Surr)	101		34 - 110				04/19/21 12:28	04/19/21 23:51	1
Terphenyl-d14 (Surr)	121		40 - 145				04/19/21 12:28	04/19/21 23:51	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			04/21/21 00:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	109		60 - 140					04/21/21 00:31	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.085		0.095	0.085	ug/L		04/21/21 10:25	04/22/21 04:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	90		25 - 130				04/21/21 10:25	04/22/21 04:29	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.0		1.0	0.23	ug/L		04/20/21 08:24	04/20/21 21:59	1
Copper	<0.50		2.0	0.50	ug/L		04/20/21 08:24	04/20/21 21:59	1
Iron	<46.7		100	46.7	ug/L		04/20/21 08:24	04/20/21 21:59	1
Manganese	1.2	J	2.5	0.79	ug/L		04/20/21 08:24	04/20/21 21:59	1
Zinc	20.4		20.0	6.9	ug/L		04/20/21 08:24	04/20/21 21:59	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	143		0.91	0.46	mg/L		04/20/21 08:27	04/23/21 08:21	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	18.1		1.0	0.85	mg/L			04/28/21 18:24	5
Nitrate as N	1.5		0.20	0.068	mg/L			04/16/21 17:09	1
Sulfate	6.2	^	0.20	0.095	mg/L			04/16/21 17:09	1
Total Organic Carbon - Duplicates	0.68	J	1.0	0.47	mg/L			04/20/21 04:58	1

Euofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-197699-1

Client Sample ID: W-210415-RA-27

Lab Sample ID: 500-197699-6

Date Collected: 04/15/21 10:50

Matrix: Water

Date Received: 04/16/21 07:45

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	121		5.0	3.7	mg/L			04/21/21 14:04	1

Client Sample Results

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

Job ID: 500-197699-1

Client Sample ID: W-210415-RA-28

Lab Sample ID: 500-197699-7

Date Collected: 04/15/21 12:25

Matrix: Water

Date Received: 04/16/21 07:45

Method: 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			04/27/21 17:48	1
Toluene	<0.15		0.50	0.15	ug/L			04/27/21 17:48	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/27/21 17:48	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/27/21 17:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		75 - 126		04/27/21 17:48	1
Toluene-d8 (Surr)	99		75 - 120		04/27/21 17:48	1
4-Bromofluorobenzene (Surr)	92		72 - 124		04/27/21 17:48	1
Dibromofluoromethane	111		75 - 120		04/27/21 17:48	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.24		0.77	0.24	ug/L		04/19/21 12:28	04/20/21 00:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	81		36 - 120	04/19/21 12:28	04/20/21 00:18	1
2-Fluorobiphenyl (Surr)	82		34 - 110	04/19/21 12:28	04/20/21 00:18	1
Terphenyl-d14 (Surr)	124		40 - 145	04/19/21 12:28	04/20/21 00:18	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			04/21/21 00:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	108		60 - 140		04/21/21 00:48	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.087		0.096	0.087	ug/L		04/21/21 10:25	04/22/21 05:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	89		25 - 130	04/21/21 10:25	04/22/21 05:07	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.53	J	1.0	0.23	ug/L		04/20/21 08:24	04/20/21 22:02	1
Copper	0.54	J B	2.0	0.50	ug/L		04/20/21 08:24	04/20/21 22:02	1
Iron	<46.7		100	46.7	ug/L		04/20/21 08:24	04/20/21 22:02	1
Manganese	<0.79		2.5	0.79	ug/L		04/20/21 08:24	04/20/21 22:02	1
Zinc	11.6	J	20.0	6.9	ug/L		04/20/21 08:24	04/20/21 22:02	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	255		0.91	0.46	mg/L		04/20/21 08:27	04/23/21 08:21	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	45.4		4.0	3.4	mg/L			04/28/21 18:51	20
Nitrate as N	2.2		0.20	0.068	mg/L			04/16/21 17:22	1
Sulfate	8.8	^	0.20	0.095	mg/L			04/16/21 17:22	1
Total Organic Carbon - Duplicates	0.76	J	1.0	0.47	mg/L			04/20/21 05:15	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-197699-1

Client Sample ID: W-210415-RA-28

Lab Sample ID: 500-197699-7

Date Collected: 04/15/21 12:25

Matrix: Water

Date Received: 04/16/21 07:45

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	190		5.0	3.7	mg/L			04/21/21 14:12	1

Client Sample Results

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

Job ID: 500-197699-1

Client Sample ID: W-210415-RA-29

Lab Sample ID: 500-197699-8

Date Collected: 04/15/21 13:30

Matrix: Water

Date Received: 04/16/21 07:45

Method: 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			04/27/21 18:16	1
Toluene	0.94		0.50	0.15	ug/L			04/27/21 18:16	1
Ethylbenzene	0.99		0.50	0.18	ug/L			04/27/21 18:16	1
Xylenes, Total	16		1.0	0.22	ug/L			04/27/21 18:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		75 - 126		04/27/21 18:16	1
Toluene-d8 (Surr)	97		75 - 120		04/27/21 18:16	1
4-Bromofluorobenzene (Surr)	87		72 - 124		04/27/21 18:16	1
Dibromofluoromethane	111		75 - 120		04/27/21 18:16	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	20		0.88	0.27	ug/L		04/19/21 12:28	04/20/21 02:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	84		36 - 120	04/19/21 12:28	04/20/21 02:32	1
2-Fluorobiphenyl (Surr)	78		34 - 110	04/19/21 12:28	04/20/21 02:32	1
Terphenyl-d14 (Surr)	117		40 - 145	04/19/21 12:28	04/20/21 02:32	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Methane	5.5		1.0	0.17	ug/L			04/21/21 01:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	108		60 - 140		04/21/21 01:06	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	9400		830	740	ug/L		04/21/21 10:26	04/22/21 07:43	8000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	0	D	25 - 130	04/21/21 10:26	04/22/21 07:43	8000

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.6		1.0	0.23	ug/L		04/20/21 08:24	04/20/21 22:06	1
Copper	1.2	J B	2.0	0.50	ug/L		04/20/21 08:24	04/20/21 22:06	1
Iron	18900		100	46.7	ug/L		04/20/21 08:24	04/20/21 22:06	1
Manganese	3410		2.5	0.79	ug/L		04/20/21 08:24	04/20/21 22:06	1
Zinc	11.0	J	20.0	6.9	ug/L		04/20/21 08:24	04/20/21 22:06	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	301		0.91	0.46	mg/L		04/20/21 08:27	04/23/21 08:21	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	27.1	F1 F2	2.0	1.7	mg/L			04/28/21 19:05	10
Nitrate as N	0.088	J	0.20	0.068	mg/L			04/16/21 17:34	1
Sulfate	13.5	F1	2.0	0.95	mg/L			04/28/21 19:05	10
Total Organic Carbon - Duplicates	4.5		1.0	0.47	mg/L			04/20/21 05:31	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-197699-1

Client Sample ID: W-210415-RA-29

Lab Sample ID: 500-197699-8

Date Collected: 04/15/21 13:30

Matrix: Water

Date Received: 04/16/21 07:45

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	278		5.0	3.7	mg/L			04/21/21 10:28	1

Client Sample Results

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

Job ID: 500-197699-1

Client Sample ID: W-210415-RA-30

Lab Sample ID: 500-197699-9

Date Collected: 04/15/21 13:15

Matrix: Water

Date Received: 04/16/21 07:45

Method: 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			04/27/21 18:45	1
Toluene	<0.15		0.50	0.15	ug/L			04/27/21 18:45	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/27/21 18:45	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/27/21 18:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		75 - 126		04/27/21 18:45	1
Toluene-d8 (Surr)	98		75 - 120		04/27/21 18:45	1
4-Bromofluorobenzene (Surr)	92		72 - 124		04/27/21 18:45	1
Dibromofluoromethane	108		75 - 120		04/27/21 18:45	1

Method: 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		04/19/21 12:28	04/20/21 00:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	99		36 - 120	04/19/21 12:28	04/20/21 00:45	1
2-Fluorobiphenyl (Surr)	105		34 - 110	04/19/21 12:28	04/20/21 00:45	1
Terphenyl-d14 (Surr)	123		40 - 145	04/19/21 12:28	04/20/21 00:45	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			04/21/21 01:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,1,1-Trifluoroethane	108		60 - 140		04/21/21 01:23	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	1.1		0.11	0.098	ug/L		04/21/21 10:26	04/22/21 05:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	87		25 - 130	04/21/21 10:26	04/22/21 05:46	1

Method: 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		04/20/21 08:24	04/20/21 22:09	1
Copper	4.6	B	2.0	0.50	ug/L		04/20/21 08:24	04/20/21 22:09	1
Iron	<46.7		100	46.7	ug/L		04/20/21 08:24	04/20/21 22:09	1
Manganese	3.2		2.5	0.79	ug/L		04/20/21 08:24	04/20/21 22:09	1
Zinc	17.3	J	20.0	6.9	ug/L		04/20/21 08:24	04/20/21 22:09	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	280		0.91	0.46	mg/L		04/20/21 08:27	04/23/21 08:21	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	10.5		0.40	0.34	mg/L			04/28/21 19:59	2
Nitrate as N	4.9	H	0.40	0.14	mg/L			04/28/21 19:59	2
Sulfate	7.3	^	0.20	0.095	mg/L			04/16/21 17:47	1
Total Organic Carbon - Duplicates	1.4		1.0	0.47	mg/L			04/20/21 05:47	1

Eurofins TestAmerica, Chicago

Client Sample Results

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

Job ID: 500-197699-1

Client Sample ID: W-210415-RA-30

Lab Sample ID: 500-197699-9

Date Collected: 04/15/21 13:15

Matrix: Water

Date Received: 04/16/21 07:45

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	257		5.0	3.7	mg/L			04/21/21 14:19	1

Client Sample Results

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

Job ID: 500-197699-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-197699-10

Date Collected: 04/15/21 00:00

Matrix: Water

Date Received: 04/16/21 07:45

Method: 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			04/27/21 19:14	1
Toluene	<0.15		0.50	0.15	ug/L			04/27/21 19:14	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/27/21 19:14	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/27/21 19:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		75 - 126		04/27/21 19:14	1
Toluene-d8 (Surr)	99		75 - 120		04/27/21 19:14	1
4-Bromofluorobenzene (Surr)	92		72 - 124		04/27/21 19:14	1
Dibromofluoromethane	109		75 - 120		04/27/21 19:14	1

Definitions/Glossary

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

Job ID: 500-197699-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F3	Duplicate RPD exceeds the control limit
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.
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.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
H	Sample was prepped or analyzed beyond the specified holding time
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: 500-197699-1

GC/MS VOA

Analysis Batch: 595330

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197699-1	W-210415-RA-22	Total/NA	Water	8260B	
500-197699-2	W-210415-RA-23	Total/NA	Water	8260B	
500-197699-3	W-210415-RA-24	Total/NA	Water	8260B	
500-197699-4	W-210415-RA-25	Total/NA	Water	8260B	
500-197699-5	W-210415-RA-26	Total/NA	Water	8260B	
500-197699-6	W-210415-RA-27	Total/NA	Water	8260B	
500-197699-7	W-210415-RA-28	Total/NA	Water	8260B	
500-197699-8	W-210415-RA-29	Total/NA	Water	8260B	
500-197699-9	W-210415-RA-30	Total/NA	Water	8260B	
500-197699-10	Trip Blank	Total/NA	Water	8260B	
MB 500-595330/6	Method Blank	Total/NA	Water	8260B	
LCS 500-595330/4	Lab Control Sample	Total/NA	Water	8260B	
500-197699-2 MS	W-210415-RA-23	Total/NA	Water	8260B	
500-197699-2 MSD	W-210415-RA-23	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 593952

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197699-1	W-210415-RA-22	Total/NA	Water	3510C	
500-197699-2	W-210415-RA-23	Total/NA	Water	3510C	
500-197699-3	W-210415-RA-24	Total/NA	Water	3510C	
500-197699-4	W-210415-RA-25	Total/NA	Water	3510C	
500-197699-5	W-210415-RA-26	Total/NA	Water	3510C	
500-197699-6	W-210415-RA-27	Total/NA	Water	3510C	
500-197699-7	W-210415-RA-28	Total/NA	Water	3510C	
500-197699-8	W-210415-RA-29	Total/NA	Water	3510C	
500-197699-9	W-210415-RA-30	Total/NA	Water	3510C	
MB 500-593952/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-593952/2-A	Lab Control Sample	Total/NA	Water	3510C	
500-197699-2 MS	W-210415-RA-23	Total/NA	Water	3510C	
500-197699-2 MSD	W-210415-RA-23	Total/NA	Water	3510C	

Analysis Batch: 593984

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197699-1	W-210415-RA-22	Total/NA	Water	8270D	593952
500-197699-2	W-210415-RA-23	Total/NA	Water	8270D	593952
500-197699-3	W-210415-RA-24	Total/NA	Water	8270D	593952
500-197699-4	W-210415-RA-25	Total/NA	Water	8270D	593952
500-197699-5	W-210415-RA-26	Total/NA	Water	8270D	593952
500-197699-6	W-210415-RA-27	Total/NA	Water	8270D	593952
500-197699-7	W-210415-RA-28	Total/NA	Water	8270D	593952
500-197699-8	W-210415-RA-29	Total/NA	Water	8270D	593952
500-197699-9	W-210415-RA-30	Total/NA	Water	8270D	593952
MB 500-593952/1-A	Method Blank	Total/NA	Water	8270D	593952
LCS 500-593952/2-A	Lab Control Sample	Total/NA	Water	8270D	593952
500-197699-2 MS	W-210415-RA-23	Total/NA	Water	8270D	593952
500-197699-2 MSD	W-210415-RA-23	Total/NA	Water	8270D	593952

QC Association Summary

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

Job ID: 500-197699-1

GC VOA

Analysis Batch: 481937

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197699-2	W-210415-RA-23	Total/NA	Water	RSK-175	
500-197699-4	W-210415-RA-25	Total/NA	Water	RSK-175	
500-197699-5	W-210415-RA-26	Total/NA	Water	RSK-175	
500-197699-6	W-210415-RA-27	Total/NA	Water	RSK-175	
500-197699-7	W-210415-RA-28	Total/NA	Water	RSK-175	
500-197699-8	W-210415-RA-29	Total/NA	Water	RSK-175	
500-197699-9	W-210415-RA-30	Total/NA	Water	RSK-175	
MB 240-481937/33	Method Blank	Total/NA	Water	RSK-175	
LCS 240-481937/34	Lab Control Sample	Total/NA	Water	RSK-175	
500-197699-2 MS	W-210415-RA-23	Total/NA	Water	RSK-175	
500-197699-2 MSD	W-210415-RA-23	Total/NA	Water	RSK-175	

Analysis Batch: 482078

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197699-1	W-210415-RA-22	Total/NA	Water	RSK-175	
MB 240-482078/3	Method Blank	Total/NA	Water	RSK-175	
LCS 240-482078/4	Lab Control Sample	Total/NA	Water	RSK-175	

GC Semi VOA

Prep Batch: 594360

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197699-1	W-210415-RA-22	Total/NA	Water	8151A	
500-197699-2	W-210415-RA-23	Total/NA	Water	8151A	
500-197699-3	W-210415-RA-24	Total/NA	Water	8151A	
500-197699-4	W-210415-RA-25	Total/NA	Water	8151A	
500-197699-5	W-210415-RA-26	Total/NA	Water	8151A	
500-197699-6	W-210415-RA-27	Total/NA	Water	8151A	
500-197699-7	W-210415-RA-28	Total/NA	Water	8151A	
500-197699-8	W-210415-RA-29	Total/NA	Water	8151A	
500-197699-9	W-210415-RA-30	Total/NA	Water	8151A	
MB 500-594360/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-594360/2-A	Lab Control Sample	Total/NA	Water	8151A	
500-197699-2 MS	W-210415-RA-23	Total/NA	Water	8151A	
500-197699-2 MSD	W-210415-RA-23	Total/NA	Water	8151A	

Analysis Batch: 594475

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197699-1	W-210415-RA-22	Total/NA	Water	8151A	594360
500-197699-2	W-210415-RA-23	Total/NA	Water	8151A	594360
500-197699-3	W-210415-RA-24	Total/NA	Water	8151A	594360
500-197699-4	W-210415-RA-25	Total/NA	Water	8151A	594360
500-197699-5	W-210415-RA-26	Total/NA	Water	8151A	594360
500-197699-6	W-210415-RA-27	Total/NA	Water	8151A	594360
500-197699-7	W-210415-RA-28	Total/NA	Water	8151A	594360
500-197699-8	W-210415-RA-29	Total/NA	Water	8151A	594360
500-197699-9	W-210415-RA-30	Total/NA	Water	8151A	594360
MB 500-594360/1-A	Method Blank	Total/NA	Water	8151A	594360
LCS 500-594360/2-A	Lab Control Sample	Total/NA	Water	8151A	594360
500-197699-2 MS	W-210415-RA-23	Total/NA	Water	8151A	594360
500-197699-2 MSD	W-210415-RA-23	Total/NA	Water	8151A	594360

Eurofins TestAmerica, Chicago

QC Association Summary

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

Job ID: 500-197699-1

Metals

Prep Batch: 594093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197699-1	W-210415-RA-22	Dissolved	Water	3005A	
500-197699-2	W-210415-RA-23	Dissolved	Water	3005A	
500-197699-3	W-210415-RA-24	Dissolved	Water	3005A	
500-197699-4	W-210415-RA-25	Dissolved	Water	3005A	
500-197699-5	W-210415-RA-26	Dissolved	Water	3005A	
500-197699-6	W-210415-RA-27	Dissolved	Water	3005A	
500-197699-7	W-210415-RA-28	Dissolved	Water	3005A	
500-197699-8	W-210415-RA-29	Dissolved	Water	3005A	
500-197699-9	W-210415-RA-30	Dissolved	Water	3005A	
MB 500-594093/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-594093/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
500-197699-2 MS	W-210415-RA-23	Dissolved	Water	3005A	
500-197699-2 MSD	W-210415-RA-23	Dissolved	Water	3005A	
500-197699-2 DU	W-210415-RA-23	Dissolved	Water	3005A	

Prep Batch: 594095

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197699-1	W-210415-RA-22	Total/NA	Water	3010A	
500-197699-2	W-210415-RA-23	Total/NA	Water	3010A	
500-197699-4	W-210415-RA-25	Total/NA	Water	3010A	
500-197699-5	W-210415-RA-26	Total/NA	Water	3010A	
500-197699-6	W-210415-RA-27	Total/NA	Water	3010A	
500-197699-7	W-210415-RA-28	Total/NA	Water	3010A	
500-197699-8	W-210415-RA-29	Total/NA	Water	3010A	
500-197699-9	W-210415-RA-30	Total/NA	Water	3010A	

Analysis Batch: 594355

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197699-1	W-210415-RA-22	Dissolved	Water	6020A	594093
500-197699-2	W-210415-RA-23	Dissolved	Water	6020A	594093
500-197699-3	W-210415-RA-24	Dissolved	Water	6020A	594093
500-197699-4	W-210415-RA-25	Dissolved	Water	6020A	594093
500-197699-5	W-210415-RA-26	Dissolved	Water	6020A	594093
500-197699-6	W-210415-RA-27	Dissolved	Water	6020A	594093
500-197699-7	W-210415-RA-28	Dissolved	Water	6020A	594093
500-197699-8	W-210415-RA-29	Dissolved	Water	6020A	594093
500-197699-9	W-210415-RA-30	Dissolved	Water	6020A	594093
MB 500-594093/1-A	Method Blank	Total Recoverable	Water	6020A	594093
LCS 500-594093/2-A	Lab Control Sample	Total Recoverable	Water	6020A	594093
500-197699-2 MS	W-210415-RA-23	Dissolved	Water	6020A	594093
500-197699-2 MSD	W-210415-RA-23	Dissolved	Water	6020A	594093
500-197699-2 DU	W-210415-RA-23	Dissolved	Water	6020A	594093

Analysis Batch: 594780

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197699-1	W-210415-RA-22	Total/NA	Water	SM 2340B	594095
500-197699-2	W-210415-RA-23	Total/NA	Water	SM 2340B	594095
500-197699-4	W-210415-RA-25	Total/NA	Water	SM 2340B	594095
500-197699-5	W-210415-RA-26	Total/NA	Water	SM 2340B	594095
500-197699-6	W-210415-RA-27	Total/NA	Water	SM 2340B	594095
500-197699-7	W-210415-RA-28	Total/NA	Water	SM 2340B	594095

Eurofins TestAmerica, Chicago

QC Association Summary

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

Job ID: 500-197699-1

Metals (Continued)

Analysis Batch: 594780 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197699-8	W-210415-RA-29	Total/NA	Water	SM 2340B	594095
500-197699-9	W-210415-RA-30	Total/NA	Water	SM 2340B	594095

General Chemistry

Analysis Batch: 593697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197699-1	W-210415-RA-22	Total/NA	Water	300.0	
500-197699-2	W-210415-RA-23	Total/NA	Water	300.0	
500-197699-4	W-210415-RA-25	Total/NA	Water	300.0	
500-197699-5	W-210415-RA-26	Total/NA	Water	300.0	
500-197699-6	W-210415-RA-27	Total/NA	Water	300.0	
500-197699-7	W-210415-RA-28	Total/NA	Water	300.0	
500-197699-8	W-210415-RA-29	Total/NA	Water	300.0	
500-197699-9	W-210415-RA-30	Total/NA	Water	300.0	
MB 500-593697/3	Method Blank	Total/NA	Water	300.0	
LCS 500-593697/4	Lab Control Sample	Total/NA	Water	300.0	
500-197699-2 MS	W-210415-RA-23	Total/NA	Water	300.0	
500-197699-2 MSD	W-210415-RA-23	Total/NA	Water	300.0	

Analysis Batch: 594158

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197699-1	W-210415-RA-22	Total/NA	Water	9060A	
500-197699-2	W-210415-RA-23	Total/NA	Water	9060A	
500-197699-4	W-210415-RA-25	Total/NA	Water	9060A	
500-197699-5	W-210415-RA-26	Total/NA	Water	9060A	
500-197699-6	W-210415-RA-27	Total/NA	Water	9060A	
500-197699-7	W-210415-RA-28	Total/NA	Water	9060A	
500-197699-8	W-210415-RA-29	Total/NA	Water	9060A	
500-197699-9	W-210415-RA-30	Total/NA	Water	9060A	
MB 500-594158/38	Method Blank	Total/NA	Water	9060A	
LCS 500-594158/39	Lab Control Sample	Total/NA	Water	9060A	
500-197699-2 MS	W-210415-RA-23	Total/NA	Water	9060A	
500-197699-2 MSD	W-210415-RA-23	Total/NA	Water	9060A	

Analysis Batch: 594436

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197699-1	W-210415-RA-22	Total/NA	Water	SM 2320B	
500-197699-2	W-210415-RA-23	Total/NA	Water	SM 2320B	
500-197699-4	W-210415-RA-25	Total/NA	Water	SM 2320B	
500-197699-5	W-210415-RA-26	Total/NA	Water	SM 2320B	
500-197699-6	W-210415-RA-27	Total/NA	Water	SM 2320B	
500-197699-7	W-210415-RA-28	Total/NA	Water	SM 2320B	
500-197699-8	W-210415-RA-29	Total/NA	Water	SM 2320B	
500-197699-9	W-210415-RA-30	Total/NA	Water	SM 2320B	
MB 500-594436/28	Method Blank	Total/NA	Water	SM 2320B	
MB 500-594436/3	Method Blank	Total/NA	Water	SM 2320B	
LCS 500-594436/29	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 500-594436/4	Lab Control Sample	Total/NA	Water	SM 2320B	

QC Association Summary

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

Job ID: 500-197699-1

General Chemistry

Analysis Batch: 595660

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197699-1	W-210415-RA-22	Total/NA	Water	300.0	
500-197699-1	W-210415-RA-22	Total/NA	Water	300.0	
500-197699-2	W-210415-RA-23	Total/NA	Water	300.0	
500-197699-4	W-210415-RA-25	Total/NA	Water	300.0	
500-197699-4	W-210415-RA-25	Total/NA	Water	300.0	
500-197699-5	W-210415-RA-26	Total/NA	Water	300.0	
500-197699-5	W-210415-RA-26	Total/NA	Water	300.0	
500-197699-6	W-210415-RA-27	Total/NA	Water	300.0	
500-197699-7	W-210415-RA-28	Total/NA	Water	300.0	
500-197699-8	W-210415-RA-29	Total/NA	Water	300.0	
500-197699-9	W-210415-RA-30	Total/NA	Water	300.0	
MB 500-595660/3	Method Blank	Total/NA	Water	300.0	
LCS 500-595660/4	Lab Control Sample	Total/NA	Water	300.0	
500-197699-2 MS	W-210415-RA-23	Total/NA	Water	300.0	
500-197699-2 MSD	W-210415-RA-23	Total/NA	Water	300.0	
500-197699-8 MS	W-210415-RA-29	Total/NA	Water	300.0	
500-197699-8 MSD	W-210415-RA-29	Total/NA	Water	300.0	

Surrogate Summary

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

Job ID: 500-197699-1

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)
500-197699-1	W-210415-RA-22	100	99	90	108
500-197699-2	W-210415-RA-23	101	98	92	109
500-197699-2 MS	W-210415-RA-23	95	99	89	102
500-197699-2 MSD	W-210415-RA-23	94	100	90	102
500-197699-3	W-210415-RA-24	102	98	91	108
500-197699-4	W-210415-RA-25	101	99	92	107
500-197699-5	W-210415-RA-26	102	98	91	108
500-197699-6	W-210415-RA-27	103	98	92	109
500-197699-7	W-210415-RA-28	103	99	92	111
500-197699-8	W-210415-RA-29	102	97	87	111
500-197699-9	W-210415-RA-30	102	98	92	108
500-197699-10	Trip Blank	100	99	92	109
LCS 500-595330/4	Lab Control Sample	95	99	88	101
MB 500-595330/6	Method Blank	100	99	91	107

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)
500-197699-1	W-210415-RA-22	96	104	121
500-197699-2	W-210415-RA-23	92	97	114
500-197699-2 MS	W-210415-RA-23	90	93	99
500-197699-2 MSD	W-210415-RA-23	96	95	108
500-197699-3	W-210415-RA-24	91	95	118
500-197699-4	W-210415-RA-25	95	95	130
500-197699-5	W-210415-RA-26	96	97	125
500-197699-6	W-210415-RA-27	96	101	121
500-197699-7	W-210415-RA-28	81	82	124
500-197699-8	W-210415-RA-29	84	78	117
500-197699-9	W-210415-RA-30	99	105	123
LCS 500-593952/2-A	Lab Control Sample	97	99	111
MB 500-593952/1-A	Method Blank	92	95	118

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: 500-197699-1

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)
500-197699-1	W-210415-RA-22	111
500-197699-2	W-210415-RA-23	109
500-197699-2 MS	W-210415-RA-23	112
500-197699-2 MSD	W-210415-RA-23	112
500-197699-4	W-210415-RA-25	110
500-197699-5	W-210415-RA-26	106
500-197699-6	W-210415-RA-27	109
500-197699-7	W-210415-RA-28	108
500-197699-8	W-210415-RA-29	108
500-197699-9	W-210415-RA-30	108
LCS 240-481937/34	Lab Control Sample	114
LCS 240-482078/4	Lab Control Sample	111
MB 240-481937/33	Method Blank	114
MB 240-482078/3	Method Blank	112

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	DCPAA2 (25-130)
500-197699-1	W-210415-RA-22	79
500-197699-2	W-210415-RA-23	78
500-197699-2 MS	W-210415-RA-23	91
500-197699-2 MSD	W-210415-RA-23	86
500-197699-3	W-210415-RA-24	81
500-197699-4	W-210415-RA-25	84
500-197699-5	W-210415-RA-26	83
500-197699-6	W-210415-RA-27	90
500-197699-7	W-210415-RA-28	89
500-197699-8	W-210415-RA-29	0 D
500-197699-9	W-210415-RA-30	87
LCS 500-594360/2-A	Lab Control Sample	80
MB 500-594360/1-A	Method Blank	78

Surrogate Legend

DCPAA = DCAA

QC Sample Results

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

Job ID: 500-197699-1

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

Lab Sample ID: MB 500-595330/6
Matrix: Water
Analysis Batch: 595330

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			04/27/21 11:03	1
Toluene	<0.15		0.50	0.15	ug/L			04/27/21 11:03	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/27/21 11:03	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/27/21 11:03	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	100		75 - 126		04/27/21 11:03	1
Toluene-d8 (Surr)	99		75 - 120		04/27/21 11:03	1
4-Bromofluorobenzene (Surr)	91		72 - 124		04/27/21 11:03	1
Dibromofluoromethane	107		75 - 120		04/27/21 11:03	1

Lab Sample ID: LCS 500-595330/4
Matrix: Water
Analysis Batch: 595330

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	55.2		ug/L		110	70 - 120
Toluene	50.0	53.1		ug/L		106	70 - 125
Ethylbenzene	50.0	51.3		ug/L		103	70 - 123
Xylenes, Total	100	101		ug/L		101	70 - 125

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	95		75 - 126
Toluene-d8 (Surr)	99		75 - 120
4-Bromofluorobenzene (Surr)	88		72 - 124
Dibromofluoromethane	101		75 - 120

Lab Sample ID: 500-197699-2 MS
Matrix: Water
Analysis Batch: 595330

Client Sample ID: W-210415-RA-23
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	48.2		ug/L		96	70 - 120
Toluene	<0.15		50.0	46.0		ug/L		92	70 - 125
Ethylbenzene	<0.18		50.0	44.1		ug/L		88	70 - 123
Xylenes, Total	<0.22		100	87.2		ug/L		87	70 - 125

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	95		75 - 126
Toluene-d8 (Surr)	99		75 - 120
4-Bromofluorobenzene (Surr)	89		72 - 124
Dibromofluoromethane	102		75 - 120

QC Sample Results

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

Job ID: 500-197699-1

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

Lab Sample ID: 500-197699-2 MSD
Matrix: Water
Analysis Batch: 595330

Client Sample ID: W-210415-RA-23
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	47.4		ug/L		95	70 - 120	2	20
Toluene	<0.15		50.0	45.4		ug/L		91	70 - 125	1	20
Ethylbenzene	<0.18		50.0	43.3		ug/L		87	70 - 123	2	20
Xylenes, Total	<0.22		100	85.5		ug/L		86	70 - 125	2	20
MSD MSD											
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	94		75 - 126								
Toluene-d8 (Surr)	100		75 - 120								
4-Bromofluorobenzene (Surr)	90		72 - 124								
Dibromofluoromethane	102		75 - 120								

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

Lab Sample ID: MB 500-593952/1-A
Matrix: Water
Analysis Batch: 593984

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 593952

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.25		0.80	0.25	ug/L		04/19/21 12:28	04/19/21 20:43	1
MB MB									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	92		36 - 120				04/19/21 12:28	04/19/21 20:43	1
2-Fluorobiphenyl (Surr)	95		34 - 110				04/19/21 12:28	04/19/21 20:43	1
Terphenyl-d14 (Surr)	118		40 - 145				04/19/21 12:28	04/19/21 20:43	1

Lab Sample ID: LCS 500-593952/2-A
Matrix: Water
Analysis Batch: 593984

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 593952

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	32.0	26.8		ug/L		84	36 - 110
LCS LCS							
Surrogate	%Recovery	Qualifier	Limits				
Nitrobenzene-d5 (Surr)	97		36 - 120				
2-Fluorobiphenyl (Surr)	99		34 - 110				
Terphenyl-d14 (Surr)	111		40 - 145				

Lab Sample ID: 500-197699-2 MS
Matrix: Water
Analysis Batch: 593984

Client Sample ID: W-210415-RA-23
Prep Type: Total/NA
Prep Batch: 593952

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	<0.24		33.4	25.8		ug/L		77	36 - 110
MS MS									
Surrogate	%Recovery	Qualifier	Limits						
Nitrobenzene-d5 (Surr)	90		36 - 120						
2-Fluorobiphenyl (Surr)	93		34 - 110						

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QC Sample Results

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

Job ID: 500-197699-1

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

Lab Sample ID: 500-197699-2 MS
Matrix: Water
Analysis Batch: 593984

Client Sample ID: W-210415-RA-23
Prep Type: Total/NA
Prep Batch: 593952

	<i>MS</i>	<i>MS</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Terphenyl-d14 (Surr)	99		40 - 145

Lab Sample ID: 500-197699-2 MSD
Matrix: Water
Analysis Batch: 593984

Client Sample ID: W-210415-RA-23
Prep Type: Total/NA
Prep Batch: 593952

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD</i>		<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec.</i>		<i>RPD</i>	<i>Limit</i>
				<i>Result</i>	<i>Qualifier</i>				<i>Limits</i>	<i>RPD</i>		
Naphthalene	<0.24		29.8	24.1		ug/L		81	36 - 110	7		20
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>MSD</i>								
Nitrobenzene-d5 (Surr)	96		36 - 120									
2-Fluorobiphenyl (Surr)	95		34 - 110									
Terphenyl-d14 (Surr)	108		40 - 145									

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 240-481937/33
Matrix: Water
Analysis Batch: 481937

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

<i>Analyte</i>	<i>MB Result</i>	<i>MB Qualifier</i>	<i>LOQ</i>	<i>LOD</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Methane	<0.17		1.0	0.17	ug/L			04/20/21 20:16	1
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>MB</i>		<i>Prepared</i>		<i>Analyzed</i>	<i>Dil Fac</i>
1,1,1-Trifluoroethane	114		60 - 140					04/20/21 20:16	1

Lab Sample ID: LCS 240-481937/34
Matrix: Water
Analysis Batch: 481937

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

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>
Methane	409	451		ug/L		110	80 - 120
<i>Surrogate</i>	<i>%Recovery</i>	<i>LCS</i>	<i>LCS</i>	<i>Limits</i>			
1,1,1-Trifluoroethane	114			60 - 140			

Lab Sample ID: 500-197699-2 MS
Matrix: Water
Analysis Batch: 481937

Client Sample ID: W-210415-RA-23
Prep Type: Total/NA

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS</i>		<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Result</i>	<i>Qualifier</i>	<i>Limits</i>				
Methane	18		284	306		ug/L		101	50 - 150
1,1,1-Trifluoroethane	112		60 - 140						

QC Sample Results

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

Job ID: 500-197699-1

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

Lab Sample ID: 500-197699-2 MSD
Matrix: Water
Analysis Batch: 481937

Client Sample ID: W-210415-RA-23
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane	18		284	309		ug/L		102	50 - 150	1	30
Surrogate	%Recovery	MSD Qualifier	MSD Limits								
1,1,1-Trifluoroethane	112		60 - 140								

Lab Sample ID: MB 240-482078/3
Matrix: Water
Analysis Batch: 482078

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			04/21/21 10:48	1	
Surrogate	%Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac				
1,1,1-Trifluoroethane	112		60 - 140		04/21/21 10:48	1				

Lab Sample ID: LCS 240-482078/4
Matrix: Water
Analysis Batch: 482078

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane	477	483		ug/L		101	80 - 120
Surrogate	%Recovery	LCS Qualifier	LCS Limits				
1,1,1-Trifluoroethane	111		60 - 140				

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 500-594360/1-A
Matrix: Water
Analysis Batch: 594475

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 594360

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.090		0.10	0.090	ug/L		04/21/21 10:25	04/22/21 01:37	1
Surrogate	%Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac			
DCAA	78		25 - 130		04/21/21 10:25	04/22/21 01:37	1		

Lab Sample ID: LCS 500-594360/2-A
Matrix: Water
Analysis Batch: 594475

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 594360

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Pentachlorophenol	2.53	1.74		ug/L		69	40 - 122
Surrogate	%Recovery	LCS Qualifier	LCS Limits				
DCAA	80		25 - 130				

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QC Sample Results

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

Job ID: 500-197699-1

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

Lab Sample ID: 500-197699-2 MS
Matrix: Water
Analysis Batch: 594475

Client Sample ID: W-210415-RA-23
Prep Type: Total/NA
Prep Batch: 594360

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	Limits
	Result	Qualifier	Added	Result	Qualifier					
Pentachlorophenol	<0.089		2.69	1.75		ug/L		65		40 - 122
Surrogate	%Recovery	MS Qualifier	Limits							
DCAA	91		25 - 130							

Lab Sample ID: 500-197699-2 MSD
Matrix: Water
Analysis Batch: 594475

Client Sample ID: W-210415-RA-23
Prep Type: Total/NA
Prep Batch: 594360

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
Pentachlorophenol	<0.089		2.63	1.89		ug/L		72		40 - 122	8	20
Surrogate	%Recovery	MSD Qualifier	Limits									
DCAA	86		25 - 130									

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 500-594093/1-A
Matrix: Water
Analysis Batch: 594355

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 594093

Analyte	MB	MB	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	<0.23		1.0	0.23	ug/L		04/20/21 08:24	04/20/21 21:13	1
Copper	0.667	J	2.0	0.50	ug/L		04/20/21 08:24	04/20/21 21:13	1
Iron	<46.7		100	46.7	ug/L		04/20/21 08:24	04/20/21 21:13	1
Manganese	<0.79		2.5	0.79	ug/L		04/20/21 08:24	04/20/21 21:13	1
Zinc	<6.9		20.0	6.9	ug/L		04/20/21 08:24	04/20/21 21:13	1

Lab Sample ID: LCS 500-594093/2-A
Matrix: Water
Analysis Batch: 594355

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 594093

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	Limits
Copper	250	256.0		ug/L		102	80 - 120	
Iron	1000	1083		ug/L		108	80 - 120	
Manganese	500	508.5		ug/L		102	80 - 120	
Zinc	500	504.2		ug/L		101	80 - 120	

Lab Sample ID: 500-197699-2 MS
Matrix: Water
Analysis Batch: 594355

Client Sample ID: W-210415-RA-23
Prep Type: Dissolved
Prep Batch: 594093

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	Limits
	Result	Qualifier	Added	Result	Qualifier					
Arsenic	1.1		100	97.09		ug/L		96		75 - 125
Copper	<0.50		250	257.4		ug/L		103		75 - 125
Iron	138		1000	1210		ug/L		107		75 - 125
Manganese	36.8		500	539.8		ug/L		101		75 - 125
Zinc	18.7	J F3	500	504.6		ug/L		97		75 - 125

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QC Sample Results

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

Job ID: 500-197699-1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: 500-197699-2 MSD
Matrix: Water
Analysis Batch: 594355

Client Sample ID: W-210415-RA-23
Prep Type: Dissolved
Prep Batch: 594093

Analyte	Sample	Sample	Spike	MSD		Unit	D	%Rec	%Rec.		RPD	Limit
	Result	Qualifier		Result	Qualifier				Limits	RPD		
Arsenic	1.1		100	97.21		ug/L		96	75 - 125	0	20	
Copper	<0.50		250	254.2		ug/L		102	75 - 125	1	20	
Iron	138		1000	1163		ug/L		102	75 - 125	4	20	
Manganese	36.8		500	538.4		ug/L		100	75 - 125	0	20	
Zinc	18.7	J F3	500	506.4		ug/L		98	75 - 125	0	20	

Lab Sample ID: 500-197699-2 DU
Matrix: Water
Analysis Batch: 594355

Client Sample ID: W-210415-RA-23
Prep Type: Dissolved
Prep Batch: 594093

Analyte	Sample	Sample	DU		Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Arsenic	1.1		1.08		ug/L		0.6	20
Copper	<0.50		0.551	J	ug/L		NC	20
Iron	138		135.2		ug/L		2	20
Manganese	36.8		37.22		ug/L		1	20
Zinc	18.7	J F3	198.1	F3	ug/L		166	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-593697/3
Matrix: Water
Analysis Batch: 593697

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

Analyte	MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	<0.17		0.20	0.17	mg/L			04/16/21 14:37	1
Nitrate as N	<0.068		0.20	0.068	mg/L			04/16/21 14:37	1
Sulfate	<0.095	^	0.20	0.095	mg/L			04/16/21 14:37	1

Lab Sample ID: LCS 500-593697/4
Matrix: Water
Analysis Batch: 593697

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

Analyte	Spike	LCS		Unit	D	%Rec	%Rec.	
		Result	Qualifier				Limits	RPD
Chloride	3.00	2.91		mg/L		97	90 - 110	
Nitrate as N	2.00	1.98		mg/L		99	90 - 110	
Sulfate	5.00	5.21	^	mg/L		104	90 - 110	

Lab Sample ID: 500-197699-2 MS
Matrix: Water
Analysis Batch: 593697

Client Sample ID: W-210415-RA-23
Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS		Unit	D	%Rec	%Rec.	
	Result	Qualifier		Result	Qualifier				Limits	RPD
Nitrate as N	0.20		1.00	1.16		mg/L		96	80 - 120	

Lab Sample ID: 500-197699-2 MSD
Matrix: Water
Analysis Batch: 593697

Client Sample ID: W-210415-RA-23
Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD		Unit	D	%Rec	%Rec.		RPD	Limit
	Result	Qualifier		Result	Qualifier				Limits	RPD		
Nitrate as N	0.20		1.00	1.09		mg/L		90	80 - 120	6	20	

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QC Sample Results

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

Job ID: 500-197699-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 500-595660/3
Matrix: Water
Analysis Batch: 595660

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

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	<0.17		0.20	0.17	mg/L			04/28/21 12:29	1
Nitrate as N	<0.068		0.20	0.068	mg/L			04/28/21 12:29	1
Sulfate	<0.095		0.20	0.095	mg/L			04/28/21 12:29	1

Lab Sample ID: LCS 500-595660/4
Matrix: Water
Analysis Batch: 595660

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	2.00	1.98		mg/L		99	90 - 110
Sulfate	5.00	4.99		mg/L		100	90 - 110

Lab Sample ID: 500-197699-2 MS
Matrix: Water
Analysis Batch: 595660

Client Sample ID: W-210415-RA-23
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	13.1		25.0	39.08		mg/L		104	80 - 120

Lab Sample ID: 500-197699-2 MSD
Matrix: Water
Analysis Batch: 595660

Client Sample ID: W-210415-RA-23
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	13.1		25.0	40.22		mg/L		109	80 - 120	3	20

Lab Sample ID: 500-197699-8 MS
Matrix: Water
Analysis Batch: 595660

Client Sample ID: W-210415-RA-29
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	13.5	F1	25.0	40.70		mg/L		109	80 - 120

Lab Sample ID: 500-197699-8 MSD
Matrix: Water
Analysis Batch: 595660

Client Sample ID: W-210415-RA-29
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	13.5	F1	25.0	43.98	F1	mg/L		122	80 - 120	8	20

QC Sample Results

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

Job ID: 500-197699-1

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

Lab Sample ID: MB 500-594158/38
Matrix: Water
Analysis Batch: 594158

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			04/20/21 00:44	1

Lab Sample ID: LCS 500-594158/39
Matrix: Water
Analysis Batch: 594158

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	10.0	9.78		mg/L		98	80 - 120

Lab Sample ID: 500-197699-2 MS
Matrix: Water
Analysis Batch: 594158

Client Sample ID: W-210415-RA-23
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	0.67	J	10.0	10.09		mg/L		94	75 - 125

Lab Sample ID: 500-197699-2 MSD
Matrix: Water
Analysis Batch: 594158

Client Sample ID: W-210415-RA-23
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	0.67	J	10.0	10.45		mg/L		98	75 - 125	3	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 500-594436/28
Matrix: Water
Analysis Batch: 594436

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			04/21/21 13:04	1

Lab Sample ID: MB 500-594436/3
Matrix: Water
Analysis Batch: 594436

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			04/21/21 10:14	1

Lab Sample ID: LCS 500-594436/29
Matrix: Water
Analysis Batch: 594436

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	100.4		mg/L		100	90 - 110

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QC Sample Results

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

Job ID: 500-197699-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCS 500-594436/4
Matrix: Water
Analysis Batch: 594436

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	97.51		mg/L		98	90 - 110

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

Lab Chronicle

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

Job ID: 500-197699-1

Client Sample ID: W-210415-RA-22

Lab Sample ID: 500-197699-1

Date Collected: 04/15/21 14:23

Matrix: Water

Date Received: 04/16/21 07:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	595330	04/27/21 14:57	PMF	TAL CHI
Total/NA	Prep	3510C			593952	04/19/21 12:28	DAK	TAL CHI
Total/NA	Analysis	8270D		1	593984	04/19/21 21:37	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	482078	04/21/21 11:39	JBN	TAL CAN
Total/NA	Prep	8151A			594360	04/21/21 10:25	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594475	04/22/21 02:15	JBK	TAL CHI
Dissolved	Prep	3005A			594093	04/20/21 08:24	BDE	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/20/21 21:20	FXG	TAL CHI
Total/NA	Prep	3010A			594095	04/20/21 08:27	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	594780	04/23/21 08:21	EEN	TAL CHI
Total/NA	Analysis	300.0		5	595660	04/28/21 15:40	EAT	TAL CHI
Total/NA	Analysis	300.0		20	595660	04/28/21 15:54	EAT	TAL CHI
Total/NA	Analysis	300.0		1	593697	04/16/21 15:27	PSP	TAL CHI
Total/NA	Analysis	9060A		1	594158	04/20/21 03:12	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	594436	04/21/21 13:35	SMO	TAL CHI

Client Sample ID: W-210415-RA-23

Lab Sample ID: 500-197699-2

Date Collected: 04/15/21 09:20

Matrix: Water

Date Received: 04/16/21 07:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	595330	04/27/21 15:25	PMF	TAL CHI
Total/NA	Prep	3510C			593952	04/19/21 12:28	DAK	TAL CHI
Total/NA	Analysis	8270D		1	593984	04/19/21 22:04	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	481937	04/20/21 22:49	JBN	TAL CAN
Total/NA	Prep	8151A			594360	04/21/21 10:25	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594475	04/22/21 02:34	JBK	TAL CHI
Dissolved	Prep	3005A			594093	04/20/21 08:24	BDE	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/20/21 21:24	FXG	TAL CHI
Total/NA	Prep	3010A			594095	04/20/21 08:27	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	594780	04/23/21 08:21	EEN	TAL CHI
Total/NA	Analysis	300.0		10	595660	04/28/21 16:07	EAT	TAL CHI
Total/NA	Analysis	300.0		1	593697	04/16/21 15:40	PSP	TAL CHI
Total/NA	Analysis	9060A		1	594158	04/20/21 03:48	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	594436	04/21/21 13:41	SMO	TAL CHI

Client Sample ID: W-210415-RA-24

Lab Sample ID: 500-197699-3

Date Collected: 04/15/21 10:00

Matrix: Water

Date Received: 04/16/21 07:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	595330	04/27/21 15:53	PMF	TAL CHI

Lab Chronicle

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

Job ID: 500-197699-1

Client Sample ID: W-210415-RA-24

Lab Sample ID: 500-197699-3

Date Collected: 04/15/21 10:00

Matrix: Water

Date Received: 04/16/21 07:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			593952	04/19/21 12:28	DAK	TAL CHI
Total/NA	Analysis	8270D		1	593984	04/19/21 22:31	SS	TAL CHI
Total/NA	Prep	8151A			594360	04/21/21 10:25	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594475	04/22/21 03:32	JBj	TAL CHI
Dissolved	Prep	3005A			594093	04/20/21 08:24	BDE	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/20/21 21:48	FXG	TAL CHI

Client Sample ID: W-210415-RA-25

Lab Sample ID: 500-197699-4

Date Collected: 04/15/21 10:00

Matrix: Water

Date Received: 04/16/21 07:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	595330	04/27/21 16:22	PMF	TAL CHI
Total/NA	Prep	3510C			593952	04/19/21 12:28	DAK	TAL CHI
Total/NA	Analysis	8270D		1	593984	04/19/21 22:57	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	481937	04/20/21 23:57	JBN	TAL CAN
Total/NA	Prep	8151A			594360	04/21/21 10:25	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594475	04/22/21 03:51	JBj	TAL CHI
Dissolved	Prep	3005A			594093	04/20/21 08:24	BDE	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/20/21 21:52	FXG	TAL CHI
Total/NA	Prep	3010A			594095	04/20/21 08:27	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	594780	04/23/21 08:21	EEN	TAL CHI
Total/NA	Analysis	300.0		1	595660	04/28/21 16:48	EAT	TAL CHI
Total/NA	Analysis	300.0		10	595660	04/28/21 17:02	EAT	TAL CHI
Total/NA	Analysis	300.0		1	593697	04/16/21 16:18	PSP	TAL CHI
Total/NA	Analysis	9060A		1	594158	04/20/21 04:25	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	594436	04/21/21 13:47	SMO	TAL CHI

Client Sample ID: W-210415-RA-26

Lab Sample ID: 500-197699-5

Date Collected: 04/15/21 10:50

Matrix: Water

Date Received: 04/16/21 07:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	595330	04/27/21 16:51	PMF	TAL CHI
Total/NA	Prep	3510C			593952	04/19/21 12:28	DAK	TAL CHI
Total/NA	Analysis	8270D		1	593984	04/19/21 23:24	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	481937	04/21/21 00:14	JBN	TAL CAN
Total/NA	Prep	8151A			594360	04/21/21 10:25	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594475	04/22/21 04:10	JBj	TAL CHI
Dissolved	Prep	3005A			594093	04/20/21 08:24	BDE	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/20/21 21:55	FXG	TAL CHI
Total/NA	Prep	3010A			594095	04/20/21 08:27	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	594780	04/23/21 08:21	EEN	TAL CHI
Total/NA	Analysis	300.0		1	595660	04/28/21 17:16	EAT	TAL CHI

Eurofins TestAmerica, Chicago

Lab Chronicle

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

Job ID: 500-197699-1

Client Sample ID: W-210415-RA-26

Lab Sample ID: 500-197699-5

Date Collected: 04/15/21 10:50

Matrix: Water

Date Received: 04/16/21 07:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	595660	04/28/21 17:57	EAT	TAL CHI
Total/NA	Analysis	300.0		1	593697	04/16/21 16:31	PSP	TAL CHI
Total/NA	Analysis	9060A		1	594158	04/20/21 04:42	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	594436	04/21/21 13:58	SMO	TAL CHI

Client Sample ID: W-210415-RA-27

Lab Sample ID: 500-197699-6

Date Collected: 04/15/21 10:50

Matrix: Water

Date Received: 04/16/21 07:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	595330	04/27/21 17:19	PMF	TAL CHI
Total/NA	Prep	3510C			593952	04/19/21 12:28	DAK	TAL CHI
Total/NA	Analysis	8270D		1	593984	04/19/21 23:51	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	481937	04/21/21 00:31	JBN	TAL CAN
Total/NA	Prep	8151A			594360	04/21/21 10:25	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594475	04/22/21 04:29	JB	TAL CHI
Dissolved	Prep	3005A			594093	04/20/21 08:24	BDE	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/20/21 21:59	FXG	TAL CHI
Total/NA	Prep	3010A			594095	04/20/21 08:27	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	594780	04/23/21 08:21	EEN	TAL CHI
Total/NA	Analysis	300.0		5	595660	04/28/21 18:24	EAT	TAL CHI
Total/NA	Analysis	300.0		1	593697	04/16/21 17:09	PSP	TAL CHI
Total/NA	Analysis	9060A		1	594158	04/20/21 04:58	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	594436	04/21/21 14:04	SMO	TAL CHI

Client Sample ID: W-210415-RA-28

Lab Sample ID: 500-197699-7

Date Collected: 04/15/21 12:25

Matrix: Water

Date Received: 04/16/21 07:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	595330	04/27/21 17:48	PMF	TAL CHI
Total/NA	Prep	3510C			593952	04/19/21 12:28	DAK	TAL CHI
Total/NA	Analysis	8270D		1	593984	04/20/21 00:18	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	481937	04/21/21 00:48	JBN	TAL CAN
Total/NA	Prep	8151A			594360	04/21/21 10:25	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594475	04/22/21 05:07	JB	TAL CHI
Dissolved	Prep	3005A			594093	04/20/21 08:24	BDE	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/20/21 22:02	FXG	TAL CHI
Total/NA	Prep	3010A			594095	04/20/21 08:27	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	594780	04/23/21 08:21	EEN	TAL CHI
Total/NA	Analysis	300.0		20	595660	04/28/21 18:51	EAT	TAL CHI
Total/NA	Analysis	300.0		1	593697	04/16/21 17:22	PSP	TAL CHI
Total/NA	Analysis	9060A		1	594158	04/20/21 05:15	TMS	TAL CHI

Eurofins TestAmerica, Chicago

Lab Chronicle

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

Job ID: 500-197699-1

Client Sample ID: W-210415-RA-28

Lab Sample ID: 500-197699-7

Date Collected: 04/15/21 12:25

Matrix: Water

Date Received: 04/16/21 07:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2320B		1	594436	04/21/21 14:12	SMO	TAL CHI

Client Sample ID: W-210415-RA-29

Lab Sample ID: 500-197699-8

Date Collected: 04/15/21 13:30

Matrix: Water

Date Received: 04/16/21 07:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	595330	04/27/21 18:16	PMF	TAL CHI
Total/NA	Prep	3510C			593952	04/19/21 12:28	DAK	TAL CHI
Total/NA	Analysis	8270D		1	593984	04/20/21 02:32	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	481937	04/21/21 01:06	JBN	TAL CAN
Total/NA	Prep	8151A			594360	04/21/21 10:26	DAK	TAL CHI
Total/NA	Analysis	8151A		8000	594475	04/22/21 07:43	JBj	TAL CHI
Dissolved	Prep	3005A			594093	04/20/21 08:24	BDE	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/20/21 22:06	FXG	TAL CHI
Total/NA	Prep	3010A			594095	04/20/21 08:27	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	594780	04/23/21 08:21	EEN	TAL CHI
Total/NA	Analysis	300.0		10	595660	04/28/21 19:05	EAT	TAL CHI
Total/NA	Analysis	300.0		1	593697	04/16/21 17:34	PSP	TAL CHI
Total/NA	Analysis	9060A		1	594158	04/20/21 05:31	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	594436	04/21/21 10:28	SMO	TAL CHI

Client Sample ID: W-210415-RA-30

Lab Sample ID: 500-197699-9

Date Collected: 04/15/21 13:15

Matrix: Water

Date Received: 04/16/21 07:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	595330	04/27/21 18:45	PMF	TAL CHI
Total/NA	Prep	3510C			593952	04/19/21 12:28	DAK	TAL CHI
Total/NA	Analysis	8270D		1	593984	04/20/21 00:45	SS	TAL CHI
Total/NA	Analysis	RSK-175		1	481937	04/21/21 01:23	JBN	TAL CAN
Total/NA	Prep	8151A			594360	04/21/21 10:26	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594475	04/22/21 05:46	JBj	TAL CHI
Dissolved	Prep	3005A			594093	04/20/21 08:24	BDE	TAL CHI
Dissolved	Analysis	6020A		1	594355	04/20/21 22:09	FXG	TAL CHI
Total/NA	Prep	3010A			594095	04/20/21 08:27	BDE	TAL CHI
Total/NA	Analysis	SM 2340B		1	594780	04/23/21 08:21	EEN	TAL CHI
Total/NA	Analysis	300.0		2	595660	04/28/21 19:59	EAT	TAL CHI
Total/NA	Analysis	300.0		1	593697	04/16/21 17:47	PSP	TAL CHI
Total/NA	Analysis	9060A		1	594158	04/20/21 05:47	TMS	TAL CHI
Total/NA	Analysis	SM 2320B		1	594436	04/21/21 14:19	SMO	TAL CHI

Lab Chronicle

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

Job ID: 500-197699-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-197699-10

Date Collected: 04/15/21 00:00

Matrix: Water

Date Received: 04/16/21 07:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	595330	04/27/21 19:14	PMF	TAL CHI

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

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

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Accreditation/Certification Summary

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

Job ID: 500-197699-1

Laboratory: Eurofins TestAmerica, Chicago

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-21

Laboratory: Eurofins TestAmerica, Canton

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	02-23-22
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-22
Illinois	NELAP	004498	07-31-21
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21
Kentucky (UST)	State	112225	02-23-21 *
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-22
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-21
Texas	NELAP	T104704517-18-10	08-31-21
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-21
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

* Accreditation/Certification renewal pending - accreditation/certification considered valid.




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Address _____

Regulatory Program: DW NPDES RCRA Other

TAL-8210

Client Contact		Project Manager: <u>Ree</u>			Site Contact			Date:			COC No						
Company Name <u>GHD</u>		Tel/Email			Lab Contact:			Carrier:			1 of 1 COCs						
Address <u>1708 Old Highway 8 NW 114</u>		Analysis Turnaround Time			Filtered Sample (Y/N) Perform MS / MSD (Y/N) PCP BTEX Aliphatics Dissolved Metals All Anions Total Metals / Hardness TOC Dissolved Metals			 500-197699 COC			Sampler:						
City/State/Zip <u>St. Paul, MN 55112</u>		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS									For Lab Use Only						
Phone <u>651 639 0912</u>		TAT if different from Below									Walk-in Client						
Fax		<input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day									Lab Sampling						
Project Name <u>Penta Wood</u>											Job / SDG No						
Site <u>11222418-01-04</u>																	
PO #																	
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	Aliphatics	Dissolved Metals	All Anions	Total Metals / Hardness	TOC	Dissolved Metals	Sample Specific Notes
1 W-210414-RA-22		4/14/21	1423	G	GW	15	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	dissolved metals
2 W-210415-RA-23		4/15/21	920	G	GW	45	Y	X	Y	Y	Y	Y	Y	Y	Y	Y	were field filtered
3 W-210415-RA-24		4/15/21	1000	G	GW	48	Y		X	X	X	X					
4 W-210415-RA-25		4/15/21	1000	G	GW	15	Y		Y	Y	Y	Y	Y	Y	Y	Y	
5 W-210415-RA-26		4/15/21	1050	G	GW	15	Y		Y	Y	Y	Y	Y	Y	Y	Y	
6 W-210415-RA-27		4/15/21	1050	G	GW	15	Y		Y	Y	X	X	X	X	X	X	
7 W-210415-RA-28		4/15/21	1225	G	GW	15	Y		Y	Y	X	X	X	X	X	X	
8 W-210415-RA-29		4/15/21	1330	G	GW	15	Y		Y	X	X	X	X	X	X	X	
9 W-210415-RA-30		4/15/21	1315	G	GW	15	Y		Y	X	X	Y	X	X	X	X	
10 Trip blank										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: <u>5.4 → 4.6, 3.3 → 2.5, 4.2 → 3.4, 4.4 → 4.0, 3.6 → 3.2, 1.6 → 0.3</u>																	
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>4/15/21 1500</u>			Received by			Company						
Relinquished by		Company			Date/Time			Received by			Company						
Relinquished by		Company			Date/Time			Received in Laboratory by <u>[Signature]</u>			Company <u>ETA-GH</u>						
											Date/Time <u>4/16/21 0915</u>						



Package US Airbill

FedEx Tracking Number

816



8683

Form ID No.

0200

fedex.com 1.800.GoFedEx 1.800.463.3339

fedex.com 1.800.GoFedEx 1.800.463.3339

1 From [Redacted] 500-197699 Wayb [Redacted]

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 P.O. boxes or P.O. 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



8161 0804 8683

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, FedEx Priority Overnight, FedEx Standard Overnight

2 or 3 Business Days

- FedEx 2Day A.M., FedEx 2Day, FedEx Express Saver

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, No Signature Required, Direct Signature, Indirect Signature

Does this shipment contain dangerous goods? No, Yes, Dry Ice, 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. Rev. Date 4/9 • Per #167002 ©20 2-2019 FedEx • PRINTED IN U.S.A. 644



Package US Airbill

FedEx Tracking Number 8161 0804 8867

Form ID No. 0200

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 _____

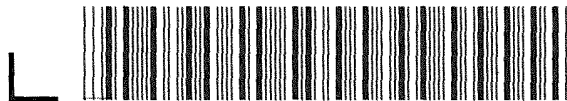
Address _____ Dept./Floor/Suite/Room _____
We cannot deliver to P.O. boxes or P.O. ZIP codes.

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.



8161 0804 8867

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 Sat. +day 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 req. red. 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.

¹Our liability is limited to US\$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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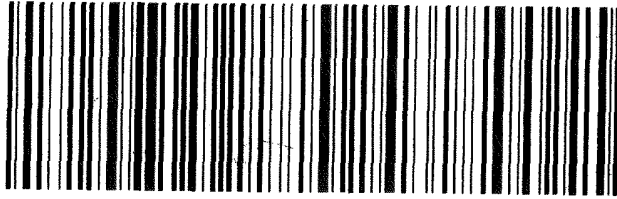
fedex.com 1.800.GoFedEx 1.800.463.3339

FedEx
TRK# 0200 8161 0804 8856

FRI - 16 APR AA
PRIORITY OVERNIGHT

XH JOTA

60484
IL-US
ORD



PEEL HERE

1 Open pre-sealed purple flap.

FID: 80701 15Apr2021 JOTA 560G2/5EF2/1B23

1 0804 8856

Form ID No 0200

Recipient's Copy

1A
1B
1C

A FedEx 1800 463 3339

5 10:30 8856 04 16

RI 519
ST 21

1 From

Date 4/16/21

Sender's Name R, A, ... Phone 604 230 7072

Company ...

Address 317 ... Dept./Floor/Suite/Room 114

City ... State IL ZIP 60484

2 Your Internal Billing Reference 1122-118-01-04

Client's Name ... Phone ...

Address 317 ... Dept./Floor/Suite/Room 114

City ... State IL ZIP 60484

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.

• HOLD location address or for continuation of your shipping address.

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 7 will be billed. Recipient Third Party

Total Packages 1 Total Weight 40 lbs.



8161 0804 8856

†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.com 1800 60FedEx 1800 463 3339



Package US Airbill

FedEx Tracking Number

8161 0804 8878

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 _____ Dept./Floor/Suite/Room _____
We cannot deliver to P.O. boxes or P.O. ZIP codes.

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.



8161 0804 8878

48qt.

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. 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 0804 8694



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 _____

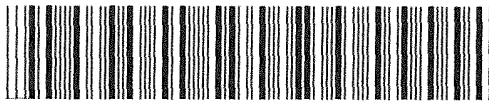
Address _____ Dept./Floor/Suite/Room _____
We cannot deliver to P.O. boxes or P.O. ZIP codes.

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.



8161 0804 8694

48qt.

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, 8, 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 7 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 8161 0804 8640

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 _____

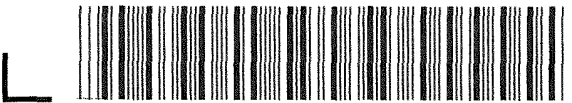
Address _____
We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room _____

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.



8161 0804 8640

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 or Monday unless Saturday Delivery is selected.	<input type="checkbox"/> FedEx 2Day A.M. Second business morning. Saturday Delivery NOT available.
<input checked="" 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.

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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Chain of Custody Record

Client Information (Sub Contract Lab)		Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact:		Wright, Richard	Wright, Richard	State of Origin:	500-147499-2
Shipping/Receiving		Phone:	E-Mail:	Wisconsin	Page: 2 of 2
Company:		Richard.Wright@Eurofins.com		Job #:	500-197699-1
TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Preservation Codes:	
Address:		State Program - Wisconsin		A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2SO4 E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2SO3 G - Amchlor S - H2SO4 H - Ascorbic Acid I - Ice J - DI Water U - Acetone V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify) Other:	
City:		Due Date Requested:		Analysis Requested	
North Canton		4/29/2021		Total Number of Containers	
State, Zip:		TAT Requested (days):		3	
OH, 44720		PO #:		Field Filtered Sample (Yes or No)	
Phone:		WO #:		Perform MS/MSD (Yes or No)	
330-497-9396(Tel) 330-497-0772(Fax)		Project #:		RSK_175/(MOD) Methane	
Email:		50013796		X	
Project Name:		SSOW#:		Special Instructions/Note:	
Penta Wood 11222418		Sample Date		RSK	
Site:		Sample Time		WI	
Sample Identification - Client ID (Lab ID)		4/15/21		Special Instructions/Note:	
W-210415-RA-30 (500-197699-9)		13:15 Central		Total Number of Containers	
Matrix (Water, Swab, On-site, etc.)		Sample Type (C=comp, G=grab)		Field Filtered Sample (Yes or No)	
Water		Preservation Code:		Perform MS/MSD (Yes or No)	
				X	
				RSK_175/(MOD) Methane	
				Field Filtered Sample (Yes or No)	
				Perform MS/MSD (Yes or No)	
				X	
				Special Instructions/Note:	
				Total Number of Containers	
				3	
				Field Filtered Sample (Yes or No)	
				Perform MS/MSD (Yes or No)	
				X	
				Special Instructions/Note:	
				Total Number of Containers	
				3	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica 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 TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.

Possible Hazard Identification
 Unconfirmed
 Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Empty Kit Relinquished by: _____ Date: _____
 Relinquished by: *[Signature]* Date: 4/16/21
 Relinquished by: *[Signature]* Date: 4/16/21
 Relinquished by: _____ Date: _____

Relinquished by: _____ Date: _____
 Relinquished by: _____ Date: _____
 Relinquished by: _____ Date: _____

Custody Seal No.: _____
 Custody Seals Intact: Yes No
 Cooler Temperature(s) °C and Other Remarks:

Eurofins TestAmerica Canton Sample Receipt Form/Narrative Login # : _____

Canton Facility

Client EPA Site Name _____ Cooler unpacked by: Math Snider

Cooler Received on 4-17-21 Opened on 4-17-21

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ **Storage Location** _____

TestAmerica Cooler # 77 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# IR-11 (CF +0.1 °C) Observed Cooler Temp. 3.2 °C Corrected Cooler Temp. 3.3 °C
 IR GUN #IR-12 (CF +0.2 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 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 NA
 -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)?
 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# HC022887
 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 _____

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

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: 500-197699-1

Login Number: 197699

List Source: Eurofins TestAmerica, Chicago

List Number: 1

Creator: Scott, Sherri L

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	4.6,2.5,3.4,4.0,3.2,0.3
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

Eurofins TestAmerica, Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

Laboratory Job ID: 500-197700-1
Client Project/Site: Penta Wood 11222418

For:
GHD Services Inc.
1801 Old Highway 8 NW
Suite 114
St. Paul, Minnesota 55112

Attn: Mr. Grant Anderson



Authorized for release by:
4/28/2021 6:56:46 AM

Richard Wright, Senior Project Manager
(708)746-0045
Richard.Wright@Eurofinset.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:

www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

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

Job ID: 500-197700-1

Job ID: 500-197700-1

Laboratory: Eurofins TestAmerica, Chicago

Narrative

Job Narrative 500-197700-1

Receipt

The samples were received on 4/16/2021 9:15 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 4.7° 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 Semi VOA

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: 500-197700-1

Client Sample ID: W-210415-RA-104

Lab Sample ID: 500-197700-1

No Detections.

Client Sample ID: W-210415-RA-106

Lab Sample ID: 500-197700-2

No Detections.

Client Sample ID: Trip Blank

Lab Sample ID: 500-197700-3

No Detections.

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This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

Method Summary

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

Job ID: 500-197700-1

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

Protocol References:

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

Laboratory References:

TAL CHI = Eurofins TestAmerica, 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: 500-197700-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
500-197700-1	W-210415-RA-104	Water	04/15/21 12:35	04/16/21 09:15	
500-197700-2	W-210415-RA-106	Water	04/15/21 12:55	04/16/21 09:15	
500-197700-3	Trip Blank	Water	04/15/21 00:00	04/16/21 09:15	

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Client Sample Results

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

Job ID: 500-197700-1

Client Sample ID: W-210415-RA-104

Lab Sample ID: 500-197700-1

Date Collected: 04/15/21 12:35

Matrix: Water

Date Received: 04/16/21 09:15

Method: 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			04/23/21 03:07	1
Toluene	<0.15		0.50	0.15	ug/L			04/23/21 03:07	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/23/21 03:07	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/23/21 03:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		75 - 126		04/23/21 03:07	1
Toluene-d8 (Surr)	99		75 - 120		04/23/21 03:07	1
4-Bromofluorobenzene (Surr)	96		72 - 124		04/23/21 03:07	1
Dibromofluoromethane	107		75 - 120		04/23/21 03:07	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.26		0.83	0.26	ug/L		04/16/21 21:43	04/19/21 16:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	97		36 - 120	04/16/21 21:43	04/19/21 16:41	1
2-Fluorobiphenyl (Surr)	86		34 - 110	04/16/21 21:43	04/19/21 16:41	1
Terphenyl-d14 (Surr)	99		40 - 145	04/16/21 21:43	04/19/21 16:41	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.090		0.10	0.090	ug/L		04/19/21 08:10	04/20/21 06:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	101		25 - 130	04/19/21 08:10	04/20/21 06:34	1

Client Sample Results

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

Job ID: 500-197700-1

Client Sample ID: W-210415-RA-106

Lab Sample ID: 500-197700-2

Date Collected: 04/15/21 12:55

Matrix: Water

Date Received: 04/16/21 09:15

Method: 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			04/23/21 03:35	1
Toluene	<0.15		0.50	0.15	ug/L			04/23/21 03:35	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/23/21 03:35	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/23/21 03:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 126		04/23/21 03:35	1
Toluene-d8 (Surr)	100		75 - 120		04/23/21 03:35	1
4-Bromofluorobenzene (Surr)	95		72 - 124		04/23/21 03:35	1
Dibromofluoromethane	107		75 - 120		04/23/21 03:35	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.24		0.79	0.24	ug/L		04/16/21 21:43	04/19/21 17:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	88		36 - 120	04/16/21 21:43	04/19/21 17:09	1
2-Fluorobiphenyl (Surr)	84		34 - 110	04/16/21 21:43	04/19/21 17:09	1
Terphenyl-d14 (Surr)	89		40 - 145	04/16/21 21:43	04/19/21 17:09	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.086		0.096	0.086	ug/L		04/19/21 08:10	04/20/21 06:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	107		25 - 130	04/19/21 08:10	04/20/21 06:54	1

Client Sample Results

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

Job ID: 500-197700-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-197700-3

Date Collected: 04/15/21 00:00

Matrix: Water

Date Received: 04/16/21 09:15

Method: 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			04/23/21 01:13	1
Toluene	<0.15		0.50	0.15	ug/L			04/23/21 01:13	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/23/21 01:13	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/23/21 01:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		75 - 126		04/23/21 01:13	1
Toluene-d8 (Surr)	99		75 - 120		04/23/21 01:13	1
4-Bromofluorobenzene (Surr)	95		72 - 124		04/23/21 01:13	1
Dibromofluoromethane	106		75 - 120		04/23/21 01:13	1

Definitions/Glossary

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

Job ID: 500-197700-1

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: 500-197700-1

GC/MS VOA

Analysis Batch: 594599

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197700-1	W-210415-RA-104	Total/NA	Water	8260B	
500-197700-2	W-210415-RA-106	Total/NA	Water	8260B	
500-197700-3	Trip Blank	Total/NA	Water	8260B	
MB 500-594599/5	Method Blank	Total/NA	Water	8260B	
LCS 500-594599/3	Lab Control Sample	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 593749

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197700-1	W-210415-RA-104	Total/NA	Water	3510C	
500-197700-2	W-210415-RA-106	Total/NA	Water	3510C	
MB 500-593749/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-593749/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 500-593749/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 593899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-593749/1-A	Method Blank	Total/NA	Water	8270D	593749
LCS 500-593749/2-A	Lab Control Sample	Total/NA	Water	8270D	593749
LCS 500-593749/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	593749

Analysis Batch: 593917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197700-1	W-210415-RA-104	Total/NA	Water	8270D	593749
500-197700-2	W-210415-RA-106	Total/NA	Water	8270D	593749

GC Semi VOA

Prep Batch: 593888

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197700-1	W-210415-RA-104	Total/NA	Water	8151A	
500-197700-2	W-210415-RA-106	Total/NA	Water	8151A	
MB 500-593888/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-593888/2-A	Lab Control Sample	Total/NA	Water	8151A	

Analysis Batch: 594024

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-197700-1	W-210415-RA-104	Total/NA	Water	8151A	593888
500-197700-2	W-210415-RA-106	Total/NA	Water	8151A	593888
MB 500-593888/1-A	Method Blank	Total/NA	Water	8151A	593888
LCS 500-593888/2-A	Lab Control Sample	Total/NA	Water	8151A	593888

Surrogate Summary

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

Job ID: 500-197700-1

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)
500-197700-1	W-210415-RA-104	97	99	96	107
500-197700-2	W-210415-RA-106	98	100	95	107
500-197700-3	Trip Blank	98	99	95	106
LCS 500-594599/3	Lab Control Sample	94	100	91	101
MB 500-594599/5	Method Blank	96	99	97	106

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)
500-197700-1	W-210415-RA-104	97	86	99
500-197700-2	W-210415-RA-106	88	84	89
LCS 500-593749/2-A	Lab Control Sample	79	81	92
LCS 500-593749/3-A	Lab Control Sample Dup	79	85	94
MB 500-593749/1-A	Method Blank	77	66	99

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)
		DCPAA2 (25-130)
500-197700-1	W-210415-RA-104	101
500-197700-2	W-210415-RA-106	107
LCS 500-593888/2-A	Lab Control Sample	96
MB 500-593888/1-A	Method Blank	89

Surrogate Legend

DCPAA = DCAA

QC Sample Results

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

Job ID: 500-197700-1

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

Lab Sample ID: MB 500-594599/5
Matrix: Water
Analysis Batch: 594599

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			04/23/21 00:17	1
Toluene	<0.15		0.50	0.15	ug/L			04/23/21 00:17	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/23/21 00:17	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/23/21 00:17	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	96		75 - 126		04/23/21 00:17	1
Toluene-d8 (Surr)	99		75 - 120		04/23/21 00:17	1
4-Bromofluorobenzene (Surr)	97		72 - 124		04/23/21 00:17	1
Dibromofluoromethane	106		75 - 120		04/23/21 00:17	1

Lab Sample ID: LCS 500-594599/3
Matrix: Water
Analysis Batch: 594599

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	50.8		ug/L		102	70 - 123
Xylenes, Total	100	100		ug/L		100	70 - 125

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	94		75 - 126
Toluene-d8 (Surr)	100		75 - 120
4-Bromofluorobenzene (Surr)	91		72 - 124
Dibromofluoromethane	101		75 - 120

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

Lab Sample ID: MB 500-593749/1-A
Matrix: Water
Analysis Batch: 593899

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 593749

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Naphthalene	<0.25		0.80	0.25	ug/L		04/16/21 21:43	04/19/21 13:21	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Nitrobenzene-d5 (Surr)	77		36 - 120	04/16/21 21:43	04/19/21 13:21	1
2-Fluorobiphenyl (Surr)	66		34 - 110	04/16/21 21:43	04/19/21 13:21	1
Terphenyl-d14 (Surr)	99		40 - 145	04/16/21 21:43	04/19/21 13:21	1

Lab Sample ID: LCS 500-593749/2-A
Matrix: Water
Analysis Batch: 593899

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 593749

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

Eurofins TestAmerica, Chicago

QC Sample Results

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

Job ID: 500-197700-1

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

Lab Sample ID: LCS 500-593749/2-A
Matrix: Water
Analysis Batch: 593899

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 593749

Surrogate	LCS		Limits
	%Recovery	Qualifier	
Nitrobenzene-d5 (Surr)	79		36 - 120
2-Fluorobiphenyl (Surr)	81		34 - 110
Terphenyl-d14 (Surr)	92		40 - 145

Lab Sample ID: LCSD 500-593749/3-A
Matrix: Water
Analysis Batch: 593899

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 593749

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
							Limits	RPD		
Naphthalene	32.0	17.7		ug/L		55	36 - 110	3		20

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
Nitrobenzene-d5 (Surr)	79		36 - 120
2-Fluorobiphenyl (Surr)	85		34 - 110
Terphenyl-d14 (Surr)	94		40 - 145

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 500-593888/1-A
Matrix: Water
Analysis Batch: 594024

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 593888

Analyte	MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Pentachlorophenol	<0.090		0.10	0.090	ug/L		04/19/21 08:10	04/19/21 23:27	1

Surrogate	MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCAA	89		25 - 130	04/19/21 08:10	04/19/21 23:27	1

Lab Sample ID: LCS 500-593888/2-A
Matrix: Water
Analysis Batch: 594024

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 593888

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	
							Limits	RPD
Pentachlorophenol	2.53	1.65		ug/L		65	40 - 122	

Surrogate	LCS		Limits
	%Recovery	Qualifier	
DCAA	96		25 - 130

Lab Chronicle

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

Job ID: 500-197700-1

Client Sample ID: W-210415-RA-104

Lab Sample ID: 500-197700-1

Date Collected: 04/15/21 12:35

Matrix: Water

Date Received: 04/16/21 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	594599	04/23/21 03:07	PMF	TAL CHI
Total/NA	Prep	3510C			593749	04/16/21 21:43	ACK	TAL CHI
Total/NA	Analysis	8270D		1	593917	04/19/21 16:41	AJD	TAL CHI
Total/NA	Prep	8151A			593888	04/19/21 08:10	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594024	04/20/21 06:34	JBj	TAL CHI

Client Sample ID: W-210415-RA-106

Lab Sample ID: 500-197700-2

Date Collected: 04/15/21 12:55

Matrix: Water

Date Received: 04/16/21 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	594599	04/23/21 03:35	PMF	TAL CHI
Total/NA	Prep	3510C			593749	04/16/21 21:43	ACK	TAL CHI
Total/NA	Analysis	8270D		1	593917	04/19/21 17:09	AJD	TAL CHI
Total/NA	Prep	8151A			593888	04/19/21 08:10	DAK	TAL CHI
Total/NA	Analysis	8151A		1	594024	04/20/21 06:54	JBj	TAL CHI

Client Sample ID: Trip Blank

Lab Sample ID: 500-197700-3

Date Collected: 04/15/21 00:00

Matrix: Water

Date Received: 04/16/21 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	594599	04/23/21 01:13	PMF	TAL CHI

Laboratory References:

TAL CHI = Eurofins TestAmerica, 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: 500-197700-1

Laboratory: Eurofins TestAmerica, Chicago

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-21

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Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-197700-1

Login Number: 197700

List Source: Eurofins TestAmerica, Chicago

List Number: 1

Creator: Scott, Sherri L

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	4.7
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

Eurofins TestAmerica, Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

Laboratory Job ID: 500-198329-1
Client Project/Site: Penta Wood 11222418

For:
GHD Services Inc.
1801 Old Highway 8 NW
Suite 114
St. Paul, Minnesota 55112

Attn: Mr. Grant Anderson



Authorized for release by:
5/11/2021 1:56:04 PM

Richard Wright, Senior Project Manager
(708)746-0045
Richard.Wright@Eurofinset.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

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

Job ID: 500-198329-1

Job ID: 500-198329-1

Laboratory: Eurofins TestAmerica, Chicago

Narrative

Job Narrative 500-198329-1

Receipt

The samples were received on 4/28/2021 9:20 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 5.2° C.

The container label for the following samples did not match the information listed on the Chain-of-Custody (COC): W-210426-RA-07 (500-198329-1) and W-210426-RA-08 (500-198329-2). The container labels list <W-210426-RA-107 and 108>, while the COC lists <W-210426-RA-07 and 08>. The samples were logged per the COC.

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: The following samples contained one base surrogate outside acceptance limits: W-210426-RA-07 (500-198329-1) and W-210426-RA-08 (500-198329-2). The laboratory's SOP allows one base and one acid surrogate to be outside acceptance limits; therefore, re-extraction was not performed. These results have been reported and qualified.

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.

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: 500-198329-1

Client Sample ID: W-210426-RA-07

Lab Sample ID: 500-198329-1

No Detections.

Client Sample ID: W-210426-RA-08

Lab Sample ID: 500-198329-2

No Detections.

Client Sample ID: Trip Blank

Lab Sample ID: 500-198329-3

No Detections.

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This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Chicago

Method Summary

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

Job ID: 500-198329-1

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

Protocol References:

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

Laboratory References:

TAL CHI = Eurofins TestAmerica, 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: 500-198329-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
500-198329-1	W-210426-RA-07	Water	04/26/21 14:45	04/28/21 09:20	
500-198329-2	W-210426-RA-08	Water	04/26/21 14:50	04/28/21 09:20	
500-198329-3	Trip Blank	Water	04/26/21 00:00	04/28/21 09:20	

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Client Sample Results

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

Job ID: 500-198329-1

Client Sample ID: W-210426-RA-07

Lab Sample ID: 500-198329-1

Date Collected: 04/26/21 14:45

Matrix: Water

Date Received: 04/28/21 09:20

Method: 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			05/05/21 15:01	1
Toluene	<0.15		0.50	0.15	ug/L			05/05/21 15:01	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/05/21 15:01	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/05/21 15:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		75 - 126		05/05/21 15:01	1
Toluene-d8 (Surr)	94		75 - 120		05/05/21 15:01	1
4-Bromofluorobenzene (Surr)	92		72 - 124		05/05/21 15:01	1
Dibromofluoromethane	112		75 - 120		05/05/21 15:01	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.23		0.76	0.23	ug/L		04/29/21 10:27	04/30/21 23:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	88		36 - 120	04/29/21 10:27	04/30/21 23:01	1
2-Fluorobiphenyl (Surr)	95		34 - 110	04/29/21 10:27	04/30/21 23:01	1
Terphenyl-d14 (Surr)	165 X		40 - 145	04/29/21 10:27	04/30/21 23:01	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.086		0.096	0.086	ug/L		04/30/21 11:23	05/03/21 08:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	84		25 - 130	04/30/21 11:23	05/03/21 08:22	1

Client Sample Results

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

Job ID: 500-198329-1

Client Sample ID: W-210426-RA-08

Lab Sample ID: 500-198329-2

Date Collected: 04/26/21 14:50

Matrix: Water

Date Received: 04/28/21 09:20

Method: 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			05/05/21 15:27	1
Toluene	<0.15		0.50	0.15	ug/L			05/05/21 15:27	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/05/21 15:27	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/05/21 15:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	116		75 - 126		05/05/21 15:27	1
Toluene-d8 (Surr)	91		75 - 120		05/05/21 15:27	1
4-Bromofluorobenzene (Surr)	94		72 - 124		05/05/21 15:27	1
Dibromofluoromethane	116		75 - 120		05/05/21 15:27	1

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

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	<0.24		0.77	0.24	ug/L		04/29/21 10:27	04/30/21 23:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	97		36 - 120	04/29/21 10:27	04/30/21 23:23	1
2-Fluorobiphenyl (Surr)	103		34 - 110	04/29/21 10:27	04/30/21 23:23	1
Terphenyl-d14 (Surr)	166 X		40 - 145	04/29/21 10:27	04/30/21 23:23	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.087		0.097	0.087	ug/L		04/30/21 11:23	05/01/21 00:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	66		25 - 130	04/30/21 11:23	05/01/21 00:57	1

Client Sample Results

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

Job ID: 500-198329-1

Client Sample ID: Trip Blank

Lab Sample ID: 500-198329-3

Date Collected: 04/26/21 00:00

Matrix: Water

Date Received: 04/28/21 09:20

Method: 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			05/05/21 15:53	1
Toluene	<0.15		0.50	0.15	ug/L			05/05/21 15:53	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/05/21 15:53	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/05/21 15:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		75 - 126		05/05/21 15:53	1
Toluene-d8 (Surr)	93		75 - 120		05/05/21 15:53	1
4-Bromofluorobenzene (Surr)	89		72 - 124		05/05/21 15:53	1
Dibromofluoromethane	115		75 - 120		05/05/21 15:53	1

Definitions/Glossary

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

Job ID: 500-198329-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
X	Surrogate recovery exceeds control 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: 500-198329-1

GC/MS VOA

Analysis Batch: 596852

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-198329-1	W-210426-RA-07	Total/NA	Water	8260B	
500-198329-2	W-210426-RA-08	Total/NA	Water	8260B	
500-198329-3	Trip Blank	Total/NA	Water	8260B	
MB 500-596852/6	Method Blank	Total/NA	Water	8260B	
LCS 500-596852/4	Lab Control Sample	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 595870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-198329-1	W-210426-RA-07	Total/NA	Water	3510C	
500-198329-2	W-210426-RA-08	Total/NA	Water	3510C	
MB 500-595870/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-595870/2-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 596169

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-198329-1	W-210426-RA-07	Total/NA	Water	8270D	595870
500-198329-2	W-210426-RA-08	Total/NA	Water	8270D	595870
MB 500-595870/1-A	Method Blank	Total/NA	Water	8270D	595870
LCS 500-595870/2-A	Lab Control Sample	Total/NA	Water	8270D	595870

GC Semi VOA

Prep Batch: 596116

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-198329-1	W-210426-RA-07	Total/NA	Water	8151A	
500-198329-2	W-210426-RA-08	Total/NA	Water	8151A	
MB 500-596116/1-A	Method Blank	Total/NA	Water	8151A	
LCS 500-596116/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 500-596116/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	

Analysis Batch: 596192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-198329-2	W-210426-RA-08	Total/NA	Water	8151A	596116
MB 500-596116/1-A	Method Blank	Total/NA	Water	8151A	596116
LCS 500-596116/2-A	Lab Control Sample	Total/NA	Water	8151A	596116
LCSD 500-596116/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	596116

Analysis Batch: 596361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-198329-1	W-210426-RA-07	Total/NA	Water	8151A	596116

Surrogate Summary

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

Job ID: 500-198329-1

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)
500-198329-1	W-210426-RA-07	111	94	92	112
500-198329-2	W-210426-RA-08	116	91	94	116
500-198329-3	Trip Blank	114	93	89	115
LCS 500-596852/4	Lab Control Sample	103	96	90	106
MB 500-596852/6	Method Blank	111	94	90	114

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)
500-198329-1	W-210426-RA-07	88	95	165 X
500-198329-2	W-210426-RA-08	97	103	166 X
LCS 500-595870/2-A	Lab Control Sample	95	102	122
MB 500-595870/1-A	Method Blank	83	89	141

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)
		DCPAA2 (25-130)
500-198329-1	W-210426-RA-07	84
500-198329-2	W-210426-RA-08	66
LCS 500-596116/2-A	Lab Control Sample	74
LCSD 500-596116/3-A	Lab Control Sample Dup	80
MB 500-596116/1-A	Method Blank	71

Surrogate Legend

DCPAA = DCAA

QC Sample Results

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

Job ID: 500-198329-1

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

Lab Sample ID: MB 500-596852/6
Matrix: Water
Analysis Batch: 596852

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			05/05/21 10:42	1
Toluene	<0.15		0.50	0.15	ug/L			05/05/21 10:42	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			05/05/21 10:42	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			05/05/21 10:42	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	111		75 - 126		05/05/21 10:42	1
Toluene-d8 (Surr)	94		75 - 120		05/05/21 10:42	1
4-Bromofluorobenzene (Surr)	90		72 - 124		05/05/21 10:42	1
Dibromofluoromethane	114		75 - 120		05/05/21 10:42	1

Lab Sample ID: LCS 500-596852/4
Matrix: Water
Analysis Batch: 596852

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	49.0		ug/L		98	70 - 125
Ethylbenzene	50.0	49.9		ug/L		100	70 - 123
Xylenes, Total	100	101		ug/L		101	70 - 125

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	103		75 - 126
Toluene-d8 (Surr)	96		75 - 120
4-Bromofluorobenzene (Surr)	90		72 - 124
Dibromofluoromethane	106		75 - 120

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

Lab Sample ID: MB 500-595870/1-A
Matrix: Water
Analysis Batch: 596169

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 595870

Analyte	MB MB		LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Naphthalene	<0.25		0.80	0.25	ug/L		04/29/21 10:27	04/30/21 21:54	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Nitrobenzene-d5 (Surr)	83		36 - 120	04/29/21 10:27	04/30/21 21:54	1
2-Fluorobiphenyl (Surr)	89		34 - 110	04/29/21 10:27	04/30/21 21:54	1
Terphenyl-d14 (Surr)	141		40 - 145	04/29/21 10:27	04/30/21 21:54	1

Lab Sample ID: LCS 500-595870/2-A
Matrix: Water
Analysis Batch: 596169

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 595870

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

Euofins TestAmerica, Chicago

QC Sample Results

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

Job ID: 500-198329-1

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

Lab Sample ID: LCS 500-595870/2-A
Matrix: Water
Analysis Batch: 596169

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 595870

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Nitrobenzene-d5 (Surr)	95		36 - 120
2-Fluorobiphenyl (Surr)	102		34 - 110
Terphenyl-d14 (Surr)	122		40 - 145

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 500-596116/1-A
Matrix: Water
Analysis Batch: 596192

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 596116

Analyte	MB Result	MB Qualifier	LOQ	LOD	Unit	D	Prepared	Analyzed	Dil Fac
Pentachlorophenol	<0.090		0.10	0.090	ug/L		04/30/21 11:23	04/30/21 23:40	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	71		25 - 130	04/30/21 11:23	04/30/21 23:40	1

Lab Sample ID: LCS 500-596116/2-A
Matrix: Water
Analysis Batch: 596192

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 596116

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Pentachlorophenol	2.53	1.68		ug/L		67	40 - 122

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCAA	74		25 - 130

Lab Sample ID: LCSD 500-596116/3-A
Matrix: Water
Analysis Batch: 596192

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 596116

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Pentachlorophenol	2.53	1.71		ug/L		68	40 - 122	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCAA	80		25 - 130

Lab Chronicle

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

Job ID: 500-198329-1

Client Sample ID: W-210426-RA-07

Lab Sample ID: 500-198329-1

Date Collected: 04/26/21 14:45

Matrix: Water

Date Received: 04/28/21 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	596852	05/05/21 15:01	PMF	TAL CHI
Total/NA	Prep	3510C			595870	04/29/21 10:27	DAK	TAL CHI
Total/NA	Analysis	8270D		1	596169	04/30/21 23:01	SS	TAL CHI
Total/NA	Prep	8151A			596116	04/30/21 11:23	DAK	TAL CHI
Total/NA	Analysis	8151A		1	596361	05/03/21 08:22	JB	TAL CHI

Client Sample ID: W-210426-RA-08

Lab Sample ID: 500-198329-2

Date Collected: 04/26/21 14:50

Matrix: Water

Date Received: 04/28/21 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	596852	05/05/21 15:27	PMF	TAL CHI
Total/NA	Prep	3510C			595870	04/29/21 10:27	DAK	TAL CHI
Total/NA	Analysis	8270D		1	596169	04/30/21 23:23	SS	TAL CHI
Total/NA	Prep	8151A			596116	04/30/21 11:23	DAK	TAL CHI
Total/NA	Analysis	8151A		1	596192	05/01/21 00:57	JB	TAL CHI

Client Sample ID: Trip Blank

Lab Sample ID: 500-198329-3

Date Collected: 04/26/21 00:00

Matrix: Water

Date Received: 04/28/21 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	596852	05/05/21 15:53	PMF	TAL CHI

Laboratory References:

TAL CHI = Eurofins TestAmerica, 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: 500-198329-1

Laboratory: Eurofins TestAmerica, Chicago

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

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-21

- 1
- 2
- 3
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- 10
- 11
- 12
- 13
- 14
- 15



CONESTOGA-ROVERS & ASSOCIATES

CHAIN OF CUSTODY RECORD

COC NO.: 40675

PAGE 1 OF 1

(See Reverse Side for Instructions)

Address _____

Phone _____ Fax _____

500-198329

Project No/ Phase/Task Code: 11222418-01-05				Laboratory Name: Test America				Lab Location:				SSOW ID																			
Project Name: Penta wood				Lab Contact				Lab Quote No				Cooler No:																			
Project Location: SVA WI				SAMPLE TYPE				CONTAINER QUANTITY & PRESERVATION				ANALYSIS REQUESTED (See Back of C)																			
Chemistry Contact: G. Anderson				Matrix Code (see back of COC) Grab (G) or Comp (C)				Unpreserved Hydrochloric Acid (HCl) Nitric Acid (HNO ₃) Sulfuric Acid (H ₂ SO ₄) Sodium Hydroxide (NaOH) Methanol/Water (Soil VOC) EnCores 3x5-g, 1x25-g Other				Total Containers/Sample PCP Nephthalene STEX 500-198329 COC																			
Sampler(s): RAAmot																Carrier				Airbill No:											
Date Shipped:				COMMENTS/ SPECIAL INSTRUCTIONS:																											
Item	SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)			DATE (mm/dd/yy)	TIME (hh:mm)	Matrix Code	Grab (G) or Comp (C)	Unpreserved	Hydrochloric Acid (HCl)	Nitric Acid (HNO ₃)	Sulfuric Acid (H ₂ SO ₄)	Sodium Hydroxide (NaOH)	Methanol/Water (Soil VOC)	EnCores 3x5-g, 1x25-g	Other	Total Containers/Sample	PCP	Nephthalene	STEX	MS/MSD Request	COMMENTS/ SPECIAL INSTRUCTIONS:										
1	W-210426-PA-07			4/26/21	1445	6	6	4	3							7	3	3	3												
2	W-210426-PA-08			4/26/21	1450	6	6	4	3							7	3	3	3												
3	trip block								1							1		1													
TAT Required in business days (use separate COCs for different TATs)																Total Number of Containers				Notes/ Special Requirements											
<input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Days <input type="checkbox"/> 3 Days <input type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week <input type="checkbox"/> Other																All Samples in Cooler must be on COC				60-25.2											
RELINQUISHED BY				COMPANY				DATE				TIME				RECEIVED BY				COMPANY				DATE				TIME			
[Signature]				GHD				4/27/21				1600				[Signature]				ETA				4/28/21				0920			

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT - ALL FIELDS MUST BE COMPLETED ACCURATELY

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 500-198329-1

Login Number: 198329

List Source: Eurofins TestAmerica, Chicago

List Number: 1

Creator: Buckley, Paula M

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	5.2
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	IDs on containers do not match the COC. Logged in per COC.
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	



Appendix C

**Residential Well and Onsite Supply Well
Water Sample Data Validation**

Technical Memorandum

September 17, 2021

To	Tim Ree, GHD		
Copy to	Ryan Aamot, GHD		
From	Grant Anderson/lg/1	Tel	+1 612 524 6836
Subject	Analytical Results and Reduced Data Validation Residential Water Sampling Event Penta Wood Products Superfund Site Siren, Wisconsin April 2021	Project no.	11222418

1. Introduction

This document details a reduced validation of analytical results for residential water samples collected at the Penta Wood Products Superfund Site during April 2021. Samples were submitted to Eurofins TestAmerica (TA) 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 Services, Inc. (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 forms, 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:

- i. "Quality Assurance Project Plan, Long Term Response Action", Rev. II, February 2005 with addendums
- ii. "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", USEPA 540/R-99/008, October 1999

Item ii. will subsequently be referred to as the "Guidelines" in this Memorandum.

2. Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in Table 3. Sample chain of custody documents and analytical reports were used to determine sample holding times. All samples were prepared and 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

In accordance with the methods employed, all samples, blanks, and QC samples analyzed for organics are spiked with surrogate compounds prior to sample extraction and/or 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 or acid fractions 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 (LCS) Analyses

LCS and/or laboratory control sample duplicates (LCSD) are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects. The relative percent difference (RPD) of the LCS/LCSD recoveries is used to evaluate analytical precision.

LCS/LCSD were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

The LCS/LCSD contained all compounds of interest. All LCS recoveries and RPDs were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision.

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 a known concentration of the analyte of concern and analyzed as MS/MSD samples. The RPD between the MS and MSD is used to assess analytical precision.

MS/MSD analyses were performed as specified in Table 1. The laboratory performed additional MS/MSD analyses internally.

The MS/MSD samples were spiked with all compounds of interest. All percent recoveries and RPD values were within the laboratory control limits or yielded outlying recoveries that did not result in qualified data, demonstrating acceptable analytical accuracy and precision.

7. Field QA/QC Samples

The field QA/QC consisted of three trip blank samples, 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, three trip blanks were submitted to the laboratory for VOC analysis. All results were non-detect for the compounds of interest.

Field Blank Sample Analysis

To assess ambient conditions at the site and cleanliness of sample containers, one field blank sample was submitted for analysis, as identified in Table 1. All results were non-detect for the compounds 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

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each analyte. Positive analyte detections less than the RL but greater than the MDL are qualified as estimated (J) in Table 2 unless qualified otherwise in this memorandum. Non-detect results are presented as non-detect at the RL in Table 2.

9. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 2 are acceptable without qualification.

Regards,



Grant Anderson
Chemist

Encl.

Table 1

**Sample Collection and Analysis Summary
Residential Water Sampling Event
Penta Wood Site
Siren, Wisconsin
April 2021**

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters			Comments
					BTEX	Naphthalene	Pentachlorophenol	
W-210414-RA-100	RW05	water	04/14/2021	10:20:00	X	X	X	MS/MSD
W-210414-RA-101	RW03	water	04/14/2021	10:52:00	X	X	X	
W-210414-RA-102	RW03	water	04/14/2021	10:52:00	X	X	X	Duplicate (RA-101)
W-210414-RA-103	RW04	water	04/14/2021	11:07:00	X	X	X	
W-210414-RA-105	RW01	water	04/14/2021	11:07:00	X	X	X	Field Blank
Trip Blank	Lab	water	04/14/2021	00:00:00	X			Trip Blank
W-210415-RA-104	RW01	water	04/15/2021	12:35:00	X	X	X	
W-210415-RA-106	RW02	water	04/15/2021	12:55:00	X	X	X	
Trip Blank	Lab	water	04/15/2021	00:00:00	X			Trip Blank
W-210426-RA-07	RW06	water	04/26/2021	14:45:00	X	X	X	
W-210426-RA-08	RW06 SHOP	water	04/26/2021	14:50:00	X	X	X	
Trip Blank	Lab	water	04/26/2021	00:00:00	X			Trip Blank

Notes:

MS/MSD - Matrix spike/matrix spike duplicate

BTEX - Benzene, toluene, ethylbenzene, and xylenes (total)

Table 2

**Validated Analytical Results Summary
Residential Water Sampling Event
Penta Wood Site
Siren, Wisconsin
April 2021**

Location ID: Sample Name: Sample Date:	RW01 W-210415-RA-104 04/15/2021	RW02 W-210415-RA-106 04/15/2021	RW03 W-210414-RA-101 04/14/2021	RW03 W-210414-RA-102 04/14/2021 Duplicate	RW04 W-210414-RA-103 04/14/2021	RW05 W-210414-RA-100 04/14/2021	RW06 W-210426-RA-07 04/26/2021	RW06 SHOP W-210426-RA-08 04/26/2021	
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	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	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	0.50 U
Xylenes (total)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Semivolatile Organic Compounds									
Naphthalene	µg/L	0.83 U	0.79 U	0.78 U	0.85 U	0.75 U	0.80 U	0.76 U	0.77 U
Herbicides									
Pentachlorophenol	µg/L	0.10 U	0.096 U	0.10 U	0.098 U	0.096 U	0.099 U	0.096 U	0.097 U

Notes:

U - Not detected at the associated reporting limit

Table 3

**Analytical Methods and Holding Time Criteria
Residential Water Sampling Event
Penta Wood Site
Siren, Wisconsin
April 2021**

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:

Method Reference:

SW-846 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, 1986, with subsequent revisions

BTEX - Benzene, toluene, ethylbenzene, and xylenes (total)

Appendix D

Site Inspection Forms

Continuing Obligations Inspection Form
 Penta Wood Products Superfund Site
 Siren, Wisconsin

086165

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

✓	
✓	
✓	
✓	
✓	
✓	
✓	
✓	

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

✓	
✓	
✓	
✓	
✓	
✓	
✓	

Inspected By: Ryan Asmus

Date: 4/9/21

* replaced old signage with metal signs on 4/15/21, 4/19/21



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