March 6, 2019

Mr. Steven Moeller, P.G.
Engineering Geologist 1
New York State Dept. of Environmental Conservation
Division of Environmental Remediation, Region 9
270 Michigan Avenue
Buffalo, New York 14203-2999

Re: *Tecumseh Redevelopment Inc. - Lackawanna, New York Site*
EPA ID# NYD002134880
Hazardous Waste Management Units (HWMUs) 1 and 2
2018 Annual Groundwater Quality Monitoring Report - REVISED

Dear Mr. Moeller:

On behalf of Tecumseh Redevelopment Inc. (Tecumseh), TurnKey Environmental Restoration, LLC (TurnKey) has prepared this letter report to transmit the results of the 2018 annual groundwater monitoring event conducted at Hazardous Waste Management Unit No. 1 (HWMU-1A and HWMU-1B) and Hazardous Waste Management Unit No. 2 (HWMU-2) at the Tecumseh Site in Lackawanna, New York (see Figure 1). This letter report addresses the comments received from the New York State Department of Environmental Conservation (NYSDEC or the Department) on February 7, 2019.

TurnKey conducted the groundwater monitoring at HWMUs-1A and -1B on April 26, 2018 and HWMU-2 on April 27, 2018. The groundwater monitoring network wells are summarized in Table 1 and shown on Figures 2 and 3. Table 2 lists the site-specific constituents of concern (SSCOCs) that have been detected at concentrations above their respective NYSDEC Class GA Groundwater Quality Standard (GWQS)/Guidance Value (GV) at a minimum of one location for each HWMU. A summary of field activities and findings for each HWMU is presented below.

PURPOSE

The activities conducted during the April 2018 groundwater monitoring event were performed in general accordance with the following document:

- Groundwater Monitoring, Sampling and Analysis Plan for HWMU-1 and HWMU-2, Tecumseh Redevelopment, Inc., December 2017.

This annual report includes a detailed discussion of current groundwater quality compared to historical data for HWMU-1A/1B and HWMU-2. Tables and graphs are provided to

summarize groundwater elevations, analytical data, and illustrate trends in groundwater quality and flow patterns.

GROUNDWATER ELEVATIONS & FLOW

On April 26, 2018, groundwater elevations were measured in 19 monitoring wells and four piezometers near HWMU-1A/1B and seven monitoring wells near HWMU-2. Monitoring Wells MWN-03 (HWMU-1A) and MWN-04 (HWMU-1B) are located on the Steel Winds leased premises and were locked at the time of sampling; therefore, depth to water measurements were not obtained. Table 3 summarizes the depth to water and calculated groundwater elevation for each monitored location. The Lake Erie elevation presented in Table 3 was obtained from the National Oceanic and Atmospheric Administration/National Ocean Service's (NOAA/NOS) Center for Operational Oceanographic Products and Services (CO-OPS) website; Great Lakes Water Level Data Inventory for Station Number 9063020 Buffalo, Lake Erie, New York.

Groundwater elevation data for the current monitoring event are generally consistent with historical data. Attachment 1 includes historical elevation data and elevation versus time plots for each monitoring well and Lake Erie, showing seasonal fluctuations throughout each monitored year. Groundwater and Lake Erie elevations are also generally trending upward, possibly in response to increased precipitation (e.g., rain and snow) over the same period.

Figures 2 and 3 are isopotential maps representing the shallow groundwater within HWMU-1 and HWMU-2 using the April 26, 2018 groundwater elevations. As indicated, the shallow groundwater migrates toward Lake Erie with a localized mound flowing radially outward from HWMU-1B, which is consistent with historic flow patterns at the Site. The groundwater mounding, which is upwards of five feet beneath HWMU-1B, is due to the destruction of the temporary 30-mil reinforced polyvinyl chloride cover in 2005. Tecumseh proposed constructing a low-permeability geosynthetic/soil cover system over HWMU-1B as the final remedy in the 2014 Corrective Measures Study (CMS) Report. Groundwater flow direction continues west toward Lake Erie. Due to inconsistencies with groundwater flow direction at HWMU-2, all HWMU-2 network monitoring wells were resurveyed at top of polyvinyl chloride (PVC) riser on September 14, 2018.

RESULTS OF APRIL 2018 GROUNDWATER MONITORING

Table 4 (HWMU-1) and Table 5 (HWMU-2) summarize the field-measured parameters and analytical results for the April 2018 groundwater monitoring event. Concentrations that exceed NYSDEC Class GA GWQS/GVs are highlighted in yellow. Well MWS-11A was used as the upgradient network monitoring sampling location at HWMU-2 due to Well MW-2U1 being historically dry. Attachment 2A includes the groundwater field forms. Attachment 2B includes the analytical data package.

Emergent Contaminant Sampling & Analysis

For the annual 2018 groundwater monitoring event, the NYSDEC requested groundwater samples be analyzed for emergent contaminants as part of a state-wide initiative. Therefore,

groundwater samples collected from Well MW-1D2 (HWMU-1A) and Well MW-2D3 (HWMU-2) were analyzed for 1,4-dioxane and the NYSDEC list of 21 per- and polyfluoroalkyl acids (PFASs). NYSDEC sampling guidelines were followed and maintained prior to, during and after emergent contaminant sample collection. The 1,4-dioxane samples were extracted via EPA Method 3510C and analyzed via EPA Method 8270D Selective Ion Method (SIM). The PFAS samples were extracted and analyzed via EPA Method 537. As indicated on Tables 4A and 5A, several PFAS parameters and 1,4-dioxane were detected above laboratory method detection limits (MDLs) at both monitoring locations; however, estimated concentrations (above MDLs) of PFASs were also reported for the field and equipment blanks. At this time, NYSDEC has not published standards or guidance values but provided a draft document entitled "Emerging Contaminant Initial Site Sampling Results Checklist." The 2018 groundwater results were compared to the "action levels" provided on this checklist; only 1,2-dioxane in Well MW-2D3 exceeded the action level.

GROUNDWATER QUALITY TRENDS

A comparison of the 2018 analytical results to historical concentrations for each HWMU indicates detections of similar parameters at similar concentrations with limited exceptions. Attachment 3 includes concentration versus time plots by HWMU for the SSCOCs identified in Table 2. Concentrations reported below MDLs (i.e., non-detect) are not plotted.

For previous years, a trend analysis table has been provided to summarize the results of the concentration versus time plots presented in Attachment 3. However, upon further examination of the usefulness of this table, we have determined that a trend line and qualitative assessment of long-term and short-term trends provides a better summary of the long-term and short-term groundwater quality in each HWMU.

HWMU-1A TRENDS

- **Benzene:** Concentrations are above the GWQS of 1 ug/L in Wells MW-1U1, MW-1D3 and MW-1D4 and highest in the upgradient well supporting an apparent source. The long-term trend is decreasing in all wells. Well MW-1D2 concentrations are only slightly above and are trending very near the GWQS. Attachment 3 also includes an *Isoconcentration Plot of Benzene in Groundwater* prepared by Dames & Moore using 1992 and 1994 data. The plot illustrates that benzene concentrations have decreased with the most substantial decrease observed at upgradient well MW-1U1 (180 ug/L versus 22 ug/L in 2018).
- **Toluene:** The long-term concentration trend is decreasing for all wells and, as of 2017, the concentrations in all wells have been below the GWQS.
- **Total Xylenes:** The long-term trend is decreasing and approaching the GWQS of 5 ug/L in all four wells, with concentrations in Well MW-1D3 below the GWQS since 2015.
- **1,2,4- and 1,3,5-Trimethylbenzene:** Analysis for these parameters began in 2010 (Wells MW-1D2, -1D3 and -1D4) and 2013 (Well MW-1U1), with detections above

GWQS only observed in Well MW-1D2; a concentration decreasing trend has been observed with concentrations dropping below the GWQS of 5 ug/L during the 2018 sampling event.

- **Naphthalene:** Concentrations in Well MW-1D2 have historically been above the GWQS of 10 ug/L; however, a decreasing trend is apparent with an order of magnitude drop observed between 2004 (490 ug/L) and 2018 (44 ug/L). Concentrations in Wells MW-1D3 and MW-1D4 have been consistently below the GWQS since 2014. A decreasing trend below GWQS was observed in upgradient Well MW-1U1; however, concentrations have slightly exceeded the GWQS since 2016.
- **Total Recoverable Phenolics (TRP):** Concentrations in all four wells show a long-term increasing trend. Concentrations range from 6 ug/L (MW-1D2) to 180 ug/L (MW-1D3) based on the 2018 sampling event. The TRP concentrations have been compared to the GWQS for Total Phenolic Compounds of 1 ug/L. The current TRP analytical colorimetric method (i.e., EPA Method 9066) has limitation, as outlined in Alpha Analytical's letter in Attachment 4, and is inappropriate for characterization of phenolic compounds in groundwater. NYSDEC DER-10 [paragraph 2.1(b)5] indicates that "*gas chromatography methods with a mass spectrometer detector system must be used for analysis of semi-volatile contaminants.*" Therefore, we recommend analyzing for phenolic compounds using EPA Method 8270 during the next groundwater sampling event.

In general, the SSCOC concentrations in all wells are trending downward and approaching the GWQSs except for benzene in Well MW-1U1 (decreasing trend but above the GWQS), naphthalene in Well MW-1D2 (decreasing trend but above the GWQS) and TRP in all wells (increasing trend).

HWMU-1B TRENDS

- **Benzene:** Concentrations are above the GWQS of 1 ug/L in Wells MW-1U1, MW-1D1, MW-1D6 and MW-1D7 and highest in the upgradient well supporting an apparent source. The long-term trend is decreasing in Wells MW-1U1 and MW-1D7 but increasing in Well MW-1D1; however, the concentrations in MW-1D1 have been decreasing since 2015. Concentrations in Wells MW-1D8 and MWN-12 have dropped below the GWQS. Concentrations in Well MW-1D6 have been fluctuating above and below the GWQS with similar concentrations observed in 2008, 2015 and 2018; however, the long-term trend is slightly upward. Attachment 3 also includes an *Isoconcentration Plot of Benzene in Groundwater* prepared by Dames & Moore using 1992 and 1994 data. The plot illustrates that benzene concentrations have decreased except for a slight increase observed in well MW-1D1 (increased from 3.6 to 8.5 ug/L). The most substantial decrease has been observed at upgradient well MW-1U1, with an order of magnitude reduction in concentration (180 ug/L versus 22 ug/L).

- **Ethylbenzene:** An increasing concentration trend is observed in Well MW-1D1; however, concentrations have been decreasing since 2016. Concentrations in the remaining wells have not exceeded the GWQS of 5 ug/L.
- **Toluene:** Concentrations in upgradient Well MW-1U1 and MW-1D8 have trended below the GWQS of 5 ug/L. An increasing concentration trend is observed in Well MW-1D1; however, concentrations have been the same or decreasing since 2015. Concentrations in the remaining wells have not exceeded the GWQS.
- **Total Xylenes:** The long-term concentration trend is decreasing and approaching the GWQS of 5 ug/L in Wells MW-1U1 and MW-1D8. Concentrations are above the GWQS in Well MW-1D1 with an increasing long-term trend; however, concentrations have decreased since 2016. Concentrations in the remaining wells have not exceeded the GWQS.
- **Trichloroethene (TCE):** Concentrations in Well MW-1D7 have trended downward since 2006 and been below the GWQS of 5 ug/L since 2012. Although a long-term increasing concentration trend is apparent in Well MW-1D1, concentrations have been less than twice the GWQS since 2014 and dipped below the GWQS during the 2018 event.
- **Cis-1,2-Dichloroethene (DCE):** Concentrations have decreased in Well MW-1D7 to less than twice the GWQS of 5 ug/L.
- **Trans-1,2-DCE:** Concentrations in Well MW-1D7 remain at twice the GWQS of 5 ug/L. Similar concentrations have been observed in 2006 and 2016/2017; however, the long-term trend is slightly upward.
- **Vinyl Chloride:** Concentrations in Well MW-1D7 show a long-term increasing trend above the GWQS of 2 ug/L, which is indicative of TCE degradation.
- **Benzo(a)anthracene:** Concentrations in Wells MW-1D6, MW-1U1 and MWN-12 are two to three orders of magnitude above the GWQS of 0.002 ug/L; however, the long-term trend is decreasing, with the last detection observed in 2016 for Well MW-1D6. However, the MDL (0.61 ug/L) is higher than the GWQS due to a laboratory programming error, which has been corrected for the 2019 sampling.
- **Bis(2-ethylhexyl)phthalate (DEHP):** Concentrations in upgradient Well MWN-12 fluctuate around the GWQS of 5 ug/L with no apparent trend. Concentrations in Wells MW-1D1 and MW-1D7 dropped below the GWQS in 2013.
- **Chrysene:** Historically, concentrations in Wells MW-1D6 and MWN-12 have been two orders of magnitude above the GWQS (0.002 ug/L) with a long-term decreasing trend; however, there have been no detections since 2016. However, the MDL (0.54 ug/L) is higher than the GWQS due to a laboratory programming error, which has been corrected for the 2019 sampling.
- **Naphthalene:** Concentrations in Well MW-1D1 fluctuated significantly until 2009 where they have held steady well above the GWQS of 10 ug/L; however,

concentrations have been decreasing since 2015. Concentrations in Wells MW-1D8, MW-1U1 and MWN-12 have an overall decreasing trend with concentrations in MWN-12 and MW-1D8 dropping below the GWQS. Concentrations in Well MW-1D6 have historically fluctuated around the GWQS but have remained above since 2017.

- **TRP:** Concentrations in all four wells show an increasing trend. Concentrations range from 8 ug/L (MW-1D6) to 40 ug/L (MW-1D3) based on the 2018 sampling event.

In general, the SSCOC concentrations in all wells are trending downward and approaching the GWQSs except for Well MW-1D1 (increasing trends for benzene, ethylbenzene, toluene, total xylene, TCE, naphthalene and TRP) and TRP (increasing in all wells). TCE concentration have been below the GWQS in Well MW-1D7 since 2012 with the following trends observed for each daughter product: cis-1,2-DCE is decreasing, trans-1,2-DCE fluctuates but the trend remains neutral, and vinyl chloride has increased slightly. The preferred final remedy presented in the 2014 CMS Report is construction of a low-permeability geosynthetic/soil cover system over HWMU-1B, which would significantly mitigate potential leaching of contaminants to the groundwater.

HWMU-2 TRENDS

- **Benzene:** Concentrations is Well MW-2D3 are trending downward and approaching the GWQS of 1 ug/L. Concentrations in Well MW-2D4 have been below the GWQS since 2008. Sampling of upgradient Well MWS-11A began in 2017; benzene was detected at a concentration of 2.6 ug/L in 2017 and 2018.
- **Ethylbenzene:** Concentrations in Well MW-2D3 trended and have remained below the GWQS of 5 ug/L since 2015. Concentrations in the remaining wells have not exceeded the GWQS.
- **Toluene:** Concentrations in Well MW-2D3 trended and have remained below the GWQS of 5 ug/L since 2014. Concentrations in the remaining wells have not exceeded the GWQS.
- **Total Xylenes:** Concentrations in Well MW-2D3 remain above the GWQS of 5 ug/L; however, the trend is decreasing and with a significant drop observed between 2010 (57 ug/L) and 2018 (11 ug/L). Concentrations in Well MW-2D4 trended below the GWQS in 2008. The concentration observed in upgradient Well MWS-11A was estimated at the GWQS during the 2018 sampling event.
- **1,2,4-Trimethylbenzene:** This parameter was first detected in Well MW-2D3 in 2011 at a concentration slightly above the GWQS of 5 ug/L. Since 2014, concentrations in Well MW-2D3 have decreased and subsequently dropped below the GWQS in 2017.
- **Chrysene:** In 2017, chrysene was detected in upgradient Well MWS-11A at a concentration two orders of magnitude above the GWQS (0.002 ug/L). However,

the MDL (0.54 ug/L) is higher than the GWQS due to a laboratory programming error, which has been corrected for the 2019 sampling.

- **Naphthalene:** Concentrations in Well MW-2D3 have remained consistently above the GWQS of 10 ug/L with a long-term neutral trend; however, concentrations have decreased from 310 ug/L (2014) to 57 ug/L (2018). Concentrations in Well MW-2D4 trended below the GWQS in 2008. Concentrations in upgradient Well MWS-11A were detected above the GWQS in 2017 (160 ug/L) and 2018 (140 ug/L).
- **TRP:** Concentrations in Well MW-2D3 show a slight increasing trend. TRP was detected at estimated concentrations in upgradient Well MWS-11A in 2017 (9 ug/L) and 2018 (17 ug/L).

In general, the SSCOC concentrations in Well MW-2D3 are trending downward except for naphthalene (neutral) and TRP (slightly increasing). In upgradient Well MWS-11A, concentrations of benzene, chrysene and naphthalene are above GWQSs and TRP was detected. Since this well was not sampled prior to 2017, concentration trends cannot be established. Similar concentrations have been observed in upgradient Well MWS-11A and downgradient Well MW-2D3. Similar concentrations of benzene and naphthalene have also been observed in Well MWS-14 located upgradient of SWMUs S-07/S-20 and S-08 indicating residual ATP groundwater as a possible source.

NYSDEC EQuIS Deliverables

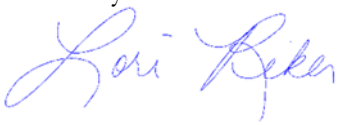
On September 20, 2018, TurnKey submitted the analytical data in Electronic Data Deliverable (EDD) format to NYSDEC on behalf of Tecumseh using the NYSDEC database software application EQuIS™. TurnKey received confirmation on September 24, 2018 that the submittal was successfully uploaded and available for use within the NYSDEC system.

Planned Activities

The next groundwater monitoring event for HWMU-1 and HWMU-2 is tentatively scheduled for April or May 2019. As indicated above, we intend to analyze future groundwater samples for phenolic compounds via EPA Method 8270 instead of TRP via EPA Method 9066. In addition, we propose to neutralize, using dilute sulfuric or muriatic acid, any purge water from monitoring wells with pH>12.5 to achieve a pH in the range of 9.0 to <12.0 prior to discharge to the surface.

Please contact us if you have any questions or require additional information.

Sincerely,
TurnKey Environmental Restoration, LLC



Lori E. Riker, P.E.
Sr. Project Manager

Att.
ec: Andrew Zwack (NYSDEC Region 9)
Stan Radon (NYSDEC Region 9)
Chad Staniszewski (NYSDEC Region 9)
Keith Nagel (Tecumseh Redevelopment)
Cary Mathias (ArcelorMittal)
Paul Werthman (TurnKey)
Brock Greene (TurnKey)

File: 0071-018-240

TABLES

TABLE 1

GROUNDWATER MONITORING NETWORK AND SAMPLE FREQUENCY

2018 Annual Event
Hazardous Waste Management Units HWMU-1 & HWMU-2
Tecumseh Redevelopment Inc.
Lackawanna, New York

Well Designation	Network Well	Monitoring Event [1]															
		2006		2007		2008		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
		1 SA	2 SA	1 SA	2 SA	1 SA	2 SA	Annual	Annual	Annual	Annual	Annual	Annual	Annual	Annual	Annual	Annual
HWMU-1A																	
MW-1D2	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
MW-1D3	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
MW-1D4	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
MW-1U1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
HWMU-1B																	
MW-1D1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
MW-1D6	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
MW-1D7	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
MW-1D8	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
MWN-12	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
HWMU-1A & HWMU-1B																	
MW-1D5		~ w a t e r l e v e l o n l y ~															
MWN-03		~ w a t e r l e v e l o n l y ~															
MWN-04		~ w a t e r l e v e l o n l y ~															
MWN-05A		~ w a t e r l e v e l o n l y ~															
MWN-13A		~ w a t e r l e v e l o n l y ~															
MWN-28A		~ w a t e r l e v e l o n l y ~															
MWN-29A		~ w a t e r l e v e l o n l y ~															
MWN-35A		~ w a t e r l e v e l o n l y ~															
MWN-36A		~ w a t e r l e v e l o n l y ~															
MWN-42A		~ w a t e r l e v e l o n l y ~															
P-4S		~ w a t e r l e v e l o n l y ~															
P-5S		~ w a t e r l e v e l o n l y ~															
P-6S		~ w a t e r l e v e l o n l y ~															
P-7S		~ w a t e r l e v e l o n l y ~															
WT8-01		~ w a t e r l e v e l o n l y ~															
WT8-02		~ w a t e r l e v e l o n l y ~															
HWMU-2																	
MW-2D2	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
MW-2D3	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
MW-2D4	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
MW-2U1		~ *Historically Dry* ~															
MWS-09		w a t e r l e v e l o n l y															
MWS-11A	x	~ *upgradient location for HWMU 2 - frequency shown above* ~														x	x
MWS-15		w a t e r l e v e l o n l y															
MWS-26A		w a t e r l e v e l o n l y															

Notes:

1. SA = semi-annual monitoring event.
2. MWS-11A was used as HWMU-2 upgradient monitoring location due to well MW-2U1 being historically dry.

TURNKEY ENVIRONMENTAL RESTORATION, LLC

TABLE 2

SUMMARY OF SITE-SPECIFIC CONSTITUENTS OF CONCERN

2018 Annual Event
Hazardous Waste Management Units HWMU-1 & HWMU-2
Tecumseh Redevelopment Inc.
Lackawanna, New York

Parameter	HWMU 1A	HWMU 1B	HWMU 2
Site-Specific Volatile Organic Compounds (SS-VOCs)-Method 8260C (CP-51 compounds in blue)			
Benzene	x	x	x
cis-1,2-Dichloroethene		x	
trans-1,2-Dichloroethene		x	
Ethylbenzene		x	x
Toluene	x	x	x
Trichloroethene		x	
1,2,4-Trimethylbenzene	x		x
1,3,5-Trimethylbenzene	x		
Vinyl chloride		x	
Xylenes, Total	x	x	x
Site-Specific Semi-Volatile Organic Compounds (SS-SVOCs)-Method 8270D (base-neutrals only)			
Benzo(a)anthracene		x	
Bis(2-ethylhexyl) phthalate		x	
Chrysene		x	x
Naphthalene	x	x	x
Total Recoverable Phenolics (TRP)-Method 9066			
Phenolics	x	x	x
Emergent Contaminant [2] -Method 8270 via Selective Ion Monitoring (SIM)			
1,4 - Dioxane	x		x
Emergent Contaminant [2] -EPA Method 537			
Per- and polyfluoroalkyl substances	x		x

Notes:

1. Parameter lists were modified in September 2009 with NYSDEC approval.
2. Emergent contaminant analyses performed on wells MW-1D2 and MW-2D3 per NYSDEC request.

TABLE 3

SUMMARY OF GROUNDWATER ELEVATIONS
April 26, 2018

2018 Annual Event
Hazardous Waste Management Units HWMU-1 & HWMU-2
Tecumseh Redevelopment Inc.
Lackawanna, New York

Location	TOR Elevation [1]	DTP (if present) (fbTOR)	DTW (fbTOR)	Product Thickness (feet)	GWE [1]	Corrected GWE [2]
HWMU-1A & 1B MONITORING WELLS (25)						
MW-1D1	610.59	NP	31.66	NP	578.93	578.93
MW-1D2	614.46	NP	40.83	NP	573.63	573.63
MW-1D3	612.69	NP	39.04	NP	573.65	573.65
MW-1D4	612.52	NP	38.76	NP	573.76	573.76
MW-1D5	613.49	NP	39.79	NP	573.70	573.70
MW-1D6	610.94	NP	36.99	NP	573.95	573.95
MW-1D7	611.26	NP	35.38	NP	575.88	575.88
MW-1D8	610.74	NP	34.14	NP	576.60	576.60
MW-1U1	613.18	NP	39.21	NP	573.97	573.97
MWN-03	611.96	NP	NM	NP	--	--
MWN-04	623.45	NP	NM	NP	--	--
MWN-05A	622.84	NP	49.47	NP	573.37	573.37
MWN-12	608.59	NP	35.11	NP	573.48	573.48
MWN-13A	607.32	NP	32.11	NP	575.21	575.21
MWN-28A	595.76	NP	21.70	NP	574.06	574.06
MWN-29A	596.19	NP	22.33	NP	573.86	573.86
MWN-35A	608.71	NP	34.58	NP	574.13	574.13
MWN-36A	598.42	NP	24.15	NP	574.27	574.27
MWN-42A	579.37	NP	5.52	NP	573.85	573.85
P-4S	610.85	NP	37.43	NP	573.42	573.42
P-5S	616.71	NP	43.07	NP	573.64	573.64
P-6S	618.92	NP	45.45	NP	573.47	573.47
P-7S	610.59	NP	37.11	NP	573.48	573.48
WT8-01	612.49	NP	38.65	NP	573.84	573.84
WT8-02	645.62	NP	71.87	NP	573.75	573.75
HWMU-2 MONITORING WELLS (8)						
MW-2D2	632.60	NP	58.49	NP	574.11	574.11
MW-2D3	635.52	NP	61.40	NP	574.12	574.12
MW-2D4	629.60	NP	55.38	NP	574.22	574.22
MW-2U1	629.69	DRY	DRY	DRY	DRY	DRY
MWS-09	630.82	NP	56.96	NP	573.86	573.86
MWS-11A	639.86	NP	65.02	NP	574.84	574.84
MWS-15	627.43	NP	52.37	NP	575.06	575.06
MWS-26A	625.61	NP	51.61	NP	574.00	574.00
LAKE ERIE						
Lake Erie [3]	NA	NP	NM	NP	573.60	573.60

Notes:
1. Top of Riser (TOR) elevation and Groundwater Elevation (GWE) are measured in feet referenced to NAVD 88 Datum.
2. Groundwater elevation (GWE) corrected based on the presence of free product (i.e., LNAPL), if applicable.
3. Source: NOAA Tides & Currents Web Page - Buffalo, NY Station ID 9063020

Acronyms:
fbTOR = feet below top of riser or casing
NM = not measured (MWN-03 and MWN-04 on First Wind property and locked)
NP = no product was present.

TABLE 4

SUMMARY OF HWMU-1 GROUNDWATER ANALYTICAL RESULTS

2018 Annual Event
Hazardous Waste Management Units HWMU-1 & HWMU-2
Tecumseh Redevelopment Inc.
Lackawanna, New York

Parameter[1]	Monitoring Well and HWMU Location																		GWQS[2]
	MW-1D1 (HWMU-1B)		**MW-1D2** (HWMU-1A)		**MW-1D3** (HWMU-1A)		**MW-1D4** (HWMU-1A)		**MW-1D6** (HWMU-1B)		**MW-1D7** (HWMU-1B)		**MW-1D8** (HWMU-1B)		**MWN-12** (HWMU-1B)		**MW-1U1** (HWMU-1A/1B)		
***Field Measurements*[3] :**																			
Sample No.	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	--
pH (units)	**11.91**	**11.64**	**12.65**	**12.63**	**12.72**	**12.80**	**12.87**	**12.90**	**12.05**	**12.03**	8.12	8.22	**11.50**	**11.50**	**13.33**	**13.31**	**12.95**	**12.95**	**6.5 - 8.5**
Temperature (°C)	13.2	13.7	13.4	13.6	14.0	14.8	14.8	14.5	13.0	13.1	13.0	13.2	13.7	13.6	10.9	11.0	10.8	9.9	**NA**
Sp. Conductance (uS)	3615	3842	1674	1728	3678	3652	2214	2193	4002	4133	4584	4380	2261	2268	5295	5062	2644	2642	**NA**
Turbidity (NTU)	12.50	11.00	4.82	8.37	6.32	5.55	4.70	4.66	5.40	5.24	5.12	5.07	4.48	3.82	9.64	12.50	3.76	4.94	**NA**
DO (ppm)	3.13	3.88	1.40	1.51	1.00	0.74	1.15	1.56	3.66	3.08	1.56	2.03	4.41	4.32	7.54	6.73	1.75	2.03	**NA**
Eh (mV)	-156	-152	-264	-234	-375	-360	-314	-332	-183	-203	-203	-198	-113	-110	-160	-159	-203	-192	**NA**
Total Volume purged (gallons)	12.5		19		5.5		3		12.5		6		4.5		1.5		5.25		**NA**
Appearance and Odor	Clear, odor	Clear, odor	Clear, odor	Clear, odor	Clear, odor	Clear, odor	Clear, odor	Clear, odor	Clear, no odor	Clear, no odor	Clear, odor	Clear, odor	Clear, no odor	Clear, no odor	Clear, odor	Clear, odor	Clear, no odor	Clear, no odor	**NA**
Volatile Organic Compounds (ug/L) :																			
Acetone	ND		--		--		--		2.3 J		ND		ND		10		1.9 J		**50***
Benzene	**8.5**		**1.3**		**5.2**		**5.6**		**2.0**		**7.0**		ND		0.32 J		**22**		**1**
1,1-Dichloroethane	ND		--		--		--		1.7 J		ND		ND		ND		ND		**5**
1,2-Dichloroethane	ND		--		--		--		0.29 J		ND		ND		ND		ND		**0.6**
cis-1,2-Dichloroethene	ND		--		--		--		ND		**7.9**		ND		ND		ND		**5**
trans-1,2-Dichloroethene	ND		--		--		--		ND		**10**		ND		ND		ND		**5**
Ethylbenzene	**14**		ND		ND		ND		ND		0.78 J		ND		ND		ND		**5**
Methylene Chloride	ND		--		--		--		0.7 J		ND		ND		ND		ND		**5**
Toluene	**6.6 J**		0.83 J		2.3 J		2.8		0.88 J		ND		ND		ND		4.3		**5**
Trichloroethene	4.2		--		--		--		ND		0.44 J		ND		ND		ND		**5**
1,2,4-Trimethylbenzene	**25**		3.9		ND		ND		1.2 J		ND		ND		ND		ND		**5**
1,3,5-Trimethylbenzene	ND		3		0.93 J		1.5 J		ND		ND		ND		ND		1 J		**5**
Vinyl Chloride	ND		ND		ND		ND		ND		**3.4**		ND		ND		ND		**2**
Xylenes, Total	**41**		4 J		4.8 J		**5.2**		ND		ND		ND		ND		**7.0**		**5**

TABLE 4

SUMMARY OF HWMU-1 GROUNDWATER ANALYTICAL RESULTS

2018 Annual Event
Hazardous Waste Management Units HWMU-1 & HWMU-2
Tecumseh Redevelopment Inc.
Lackawanna, New York

Parameter[1]	Monitoring Well and HWMU Location									GWQS[2]
	MW-1D1 (HWMU-1B)	**MW-1D2** (HWMU-1A)	**MW-1D3** (HWMU-1A)	**MW-1D4** (HWMU-1A)	**MW-1D6** (HWMU-1B)	**MW-1D7** (HWMU-1B)	**MW-1D8** (HWMU-1B)	**MWN-12** (HWMU-1B)	**MW-1U1** (HWMU-1A/1B)	
Semi-Volatile Organic Compounds (ug/L):										
Acenaphthene	2	0.83 J	0.84 J	1.2 J	ND	ND	ND	0.98 J	0.68 J	**20***
Acenaphthylene	25	11	1.1 J	1.8 J	0.66 J	ND	ND	ND	1.4 J	**--**
Anthracene	ND	ND	ND	ND	ND	ND	ND	ND	ND	**50***
Benzo(a)anthracene [4]	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.002***
Biphenyl	**8.4**	2.9	ND	ND	ND	ND	ND	ND	ND	**5**
Bis(2-Ethylhexyl)phthalate	ND	ND	ND	ND	ND	ND	ND	**8.5**	ND	**5**
Carbazole	0.9 J	1.1 J	1.9 J	2.5	3.3	ND	ND	ND	2	**--**
Chrysene [4]	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.002***
Dibenzofuran	11	4.7	0.89 J	1.7 J	1.4 J	ND	ND	ND	0.82 J	**--**
Fluoranthene	ND	0.72 J	ND	0.75 J	4.1	ND	ND	2.4	1.5 J	**50***
Fluorene	8.6	4.7	1.9 J	2.9	1.8 J	5.2	ND	2.5	1.7 J	**50***
2-Methylnaphthalene	4.5	26	1.1 J	2.2	2.1	ND	ND	ND	1 J	**--**
Naphthalene	**180**	**44**	7.4	8.1	**28**	ND	ND	0.87 J	**14**	**10***
Phenanthrene	2.1	3.8	2.5	3.8	11	ND	ND	3.7	2.9	**50***
Pyrene	ND	ND	0.64 J	ND	2	ND	ND	1.8 J	1.5 J	**50***
General Chemistry (ug/L):										
Total Recoverable Phenolics (TRP) [5]	**38**	**6 J**	**180**	**40**	**8**	**40**	ND	**24 J**	**15 J**	**1****

Notes:
1. Only those VOCs and SVOCs detected above the method detection limit at a minimum of one sample location are reported in this table.
2. NYSDEC Class "GA" Groundwater Quality Standards/Guidance Values (GWQS/GV) per 6 NYCRR Part 703.
3. Field measurements were collected immediately before and after groundwater sample collection.
4. Method detection limits for benzo(a)anthracene (0.61 ug/L and chrysene (0.54 ug/L) are above the GWGV.
5. TRP determined using EPA colorimetric Method 9066, which has limitations and is inappropriate for characterization of phenolic compounds in groundwater.

Acronyms:
J = Estimated Value
BOLD = exceeds GWQS/GV
"--" = Not analyzed for this parameter
ND = Parameter was not detected above laboratory method detection limit.
" * " = The Guidance Value was used where a Standard has not been established.
" ** " = General GWQS of 1.0 ug/L for phenolic compounds (total phenols).

TURNKEY ENVIRONMENTAL RESTORATION, LLC

TABLE 4A

SUMMARY OF HWMU-1 GROUNDWATER ANALYTICAL RESULTS

2018 Annual Event
Hazardous Waste Management Units HWMU-1 & HWMU-2
Tecumseh Redevelopment Inc.
Lackawanna, New York

Parameter[1]	Monitoring Well and HWMU Location									Action Levels[2]
	MW-1D1 (HWMU-1B)	**MW-1D2** (HWMU-1A)	**MW-1D3** (HWMU-1A)	**MW-1D4** (HWMU-1A)	**MW-1D6** (HWMU-1B)	**MW-1D7** (HWMU-1B)	**MW-1D8** (HWMU-1B)	**MWN-12** (HWMU-1B)	**MW-1U1** (HWMU-1A/1B)	
Semi-Volatile Organic Compounds 8270 (SIM)[3] (ng/L):										
1,4-Dioxane	--	311	--	--	--	--	--	--	--	**350**
Perfluorinated Alkyl Acids (ng/L)										
Perfluorobutanoic acid (PFBA)	--	18.9	--	--	--	--	--	--	--	**--**
Perfluoropentanoic acid (PFPeA)	--	14.9	--	--	--	--	--	--	--	**--**
Perfluorobutanesulfonic Acid (PFBS)	--	1.56 J	--	--	--	--	--	--	--	**--**
Perfluorohexanoic acid (PFHxA)	--	10.6	--	--	--	--	--	--	--	**--**
Perfluoroheptanoic acid (PFHpA)	--	6.78	--	--	--	--	--	--	--	**--**
Perfluorooctanoic acid (PFOA)	--	10.9	--	--	--	--	--	--	--	**--**
1H,1H,2H,2H-Perfluorooctaneslfonic Acid (6:2FTS)	--	7.58	--	--	--	--	--	--	--	**--**
Perfluoroheptanesulfonic Acid (PFHpS)	--	0.666 J	--	--	--	--	--	--	--	**--**
Perfluorononanoic acid (PFNA)	--	1.73	--	--	--	--	--	--	--	**--**
Perfluorodecanoic Acid (PFDA)	--	0.483 J	--	--	--	--	--	--	--	**--**
1H,1H,2H,2H-Perfluorodecanessulfonic Acid (8:2FTS)	--	0.969 J	--	--	--	--	--	--	--	**--**
Perfluorooctanesulfonic acid (PFOS)	--	27.8	--	--	--	--	--	--	--	**--**
Perfluorotetradecanoic acid (PFTA)	--	0.072 J	--	--	--	--	--	--	--	**--**
Perfluorooctane Sulfonamide (FOSA)	--	2.77	--	--	--	--	--	--	--	**--**
Total PFAS		***106 J***								**500**

Notes:

1. Only those VOCs and SVOCs detected above the method detection limit at a minimum of one sample location are reported in this table.
2. Extraction methodology of Selective Ion Monitoring (SIM) was used for 1,4-dioxane.
3. Draft action level per NYSDEC emerging contaminant initial site sampling results checklist.

Acronyms:

J = Estimated Value
"--" = Not analyzed for this parameter

BOLD = exceeds action level

TABLE 5

SUMMARY OF HWMU-2 GROUNDWATER ANALYTICAL RESULTS

2018 Annual Event
Hazardous Waste Management Units HWMU-1 & HWMU-2
Tecumseh Redevelopment Inc.
Lackawanna, New York

Parameter [1]	Monitoring Well								GWQS [2]
	MW-2D2		MW-2D3		MW-2D4		MWS-11A		
Field Measurements [3]:									
Sample No.	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	--
pH (units)	**9.51**	**9.42**	**11.86**	**11.82**	**8.60**	**8.60**	**12.75**	**12.75**	**6.5 - 8.5**
Temperature (°C)	18	17.9	18.6	19	17.5	17.8	15.1	15.3	**NA**
Sp. Conductance (mS)	1034	1034	1213	1208	1296	1287	2226	2211	**NA**
Turbidity (NTU)	4.79	4.23	5.12	6.37	7.46	6.72	6.79	5.78	**NA**
DO (ppm)	3.76	3.37	1.24	1.24	8.72	8.67	1.19	1.14	**NA**
Eh (mV)	-94	-90	-252	-241	-58	-64	-296	-284	**NA**
Total Volume Purged (gallons)	5.75		9		4.5		3.5		--
Appearance and Odor	Clear Sl. odor	Clear Sl. odor	Clear Sl. odor	Clear Sl. odor	Clear No odor	Clear No odor	Clear Sl. odor	Clear Sl. odor	**NA**
Volatile Organic Compounds (ug/L):									
Benzene	ND		**3.5**		ND		**2.6**		**1**
Ethylbenzene	ND		1.6 J		ND		1.6 J		**5**
Toluene	ND		2.6		ND		1.7 J		**5**
1,2,4-Trimethylbenzene	ND		2.9		ND		2.4 J		**5**
1,3,5-Trimethylbenzene	ND		1.5 J		ND		1.5 J		**5**
Xylenes, Total	ND		**11**		ND		5 J		**5**
Semi-Volatile Organic Compounds (ug/L):									
Acenaphthene	ND		2.2		ND		3.1		**20***
Acenaphthylene	ND		11		ND		13		--
Anthracene	ND		1.5 J		ND		1.3 J		**50***
Benzo(a)anthracene [4]	ND		ND		ND		ND		**0.002***
Biphenyl	ND		2.0		ND		3.6		**5**
Bis(2-Ethylhexyl)phthalate	ND		ND		ND		ND		**5**
Carbazole	ND		7.0		ND		9.3		--
Chrysene [4]	ND		ND		ND		ND		**0.002***
Dibenzofuran	ND		8.9		ND		10		--
Fluoranthene	ND		1.7 J		ND		3.6		**50***
Fluorene	ND		13		ND		9.2		**50***
2-Methylnaphthalene	ND		9.8		ND		17		--
Naphthalene	ND		**57**		ND		**140**		**10***
Phenanthrene	ND		17		ND		13		**50***
Pyrene	ND		0.93 J		ND		2.3		**50***
General Chemistry (ug/L):									
Total Recoverable Phenolics (TRP) [5]	ND		ND		ND		**17 J**		**1****

Notes:

1. Only those compounds detected above the method detection limit at a minimum of one sample location are reported in this table.
2. NYSDEC Class "GA" Groundwater Quality Standards (GWQS) as per 6 NYCRR Part 703.
3. Field measurements were collected immediately before and after groundwater sample collection.
4. Method detection limits for benzo(a)anthracene (0.61 ug/L and chrysene (0.54 ug/L) are above the GWGV.
5. TRP determined using EPA colorimetric Method 9066, which has limitations and is inappropriate for characterization of phenolic compounds in groundwater.

Acronyms:

J = Estimated value

BOLD = exceeds GWQS/GV

ND = Indicates parameter was not detected above laboratory reporting limit.

Sl. odor = slight odor

" -- " = Not analyzed for this parameter or no GWQS/GV exists for this parameter.

" * " = The Guidance Value was used where a Standard has not been established.

" ** " = General GWQS of 1.0 ug/L for phenolic compounds (total phenols).

TABLE 5A

SUMMARY OF HWMU-2 GROUNDWATER ANALYTICAL RESULTS

2018 Annual Event
Hazardous Waste Management Units HWMU-1 & HWMU-2
Tecumseh Redevelopment Inc.
Lackawanna, New York

Parameter [1]	Monitoring Well				Action Levels[2]
	MW-2D2	MW-2D3	MW-2D4	MWS-11A	
Semi-Volatile Organic Compounds 8270 (SIM)[3] (ng/L):					
1,4-Dioxane	--	**1,150**	--	--	**350**
Perfluorinated Alkyl Acids (ng/L)					
Perfluorobutanoic acid (PFBA)	--	15.8	--	--	**--**
Perfluroropentanoic acid (PFPeA)	--	13.2	--	--	**--**
Perflurorohexanoic acid (PFHxA)	--	17.4	--	--	**--**
Perflurorohexanoic acid (PFHpA)	--	29.5	--	--	**--**
Perfluorohexanessukfonic Acid (PFHxS)	--	4.37	--	--	**--**
Perfluorooctanoic acid (PFOA)	--	61.1	--	--	**--**
Perfluorononanoic acid (PFNA)	--	3.14	--	--	**--**
Perfluorodecanoic Acid (PFDA)	--	0.459 J	--	--	**--**
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	--	0.352 J	--	--	**--**
Perfluorooctanesulfonic acid (PFOS)	--	32.5	--	--	**--**
Perfluorotetradecanoic acid (PFTA)	--	0.221 J	--	--	**--**
Total PFAS		***178 J***			**500**

Notes:

1. Only those compounds detected above the method detection limit at a minimum of one sample location are reported in this table.
2. Extraction methodology of Selective Ion Monitoring (SIM) was used for 1,4-dioxane.
3. Draft action level per NYSDEC emerging contaminant initial site sampling results checklist.

Acronyms:

J = Estimated value

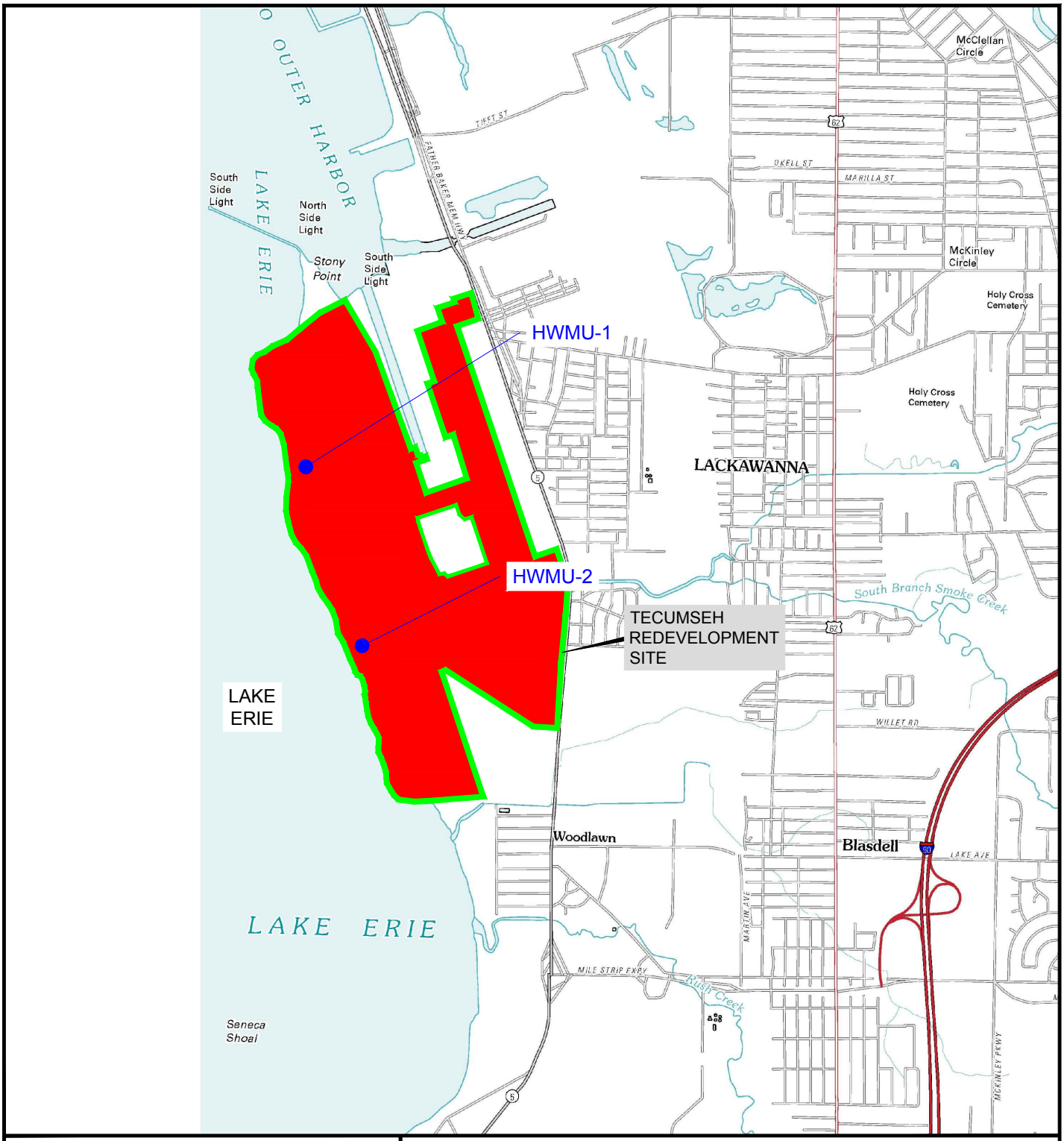
" -- " = Not analyzed for this parameter or no action level

BOLD = exceeds action level

FIGURES

F:\CAD\TurnKey\Tecumseh Redevelopment\HWMU Groundwater Sampling\2018\Figure 1; Site Vicinity and Location Map.dwg

FIGURE 1



TURNKEY ENVIRONMENTAL RESTORATION, LLC

2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635

SITE VICINITY AND LOCATION MAP

HWMU-1 & HWMU-2 ANNUAL GWM PROGRAM

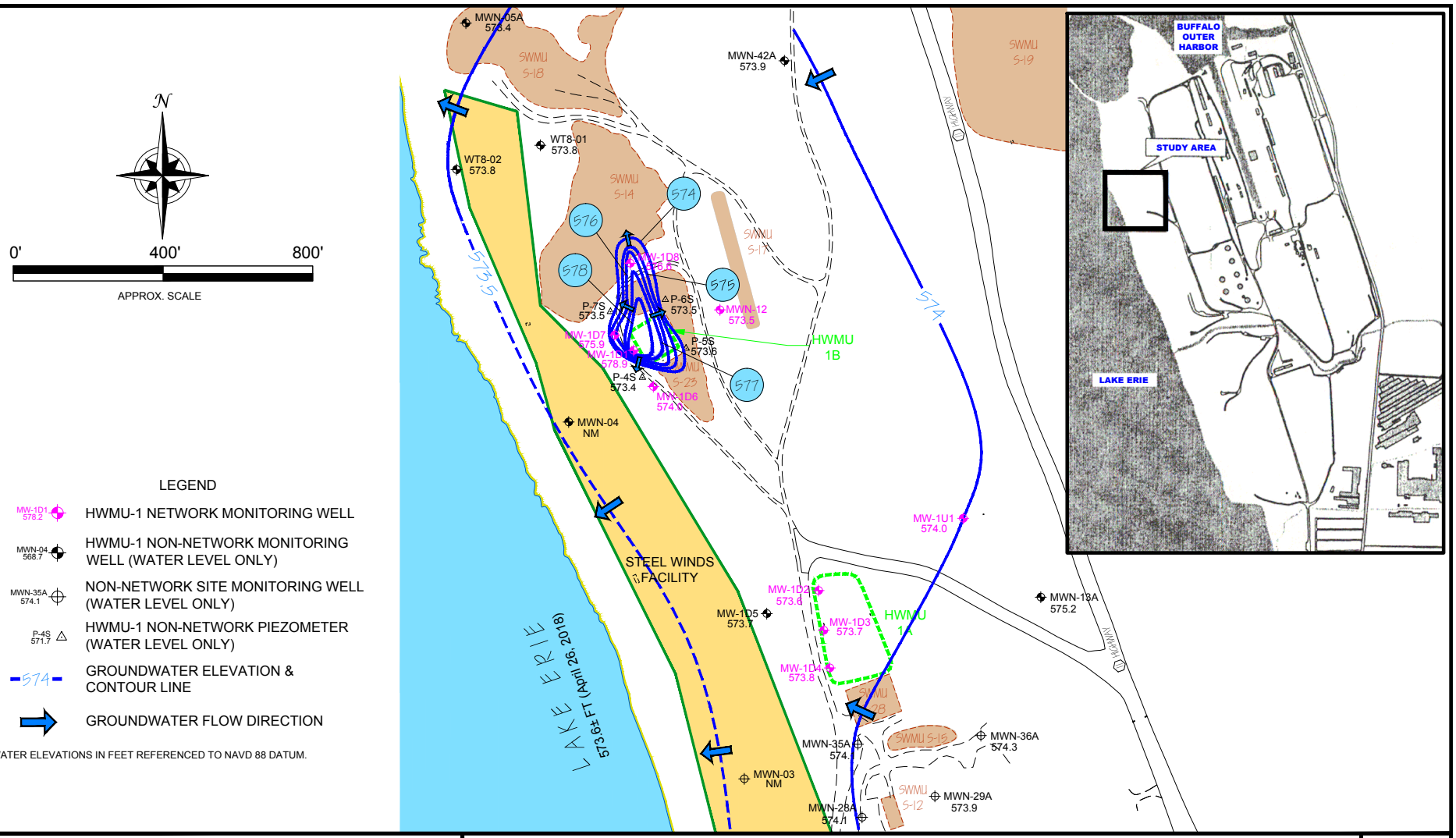
FORMER BETHLEHEM STEEL LACKAWANNA COKE DIVISION SITE
LACKAWANNA, NEW YORK

PREPARED FOR

TECUMSEH REDEVELOPMENT INC.

PROJECT NO.:	0071-018-240
DATE:	JUNE 2018
DRAFTED BY:	CMC

F:\CAD\TurnKey\Tecumseh Redevelopment\HWMU Groundwater Sampling\2018\Figure 2; HWMU-1 Shallow GW Isopotential Map - 050#18.dwg



TURNKEY ENVIRONMENTAL RESTORATION, LLC

2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635

PROJECT NO.: 0071-018-240

DATE: FEBRUARY 2019

DRAFTED BY: RFL

HWMU-1 SHALLOW GROUNDWATER ISOPOTENTIAL MAP APRIL 26, 2018

HWMU-1 & HWMU-2 ANNUAL GROUNDWATER MONITORING PROGRAM

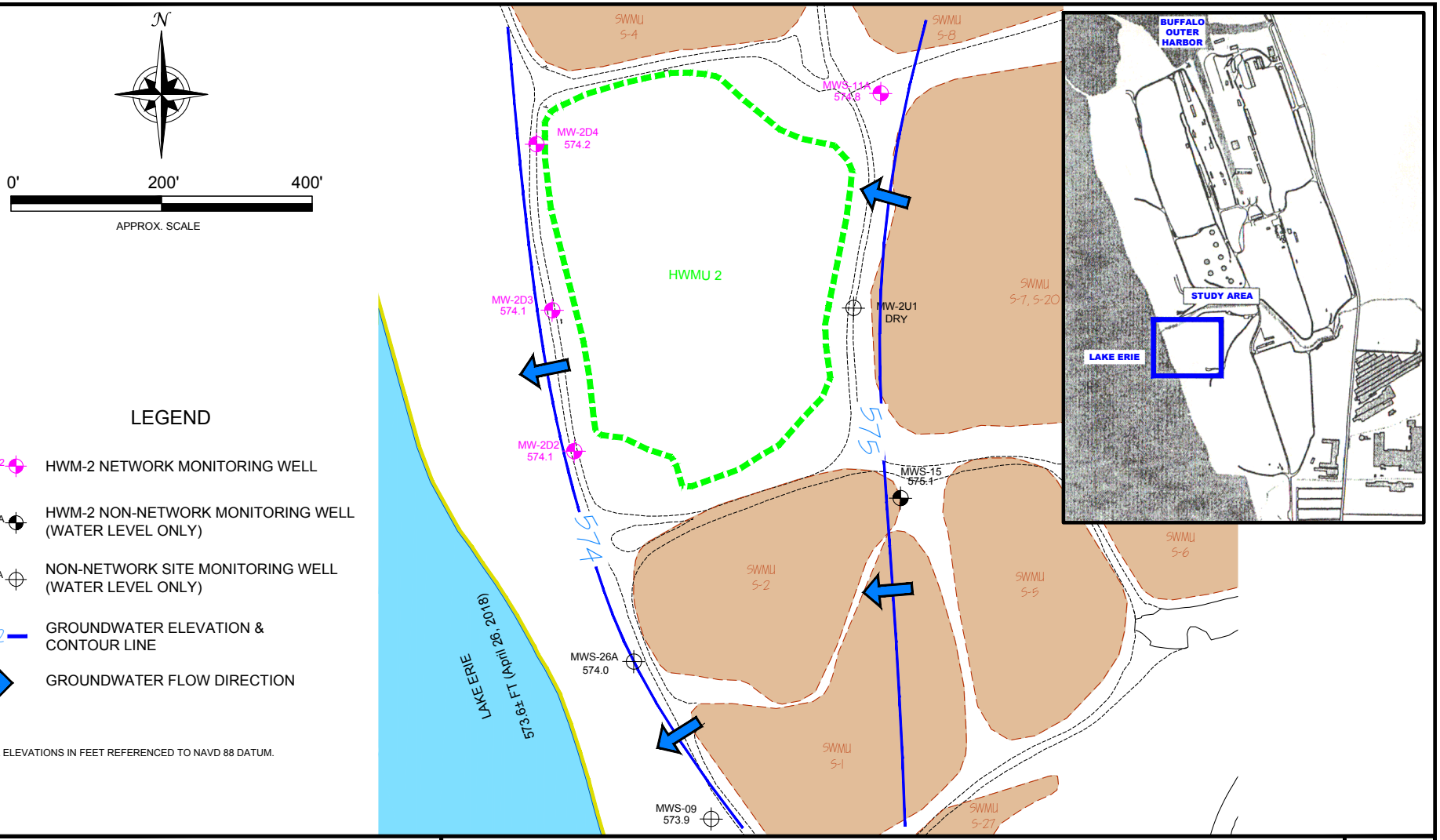
FORMER BETHLEHEM STEEL LACKAWANNA COKE DIVISION SITE
LACKAWANNA, NEW YORK

PREPARED FOR

TECUMSEH REDEVELOPMENT INC.

FIGURE 2

F:\CAD\TurnKey\Tecumseh Redevelopment\HWMU Groundwater Sampling\2018\Figure 3; HWMU-2 Shallow GW Isopotential Map - 050#18.dwg



TURNKEY ENVIRONMENTAL RESTORATION, LLC
2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635

PROJECT NO.: 0071-018-240

DATE: FEBRUARY 2019

DRAFTED BY: RFL

HWMU-2 SHALLOW GROUNDWATER ISOPOTENTIAL MAP
April 26, 2018

HWMU-1 & HWMU-2 ANNUAL GROUNDWATER MONITORING PROGRAM

FORMER BETHLEHEM STEEL LACKAWANNA COKE DIVISION SITE
LACKAWANNA, NEW YORK

PREPARED FOR

TECUMSEH REDEVELOPMENT INC.

FIGURE 3

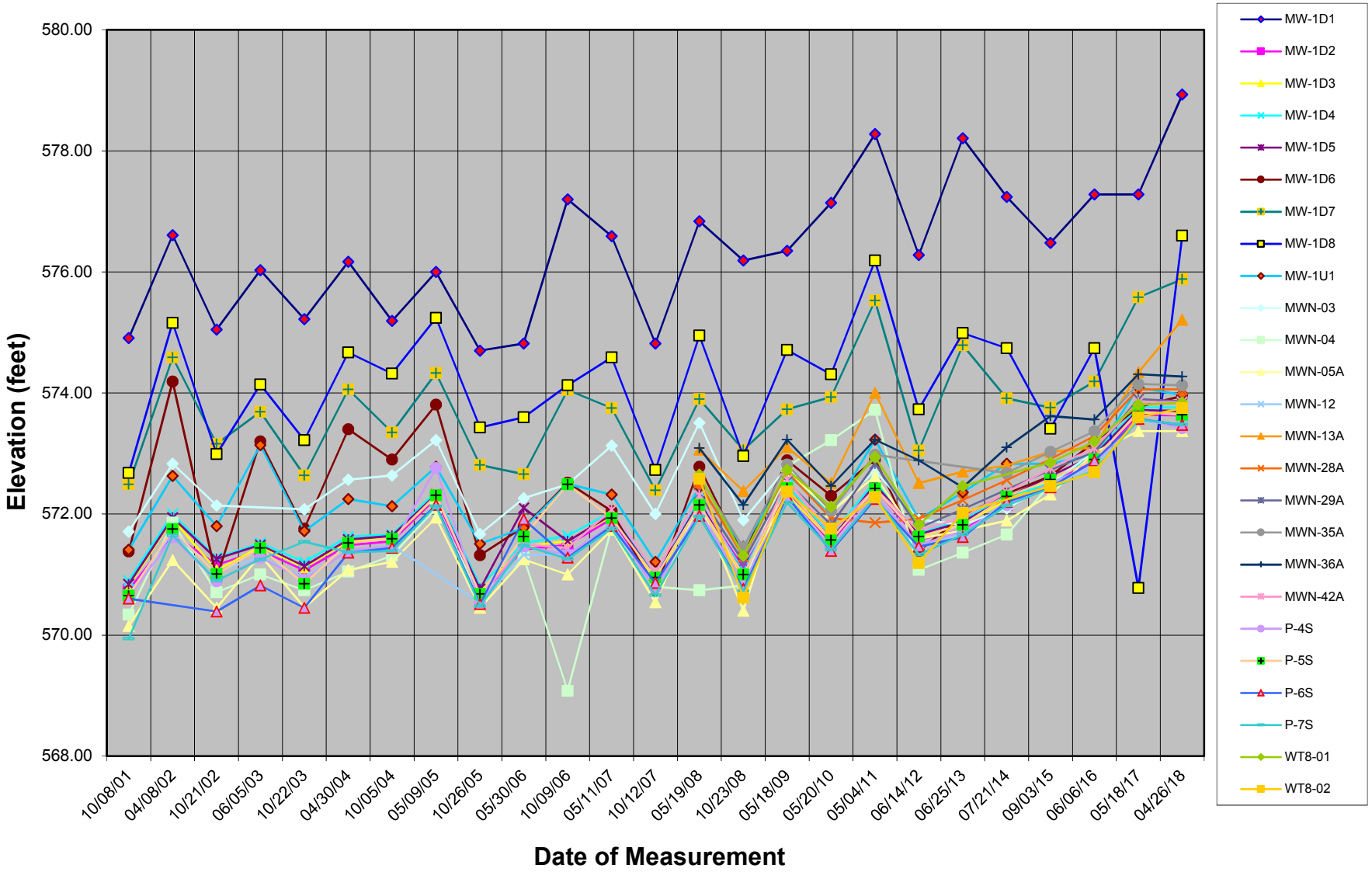
ATTACHMENT 1

HISTORICAL GROUNDWATER ELEVATION SUMMARY

ATTACHMENT 1

HISTORICAL GROUNDWATER ELEVATIONS
HWMU-1A & 1B

2001 to Present



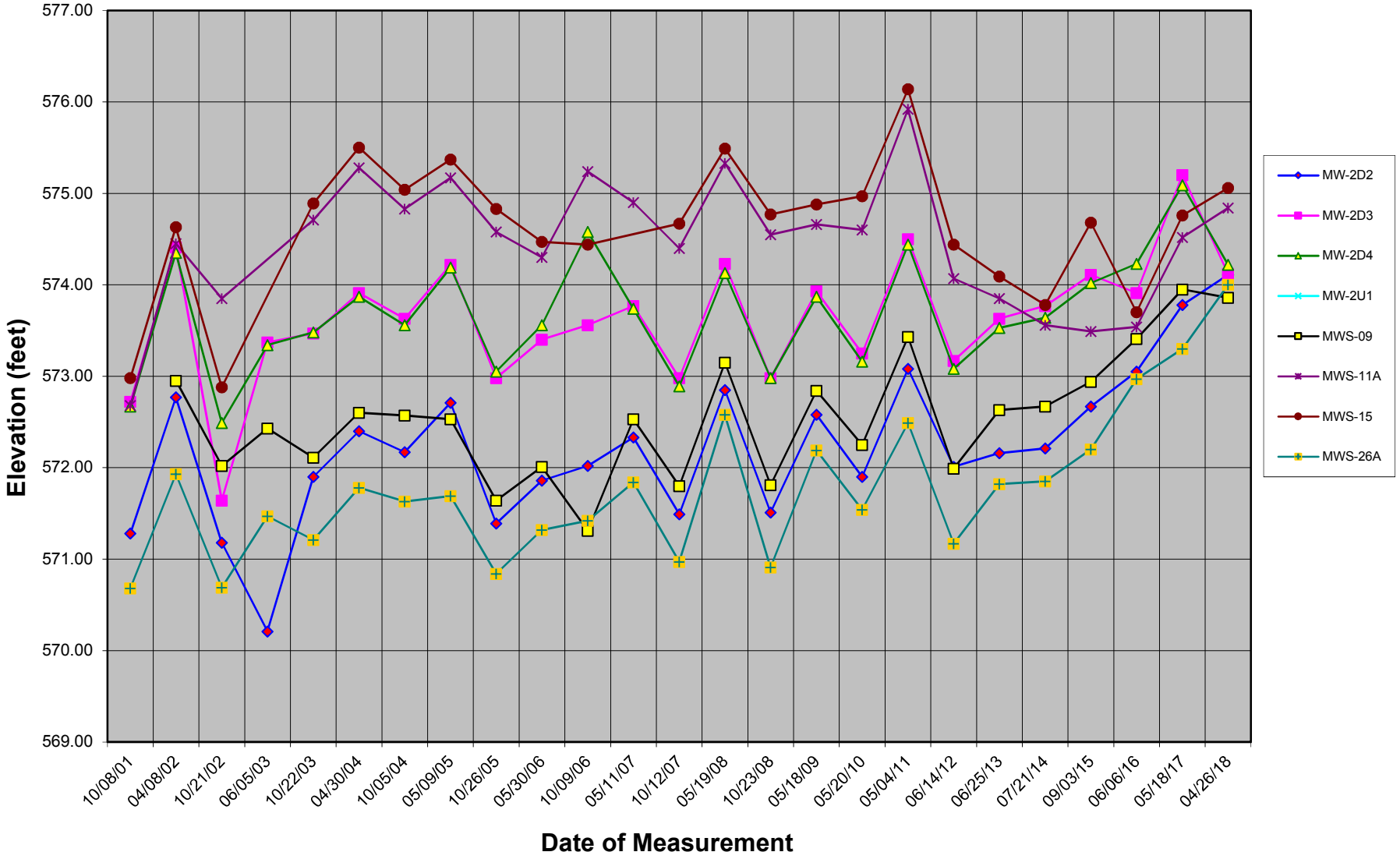
Note:

1. All water elevations in feet referenced to NAVD 88 Datum.

ATTACHMENT 1

HISTORICAL GROUNDWATER ELEVATIONS
HWMU-2

2001 to Present



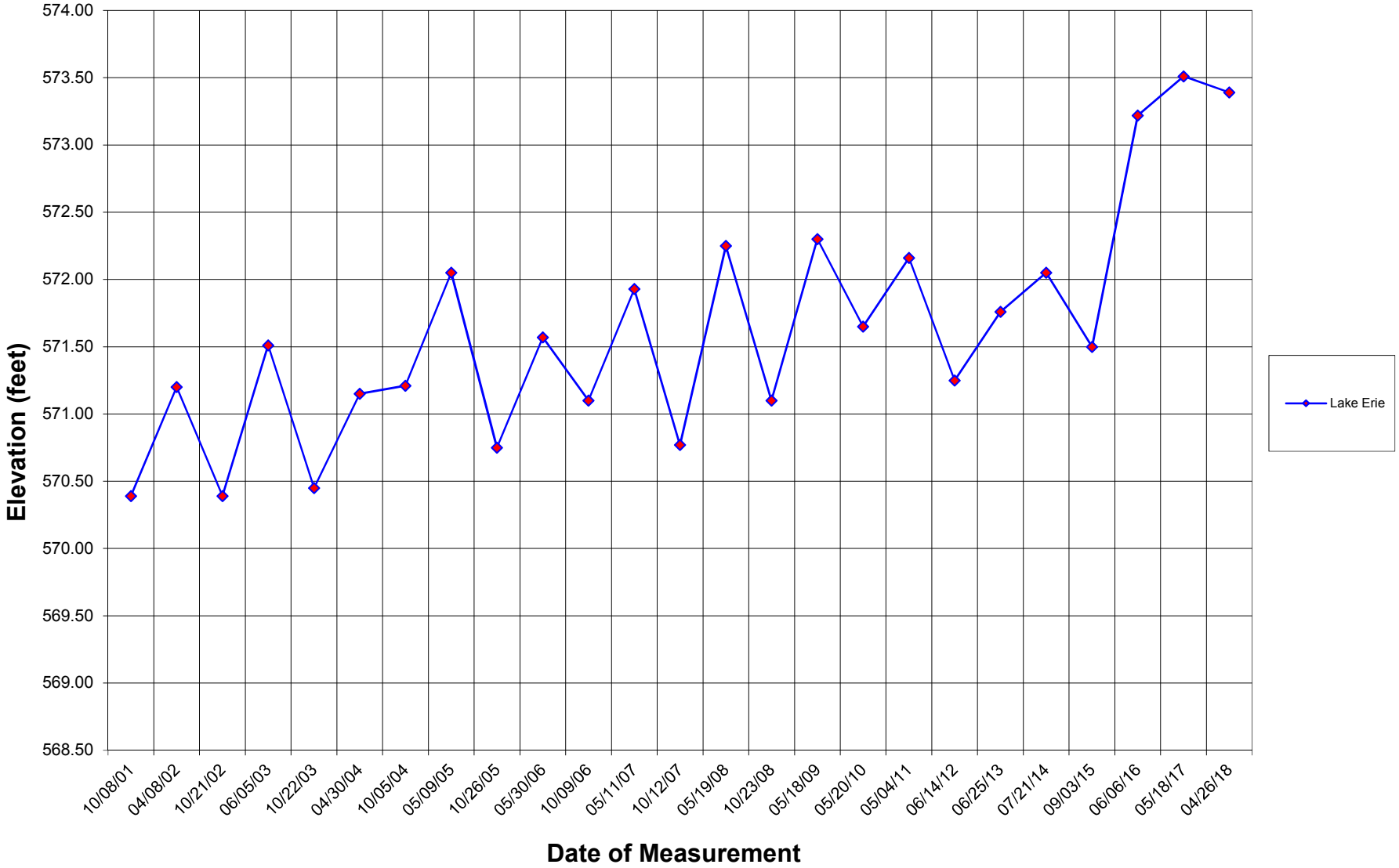
Note:

1. All water elevations in feet referenced to NAVD 88 Datum.

ATTACHMENT 1

HISTORICAL GROUNDWATER ELEVATIONS
LAKE ERIE

2001 to Present



Notes:

1. All water elevations in feet referenced to NAVD 88 Datum.

ATTACHMENT 2A

GROUNDWATER FIELD FORMS AND CALIBRATION LOGS

GROUNDWATER FIELD FORM

Project Name: HWM-1A & B Groundwater Monitoring Date: 4-27-18

Location: Tecumseh Redevelopment, Inc Project No.: 0071-018-240 Field Team: TAB + CEH

Well No.	MW-1D3	Diameter (inches):	4-inch	Sample Date / Time:	4-27-18 / 1120
Product Depth (fbTOR):		Water Column (ft):	15.12	DTW when sampled:	39.09
DTW (static) (fbTOR):	32.98	One Well Volume (gal):	9.87	Purpose: ☐ Development ☑ Sample ☐ Purge & Sample	
Total Depth (fbTOR):	48.10	Total Volume Purged (gal):		Purge Method: *Mini-Monsoon* Purge Rate:	

Time		Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
1100	0	Initial	2.20	12.63	15.5	3963	155	0.28	-426	SL turbid, Petrol odor
1110	1	39.09	1.50	12.63	14.5	3935	24.9	0.65	-434	clear, " "
1115	2	39.09	3.00	12.67	14.4	3853	10.8	0.45	-403	" " "
1117	3	39.09	4.00	12.70	13.9	3851	8.30	0.32	-414	" " "
	4									
	5									
	6									
	7									
	8									
	9									
	10									
Sample Information:										
1120	S1	39.09	5.00	12.72	14.0	3678	6.32	1.00	-375	clear, Petrol odor
1124	S2	39.09	5.50	12.80	14.8	3653	5.55	0.74	-360	" " "

Well No.	MW-1D4	Diameter (inches):	4-inch	Sample Date / Time:	4-27-18 / 1143
Product Depth (fbTOR):		Water Column (ft):	7.66	DTW when sampled:	38.72
DTW (static) (fbTOR):	38.73	One Well Volume (gal):	5.00	Purpose: ☐ Development ☑ Sample ☐ Purge & Sample	
Total Depth (fbTOR):	46.39	Total Volume Purged (gal):		Purge Method: *Mini-Monsoon* Purge Rate:	

Time		Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
1134	0	Initial	2.20	12.95	14.2	2188	5.55	1.46	-327	clear, SL Petrol odor
1137	1	38.73	1.00	12.93	13.8	2257	6.43	1.33	-321	" " " "
1139	2	38.73	1.50	12.93	13.7	2350	4.66	1.51	-318	" " " "
1141	3	38.73	2.00	12.91	14.0	2234	4.55	1.41	-324	" " " "
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	10									
Sample Information:										
1143	S1	38.73	2.50	12.87	14.8	2214	4.70	1.15	-314	clear, v SL Petrol odor
1148	S2	38.73	3.00	12.90	14.5	2193	4.66	1.56	-332	" " " "

REMARKS:

Note: All measurements are in feet, distance from top of riser.

Volume Calculation

Diam.	Vol. (g/ft)
1"	0.041
2"	0.163
4"	0.653
6"	1.469

Stabilization Criteria

Parameter	Criteria
pH	± 0.1 unit
SC	± 3%
Turbidity	± 10%
DO	± 0.3 mg/L
ORP	± 10 mV

PREPARED BY: TAB

GROUNDWATER FIELD FORM

Project Name: HWM-1A & B Groundwater Monitoring Date: 4-26-18

Location: Tecumseh Redevelopment, Inc Project No.: 0071-013-240 Field Team: TAB, CEH

Well No. MW-1D1	Diameter (inches): 4-inch	Sample Date / Time: 4-26-18 / 1355
Product Depth (fbTOR):	Water Column (ft): 13.29	DTW when sampled: 39.51
DTW (static) (fbTOR): 31.66	One Well Volume (gal): 8.68	Purpose: ☐ Development ☑ Sample ☐ Purge & Sample
Total Depth (fbTOR): 44.95	Total Volume Purged (gal):	Purge Method: *Mini-Typhoon* Purge Rate:

Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
1313	0 Initial	2.20	9.93	13.4	3991	140	3.01	-199	Sl Turbid, Petrol odor
1315	1 30.56	1.50	10.60	13.2	3975	83.7	1.98	-141	Clear, "
1318	2 33.56	3.50	10.77	13.5	3981	141	1.70	-198	Sl Turbid "
1320	3 34.20	3.00	10.84	13.7	3993	69.4	1.90	-196	Clear "
1322	4 34.91	3.50	10.91	13.7	3995	47.6	1.66	-195	" "
1323	5 34.99	4.00	10.99	13.9	3998	26.7	1.59	-205	" "
1325	6 35.56	4.50	11.04	13.6	4007	33.6	2.00	-196	" "
1327	7 36.18	5.00	11.13	13.9	4006	35.0	1.74	-198	" "
1331	8 36.58	6.00	11.31	13.9	3994	18.1	1.41	-196	" "
1332	9 36.72	6.50	11.56	13.9	3968	15.9	1.32	-198	" "
1334	10 36.98	7.00	11.96	13.9	3990	13.9	1.64	-194	" "
Sample Information:			12.26						
1337	S1 37.31	8.00	[illegible]	13.9	3674	11.5	1.85	-194	" "
1340	S2 37.66	9.00	12.44	13.9	3503	10.2	2.05	-152	

Well No. MW-1D1 MW-1D2	Diameter (inches): 4-inch	Sample Date / Time: —
Product Depth (fbTOR): —	Water Column (ft): —	DTW when sampled: —
DTW (static) (fbTOR): —	One Well Volume (gal): —	Purpose: ☐ Development ☑ Sample ☐ Purge & Sample
Total Depth (fbTOR): [illegible]	Total Volume Purged (gal): —	Purge Method: *Mini-Monsoon* Purge Rate: —

Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
	0 Initial								
1342	1 38.29	9.50	12.37	13.8	3363	11.3	3.77	-170	Clear, Petrol odor
1344	2 38.38	10.00	12.30	13.8	3369	12.0	3.72	-166	" "
1346	3 38.52	10.50	12.33	13.7	3341			-165	" "
1349	4 38.56	11.00	12.06	13.9	3521	12.6	3.80	-147	" "
1352	5 39.51	11.50	11.99	14.0	3537	13.8	3.14	-163	" "
	6								
	7								
	8								
	9								
	10								
Sample Information:									
1355	S1 39.51	12.00	11.91	13.2	3615	12.5	3.13	-156	Clear, Petrol odor
1403	S2 39.91	12.50	11.64	13.7	3542	11.0	3.88	-153	" "

REMARKS:

Note: All water level measurements are in feet, distance from top of riser.

Volume Calculation

Diam.	Vol. (g/ft)
1"	0.041
2"	0.163
4"	0.653
6"	1.469

Stabilization Criteria

Parameter	Criteria
pH	± 0.1 unit
SC	± 3%
Turbidity	± 10%
DO	± 0.3 mg/L
ORP	± 10 mV

PREPARED BY: TAB

GROUNDWATER FIELD FORM

Project Name: HWM-1A & B Groundwater Monitoring
Location: Tecumseh Redevelopment, Inc Project No.: 0071-013-240
Date: 4-26-18
Field Team: TAB+CEH

Well No.	MW-1D8	Diameter (inches):	4-inch	Sample Date / Time:	4-26-18 / 1430
Product Depth (fbTOR):		Water Column (ft):	9.41	DTW when sampled:	34.90
DTW (static) (fbTOR):	34.14	One Well Volume (gal):	6.14	Purpose: ☐ Development ☑ Sample ☐ Purge & Sample	
Total Depth (fbTOR):	43.55	Total Volume Purged (gal):		Purge Method: *Mini-Typhoon* Purge Rate:	

Time		Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
1420	0	Initial	2.20	11.59	13.9	2334	11.0	2.73	-130	clear, no odor
1425	1	34.90	2.00	11.49	13.6	2269	8.43	4.60	-116	" " "
1427	2	34.91	2.50	11.48	13.7	2264	6.56	4.68	-115	" " "
1429	3	34.90	3.00	11.49	13.7	2276	4.69	4.55	-119	" " "
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	6									
	7									
	8									
	9									
	10									
Sample Information:										
1430	S1	34.90	3.50	11.50	13.7	2261	4.48	4.41	-113	clear, no odor
1435	S2	34.90	4.50	11.50	13.6	2268	3.82	4.32	-110	" " "

Well No.	MW-1U1	Diameter (inches):	4-inch	Sample Date / Time:	4/26/18 940
Product Depth (fbTOR):		Water Column (ft):	27.29	DTW when sampled:	39.21
DTW (static) (fbTOR):	39.21	One Well Volume (gal):	17.82	Purpose: ☐ Development ☑ Sample ☐ Purge & Sample	
Total Depth (fbTOR):	66.5	Total Volume Purged (gal):		Purge Method: *Mini-Monsoon* Purge Rate:	

Time		Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
920	0	Initial	2.20	12.69	10.3	2599	5.73	2.06	-117	clear, no odor
924	1	39.21	2.00	12.41	11.2	2633	5.31	3.53	-164	" " "
926	2	39.21	3.00	12.96	11.6	2655	4.56	3.79	-183	" " "
928	3	39.21	3.50	12.53	11.3	2666	4.59	3.40	-155	" " "
930	4	39.21	4.00	13.04	11.0	2644	4.79	2.86	-205	" " "
934	5	39.21	4.25	12.90	10.8	2710	4.14	2.45	-183	" " "
936	6	39.21	4.50	13.03	11.0	2630	4.17	2.53	-201	" " "
940	7	39.21	4.75	12.95	10.8	2644	3.76	1.75	-208	" " "
	8									
	9									
	10									
Sample Information:										
0940	S1	39.21	5.00	12.95	10.8	2644	3.76	1.75	-208	clear, no odor
0944	S2	39.21	5.25	12.95	9.9	2642	4.94	2.03	-193	" " "

REMARKS:

Note: All measurements are in feet, distance from top of riser.

Volume Calculation

Diam.	Vol. (g/ft)
1"	0.041
2"	0.163
4"	0.653
6"	1.469

Stabilization Criteria

Parameter	Criteria
pH	± 0.1 unit
SC	± 3%
Turbidity	± 10%
DO	± 0.3 mg/L
ORP	± 10 mV

PREPARED BY: TAB

GROUNDWATER FIELD FORM

Project Name: HWM-1A & B Groundwater Monitoring
Location: Tecumseh Redevelopment, Inc Project No.: 0071-013-240
Date: 4/26/2018
Field Team: TAB + CEH

Well No. MWN-12			Diameter (inches): 4-inch			Sample Date / Time: 4-26-18 / 1020			
Product Depth (fbTOR):			Water Column (ft): 5.29			DTW when sampled: 35.19			
DTW (static) (fbTOR): 35.11			One Well Volume (gal): 3.45			Purpose: ☐ Development ☑ Sample ☐ Purge & Sample			
Total Depth (fbTOR): 40.40			Total Volume Purged (gal):			Purge Method: *Mini-Typhoon* Purge Rate:			
Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
1005	0 Initial	2.20	13.44	8.2	5248	21.7	7.33	-196	clear, no odor
1009	1 35.19	0.50	13.39	10.1	5408	28.4	7.25	-175	" " "
1012	2 35.19	0.75	13.35	10.8	5332	15.8	7.22	-166	" " "
1015	3 35.19	1.00	13.31	11.2	5314	11.6	7.16	-162	" " "
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	10								
Sample Information:									
1020	S1 35.19	1.25	13.33	10.9	5295	9.64	7.54	-160	clear, no odor
1025	S2 35.31	1.50	13.31	11.0	5062	12.5	6.73	-159	" " "

Well No. MW-102			Diameter (inches): 4 inch			Sample Date / Time: 4/27/18 1050			
Product Depth (fbTOR):			Water Column (ft): 8.71			DTW when sampled: 41.25			
DTW (static) (fbTOR): 40.79			One Well Volume (gal): 5.7			Purpose: ☐ Development ☐ Sample ☐ Purge & Sample			
Total Depth (fbTOR): 49.5			Total Volume Purged (gal):			Purge Method: Purge Rate:			
Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
1000	0 Initial	2.20	12.30	14.9	1963	29.9	1.86	-250	clear, slight petrol odor
1015	1 41.22	5.00	12.64	14.2	1911	9.35	1.33	-273	" , sl " "
1030	2 41.25	10.00	12.67	13.5	1628	6.37	1.14	-251	" " " "
1045	3 41.25	15.00	12.72	13.1	1630	5.71	1.31	-260	" " " "
~~1100~~	4	~~20.00~~							
	5								
	6								
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	9								
	10								
Sample Information:									
1050	S1 41.25	17.00	12.65	13.4	1674	4.82	1.40	-264	clear, slight petrol odor
1055	S2 41.25	19.00	12.63	13.6	1728	5.37	1.51	-234	" " "

REMARKS:

Note: All measurements are in feet, distance from top of riser.

Volume Calculation

Diam.	Vol. (g/ft)
1"	0.041
2"	0.163
4"	0.653
6"	1.469

Stabilization Criteria

Parameter	Criteria
pH	± 0.1 unit
SC	± 3%
Turbidity	± 10%
DO	± 0.3 mg/L
ORP	± 10 mV

PREPARED BY: TAB

GROUNDWATER FIELD FORM

Project Name: HWM-1A & B Groundwater Monitoring Date: 4-26-2018

Location: Tecumseh Redevelopment, Inc Project No.: 0071-013-240 Field Team: TAB & CEH

Well No.	MW-1D6	Diameter (inches):	2-inch	Sample Date / Time:	4-26-18 / 1135
Product Depth (fbTOR):		Water Column (ft):	5.16	DTW when sampled:	TOP
DTW (static) (fbTOR):	36.99	One Well Volume (gal):	0.84	Purpose:	☐ Development ☑ Sample ☐ Purge & Sample
Total Depth (fbTOR):	42.15	Total Volume Purged (gal):		Purge Method:	*Mini-Typhoon* Purge Rate:

Time		Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
1121	0	Initial	2.20	12.26	14.1	3958	12.5	3.65	-117	clear, no odor
1124	1	39.11	0.75	12.11	13.5	3887	17.1	2.40	-136	" " "
1127	2	40.68	1.50	12.02	13.3	4014	12.9	2.06	-148	" " "
1129	3	TOP	2.00	11.98	13.2	4428	7.35	1.72	-153	" " "
1131	4	TOP	2.50	11.99	13.3	4173	5.05	3.34	-170	" " "
	5									
	6									
	7									
	8									
	9									
	10									
Sample Information:										
1135	S1	TOP	2.75	12.05	13.0	4002	5.40	3.66	-183	clear, no odor
1140	S2	TOP	3.50	12.03	13.1	4133	5.24	3.08	-205	" " "

Well No.	MW-1D7	Diameter (inches):	2-inch	Sample Date / Time:	4-26-18 / 1250
Product Depth (fbTOR):	-	Water Column (ft):	10.07	DTW when sampled:	35.81
DTW (static) (fbTOR):	35.38	One Well Volume (gal):	1.64	Purpose:	☐ Development ☑ Sample ☐ Purge & Sample
Total Depth (fbTOR):	45.45	Total Volume Purged (gal):		Purge Method:	*Mini-Typhoon* Purge Rate:

Time		Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
1229	0	Initial	2.20	9.86	13.5	5305	24.7	2.00	-96	clear, SL Petrol odor
1231	1	35.91	1.00	9.23	13.7	4684	8.79	2.60	-97	" " " "
1234	2	35.91	2.00	8.97	13.2	4589	6.30	2.31	-148	" " " "
1236	3	35.86	3.00	8.83	13.5	4489	6.15	2.47	-154	" " " "
1238	4	35.82	3.50	8.67	13.7	4585	5.44	1.80	-170	" " " "
1240	5	35.81	4.00	8.51	13.8	4657	4.46	1.85	-185	" " " "
1241	6	35.81	4.25	8.40	13.8	4687	5.06	1.76	-196	" " " "
1243	7	35.81	4.50	8.32	13.4	4591	4.87	1.64	-199	" " " "
1246	8	35.81	5.00	8.23	13.6	4682	4.69	1.46	-201	" " " "
	9									
	10									
Sample Information:										
1250	S1	35.81	5.50	8.12	13.0	4584	5.12	1.56	-203	clear, SL Petrol odor
1254	S2	35.81	6.00	8.22	13.2	4380	5.07	2.03	-198	" " " "

REMARKS:

Note: All measurements are in feet, distance from top of riser.

Volume Calculation

Diam.	Vol. (g/ft)
1"	0.041
2"	0.163
4"	0.653
6"	1.469

Stabilization Criteria

Parameter	Criteria
pH	± 0.1 unit
SC	± 3%
Turbidity	± 10%
DO	± 0.3 mg/L
ORP	± 10 mV

PREPARED BY: TAB

GROUNDWATER FIELD FORM

Project Name: HWM-2 Groundwater Monitoring Date: 4-27-18

Location: Tecumseh Redevelopment, Inc Project No.: 0071-017-240 Field Team: TAB + CEH

Well No. MW-2D3			Diameter (inches): 4-inch			Sample Date / Time: 4-27-18 / 1313			
Product Depth (fbTOR):			Water Column (ft): 5.80			DTW when sampled: 61.51			
DTW (static) (fbTOR): 61.40			One Well Volume (gal): 3.75			Purpose: ☐ Development ☑ Sample ☐ Purge & Sample			
Total Depth (fbTOR): 67.2			Total Volume Purged (gal):			Purge Method: *Mini-Monsoon* Purge Rate:			
Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
1250	0 Initial	2.20	10.04	19.8	1285	109	1.81	-287	SL Turbid, no odor
1256	1 61.51	2.50	11.96	18.8	1254	10.9	1.35	-273	clear, no odor
1306	2 61.51	5.00	11.89	18.6	1228	7.16	1.18	-266	" " "
1312	3 61.51	7.50	11.86	18.6	1220	5.11	1.31	-263	clear, SL Petrol odor
	4								
	5								
	6								
	7								
	8								
	9								
	10								
Sample Information:									
1313	S1 61.51	8.00	11.86	18.6	1213	5.12	1.24	-252	clear, SL Petrol odor
1320	S2 61.51	9.00	11.82	19.0	1208	6.37	1.24	-241	" " " "

Well No. MW-2D2			Diameter (inches): 4-inch			Sample Date / Time:			
Product Depth (fbTOR):			Water Column (ft): 6.71			DTW when sampled:			
DTW (static) (fbTOR): 58.49			One Well Volume (gal): 4.38			Purpose: ☐ Development ☑ Sample ☐ Purge & Sample			
Total Depth (fbTOR): 65.20			Total Volume Purged (gal):			Purge Method: *Mini-Monsoon* Purge Rate:			
Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
1335	0 Initial	2.20	10.62	18.6	1084	24.4	4.04	-161	clear, no odor
1342	1 58.51	1.50	10.06	18.2	1091	6.62	4.03	-134	" " "
1345	2 58.51	3.00	9.81	18.1	1092	5.91	4.08	-104	" " "
1347	3 58.51	4.00	9.74	17.0	1088	5.42	4.14	-101	" " "
1349	4 58.51	4.75	9.60	18.0	1089	5.49	4.29	-93	" " "
1350	5 58.51	5.00	9.58	17.5	1087	4.72	4.20	-92	" " "
1351	6 58.51	5.25	9.54	18.0	1081	5.20	4.04	-90	" " "
	7								
	8								
	9								
	10								
Sample Information:									
1353	S1 58.51	5.50	9.51	18.0	1084	4.79	3.76	-94	clear, no odor
1356	S2 58.51	5.75	9.42	17.9	1084	4.23	3.37	-90	" " "

REMARKS:

Note: All measurements are in feet, distance from top of riser.

Volume Calculation

Diam.	Vol. (g/ft)
1"	0.041
2"	0.163
4"	0.653
6"	1.469

Stabilization Criteria

Parameter	Criteria
pH	± 0.1 unit
SC	± 3%
Turbidity	± 10%
DO	± 0.3 mg/L
ORP	± 10 mV

PREPARED BY: TAB

GROUNDWATER FIELD FORM

Project Name: HWM-2 Groundwater Monitoring Date: 4-27-18

Location: Tecumseh Redevelopment, Inc Project No.: 0071-018-240 Field Team: TAB + CEH

Well No.	MW-2D4	Diameter (inches):	4-inch	Sample Date / Time:	4-27-18 / 1424
Product Depth (fbTOR):		Water Column (ft):	7.22	DTW when sampled:	55.96
DTW (static) (fbTOR):	55.38	One Well Volume (gal):	4.71	Purpose:	☐ Development ☑ Sample ☐ Purge & Sample
Total Depth (fbTOR):	62.60	Total Volume Purged (gal):		Purge Method:	*Mini-Monsoon* Purge Rate:

Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
1415	0 Initial	2.20	9.13	17.7	1294	15.3	7.76	-111	clear, no odor
1417	1 55.73	1.00	8.70	17.4	1299	10.90	8.47	-68	" " "
1420	2 55.83	2.00	8.67	17.6	1298	8.52	8.57	-65	" " "
1422	3 55.96	3.00	8.62	17.6	1300	8.32	8.68	-62	" " "
	4								
	5								
	6								
	7								
	8								
	9								
	10								
Sample Information:									
1424	S1 55.96	4.00	8.60	17.5	1296	7.46	8.72	-58	clear, no odor
1428	S2 56.18	4.50	8.60	17.8	1287	6.72	8.67	-64	" " "

Well No.	MWS-11A	Diameter (inches):	4-inch	Sample Date / Time:	1455 / 4-27-18
Product Depth (fbTOR):		Water Column (ft):	8.06	DTW when sampled:	65.11
DTW (static) (fbTOR):	65.02	One Well Volume (gal):	5.26	Purpose:	☐ Development ☑ Sample ☐ Purge & Sample
Total Depth (fbTOR):	73.08	Total Volume Purged (gal):		Purge Method:	*Mini-Monsoon* Purge Rate:

Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
1445	0 Initial	2.20	12.18	15.4	3055	10.1	3.28	-271	clear, petrol odor
1448	1 65.11	0.75	12.67	15.0	3248	11.6	1.65	-297	" " "
1451	2 65.11	1.50	12.74	15.1	3238	7.70	1.27	-295	" " "
1453	3 65.11	2.50	12.74	15.0	3232	6.58	1.10	-293	" " "
	4								
	5								
	6								
	7								
	8								
	9								
	10								
Sample Information:									
1455	S1 65.11	3.00	12.75	15.1	3226	6.79	1.19	-296	clear, petrol odor
1459	S2 65.11	3.50	12.75	15.3	3211	5.78	1.14	-284	" " "

REMARKS: Slight Sheen on MWA water

Note: All measurements are in feet, distance from top of riser.

Volume Calculation

Diam.	Vol. (g/ft)
1"	0.041
2"	0.163
4"	0.653
6"	1.469

Stabilization Criteria

Parameter	Criteria
pH	± 0.1 unit
SC	± 3%
Turbidity	± 10%
DO	± 0.3 mg/L
ORP	± 10 mV

PREPARED BY: TAB

TurnKey Environmental Restoration, LLC

EQUIPMENT CALIBRATION LOG

PROJECT INFORMATION:

Project Name: HMW4-1+2 GWM

Project No.: 0071-012-240

Client: Tecumseh

Date: [redacted] 4/26/18

Instrument Source: ☐ BM ☐ Rental

METER TYPE	UNITS	TIME	MAKE/MODEL	SERIAL NUMBER	CAL. BY	STANDARD	POST CAL. READING	SETTINGS
☒ pH meter	units	830	Myron L Company Ultra Meter 6P	6213516 ☐ 6243084 ☐ 6212375 ☒ 6243003 ☐ 6223973 ☐	TAB	4.00	3.99	4.0
						7.00	7.19	7.0
						10.01	10.05	10.0
☒ Turbidity meter	NTU	0830	Hach 2100P or 2100Q Turbidimeter	06120C020523 (P) ☒ 13120C030432 (Q) ☐ 17110C062619 (Q) ☐	TAB	10 NTU verification		
						<0.4	0.5	0.4
						20	20.2	20
						100	93.4	100
						800	747	800
☐ Turbidity meter	NTU		LaMotte 2020	6523-1816 (La) ☐		0.0 NTU 1.0 NTU 10.0 NTU		
☒ Sp. Cond. meter	uS mS	0830	Myron L Company Ultra Meter 6P	6213516 ☐ 6243084 ☐ 6212375 ☒ 6243003 ☐ 6223973 ☐	TAB	1413 mS @ 25 °C	1413	1413
☐ PID	ppm		MinRAE 2000			open air zero		MIBK response factor = 1.0
						____ ppm Iso. Gas		
☒ Dissolved Oxygen	ppm	0830	HACH Model HQ30d	080700023281 ☐ 100500041867 ☐ 140200100319 ☒	TAB	100% Satuartion	—	
☐ Particulate meter	mg/m³					zero air		
☐ Radiation Meter	uR/H					background area		

ADDITIONAL REMARKS:

PREPARED BY: TAB **DATE:** [redacted] 4/26/18

TurnKey Environmental Restoration, LLC

EQUIPMENT CALIBRATION LOG

PROJECT INFORMATION:

Project Name: HMWU 1+2 GWM

Project No.: 0671-018-240

Client: Tecumseh

Date: 4-27-18

Instrument Source: [x] BM [ ] Rental

METER TYPE	UNITS	TIME	MAKE/MODEL	SERIAL NUMBER	CAL. BY	STANDARD	POST CAL. READING	SETTINGS
[x] pH meter	units	0930	Myron L Company Ultra Meter 6P	6213516 [ ] 6243084 [ ] 6212375 [x] 6243003 [ ] 6223973 [ ]	CEH	4.00 7.00 10.01	4.05 6.97 10.07	
[x] Turbidity meter	NTU	0930	Hach 2100P or 2100Q Turbidimeter	06120C020523 (P) [x] 13120C030432 (Q) [ ] 17110C062619 (Q) [ ]	CEH	10 NTU verification <0.4 20 100 800	 0.43 20.4 95.6 777	
[ ] Turbidity meter	NTU		LaMotte 2020	6523-1816 (La) [ ]		0.0 NTU 1.0 NTU 10.0 NTU		
[x] Sp. Cond. meter	uS mS	0930	Myron L Company Ultra Meter 6P	6213516 [ ] 6243084 [ ] 6212375 [x] 6243003 [ ] 6223973 [ ]	CEH	1413 mS @ 25 °C	1428	
[ ] PID	ppm		MinRAE 2000			open air zero ____ ppm Iso. Gas		MIBK response factor = 1.0
[x] Dissolved Oxygen	ppm	0930	HACH Model HQ30d	080700023281 [ ] 100500041867 [ ] 140200100319 [x]	CEH	100% Satuartion		
[ ] Particulate meter	mg/m^3					zero air		
[ ] Radiation Meter	uR/H					background area		

ADDITIONAL REMARKS:

PREPARED BY: THB **DATE:** 4/27/18

ATTACHMENT 2B

ANALYTICAL DATA PACKAGE

TURNKEY

ANALYTICAL REPORT

Lab Number:	L1815126
Client:	Benchmark & Turnkey Companies 2558 Hamburg Turnpike Suite 300 Buffalo, NY 14218
ATTN:	Thomas Behrendt
Phone:	(716) 856-0599
Project Name:	TECUMSEH ANNUAL GWM HWMU 1/2
Project Number:	0071-017-240
Report Date:	05/14/18

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2
Project Number: 0071-017-240

Lab Number: L1815126
Report Date: 05/14/18

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1815126-01	HWMU-1B MW 1D1	WATER	BUFFALO, NY	04/26/18 13:55	04/27/18
L1815126-02	HWMU-1B MW 1D6	WATER	BUFFALO, NY	04/26/18 11:35	04/27/18
L1815126-03	HWMU-1B MW 1D7	WATER	BUFFALO, NY	04/26/18 12:50	04/27/18
L1815126-04	HWMU-1B MW 1D8	WATER	BUFFALO, NY	04/26/18 14:30	04/27/18
L1815126-05	HWMU-1B MW 1U1	WATER	BUFFALO, NY	04/26/18 09:40	04/27/18
L1815126-06	HWMU-1B MWN-12	WATER	BUFFALO, NY	04/26/18 10:20	04/27/18
L1815126-07	TRIP BLANK	WATER	BUFFALO, NY	04/26/18 00:00	04/27/18
L1815126-08	HWMU-2 MW 2D2	WATER	BUFFALO, NY	04/27/18 13:53	04/27/18
L1815126-09	HWMU-2 MW 2D3	WATER	BUFFALO, NY	04/27/18 13:13	04/27/18
L1815126-10	HWMU-2 MW 2D4	WATER	BUFFALO, NY	04/27/18 14:24	04/27/18
L1815126-11	HWMU-2 MWS 11A	WATER	BUFFALO, NY	04/27/18 14:55	04/27/18
L1815126-12	HWMU-1A MW 1D2	WATER	BUFFALO, NY	04/27/18 10:50	04/27/18
L1815126-13	HWMU-1A MW 1D3	WATER	BUFFALO, NY	04/27/18 11:20	04/27/18
L1815126-14	HWMU-1A MW 1D4	WATER	BUFFALO, NY	04/27/18 11:45	04/27/18
L1815126-15	FIELD BLANK	WATER	BUFFALO, NY	04/27/18 09:33	04/27/18
L1815126-16	EQUIPMENT BLANK	WATER	BUFFALO, NY	04/27/18 09:50	04/27/18

Project Name:	TECUMSEH ANNUAL GWM HWMU 1/2	**Lab Number:**	L1815126
Project Number:	0071-017-240	**Report Date:**	05/14/18

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name:	TECUMSEH ANNUAL GWM HWMU 1/2	**Lab Number:**	L1815126
Project Number:	0071-017-240	**Report Date:**	05/14/18

Case Narrative (continued)

Report Revision

May 14, 2018: The Volatile Organics analyte list has been amended on L1815126-01 through -07.

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

The project number was supplied by the project manager.

L1815126-15 and -16: Samples identified as "FIELD BLANK" and "EQUIPMENT BLANK" were received, but not listed on the chain of custody, and were analyzed at the client's request.

Perfluorinated Alkyl Acids by Isotope Dilution

Extracted Internal Standard recoveries for the following samples were outside the acceptance criteria:

L1815126-09: perfluoro[13c4]butanoic acid (mpfba) (49%); perfluoro[13c5]pentanoic acid (m5pfpea) (35%); perfluoro[1,2,3,4,6-13c5]hexanoic acid (m5pfhxa) (44%); 1h,1h,2h,2h-perfluoro[1,2-13c2]octanesulfonic acid (m2-6:2fts) (286%); 1h,1h,2h,2h-perfluoro[1,2-13c2]decanesulfonic acid (m2-8:2fts) (184%); and perfluoro[13c8]octanesulfonamide (m8fosa) (36%)

L1815126-12: perfluoro[13c4]butanoic acid (mpfba) (44%); 1h,1h,2h,2h-perfluoro[1,2-13c2]octanesulfonic acid (m2-6:2fts) (177%); and perfluoro[13c8]octanesulfonamide (m8fosa) (14%)

L1815126-15: perfluoro[13c8]octanesulfonamide (m8fosa) (8%)

L1815126-16: perfluoro[13c8]octanesulfonamide (m8fosa) (11%)

WG1111167-1: perfluoro[13c8]octanesulfonamide (m8fosa) (3%)

WG1111167-2: perfluoro[13c8]octanesulfonamide (m8fosa) (6%)

WG1111167-3: perfluoro[13c8]octanesulfonamide (m8fosa) (11%)

WG1111167-5: 1h,1h,2h,2h-perfluoro[1,2-13c2]octanesulfonic acid (m2-6:2fts) (182%); perfluoro[13c4]butanoic acid (mpfba) (48%); and perfluoro[13c8]octanesulfonamide (m8fosa) (19%)

WG1111167-4: perfluoro[13c4]butanoic acid (mpfba) (48%); perfluoro[13c5]pentanoic acid (m5pfpea) (35%);

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126
Project Number: 0071-017-240 **Report Date:** 05/14/18

Case Narrative (continued)

perfluoro[1,2,3,4,6-13c5]hexanoic acid (m5pfhxa) (44%); 1h,1h,2h,2h-perfluoro[1,2-13c2]octanesulfonic acid (m2-6:2fts) (261%); 1h,1h,2h,2h-perfluoro[1,2-13c2]decanesulfonic acid (m2-8:2fts) (173%); and perfluoro[13c8]octanesulfonamide (m8fosa) (37%)

The WG1111167-4 Laboratory Duplicate RPD for perfluorohexanesulfonic acid (pfhxs) (34%), performed on L1815126-09, is outside the acceptance criteria.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Cripps Melissa Cripps

Title: Technical Director/Representative Date: 05/14/18

ORGANICS

VOLATILES

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-01 D
Client ID: HWMU-1B MW 1D1
Sample Location: BUFFALO, NY

Date Collected: 04/26/18 13:55
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/02/18 21:38
Analyst: KD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	10	2.8	4
1,1-Dichloroethane	ND		ug/l	10	2.8	4
Chloroform	ND		ug/l	10	2.8	4
Carbon tetrachloride	ND		ug/l	2.0	0.54	4
1,2-Dichloropropane	ND		ug/l	4.0	0.55	4
Dibromochloromethane	ND		ug/l	2.0	0.60	4
1,1,2-Trichloroethane	ND		ug/l	6.0	2.0	4
Tetrachloroethene	ND		ug/l	2.0	0.72	4
Chlorobenzene	ND		ug/l	10	2.8	4
Trichlorofluoromethane	ND		ug/l	10	2.8	4
1,2-Dichloroethane	ND		ug/l	2.0	0.53	4
1,1,1-Trichloroethane	ND		ug/l	10	2.8	4
Bromodichloromethane	ND		ug/l	2.0	0.77	4
trans-1,3-Dichloropropene	ND		ug/l	2.0	0.66	4
cis-1,3-Dichloropropene	ND		ug/l	2.0	0.58	4
Bromoform	ND		ug/l	8.0	2.6	4
1,1,2,2-Tetrachloroethane	ND		ug/l	2.0	0.67	4
Benzene	8.5		ug/l	2.0	0.64	4
Toluene	6.6	J	ug/l	10	2.8	4
Ethylbenzene	14		ug/l	10	2.8	4
Chloromethane	ND		ug/l	10	2.8	4
Bromomethane	ND		ug/l	10	2.8	4
Vinyl chloride	ND		ug/l	4.0	0.28	4
Chloroethane	ND		ug/l	10	2.8	4
1,1-Dichloroethene	ND		ug/l	2.0	0.68	4
trans-1,2-Dichloroethene	ND		ug/l	10	2.8	4
Trichloroethene	4.2		ug/l	2.0	0.70	4
1,2-Dichlorobenzene	ND		ug/l	10	2.8	4

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-01 D
Client ID: HWMU-1B MW 1D1
Sample Location: BUFFALO, NY

Date Collected: 04/26/18 13:55
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	10	2.8	4
1,4-Dichlorobenzene	ND		ug/l	10	2.8	4
Methyl tert butyl ether	ND		ug/l	10	2.8	4
p/m-Xylene	14		ug/l	10	2.8	4
o-Xylene	27		ug/l	10	2.8	4
cis-1,2-Dichloroethene	ND		ug/l	10	2.8	4
Styrene	ND		ug/l	10	2.8	4
Dichlorodifluoromethane	ND		ug/l	20	4.0	4
Acetone	ND		ug/l	20	5.8	4
Carbon disulfide	ND		ug/l	20	4.0	4
2-Butanone	ND		ug/l	20	7.8	4
4-Methyl-2-pentanone	ND		ug/l	20	4.0	4
2-Hexanone	ND		ug/l	20	4.0	4
Bromochloromethane	ND		ug/l	10	2.8	4
1,2-Dibromoethane	ND		ug/l	8.0	2.6	4
n-Butylbenzene	ND		ug/l	10	2.8	4
sec-Butylbenzene	ND		ug/l	10	2.8	4
1,2-Dibromo-3-chloropropane	ND		ug/l	10	2.8	4
Isopropylbenzene	ND		ug/l	10	2.8	4
p-Isopropyltoluene	ND		ug/l	10	2.8	4
n-Propylbenzene	ND		ug/l	10	2.8	4
1,2,3-Trichlorobenzene	ND		ug/l	10	2.8	4
1,2,4-Trichlorobenzene	ND		ug/l	10	2.8	4
1,3,5-Trimethylbenzene	ND		ug/l	10	2.8	4
1,2,4-Trimethylbenzene	25		ug/l	10	2.8	4
Methyl Acetate	ND		ug/l	8.0	0.94	4
Cyclohexane	ND		ug/l	40	1.1	4
1,4-Dioxane	ND		ug/l	1000	240	4
Freon-113	ND		ug/l	10	2.8	4
Methyl cyclohexane	ND		ug/l	40	1.6	4

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	96		70-130

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-02
Client ID: HWMU-1B MW 1D6
Sample Location: BUFFALO, NY

Date Collected: 04/26/18 11:35
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/03/18 22:07
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	0.70	J	ug/l	2.5	0.70	1
1,1-Dichloroethane	1.7	J	ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	0.29	J	ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	2.0		ug/l	0.50	0.16	1
Toluene	0.88	J	ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-02 Date Collected: 04/26/18 11:35

Client ID: HWMU-1B MW 1D6 Date Received: 04/27/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	2.3	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	1.2	J	ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	94		70-130

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-03
Client ID: HWMU-1B MW 1D7
Sample Location: BUFFALO, NY

Date Collected: 04/26/18 12:50
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/03/18 22:36
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	7.0		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	0.78	J	ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	3.4		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	10		ug/l	2.5	0.70	1
Trichloroethene	0.44	J	ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-03 Date Collected: 04/26/18 12:50

Client ID: HWMU-1B MW 1D7 Date Received: 04/27/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	7.9		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	94		70-130

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-04
Client ID: HWMU-1B MW 1D8
Sample Location: BUFFALO, NY

Date Collected: 04/26/18 14:30
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/03/18 23:04
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-04 Date Collected: 04/26/18 14:30

Client ID: HWMU-1B MW 1D8 Date Received: 04/27/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	96		70-130

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-05
Client ID: HWMU-1B MW 1U1
Sample Location: BUFFALO, NY

Date Collected: 04/26/18 09:40
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/03/18 23:32
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	22		ug/l	0.50	0.16	1
Toluene	4.3		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-05 Date Collected: 04/26/18 09:40

Client ID: HWMU-1B MW 1U1 Date Received: 04/27/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	3.3		ug/l	2.5	0.70	1
o-Xylene	3.7		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	1.9	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	1.0	J	ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	93		70-130

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-06
Client ID: HWMU-1B MWN-12
Sample Location: BUFFALO, NY

Date Collected: 04/26/18 10:20
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/04/18 00:01
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	0.32	J	ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-06 Date Collected: 04/26/18 10:20

Client ID: HWMU-1B MWN-12 Date Received: 04/27/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	10		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	96		70-130

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-07
Client ID: TRIP BLANK
Sample Location: BUFFALO, NY

Date Collected: 04/26/18 00:00
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/04/18 00:29
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-07 Date Collected: 04/26/18 00:00

Client ID: TRIP BLANK Date Received: 04/27/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	2.0	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	92		70-130

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-08
Client ID: HWMU-2 MW 2D2
Sample Location: BUFFALO, NY

Date Collected: 04/27/18 13:53
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/04/18 00:57
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
tert-Butylbenzene	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	119		70-130
Dibromofluoromethane	94		70-130

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-09
Client ID: HWMU-2 MW 2D3
Sample Location: BUFFALO, NY

Date Collected: 04/27/18 13:13
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/02/18 20:15
Analyst: KD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	3.5		ug/l	0.50	0.16	1
Toluene	2.6		ug/l	2.5	0.70	1
Ethylbenzene	1.6	J	ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	7.6		ug/l	2.5	0.70	1
o-Xylene	3.4		ug/l	2.5	0.70	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
tert-Butylbenzene	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	1.5	J	ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	2.9		ug/l	2.5	0.70	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	114		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	94		70-130

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-10
Client ID: HWMU-2 MW 2D4
Sample Location: BUFFALO, NY

Date Collected: 04/27/18 14:24
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/04/18 01:26
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
tert-Butylbenzene	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	118		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	99		70-130

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-11
Client ID: HWMU-2 MWS 11A
Sample Location: BUFFALO, NY

Date Collected: 04/27/18 14:55
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/02/18 20:43
Analyst: KD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	2.6		ug/l	0.50	0.16	1
Toluene	1.7	J	ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	3.4		ug/l	2.5	0.70	1
o-Xylene	1.6	J	ug/l	2.5	0.70	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
tert-Butylbenzene	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	1.5	J	ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	2.4	J	ug/l	2.5	0.70	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	94		70-130

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-12
Client ID: HWMU-1A MW 1D2
Sample Location: BUFFALO, NY

Date Collected: 04/27/18 10:50
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/02/18 21:11
Analyst: KD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	1.3		ug/l	0.50	0.16	1
Toluene	0.83	J	ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	2.4	J	ug/l	2.5	0.70	1
o-Xylene	1.6	J	ug/l	2.5	0.70	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
tert-Butylbenzene	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	3.0		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	3.9		ug/l	2.5	0.70	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	93		70-130

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-13
Client ID: HWMU-1A MW 1D3
Sample Location: BUFFALO, NY

Date Collected: 04/27/18 11:20
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/04/18 01:54
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	5.2		ug/l	0.50	0.16	1
Toluene	2.3	J	ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	2.0	J	ug/l	2.5	0.70	1
o-Xylene	2.8		ug/l	2.5	0.70	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
tert-Butylbenzene	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	0.93	J	ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	93		70-130

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-14
Client ID: HWMU-1A MW 1D4
Sample Location: BUFFALO, NY

Date Collected: 04/27/18 11:45
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/04/18 02:23
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Benzene	5.6		ug/l	0.50	0.16	1
Toluene	2.8		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	2.5		ug/l	2.5	0.70	1
o-Xylene	2.7		ug/l	2.5	0.70	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
tert-Butylbenzene	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	1.5	J	ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	93		70-130

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/04/18 09:29
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 11 Batch: WG1111941-10					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/04/18 09:29
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 11 Batch: WG1111941-10					
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.70
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
n-Butylbenzene	ND		ug/l	2.5	0.70
sec-Butylbenzene	ND		ug/l	2.5	0.70
tert-Butylbenzene	ND		ug/l	2.5	0.70
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
p-Isopropyltoluene	ND		ug/l	2.5	0.70
n-Propylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
1,4-Dioxane	ND		ug/l	250	61.
Freon-113	ND		ug/l	2.5	0.70

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/04/18 09:29
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 11 Batch: WG1111941-10					
Methyl cyclohexane	ND		ug/l	10	0.40

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	113		70-130
Dibromofluoromethane	89		70-130

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/02/18 12:23
Analyst: KD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01,09,11-12 Batch: WG1111941-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/02/18 12:23
Analyst: KD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01,09,11-12 Batch: WG1111941-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.70
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
n-Butylbenzene	ND		ug/l	2.5	0.70
sec-Butylbenzene	ND		ug/l	2.5	0.70
tert-Butylbenzene	ND		ug/l	2.5	0.70
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
p-Isopropyltoluene	ND		ug/l	2.5	0.70
n-Propylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
1,4-Dioxane	ND		ug/l	250	61.
Freon-113	ND		ug/l	2.5	0.70

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/02/18 12:23
Analyst: KD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01,09,11-12 Batch: WG1111941-5					
Methyl cyclohexane	ND		ug/l	10	0.40

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	93		70-130

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/03/18 20:42
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02-08,10,13-14 Batch: WG1112666-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/03/18 20:42
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02-08,10,13-14 Batch: WG1112666-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.70
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
n-Butylbenzene	ND		ug/l	2.5	0.70
sec-Butylbenzene	ND		ug/l	2.5	0.70
tert-Butylbenzene	ND		ug/l	2.5	0.70
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
p-Isopropyltoluene	ND		ug/l	2.5	0.70
n-Propylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
1,4-Dioxane	ND		ug/l	250	61.
Freon-113	ND		ug/l	2.5	0.70

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/03/18 20:42
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02-08,10,13-14 Batch: WG1112666-5					
Methyl cyclohexane	ND		ug/l	10	0.40

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	99		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2

Project Number: 0071-017-240

Lab Number: L1815126

Report Date: 05/14/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,09,11-12 Batch: WG1111941-3 WG1111941-4								
Methylene chloride	99		100		70-130	1		20
1,1-Dichloroethane	110		110		70-130	0		20
Chloroform	93		94		70-130	1		20
Carbon tetrachloride	83		84		63-132	1		20
1,2-Dichloropropane	110		110		70-130	0		20
Dibromochloromethane	89		92		63-130	3		20
1,1,2-Trichloroethane	100		110		70-130	10		20
Tetrachloroethene	85		86		70-130	1		20
Chlorobenzene	95		96		75-130	1		20
Trichlorofluoromethane	87		89		62-150	2		20
1,2-Dichloroethane	96		98		70-130	2		20
1,1,1-Trichloroethane	88		89		67-130	1		20
Bromodichloromethane	90		93		67-130	3		20
trans-1,3-Dichloropropene	99		100		70-130	1		20
cis-1,3-Dichloropropene	94		95		70-130	1		20
Bromoform	91		93		54-136	2		20
1,1,2,2-Tetrachloroethane	110		110		67-130	0		20
Benzene	93		93		70-130	0		20
Toluene	97		99		70-130	2		20
Ethylbenzene	98		98		70-130	0		20
Chloromethane	120		120		64-130	0		20
Bromomethane	73		68		39-139	7		20
Vinyl chloride	100		110		55-140	10		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2

Project Number: 0071-017-240

Lab Number: L1815126

Report Date: 05/14/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,09,11-12 Batch: WG1111941-3 WG1111941-4								
Chloroethane	99		110		55-138	11		20
1,1-Dichloroethene	92		93		61-145	1		20
trans-1,2-Dichloroethene	94		95		70-130	1		20
Trichloroethene	87		88		70-130	1		20
1,2-Dichlorobenzene	94		94		70-130	0		20
1,3-Dichlorobenzene	96		94		70-130	2		20
1,4-Dichlorobenzene	96		95		70-130	1		20
Methyl tert butyl ether	90		94		63-130	4		20
p/m-Xylene	95		100		70-130	5		20
o-Xylene	100		95		70-130	5		20
cis-1,2-Dichloroethene	92		93		70-130	1		20
Styrene	**140**	Q	**145**	Q	70-130	4		20
Dichlorodifluoromethane	92		94		36-147	2		20
Acetone	100		110		58-148	10		20
Carbon disulfide	99		100		51-130	1		20
2-Butanone	120		130		63-138	8		20
4-Methyl-2-pentanone	110		110		59-130	0		20
2-Hexanone	99		110		57-130	11		20
Bromochloromethane	85		86		70-130	1		20
1,2-Dibromoethane	91		93		70-130	2		20
n-Butylbenzene	100		100		53-136	0		20
sec-Butylbenzene	100		100		70-130	0		20
tert-Butylbenzene	99		98		70-130	1		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2

Project Number: 0071-017-240

Lab Number: L1815126

Report Date: 05/14/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,09,11-12 Batch: WG1111941-3 WG1111941-4								
1,2-Dibromo-3-chloropropane	91		89		41-144	2		20
Isopropylbenzene	100		100		70-130	0		20
p-Isopropyltoluene	100		98		70-130	2		20
n-Propylbenzene	110		100		69-130	10		20
1,2,3-Trichlorobenzene	77		78		70-130	1		20
1,2,4-Trichlorobenzene	80		80		70-130	0		20
1,3,5-Trimethylbenzene	100		100		64-130	0		20
1,2,4-Trimethylbenzene	83		82		70-130	1		20
Methyl Acetate	130		**140**	Q	70-130	7		20
Cyclohexane	110		120		70-130	9		20
1,4-Dioxane	106		102		56-162	4		20
Freon-113	92		93		70-130	1		20
Methyl cyclohexane	91		93		70-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		100		70-130
Toluene-d8	104		104		70-130
4-Bromofluorobenzene	105		102		70-130
Dibromofluoromethane	93		93		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2

Project Number: 0071-017-240

Lab Number: L1815126

Report Date: 05/14/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 11 Batch: WG1111941-8 WG1111941-9								
Methylene chloride	110		100		70-130	10		20
1,1-Dichloroethane	110		110		70-130	0		20
Chloroform	97		98		70-130	1		20
Carbon tetrachloride	80		84		63-132	5		20
1,2-Dichloropropane	110		120		70-130	9		20
Dibromochloromethane	92		93		63-130	1		20
1,1,2-Trichloroethane	110		110		70-130	0		20
Tetrachloroethene	86		90		70-130	5		20
Chlorobenzene	98		99		75-130	1		20
Trichlorofluoromethane	80		85		62-150	6		20
1,2-Dichloroethane	98		96		70-130	2		20
1,1,1-Trichloroethane	87		91		67-130	4		20
Bromodichloromethane	90		93		67-130	3		20
trans-1,3-Dichloropropene	100		100		70-130	0		20
cis-1,3-Dichloropropene	100		100		70-130	0		20
Bromoform	94		93		54-136	1		20
1,1,2,2-Tetrachloroethane	120		110		67-130	9		20
Benzene	98		99		70-130	1		20
Toluene	100		100		70-130	0		20
Ethylbenzene	100		100		70-130	0		20
Chloromethane	88		100		64-130	13		20
Bromomethane	65		63		39-139	3		20
Vinyl chloride	88		100		55-140	13		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2

Project Number: 0071-017-240

Lab Number: L1815126

Report Date: 05/14/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 11 Batch: WG1111941-8 WG1111941-9								
Chloroethane	100		110		55-138	10		20
1,1-Dichloroethene	92		91		61-145	1		20
trans-1,2-Dichloroethene	99		99		70-130	0		20
Trichloroethene	89		91		70-130	2		20
1,2-Dichlorobenzene	99		98		70-130	1		20
1,3-Dichlorobenzene	98		98		70-130	0		20
1,4-Dichlorobenzene	98		98		70-130	0		20
Methyl tert butyl ether	100		99		63-130	1		20
p/m-Xylene	100		100		70-130	0		20
o-Xylene	100		100		70-130	0		20
cis-1,2-Dichloroethene	97		99		70-130	2		20
Styrene	**140**	Q	**140**	Q	70-130	0		20
Dichlorodifluoromethane	79		90		36-147	13		20
Acetone	**160**	Q	140		58-148	13		20
Carbon disulfide	100		99		51-130	1		20
2-Butanone	**150**	Q	**140**	Q	63-138	7		20
4-Methyl-2-pentanone	120		120		59-130	0		20
2-Hexanone	120		110		57-130	9		20
Bromochloromethane	91		93		70-130	2		20
1,2-Dibromoethane	96		99		70-130	3		20
n-Butylbenzene	100		100		53-136	0		20
sec-Butylbenzene	100		100		70-130	0		20
tert-Butylbenzene	100		100		70-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2

Project Number: 0071-017-240

Lab Number: L1815126

Report Date: 05/14/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 11 Batch: WG1111941-8 WG1111941-9								
1,2-Dibromo-3-chloropropane	91		90		41-144	1		20
Isopropylbenzene	100		100		70-130	0		20
p-Isopropyltoluene	100		100		70-130	0		20
n-Propylbenzene	110		110		69-130	0		20
1,2,3-Trichlorobenzene	84		83		70-130	1		20
1,2,4-Trichlorobenzene	86		84		70-130	2		20
1,3,5-Trimethylbenzene	100		100		64-130	0		20
1,2,4-Trimethylbenzene	87		88		70-130	1		20
Methyl Acetate	**140**	Q	130		70-130	7		20
Cyclohexane	110		120		70-130	9		20
1,4-Dioxane	84		88		56-162	5		20
Freon-113	93		97		70-130	4		20
Methyl cyclohexane	94		98		70-130	4		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	93		93		70-130
Toluene-d8	102		102		70-130
4-Bromofluorobenzene	104		103		70-130
Dibromofluoromethane	91		92		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2

Project Number: 0071-017-240

Lab Number: L1815126

Report Date: 05/14/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02-08,10,13-14 Batch: WG1112666-3 WG1112666-4								
Methylene chloride	76		80		70-130	5		20
1,1-Dichloroethane	84		89		70-130	6		20
Chloroform	82		88		70-130	7		20
Carbon tetrachloride	82		88		63-132	7		20
1,2-Dichloropropane	87		85		70-130	2		20
Dibromochloromethane	81		85		63-130	5		20
1,1,2-Trichloroethane	85		85		70-130	0		20
Tetrachloroethene	83		87		70-130	5		20
Chlorobenzene	85		88		75-130	3		20
Trichlorofluoromethane	86		91		62-150	6		20
1,2-Dichloroethane	95		96		70-130	1		20
1,1,1-Trichloroethane	87		91		67-130	4		20
Bromodichloromethane	83		84		67-130	1		20
trans-1,3-Dichloropropene	88		89		70-130	1		20
cis-1,3-Dichloropropene	84		83		70-130	1		20
Bromoform	74		77		54-136	4		20
1,1,2,2-Tetrachloroethane	85		87		67-130	2		20
Benzene	86		90		70-130	5		20
Toluene	89		88		70-130	1		20
Ethylbenzene	85		89		70-130	5		20
Chloromethane	92		95		64-130	3		20
Bromomethane	62		67		39-139	8		20
Vinyl chloride	86		91		55-140	6		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2

Project Number: 0071-017-240

Lab Number: L1815126

Report Date: 05/14/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02-08,10,13-14 Batch: WG1112666-3 WG1112666-4								
Chloroethane	68		71		55-138	4		20
1,1-Dichloroethene	80		85		61-145	6		20
trans-1,2-Dichloroethene	80		85		70-130	6		20
Trichloroethene	84		89		70-130	6		20
1,2-Dichlorobenzene	86		89		70-130	3		20
1,3-Dichlorobenzene	86		90		70-130	5		20
1,4-Dichlorobenzene	87		89		70-130	2		20
Methyl tert butyl ether	78		81		63-130	4		20
p/m-Xylene	80		85		70-130	6		20
o-Xylene	80		85		70-130	6		20
cis-1,2-Dichloroethene	82		85		70-130	4		20
Styrene	80		85		70-130	6		20
Dichlorodifluoromethane	78		82		36-147	5		20
Acetone	71		77		58-148	8		20
Carbon disulfide	81		86		51-130	6		20
2-Butanone	80		84		63-138	5		20
4-Methyl-2-pentanone	80		82		59-130	2		20
2-Hexanone	92		96		57-130	4		20
Bromochloromethane	79		83		70-130	5		20
1,2-Dibromoethane	84		86		70-130	2		20
n-Butylbenzene	89		94		53-136	5		20
sec-Butylbenzene	88		92		70-130	4		20
tert-Butylbenzene	91		95		70-130	4		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2

Project Number: 0071-017-240

Lab Number: L1815126

Report Date: 05/14/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02-08,10,13-14 Batch: WG1112666-3 WG1112666-4								
1,2-Dibromo-3-chloropropane	75		75		41-144	0		20
Isopropylbenzene	91		94		70-130	3		20
p-Isopropyltoluene	90		95		70-130	5		20
n-Propylbenzene	90		94		69-130	4		20
1,2,3-Trichlorobenzene	74		75		70-130	1		20
1,2,4-Trichlorobenzene	81		85		70-130	5		20
1,3,5-Trimethylbenzene	90		94		64-130	4		20
1,2,4-Trimethylbenzene	91		95		70-130	4		20
Methyl Acetate	82		85		70-130	4		20
Cyclohexane	88		94		70-130	7		20
1,4-Dioxane	106		100		56-162	6		20
Freon-113	81		84		70-130	4		20
Methyl cyclohexane	81		84		70-130	4		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	111		112		70-130
Toluene-d8	106		101		70-130
4-Bromofluorobenzene	108		108		70-130
Dibromofluoromethane	95		97		70-130

SEMIVOLATILES

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-01
Client ID: HWMU-1B MW 1D1
Sample Location: BUFFALO, NY

Date Collected: 04/26/18 13:55
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 05/08/18 17:46
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 04/30/18 15:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	2.0		ug/l	2.0	0.59	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.66	1
Hexachlorobenzene	ND		ug/l	2.0	0.58	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.67	1
2-Chloronaphthalene	ND		ug/l	2.0	0.64	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.73	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.69	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.71	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.4	1
2,4-Dinitrotoluene	ND		ug/l	5.0	0.84	1
2,6-Dinitrotoluene	ND		ug/l	5.0	1.1	1
Fluoranthene	ND		ug/l	2.0	0.57	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.62	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.73	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.70	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.63	1
Hexachlorobutadiene	ND		ug/l	2.0	0.72	1
Hexachlorocyclopentadiene	ND		ug/l	20	7.8	1
Hexachloroethane	ND		ug/l	2.0	0.68	1
Isophorone	ND		ug/l	5.0	0.60	1
Naphthalene	180		ug/l	2.0	0.68	1
Nitrobenzene	ND		ug/l	2.0	0.75	1
NDPA/DPA	ND		ug/l	2.0	0.64	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.70	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	0.91	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.3	1
Di-n-butylphthalate	ND		ug/l	5.0	0.69	1
Di-n-octylphthalate	ND		ug/l	5.0	1.1	1

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-01 Date Collected: 04/26/18 13:55

Client ID: HWMU-1B MW 1D1 Date Received: 04/27/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/l	5.0	0.63	1
Dimethyl phthalate	ND		ug/l	5.0	0.65	1
Benzo(a)anthracene	ND		ug/l	2.0	0.61	1
Benzo(a)pyrene	ND		ug/l	2.0	0.54	1
Benzo(b)fluoranthene	ND		ug/l	2.0	0.64	1
Benzo(k)fluoranthene	ND		ug/l	2.0	0.60	1
Chrysene	ND		ug/l	2.0	0.54	1
Acenaphthylene	25.		ug/l	2.0	0.66	1
Anthracene	ND		ug/l	2.0	0.64	1
Benzo(ghi)perylene	ND		ug/l	2.0	0.61	1
Fluorene	8.6		ug/l	2.0	0.62	1
Phenanthrene	2.1		ug/l	2.0	0.61	1
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.55	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.71	1
Pyrene	ND		ug/l	2.0	0.57	1
Biphenyl	8.4		ug/l	2.0	0.76	1
4-Chloroaniline	ND		ug/l	5.0	0.63	1
2-Nitroaniline	ND		ug/l	5.0	1.1	1
3-Nitroaniline	ND		ug/l	5.0	1.2	1
4-Nitroaniline	ND		ug/l	5.0	1.3	1
Dibenzofuran	11.		ug/l	2.0	0.66	1
2-Methylnaphthalene	4.5		ug/l	2.0	0.72	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.67	1
Acetophenone	ND		ug/l	5.0	0.85	1
Benzyl Alcohol	ND		ug/l	2.0	0.72	1
Carbazole	0.90	J	ug/l	2.0	0.63	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	45		21-120
Phenol-d6	32		10-120
Nitrobenzene-d5	75		23-120
2-Fluorobiphenyl	82		15-120
2,4,6-Tribromophenol	87		10-120
4-Terphenyl-d14	90		41-149

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-02
Client ID: HWMU-1B MW 1D6
Sample Location: BUFFALO, NY

Date Collected: 04/26/18 11:35
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 05/08/18 18:12
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 04/30/18 15:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/l	2.0	0.59	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.66	1
Hexachlorobenzene	ND		ug/l	2.0	0.58	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.67	1
2-Chloronaphthalene	ND		ug/l	2.0	0.64	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.73	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.69	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.71	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.4	1
2,4-Dinitrotoluene	ND		ug/l	5.0	0.84	1
2,6-Dinitrotoluene	ND		ug/l	5.0	1.1	1
Fluoranthene	4.1		ug/l	2.0	0.57	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.62	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.73	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.70	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.63	1
Hexachlorobutadiene	ND		ug/l	2.0	0.72	1
Hexachlorocyclopentadiene	ND		ug/l	20	7.8	1
Hexachloroethane	ND		ug/l	2.0	0.68	1
Isophorone	ND		ug/l	5.0	0.60	1
Naphthalene	28.		ug/l	2.0	0.68	1
Nitrobenzene	ND		ug/l	2.0	0.75	1
NDPA/DPA	ND		ug/l	2.0	0.64	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.70	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	0.91	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.3	1
Di-n-butylphthalate	ND		ug/l	5.0	0.69	1
Di-n-octylphthalate	ND		ug/l	5.0	1.1	1

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-02 Date Collected: 04/26/18 11:35

Client ID: HWMU-1B MW 1D6 Date Received: 04/27/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/l	5.0	0.63	1
Dimethyl phthalate	ND		ug/l	5.0	0.65	1
Benzo(a)anthracene	ND		ug/l	2.0	0.61	1
Benzo(a)pyrene	ND		ug/l	2.0	0.54	1
Benzo(b)fluoranthene	ND		ug/l	2.0	0.64	1
Benzo(k)fluoranthene	ND		ug/l	2.0	0.60	1
Chrysene	ND		ug/l	2.0	0.54	1
Acenaphthylene	0.66	J	ug/l	2.0	0.66	1
Anthracene	ND		ug/l	2.0	0.64	1
Benzo(ghi)perylene	ND		ug/l	2.0	0.61	1
Fluorene	1.8	J	ug/l	2.0	0.62	1
Phenanthrene	11.		ug/l	2.0	0.61	1
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.55	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.71	1
Pyrene	2.0		ug/l	2.0	0.57	1
Biphenyl	ND		ug/l	2.0	0.76	1
4-Chloroaniline	ND		ug/l	5.0	0.63	1
2-Nitroaniline	ND		ug/l	5.0	1.1	1
3-Nitroaniline	ND		ug/l	5.0	1.2	1
4-Nitroaniline	ND		ug/l	5.0	1.3	1
Dibenzofuran	1.4	J	ug/l	2.0	0.66	1
2-Methylnaphthalene	2.1		ug/l	2.0	0.72	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.67	1
Acetophenone	ND		ug/l	5.0	0.85	1
Benzyl Alcohol	ND		ug/l	2.0	0.72	1
Carbazole	3.3		ug/l	2.0	0.63	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	49		21-120
Phenol-d6	34		10-120
Nitrobenzene-d5	84		23-120
2-Fluorobiphenyl	89		15-120
2,4,6-Tribromophenol	94		10-120
4-Terphenyl-d14	98		41-149

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-03
Client ID: HWMU-1B MW 1D7
Sample Location: BUFFALO, NY

Date Collected: 04/26/18 12:50
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 05/08/18 18:37
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 04/30/18 15:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/l	2.0	0.59	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.66	1
Hexachlorobenzene	ND		ug/l	2.0	0.58	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.67	1
2-Chloronaphthalene	ND		ug/l	2.0	0.64	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.73	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.69	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.71	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.4	1
2,4-Dinitrotoluene	ND		ug/l	5.0	0.84	1
2,6-Dinitrotoluene	ND		ug/l	5.0	1.1	1
Fluoranthene	ND		ug/l	2.0	0.57	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.62	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.73	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.70	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.63	1
Hexachlorobutadiene	ND		ug/l	2.0	0.72	1
Hexachlorocyclopentadiene	ND		ug/l	20	7.8	1
Hexachloroethane	ND		ug/l	2.0	0.68	1
Isophorone	ND		ug/l	5.0	0.60	1
Naphthalene	ND		ug/l	2.0	0.68	1
Nitrobenzene	ND		ug/l	2.0	0.75	1
NDPA/DPA	ND		ug/l	2.0	0.64	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.70	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	0.91	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.3	1
Di-n-butylphthalate	ND		ug/l	5.0	0.69	1
Di-n-octylphthalate	ND		ug/l	5.0	1.1	1

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-03 Date Collected: 04/26/18 12:50

Client ID: HWMU-1B MW 1D7 Date Received: 04/27/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/l	5.0	0.63	1
Dimethyl phthalate	ND		ug/l	5.0	0.65	1
Benzo(a)anthracene	ND		ug/l	2.0	0.61	1
Benzo(a)pyrene	ND		ug/l	2.0	0.54	1
Benzo(b)fluoranthene	ND		ug/l	2.0	0.64	1
Benzo(k)fluoranthene	ND		ug/l	2.0	0.60	1
Chrysene	ND		ug/l	2.0	0.54	1
Acenaphthylene	ND		ug/l	2.0	0.66	1
Anthracene	ND		ug/l	2.0	0.64	1
Benzo(ghi)perylene	ND		ug/l	2.0	0.61	1
Fluorene	5.2		ug/l	2.0	0.62	1
Phenanthrene	ND		ug/l	2.0	0.61	1
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.55	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.71	1
Pyrene	ND		ug/l	2.0	0.57	1
Biphenyl	ND		ug/l	2.0	0.76	1
4-Chloroaniline	ND		ug/l	5.0	0.63	1
2-Nitroaniline	ND		ug/l	5.0	1.1	1
3-Nitroaniline	ND		ug/l	5.0	1.2	1
4-Nitroaniline	ND		ug/l	5.0	1.3	1
Dibenzofuran	ND		ug/l	2.0	0.66	1
2-Methylnaphthalene	ND		ug/l	2.0	0.72	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.67	1
Acetophenone	ND		ug/l	5.0	0.85	1
Benzyl Alcohol	ND		ug/l	2.0	0.72	1
Carbazole	ND		ug/l	2.0	0.63	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	50		21-120
Phenol-d6	34		10-120
Nitrobenzene-d5	87		23-120
2-Fluorobiphenyl	91		15-120
2,4,6-Tribromophenol	100		10-120
4-Terphenyl-d14	100		41-149

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-04
Client ID: HWMU-1B MW 1D8
Sample Location: BUFFALO, NY

Date Collected: 04/26/18 14:30
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 05/08/18 19:03
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 04/30/18 15:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/l	2.0	0.59	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.66	1
Hexachlorobenzene	ND		ug/l	2.0	0.58	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.67	1
2-Chloronaphthalene	ND		ug/l	2.0	0.64	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.73	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.69	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.71	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.4	1
2,4-Dinitrotoluene	ND		ug/l	5.0	0.84	1
2,6-Dinitrotoluene	ND		ug/l	5.0	1.1	1
Fluoranthene	ND		ug/l	2.0	0.57	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.62	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.73	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.70	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.63	1
Hexachlorobutadiene	ND		ug/l	2.0	0.72	1
Hexachlorocyclopentadiene	ND		ug/l	20	7.8	1
Hexachloroethane	ND		ug/l	2.0	0.68	1
Isophorone	ND		ug/l	5.0	0.60	1
Naphthalene	ND		ug/l	2.0	0.68	1
Nitrobenzene	ND		ug/l	2.0	0.75	1
NDPA/DPA	ND		ug/l	2.0	0.64	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.70	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	0.91	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.3	1
Di-n-butylphthalate	ND		ug/l	5.0	0.69	1
Di-n-octylphthalate	ND		ug/l	5.0	1.1	1

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-04 Date Collected: 04/26/18 14:30

Client ID: HWMU-1B MW 1D8 Date Received: 04/27/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/l	5.0	0.63	1
Dimethyl phthalate	ND		ug/l	5.0	0.65	1
Benzo(a)anthracene	ND		ug/l	2.0	0.61	1
Benzo(a)pyrene	ND		ug/l	2.0	0.54	1
Benzo(b)fluoranthene	ND		ug/l	2.0	0.64	1
Benzo(k)fluoranthene	ND		ug/l	2.0	0.60	1
Chrysene	ND		ug/l	2.0	0.54	1
Acenaphthylene	ND		ug/l	2.0	0.66	1
Anthracene	ND		ug/l	2.0	0.64	1
Benzo(ghi)perylene	ND		ug/l	2.0	0.61	1
Fluorene	ND		ug/l	2.0	0.62	1
Phenanthrene	ND		ug/l	2.0	0.61	1
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.55	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.71	1
Pyrene	ND		ug/l	2.0	0.57	1
Biphenyl	ND		ug/l	2.0	0.76	1
4-Chloroaniline	ND		ug/l	5.0	0.63	1
2-Nitroaniline	ND		ug/l	5.0	1.1	1
3-Nitroaniline	ND		ug/l	5.0	1.2	1
4-Nitroaniline	ND		ug/l	5.0	1.3	1
Dibenzofuran	ND		ug/l	2.0	0.66	1
2-Methylnaphthalene	ND		ug/l	2.0	0.72	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.67	1
Acetophenone	ND		ug/l	5.0	0.85	1
Benzyl Alcohol	ND		ug/l	2.0	0.72	1
Carbazole	ND		ug/l	2.0	0.63	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	27		21-120
Phenol-d6	21		10-120
Nitrobenzene-d5	51		23-120
2-Fluorobiphenyl	63		15-120
2,4,6-Tribromophenol	80		10-120
4-Terphenyl-d14	93		41-149

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-05
Client ID: HWMU-1B MW 1U1
Sample Location: BUFFALO, NY

Date Collected: 04/26/18 09:40
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 05/08/18 19:29
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 04/30/18 15:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	0.68	J	ug/l	2.0	0.59	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.66	1
Hexachlorobenzene	ND		ug/l	2.0	0.58	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.67	1
2-Chloronaphthalene	ND		ug/l	2.0	0.64	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.73	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.69	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.71	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.4	1
2,4-Dinitrotoluene	ND		ug/l	5.0	0.84	1
2,6-Dinitrotoluene	ND		ug/l	5.0	1.1	1
Fluoranthene	1.5	J	ug/l	2.0	0.57	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.62	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.73	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.70	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.63	1
Hexachlorobutadiene	ND		ug/l	2.0	0.72	1
Hexachlorocyclopentadiene	ND		ug/l	20	7.8	1
Hexachloroethane	ND		ug/l	2.0	0.68	1
Isophorone	ND		ug/l	5.0	0.60	1
Naphthalene	14.		ug/l	2.0	0.68	1
Nitrobenzene	ND		ug/l	2.0	0.75	1
NDPA/DPA	ND		ug/l	2.0	0.64	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.70	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	0.91	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.3	1
Di-n-butylphthalate	ND		ug/l	5.0	0.69	1
Di-n-octylphthalate	ND		ug/l	5.0	1.1	1

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-05 Date Collected: 04/26/18 09:40

Client ID: HWMU-1B MW 1U1 Date Received: 04/27/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/l	5.0	0.63	1
Dimethyl phthalate	ND		ug/l	5.0	0.65	1
Benzo(a)anthracene	ND		ug/l	2.0	0.61	1
Benzo(a)pyrene	ND		ug/l	2.0	0.54	1
Benzo(b)fluoranthene	ND		ug/l	2.0	0.64	1
Benzo(k)fluoranthene	ND		ug/l	2.0	0.60	1
Chrysene	ND		ug/l	2.0	0.54	1
Acenaphthylene	1.4	J	ug/l	2.0	0.66	1
Anthracene	ND		ug/l	2.0	0.64	1
Benzo(ghi)perylene	ND		ug/l	2.0	0.61	1
Fluorene	1.7	J	ug/l	2.0	0.62	1
Phenanthrene	2.9		ug/l	2.0	0.61	1
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.55	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.71	1
Pyrene	1.5	J	ug/l	2.0	0.57	1
Biphenyl	ND		ug/l	2.0	0.76	1
4-Chloroaniline	ND		ug/l	5.0	0.63	1
2-Nitroaniline	ND		ug/l	5.0	1.1	1
3-Nitroaniline	ND		ug/l	5.0	1.2	1
4-Nitroaniline	ND		ug/l	5.0	1.3	1
Dibenzofuran	0.82	J	ug/l	2.0	0.66	1
2-Methylnaphthalene	1.0	J	ug/l	2.0	0.72	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.67	1
Acetophenone	ND		ug/l	5.0	0.85	1
Benzyl Alcohol	ND		ug/l	2.0	0.72	1
Carbazole	2.0		ug/l	2.0	0.63	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	41		21-120
Phenol-d6	30		10-120
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	84		15-120
2,4,6-Tribromophenol	92		10-120
4-Terphenyl-d14	101		41-149

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-06
Client ID: HWMU-1B MWN-12
Sample Location: BUFFALO, NY

Date Collected: 04/26/18 10:20
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 05/09/18 19:40
Analyst: EK

Extraction Method: EPA 3510C
Extraction Date: 04/30/18 15:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	0.98	J	ug/l	2.0	0.59	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.66	1
Hexachlorobenzene	ND		ug/l	2.0	0.58	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.67	1
2-Chloronaphthalene	ND		ug/l	2.0	0.64	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.73	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.69	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.71	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.4	1
2,4-Dinitrotoluene	ND		ug/l	5.0	0.84	1
2,6-Dinitrotoluene	ND		ug/l	5.0	1.1	1
Fluoranthene	2.4		ug/l	2.0	0.57	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.62	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.73	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.70	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.63	1
Hexachlorobutadiene	ND		ug/l	2.0	0.72	1
Hexachlorocyclopentadiene	ND		ug/l	20	7.8	1
Hexachloroethane	ND		ug/l	2.0	0.68	1
Isophorone	ND		ug/l	5.0	0.60	1
Naphthalene	0.87	J	ug/l	2.0	0.68	1
Nitrobenzene	ND		ug/l	2.0	0.75	1
NDPA/DPA	ND		ug/l	2.0	0.64	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.70	1
Bis(2-ethylhexyl)phthalate	8.5		ug/l	3.0	0.91	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.3	1
Di-n-butylphthalate	ND		ug/l	5.0	0.69	1
Di-n-octylphthalate	ND		ug/l	5.0	1.1	1

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-06 Date Collected: 04/26/18 10:20

Client ID: HWMU-1B MWN-12 Date Received: 04/27/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/l	5.0	0.63	1
Dimethyl phthalate	ND		ug/l	5.0	0.65	1
Benzo(a)anthracene	ND		ug/l	2.0	0.61	1
Benzo(a)pyrene	ND		ug/l	2.0	0.54	1
Benzo(b)fluoranthene	ND		ug/l	2.0	0.64	1
Benzo(k)fluoranthene	ND		ug/l	2.0	0.60	1
Chrysene	ND		ug/l	2.0	0.54	1
Acenaphthylene	ND		ug/l	2.0	0.66	1
Anthracene	ND		ug/l	2.0	0.64	1
Benzo(ghi)perylene	ND		ug/l	2.0	0.61	1
Fluorene	2.5		ug/l	2.0	0.62	1
Phenanthrene	3.7		ug/l	2.0	0.61	1
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.55	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.71	1
Pyrene	1.8	J	ug/l	2.0	0.57	1
Biphenyl	ND		ug/l	2.0	0.76	1
4-Chloroaniline	ND		ug/l	5.0	0.63	1
2-Nitroaniline	ND		ug/l	5.0	1.1	1
3-Nitroaniline	ND		ug/l	5.0	1.2	1
4-Nitroaniline	ND		ug/l	5.0	1.3	1
Dibenzofuran	ND		ug/l	2.0	0.66	1
2-Methylnaphthalene	ND		ug/l	2.0	0.72	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.67	1
Acetophenone	ND		ug/l	5.0	0.85	1
Benzyl Alcohol	ND		ug/l	2.0	0.72	1
Carbazole	ND		ug/l	2.0	0.63	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	37		21-120
Phenol-d6	31		10-120
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	82		15-120
2,4,6-Tribromophenol	101		10-120
4-Terphenyl-d14	105		41-149

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-08
Client ID: HWMU-2 MW 2D2
Sample Location: BUFFALO, NY

Date Collected: 04/27/18 13:53
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 05/09/18 20:06
Analyst: EK

Extraction Method: EPA 3510C
Extraction Date: 04/30/18 15:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/l	2.0	0.59	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.66	1
Hexachlorobenzene	ND		ug/l	2.0	0.58	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.67	1
2-Chloronaphthalene	ND		ug/l	2.0	0.64	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.73	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.69	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.71	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.4	1
2,4-Dinitrotoluene	ND		ug/l	5.0	0.84	1
2,6-Dinitrotoluene	ND		ug/l	5.0	1.1	1
Fluoranthene	ND		ug/l	2.0	0.57	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.62	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.73	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.70	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.63	1
Hexachlorobutadiene	ND		ug/l	2.0	0.72	1
Hexachlorocyclopentadiene	ND		ug/l	20	7.8	1
Hexachloroethane	ND		ug/l	2.0	0.68	1
Isophorone	ND		ug/l	5.0	0.60	1
Naphthalene	ND		ug/l	2.0	0.68	1
Nitrobenzene	ND		ug/l	2.0	0.75	1
NDPA/DPA	ND		ug/l	2.0	0.64	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.70	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	0.91	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.3	1
Di-n-butylphthalate	ND		ug/l	5.0	0.69	1
Di-n-octylphthalate	ND		ug/l	5.0	1.1	1

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-08 Date Collected: 04/27/18 13:53

Client ID: HWMU-2 MW 2D2 Date Received: 04/27/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/l	5.0	0.63	1
Dimethyl phthalate	ND		ug/l	5.0	0.65	1
Benzo(a)anthracene	ND		ug/l	2.0	0.61	1
Benzo(a)pyrene	ND		ug/l	2.0	0.54	1
Benzo(b)fluoranthene	ND		ug/l	2.0	0.64	1
Benzo(k)fluoranthene	ND		ug/l	2.0	0.60	1
Chrysene	ND		ug/l	2.0	0.54	1
Acenaphthylene	ND		ug/l	2.0	0.66	1
Anthracene	ND		ug/l	2.0	0.64	1
Benzo(ghi)perylene	ND		ug/l	2.0	0.61	1
Fluorene	ND		ug/l	2.0	0.62	1
Phenanthrene	ND		ug/l	2.0	0.61	1
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.55	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.71	1
Pyrene	ND		ug/l	2.0	0.57	1
Biphenyl	ND		ug/l	2.0	0.76	1
4-Chloroaniline	ND		ug/l	5.0	0.63	1
2-Nitroaniline	ND		ug/l	5.0	1.1	1
3-Nitroaniline	ND		ug/l	5.0	1.2	1
4-Nitroaniline	ND		ug/l	5.0	1.3	1
Dibenzofuran	ND		ug/l	2.0	0.66	1
2-Methylnaphthalene	ND		ug/l	2.0	0.72	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.67	1
Acetophenone	ND		ug/l	5.0	0.85	1
Benzyl Alcohol	ND		ug/l	2.0	0.72	1
Carbazole	ND		ug/l	2.0	0.63	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	47		21-120
Phenol-d6	35		10-120
Nitrobenzene-d5	91		23-120
2-Fluorobiphenyl	90		15-120
2,4,6-Tribromophenol	107		10-120
4-Terphenyl-d14	106		41-149

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-09
Client ID: HWMU-2 MW 2D3
Sample Location: BUFFALO, NY

Date Collected: 04/27/18 13:13
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 05/09/18 20:31
Analyst: EK

Extraction Method: EPA 3510C
Extraction Date: 04/30/18 15:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	2.2		ug/l	2.0	0.59	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.66	1
Hexachlorobenzene	ND		ug/l	2.0	0.58	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.67	1
2-Chloronaphthalene	ND		ug/l	2.0	0.64	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.73	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.69	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.71	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.4	1
2,4-Dinitrotoluene	ND		ug/l	5.0	0.84	1
2,6-Dinitrotoluene	ND		ug/l	5.0	1.1	1
Fluoranthene	1.7	J	ug/l	2.0	0.57	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.62	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.73	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.70	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.63	1
Hexachlorobutadiene	ND		ug/l	2.0	0.72	1
Hexachlorocyclopentadiene	ND		ug/l	20	7.8	1
Hexachloroethane	ND		ug/l	2.0	0.68	1
Isophorone	ND		ug/l	5.0	0.60	1
Naphthalene	57.		ug/l	2.0	0.68	1
Nitrobenzene	ND		ug/l	2.0	0.75	1
NDPA/DPA	ND		ug/l	2.0	0.64	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.70	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	0.91	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.3	1
Di-n-butylphthalate	ND		ug/l	5.0	0.69	1
Di-n-octylphthalate	ND		ug/l	5.0	1.1	1

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-09 Date Collected: 04/27/18 13:13

Client ID: HWMU-2 MW 2D3 Date Received: 04/27/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/l	5.0	0.63	1
Dimethyl phthalate	ND		ug/l	5.0	0.65	1
Benzo(a)anthracene	ND		ug/l	2.0	0.61	1
Benzo(a)pyrene	ND		ug/l	2.0	0.54	1
Benzo(b)fluoranthene	ND		ug/l	2.0	0.64	1
Benzo(k)fluoranthene	ND		ug/l	2.0	0.60	1
Chrysene	ND		ug/l	2.0	0.54	1
Acenaphthylene	11.		ug/l	2.0	0.66	1
Anthracene	1.5	J	ug/l	2.0	0.64	1
Benzo(ghi)perylene	ND		ug/l	2.0	0.61	1
Fluorene	13.		ug/l	2.0	0.62	1
Phenanthrene	17.		ug/l	2.0	0.61	1
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.55	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.71	1
Pyrene	0.93	J	ug/l	2.0	0.57	1
Biphenyl	2.0		ug/l	2.0	0.76	1
4-Chloroaniline	ND		ug/l	5.0	0.63	1
2-Nitroaniline	ND		ug/l	5.0	1.1	1
3-Nitroaniline	ND		ug/l	5.0	1.2	1
4-Nitroaniline	ND		ug/l	5.0	1.3	1
Dibenzofuran	8.9		ug/l	2.0	0.66	1
2-Methylnaphthalene	9.8		ug/l	2.0	0.72	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.67	1
Acetophenone	ND		ug/l	5.0	0.85	1
Benzyl Alcohol	ND		ug/l	2.0	0.72	1
Carbazole	7.0		ug/l	2.0	0.63	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	44		21-120
Phenol-d6	32		10-120
Nitrobenzene-d5	80		23-120
2-Fluorobiphenyl	81		15-120
2,4,6-Tribromophenol	98		10-120
4-Terphenyl-d14	98		41-149

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-09
Client ID: HWMU-2 MW 2D3
Sample Location: BUFFALO, NY

Date Collected: 04/27/18 13:13
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/04/18 17:22
Analyst: TJ

Extraction Method: EPA 3510C
Extraction Date: 05/04/18 12:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	1150		ng/l	144	72.1	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	22		15-110

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-09
Client ID: HWMU-2 MW 2D3
Sample Location: BUFFALO, NY

Date Collected: 04/27/18 13:13
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 05/02/18 13:41
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 04/30/18 18:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	15.8		ng/l	1.72	0.113	1
Perfluoropentanoic Acid (PFPeA)	13.2		ng/l	1.72	0.074	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.72	0.095	1
Perfluorohexanoic Acid (PFHxA)	17.4		ng/l	1.72	0.109	1
Perfluoroheptanoic Acid (PFHpA)	29.5		ng/l	1.72	0.080	1
Perfluorohexanesulfonic Acid (PFHxS)	4.37		ng/l	1.72	0.093	1
Perfluorooctanoic Acid (PFOA)	61.1		ng/l	1.72	0.043	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.72	0.167	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.72	0.134	1
Perfluorononanoic Acid (PFNA)	3.14		ng/l	1.72	0.087	1
Perfluorooctanesulfonic Acid (PFOS)	32.5		ng/l	1.72	0.096	1
Perfluorodecanoic Acid (PFDA)	0.459	J	ng/l	1.72	0.164	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.72	0.251	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.72	0.216	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.72	0.165	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.72	0.192	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.72	0.196	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	0.352	J	ng/l	1.72	0.321	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.72	0.079	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.72	0.078	1
Perfluorotetradecanoic Acid (PFTA)	0.221	J	ng/l	1.72	0.062	1

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-09 Date Collected: 04/27/18 13:13

Client ID: HWMU-2 MW 2D3 Date Received: 04/27/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	**49**	Q	50-150
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	**35**	Q	50-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	77		50-150
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**44**	Q	50-150
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	62		50-150
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	96		50-150
Perfluoro[13C8]Octanoic Acid (M8PFOA)	79		50-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**286**	Q	50-150
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	79		50-150
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	80		50-150
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	75		50-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**184**	Q	50-150
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	100		50-150
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	86		50-150
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	**36**	Q	50-150
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	120		50-150
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	91		50-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	62		50-150

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-10
Client ID: HWMU-2 MW 2D4
Sample Location: BUFFALO, NY

Date Collected: 04/27/18 14:24
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 05/09/18 20:57
Analyst: EK

Extraction Method: EPA 3510C
Extraction Date: 04/30/18 15:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/l	2.0	0.59	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.66	1
Hexachlorobenzene	ND		ug/l	2.0	0.58	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.67	1
2-Chloronaphthalene	ND		ug/l	2.0	0.64	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.73	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.69	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.71	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.4	1
2,4-Dinitrotoluene	ND		ug/l	5.0	0.84	1
2,6-Dinitrotoluene	ND		ug/l	5.0	1.1	1
Fluoranthene	ND		ug/l	2.0	0.57	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.62	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.73	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.70	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.63	1
Hexachlorobutadiene	ND		ug/l	2.0	0.72	1
Hexachlorocyclopentadiene	ND		ug/l	20	7.8	1
Hexachloroethane	ND		ug/l	2.0	0.68	1
Isophorone	ND		ug/l	5.0	0.60	1
Naphthalene	ND		ug/l	2.0	0.68	1
Nitrobenzene	ND		ug/l	2.0	0.75	1
NDPA/DPA	ND		ug/l	2.0	0.64	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.70	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	0.91	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.3	1
Di-n-butylphthalate	ND		ug/l	5.0	0.69	1
Di-n-octylphthalate	ND		ug/l	5.0	1.1	1

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-10 Date Collected: 04/27/18 14:24

Client ID: HWMU-2 MW 2D4 Date Received: 04/27/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/l	5.0	0.63	1
Dimethyl phthalate	ND		ug/l	5.0	0.65	1
Benzo(a)anthracene	ND		ug/l	2.0	0.61	1
Benzo(a)pyrene	ND		ug/l	2.0	0.54	1
Benzo(b)fluoranthene	ND		ug/l	2.0	0.64	1
Benzo(k)fluoranthene	ND		ug/l	2.0	0.60	1
Chrysene	ND		ug/l	2.0	0.54	1
Acenaphthylene	ND		ug/l	2.0	0.66	1
Anthracene	ND		ug/l	2.0	0.64	1
Benzo(ghi)perylene	ND		ug/l	2.0	0.61	1
Fluorene	ND		ug/l	2.0	0.62	1
Phenanthrene	ND		ug/l	2.0	0.61	1
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.55	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.71	1
Pyrene	ND		ug/l	2.0	0.57	1
Biphenyl	ND		ug/l	2.0	0.76	1
4-Chloroaniline	ND		ug/l	5.0	0.63	1
2-Nitroaniline	ND		ug/l	5.0	1.1	1
3-Nitroaniline	ND		ug/l	5.0	1.2	1
4-Nitroaniline	ND		ug/l	5.0	1.3	1
Dibenzofuran	ND		ug/l	2.0	0.66	1
2-Methylnaphthalene	ND		ug/l	2.0	0.72	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.67	1
Acetophenone	ND		ug/l	5.0	0.85	1
Benzyl Alcohol	ND		ug/l	2.0	0.72	1
Carbazole	ND		ug/l	2.0	0.63	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	50		21-120
Phenol-d6	35		10-120
Nitrobenzene-d5	91		23-120
2-Fluorobiphenyl	88		15-120
2,4,6-Tribromophenol	101		10-120
4-Terphenyl-d14	97		41-149

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-11
Client ID: HWMU-2 MWS 11A
Sample Location: BUFFALO, NY

Date Collected: 04/27/18 14:55
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 05/09/18 21:23
Analyst: EK

Extraction Method: EPA 3510C
Extraction Date: 04/30/18 15:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	3.1		ug/l	2.0	0.59	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.66	1
Hexachlorobenzene	ND		ug/l	2.0	0.58	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.67	1
2-Chloronaphthalene	ND		ug/l	2.0	0.64	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.73	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.69	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.71	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.4	1
2,4-Dinitrotoluene	ND		ug/l	5.0	0.84	1
2,6-Dinitrotoluene	ND		ug/l	5.0	1.1	1
Fluoranthene	3.6		ug/l	2.0	0.57	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.62	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.73	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.70	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.63	1
Hexachlorobutadiene	ND		ug/l	2.0	0.72	1
Hexachlorocyclopentadiene	ND		ug/l	20	7.8	1
Hexachloroethane	ND		ug/l	2.0	0.68	1
Isophorone	ND		ug/l	5.0	0.60	1
Naphthalene	140		ug/l	2.0	0.68	1
Nitrobenzene	ND		ug/l	2.0	0.75	1
NDPA/DPA	ND		ug/l	2.0	0.64	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.70	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	0.91	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.3	1
Di-n-butylphthalate	ND		ug/l	5.0	0.69	1
Di-n-octylphthalate	ND		ug/l	5.0	1.1	1

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-11 Date Collected: 04/27/18 14:55

Client ID: HWMU-2 MWS 11A Date Received: 04/27/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/l	5.0	0.63	1
Dimethyl phthalate	ND		ug/l	5.0	0.65	1
Benzo(a)anthracene	ND		ug/l	2.0	0.61	1
Benzo(a)pyrene	ND		ug/l	2.0	0.54	1
Benzo(b)fluoranthene	ND		ug/l	2.0	0.64	1
Benzo(k)fluoranthene	ND		ug/l	2.0	0.60	1
Chrysene	ND		ug/l	2.0	0.54	1
Acenaphthylene	13.		ug/l	2.0	0.66	1
Anthracene	1.3	J	ug/l	2.0	0.64	1
Benzo(ghi)perylene	ND		ug/l	2.0	0.61	1
Fluorene	9.2		ug/l	2.0	0.62	1
Phenanthrene	13.		ug/l	2.0	0.61	1
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.55	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.71	1
Pyrene	2.3		ug/l	2.0	0.57	1
Biphenyl	3.6		ug/l	2.0	0.76	1
4-Chloroaniline	ND		ug/l	5.0	0.63	1
2-Nitroaniline	ND		ug/l	5.0	1.1	1
3-Nitroaniline	ND		ug/l	5.0	1.2	1
4-Nitroaniline	ND		ug/l	5.0	1.3	1
Dibenzofuran	10.		ug/l	2.0	0.66	1
2-Methylnaphthalene	17.		ug/l	2.0	0.72	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.67	1
Acetophenone	ND		ug/l	5.0	0.85	1
Benzyl Alcohol	ND		ug/l	2.0	0.72	1
Carbazole	9.3		ug/l	2.0	0.63	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	49		21-120
Phenol-d6	34		10-120
Nitrobenzene-d5	90		23-120
2-Fluorobiphenyl	86		15-120
2,4,6-Tribromophenol	102		10-120
4-Terphenyl-d14	102		41-149

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-12
Client ID: HWMU-1A MW 1D2
Sample Location: BUFFALO, NY

Date Collected: 04/27/18 10:50
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 05/09/18 21:48
Analyst: EK

Extraction Method: EPA 3510C
Extraction Date: 04/30/18 15:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	0.83	J	ug/l	2.0	0.59	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.66	1
Hexachlorobenzene	ND		ug/l	2.0	0.58	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.67	1
2-Chloronaphthalene	ND		ug/l	2.0	0.64	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.73	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.69	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.71	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.4	1
2,4-Dinitrotoluene	ND		ug/l	5.0	0.84	1
2,6-Dinitrotoluene	ND		ug/l	5.0	1.1	1
Fluoranthene	0.72	J	ug/l	2.0	0.57	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.62	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.73	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.70	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.63	1
Hexachlorobutadiene	ND		ug/l	2.0	0.72	1
Hexachlorocyclopentadiene	ND		ug/l	20	7.8	1
Hexachloroethane	ND		ug/l	2.0	0.68	1
Isophorone	ND		ug/l	5.0	0.60	1
Naphthalene	44.		ug/l	2.0	0.68	1
Nitrobenzene	ND		ug/l	2.0	0.75	1
NDPA/DPA	ND		ug/l	2.0	0.64	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.70	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	0.91	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.3	1
Di-n-butylphthalate	ND		ug/l	5.0	0.69	1
Di-n-octylphthalate	ND		ug/l	5.0	1.1	1

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-12 Date Collected: 04/27/18 10:50
Client ID: HWMU-1A MW 1D2 Date Received: 04/27/18
Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/l	5.0	0.63	1
Dimethyl phthalate	ND		ug/l	5.0	0.65	1
Benzo(a)anthracene	ND		ug/l	2.0	0.61	1
Benzo(a)pyrene	ND		ug/l	2.0	0.54	1
Benzo(b)fluoranthene	ND		ug/l	2.0	0.64	1
Benzo(k)fluoranthene	ND		ug/l	2.0	0.60	1
Chrysene	ND		ug/l	2.0	0.54	1
Acenaphthylene	11.		ug/l	2.0	0.66	1
Anthracene	ND		ug/l	2.0	0.64	1
Benzo(ghi)perylene	ND		ug/l	2.0	0.61	1
Fluorene	4.7		ug/l	2.0	0.62	1
Phenanthrene	3.8		ug/l	2.0	0.61	1
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.55	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.71	1
Pyrene	ND		ug/l	2.0	0.57	1
Biphenyl	2.9		ug/l	2.0	0.76	1
4-Chloroaniline	ND		ug/l	5.0	0.63	1
2-Nitroaniline	ND		ug/l	5.0	1.1	1
3-Nitroaniline	ND		ug/l	5.0	1.2	1
4-Nitroaniline	ND		ug/l	5.0	1.3	1
Dibenzofuran	4.7		ug/l	2.0	0.66	1
2-Methylnaphthalene	26.		ug/l	2.0	0.72	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.67	1
Acetophenone	ND		ug/l	5.0	0.85	1
Benzyl Alcohol	ND		ug/l	2.0	0.72	1
Carbazole	1.1	J	ug/l	2.0	0.63	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	45		21-120
Phenol-d6	32		10-120
Nitrobenzene-d5	83		23-120
2-Fluorobiphenyl	82		15-120
2,4,6-Tribromophenol	99		10-120
4-Terphenyl-d14	102		41-149

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-12
Client ID: HWMU-1A MW 1D2
Sample Location: BUFFALO, NY

Date Collected: 04/27/18 10:50
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 05/04/18 17:46
Analyst: TJ

Extraction Method: EPA 3510C
Extraction Date: 05/04/18 12:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	311.		ng/l	144	72.1	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	34		15-110

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-12
Client ID: HWMU-1A MW 1D2
Sample Location: BUFFALO, NY

Date Collected: 04/27/18 10:50
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 05/02/18 14:14
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 04/30/18 18:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	18.9		ng/l	1.72	0.113	1
Perfluoropentanoic Acid (PFPeA)	14.9		ng/l	1.72	0.074	1
Perfluorobutanesulfonic Acid (PFBS)	1.56	J	ng/l	1.72	0.095	1
Perfluorohexanoic Acid (PFHxA)	10.6		ng/l	1.72	0.109	1
Perfluoroheptanoic Acid (PFHpA)	6.78		ng/l	1.72	0.080	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.72	0.093	1
Perfluorooctanoic Acid (PFOA)	10.9		ng/l	1.72	0.043	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	7.58		ng/l	1.72	0.167	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.666	J	ng/l	1.72	0.134	1
Perfluorononanoic Acid (PFNA)	1.73		ng/l	1.72	0.087	1
Perfluorooctanesulfonic Acid (PFOS)	27.8		ng/l	1.72	0.096	1
Perfluorodecanoic Acid (PFDA)	0.483	J	ng/l	1.72	0.164	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	0.969	J	ng/l	1.72	0.251	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.72	0.216	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.72	0.165	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.72	0.192	1
Perfluorooctanesulfonamide (FOSA)	2.77		ng/l	1.72	0.196	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.72	0.321	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.72	0.079	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.72	0.078	1
Perfluorotetradecanoic Acid (PFTA)	0.072	J	ng/l	1.72	0.062	1

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-12 Date Collected: 04/27/18 10:50

Client ID: HWMU-1A MW 1D2 Date Received: 04/27/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	**44**	Q	50-150
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	58		50-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	76		50-150
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	58		50-150
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	69		50-150
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	93		50-150
Perfluoro[13C8]Octanoic Acid (M8PFOA)	74		50-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**177**	Q	50-150
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	70		50-150
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	78		50-150
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	74		50-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	129		50-150
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	89		50-150
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	80		50-150
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	**14**	Q	50-150
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	103		50-150
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	68		50-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	60		50-150

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-13
Client ID: HWMU-1A MW 1D3
Sample Location: BUFFALO, NY

Date Collected: 04/27/18 11:20
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 05/10/18 23:56
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 04/30/18 15:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	0.84	J	ug/l	2.0	0.59	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.66	1
Hexachlorobenzene	ND		ug/l	2.0	0.58	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.67	1
2-Chloronaphthalene	ND		ug/l	2.0	0.64	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.73	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.69	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.71	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.4	1
2,4-Dinitrotoluene	ND		ug/l	5.0	0.84	1
2,6-Dinitrotoluene	ND		ug/l	5.0	1.1	1
Fluoranthene	ND		ug/l	2.0	0.57	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.62	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.73	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.70	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.63	1
Hexachlorobutadiene	ND		ug/l	2.0	0.72	1
Hexachlorocyclopentadiene	ND		ug/l	20	7.8	1
Hexachloroethane	ND		ug/l	2.0	0.68	1
Isophorone	ND		ug/l	5.0	0.60	1
Naphthalene	7.4		ug/l	2.0	0.68	1
Nitrobenzene	ND		ug/l	2.0	0.75	1
NDPA/DPA	ND		ug/l	2.0	0.64	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.70	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	0.91	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.3	1
Di-n-butylphthalate	ND		ug/l	5.0	0.69	1
Di-n-octylphthalate	ND		ug/l	5.0	1.1	1

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-13 Date Collected: 04/27/18 11:20

Client ID: HWMU-1A MW 1D3 Date Received: 04/27/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/l	5.0	0.63	1
Dimethyl phthalate	ND		ug/l	5.0	0.65	1
Benzo(a)anthracene	ND		ug/l	2.0	0.61	1
Benzo(a)pyrene	ND		ug/l	2.0	0.54	1
Benzo(b)fluoranthene	ND		ug/l	2.0	0.64	1
Benzo(k)fluoranthene	ND		ug/l	2.0	0.60	1
Chrysene	ND		ug/l	2.0	0.54	1
Acenaphthylene	1.1	J	ug/l	2.0	0.66	1
Anthracene	ND		ug/l	2.0	0.64	1
Benzo(ghi)perylene	ND		ug/l	2.0	0.61	1
Fluorene	1.9	J	ug/l	2.0	0.62	1
Phenanthrene	2.5		ug/l	2.0	0.61	1
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.55	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.71	1
Pyrene	0.64	J	ug/l	2.0	0.57	1
Biphenyl	ND		ug/l	2.0	0.76	1
4-Chloroaniline	ND		ug/l	5.0	0.63	1
2-Nitroaniline	ND		ug/l	5.0	1.1	1
3-Nitroaniline	ND		ug/l	5.0	1.2	1
4-Nitroaniline	ND		ug/l	5.0	1.3	1
Dibenzofuran	0.89	J	ug/l	2.0	0.66	1
2-Methylnaphthalene	1.1	J	ug/l	2.0	0.72	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.67	1
Acetophenone	ND		ug/l	5.0	0.85	1
Benzyl Alcohol	ND		ug/l	2.0	0.72	1
Carbazole	1.9	J	ug/l	2.0	0.63	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	52		21-120
Phenol-d6	38		10-120
Nitrobenzene-d5	88		23-120
2-Fluorobiphenyl	96		15-120
2,4,6-Tribromophenol	110		10-120
4-Terphenyl-d14	137		41-149

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-14
Client ID: HWMU-1A MW 1D4
Sample Location: BUFFALO, NY

Date Collected: 04/27/18 11:45
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 05/11/18 00:20
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 04/30/18 15:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	1.2	J	ug/l	2.0	0.59	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.66	1
Hexachlorobenzene	ND		ug/l	2.0	0.58	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.67	1
2-Chloronaphthalene	ND		ug/l	2.0	0.64	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.73	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.69	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.71	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.4	1
2,4-Dinitrotoluene	ND		ug/l	5.0	0.84	1
2,6-Dinitrotoluene	ND		ug/l	5.0	1.1	1
Fluoranthene	0.75	J	ug/l	2.0	0.57	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.62	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.73	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.70	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.63	1
Hexachlorobutadiene	ND		ug/l	2.0	0.72	1
Hexachlorocyclopentadiene	ND		ug/l	20	7.8	1
Hexachloroethane	ND		ug/l	2.0	0.68	1
Isophorone	ND		ug/l	5.0	0.60	1
Naphthalene	8.1		ug/l	2.0	0.68	1
Nitrobenzene	ND		ug/l	2.0	0.75	1
NDPA/DPA	ND		ug/l	2.0	0.64	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.70	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	0.91	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.3	1
Di-n-butylphthalate	ND		ug/l	5.0	0.69	1
Di-n-octylphthalate	ND		ug/l	5.0	1.1	1

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-14 Date Collected: 04/27/18 11:45

Client ID: HWMU-1A MW 1D4 Date Received: 04/27/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/l	5.0	0.63	1
Dimethyl phthalate	ND		ug/l	5.0	0.65	1
Benzo(a)anthracene	ND		ug/l	2.0	0.61	1
Benzo(a)pyrene	ND		ug/l	2.0	0.54	1
Benzo(b)fluoranthene	ND		ug/l	2.0	0.64	1
Benzo(k)fluoranthene	ND		ug/l	2.0	0.60	1
Chrysene	ND		ug/l	2.0	0.54	1
Acenaphthylene	1.8	J	ug/l	2.0	0.66	1
Anthracene	ND		ug/l	2.0	0.64	1
Benzo(ghi)perylene	ND		ug/l	2.0	0.61	1
Fluorene	2.9		ug/l	2.0	0.62	1
Phenanthrene	3.8		ug/l	2.0	0.61	1
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.55	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.71	1
Pyrene	ND		ug/l	2.0	0.57	1
Biphenyl	ND		ug/l	2.0	0.76	1
4-Chloroaniline	ND		ug/l	5.0	0.63	1
2-Nitroaniline	ND		ug/l	5.0	1.1	1
3-Nitroaniline	ND		ug/l	5.0	1.2	1
4-Nitroaniline	ND		ug/l	5.0	1.3	1
Dibenzofuran	1.7	J	ug/l	2.0	0.66	1
2-Methylnaphthalene	2.2		ug/l	2.0	0.72	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.67	1
Acetophenone	ND		ug/l	5.0	0.85	1
Benzyl Alcohol	ND		ug/l	2.0	0.72	1
Carbazole	2.5		ug/l	2.0	0.63	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	55		21-120
Phenol-d6	38		10-120
Nitrobenzene-d5	90		23-120
2-Fluorobiphenyl	97		15-120
2,4,6-Tribromophenol	101		10-120
4-Terphenyl-d14	121		41-149

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-15
Client ID: FIELD BLANK
Sample Location: BUFFALO, NY

Date Collected: 04/27/18 09:33
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 05/02/18 12:18
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 04/30/18 18:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.78	0.117	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.78	0.076	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.78	0.098	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.78	0.113	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.78	0.083	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.78	0.096	1
Perfluorooctanoic Acid (PFOA)	0.896	J	ng/l	1.78	0.045	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.78	0.173	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.78	0.138	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.78	0.090	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.78	0.100	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.78	0.170	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.78	0.260	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.78	0.224	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.78	0.171	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.78	0.198	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.78	0.202	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.78	0.333	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.78	0.082	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.78	0.081	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.78	0.064	1

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-15 Date Collected: 04/27/18 09:33

Client ID: FIELD BLANK Date Received: 04/27/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	51		50-150
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	63		50-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	72		50-150
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	67		50-150
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	74		50-150
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	88		50-150
Perfluoro[13C8]Octanoic Acid (M8PFOA)	79		50-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	92		50-150
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	74		50-150
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	79		50-150
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	75		50-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	106		50-150
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	86		50-150
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	86		50-150
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	**8**	Q	50-150
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	91		50-150
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	80		50-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	78		50-150

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-16
Client ID: EQUIPMENT BLANK
Sample Location: BUFFALO, NY

Date Collected: 04/27/18 09:50
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537(M)
Analytical Date: 05/02/18 12:35
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 04/30/18 18:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.92	0.126	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.92	0.082	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.92	0.106	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.92	0.122	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.92	0.089	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.92	0.103	1
Perfluorooctanoic Acid (PFOA)	0.969	J	ng/l	1.92	0.049	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.92	0.186	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.92	0.149	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.92	0.097	1
Perfluorooctanesulfonic Acid (PFOS)	0.258	J	ng/l	1.92	0.107	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.92	0.183	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.92	0.280	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.92	0.241	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.92	0.184	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.92	0.214	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.92	0.218	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.92	0.358	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.92	0.088	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.92	0.087	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.92	0.069	1

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-16 Date Collected: 04/27/18 09:50

Client ID: EQUIPMENT BLANK Date Received: 04/27/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	62		50-150
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	62		50-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	70		50-150
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	65		50-150
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	65		50-150
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	83		50-150
Perfluoro[13C8]Octanoic Acid (M8PFOA)	75		50-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	97		50-150
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	74		50-150
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	74		50-150
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	77		50-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	92		50-150
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	81		50-150
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	86		50-150
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	**11**	Q	50-150
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	92		50-150
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	83		50-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	75		50-150

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 05/02/18 00:28
Analyst: RC

Extraction Method: EPA 3510C
Extraction Date: 04/30/18 15:45

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-06,08-14 Batch: WG1111116-1					
Acenaphthene	ND		ug/l	2.0	0.59
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.66
Hexachlorobenzene	ND		ug/l	2.0	0.58
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.67
2-Chloronaphthalene	ND		ug/l	2.0	0.64
1,2-Dichlorobenzene	ND		ug/l	2.0	0.73
1,3-Dichlorobenzene	ND		ug/l	2.0	0.69
1,4-Dichlorobenzene	ND		ug/l	2.0	0.71
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.4
2,4-Dinitrotoluene	ND		ug/l	5.0	0.84
2,6-Dinitrotoluene	ND		ug/l	5.0	1.1
Fluoranthene	ND		ug/l	2.0	0.57
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.62
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.73
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.70
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.63
Hexachlorobutadiene	ND		ug/l	2.0	0.72
Hexachlorocyclopentadiene	ND		ug/l	20	7.8
Hexachloroethane	ND		ug/l	2.0	0.68
Isophorone	ND		ug/l	5.0	0.60
Naphthalene	ND		ug/l	2.0	0.68
Nitrobenzene	ND		ug/l	2.0	0.75
NDPA/DPA	ND		ug/l	2.0	0.64
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.70
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	0.91
Butyl benzyl phthalate	ND		ug/l	5.0	1.3
Di-n-butylphthalate	ND		ug/l	5.0	0.69
Di-n-octylphthalate	ND		ug/l	5.0	1.1
Diethyl phthalate	ND		ug/l	5.0	0.63

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 05/02/18 00:28
Analyst: RC

Extraction Method: EPA 3510C
Extraction Date: 04/30/18 15:45

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-06,08-14 Batch: WG1111116-1					
Dimethyl phthalate	ND		ug/l	5.0	0.65
Benzo(a)anthracene	ND		ug/l	2.0	0.61
Benzo(a)pyrene	ND		ug/l	2.0	0.54
Benzo(b)fluoranthene	ND		ug/l	2.0	0.64
Benzo(k)fluoranthene	ND		ug/l	2.0	0.60
Chrysene	ND		ug/l	2.0	0.54
Acenaphthylene	ND		ug/l	2.0	0.66
Anthracene	ND		ug/l	2.0	0.64
Benzo(ghi)perylene	ND		ug/l	2.0	0.61
Fluorene	ND		ug/l	2.0	0.62
Phenanthrene	ND		ug/l	2.0	0.61
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.55
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.71
Pyrene	ND		ug/l	2.0	0.57
Biphenyl	ND		ug/l	2.0	0.76
4-Chloroaniline	ND		ug/l	5.0	0.63
2-Nitroaniline	ND		ug/l	5.0	1.1
3-Nitroaniline	ND		ug/l	5.0	1.2
4-Nitroaniline	ND		ug/l	5.0	1.3
Dibenzofuran	ND		ug/l	2.0	0.66
2-Methylnaphthalene	ND		ug/l	2.0	0.72
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.67
Acetophenone	ND		ug/l	5.0	0.85
Benzyl Alcohol	ND		ug/l	2.0	0.72
Carbazole	ND		ug/l	2.0	0.63

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 05/02/18 00:28
Analyst: RC

Extraction Method: EPA 3510C
Extraction Date: 04/30/18 15:45

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-06,08-14 Batch: WG1111116-1					
Tentatively Identified Compounds					
Total TIC Compounds	6.85	J	ug/l		
Aldol Condensates	6.85	J	ug/l		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	57		21-120
Phenol-d6	39		10-120
Nitrobenzene-d5	101		23-120
2-Fluorobiphenyl	91		15-120
2,4,6-Tribromophenol	86		10-120
4-Terphenyl-d14	96		41-149

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 05/02/18 10:55
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 04/30/18 18:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 09,12,15-16 Batch: WG1111167-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.131
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.086
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.110
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	0.126
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.092
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.108
Perfluorooctanoic Acid (PFOA)	0.712	J	ng/l	2.00	0.050
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	0.194
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.155
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.101
Perfluorooctanesulfonic Acid (PFOS)	0.112	J	ng/l	2.00	0.112
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.190
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	0.291
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.250
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.191
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.222
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.227
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.373
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.092
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.090
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.072

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537(M)
Analytical Date: 05/02/18 10:55
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 04/30/18 18:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 09,12,15-16 Batch: WG1111167-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	61		50-150
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	68		50-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	86		50-150
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	74		50-150
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	80		50-150
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	100		50-150
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		50-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	106		50-150
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	85		50-150
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	91		50-150
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	86		50-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	115		50-150
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	89		50-150
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	96		50-150
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	**3**	Q	50-150
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	95		50-150
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	98		50-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	86		50-150

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 05/04/18 16:09
Analyst: TJ

Extraction Method: EPA 3510C
Extraction Date: 05/04/18 12:30

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 09,12 Batch: WG1112668-1					
1,4-Dioxane	ND		ng/l	150	75.0

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	32		15-110

Lab Control Sample Analysis

Batch Quality Control

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2

Project Number: 0071-017-240

Lab Number: L1815126

Report Date: 05/14/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06,08-14 Batch: WG1111116-2 WG1111116-3								
Acenaphthene	85		74		37-111	14		30
1,2,4-Trichlorobenzene	78		70		39-98	11		30
Hexachlorobenzene	88		75		40-140	16		30
Bis(2-chloroethyl)ether	86		80		40-140	7		30
2-Chloronaphthalene	91		79		40-140	14		30
1,2-Dichlorobenzene	71		68		40-140	4		30
1,3-Dichlorobenzene	66		66		40-140	0		30
1,4-Dichlorobenzene	68		66		36-97	3		30
3,3'-Dichlorobenzidine	85		70		40-140	19		30
2,4-Dinitrotoluene	119		101		48-143	16		30
2,6-Dinitrotoluene	120		100		40-140	18		30
Fluoranthene	94		82		40-140	14		30
4-Chlorophenyl phenyl ether	89		77		40-140	14		30
4-Bromophenyl phenyl ether	91		78		40-140	15		30
Bis(2-chloroisopropyl)ether	116		104		40-140	11		30
Bis(2-chloroethoxy)methane	96		83		40-140	15		30
Hexachlorobutadiene	73		65		40-140	12		30
Hexachlorocyclopentadiene	62		53		40-140	16		30
Hexachloroethane	67		66		40-140	2		30
Isophorone	98		85		40-140	14		30
Naphthalene	80		72		40-140	11		30
Nitrobenzene	97		87		40-140	11		30
NDPA/DPA	91		79		40-140	14		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2

Project Number: 0071-017-240

Lab Number: L1815126

Report Date: 05/14/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06,08-14 Batch: WG1111116-2 WG1111116-3								
n-Nitrosodi-n-propylamine	97		84		29-132	14		30
Bis(2-ethylhexyl)phthalate	103		90		40-140	13		30
Butyl benzyl phthalate	99		86		40-140	14		30
Di-n-butylphthalate	98		85		40-140	14		30
Di-n-octylphthalate	105		91		40-140	14		30
Diethyl phthalate	92		79		40-140	15		30
Dimethyl phthalate	98		84		40-140	15		30
Benzo(a)anthracene	93		81		40-140	14		30
Benzo(a)pyrene	95		82		40-140	15		30
Benzo(b)fluoranthene	95		82		40-140	15		30
Benzo(k)fluoranthene	94		81		40-140	15		30
Chrysene	93		80		40-140	15		30
Acenaphthylene	94		80		45-123	16		30
Anthracene	93		79		40-140	16		30
Benzo(ghi)perylene	94		81		40-140	15		30
Fluorene	91		78		40-140	15		30
Phenanthrene	91		79		40-140	14		30
Dibenzo(a,h)anthracene	93		80		40-140	15		30
Indeno(1,2,3-cd)pyrene	94		80		40-140	16		30
Pyrene	92		80		26-127	14		30
Biphenyl	92		79		40-140	15		30
4-Chloroaniline	77		66		40-140	15		30
2-Nitroaniline	118		101		52-143	16		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2

Project Number: 0071-017-240

Lab Number: L1815126

Report Date: 05/14/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06,08-14 Batch: WG1111116-2 WG1111116-3								
3-Nitroaniline	89		78		25-145	13		30
4-Nitroaniline	103		90		51-143	13		30
Dibenzofuran	89		77		40-140	14		30
2-Methylnaphthalene	86		74		40-140	15		30
1,2,4,5-Tetrachlorobenzene	87		76		2-134	13		30
Acetophenone	97		86		39-129	12		30
Benzyl Alcohol	84		73		26-116	14		30
Carbazole	98		84		55-144	15		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	58		52		21-120
Phenol-d6	44		38		10-120
Nitrobenzene-d5	103		91		23-120
2-Fluorobiphenyl	97		85		15-120
2,4,6-Tribromophenol	95		80		10-120
4-Terphenyl-d14	103		88		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2

Project Number: 0071-017-240

Lab Number: L1815126

Report Date: 05/14/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 09,12,15-16 Batch: WG1111167-2 WG1111167-3								
Perfluorobutanoic Acid (PFBA)	124		119		50-150	4		30
Perfluoropentanoic Acid (PFPeA)	121		118		50-150	3		30
Perfluorobutanesulfonic Acid (PFBS)	127		122		50-150	4		30
Perfluorohexanoic Acid (PFHxA)	132		125		50-150	5		30
Perfluoroheptanoic Acid (PFHpA)	122		115		50-150	6		30
Perfluorohexanesulfonic Acid (PFHxS)	135		135		50-150	0		30
Perfluorooctanoic Acid (PFOA)	129		120		50-150	7		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	128		115		50-150	11		30
Perfluoroheptanesulfonic Acid (PFHpS)	129		134		50-150	4		30
Perfluorononanoic Acid (PFNA)	132		130		50-150	2		30
Perfluorooctanesulfonic Acid (PFOS)	113		120		50-150	6		30
Perfluorodecanoic Acid (PFDA)	133		129		50-150	3		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	118		122		50-150	3		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	124		119		50-150	4		30
Perfluoroundecanoic Acid (PFUnA)	120		126		50-150	5		30
Perfluorodecanesulfonic Acid (PFDS)	91		88		50-150	3		30
Perfluorooctanesulfonamide (FOSA)	124		119		50-150	4		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	121		107		50-150	12		30
Perfluorododecanoic Acid (PFDoA)	110		116		50-150	5		30
Perfluorotridecanoic Acid (PFTrDA)	102		101		50-150	1		30
Perfluorotetradecanoic Acid (PFTA)	133		116		50-150	14		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2

Project Number: 0071-017-240

Lab Number: L1815126

Report Date: 05/14/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 09,12,15-16 Batch: WG1111167-2 WG1111167-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	63		57		50-150
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	62		63		50-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	75		77		50-150
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	64		65		50-150
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	71		74		50-150
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	89		89		50-150
Perfluoro[13C8]Octanoic Acid (M8PFOA)	76		77		50-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	99		107		50-150
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	76		74		50-150
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	77		77		50-150
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	75		75		50-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	105		106		50-150
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	88		89		50-150
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	88		89		50-150
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	**6**	Q	**11**	Q	50-150
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	97		99		50-150
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	89		89		50-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	75		83		50-150

Lab Control Sample Analysis

Batch Quality Control

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2

Project Number: 0071-017-240

Lab Number: L1815126

Report Date: 05/14/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab	Associated sample(s): 09,12		Batch: WG1112668-2		WG1112668-3			
1,4-Dioxane	105		101		40-140	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	22		26		15-110

Matrix Spike Analysis

Batch Quality Control

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 09,12,15-16 QC Batch ID: WG1111167-5 QC Sample: L1815126-12 Client ID: HWMU-1A MW 1D2												
Perfluorobutanoic Acid (PFBA)	18.9	34.5	60.9	122		-	-		50-150	-		30
Perfluoropentanoic Acid (PFPeA)	14.9	34.5	54.6	115		-	-		50-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	1.56J	34.5	43.3	126		-	-		50-150	-		30
Perfluorohexanoic Acid (PFHxA)	10.6	34.5	54.6	128		-	-		50-150	-		30
Perfluoroheptanoic Acid (PFHpA)	6.78	34.5	48.3	120		-	-		50-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	34.5	49.7	144		-	-		50-150	-		30
Perfluorooctanoic Acid (PFOA)	10.9	34.5	49.9	113		-	-		50-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	7.58	34.5	43.8	105		-	-		50-150	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	0.666J	34.5	45.0	131		-	-		50-150	-		30
Perfluorononanoic Acid (PFNA)	1.73	34.5	46.0	128		-	-		50-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	27.8	34.5	67.2	114		-	-		50-150	-		30
Perfluorodecanoic Acid (PFDA)	0.483J	34.5	46.9	136		-	-		50-150	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	0.969J	34.5	40.6	118		-	-		50-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	34.5	42.7	124		-	-		50-150	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	34.5	41.8	121		-	-		50-150	-		30
Perfluorodecanesulfonic Acid (PFDS)	ND	34.5	31.4	91		-	-		50-150	-		30
Perfluorooctanesulfonamide (FOSA)	2.77	34.5	42.6	116		-	-		50-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	34.5	39.4	114		-	-		50-150	-		30
Perfluorododecanoic Acid (PFDoA)	ND	34.5	40.1	116		-	-		50-150	-		30
Perfluorotridecanoic Acid (PFTrDA)	ND	34.5	33.8	98		-	-		50-150	-		30
Perfluorotetradecanoic Acid (PFTA)	0.072J	34.5	47.7	138		-	-		50-150	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 09,12,15-16 QC Batch ID: WG1111167-5 QC Sample: L1815126-12 Client ID: HWMU-1A MW 1D2

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	132				50-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**182**	Q			50-150
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	108				50-150
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	98				50-150
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	82				50-150
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	73				50-150
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	60				50-150
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	69				50-150
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	88				50-150
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	80				50-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	61				50-150
Perfluoro[13C4]Butanoic Acid (MPFBA)	**48**	Q			50-150
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	57				50-150
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	**19**	Q			50-150
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	77				50-150
Perfluoro[13C8]Octanoic Acid (M8PFOA)	76				50-150
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	68				50-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	75				50-150

Lab Duplicate Analysis
Batch Quality Control

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2
Project Number: 0071-017-240

Lab Number: L1815126
Report Date: 05/14/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 09,12,15-16 QC Batch ID: WG1111167-4 QC Sample: L1815126-09 Client ID: HWMU-2 MW 2D3						
Perfluorobutanoic Acid (PFBA)	15.8	16.0	ng/l	1		30
Perfluoropentanoic Acid (PFPeA)	13.2	12.9	ng/l	2		30
Perfluorobutanesulfonic Acid (PFBS)	ND	ND	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	17.4	16.9	ng/l	3		30
Perfluoroheptanoic Acid (PFHpA)	29.5	30.8	ng/l	4		30
Perfluorohexanesulfonic Acid (PFHxS)	4.37	3.10	ng/l	**34**	Q	30
Perfluorooctanoic Acid (PFOA)	61.1	59.8	ng/l	2		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ng/l	NC		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	1.04J	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	3.14	2.78	ng/l	12		30
Perfluorooctanesulfonic Acid (PFOS)	32.5	36.2	ng/l	11		30
Perfluorodecanoic Acid (PFDA)	0.459J	0.603J	ng/l	NC		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ng/l	NC		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/l	NC		30
Perfluorodecanesulfonic Acid (PFDS)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonamide (FOSA)	ND	ND	ng/l	NC		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	0.352J	ND	ng/l	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2
Project Number: 0071-017-240

Lab Number: L1815126
Report Date: 05/14/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 09,12,15-16 QC Batch ID: WG1111167-4 QC Sample: L1815126-09 Client ID: HWMU-2 MW 2D3						
Perfluorotetradecanoic Acid (PFTA)	0.221J	ND	ng/l	NC		30

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	**49**	Q	**48**	Q	50-150
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	**35**	Q	**35**	Q	50-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	77		79		50-150
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**44**	Q	**44**	Q	50-150
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	62		62		50-150
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	96		93		50-150
Perfluoro[13C8]Octanoic Acid (M8PFOA)	79		77		50-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**286**	Q	**261**	Q	50-150
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	79		77		50-150
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	80		75		50-150
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	75		72		50-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**184**	Q	**173**	Q	50-150
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	100		97		50-150
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	86		74		50-150
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	**36**	Q	**37**	Q	50-150
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	120		99		50-150
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	91		71		50-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	62		59		50-150

INORGANICS
&
MISCELLANEOUS

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2
Project Number: 0071-017-240
Lab Number: L1815126
Report Date: 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-01
Client ID: HWMU-1B MW 1D1
Sample Location: BUFFALO, NY
Sample Depth:
Matrix: Water
Date Collected: 04/26/18 13:55
Date Received: 04/27/18
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	0.038		mg/l	0.030	0.006	1	05/02/18 13:00	05/03/18 05:47	4,420.1	BR

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2
Project Number: 0071-017-240
Lab Number: L1815126
Report Date: 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-02
Client ID: HWMU-1B MW 1D6
Sample Location: BUFFALO, NY
Sample Depth:
Matrix: Water
Date Collected: 04/26/18 11:35
Date Received: 04/27/18
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	0.008	J	mg/l	0.030	0.006	1	05/02/18 13:00	05/03/18 05:48	4,420.1	BR

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2
Project Number: 0071-017-240
Lab Number: L1815126
Report Date: 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-03
Client ID: HWMU-1B MW 1D7
Sample Location: BUFFALO, NY
Sample Depth:
Matrix: Water

Date Collected: 04/26/18 12:50
Date Received: 04/27/18
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	0.040		mg/l	0.030	0.006	1	05/02/18 13:00	05/03/18 05:52	4,420.1	BR

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2
Project Number: 0071-017-240
Lab Number: L1815126
Report Date: 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-04
Client ID: HWMU-1B MW 1D8
Sample Location: BUFFALO, NY
Sample Depth:
Matrix: Water
Date Collected: 04/26/18 14:30
Date Received: 04/27/18
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	ND		mg/l	0.030	0.006	1	05/02/18 13:00	05/03/18 05:56	4,420.1	BR

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2
Project Number: 0071-017-240
Lab Number: L1815126
Report Date: 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-05
Client ID: HWMU-1B MW 1U1
Sample Location: BUFFALO, NY
Sample Depth:
Matrix: Water
Date Collected: 04/26/18 09:40
Date Received: 04/27/18
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	0.015	J	mg/l	0.030	0.006	1	05/02/18 13:00	05/03/18 05:57	4,420.1	BR

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2
Project Number: 0071-017-240
Lab Number: L1815126
Report Date: 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-06
Client ID: HWMU-1B MWN-12
Sample Location: BUFFALO, NY
Sample Depth:
Matrix: Water
Date Collected: 04/26/18 10:20
Date Received: 04/27/18
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	0.024	J	mg/l	0.030	0.006	1	05/02/18 13:00	05/03/18 05:59	4,420.1	BR

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2
Project Number: 0071-017-240
Lab Number: L1815126
Report Date: 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-08
Client ID: HWMU-2 MW 2D2
Sample Location: BUFFALO, NY
Sample Depth:
Matrix: Water

Date Collected: 04/27/18 13:53
Date Received: 04/27/18
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	ND		mg/l	0.030	0.006	1	05/02/18 13:00	05/03/18 06:00	4,420.1	BR

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2
Project Number: 0071-017-240
Lab Number: L1815126
Report Date: 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-09
Client ID: HWMU-2 MW 2D3
Sample Location: BUFFALO, NY
Sample Depth:
Matrix: Water

Date Collected: 04/27/18 13:13
Date Received: 04/27/18
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	ND		mg/l	0.030	0.006	1	05/02/18 13:00	05/03/18 06:01	4,420.1	BR

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2
Project Number: 0071-017-240

Lab Number: L1815126
Report Date: 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-10
Client ID: HWMU-2 MW 2D4
Sample Location: BUFFALO, NY

Date Collected: 04/27/18 14:24
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	ND		mg/l	0.030	0.006	1	05/02/18 13:00	05/03/18 06:03	4,420.1	BR

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-11 Date Collected: 04/27/18 14:55

Client ID: HWMU-2 MWS 11A Date Received: 04/27/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	0.017	J	mg/l	0.030	0.006	1	05/02/18 13:00	05/03/18 06:03	4,420.1	BR

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2
Project Number: 0071-017-240
Lab Number: L1815126
Report Date: 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-12
Client ID: HWMU-1A MW 1D2
Sample Location: BUFFALO, NY
Sample Depth:
Matrix: Water
Date Collected: 04/27/18 10:50
Date Received: 04/27/18
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	0.006	J	mg/l	0.030	0.006	1	05/02/18 13:00	05/03/18 06:06	4,420.1	BR

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-13 Date Collected: 04/27/18 11:20

Client ID: HWMU-1A MW 1D3 Date Received: 04/27/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	0.18		mg/l	0.030	0.006	1	05/02/18 13:00	05/03/18 06:09	4,420.1	BR

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2
Project Number: 0071-017-240

Lab Number: L1815126
Report Date: 05/14/18

SAMPLE RESULTS

Lab ID: L1815126-14
Client ID: HWMU-1A MW 1D4
Sample Location: BUFFALO, NY

Date Collected: 04/27/18 11:45
Date Received: 04/27/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	0.040		mg/l	0.030	0.006	1	05/02/18 13:00	05/03/18 06:10	4,420.1	BR

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2 **Lab Number:** L1815126

Project Number: 0071-017-240 **Report Date:** 05/14/18

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-06,08-11 Batch: WG1111822-1										
Phenolics, Total	ND		mg/l	0.030	0.006	1	05/02/18 13:00	05/03/18 05:45	4,420.1	BR
General Chemistry - Westborough Lab for sample(s): 12-14 Batch: WG1111824-1										
Phenolics, Total	ND		mg/l	0.030	0.006	1	05/02/18 13:00	05/03/18 06:04	4,420.1	BR

Lab Control Sample Analysis

Batch Quality Control

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2

Project Number: 0071-017-240

Lab Number: L1815126

Report Date: 05/14/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-06,08-11 Batch: WG1111822-2								
Phenolics, Total	83		-		70-130	-		
General Chemistry - Westborough Lab Associated sample(s): 12-14 Batch: WG1111824-2								
Phenolics, Total	77		-		70-130	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2
Project Number: 0071-017-240

Lab Number: L1815126
Report Date: 05/14/18

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-06,08-11 QC Batch ID: WG1111822-4 QC Sample: L1815126-02 Client ID: HWMU-1B MW 1D6												
Phenolics, Total	0.008J	0.4	0.33	82		-	-		70-130	-		20
General Chemistry - Westborough Lab Associated sample(s): 12-14 QC Batch ID: WG1111824-4 QC Sample: L1800004-150 Client ID: MS Sample												
Phenolics, Total	0.008J	0.4	0.33	82		-	-		70-130	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2
Project Number: 0071-017-240

Lab Number: L1815126
Report Date: 05/14/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-06,08-11 QC Batch ID: WG1111822-3 QC Sample: L1815126-02 Client ID: HWMU-1B MW 1D6						
Phenolics, Total	0.008J	0.009J	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 12-14 QC Batch ID: WG1111824-3 QC Sample: L1800004-150 Client ID: DUP Sample						
Phenolics, Total	0.008J	0.009J	mg/l	NC		20

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2
Project Number: 0071-017-240

Lab Number: L1815126
Report Date: 05/14/18

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent
D	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1815126-01A	Vial HCl preserved	B	NA		3.6	Y	Absent		NYTCL-8260-R2(14)
L1815126-01B	Vial HCl preserved	B	NA		3.6	Y	Absent		NYTCL-8260-R2(14)
L1815126-01C	Vial HCl preserved	B	NA		3.6	Y	Absent		NYTCL-8260-R2(14)
L1815126-01D	Amber 1000ml H2SO4 preserved	B	<2	<2	3.6	Y	Absent		NY-TPHENOL-420(28)
L1815126-01E	Amber 1000ml unpreserved	B	10	10	3.6	Y	Absent		NYTCL-8270(7)
L1815126-01F	Amber 1000ml unpreserved	B	10	10	3.6	Y	Absent		NYTCL-8270(7)
L1815126-02A	Vial HCl preserved	B	NA		3.6	Y	Absent		NYTCL-8260-R2(14)
L1815126-02B	Vial HCl preserved	B	NA		3.6	Y	Absent		NYTCL-8260-R2(14)
L1815126-02C	Vial HCl preserved	B	NA		3.6	Y	Absent		NYTCL-8260-R2(14)
L1815126-02D	Amber 1000ml H2SO4 preserved	B	<2	<2	3.6	Y	Absent		NY-TPHENOL-420(28)
L1815126-02E	Amber 1000ml unpreserved	B	10	10	3.6	Y	Absent		NYTCL-8270(7)
L1815126-02F	Amber 1000ml unpreserved	B	10	10	3.6	Y	Absent		NYTCL-8270(7)
L1815126-03A	Vial HCl preserved	B	NA		3.6	Y	Absent		NYTCL-8260-R2(14)
L1815126-03B	Vial HCl preserved	B	NA		3.6	Y	Absent		NYTCL-8260-R2(14)
L1815126-03C	Vial HCl preserved	B	NA		3.6	Y	Absent		NYTCL-8260-R2(14)
L1815126-03D	Amber 1000ml H2SO4 preserved	B	<2	<2	3.6	Y	Absent		NY-TPHENOL-420(28)
L1815126-03E	Amber 1000ml unpreserved	B	7	7	3.6	Y	Absent		NYTCL-8270(7)
L1815126-03F	Amber 1000ml unpreserved	B	7	7	3.6	Y	Absent		NYTCL-8270(7)
L1815126-04A	Vial HCl preserved	B	NA		3.6	Y	Absent		NYTCL-8260-R2(14)
L1815126-04B	Vial HCl preserved	B	NA		3.6	Y	Absent		NYTCL-8260-R2(14)

*Values in parentheses indicate holding time in days

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2
Project Number: 0071-017-240

Lab Number: L1815126
Report Date: 05/14/18

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1815126-04C	Vial HCl preserved	B	NA		3.6	Y	Absent		NYTCL-8260-R2(14)
L1815126-04D	Amber 1000ml H2SO4 preserved	B	<2	<2	3.6	Y	Absent		NY-TPHENOL-420(28)
L1815126-04E	Amber 1000ml unpreserved	B	>12	>12	3.6	Y	Absent		NYTCL-8270(7)
L1815126-04F	Amber 1000ml unpreserved	B	>12	>12	3.6	Y	Absent		NYTCL-8270(7)
L1815126-05A	Vial HCl preserved	C	NA		2.9	Y	Absent		NYTCL-8260-R2(14)
L1815126-05B	Vial HCl preserved	C	NA		2.9	Y	Absent		NYTCL-8260-R2(14)
L1815126-05C	Vial HCl preserved	C	NA		2.9	Y	Absent		NYTCL-8260-R2(14)
L1815126-05D	Amber 1000ml H2SO4 preserved	C	<2	<2	2.9	Y	Absent		NY-TPHENOL-420(28)
L1815126-05E	Amber 1000ml unpreserved	C	10	10	2.9	Y	Absent		NYTCL-8270(7)
L1815126-05F	Amber 1000ml unpreserved	C	10	10	2.9	Y	Absent		NYTCL-8270(7)
L1815126-06A	Vial HCl preserved	B	NA		3.6	Y	Absent		NYTCL-8260-R2(14)
L1815126-06B	Vial HCl preserved	B	NA		3.6	Y	Absent		NYTCL-8260-R2(14)
L1815126-06C	Vial HCl preserved	B	NA		3.6	Y	Absent		NYTCL-8260-R2(14)
L1815126-06D	Amber 1000ml H2SO4 preserved	B	<2	<2	3.6	Y	Absent		NY-TPHENOL-420(28)
L1815126-06E	Amber 1000ml unpreserved	B	11	11	3.6	Y	Absent		NYTCL-8270(7)
L1815126-06F	Amber 1000ml unpreserved	B	11	11	3.6	Y	Absent		NYTCL-8270(7)
L1815126-07A	Vial HCl preserved	B	NA		3.6	Y	Absent		NYTCL-8260-R2(14)
L1815126-07B	Vial HCl preserved	B	NA		3.6	Y	Absent		NYTCL-8260-R2(14)
L1815126-07C	Vial HCl preserved	B	NA		3.6	Y	Absent		NYTCL-8260-R2(14)
L1815126-07D	Vial HCl preserved	B	NA		3.6	Y	Absent		NYTCL-8260-R2(14)
L1815126-08A	Vial HCl preserved	D	NA		4.5	Y	Absent		NYTCL-8260-R2(14)
L1815126-08B	Vial HCl preserved	D	NA		4.5	Y	Absent		NYTCL-8260-R2(14)
L1815126-08C	Vial HCl preserved	D	NA		4.5	Y	Absent		NYTCL-8260-R2(14)
L1815126-08D	Amber 1000ml H2SO4 preserved	D	<2	<2	4.5	Y	Absent		NY-TPHENOL-420(28)
L1815126-08E	Amber 1000ml unpreserved	D	7	7	4.5	Y	Absent		NYTCL-8270(7)
L1815126-08F	Amber 1000ml unpreserved	D	7	7	4.5	Y	Absent		NYTCL-8270(7)
L1815126-09A	Vial HCl preserved	D	NA		4.5	Y	Absent		NYTCL-8260-R2(14)
L1815126-09B	Vial HCl preserved	D	NA		4.5	Y	Absent		NYTCL-8260-R2(14)

*Values in parentheses indicate holding time in days

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2
Project Number: 0071-017-240

Lab Number: L1815126
Report Date: 05/14/18

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1815126-09C	Vial HCl preserved	D	NA		4.5	Y	Absent		NYTCL-8260-R2(14)
L1815126-09D	Plastic 250ml Trizma preserved	A	NA		2.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1815126-09E	Plastic 250ml Trizma preserved	A	NA		2.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1815126-09F	Plastic 250ml Trizma preserved	A	NA		2.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1815126-09G	Amber 500ml unpreserved	A	11	11	2.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1815126-09H	Amber 500ml unpreserved	A	11	11	2.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1815126-09I	Amber 1000ml H2SO4 preserved	D	<2	<2	4.5	Y	Absent		NY-TPHENOL-420(28)
L1815126-09J	Amber 1000ml unpreserved	D	11	11	4.5	Y	Absent		NYTCL-8270(7)
L1815126-09K	Amber 1000ml unpreserved	D	11	11	4.5	Y	Absent		NYTCL-8270(7)
L1815126-10A	Vial HCl preserved	D	NA		4.5	Y	Absent		NYTCL-8260-R2(14)
L1815126-10B	Vial HCl preserved	D	NA		4.5	Y	Absent		NYTCL-8260-R2(14)
L1815126-10C	Vial HCl preserved	D	NA		4.5	Y	Absent		NYTCL-8260-R2(14)
L1815126-10D	Amber 1000ml H2SO4 preserved	D	<2	<2	4.5	Y	Absent		NY-TPHENOL-420(28)
L1815126-10E	Amber 1000ml unpreserved	D	7	7	4.5	Y	Absent		NYTCL-8270(7)
L1815126-10F	Amber 1000ml unpreserved	D	7	7	4.5	Y	Absent		NYTCL-8270(7)
L1815126-11A	Vial HCl preserved	D	NA		4.5	Y	Absent		NYTCL-8260-R2(14)
L1815126-11B	Vial HCl preserved	D	NA		4.5	Y	Absent		NYTCL-8260-R2(14)
L1815126-11C	Vial HCl preserved	D	NA		4.5	Y	Absent		NYTCL-8260-R2(14)
L1815126-11D	Amber 1000ml H2SO4 preserved	D	<2	<2	4.5	Y	Absent		NY-TPHENOL-420(28)
L1815126-11E	Amber 1000ml unpreserved	D	11	11	4.5	Y	Absent		NYTCL-8270(7)
L1815126-11F	Amber 1000ml unpreserved	D	11	11	4.5	Y	Absent		NYTCL-8270(7)
L1815126-12A	Vial HCl preserved	C	NA		2.9	Y	Absent		NYTCL-8260-R2(14)
L1815126-12B	Vial HCl preserved	C	NA		2.9	Y	Absent		NYTCL-8260-R2(14)
L1815126-12C	Vial HCl preserved	C	NA		2.9	Y	Absent		NYTCL-8260-R2(14)
L1815126-12D	Plastic 250ml Trizma preserved	A	NA		2.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1815126-12E	Plastic 250ml Trizma preserved	A	NA		2.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1815126-12F	Plastic 250ml Trizma preserved	A	NA		2.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1815126-12G	Amber 500ml unpreserved	A	11	11	2.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)

*Values in parentheses indicate holding time in days

Project Name: TECUMSEH ANNUAL GWM HWMU 1/2
Project Number: 0071-017-240

Lab Number: L1815126
Report Date: 05/14/18

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1815126-12H	Amber 500ml unpreserved	A	11	11	2.4	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L1815126-12I	Amber 1000ml H2SO4 preserved	D	<2	<2	4.5	Y	Absent		NY-TPHENOL-420(28)
L1815126-12J	Amber 1000ml unpreserved	C	11	11	2.9	Y	Absent		NYTCL-8270(7)
L1815126-12K	Amber 1000ml unpreserved	C	11	11	2.9	Y	Absent		NYTCL-8270(7)
L1815126-13A	Vial HCl preserved	C	NA		2.9	Y	Absent		NYTCL-8260-R2(14)
L1815126-13B	Vial HCl preserved	C	NA		2.9	Y	Absent		NYTCL-8260-R2(14)
L1815126-13C	Vial HCl preserved	C	NA		2.9	Y	Absent		NYTCL-8260-R2(14)
L1815126-13D	Amber 1000ml H2SO4 preserved	C	<2	<2	2.9	Y	Absent		NY-TPHENOL-420(28)
L1815126-13E	Amber 1000ml unpreserved	C	11	11	2.9	Y	Absent		NYTCL-8270(7)
L1815126-13F	Amber 1000ml unpreserved	C	11	11	2.9	Y	Absent		NYTCL-8270(7)
L1815126-14A	Vial HCl preserved	C	NA		2.9	Y	Absent		NYTCL-8260-R2(14)
L1815126-14B	Vial HCl preserved	C	NA		2.9	Y	Absent		NYTCL-8260-R2(14)
L1815126-14C	Vial HCl preserved	C	NA		2.9	Y	Absent		NYTCL-8260-R2(14)
L1815126-14D	Amber 1000ml H2SO4 preserved	C	<2	<2	2.9	Y	Absent		NY-TPHENOL-420(28)
L1815126-14E	Amber 1000ml unpreserved	C	11	11	2.9	Y	Absent		NYTCL-8270(7)
L1815126-14F	Amber 1000ml unpreserved	C	11	11	2.9	Y	Absent		NYTCL-8270(7)
L1815126-15A	Plastic 250ml Trizma preserved	A	NA		2.4	Y	Absent		A2-NY-537-ISOTOPE(14)
L1815126-16A	Plastic 250ml unpreserved	A	NA		2.4	Y	Absent		A2-NY-537-ISOTOPE(14)

*Values in parentheses indicate holding time in days

Project Name:	TECUMSEH ANNUAL GWM HWMU 1/2	**Lab Number:**	L1815126
Project Number:	0071-017-240	**Report Date:**	05/14/18

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1	- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: DU Report with 'J' Qualifiers

Project Name:	TECUMSEH ANNUAL GWM HWMU 1/2	**Lab Number:**	L1815126
Project Number:	0071-017-240	**Report Date:**	05/14/18

Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	TECUMSEH ANNUAL GWM HWMU 1/2	**Lab Number:**	L1815126
Project Number:	0071-017-240	**Report Date:**	05/14/18

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.

122 Determination of Selected Perfluorintated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Be, Cd, Cr, Cu, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

NEW YORK CHAIN OF CUSTODY

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 3

Date Rec'd in Lab 4/28/18

ALPHA Job # L1815126

Client Information

Client: Benchmark Environmental
Address: 2558 Hamburg Turnpike, Ste300
Buffalo, NY 14218
Phone: 716-856-0599
Fax: TBehrendt@benchmarkees.com
Email: BHann@benchmarkees.com

Project Information

Project Name: Tecumseh Annual GWM HWMU 1/2
Project Location: Buffalo, NY
Project #
(Use Project name as Project #) ☐
Project Manager: ~~Gepdace Fox~~ Tom Behrendt
ALPHAQuote #:

Turn-Around Time

Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☑ Other

Regulatory Requirement

☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☑ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information

☑ Same as Client Info
PO #

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other: NA

These samples have been previously analyzed by Alpha ☑

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8270 BNA Only	NYTCL-8260+CP-51	TR Phenolics	Total Bottle
15126-01	HWMU-1B MW 1D1	4/26/18	1355	Water	TAB	X	X	X	6
-02	HWMU-1B MW 1D6		1135			X	X	X	6
-03	HWMU-1B MW 1D7		1250			X	X	X	6
-04	HWMU-1B MW 1D8		1430			X	X	X	6
-05	HWMU-1B MW 1U1		940			X	X	X	6
-06	HWMU-1B MWN-12		1020			X	X	X	6
-07	Trip Blank								

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Sample Specific Comments

Container Type: A V A
Preservative: A B D

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
[illegible]	4/27/18 1608	Jm AL AAL	4/27/18 16:10
Jm AL AAL	4/27/18 16:45		4/28/18 8:25

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS.

Form No: 01-25 (rev. 30-Sept-2013)

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
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Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 3

Date Rec'd in Lab: 4/28/18

ALPHA Job #: L1815120

Client Information

Client: Benchmark Environmental
Address: 2558 Hamburg Turnpike, Ste300
Buffalo, NY 14218
Phone: 716-856-0599
Fax: TBehrendt@Tumbyllc.com
Email: BHann@benchmarkees.com

Project Information

Project Name: Tecumseh Annual GWM HWMU 1/2
Project Location: Buffalo, NY
Project #
(Use Project name as Project #) ☐
Project Manager: ~~Candace Fox~~ Tom Behrendt
ALPHAQuote #:

Turn-Around Time

Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☑ Other

Regulatory Requirement

☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☑ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information

☑ Same as Client Info
PO #

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other: NA

These samples have been previously analyzed by Alpha ☑

Other project specific requirements/comments:

CAT B- 1,4 Dioxane, PFOA+PFOS

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8270 BNA Only	8260 CP-51	TR Phenolics	1,4 Dioxane	PFOA, PFOS				Sample Specific Comments	Total # Bottles
15126-08	HWMU-2 MW 2D2	4/27/18	1353	Water	TAB	X	X	X							6
-09	HWMU-2 MW 2D3		1313	Water		X	X	X	X	X					6
-10	HWMU-2 MW 2D4		1424	Water		X	X	X							6
-11	HWMU-2 MWS 11A		1455	Water		X	X	X							6

Container Type: A V A A P
Preservative: A B D A O

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	4/27/18 1605	JM AL AAL	4/27/18 16:10
JM AL AAL	4/27/18 16:45		4/28/18 0125

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS.

Form No: 01-25 (rev. 30-Sept-2013)

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
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FAX: 508-898-9193

Mansfield, MA 02048
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FAX: 508-822-3288

NEW YORK CHAIN OF CUSTODY

Service Centers
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Page 1 of 3

Date Rec'd in Lab: 4/28/18

ALPHA Job #: L1815126

Client Information

Client: Benchmark Environmental
Address: 2558 Hamburg Turnpike, Ste300
Buffalo, NY 14218
Phone: 716-856-0599
Fax: TBehrendt@benchmarkees.com
Email: BHann@benchmarkees.com

Project Information

Project Name: Tecumseh Annual GWM HWMU 1/2
Project Location: Buffalo, NY
Project #
(Use Project name as Project #) ☐
Project Manager: ~~Candace Fox~~ Tom Behrendt
ALPHAQuote #:

Turn-Around Time

Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☑ Other

Regulatory Requirement

☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☑ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information

☑ Same as Client Info
PO #

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other: NA

These samples have been previously analyzed by Alpha ☑

Other project specific requirements/comments:

CAT B = 1,4 Dioxane, PFOA + PFOS

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8270 BNA Only	8260 CP-51	TR Phenolics	1,4-Dioxane	PFOA PFOS	Sample Specific Comments	Total Bottle
~~L1815126~~ -12	HWMU-1A MW 1D2	4/27/18	1050	Water	TAB	X	X	X	X	X		6
15126 -13	HWMU-1A MW 1D3	"	1120	Water	"	X	X	X				6
-14	HWMU-1A MW 1D4	"	1145	Water	"	X	X	X				6

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	A	V	A	A	P					
Preservative	A	B	D	A	D					

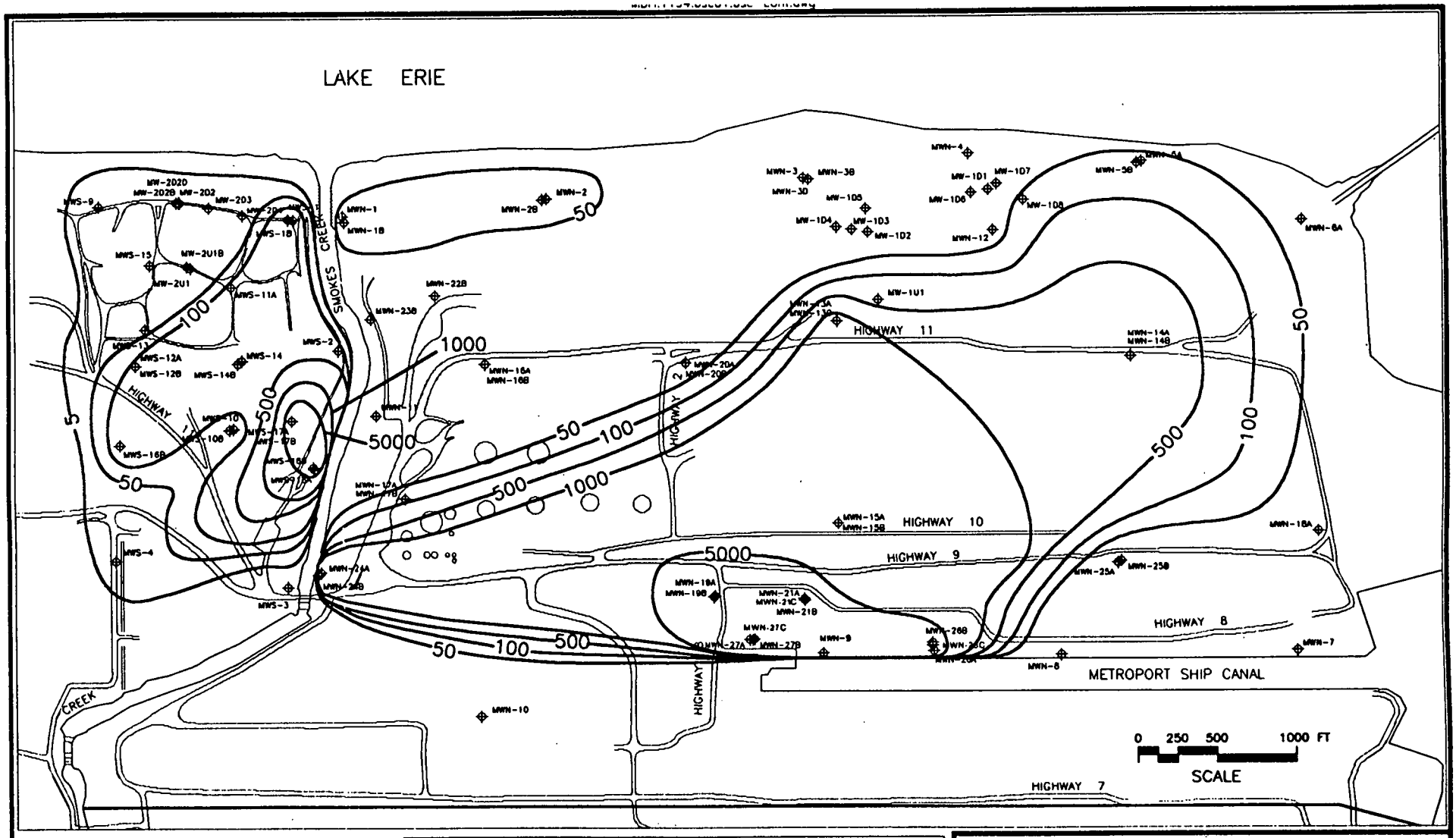
Relinquished By:	Date/Time	Received By:	Date/Time
[illegible]	4/27/18 1608	JM AAL AAL	4/27/18 16:10
JM AAL AAL	4/27/18		4/27/18 [illegible] 4/28/18

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS.

Form No: 01-25 (rev. 30-Sept-2013)

ATTACHMENT 3

TIME-CONCENTRATION PLOTS



KEY:

—10— ISOCONCENTRATION CONTOUR (ug/l)

MWS-8 MONITORING WELL LOCATIONS

WELL I.D.	VALUE (ug/l)	WELL I.D.	VALUE (ug/l)	WELL I.D.	VALUE (ug/l)
MWN-01/1B	72	MWN-23B	7.5	MWS-ND7	ND
MWN-02/2B	63	MWN-24A/24B	1100	MWS-ND8	ND
MWN-03/3B/3D	24	MWN-25A/25B	ND	MWS-09	4.6
MWN-ND4	ND	MWN-26A/26B/26C	5500	MWS-10/10B	88
MWN-05A/5B	79	MWN-27A/27B/27C	16000	MWS-11A	110
MWN-06A	5.6	MW-1U1	180	MWS-12A/12B	240
MWN-ND7	ND	MW-1D1	3.6	MWS-13	8.9
MWN-ND8	ND	MW-1D2	4.8	MWS-14/14B	100
MWN-09	5800	MW-1D3	12	MWS-15	12
MWN-1ND	ND	MW-1D4	14	MWS-16B	150
MWN-11	14	MW-1D5	32	MWS-17A/17B	37000
MWN-12	4.2	MW-1D6	ND	MWS-18A/18B	230000
MWN-13A/13B/13C	1200	MW-1D7	39	MW-2U1/2U1B	17
MWN-14A/14B	590	MW-1D8	32	MW-202/202B/2020	51
MWN-15A/15B	1300	MWS-01/1B	140	MW-203	31
MWN-16A/16B	26	MWS-02	190	MW-204	38
MWN-17A/17B	57	MWS-ND3	ND		
MWN-18A	14	MWS-04	27		
MWN-19A/19B	19000	MWS-ND5	ND		
MWN-20A/20B	34	MWS-ND6	ND		
MWN-21A/21B/21C	6000			SCOURCE: DATA COLLECTED IN DECEMBER 1992 AND AUGUST 1994.	
MWN-22B	15				

SCALE AS NOTED

BETHLEHEM STEEL CORPORATION
LACKAWANNA, NEW YORK

FIGURE 7

ISOCONCENTRATION PLOT OF BENZENE IN GROUNDWATER

JOB No.: 00120-173-152

DAMES & MOORE

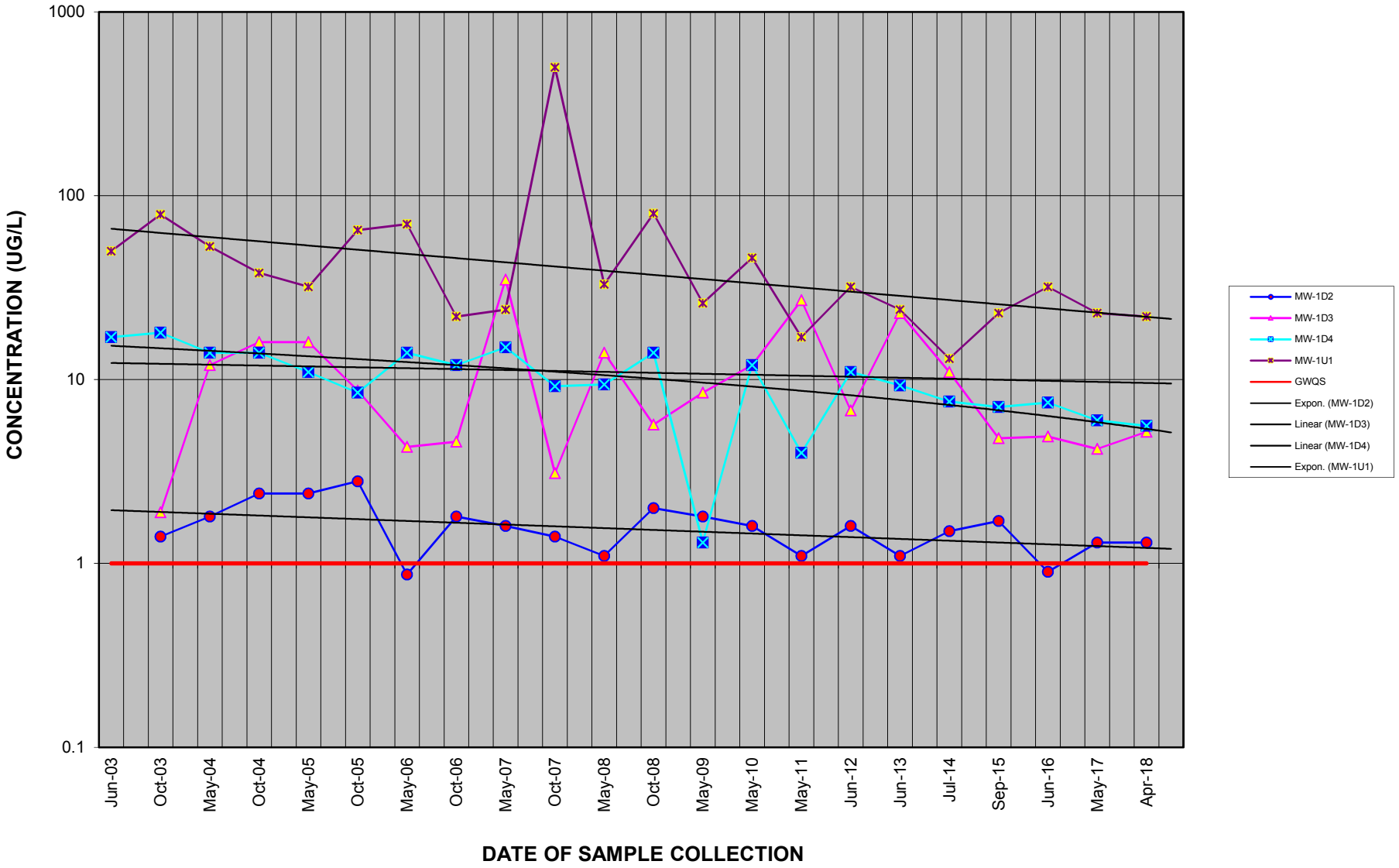
ATTACHMENT 3A

TIME-CONCENTRATION PLOTS

HWMU-1A

BENZENE

HAZARDOUS WASTE MANAGEMENT UNIT 1A
HISTORICAL ANALYTICAL SUMMARY

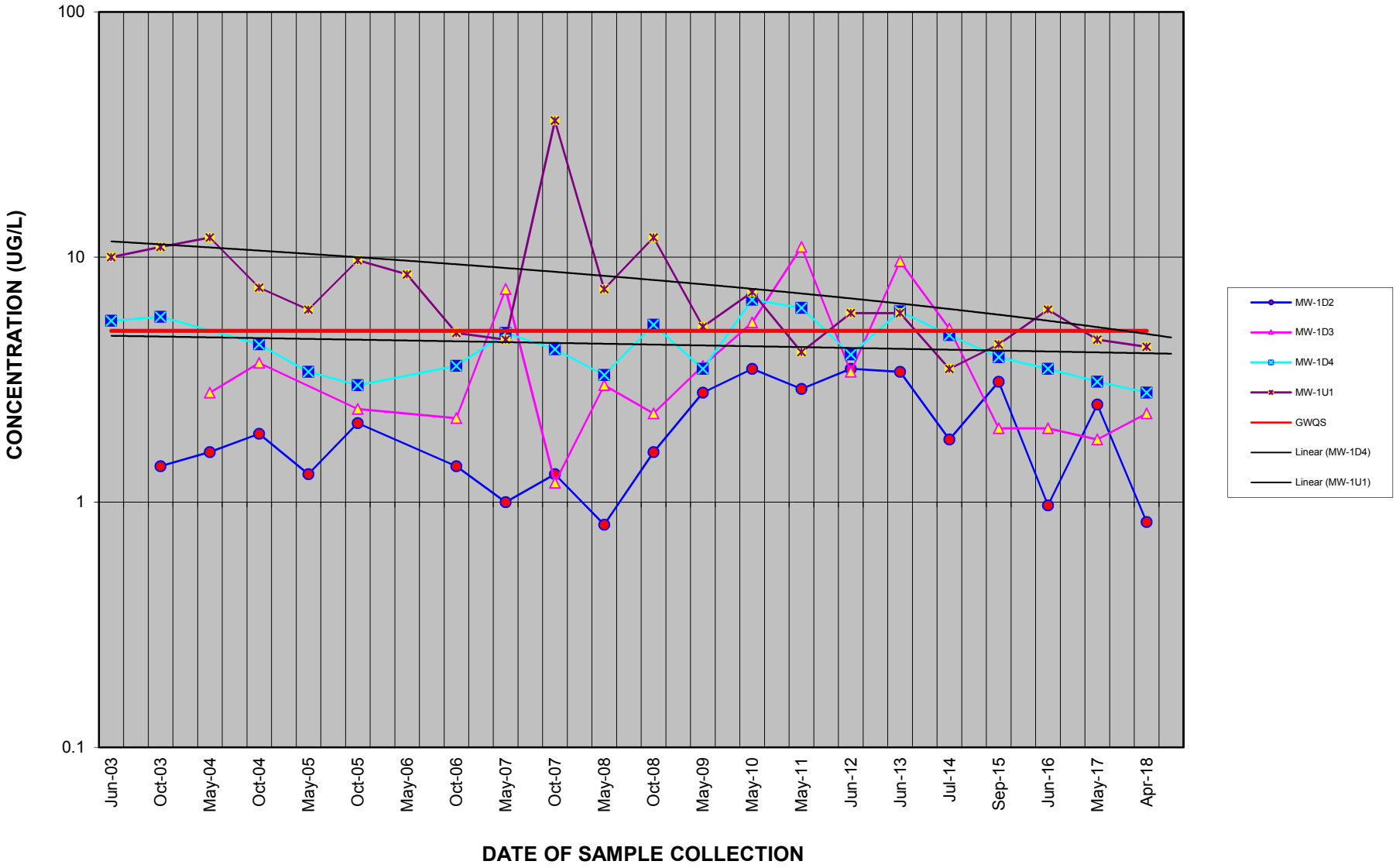


Notes:
1. Concentrations reported below method detection limits (i.e., non-detect) are presented at the reporting limit preceded with an "ND".
2. Concentrations are in micrograms per liter (ug/L).

TURNKEY ENVIRONMENTAL RESTORATION, LLC

TOLUENE

HAZARDOUS WASTE MANAGEMENT UNIT 1A
HISTORICAL ANALYTICAL SUMMARY

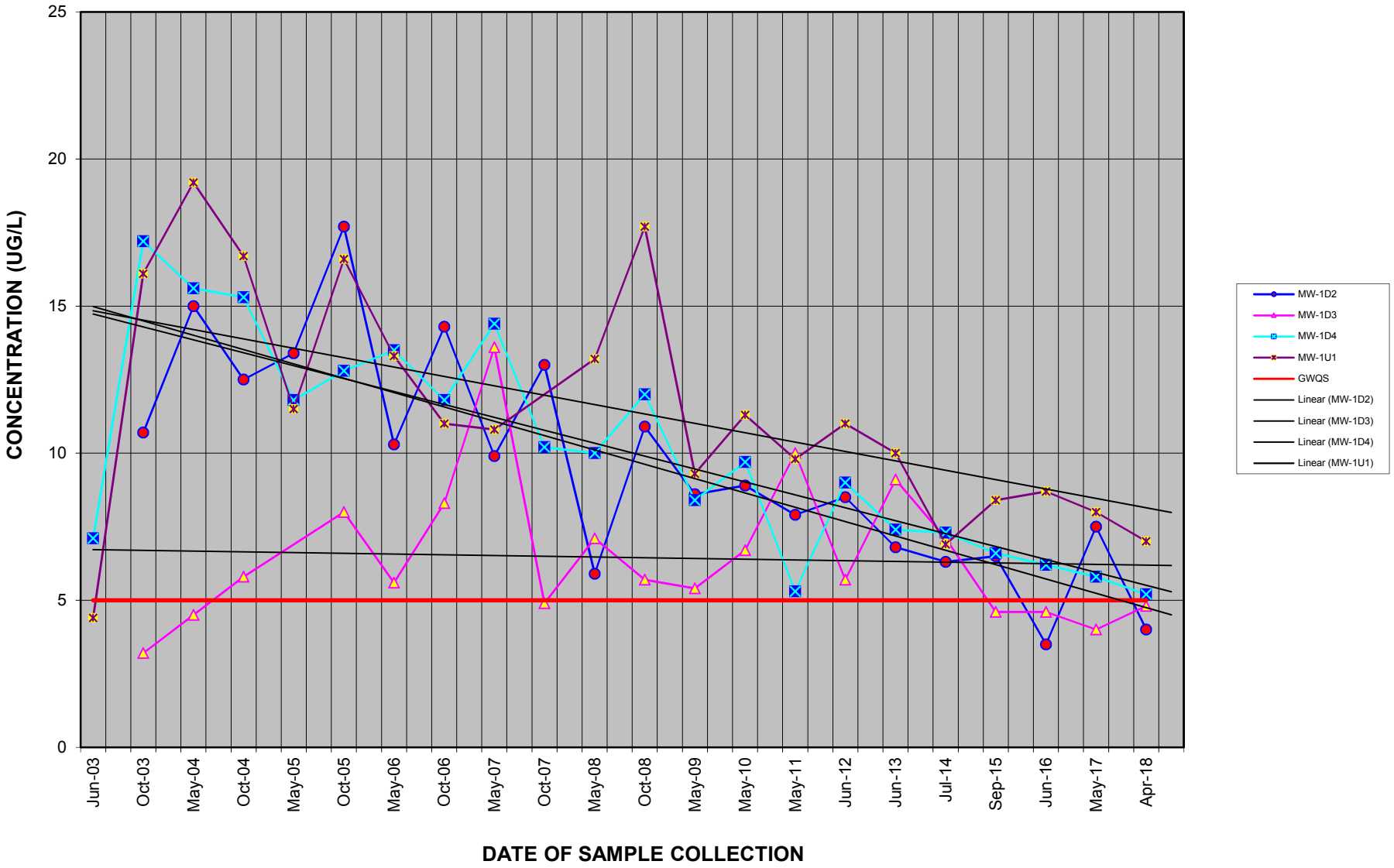


Notes:
1. Concentrations reported below method detection limits (i.e., non-detect) are presented at the reporting limit preceded with an "ND".
2. Concentrations are in micrograms per liter (ug/L).

TURNKEY ENVIRONMENTAL RESTORATION, LLC

TOTAL XYLENES

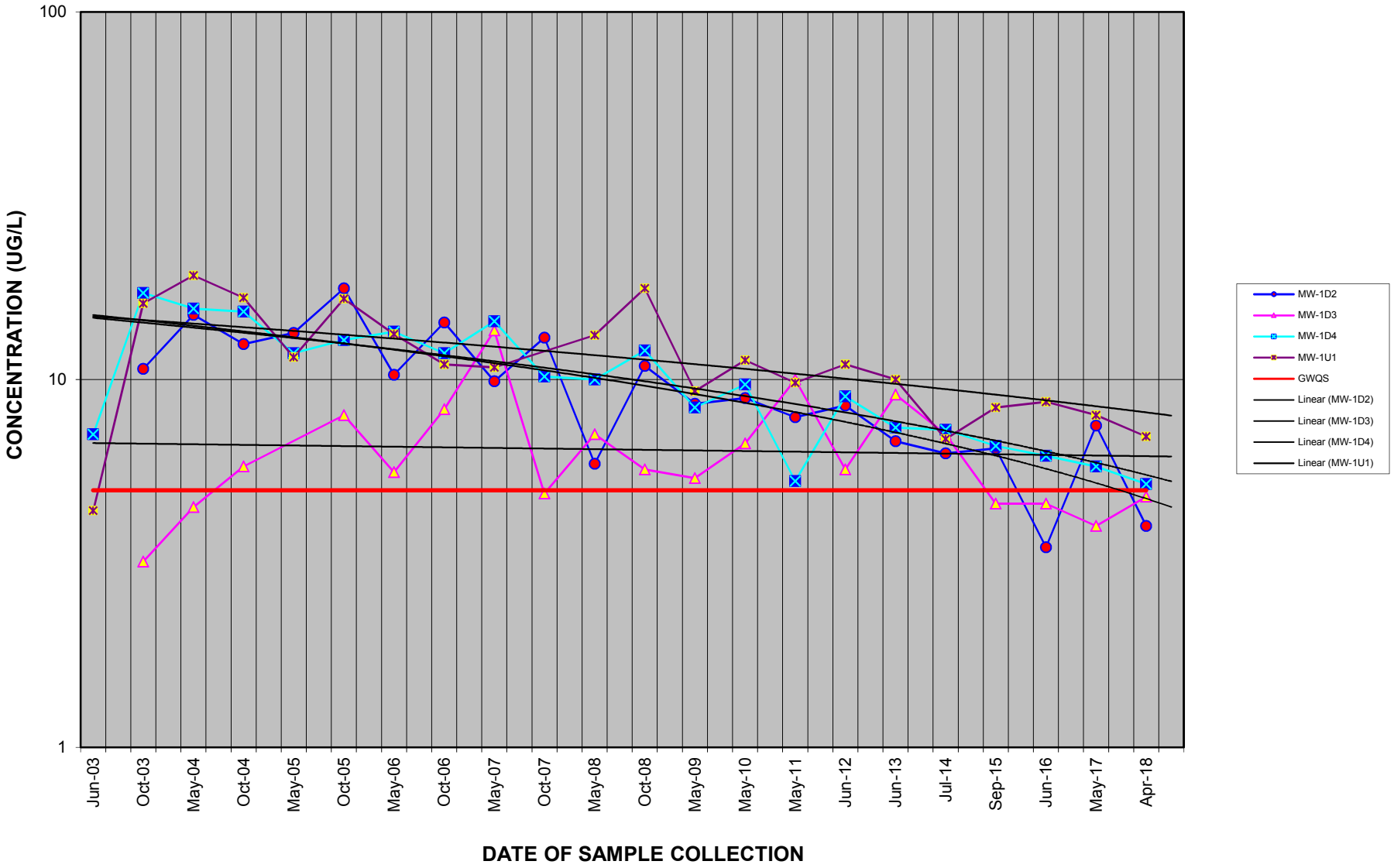
HAZARDOUS WASTE MANAGEMENT UNIT 1A
HISTORICAL ANALYTICAL SUMMARY



Notes:
1. Concentrations reported below method detection limits (i.e., non-detect) are presented at the reporting limit preceded with an "ND".
2. Concentrations are in micrograms per liter (ug/L).

TOTAL XYLENES

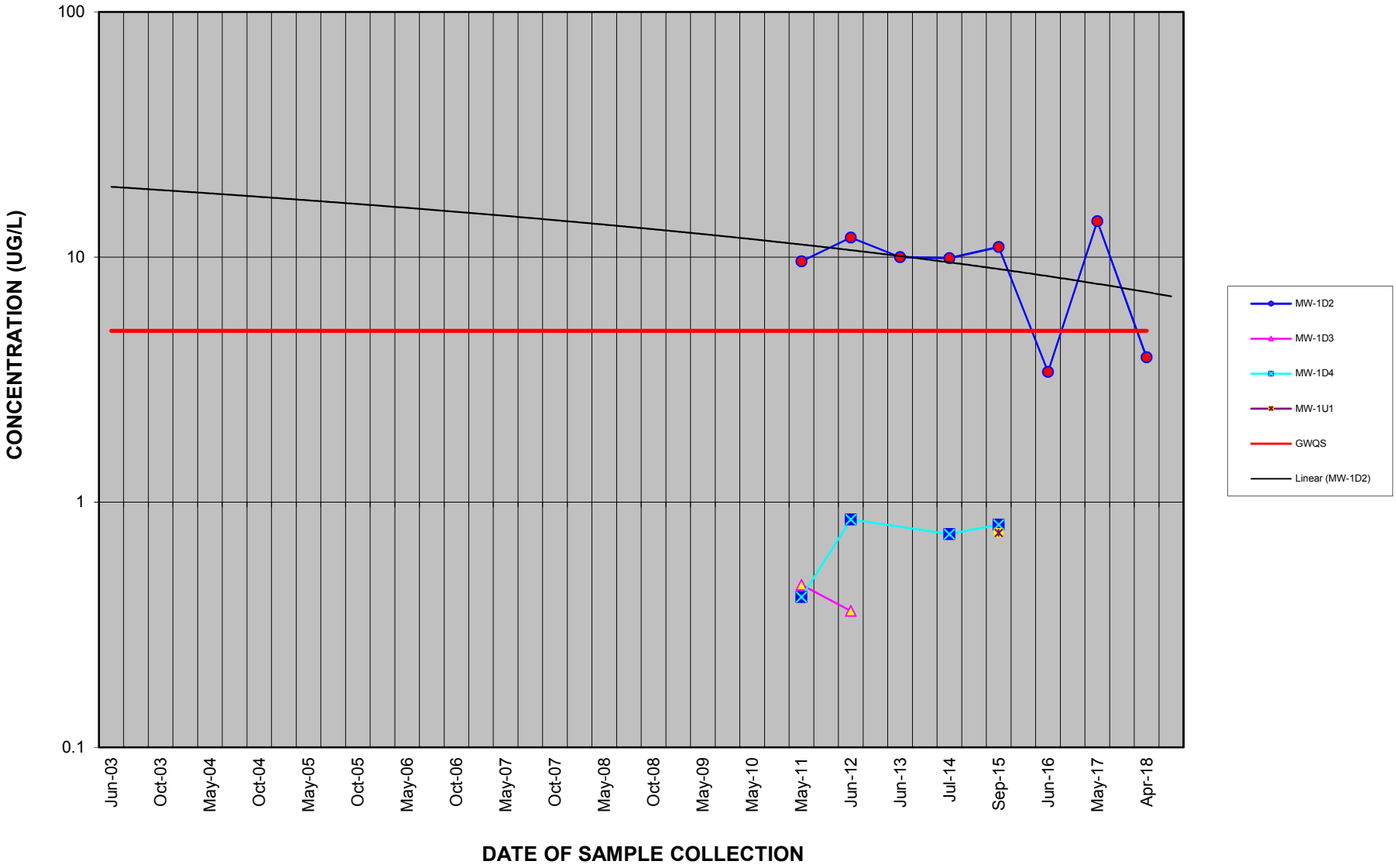
HAZARDOUS WASTE MANAGEMENT UNIT 1A
HISTORICAL ANALYTICAL SUMMARY



Notes:
1. Concentrations reported below method detection limits (i.e., non-detect) are presented at the reporting limit preceded with an "ND".
2. Concentrations are in micrograms per liter (ug/L).

1,2,4-TRIMETHYLBENZENE

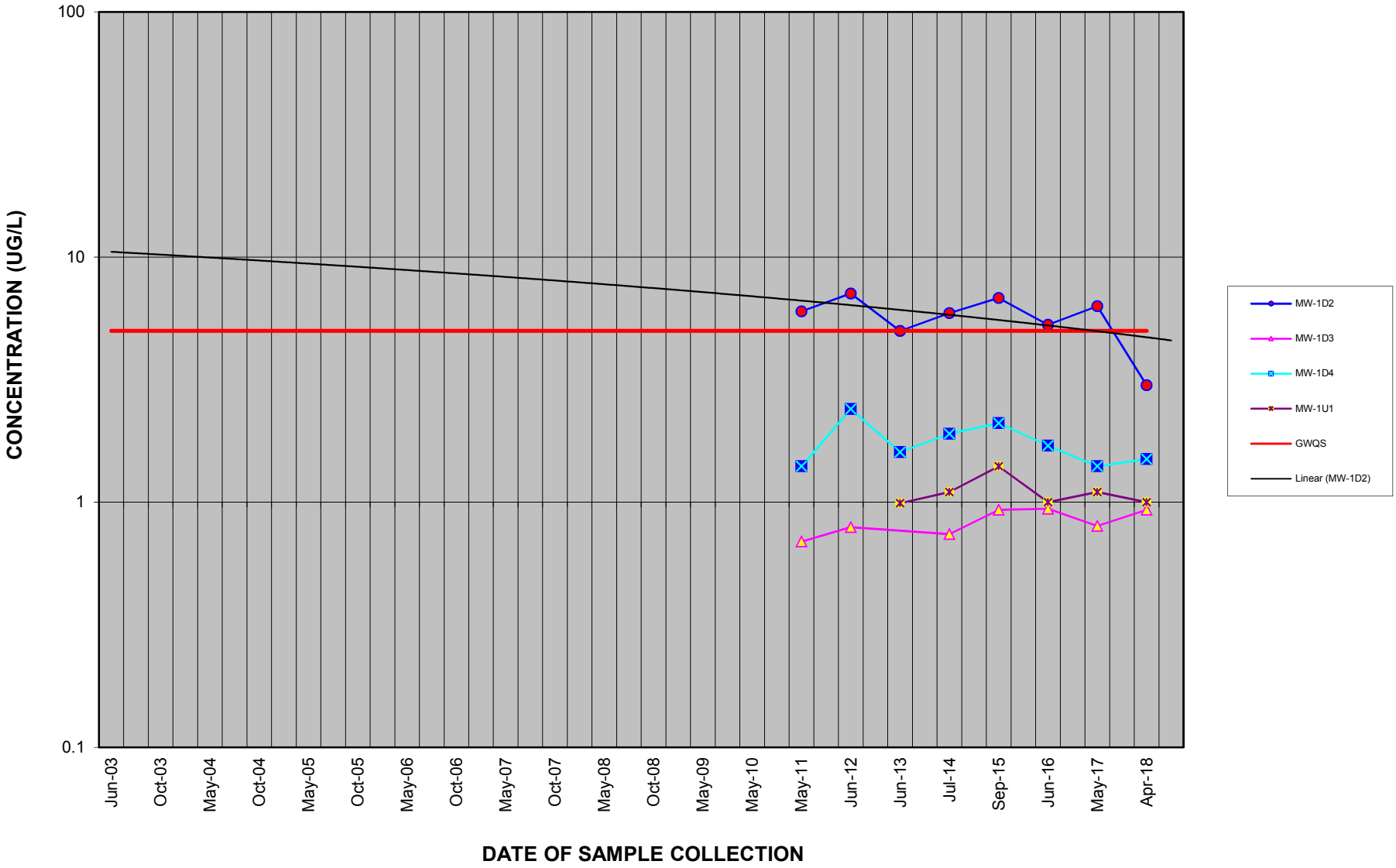
HAZARDOUS WASTE MANAGEMENT UNIT 1A
HISTORICAL ANALYTICAL SUMMARY



Notes:
1. Concentrations reported below method detection limits (i.e., non-detect) are presented at the reporting limit preceded with an "ND".
2. Concentrations are in micrograms per liter (ug/L).

1,3,5-TRIMETHYLBENZENE

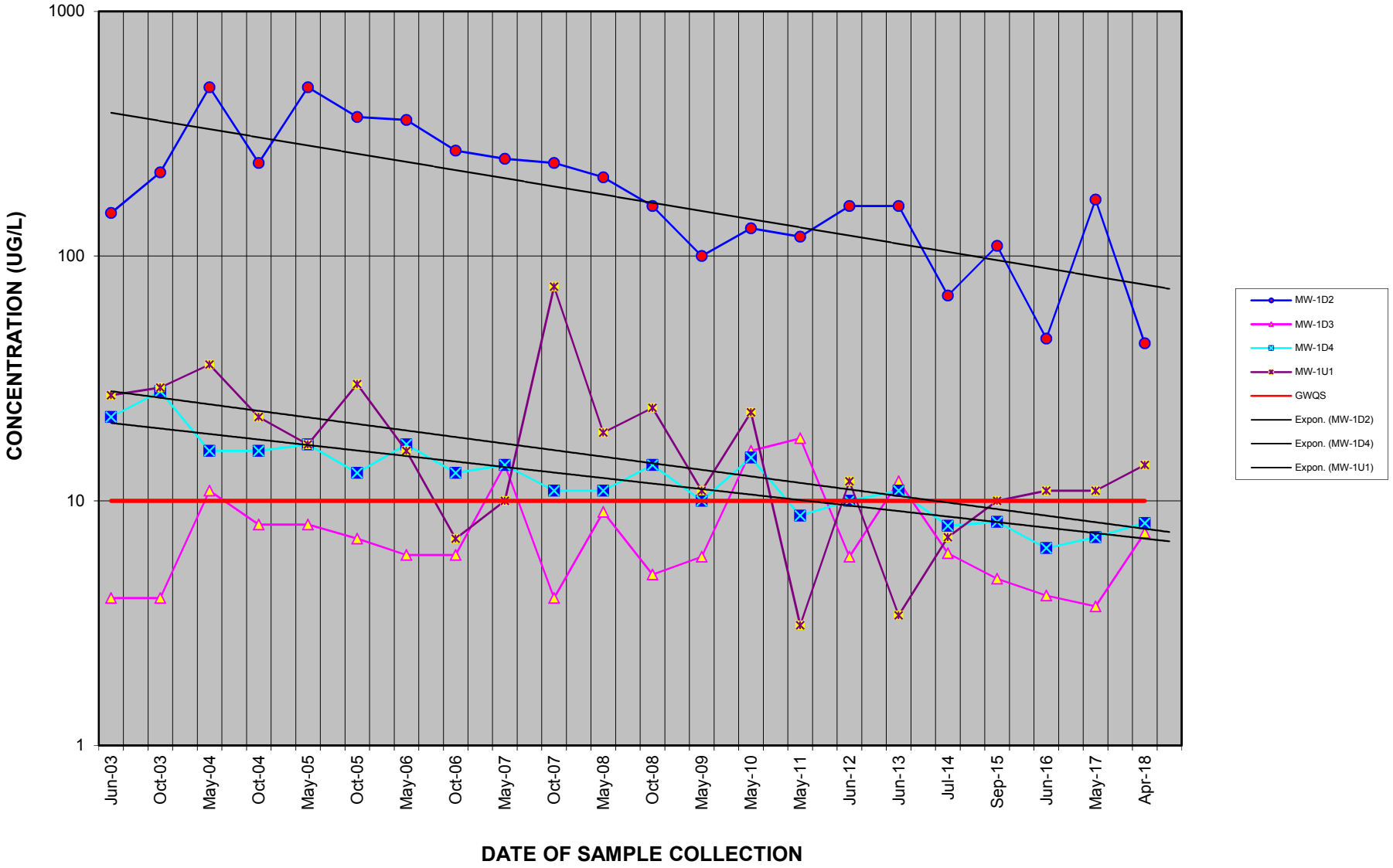
HAZARDOUS WASTE MANAGEMENT UNIT 1A
HISTORICAL ANALYTICAL SUMMARY



Notes:
1. Concentrations reported below method detection limits (i.e., non-detect) are presented at the reporting limit preceded with an "ND".
2. Concentrations are in micrograms per liter (ug/L).

NAPHTHALENE

HAZARDOUS WASTE MANAGEMENT UNIT 1A
HISTORICAL ANALYTICAL SUMMARY

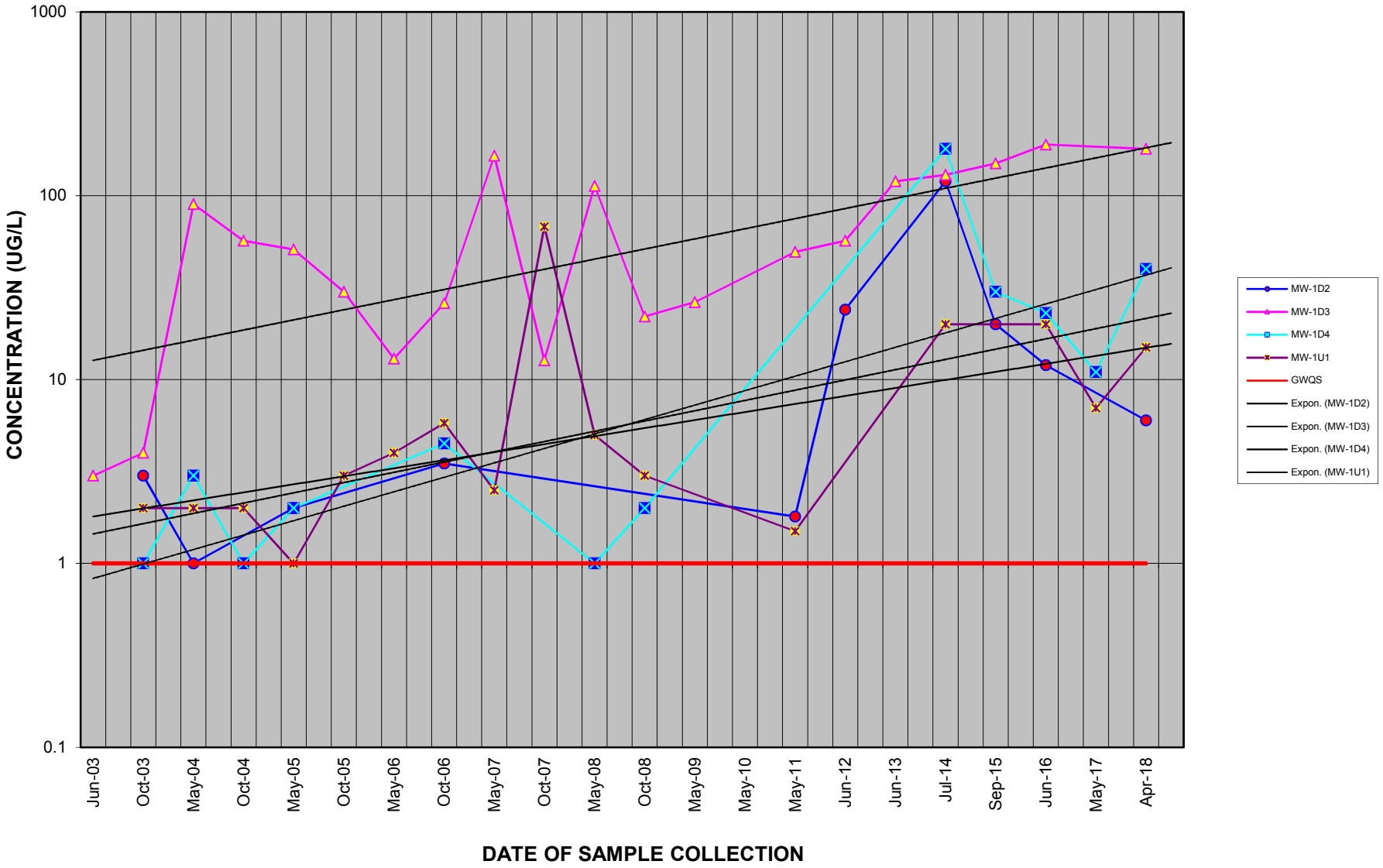


Notes:
1. Concentrations reported below method detection limits (i.e., non-detect) are presented at the reporting limit preceded with an "ND".
2. Concentrations are in micrograms per liter (ug/L).

TURNKEY ENVIRONMENTAL RESTORATION, LLC

TOTAL RECOVERABLE PHENOLICS (TRP)

HAZARDOUS WASTE MANAGEMENT UNIT 1A
HISTORICAL ANALYTICAL SUMMARY



Notes:
1. Concentrations reported below method detection limits (i.e., non-detect) are presented at the reporting limit preceded with an "ND".
2. Concentrations are in micrograms per liter (ug/L).
3. General GWQS of 1.0 ug/L for phenolic compounds.

ATTACHMENT 3B

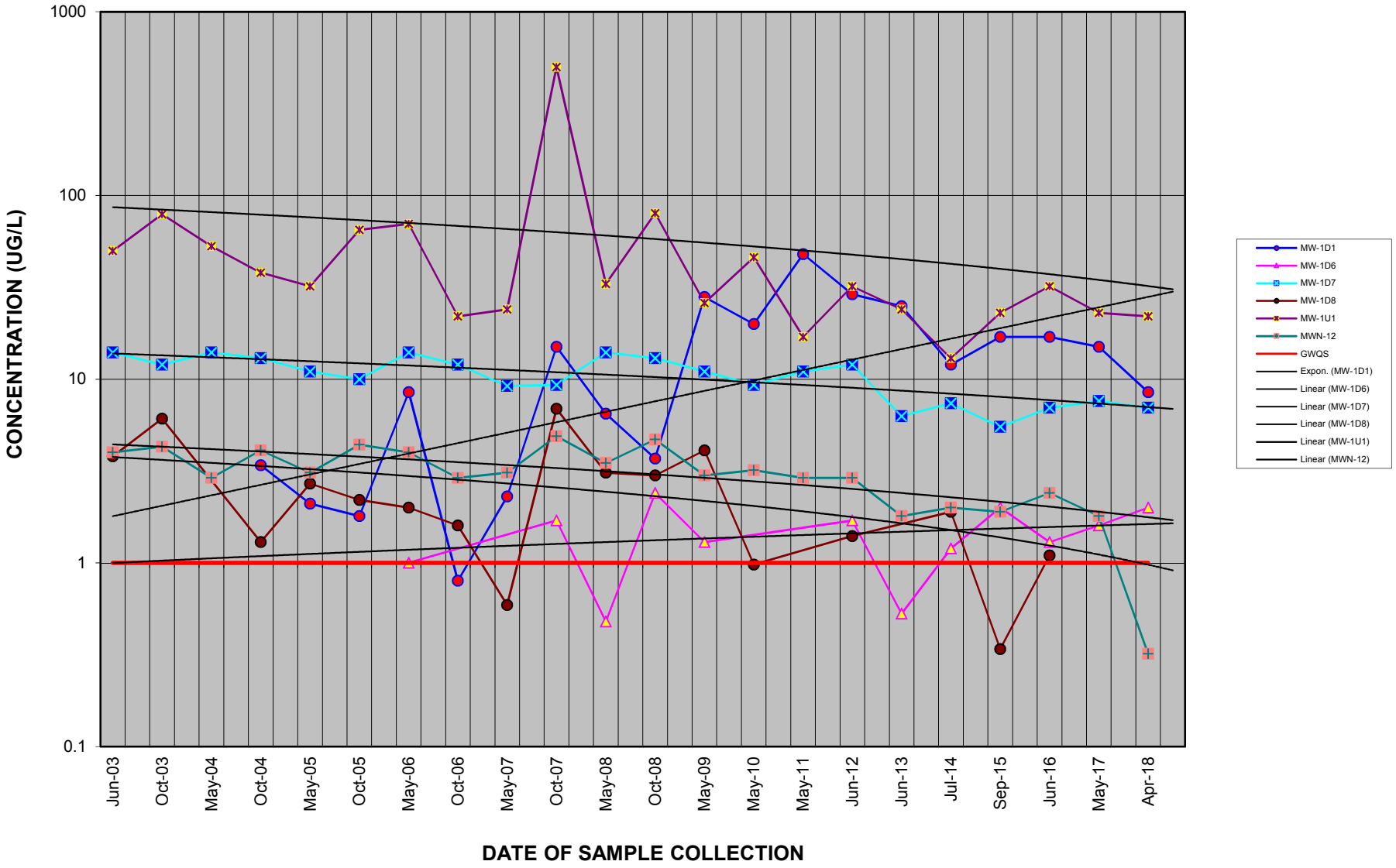
TIME-CONCENTRATION PLOTS

HWMU-1B

TURNKEY

BENZENE

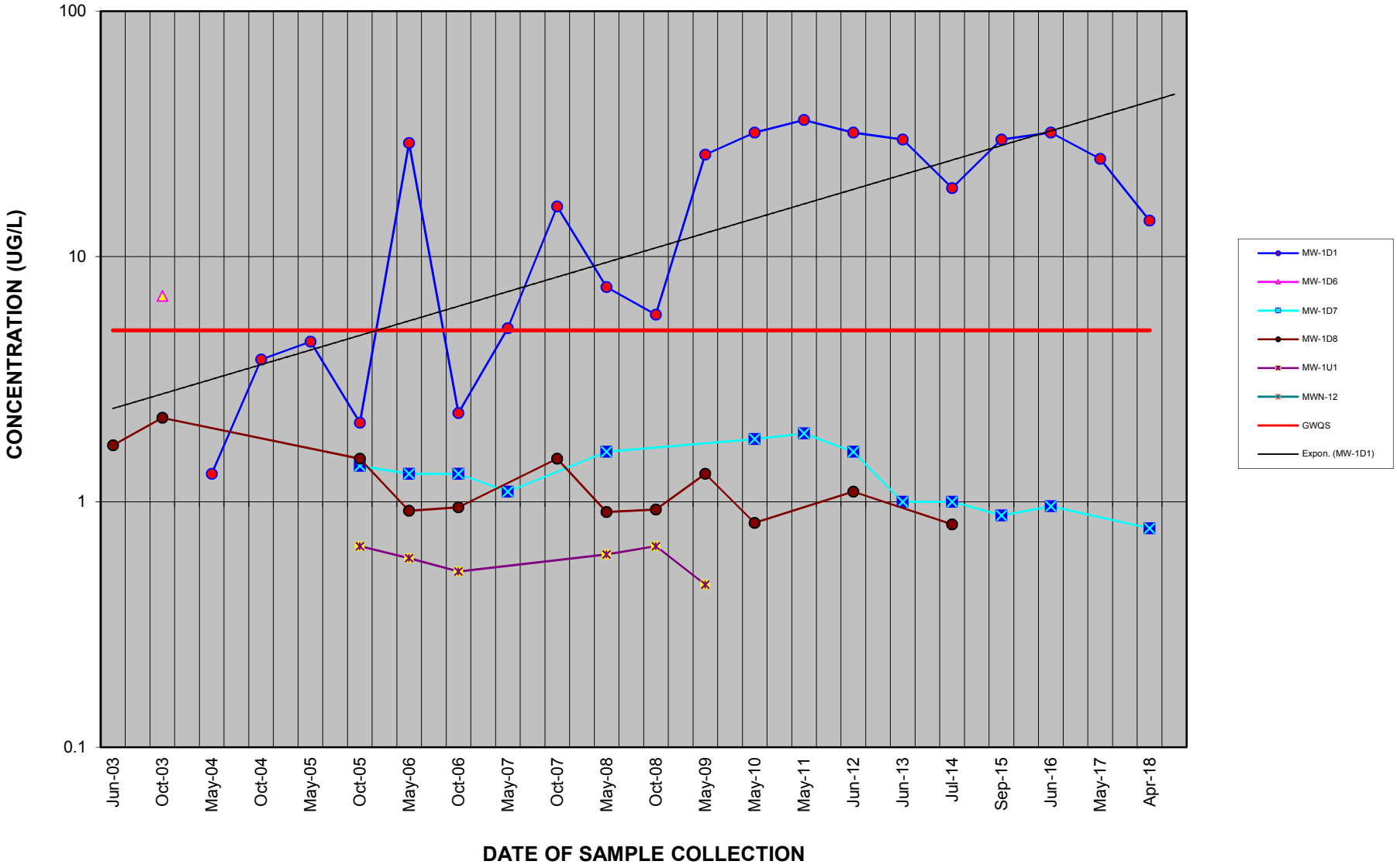
HAZARDOUS WASTE MANAGEMENT UNIT 1B
HISTORICAL ANALYTICAL SUMMARY



Note: Concentrations reported below method detection limits (i.e., non-detect) are not included in the plot.

ETHYLBENZENE

HAZARDOUS WASTE MANAGEMENT UNIT 1B
HISTORICAL ANALYTICAL SUMMARY

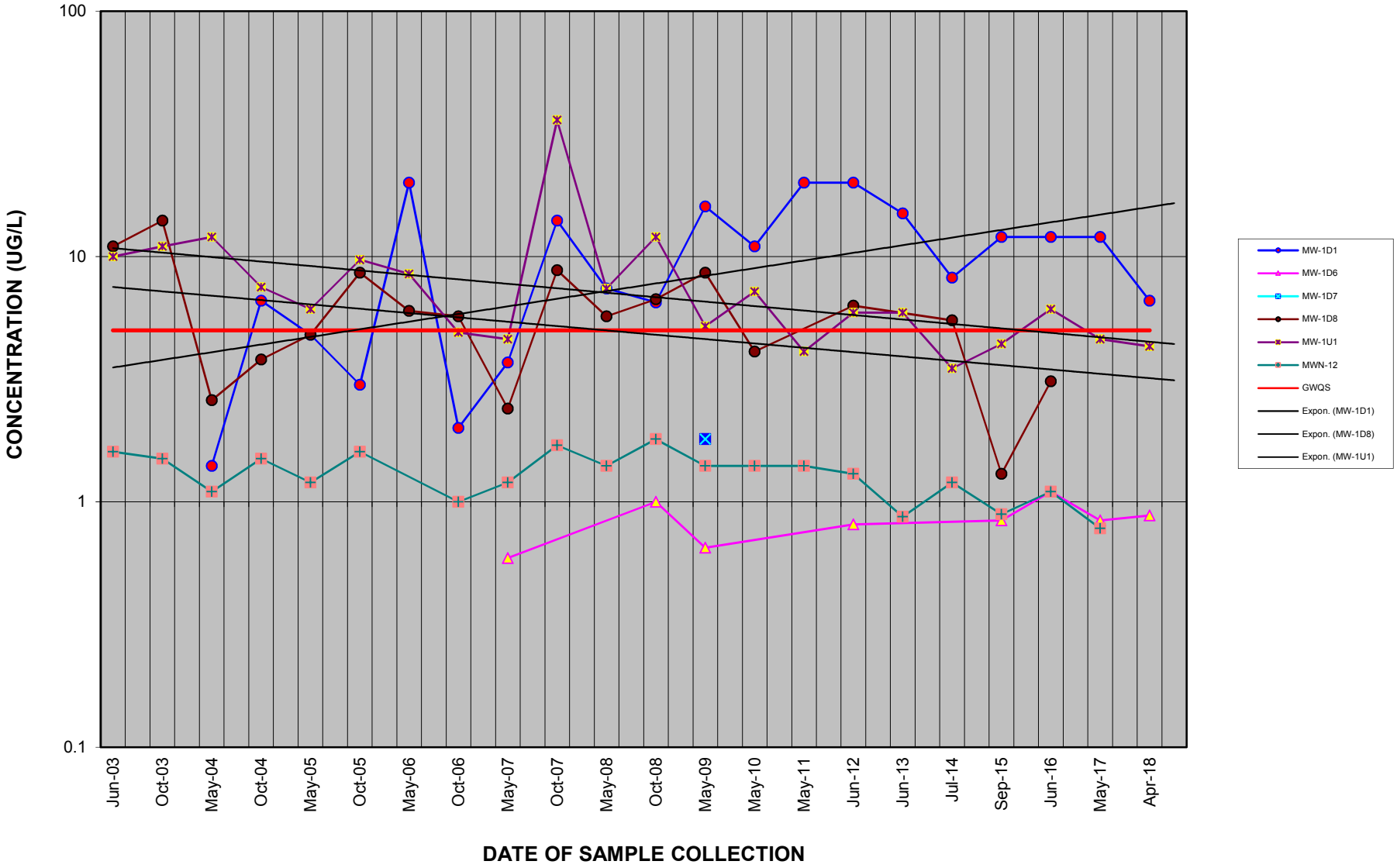


Note: Concentrations reported below method detection limits (i.e., non-detect) are not included in the plot.

TURNKEY ENVIRONMENTAL RESTORATION, LLC

TOLUENE

HAZARDOUS WASTE MANAGEMENT UNIT 1B
HISTORICAL ANALYTICAL SUMMARY

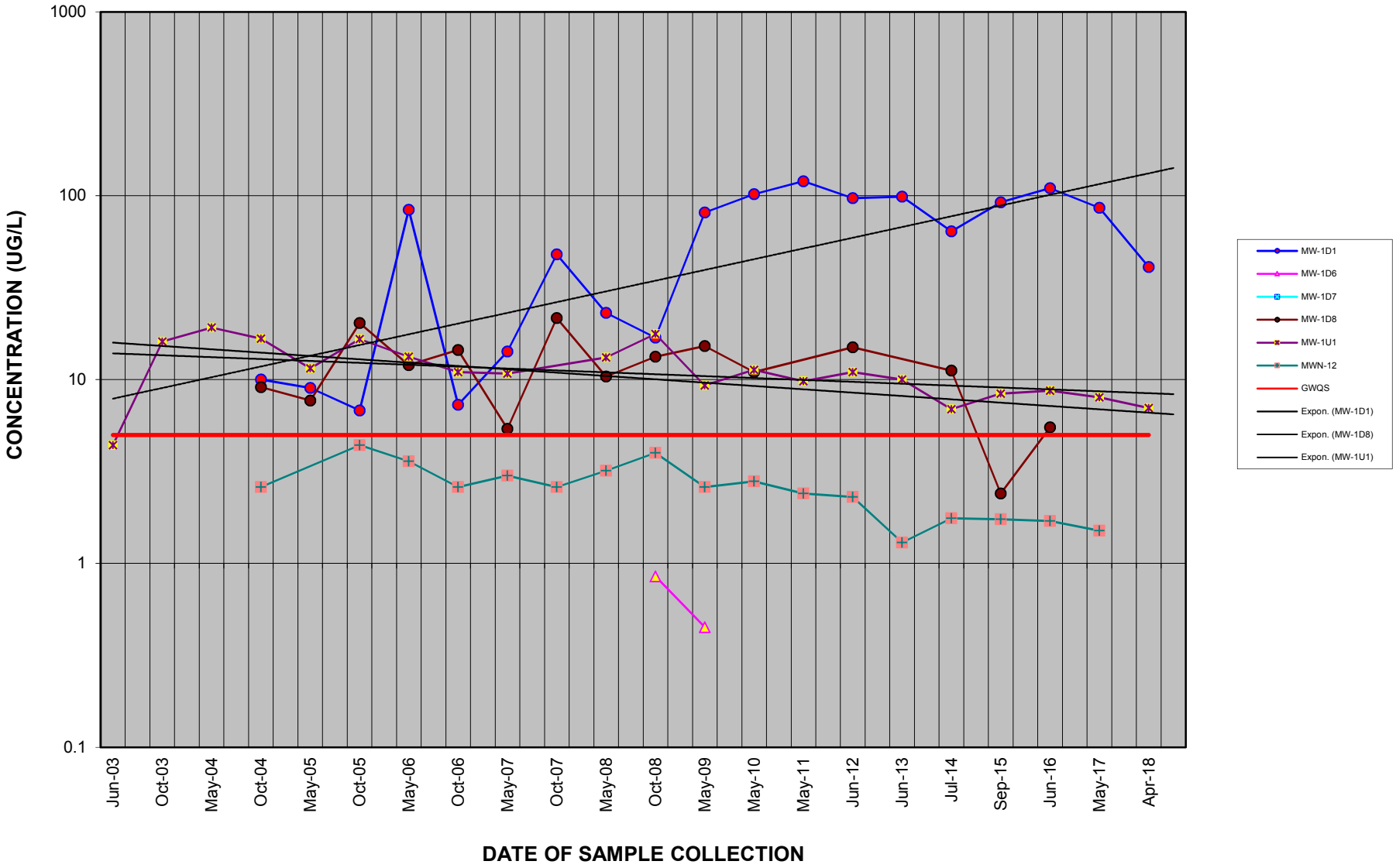


Note: Concentrations reported below method detection limits (i.e., non-detect) are not included in the plot.

TURNKEY ENVIRONMENTAL RESTORATION, LLC

TOTAL XYLENES

HAZARDOUS WASTE MANAGEMENT UNIT 1B
HISTORICAL ANALYTICAL SUMMARY

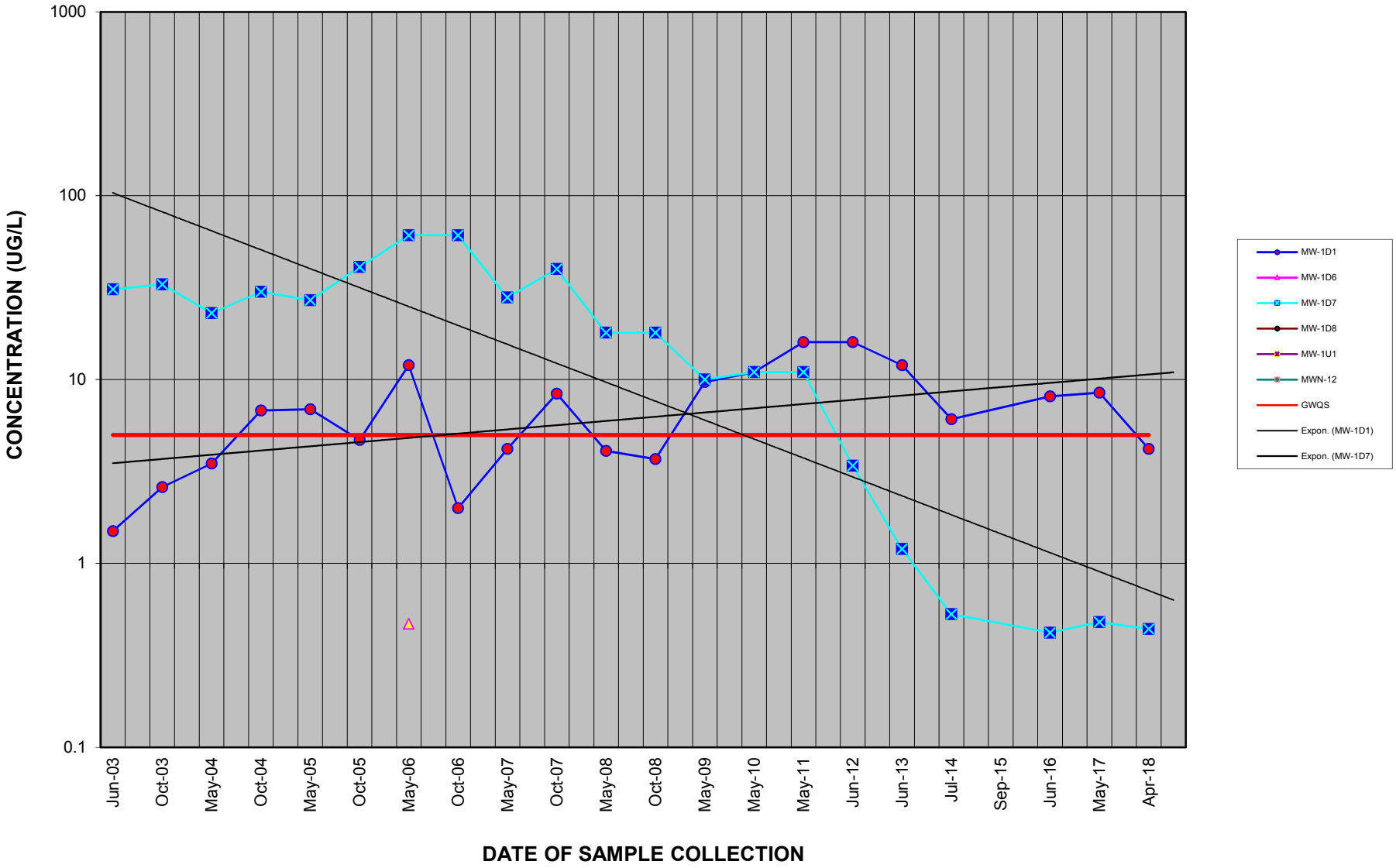


Note: Concentrations reported below method detection limits (i.e., non-detect) are not included in the plot.

TURNKEY ENVIRONMENTAL RESTORATION, LLC

TRICHLOROETHENE

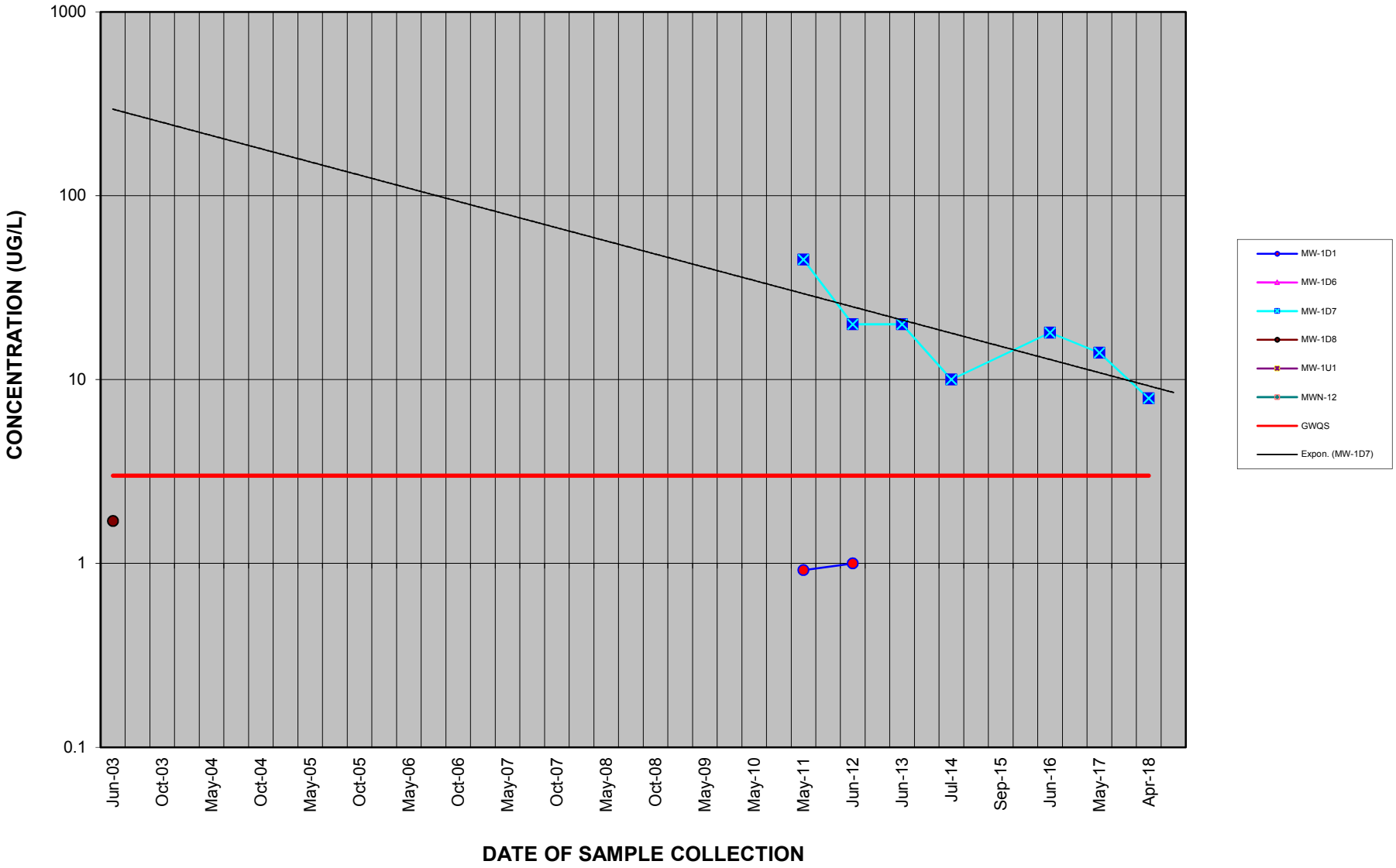
HAZARDOUS WASTE MANAGEMENT UNIT 1B
HISTORICAL ANALYTICAL SUMMARY



Note: Concentrations reported below method detection limits (i.e., non-detect) are not included in the plot.

cis-1,2-DICHLOROETHENE

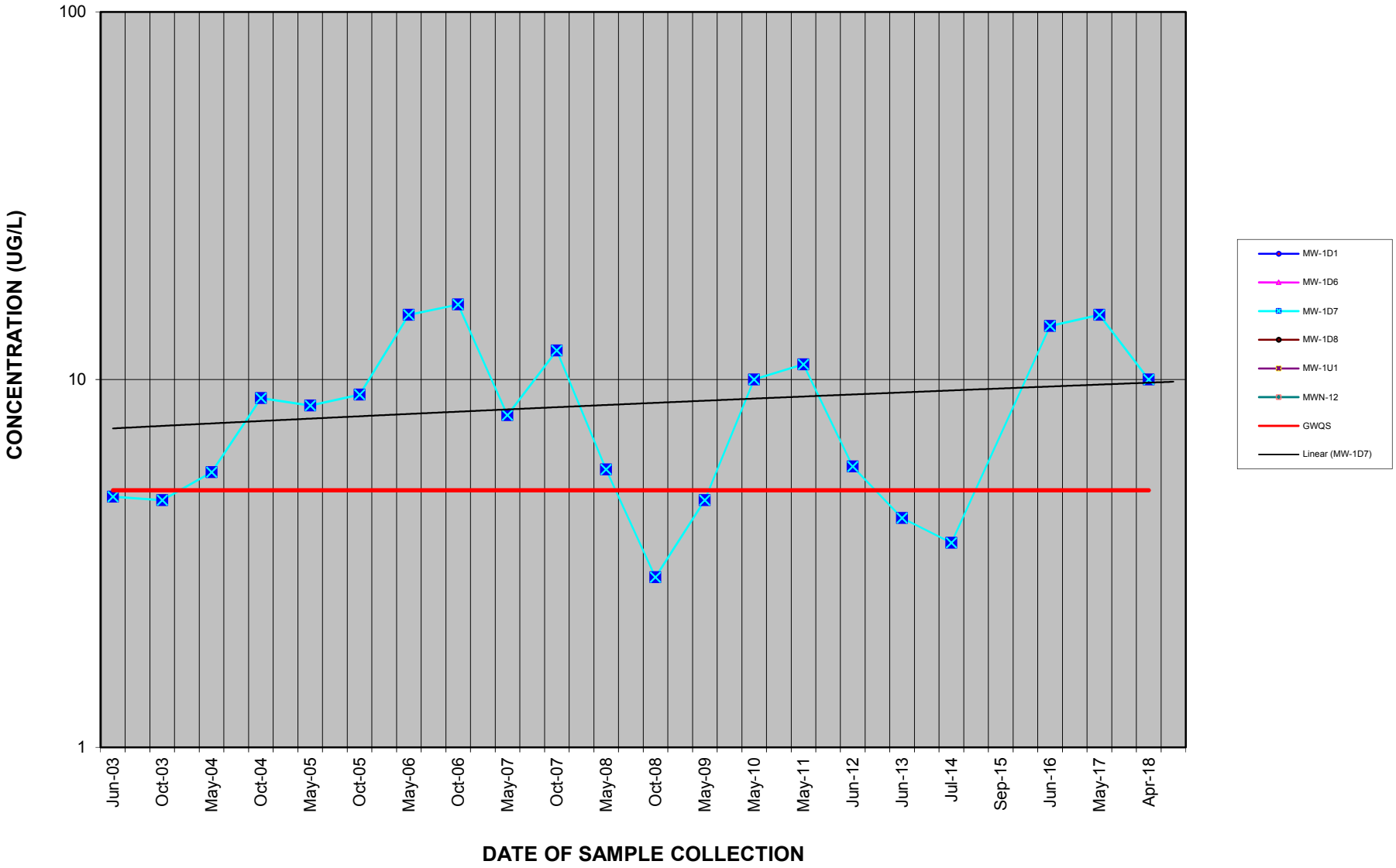
HAZARDOUS WASTE MANAGEMENT UNIT 1B
HISTORICAL ANALYTICAL SUMMARY



Note: Concentrations reported below method detection limits (i.e., non-detect) are not included in the plot.

trans-1,2-DICHLOROETHENE

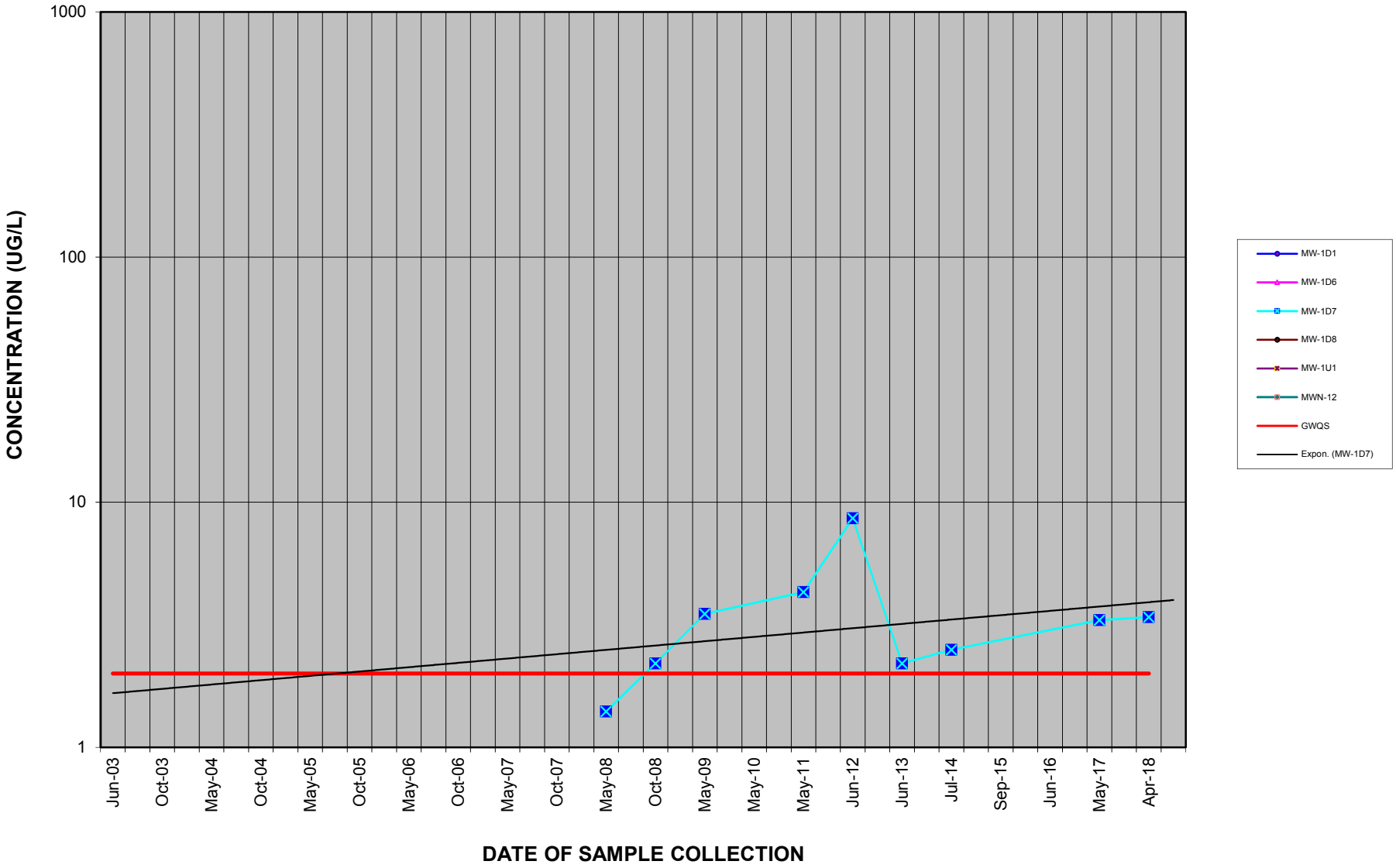
HAZARDOUS WASTE MANAGEMENT UNIT 1B
HISTORICAL ANALYTICAL SUMMARY



Note: Concentrations reported below method detection limits (i.e., non-detect) are not included in the plot.

VINYL CHLORIDE

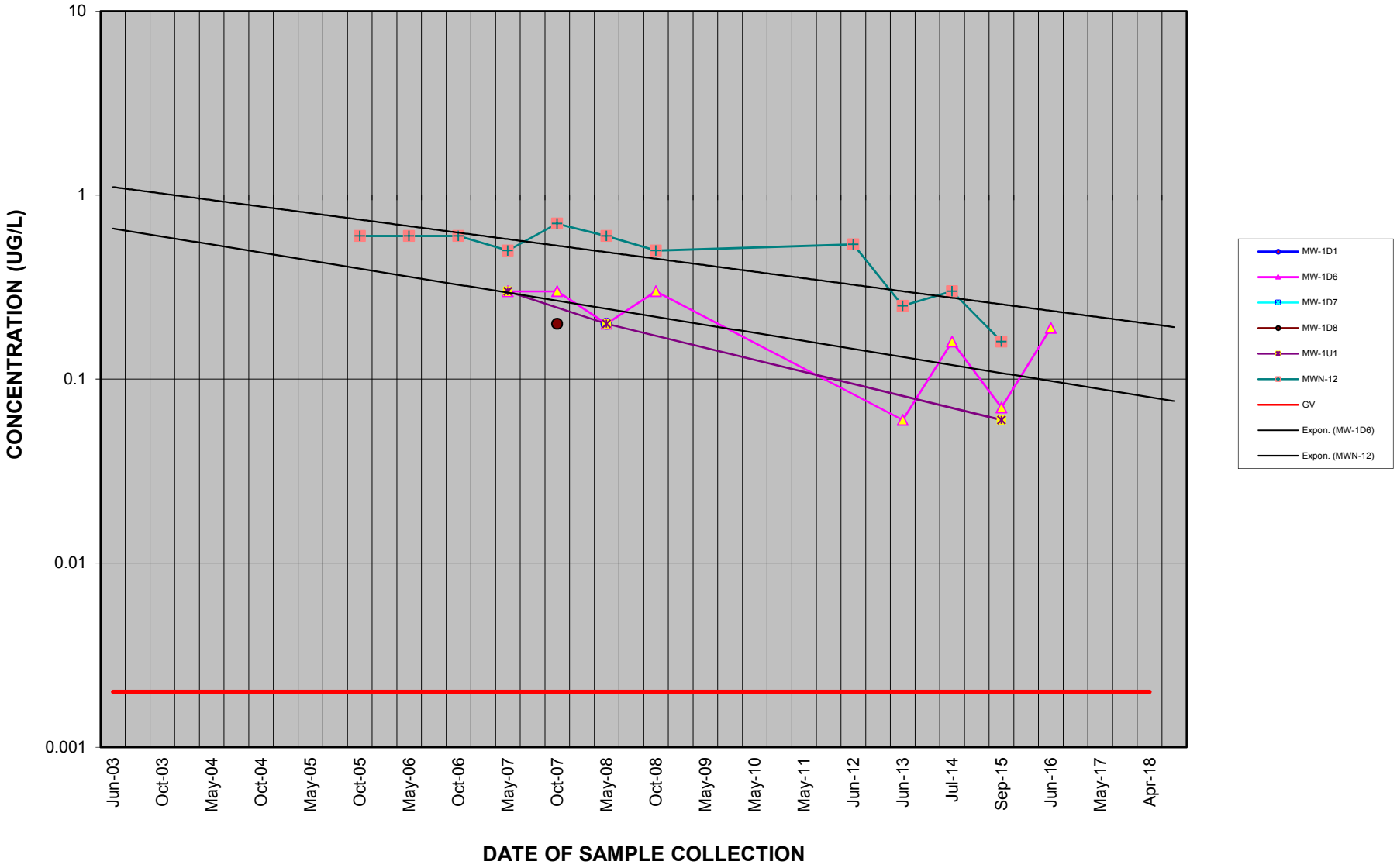
HAZARDOUS WASTE MANAGEMENT UNIT 1B
HISTORICAL ANALYTICAL SUMMARY



Note: Concentrations reported below method detection limits (i.e., non-detect) are not included in the plot.

BENZO(A)ANTHRACENE

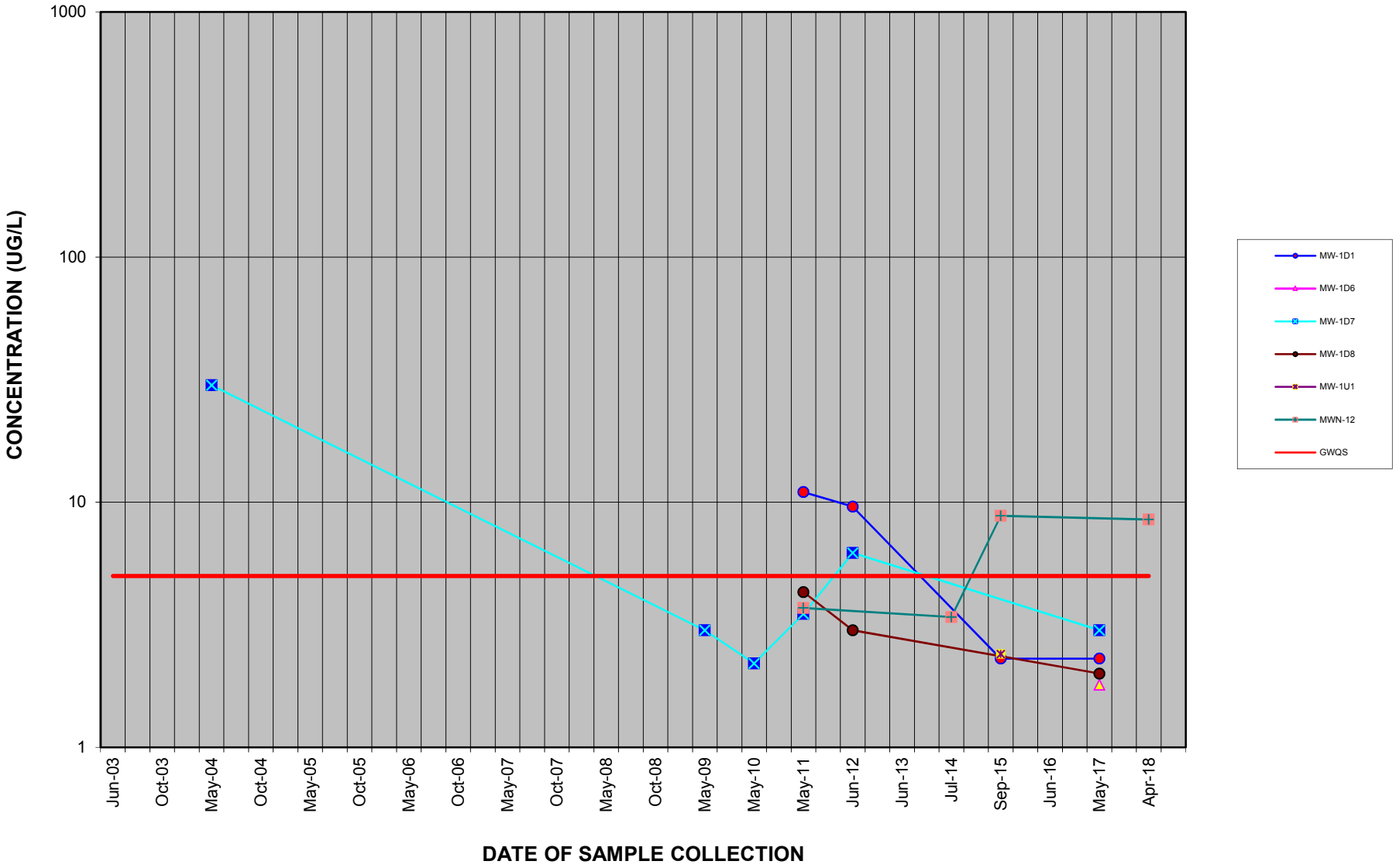
HAZARDOUS WASTE MANAGEMENT UNIT 1B
HISTORICAL ANALYTICAL SUMMARY



Note: Concentrations reported below method detection limits (i.e., non-detect) are not included in the plot.

BIS(2-ETHYLHEXYL)PHTHALATE

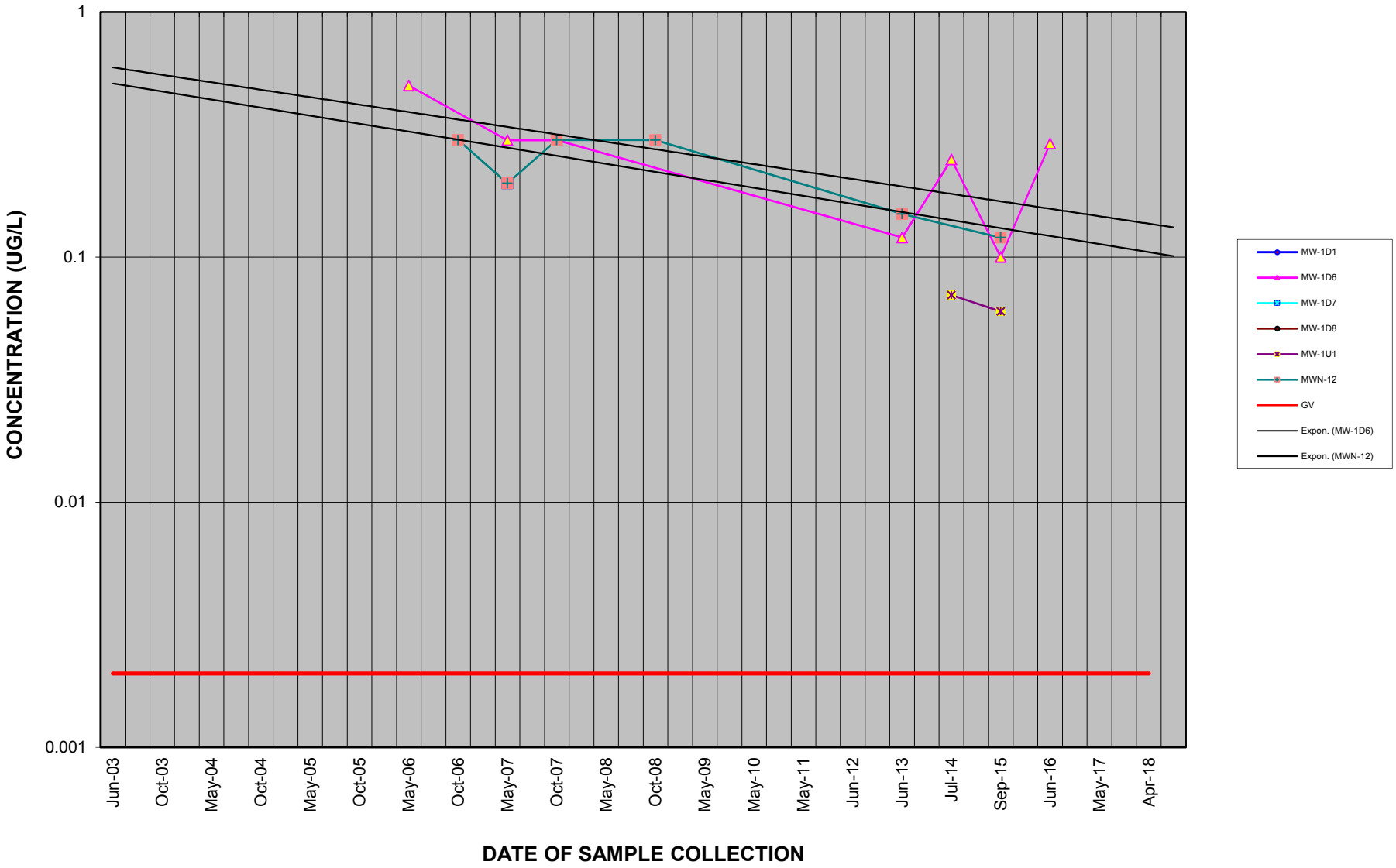
HAZARDOUS WASTE MANAGEMENT UNIT 1B
HISTORICAL ANALYTICAL SUMMARY



Note: Concentrations reported below method detection limits (i.e., non-detect) are not included in the plot.

CHRYSENE

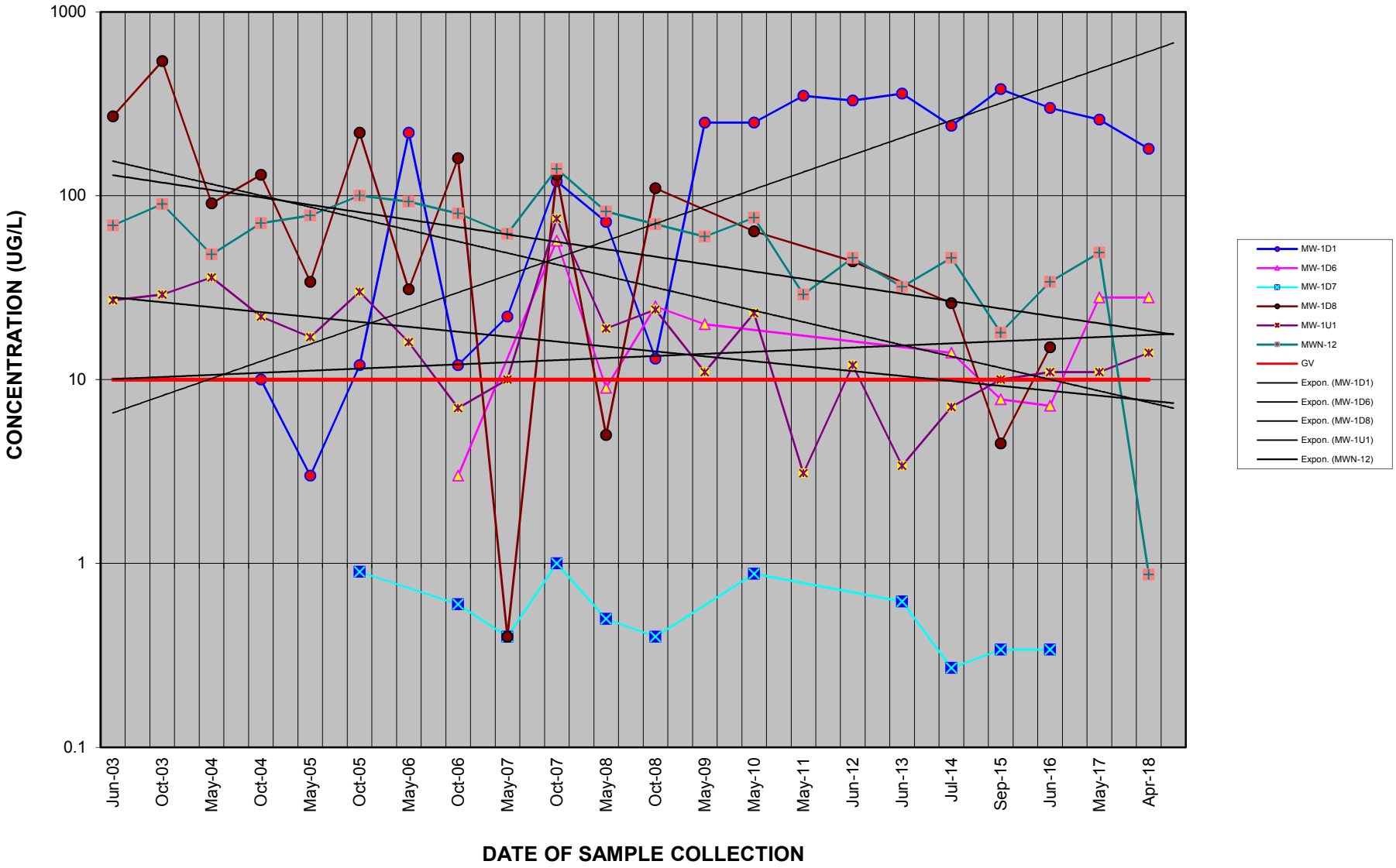
HAZARDOUS WASTE MANAGEMENT UNIT 1B
HISTORICAL ANALYTICAL SUMMARY



Note: Concentrations reported below method detection limits (i.e., non-detect) are not included in the plot.

NAPHTHALENE

HAZARDOUS WASTE MANAGEMENT UNIT 1B
HISTORICAL ANALYTICAL SUMMARY

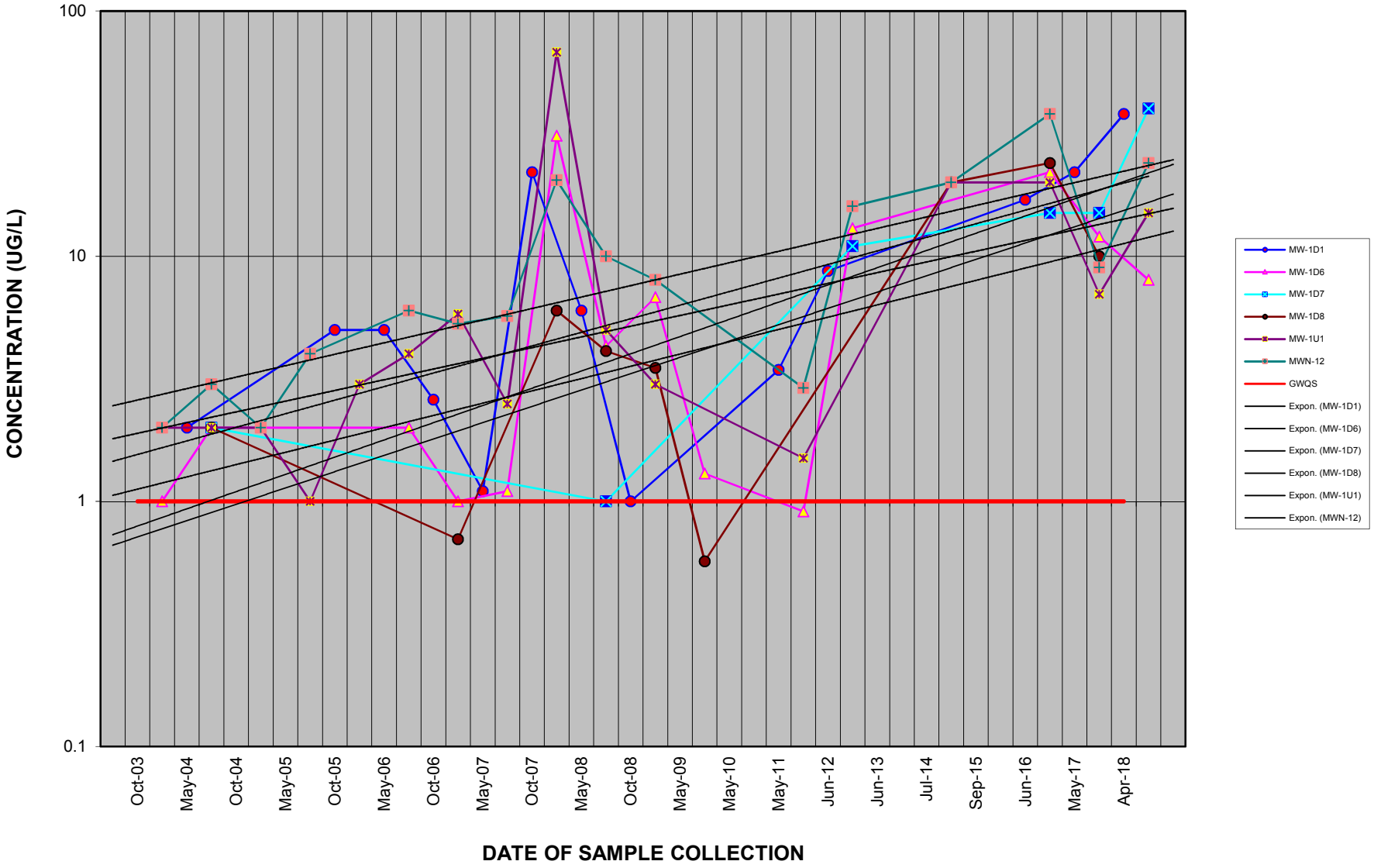


Note: Concentrations reported below method detection limits (i.e., non-detect) are not included in the plot.

TURNKEY ENVIRONMENTAL RESTORATION, LLC

TOTAL RECOVERABLE PHENOLICS (TRP)

HAZARDOUS WASTE MANAGEMENT UNIT 1B
HISTORICAL ANALYTICAL SUMMARY



Notes:

1. Concentrations reported below method detection limits (i.e., non-detect) are not included in the plot.
2. General GWQS of 1.0 ug/L for phenolic compounds.

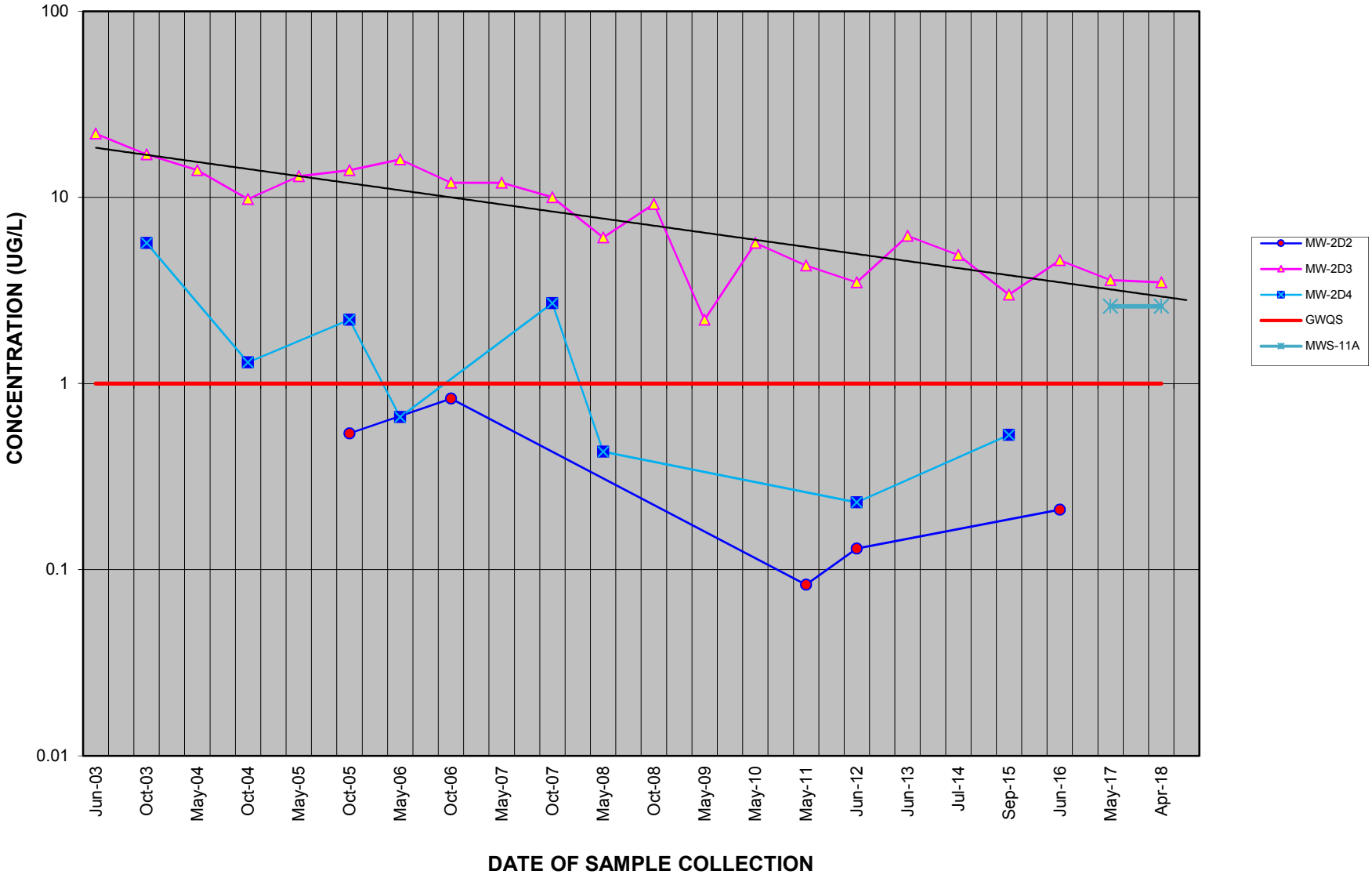
ATTACHMENT 3C

TIME-CONCENTRATION PLOTS

HWMU-2

BENZENE

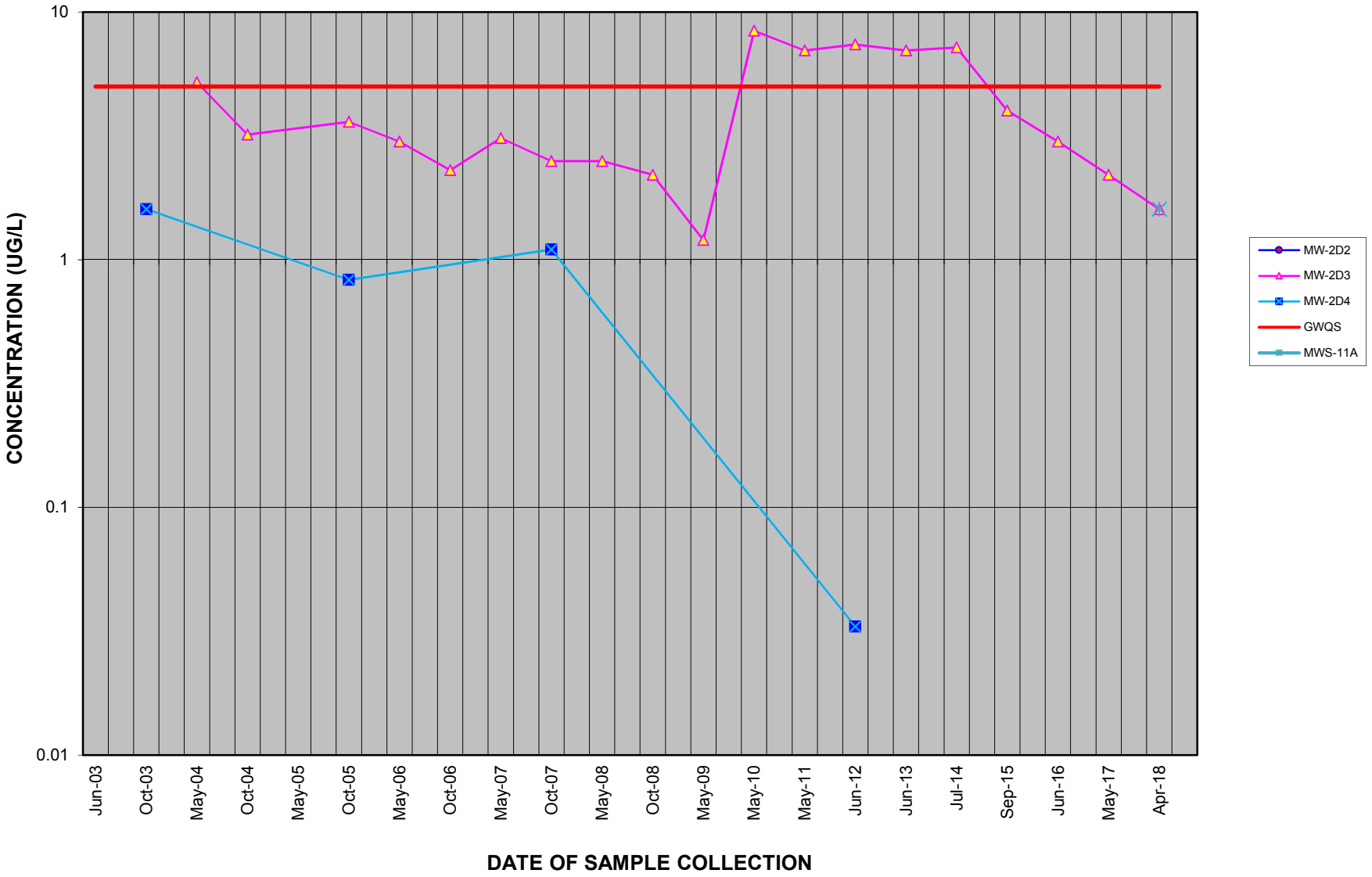
HAZARDOUS WASTE MANAGEMENT UNIT 2
HISTORICAL ANALYTICAL SUMMARY



Note: Concentrations reported below method detection limits (i.e., non-detect) are not included in the plot.

ETHYLBENZENE

HAZARDOUS WASTE MANAGEMENT UNIT 2
HISTORICAL ANALYTICAL SUMMARY

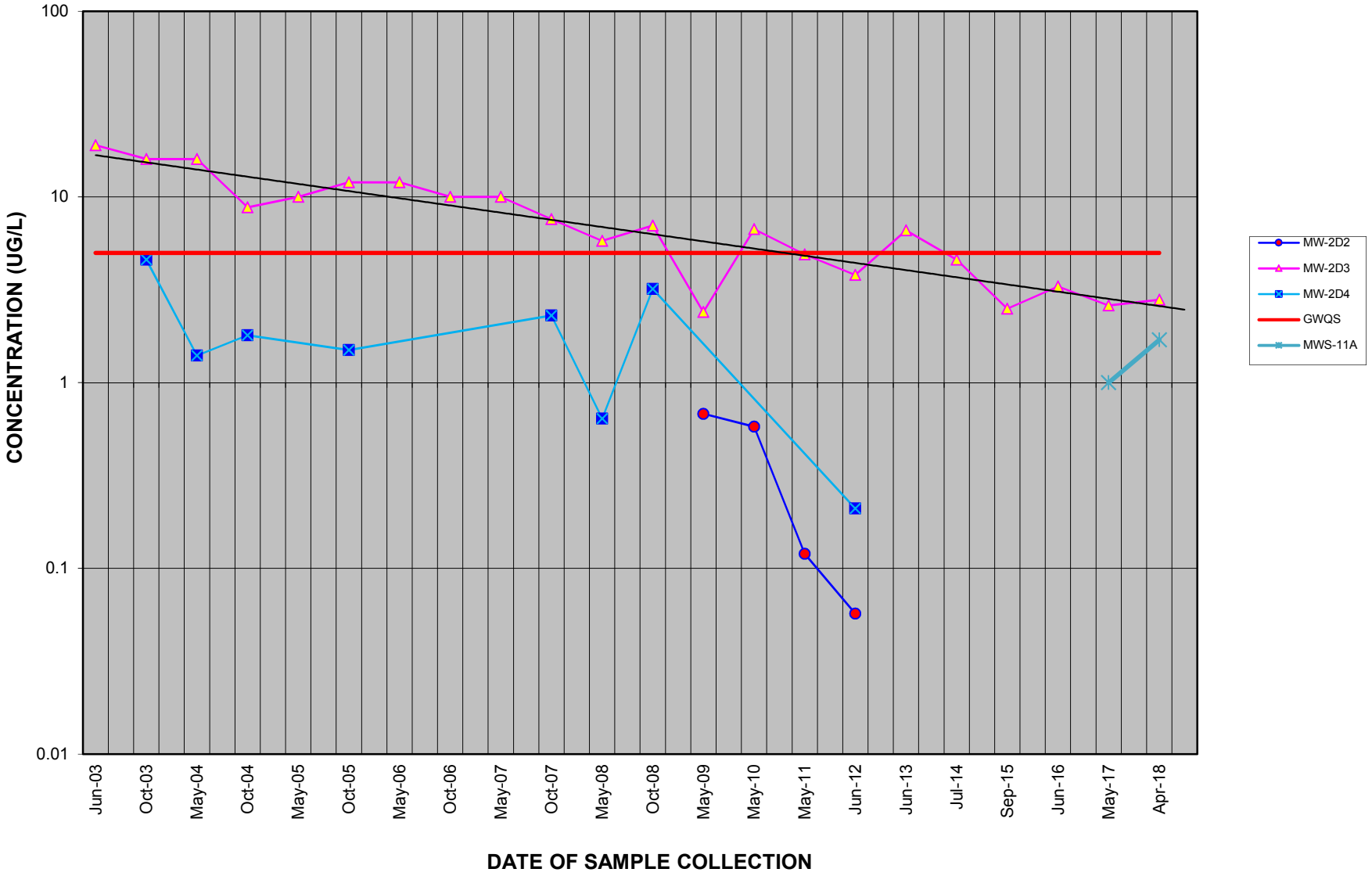


Note: Concentrations reported below method detection limits (i.e., non-detect) are not included in the plot.

TURNKEY ENVIRONMENTAL RESTORATION, LLC

TOLUENE

HAZARDOUS WASTE MANAGEMENT UNIT 2
HISTORICAL ANALYTICAL SUMMARY

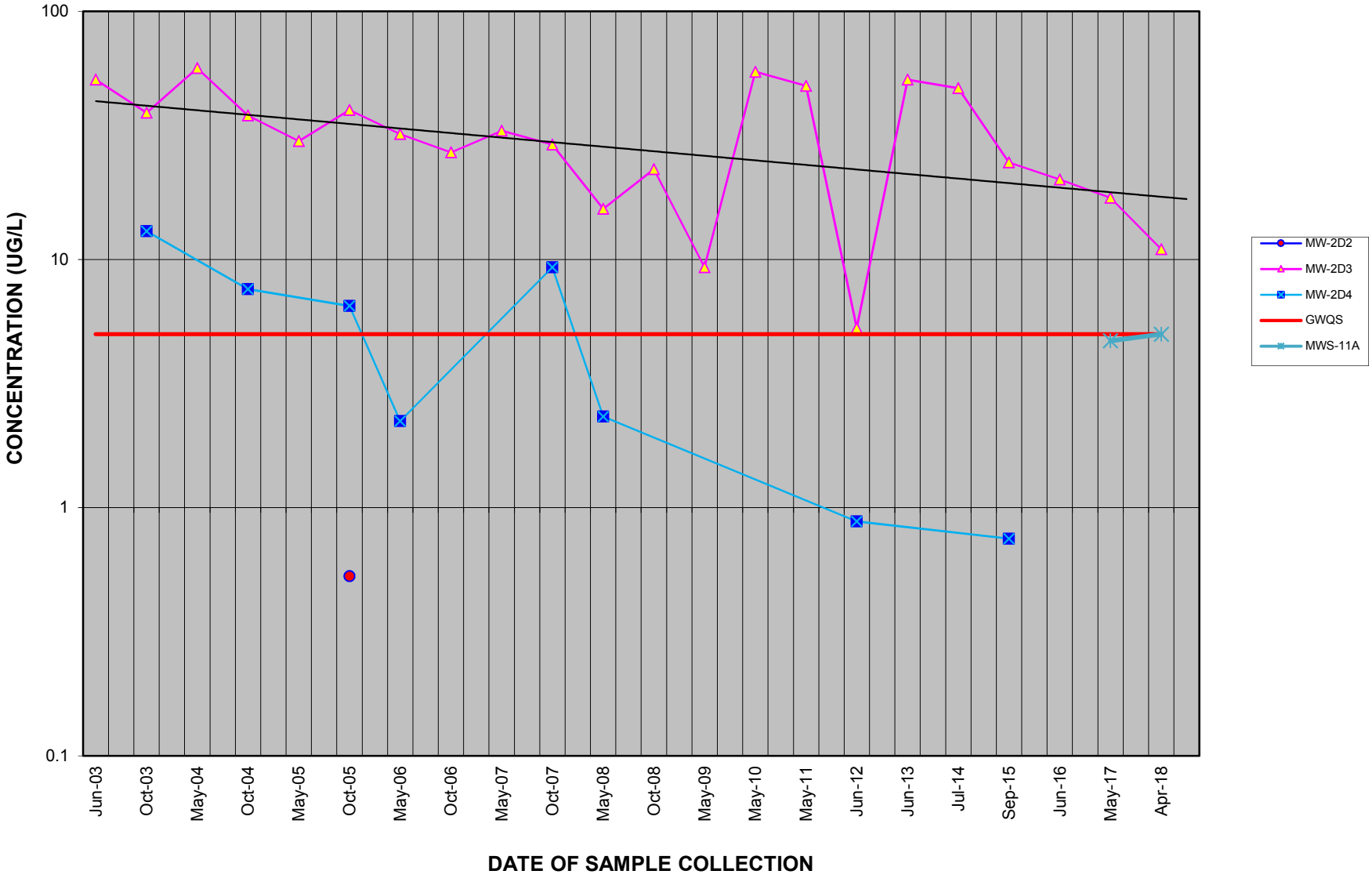


Note: Concentrations reported below method detection limits (i.e., non-detect) are not included in the plot.

TURNKEY ENVIRONMENTAL RESTORATION, LLC

TOTAL XYLENES

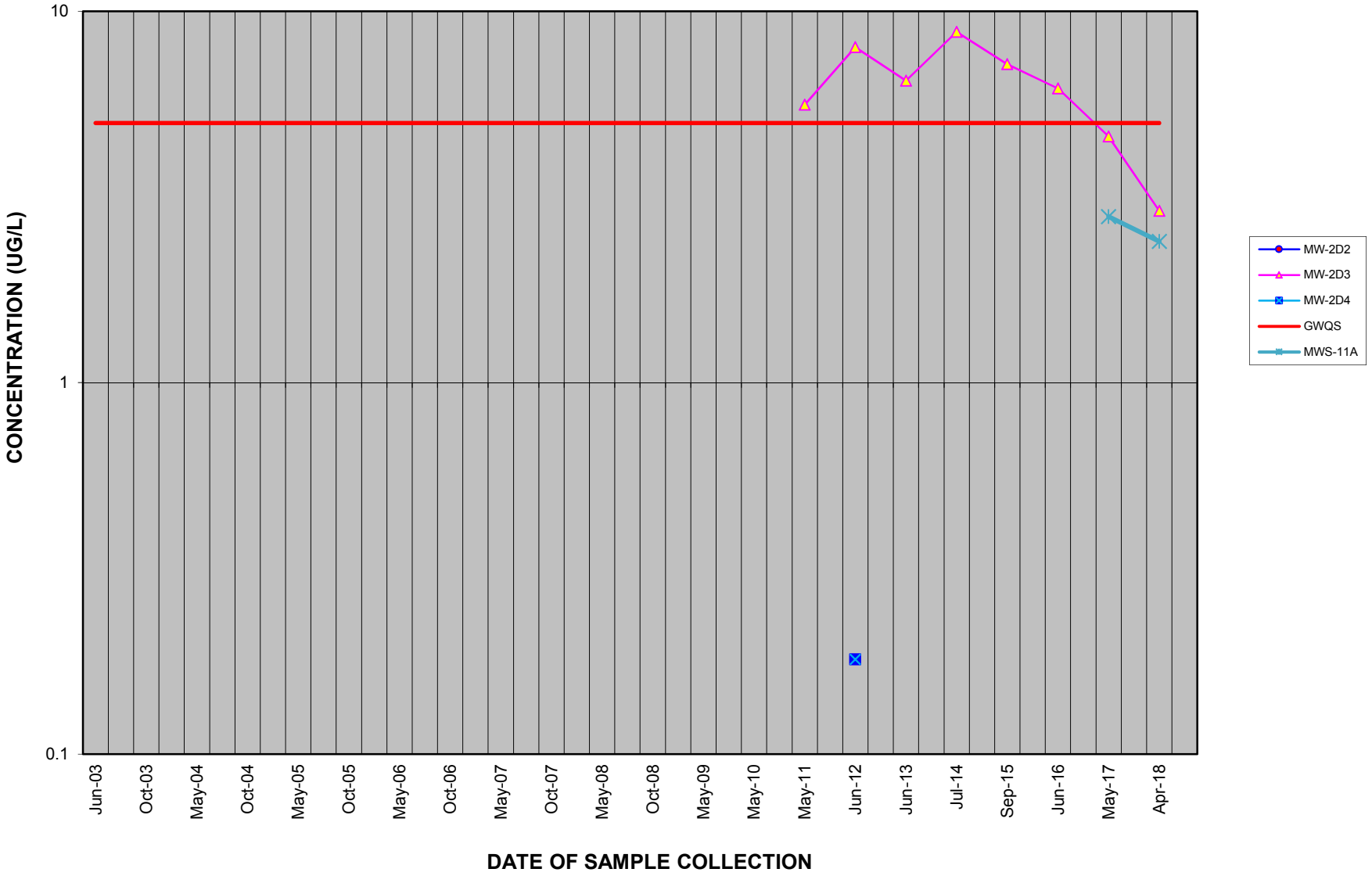
HAZARDOUS WASTE MANAGEMENT UNIT 2
HISTORICAL ANALYTICAL SUMMARY



Note: Concentrations reported below method detection limits (i.e., non-detect) are not included in the plot.

1,2,4-TRIMETHYLBENZENE

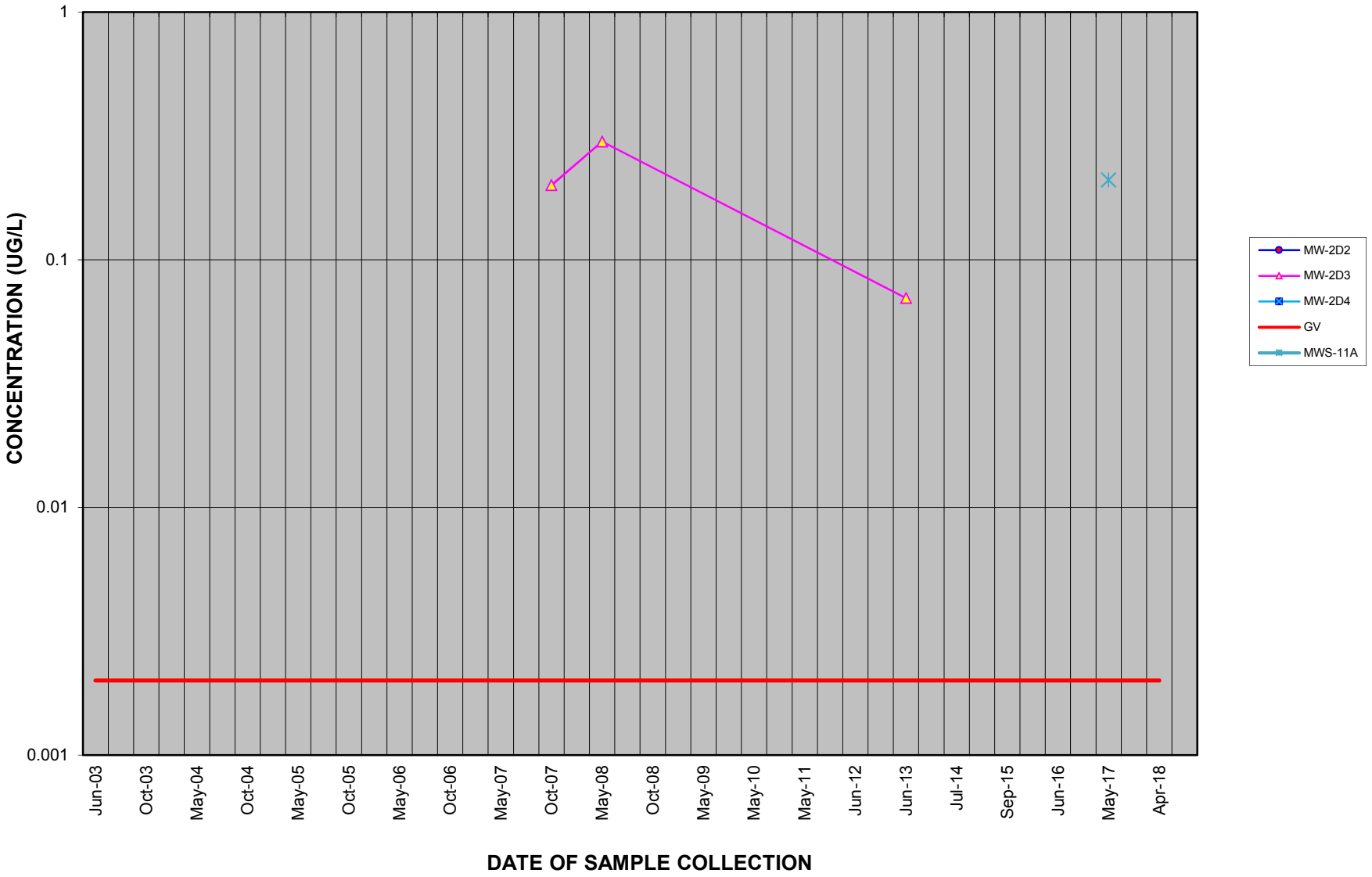
HAZARDOUS WASTE MANAGEMENT UNIT 2
HISTORICAL ANALYTICAL SUMMARY



Note: Concentrations reported below method detection limits (i.e., non-detect) are not included in the plot.

CHRYSENE

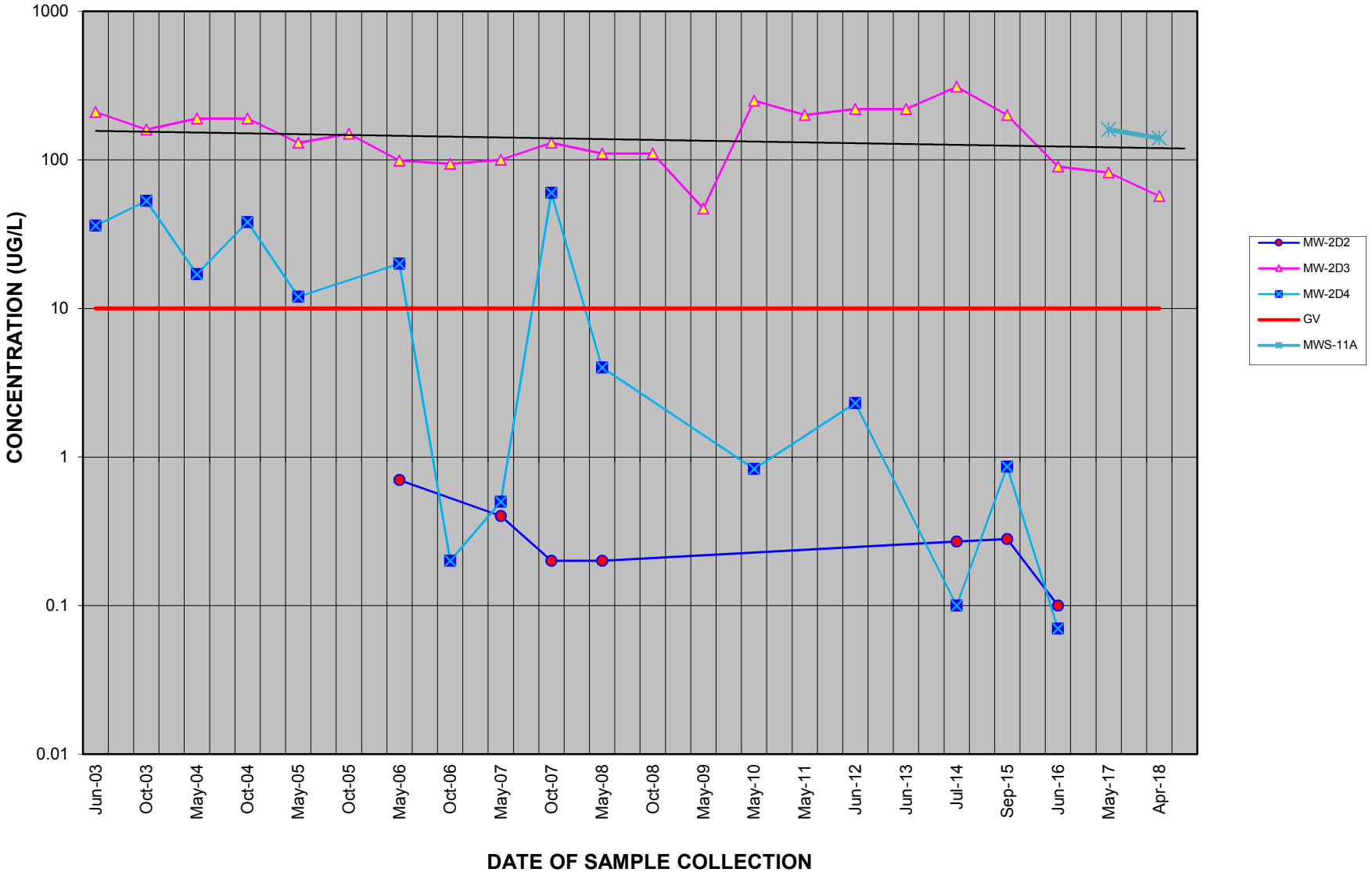
HAZARDOUS WASTE MANAGEMENT UNIT 2
HISTORICAL ANALYTICAL SUMMARY



Note: Concentrations reported below method detection limits (i.e., non-detect) are not included in the plot.

NAPHTHALENE

HAZARDOUS WASTE MANAGEMENT UNIT 2
HISTORICAL ANALYTICAL SUMMARY

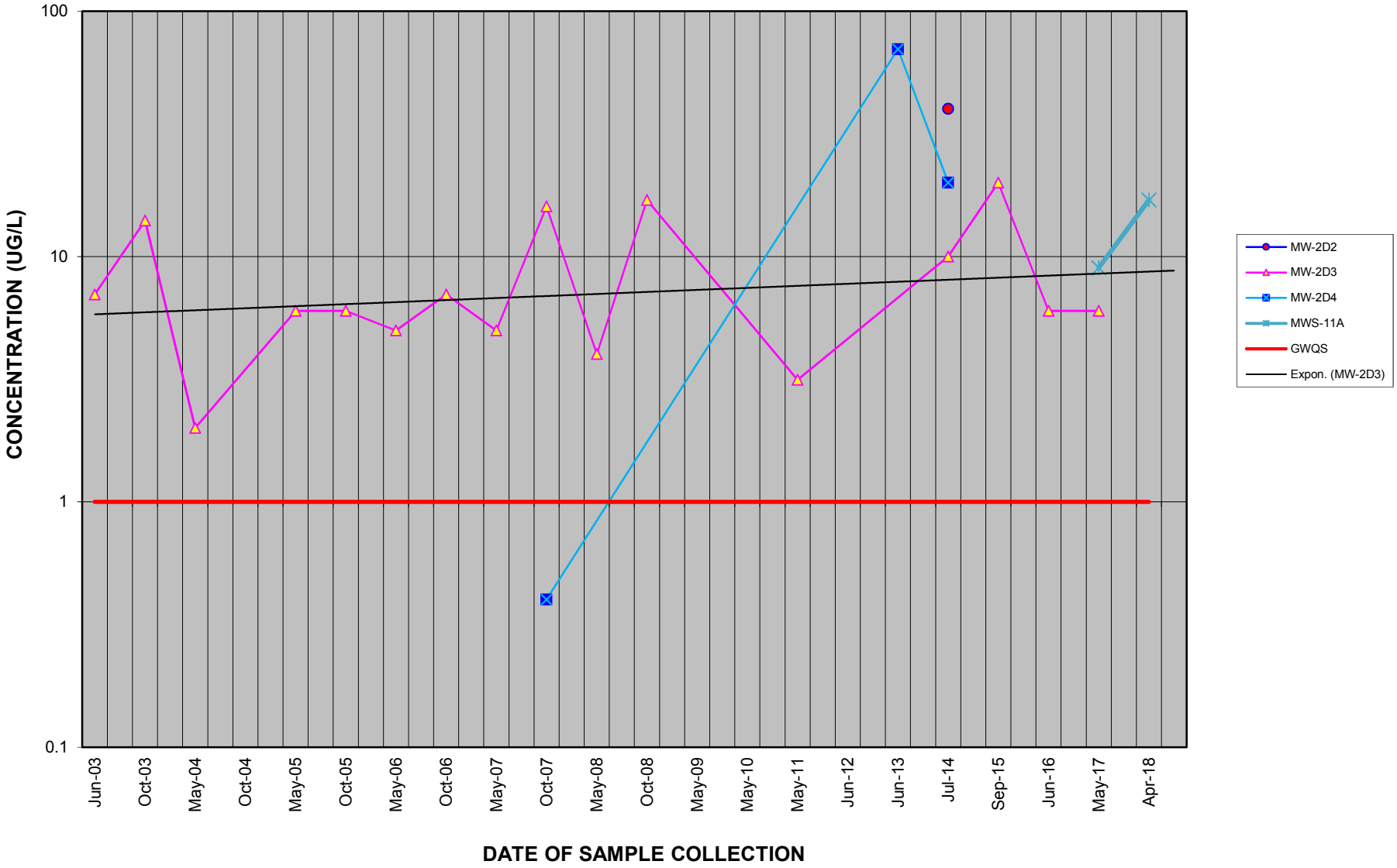


Note: Concentrations reported below method detection limits (i.e., non-detect) are not included in the plot.

TURNKEY ENVIRONMENTAL RESTORATION, LLC

TOTAL RECOVERABLE PHENOLICS (TRP)

HAZARDOUS WASTE MANAGEMENT UNIT 2
HISTORICAL ANALYTICAL SUMMARY



Notes:

1. Concentrations reported below method detection limits (i.e., non-detect) are not included in the plot.
2. General GWQS of 1.0 ug/L for phenolic compounds.

ATTACHMENT 4

12/17/18 ALPHA ANALYTICAL MEMO

December 17, 2018

Ms. Lori Riker
Benchmark Environmental Engineering & Science, PLLc
2558 Hamburg Turnpike
Suite 300
Buffalo, NY 14218

RE: Total Phenolics – EPA Method 420.1 bias

The method refers to total phenolics, which is a broad characterization of aromatic phenolics based on single phenolic standard. Individual phenols are not characterized by these methods used to assess total phenolics, like EPA Method 420.1 or EPA Method 9066. These methods utilize a 4 amino-antipyrine colorimetric method that determines phenol as well as other ortho- and meta- substituted phenols. The method is non-specific and determines all phenolics present except para-substituted phenols where the substitution is an alkyl, aryl, nitro benzoyl, nitroso, or aldehyde group.

Therefore, the value obtained will be biased high compared to the actual level of phenol, or more specifically toxic phenolics. As stated in the *Federal Register* (Vol. 49, No. 188, p 38005), "EPA recognizes that this parameter (total phenolics) using 4- aminoantipyrene (4-AAP) measures both toxic and non-toxic pollutants. A list of the toxic phenolics is provided in Table 1.

It is also known that EPA 420.1 is prone to interferences from sulfur compounds and chlorine. These interferences are addressed by various techniques described in Section 5 of the method. In addition, the technique used for the distillation can have an impact on overall results.

Table 1. Toxic Phenolics Listed in Section 307(a)

Compound	CAS Number
4-Chlor-m-cresol	59-50-7
2-Chlorophenol	95-57-8
2,4-Dichlorophenol	120-83-2
2,4-Dimethylphenol	105-67-9
4,6-Dinitro-o-cresol	534-52-1
2,4-Dinitrophenol	51-28-5
4-Nitrophenol	100-02-7

2-Nitrophenol	88-75-5
Pentachlorophenol	87-86-5
Phenol	108-95-2
2,3,4,6-Tetrachlorophenol	58-90-2
2,4,6-Trichlorophenol	88-06-2

The main points still stand. EPA Method 420.1 is nonspecific and prone to high bias because of sulfur compounds. Therefore, it is recommended to use a more specific approach to assessing toxic phenolic compounds via GC or GC/MS methods, like EPA 8270 or 625.1.

Please let me know if you should have any questions. I can be reached by email at pfiley@alphalab.com or by phone at 716-392-3932.

Sincerely,

Alpha Analytical

Patrick J Filey

//electronic signature//

Patrick J Filey

Vice President of Technical Sales