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HIMCO Site Trust

2020 Annual Groundwater Monitoring Report

HIMCO Landfill

Elkhart, Indiana

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Table of Contents

1 Introduction 1
1.1 Background 1
1.2 Previous Investigations 2
1.2.1 Routine Groundwater Monitoring 2
1.3 Report Organization 3
2 Groundwater Gauging, Sample Collection, and Results 3
2.1 Site Hydrogeology 3
2.2 Groundwater Elevation Monitoring 4
2.3 Groundwater Quality/Results 4
2.3.1 Field Parameters 5
2.3.2 Volatile Organic Compounds (VOCs) 5
2.3.3 Benzene 6
2.3.4 1,1-Dichloroethane (1,1-DCA) 8
2.3.5 cis-1,2-Dichloroethene (cis-1,2-DCE) 10
2.3.6 Vinyl Chloride 11
2.4 Metals and General Chemistry Analytes 11
2.4.1 Introduction 11
2.4.2 Arsenic 13
2.4.3 Calcium 14
2.4.4 Manganese 15
2.4.5 Sodium and Chloride 15
3 Recent Reports and Site Controls 16
3.1 Private Well Sampling Report (October 2018): 16
3.2 Long-Term Stewardship Plan (April 2019): 17
4 Conclusions and Recommendations 19
4.1 Groundwater Elevation Monitoring 19
4.2 Groundwater Quality Monitoring 19
4.2.1 VOCs 19
4.2.2 Metals and General Chemistry Parameters 20
4.3 Future Monitoring and Reporting 21

Embedded Tables

Table 1 – Number of VOC Detections/Number of Samples
Table 2 – WT115A/B/C Benzene Concentrations
Table 3 – S16 and S17 Benzene Detections
Table 4 – S16 and S17 1,1-DCA Detections
Table 5 – S16 and S17 cis-1,2-DCE Detections
Table 6 – S16 and S17 Vinyl Chloride Detections
Table 7 – Number of Exceedances of GW RAOs/Number of Samples (Metals and General Chemistry)
Table 8 – S16 and S17 Arsenic Concentrations
Table 9 – S16 and S17 Calcium Concentrations
Table 10 – S16 and S17 Manganese Concentrations

Figures

Figure 1 – Site Location Map
Figure 2 – Site Map
Figure 3.1 – Groundwater Contour Map - October 2019 (Upper Aquifer)
Figure 3.2 – Groundwater Contour Map - October 2019 (Intermediate Aquifer)
Figure 3.3 – Groundwater Contour Map - October 2019 (Lower Aquifer)
Figure 3.4 – Groundwater Contour Map - October 2020 (Upper Aquifer)
Figure 3.5 – Groundwater Contour Map - October 2020 (Intermediate Aquifer)
Figure 3.6 – Groundwater Contour Map - October 2020 (Lower Aquifer)
Figure 4.1 – Volatile Organic Compound Concentration Map - October 2019
Figure 4.2 – Volatile Organic Compound Concentration Map - October 2020
Figure 4.3 – Metals & General Chemistry Concentration Map - October 2019
Figure 4.4 – Metals & General Chemistry Concentration Map - October 2020

Tables

Table 1.1 – Groundwater Analytical Table (VOC's) - October 2019 & October 2020
Table 1.2 – Groundwater Analytical Table (Metals - Lower) - October 2019 & October 2020
Table 1.3 – Groundwater Analytical Table (Metals - Intermediate) - October 2019 & October 2020
Table 1.4 – Groundwater Analytical Table (Metals - Upper) - October 2019 & October 2020
Table 2.1 – Monitoring Well Status Table
Table 2.2 – Groundwater Monitoring Program Wells Table
Table 2.3 – Groundwater Monitoring Program Parameter List

Table 3.1 – Summary of Groundwater Elevation Data Table
Table 4.1 – Groundwater Stabilization Parameters Table
Table 4.2 – Groundwater Analytical Results Summary Table (VOC's)
Table 4.3 – Groundwater Analytical Results Summary Table (Metals - Lower)
Table 4.4 – Groundwater Analytical Results Summary Table (Metals - Intermediate)
Table 4.5 – Groundwater Analytical Results Summary Table (Metals - Upper)

Appendices

Appendix A – Groundwater Analytical Reports - October 2019 & October 2020
Appendix B – Field Notes
Appendix C – QA/QC Validation Reports

Acronyms

AGMR	Annual Groundwater Monitoring Report
AMSL	Above Mean Sea Level
BV	Background Value
CD	Consent Decree
CDA	Construction Debris Area
COCs	Chemicals of Concern
CRA	Conestoga-Rovers & Associates
DO	Dissolved Oxygen
DR	Deed Restrictions
ERC	Environmental Restrictive Covenants
FYR	Five Year Review
GES	Groundwater & Environmental Services, Inc.
GHD	Gutteridge Haskins & Davey
GMP	Groundwater Monitoring Program
GW RAO	Groundwater Remedial Action Objective
GWSDAT	Groundwater Spatiotemporal Data Analysis Tool
IAC	Indiana Administrative Code
IC	Institutional Controls
ICIAP	Institutional Controls Implementation and Assurance Plan
IDEM	Indiana Department of Environmental Management
MAROS	Monitoring and Remediation Optimization System
mg/L	milligrams per liter
MCL	Maximum Contaminant Level
NPL	National Priority List
NTU	Nephelometric Turbidity Units
ORP	Oxidation Reduction Potential
PSDs	Performing Settling Defendants
QAPP	Quality Assurance Project Plan
RA	Remedial Action
Report	2020 Annual Groundwater Monitoring Report
RD	Remedial Design
RDA	Recommended Dietary Allowance
RDL	Reporting Detection Limit
RD/RA	Remedial Design/Remedial Action
RSL	Tapwater Regional Screening Level
Site	Himco Landfill Site
SOW	Statement of Work
µg/L	microgram per liter
UCL	Upper Confidence Limit
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compounds

1 Introduction

This 2020 Annual Groundwater Monitoring Report (AGMR) presents the results of routine groundwater monitoring completed in October 2019 and October/November 2020 at the Himco Landfill Site (Site), located in Elkhart, Indiana. Groundwater and Environmental Services, Inc. (GES) prepared this report on behalf of the Performing Settling Defendants (PSDs), collectively known as the Himco Site Trust.

The Site is a National Priorities List (NPL) site that is being remediated pursuant to a Consent Decree (Civil Action No. 2:07cv304 (TS)) (CD). The Statement of Work (SOW), included as Appendix B of the CD, specified the Remedial Action (RA) requirements for the Site. The SOW required groundwater investigations to the east and southeast of the Site and the implementation of a Groundwater Monitoring Program (GMP). GHD Group Pty Ltd, formerly known as Gutteridge Haskins & Davey (GHD) prepared a Remedial Design Work Plan (RD Work Plan) on behalf of the PSDs that combined the East and Southeast Groundwater Investigations and the GMP into a three-phase groundwater investigation that built incrementally to address the groundwater investigation and monitoring requirements of the SOW.

GHD completed quarterly groundwater monitoring between 2008 and 2011. GHD documented the results of previous monitoring rounds in a series of reports previously submitted to the United States Environmental Protection Agency (USEPA) and the Indiana Department of Environmental Management (IDEM). In accordance with the Interim Groundwater Monitoring Program Report (CRA, 2011), approved by USEPA on August 31, 2011, the GMP was modified to semi-annual groundwater monitoring with annual reporting each fall. In April 2015 and August 2016, USEPA provided letters commenting on the 2014 and 2015 AGMRs, respectively. These letters authorized further reductions to the current twelve parameters included in the GMP. In concert with approval from USEPA/IDEM on October 31, 2019 and subsequent discussions, the groundwater monitoring is currently conducted on an annual basis.

1.1 Background

The Site is a closed landfill located at the intersection of County Road 10 and North Nappanee Street in Cleveland Township, Elkhart County, Indiana. This former 60-acre unlined landfill, previously operated by Himco Waste Away Service, Inc., accepted waste including household refuse, construction rubble, medical waste, and calcium sulfate during its operation between 1960 and its eventual closure in 1976.

The Site was proposed for the NPL in 1988 and was placed on the NPL in 1990. The Remedial Design/Remedial Action (RD/RA) was conducted pursuant to the CD, which became effective on November 27, 2007. Currently, the Site is a grassy field secured by a chain-link perimeter fence.

A Site Location Map is supplied as **Figure 1**, showing the general location of the Site and surrounding area. A Site Map is presented as **Figure 2**, graphically depicting the layout of the Site, property boundaries, monitoring wells and neighboring properties. The Site consists of two major areas: the landfill and the 4-acre construction debris area (CDA). The CDA is located on

the northern portion of seven residential properties and one commercial property that front onto County Road 10. In 2011, the PSDs relocated CDA waste to the landfill, and completed the construction of a soil cover over the landfill in 2012. USEPA approved the *Construction Completion Report/Completion of Remedial Action Report* (CRA, 2012) on October 31, 2012.

1.2 Previous Investigations

Section II, Paragraph 4.3 of the SOW describes the requirements for the groundwater investigation east and southeast of the Site. The purpose of the investigation was to delineate the contaminant plume emanating from the Site that may potentially be impacting the adjacent aquifer and private water supply wells.

The Himco Site Trust completed a USEPA-approved phased groundwater investigation from 2008-2012 consisting of:

- Historic data compilation
- Existing monitoring well reconnaissance and survey
- Baseline groundwater monitoring
- Vertical aquifer sampling
- The Interim Groundwater Monitoring Program

1.2.1 Routine Groundwater Monitoring

GHD completed a Baseline Groundwater Sampling round in 2008. The purpose of this sampling was to determine if the existing monitoring wells were capable of providing representative groundwater samples and to establish baseline groundwater quality conditions. The Baseline Groundwater Sampling round represents the first routine quarterly groundwater quality monitoring round (Q1).

GHD completed the initial round of the Interim Groundwater Monitoring Program in February 2009. The Interim Groundwater Monitoring Program was completed on a quarterly basis between November 2008 and June 2011. GHD provided the results of the Interim Groundwater Monitoring Program to the USEPA in the following submissions:

- Q1 and Q2 - The Phase I Groundwater Investigation Report (CRA, May 2009)
- Q3 through Q6 - Himco Annual Groundwater Monitoring Report (CRA, July 2010)
- Q7 - The Phase II Groundwater Investigation Report (CRA, October 2010)
- Q8 - Interim Groundwater Monitoring Program Report (CRA, April 2011)
- Q9 through Q11 – 2011 Annual Groundwater Monitoring Report (CRA, November 2011)
- Q12 and Q13 – 2012 Annual Groundwater Monitoring Report (CRA, November 2012)

GHD completed the initial round of the semi-annual GMP (S1) in April 2012. The results of the S1 monitoring were provided in the 2012 Annual Groundwater Monitoring Report

(CRA, November 2012). The subsequent rounds of the GMP and the corresponding reports are as follows:

- S2 and S3 – 2013 Annual Groundwater Monitoring Report (CRA, November 2013)
- S4 and S5 – 2014 Annual Groundwater Monitoring Report (CRA, November 2014)
- S6 and S7 – 2015 Annual Groundwater Monitoring Report (GHD, November 2015)
- S8 and S9 – 2016 Annual Groundwater Monitoring Report (GHD, November 2016)
- S10 and S11– 2017 Annual Groundwater Monitoring Report (GHD, November 2017)
- S12 and S13 – 2018 Annual Groundwater Monitoring Report (GHD, November 2018)
- S14 and S15 – 2019 Annual Groundwater Monitoring Report (GES, November 2019)

GES completed the 16th and 17th round of the now annual GMP (S16 and S17) from October 22 to 25, 2019 and October 26 to 29/November 19, 2020, respectively. The results of the S16 and S17 monitoring rounds are provided in this AGMR. Future AGMR's will contain the data from one annual groundwater monitoring event. The next event is scheduled for Fall 2021.

1.3 Report Organization

This report is organized as follows:

- Section 2 Describes the scope of the routine groundwater monitoring activities completed at the Site during the two most recent events (10/2019 and 10-11/2020). The description includes a hydro geologic model, the groundwater flow regime, and presents hydraulic monitoring data.
- Section 3 Reviews information on recent reports and site controls.
- Section 4 Presents conclusions and outlines future routine groundwater monitoring activities.

2 Groundwater Gauging, Sample Collection, and Results

2.1 Site Hydrogeology

There are five principal hydrostratigraphic units beneath the Site. They are, in descending order:

- The Upper Aquifer
- The Intermediate Aquifer
- The Unnamed Silt/Clay Layer
- The Lower Aquifer
- The Bedrock

The Upper and Intermediate Aquifers beneath the Site have been conceptualized as one sand aquifer with silt/clay aquitard materials occasionally interspersed. The sand comprising the Intermediate Aquifer is generally more fine-grained than the overlying Upper Aquifer and it contains discontinuous zones of silt and clay.

The Unnamed Silt/Clay Layer underlies the Intermediate Aquifer and does not behave as a confining layer.

The sand and gravel Lower Aquifer is beneath the Unnamed Silt Clay layer. The elevation of the bedrock surface beneath the Site is variable, and therefore, so is the thickness of the Lower Aquifer, but it ranges up to 300 feet thick in the bedrock valley beneath the western portion of the Site.

2.2 Groundwater Elevation Monitoring

Two synoptic groundwater elevation monitoring rounds were conducted during this reporting period on October 22, 2019 (S16), and October 26 and November 19, 2020 (S17). **Table 3.1** provides the depth to water and groundwater elevation measured at each monitoring well during the water level rounds and during any subsequent groundwater sampling.

Figure 3.1, **Figure 3.2**, and **Figure 3.3** present groundwater elevation contours derived from groundwater elevation data collected on October 22, 2019 for the Upper Aquifer, Intermediate Aquifer and Lower Aquifer, respectively. **Figure 3.4**, **Figure 3.5**, and **Figure 3.6** present groundwater elevation contours derived from groundwater elevation data collected on October 26 and November 19, 2020 for the Upper Aquifer, Intermediate Aquifer and Lower Aquifer, respectively. The depth to groundwater near the Site is relatively shallow, with typical depths ranging from 4.18 to 15.57 feet. The elevation of groundwater near the Site ranges from approximately 747.01 to 757.68 feet above mean sea level (AMSL).

Figures 3.1 and **3.4** show that groundwater in the Upper Aquifer typically flows in a southerly direction. Overall groundwater flow is to the south and is consistent with the regional groundwater flow pattern. The horizontal hydraulic gradient in the Upper Aquifer is calculated to 0.00155 feet/feet for the October 2019 event and 0.00159 feet/feet for the October 2020 event.

As shown on **Figures 3.2** and **3.5**, groundwater in the Intermediate Aquifer typically flows in a southerly direction in October 2019 and October/November 2020, consistent with the regional groundwater flow pattern. East and southeast of the southeast corner of the Site, groundwater in the Intermediate Aquifer flows south. The horizontal hydraulic gradient in the Intermediate Aquifer is calculated to 0.00156 feet/feet for the October 2019 event and 0.00138 feet/feet for the October/November 2020 event.

Figures 3.3 and **3.6** show a south-southeasterly groundwater flow direction in the Lower Aquifer in both the October 2019 and October/November 2020 events. The horizontal hydraulic gradient in the Lower Aquifer is calculated to 0.00304 feet/feet for the October 2019 event and 0.00299 feet/feet for the October/November 2020 event.

2.3 Groundwater Quality/Results

This section of the 2020 AGMR describes the groundwater quality in the vicinity of the Site and discusses the nature and extent of groundwater contamination emanating from the Site.

This 2020 AGMR presents groundwater quality monitoring data for two semi-annual monitoring events, the S16 and the S17 rounds of the GMP that were completed in October 2019 and October/November 2020, respectively. **Table 4.1** provides the final readings of the low-flow sampling stabilization parameters measured in the field during the S16 and S17 monitoring rounds. Groundwater analytical reports are provided as **Appendix A**.

The following analytes are included in the GMP at the Site:

Volatile Organic Compounds (VOCs)

- Benzene
- 1,1-Dichloroethane (1,1-DCA)
- cis-1,2-Dichloroethene (cis-1,2-DCE)
- Vinyl chloride

Metals

- Arsenic
- Calcium
- Iron
- Lead
- Manganese
- Sodium

General Chemistry

- Sulfate
- Chloride

The following sections discuss the results of the S16 and S17 GMP rounds.

2.3.1 Field Parameters

Groundwater samples were collected after consistent and stable pH, temperature, conductivity, dissolved oxygen (DO), oxidation reduction potential (ORP) and turbidity measurements were obtained. **Table 4.1** provides the final stabilized value for each field parameter.

DO and ORP values are generally low and negative, respectively, near a landfill because of reducing groundwater conditions generated in the landfill. This can locally increase metals solubility, and mobility, until oxidizing conditions are encountered and the metals precipitate. Excessive turbidity can also artificially elevate metals concentrations in groundwater samples. This is generally an artifact of the sampling process and does not reflect actual concentrations of metals dissolved in, and transported via groundwater.

2.3.2 Volatile Organic Compounds (VOCs)

A total of 59 groundwater samples from 27 monitoring wells (27 samples and 3 duplicates X 2 events, minus one duplicate sample), were collected and analyzed for VOC analysis. The

laboratory analytical results are summarized in **Table 1.1** and monitoring wells with detectable concentrations are depicted on **Figure 4.1** and **Figure 4.2**.

Benzene was the only VOC detected in routine groundwater monitoring samples at concentrations greater than its Primary Maximum Contaminant Level (MCL) (5 micrograms per liter [µg/L]). The four VOCs in the GMP parameter list were detected at the following frequencies:

- Benzene = 16.9 percent
- 1,1-DCA = 50.8 percent
- cis-1,2-DCE = 33.9 percent
- Vinyl chloride = 13.6 percent

The following is a summary of the frequency of detection of the VOCs in each aquifer for the October 2019 and October/November 2020 groundwater quality monitoring results:

Table 1 – Number of VOC Detections/Number of Samples

Parameter	Upper Aquifer	Intermediate Aquifer	Lower Aquifer
Benzene	10/26	0/27	0/6
1,1 DCA	14/26	16/27	0/6
cis- 1,2-DCE	13/26	7/27	0/6
Vinyl chloride	4/26	4/27	0/6

2.3.3 Benzene

As shown in **Table 4.2**, benzene was detected in 10 of 59 groundwater samples collected from the entire monitoring well network during this reporting period, or 16.9 percent of the groundwater samples. The detected concentrations of benzene ranged from 0.92 J µg/L to 23 µg/L. **Figure 4.1** and **Figure 4.2** depict routine groundwater quality monitoring results for monitoring wells with detectable concentrations of benzene for the S16 and S17 events.

The concentration of benzene was greater than the Primary MCL of 5 µg/L in Upper Aquifer monitoring well WT115A during the S17 event and in each of the groundwater samples collected from WT115B during both monitoring events. As shown on **Figure 4.1**, monitoring wells WT115A and WT115B are Upper Aquifer monitoring wells located in the southeast corner of the Site, near the limit of waste. The historic benzene results for routine groundwater monitoring samples collected from WT115A (Upper Aquifer), WT115B (Upper Aquifer), and WT115C (Intermediate Aquifer) were as follows:

Table 2 – WT115A/B/C Benzene Concentrations

Date	WT115A	WT115B	WT115C
11/6/2008	5.7/9.3	Not Installed	Not Installed
2/12/2009	12	Not Installed	Not Installed
5/6/2009	1.0 U/0.43 J	Not Installed	Not Installed
8/5/2009	9.9	Not Installed	Not Installed
11/6/2009	12/12	Not Installed	Not Installed
3/2/2010	9.8	Not Installed	Not Installed
6/17/2011	0.69 J	Not Installed	Not Installed
9/15/2010	10	Not Installed	Not Installed
12/13/2010	16	Not Installed	Not Installed
3/11/2011	3.6	30	1.0 U
6/22/2011	1.0 U	29	1.0 U
9/20/2011	2.9	11	1.0 U
12/14/2011	Not Sampled	34	Not Sampled
4/26/2012	1.0 U	30	1.0 U
9/20/2012	16	31	Not Sampled
4/25/2013	1.0 U/1.0 U	32	1.0 U
9/24/2013	7	22	1.0 U
4/24/2014	1.0 U	23	1.0 U
9/25/2014	1.0 U	31/31	1.0 U/1.0 U
5/7/2015	1.0 U	21	1.0 U
9/24/2015	1.1	18	1.0 U
4/28/2016	1.0 U	21/22	1.0 U
10/5/2016	1.0 U	19/18	1.0 U
4/12/2017	1.0 U	12	1.0 U
4/27/2018	1.0 U	13	1.0 U
10/25/2018	1.9	16	1.0 U
4/24/2019	1.0 U	15	1.0 U
10/24/2019	1.9	23	1.0 U
10/29/2020	5.4	21	1.0 U

Notes:

All laboratory data is reported in micrograms per liter

5.7/9.3 Duplicate sample result
J Estimated concentration
U Not-detected at the associated value

Benzene was also detected in groundwater monitoring samples collected from three other monitoring wells during S16 and S17 groundwater quality monitoring rounds, as follows:

Table 3 – S16 and S17 Benzene Detections

Well	Number of Detections/ Number of Samples	Range of Benzene
WT101A	2/2	1.4 – 1.7
WT111A	2/2	0.92 J – 0.94 J
WT116A	2/2	4.2 – 4.4

Note:
All laboratory data is reported in micrograms per liter
J Estimated concentration

All five of the wells where benzene was detected are in the Upper Aquifer. As shown on **Figure 4.1**, these Upper Aquifer monitoring wells are located along the southern limit of waste. Monitoring wells WT122, WT106, and WT121 are located south of the these monitoring wells with detections and are below MCLs.

Benzene was not detected above the RDL of 1.0 μg/L in any groundwater samples collected from Intermediate or Lower Aquifer monitoring wells during S16 and S17.

The pattern of low concentrations of benzene dissolved in Upper Aquifer groundwater along part of the southern edge of the landfill is consistent with a relatively weak local source of benzene near WT115A and WT115B.

- Benzene results for this monitoring period are consistent with the historic benzene concentrations in groundwater samples collected from WT115B that range between 11 μg/L and 34 μg/L.
- Benzene concentrations in groundwater samples from WT115A prior to 2014 fluctuated between less than 1 μg/L to 16 μg/L. Beginning in 2013, benzene had only been detected in three of 12 groundwater samples, however was detected during the S16 and S17 events. The concentration of 1.9 μg/L in the October 2019 groundwater sample was less than the MCL, but the sample from the October/November 2020 event exceeded the MCL of 5 μg/L, at 5.4 μg/L.

2.3.4 1,1-Dichloroethane (1,1-DCA)

As summarized in **Table 4.2**, 1,1-DCA was detected in 30 of 59 routine groundwater samples collected from the monitoring well network during this reporting period, or 50.8 percent of the samples. The concentrations of 1,1-DCA ranged from 0.32 J μg/L to 7.0 μg/L. There is no MCL for 1,1-DCA. USEPA requested that the Himco Site Trust compare 1,1-DCA results to the calculated Tapwater Regional Screening Level (RSL) of 240 μg/L, which is based on an excess cancer risk of 1 x 10^{-5}. The maximum 1,1-DCA concentration is 2.9 percent of the GW RAO.

Figure 4.1 and **Figure 4.2** depict routine groundwater quality monitoring results for monitoring wells with detectable concentrations of 1-DCA for the S16 and S17 events.

Table 4 – S16 and S17 1,1-DCA Detections

Well	Number of Detections/Number of Samples	Range of 1,1-DCA Concentrations
WT101A	3/3	4.9 – 7.0
WT101D	2/2	3.0 – 3.4
WT101E	2/2	1.1 – 1.5
WT106A	2/2	1.4 – 1.6
WT106B	2/2	1.1 – 2.3
WT111A	2/2	4.4 – 4.6
WT114B	3/3	0.53 J – 0.87 J
WT114C	2/2	0.43 J – 0.44 J
WT115A	2/2	3.2 J – 1.6
WT115B	2/2	4.5 – 4.6
WT115C	2/2	2.0 – 2.3
WT116A	2/2	4.0 – 4.1
WT121A	2/2	1.2 – 1.5
WT122B	2/2	0.79 J – 1.0

Note:
All laboratory data is reported in micrograms per liter
J Estimated concentration

1,1-DCA was detected in groundwater samples collected during the reporting period from Upper and Intermediate Aquifer monitoring wells located along the southern Site boundary. 1,1-DCA was also detected in groundwater samples collected from Upper Aquifer monitoring wells WT106A and WT121A, located south and southeast of the Site. The detected concentrations were significantly less (<1.0 to 2.3 μg/L) than the calculated Tapwater RSL of 240 μg/L.

1,1-DCA was also detected at estimated concentrations below the RDL (1.0 μg/L) in groundwater samples from Intermediate Aquifer monitoring wells WT114B and WT114C, located east of the Site. 1,1-DCA was not detected in groundwater samples collected from Intermediate Aquifer monitoring wells WT120A and WT120B, which are located further east and delineate the eastern limit of 1,1-DCA in the Intermediate Aquifer.

1,1-DCA was not detected in groundwater samples collected from any of the Lower Aquifer monitoring wells during this reporting period.

Consistent with previous 1,1-DCA monitoring data and reports, the pattern of widespread, low-concentration 1,1-DCA detections is not consistent with a distinct, high-concentration VOC source. The distribution of 1,1-DCA in groundwater at the Site is more consistent with residual contamination undergoing degradation in the absence of ongoing contaminant loading.

2.3.5 cis-1,2-Dichloroethene (cis-1,2-DCE)

cis-1,2-DCE was detected in 20 of 59 routine groundwater samples collected during this reporting period, or 33.9 percent of the samples (**Table 4.2**). The range of detected concentrations was from 0.17 J µg/L to 2.5 µg/L. Concentrations of cis-1,2-DCE in all groundwater samples did not exceed the Primary MCL of 70 µg/L for cis-1,2-DCE. The maximum cis-1,2-DCE concentration of 2.7 µg/L is 3.9 percent of the GW RAO.

Figure 4.1 and **Figure 4.2** depict routine groundwater quality monitoring results for monitoring wells with detectable concentrations of cis-1,2-DCE for the S16 and S17 events.

The distribution of cis-1,2-DCE is similar to the distribution of 1,1-DCA. cis-1,2-DCE was detected in groundwater samples from the following eleven monitoring wells:

Table 5 – S16 and S17 cis-1,2-DCE Detections

Well	Number of Detections/Number of Samples	Range of cis-1,2-DCE Concentrations
WT101A	2/2	4.9 – 7.0
WT101D	2/2	0.53 J – 0.62 J
WT101E	1/2	0.24 J
WT106A	2/2	0.23 J – 0.23 J
WT111A	1/2	0.20 J
WT114B	2/3	0.17 J – 0.32 J
WT115B	2/2	1.8 – 2.0
WT115C	2/2	0.49 J – 0.51 J
WT116A	2/2	1.9 – 2.5
WT121A	2/2	1.3 – 1.4
WT122A	2/2	0.76 J – 0.82 J

Note:
All laboratory data is reported in micrograms per liter
J Estimated concentration

As shown on **Figure 4.1** and **Figure 4.2**, cis-1,2-DCE was detected in groundwater samples collected from the Upper and Intermediate Aquifer monitoring wells located along the southern Site boundary. cis-1,2-DCE was detected in the groundwater samples collected from WT106A and WT121A, located southeast of the Site, at a maximum concentrations of 1.4 µg/L.

cis-1,2-DCE was also detected east of the Site in groundwater samples collected from Intermediate Aquifer monitoring well WT114B, but not in samples from Intermediate Aquifer monitoring wells WT120A and WT120B, located further east of the Site.

cis-1,2-DCE was not detected (RDL=1.0 µg/L) in groundwater samples collected from Lower Aquifer monitoring wells.

The distribution of cis-1,2-DCE in groundwater near the Site during the S16 and S17 monitoring events were similar to each other and consistent with baseline monitoring results. The spatial pattern of widespread, low-concentration cis-1,2-DCE detections and the stable distribution of

VOCs over time is consistent with residual contamination undergoing degradation in the absence of ongoing contaminant loading.

2.3.6 Vinyl Chloride

Vinyl chloride was detected in eight of 59 groundwater samples collected from the monitoring well network during this reporting period, or 13.6 percent of the samples (**Table 4.2**). Vinyl chloride concentration detections in groundwater samples ranged from 0.46 J µg/L to 1.1 µg/L, as follows:

Figure 4.1 and **Figure 4.2** depict routine groundwater quality monitoring results for monitoring wells with detectable concentrations of vinyl chloride for the S16 and S17 events.

Table 6 – S16 and S17 Vinyl Chloride Detections

Well	Number of Detections/Number of Samples	Range of Vinyl Chloride Concentrations
WT106B	2/2	0.46 J – 0.61 J
WT116A	2/2	0.89 J – 1.1
WT121B	2/2	0.89 J – 0.99 J
WT122A	2/2	0.51 J – 0.51 J

Note:
All laboratory data is reported in micrograms per liter
J Estimated concentration

Figures 4.1 and **4.2** depict vinyl chloride results for the Upper and Intermediate Aquifer for S16 and S17. Vinyl chloride was present in groundwater samples collected from the monitoring wells south of the Site, but at concentrations less than the GW RAO (MCL = 2.0 µg/L).

The concentrations of vinyl chloride detected in Lower Aquifer groundwater samples were less than the MCL of 2 µg/L.

Vinyl chloride is produced in reducing environments by the degradation of chlorinated organic compounds. The distribution of vinyl chloride in groundwater in the vicinity of the Site during the S16 and S17 monitoring rounds is consistent with the baseline monitoring results. The relatively low-level, stable vinyl chloride concentrations are consistent with residual contamination undergoing degradation in the absence of an ongoing source of VOC contaminants.

2.4 Metals and General Chemistry Analytes

2.4.1 Introduction

A total of 58 groundwater samples were collected from 27 monitoring wells during S16 and S17 for select metals and general chemistry analyses. **Tables 4.3 and 4.4** summarize the metals and general chemistry results for the groundwater samples collected from the Upper, Intermediate, and Lower Aquifers, respectively, during the reporting period. The laboratory analytical results for select metals and general chemistry are summarized in **Table 1.2**, **Table 1.3** and **Table 1.4**.

For background data quality comparison, GES collected groundwater samples from monitoring wells WT102A, WT102B, and WT102C for metals and general chemistry parameters. These wells are located approximately 1,260 feet north of and upgradient of the Site. The 2012 Himco Annual Groundwater Monitoring Report (CRA, 2012) included a statistical analysis of data from these wells to determine background concentrations to compare with concentrations measured at other locations at the Site. **Tables 1.2** through **1.4** provide the background concentrations for the metals parameters for the Upper, Intermediate and Lower Aquifers, respectively. Several of the background threshold values (BVs) exceeded their respective Primary MCL, Secondary MCL or Recommended Dietary Allowance (RDA).

The CD states that the GW RAOs are to prevent the use of groundwater that contains Site-related carcinogens and non-carcinogens in excess of MCLs. The CD also states that the GW RAOs are:

> *To prevent the use of groundwater which contains site-related sodium, calcium, and iron in excess of their upper intake limit or recommended dietary allowances for sensitive populations.*

However, nearby affected properties - in accordance with Environmental Restrictive Covenants (ERC) and Deed Restrictions (DR) - are prohibited from installing and utilizing groundwater wells; their private wells were abandoned in conjunction with connection to municipal drinking water.

There are no Primary MCLs for sodium, calcium, iron and manganese. There are Secondary MCLs for sodium (250 milligrams per liter [mg/L]) and iron (0.3 mg/L), but these are aesthetic criteria and are not health based. There is a health-based Tapwater RSL for iron of 26 mg/L. The RDA for calcium is 250 mg/L. In order to establish appropriate GW RAOs, GES ranked these criteria as follows:

1. Primary MCLs
2. Tapwater RSL
3. RDA
4. Secondary MCLs

For example, there is no Primary MCL for iron, so the next level of criteria is the health based RSL Tapwater of 26 mg/L. There is no Primary MCL, Tapwater RSL or RDA for chloride. Therefore, the best available criterion for chloride is the Secondary MCL of 250 mg/L.

The following are the exceedances of the metals and general chemistry GW RAOs in each of the aquifer units:

Table 7 – Number of Exceedances of GW RAOs/Number of Samples (Metals and General Chemistry)

Parameter	Upper Aquifer	Intermediate Aquifer	Lower Aquifer
Arsenic	1/25	5/27	1/6
Calcium	4/25	0/27	0/6
Iron	2/25	0/27	0/6
Lead	2/25	0/27	0/6
Manganese	6/25	0/27	0/6
Sodium	2/25	0/27	0/6
Chloride	1/25	0/27	0/6
Sulfate	0/26	0/27	0/6

GES selected arsenic, calcium, manganese, sodium, and chloride for discussion purposes as these analytes are of concern to the USEPA and IDEM and have shown historical concentrations greater than their respective GW RAOs.

2.4.2 Arsenic

Arsenic was detected in 48 of the 58 routine groundwater quality monitoring samples collected for select metals and general chemistry during the reporting period. Arsenic concentrations ranged from 0.81 J µg/L to 18 µg/L. The GW RAO for arsenic is 10 µg/L, which is equal to its Primary MCL. Arsenic is the only metal parameter detected during the S16 and S17 monitoring rounds at concentrations greater than a GW RAO that is based on a Primary MCL.

Arsenic concentrations in groundwater samples collected from Upper Aquifer monitoring wells during S16 and S17 monitoring rounds were less than the GW RAO of 10 µg/L, except for WT121A during the S17 event. The arsenic concentration in monitoring well WT121A during the S17 event was 14 µg/L.

Figure 4.3 and **Figure 4.4** show the arsenic concentrations in groundwater samples collected from the monitoring wells from each aquifer. The concentrations of arsenic exceeded the GW RAO in S16 and S17 samples from the following Intermediate Aquifer monitoring wells:

Table 8 – S16 and S17 Arsenic Concentrations

Well	Date	Arsenic Concentration
WT114C	10/24/2019	18/14
WT114C	10/28/2020	16
WT121B	10/23/2019	14
WT121B	11/19/2020	12

Note:
All metals laboratory data is reported in micrograms per liter

Intermediate Aquifer monitoring well WT114C is located immediately east of the Site and WT121B is located southeast of the Site and east of WT106B.

Figure 4.3 and **Figure 4.4** shows the arsenic concentrations in groundwater samples collected from Lower Aquifer monitoring wells during S16 and S17. The arsenic concentration in the groundwater sample collected from WT106C during the October 2019 event was 12 µg/L, exceeding the GW RAO of 10 µg/L. However, during the October 2020 event the result was less than the GW RAO at 9.4 µg/L. These are consistent with previous results.

2.4.3 Calcium

Calcium was detected in all of the 58 routine groundwater quality monitoring samples collected for select metals and general chemistry during this reporting period. Calcium concentrations in groundwater samples ranged from 43,000 µg/L to 640,000 µg/L. The GW RAO for calcium is 250,000 µg/L, and is equal to its RDA.

Figure 4.3 and **Figure 4.4** show the calcium concentrations in groundwater samples collected from the monitoring wells from each aquifer. There is a plume of calcium in the Upper Aquifer defined by exceedances of the GW RAO (250,000 µg/L). Calcium concentrations in the Upper Aquifer greater than the GW RAO were detected in groundwater samples collected from the following monitoring wells:

Table 9 – S16 and S17 Calcium Concentrations

Well	Date	Calcium Concentration
WT115B	10/24/2019	290,000
WT115B	10/29/2020	330,000
WT116A	10/24/2019	600,000
WT116A	10/29/2020	640,000 B

Note:
All laboratory data is reported in micrograms per liter

The maximum calcium concentrations in the Upper Aquifer were detected in groundwater samples collected from monitoring well WT116A, located within the limit of the waste in the south-central portion of the Site. Calcium concentrations have also typically exceeded the GW RAO in groundwater samples collected from monitoring well WT115B, located in the southeast portion of the Site within the limits of waste.

Calcium concentrations in the Intermediate and Lower Aquifers were less than the GW RAO.

The calcium concentrations in groundwater samples collected at the Site are generally stable and only exceed the GW RAO in the Upper Aquifer in the immediate vicinity of the former landfill area. The calcium data for the S16 and S17 routine groundwater quality monitoring rounds are

generally consistent with the baseline groundwater monitoring results from September 2011 and other routine monitoring data.

2.4.4 Manganese

Manganese was detected in 53 of the 58 routine groundwater quality monitoring samples collected for select metals and general chemistry during the reporting period. The concentrations of manganese in groundwater samples ranged from 6.6 J µg/L to 2,100 µg/L. The GW RAOs for manganese in the Upper and Lower Aquifers are 1,070 µg/L and 1,140 µg/L, respectively, which are the respective BVs for those aquifers. The GW RAO for manganese in the Intermediate Aquifer is 880 µg/L, which is its Secondary MCL.

Figure 4.3 and **Figure 4.4** show the manganese concentrations in groundwater samples collected from the monitoring wells from each aquifer. The samples that contained manganese at concentrations that were greater than the GW RAO were as follows:

Table 10 – S16 and S17 Manganese Concentrations

Well	Date	Manganese Concentration
WT101A	10/25/2019	1,200
WT101A	10/28/2020	1,300
WT116A	10/24/2019	2,100
WT116A	10/29/2020	1,500

Note:
All laboratory data is reported in micrograms per liter

WT101A and WT116A are located along the southern limit of waste.

The maximum manganese concentrations in the Intermediate and Lower Aquifer groundwater samples were 190 µg/L and 31 µg/L, respectively, which are less than the respective GW RAOs of 880 µg/L and 1,140 µg/L.

The manganese data for the S16 and S17 routine groundwater quality monitoring rounds are generally consistent with previous monitoring rounds including baseline groundwater monitoring results from September 2011.

2.4.5 Sodium and Chloride

Sodium was detected in all 58 of the routine groundwater quality monitoring samples collected for select metals and general chemistry during the reporting period. Sodium concentrations in groundwater samples ranged from 480 µg/L to 270,000 µg/L. The GW RAO for sodium is 150,000 µg/L, which is its RDA.

Chloride was detected in 57 of the 58 groundwater samples collected for select metals and general chemistry from the monitoring well network during this reporting period. The detected

concentrations of chloride ranged from 2.6 mg/L to 340 mg/L. The GW RAO for chloride is 250 mg/L, which is equal to its Secondary MCL.

Figure 4.3 and **Figure 4.4** show the sodium and chloride concentrations in groundwater samples collected from the monitoring wells from each aquifer. The sodium concentration in the groundwater samples collected from WT114A in October 2019 and October 2020 were greater than the GW RAOs. The concentration of chloride was greater than the GW RAO in the October 2019 groundwater sample collected from WT114A. The exceedance of chloride is typical for monitoring well WT114A. All other sodium and chloride concentrations in Upper Aquifer groundwater samples were less than the GW RAOs. Monitoring well WT114A is cross gradient of the Site and is located adjacent to the John Weaver Parkway. The source of the sodium and chloride in the groundwater samples collected from WT114A is likely due to road salt applied to the adjacent roadway to treat winter road conditions.

Sodium and chloride concentrations in the S16 and S17 groundwater samples from the Intermediate and Lower Aquifers were less than the GW RAO.

The sodium and chloride results for the routine groundwater quality monitoring samples for this monitoring period are consistent with historic baseline groundwater monitoring results.

3 Recent Reports and Site Controls

This section provides descriptions about the final actions related to the removal of potable wells and connections to the city water service to ensure protection of the environment and human health and also the institutional controls that are in place to meet the requirements of the CD/ROD. All of the institutional controls and water connections have been completed and future discussions related to these topics will be provided as part of the Annual Institutional Control Certification Report.

3.1 Private Well Sampling Report (October 2018):

As documented in previous AGMR's, an arsenic plume is present in the Intermediate Aquifer and groundwater has been consistently confirmed flowing to the south. Samples from several groundwater monitoring wells routinely contain arsenic at concentrations greater than the GW RAO of 10 µg/L. While arsenic was not placed in the landfill, it does naturally occur in the soil. As the landfill uses up oxygen in the groundwater, it creates favorable reducing conditions for the arsenic, thus making it present in the groundwater in variable concentrations at select locations. Previous detailed groundwater analyses concluded that arsenic concentrations in the groundwater have been relatively stable and do not pose a human health risk in these groundwater monitoring wells.

The Private Well Sampling Report (October 2018), detailed the historical and recent sampling events of nearby private wells. In September 2015, the Trust canvassed residences and businesses in the vicinity of the Intermediate Aquifer to determine the source of drinking water at

the properties (e.g., municipal water or private well) and to determine if there was a potential for the private wells to intercept the Intermediate Aquifer arsenic plume. During the 2015 visit, 23 properties were documented: private wells were confirmed on 12, municipal water was supplied to 7, and 4 unoccupied properties prevented official documentation of water supply. These properties represented the entire potential scope as previous review of water main records/maps indicated that municipal water supplies were already available and present south of Bristol Street, further southeast of the property.

Following a combined agency site-walk in October 2017 (USEPA, IDEM, and USACE), the Trust – in an effort to investigate, determine, and mitigate potential arsenic impacts – recommended that in lieu of installation of additional monitoring wells, a risk-based approach would be implemented by finalizing the door-to-door survey and sampling any remaining private wells.

With agency confirmation, the Trust conducted the final door-to-door survey to confirm the current private wells status for all properties. In July 2018, all properties were confirmed to either have eliminated private wells and/or maintain connection to the municipal water supply; there were 11 final/remaining properties confirmed to have private water supplies. Following receipt of owners' consent, sampling efforts commenced at these properties.

The 2018 private well results were all less than the arsenic GW RAO, with the exception of the sample collected from 1241 North Nappanee Street. This property is currently an auto sales lot consisting of a large parking lot, a sales trailer, and a connected garage and storage building, which contains a bathroom supplied by a private well (used for handwashing/sewage; bottled water is used for human consumption). In an effort to eliminate any risk from consumption, the Trust initiated coordination efforts with the property owner and funded the connection effort of the property to the available public water supply and abandon the well in conjunction with the required abandonment of the existing well on the property in compliance with 312 Indiana Administrative Code (IAC) 13-10-2.

In May 2019, the Trust completed the private well abandonment and connection to the municipal water supply for the property at 1241 North Nappanee Street (as documented in the Quarterly Report, June 2019).

Thus, there are no remaining potentially affected private wells which exceed the arsenic GW RAO.

3.2 Long-Term Stewardship Plan (April 2019):

The Institutional Controls Implementation and Assurance Plan (ICIAP) also known as the Long-Term Stewardship (LTS) Plan presents procedures to implement, maintain, and enforce institutional controls (ICs) at the Himco Site. It was originally submitted in December 2018 and finalized in April 2019, following conditional USEPA approval and amended modifications upon request.

The LTS Plan outlines the various controls enacted at the Site and the surrounding vicinity. As documented in the LTS Plan, the remedy selected for the landfill and associated parcels

surrounding the area entailed implementing ICs in the form of deed restrictions (or other appropriate institutional controls) which: prohibit both future groundwater use and future drilling or digging into the landfill cover; limit the land reuse to industrial, recreational, or commercial; abandoning any private well; and requiring feasibility studies to determine appropriate redevelopment scenarios, subject to USEPA/IDEM approval.

These ICs have been instituted on all affected parcels (both the landfill and off-Site) in the form of ERCs and DRs:

On-Site parcels: Land use restrictions are memorialized in ERCs signed by Bayer Healthcare LLC and Indiana Michigan Power filed with the Elkhart County Recorder. Four landfill parcels (D, F, Q, and S) – for which a signed ERC was in place – were transferred in January 2018 to Cooper Land Company of New Jersey Inc., an affiliate of Bayer HealthCare LLC. In 2018, Giada Holdings, LLC purchased Parcel J in a delinquent tax sale; this landfill parcel was formerly owned by Zap Distributing LLC and CLD Corporation. An ERC was signed for this parcel by Giada Holdings, LLC on December 18, 2019. A recorded Temporary Access Agreement also places some additional controls on the property. CLD Corporation currently owns a thin 1.38 acre parcel (that bisects Parcel J) and this parcel is subject to an ERC. Additionally, the Elkhart County Private Well Ordinance No. 2017-24 applies to the landfill property and all surrounding parcels and places further restrictions on the installation of any groundwater wells.

Off-Site Parcels: the remaining off-Site parcels (south, east, and west of the site) all have ERCs, with the exception of four parcels, for which a DR is in place.

The following four IC Instruments described below were selected as the mechanisms in which to assure compliance with the aforementioned remedies and ICs:

1. Annual Report: Per the Five Year Review (FYR), an Annual IC Monitoring, Compliance Assurance, and Certification Report (Annual Report) that will include a certification statement and results of IC reviews will be submitted to USEPA. It will demonstrate that the site was inspected to ensure no inconsistent uses have occurred, ICs remain in place and are effective, and any necessary contingency actions have been executed.

2. Quarterly Progress Reports: The Himco Trust will declare compliance with the ERCs in quarterly progress reports.

3. Well Verification: The Himco Trust will maintain compliance by verifying the absence of new groundwater drinking wells and changes in land use once during each FYR cycle and declare compliance in the Annual Report.

4. Land Restriction Verification: The Himco Trust will maintain compliance by verifying implemented land use restrictions via the Elkhart County Recorder's office (and current owners as needed) once during each FYR cycle and declare compliance in the Annual Report.

In summary, the Himco Trust has successfully completed all of the CD/ROD-required remedies at the site and implemented the prescriptive ICs. The most recent Annual IC Monitoring, Compliance Assurance, and Certification Report was submitted to IDEM and the USEPA on December 21, 2020. The remaining tasks currently ongoing at the Site include: soil gas monitoring, annual groundwater monitoring, inspections, routine Quarterly reports, and IC implementation/assurance.

4 Conclusions and Recommendations

4.1 Groundwater Elevation Monitoring

Data collected during S16 and S17 indicate that groundwater in the Upper, Intermediate, and Lower Aquifers typically flows south to southeast, consistent with the regional groundwater flow direction and previous monitoring data.

4.2 Groundwater Quality Monitoring

4.2.1 VOCs

Benzene was the only VOC detected at concentrations greater than its Primary MCL during the reporting period. Benzene concentrations that were greater than the GW RAO were detected in groundwater samples collected from only the Upper Aquifer monitoring wells WT115A and WT115B, located in the southeast corner of the landfill. Benzene results for this monitoring period are consistent with the historic benzene concentrations in groundwater samples collected from WT115A that range between 0.43 J μg/L through 16 μg/L and WT115B that range between 11 μg/L through 34 μg/L. These stable, low-level concentrations are consistent with a local source of benzene near WT115A and WT115B, which is defined to the south by monitoring wells WT122, WT106, and WT121. Benzene was not detected above the MCL in the samples collected from monitoring well WT115C. Monitoring well WT115C is screened in the Intermediate Aquifer and provides vertical delineation of the WT115 benzene plume.

1,1-DCA, cis-1,2-DCE, vinyl chloride, and carbon disulfide were detected in 13.6 percent to 50.8 percent of routine groundwater quality monitoring samples collected during the reporting period. Unlike the distinct benzene plume in the vicinity of WT115, these other VOCs were detected at concentrations that were significantly less than their respective GW RAOs. 1,1-DCA, cis-1,2-DCE, and vinyl chloride detections are clustered along the southern Site boundary. The broad distribution of low-level concentrations of degradation products and the lack of change in the distribution of VOCs over time is consistent with residual VOC groundwater contamination undergoing degradation.

Routine groundwater quality monitoring results for this reporting period (S16 and S17) are similar to each other and consistent with baseline (September 2011) monitoring data for VOCs.

4.2.2 Metals and General Chemistry Parameters

Arsenic, calcium, iron, lead, manganese, sodium, and chloride are the only metals and general chemistry parameters detected in groundwater samples at concentrations that exceeded their GW RAOs during this reporting period.

The GW RAO for arsenic is 10 μg/L, which is equal to its Primary MCL. During the S16 and S17 sampling events, the concentrations of arsenic ranged from 12 to 18 μg/L, which exceeds the GW RAO in four samples from Intermediate Aquifer monitoring wells WT114C and WT121B (located immediately east of the Site) and one sample from Upper Aquifer monitoring well WT121A (located southeast of the Site). The results are consistent with previous sampling events.

The arsenic concentrations in groundwater samples collected during this reporting period from Lower Aquifer monitoring well WT106C ranged from 9.4 to 12 μg/L, which is greater than the GW RAO of 10 μg/L. This is consistent with previous results.

There are detections of calcium in the Upper Aquifer defined by the GW RAO of 250,000 μg/L, which equals its RDA. Calcium concentrations in the Upper Aquifer that were greater than the GW RAO were detected in groundwater samples collected from Upper Aquifer monitoring wells WT115B and WT116A (located along the southern limit of waste). Calcium concentrations in groundwater samples from the Intermediate and Lower Aquifers were less than their GW RAOs.

There are detections of iron in the Upper Aquifer defined by the GW RAO of 26,000 μg/L. Iron concentrations in the Upper Aquifer that were greater than the GW RAO were detected in groundwater samples collected from Upper Aquifer monitoring wells WT114A (located east of the Site) and WT122A (located south of the Site). Iron concentrations in groundwater samples from the Intermediate and Lower Aquifers were less than their GW RAOs.

There are detections of lead in the Upper Aquifer defined by the GW RAO of 15 μg/L. Lead concentrations in the Upper Aquifer that were greater than the GW RAO were detected in the groundwater sample collected from Upper Aquifer monitoring well WT121A (located southeast of the Site) and WT116A (located south of the Site). Lead concentrations in all other groundwater samples and from the Intermediate and Lower Aquifers were less than their GW RAOs.

There is a plume of manganese in the Upper Aquifer defined by the 1,070 μg/L contour, which is its GW RAO derived from its BV. The manganese concentrations in groundwater samples collected from WT101A and WT116A, which are located along the southern limit of waste, were greater than the GW RAO. The maximum manganese concentrations in the Intermediate and Lower Aquifer well samples were 190 μg/L and 31 μg/L, respectively, which are less than the GW RAO. The GW RAOs for manganese are based on BVs, not health based criteria.

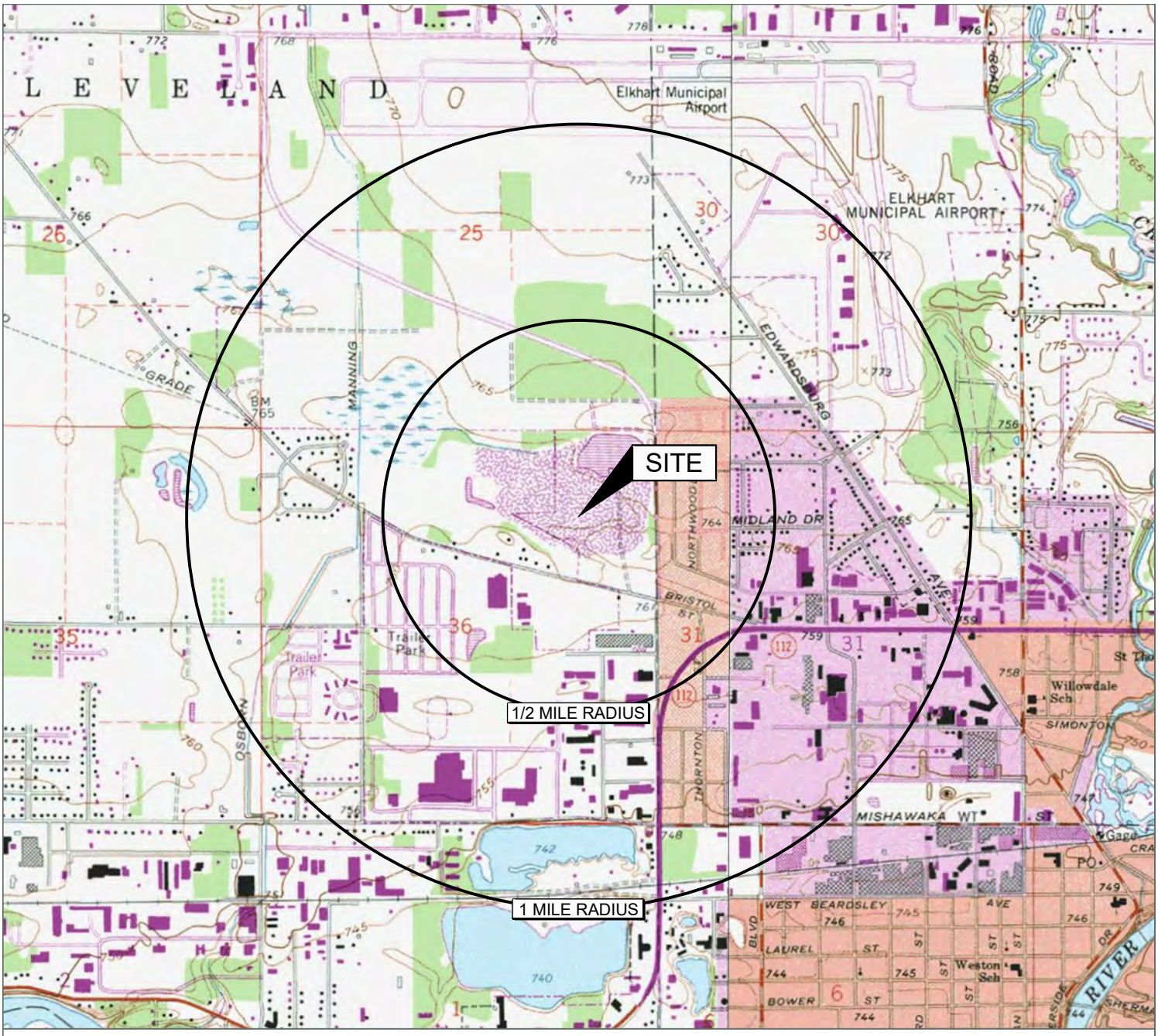
Sodium and chloride concentrations that were greater than the GW RAO were detected in groundwater samples from Upper Aquifer monitoring well WT114A. Monitoring well WT114A is cross gradient of the Site and located adjacent the John Weaver Parkway. The source of the sodium and chloride in the groundwater samples collected from WT114A are potentially linked to road salt applied to the adjacent roadway. Sodium and chloride are not Site-related COCs.

The metals and general chemistry data for S16 and S17 routine groundwater quality monitoring are consistent with baseline groundwater monitoring results from September 2011 and other previous monitoring data.

4.3 Future Monitoring and Reporting

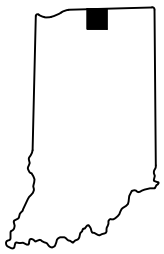
Overall, the data from the two sampling events presented within this report reveal data consistent with historical trends with some reduction in concentrations. The PSDs will continue to follow the annual monitoring requirement and may perform further trend analysis at a later date to evaluate the current monitoring program. The PSDs continue to work with GES to compile the Addendum to the Construction Completion Report/Completion of Remedial Action Report (CRA-August 31, 2012) to assist EPA in initiating the *Final Close Out Report* (FCOR) and delisting for the Site.

Figures



Source:
USGS 7.5 Minute Series
Topographic Quadrangle, 1994
Osceola, Indiana
Contour Interval = 5 feet

Township - 38 N
Range - 4 E
Section - 36



Indiana

Quadrangle Location
LAT. 041 ° 42 ' 23.81 " N
LONG. 086 ° 00 ' 25.95 " W
(Approximate Site Coordinates)

Site Location Map

The HIMCO Site Trust
HIMCO Landfill
County Road 10
Elkhart, Indiana

Drawn
W.A.W.
Designed
W.A.W.
Approved
J.E.H

Date
08/13/19
Figure
1

Scale In Feet
0 2000

Groundwater & Environmental Services, Inc.

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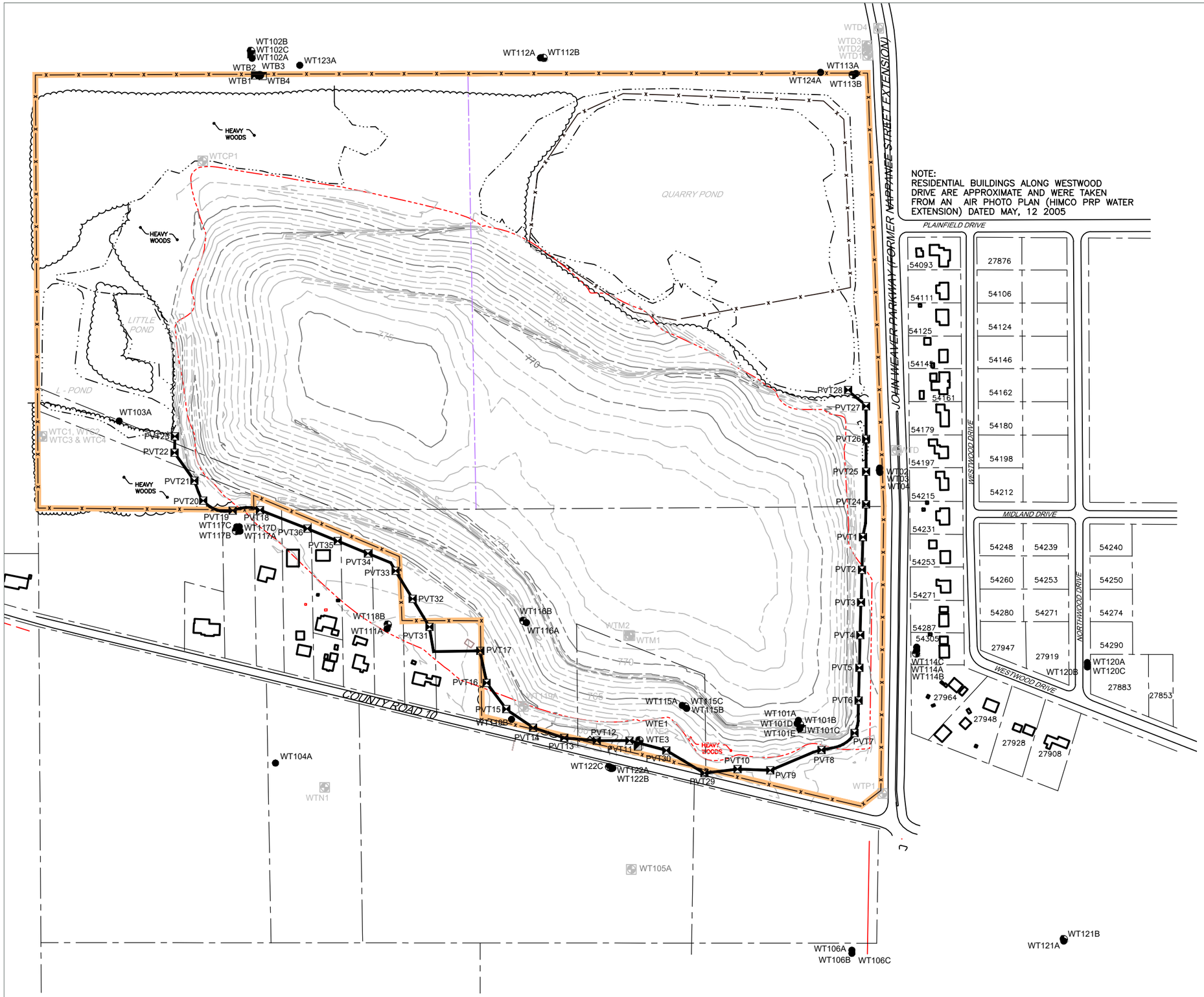

NOTE:
RESIDENTIAL BUILDINGS ALONG WESTWOOD DRIVE ARE APPROXIMATE AND WERE TAKEN FROM AN AIR PHOTO PLAN (HIMCO PRP WATER EXTENSION) DATED MAY, 12 2005

LEGEND

- PROPERTY BOUNDARY
- FENCE LINE
- 760 AS-BUILT TOPSOIL CONTOUR
- LOWER AQUIFER MONITORING WELL
- INTERMEDIATE AQUIFER MONITORING WELL
- UPPER AQUIFER MONITORING WELL
- PASSIVE VAPOR TRENCH RISERS
- PASSIVE VAPOR TRENCH
- ABANDONED/DESTROYED MONITORING WELLS
- APPROXIMATE LINE OF EDGE OF HEAVY WOODS

SOURCES:

SITE MAP BASED ON GHD SOURCE FILES DATED & MAY 16, 2019. **(INCLUDING PROPERTY BOUNDARIES)**

GOOGLE EARTH AERIAL PHOTOGRAPHY DATED MARCH 25, 2019.

Site Map

The HIMCO Site Trust
HIMCO Landfill
County Road 10
Elkhart, Indiana

Drawn W.A.W.
Designed W.A.W.
Approved J.E.H.

Date 08/13/19
Figure 2

Scale In Feet (Approximate)
0 300

GES
Groundwater & Environmental Services, Inc.

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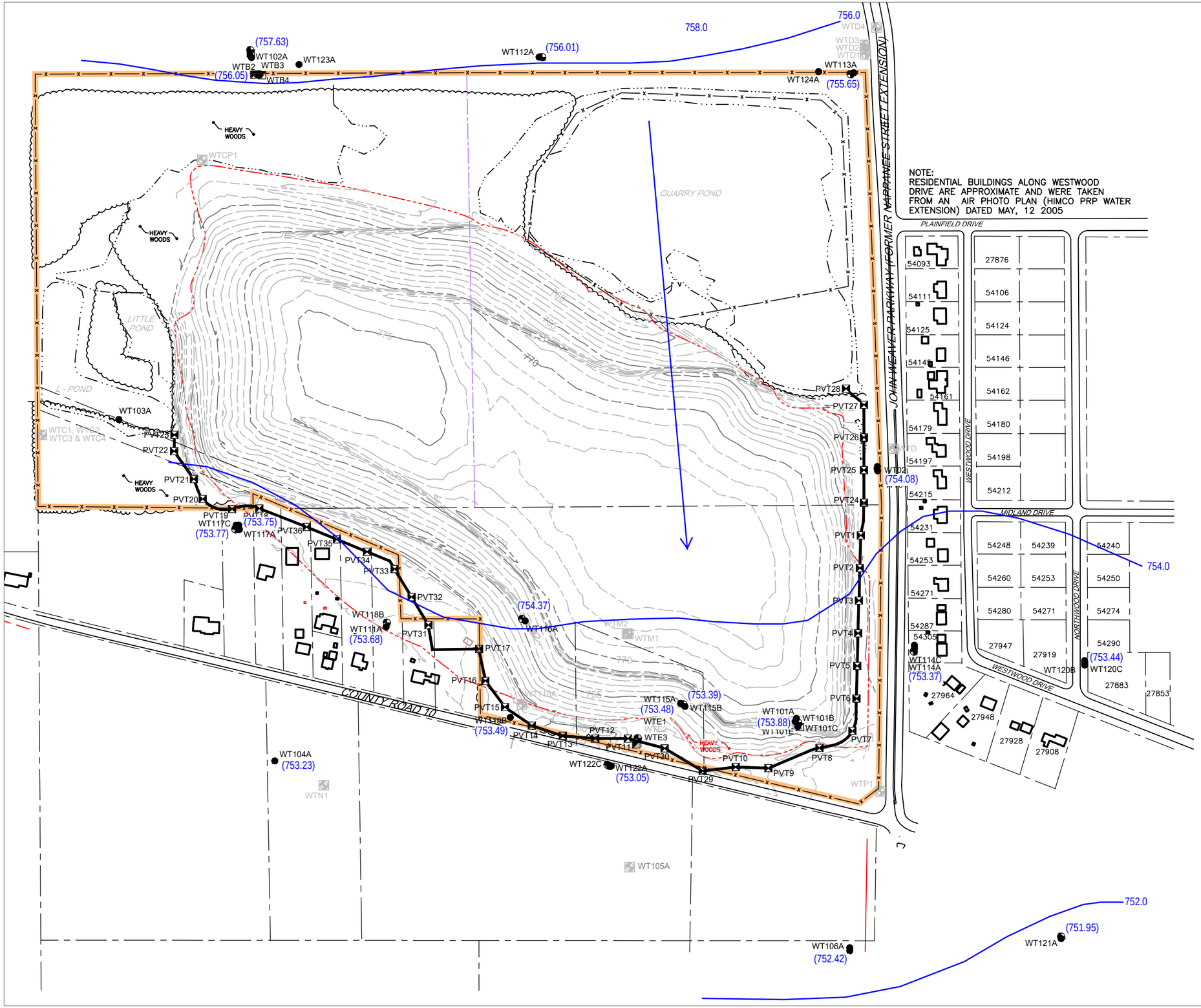

NOTE:
RESIDENTIAL BUILDINGS ALONG WESTWOOD DRIVE ARE APPROXIMATE AND WERE TAKEN FROM AN AIR PHOTO PLAN (HIMCO PRP WATER EXTENSION) DATED MAY, 12 2005

LEGEND

- PROPERTY BOUNDARY
- FENCE LINE
- --760--- AS-BUILT TOPSOIL CONTOUR
- LOWER AQUIFER MONITORING WELL
- INTERMEDIATE AQUIFER MONITORING WELL
- UPPER AQUIFER MONITORING WELL
- PASSIVE VAPOR TRENCH RISERS
- PASSIVE VAPOR TRENCH
- ABANDONED/DESTROYED MONITORING WELLS
- 754.08 GROUNDWATER ELEVATION (feet)
- (754.0) GROUNDWATER CONTOUR INTERVAL = 2.0FT
- GROUNDWATER FLOW DIRECTION

SOURCES:

SITE MAP BASED ON GHD SOURCE FILES DATED & MAY 16, 2019. **(INCLUDING PROPERTY BOUNDARIES)**

GOOGLE EARTH AERIAL PHOTOGRAPHY DATED MARCH 25, 2019.

Groundwater Contour Map
Upper Aquifer - October 2019

The HIMCO Site Trust
HIMCO Landfill
County Road 10
Elkhart, Indiana

Drawn W.A.W.
Designed W.A.W.
Approved J.E.H.

Date 11/16/20
Figure 3.1

Scale In Feet (Approximate)
0 300

Groundwater & Environmental Services, Inc.

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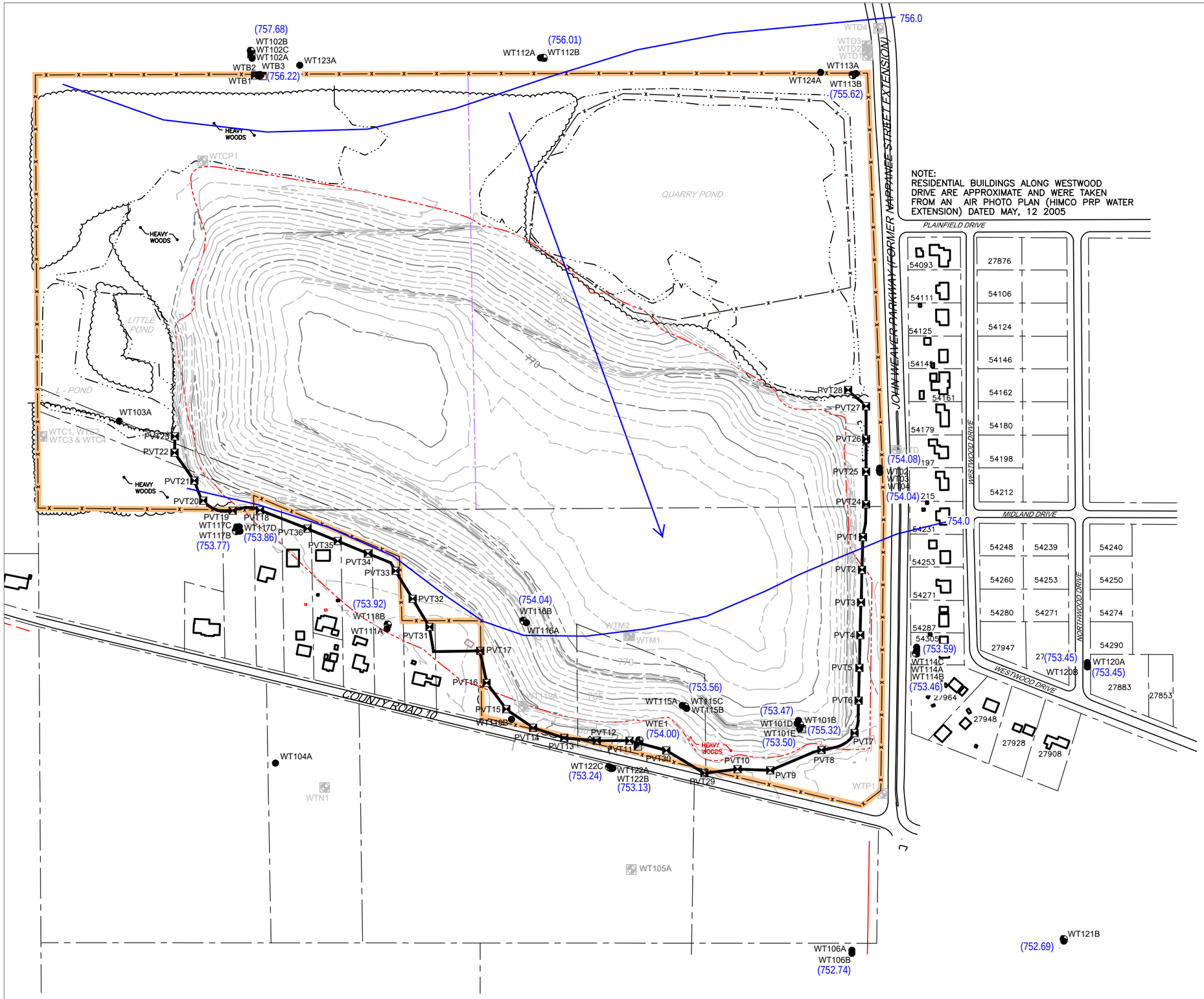


LEGEND

- PROPERTY BOUNDARY
- FENCE LINE
- --760--- AS-BUILT TOPSOIL CONTOUR
- LOWER AQUIFER MONITORING WELL
- INTERMEDIATE AQUIFER MONITORING WELL
- UPPER AQUIFER MONITORING WELL
- PASSIVE VAPOR TRENCH RISERS
- PASSIVE VAPOR TRENCH
- ABANDONED/DESTROYED MONITORING WELLS
- 754.08 GROUNDWATER ELEVATION (feet)
- (754.0) GROUNDWATER CONTOUR INTERVAL = 2.0FT
- GROUNDWATER FLOW DIRECTION

SOURCES:

SITE MAP BASED ON GHD SOURCE FILES DATED & MAY 16, 2019. **(INCLUDING PROPERTY BOUNDARIES)**

GOOGLE EARTH AERIAL PHOTOGRAPHY DATED MARCH 25, 2019.

Groundwater Contour Map
Intermediate Aquifer - October 2019

The HIMCO Site Trust
HIMCO Landfill
County Road 10
Elkhart, Indiana

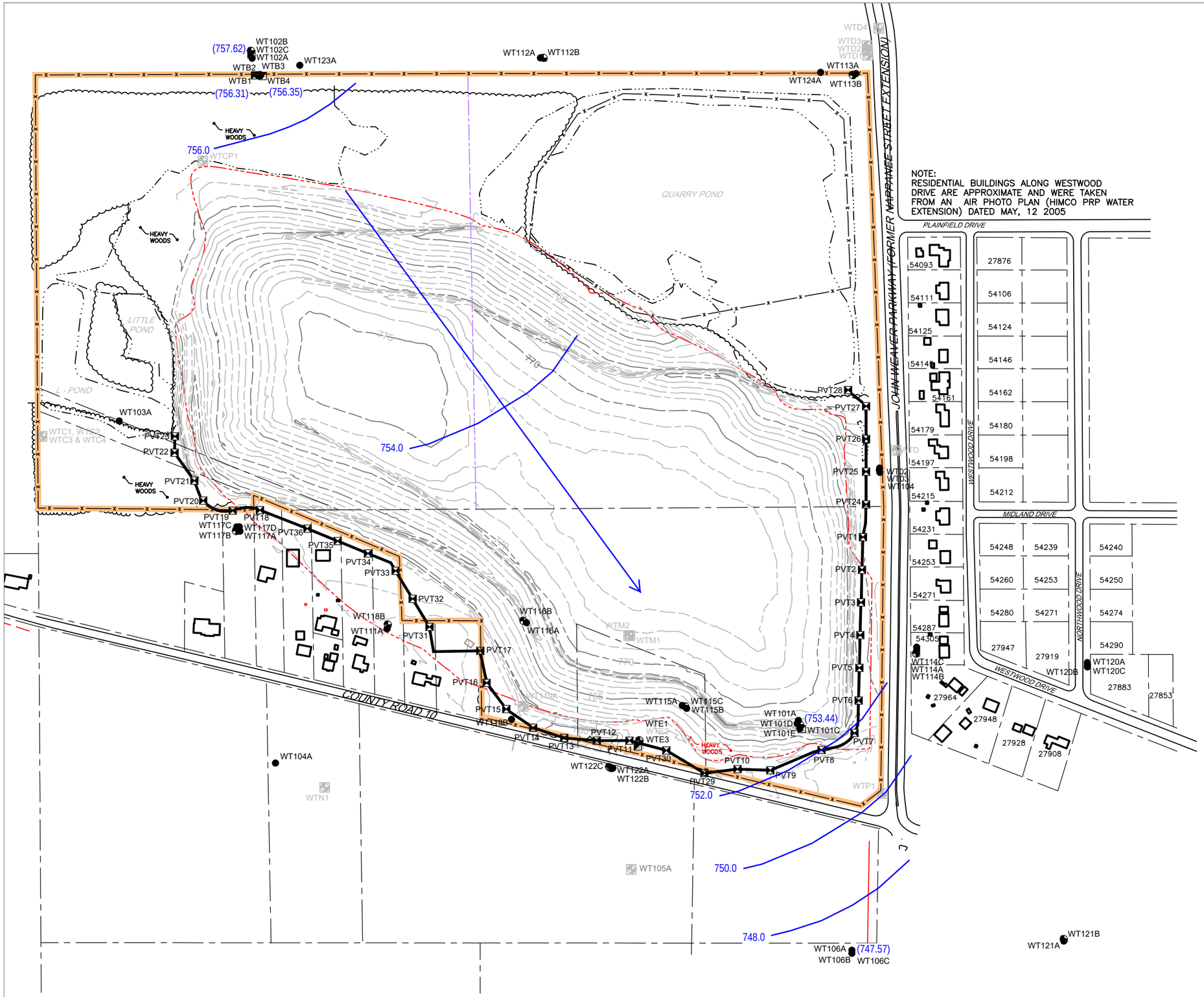
Drawn W.A.W.
Designed W.A.W.
Approved J.E.H.

Date 11/16/20
Figure 3.2

Scale In Feet (Approximate)
0 300

GES Groundwater & Environmental Services, Inc.

M:\Graphics\1800-Cleveland\Misc\Bayer Himco Landfill Elkhart\Bayer Himco Landfill Elkhart NEW.dwg, B-300, 8/14/2019 9:34:35 AM, WWESTERLUND



NOTE:
RESIDENTIAL BUILDINGS ALONG WESTWOOD DRIVE ARE APPROXIMATE AND WERE TAKEN FROM AN AIR PHOTO PLAN (HIMCO PRP WATER EXTENSION) DATED MAY, 12 2005

LEGEND

- PROPERTY BOUNDARY
- FENCE LINE
- --760--- AS-BUILT TOPSOIL CONTOUR
- LOWER AQUIFER MONITORING WELL
- INTERMEDIATE AQUIFER MONITORING WELL
- UPPER AQUIFER MONITORING WELL
- PASSIVE VAPOR TRENCH RISERS
- PASSIVE VAPOR TRENCH
- ABANDONED/DESTROYED MONITORING WELLS
- 756.31 GROUNDWATER ELEVATION (feet)
- (756.0) GROUNDWATER CONTOUR INTERVAL = 2.0FT
- GROUNDWATER FLOW DIRECTION

SOURCES:

SITE MAP BASED ON GHD SOURCE FILES DATED & MAY 16, 2019. **(INCLUDING PROPERTY BOUNDARIES)**

GOOGLE EARTH AERIAL PHOTOGRAPHY DATED MARCH 25, 2019.

Groundwater Contour Map
Lower Aquifer - October 2019

The HIMCO Site Trust
HIMCO Landfill
County Road 10
Elkhart, Indiana

Drawn W.A.W.
Designed W.A.W.
Approved J.E.H.
Date 11/17/20
Figure 3.3

Scale In Feet (Approximate)
0 300

GES
Groundwater & Environmental Services, Inc.

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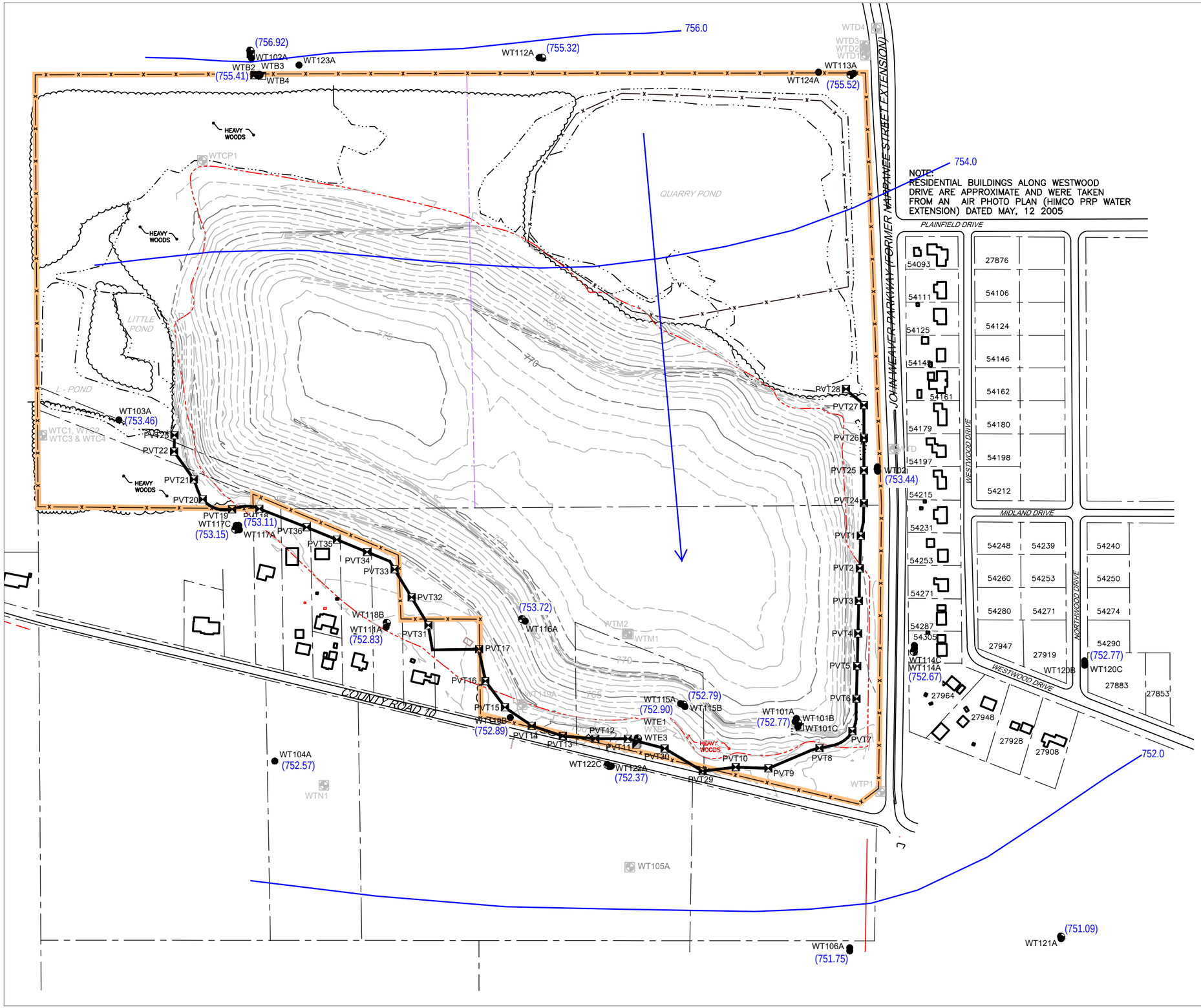

NOTE:
RESIDENTIAL BUILDINGS ALONG WESTWOOD DRIVE ARE APPROXIMATE AND WERE TAKEN FROM AN AIR PHOTO PLAN (HIMCO PRP WATER EXTENSION) DATED MAY, 12 2005

LEGEND

- PROPERTY BOUNDARY
- FENCE LINE
- --760--- AS-BUILT TOPSOIL CONTOUR
- LOWER AQUIFER MONITORING WELL
- INTERMEDIATE AQUIFER MONITORING WELL
- UPPER AQUIFER MONITORING WELL
- PASSIVE VAPOR TRENCH RISERS
- PASSIVE VAPOR TRENCH
- ABANDONED/DESTROYED MONITORING WELLS
- 752.77 GROUNDWATER ELEVATION (feet)
- (752.0) GROUNDWATER CONTOUR INTERVAL = 2.0FT
- GROUNDWATER FLOW DIRECTION

SOURCES:

SITE MAP BASED ON GHD SOURCE FILES DATED & MAY 16, 2019. **(INCLUDING PROPERTY BOUNDARIES)**

GOOGLE EARTH AERIAL PHOTOGRAPHY DATED MARCH 25, 2019.

Groundwater Contour Map
Upper Aquifer - October 2020

The HIMCO Site Trust
HIMCO Landfill
County Road 10
Elkhart, Indiana

Drawn W.A.W.
Designed W.A.W.
Approved J.E.H.

Date 11/17/20
Figure 3.4

Scale In Feet (Approximate)
0 300

GES
Groundwater & Environmental Services, Inc.

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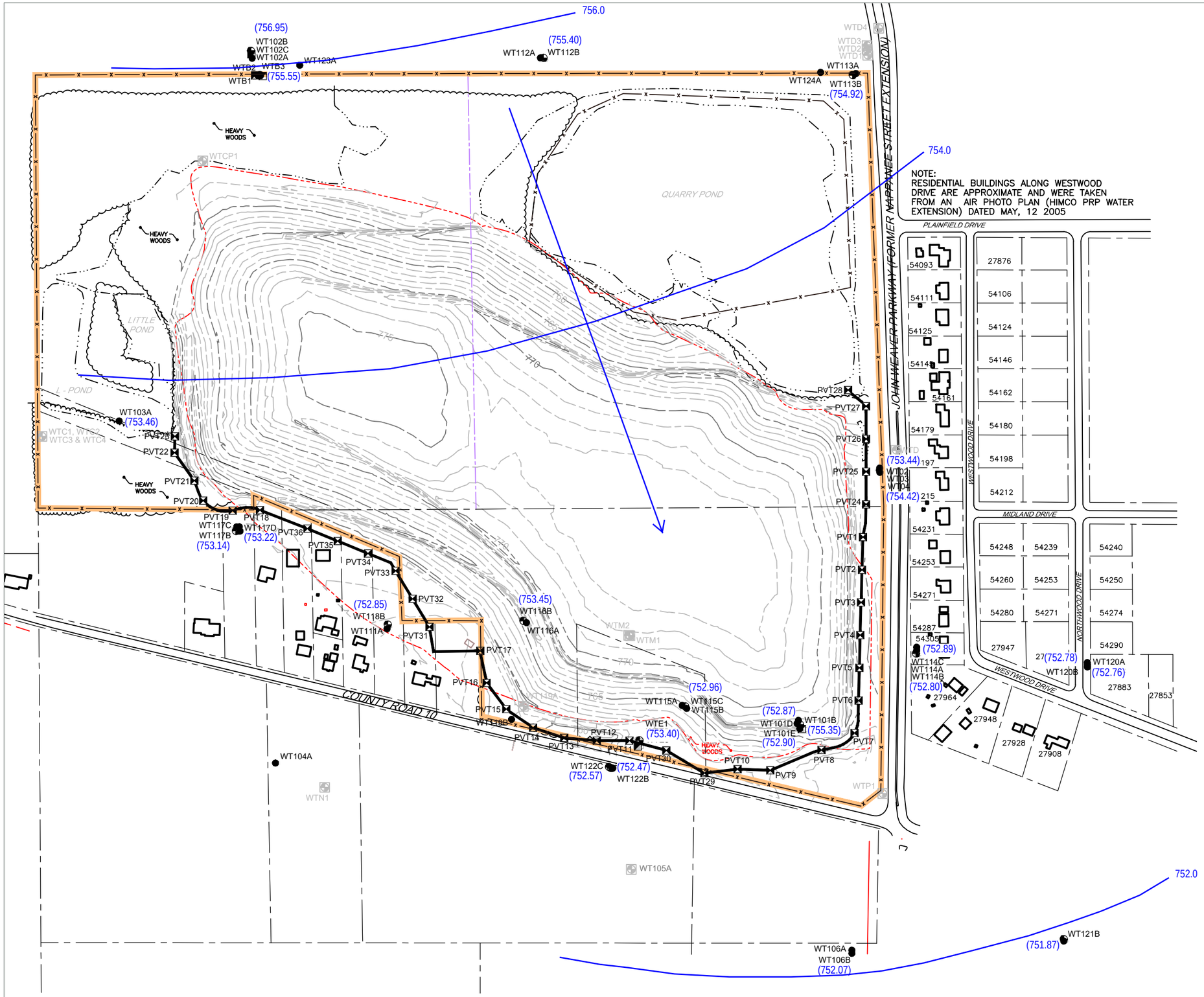

LEGEND

- PROPERTY BOUNDARY
- FENCE LINE
- --760--- AS-BUILT TOPSOIL CONTOUR
- LOWER AQUIFER MONITORING WELL
- INTERMEDIATE AQUIFER MONITORING WELL
- UPPER AQUIFER MONITORING WELL
- PASSIVE VAPOR TRENCH RISERS
- PASSIVE VAPOR TRENCH
- ABANDONED/DESTROYED MONITORING WELLS
- 754.92 GROUNDWATER ELEVATION (feet)
- (754.0) GROUNDWATER CONTOUR INTERVAL = 2.0FT
- GROUNDWATER FLOW DIRECTION

SOURCES:

SITE MAP BASED ON GHD SOURCE FILES DATED & MAY 16, 2019. **(INCLUDING PROPERTY BOUNDARIES)**

GOOGLE EARTH AERIAL PHOTOGRAPHY DATED MARCH 25, 2019.

Groundwater Contour Map
Intermediate Aquifer - October 2020

The HIMCO Site Trust
HIMCO Landfill
County Road 10
Elkhart, Indiana

Drawn W.A.W.
Designed W.A.W.
Approved J.E.H.

Date 11/17/20
Figure 3.5

Scale In Feet (Approximate)
0 300

GES
Groundwater & Environmental Services, Inc.

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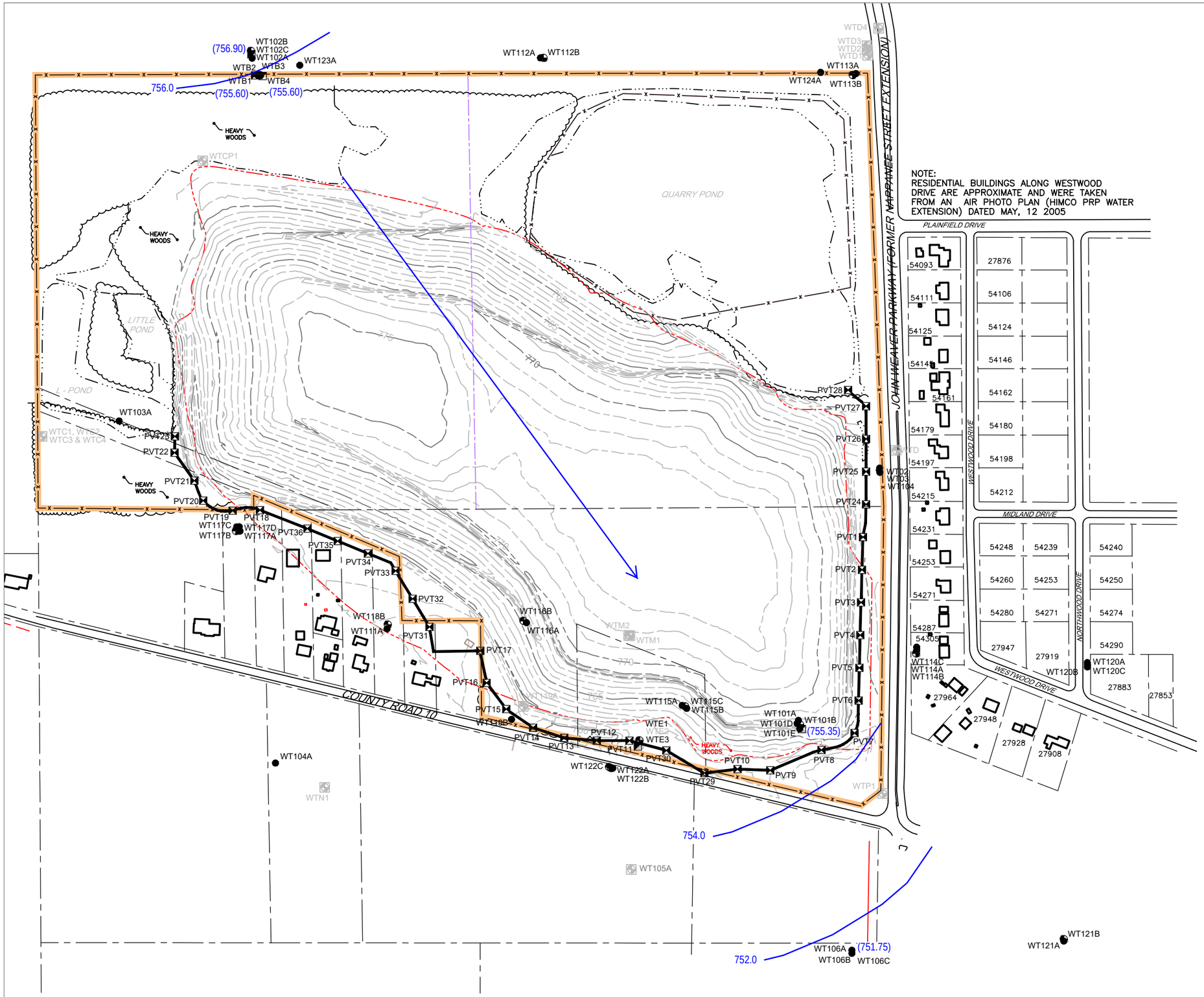

NOTE:
RESIDENTIAL BUILDINGS ALONG WESTWOOD DRIVE ARE APPROXIMATE AND WERE TAKEN FROM AN AIR PHOTO PLAN (HIMCO PRP WATER EXTENSION) DATED MAY, 12 2005

LEGEND

- PROPERTY BOUNDARY
- FENCE LINE
- --760--- AS-BUILT TOPSOIL CONTOUR
- LOWER AQUIFER MONITORING WELL
- INTERMEDIATE AQUIFER MONITORING WELL
- UPPER AQUIFER MONITORING WELL
- PASSIVE VAPOR TRENCH RISERS
- PASSIVE VAPOR TRENCH
- ABANDONED/DESTROYED MONITORING WELLS
- 754.22 GROUNDWATER ELEVATION (feet)
- (754.0) GROUNDWATER CONTOUR INTERVAL = 2.0FT
- GROUNDWATER FLOW DIRECTION

SOURCES:

SITE MAP BASED ON GHD SOURCE FILES DATED & MAY 16, 2019. **(INCLUDING PROPERTY BOUNDARIES)**

GOOGLE EARTH AERIAL PHOTOGRAPHY DATED MARCH 25, 2019.

Groundwater Contour Map
Lower Aquifer - October 2020

The HIMCO Site Trust
HIMCO Landfill
County Road 10
Elkhart, Indiana

Drawn W.A.W.
Designed W.A.W.
Approved J.E.H.
Date 11/17/20
Figure 3.6

Scale In Feet (Approximate)
0 300

GES
Groundwater & Environmental Services, Inc.

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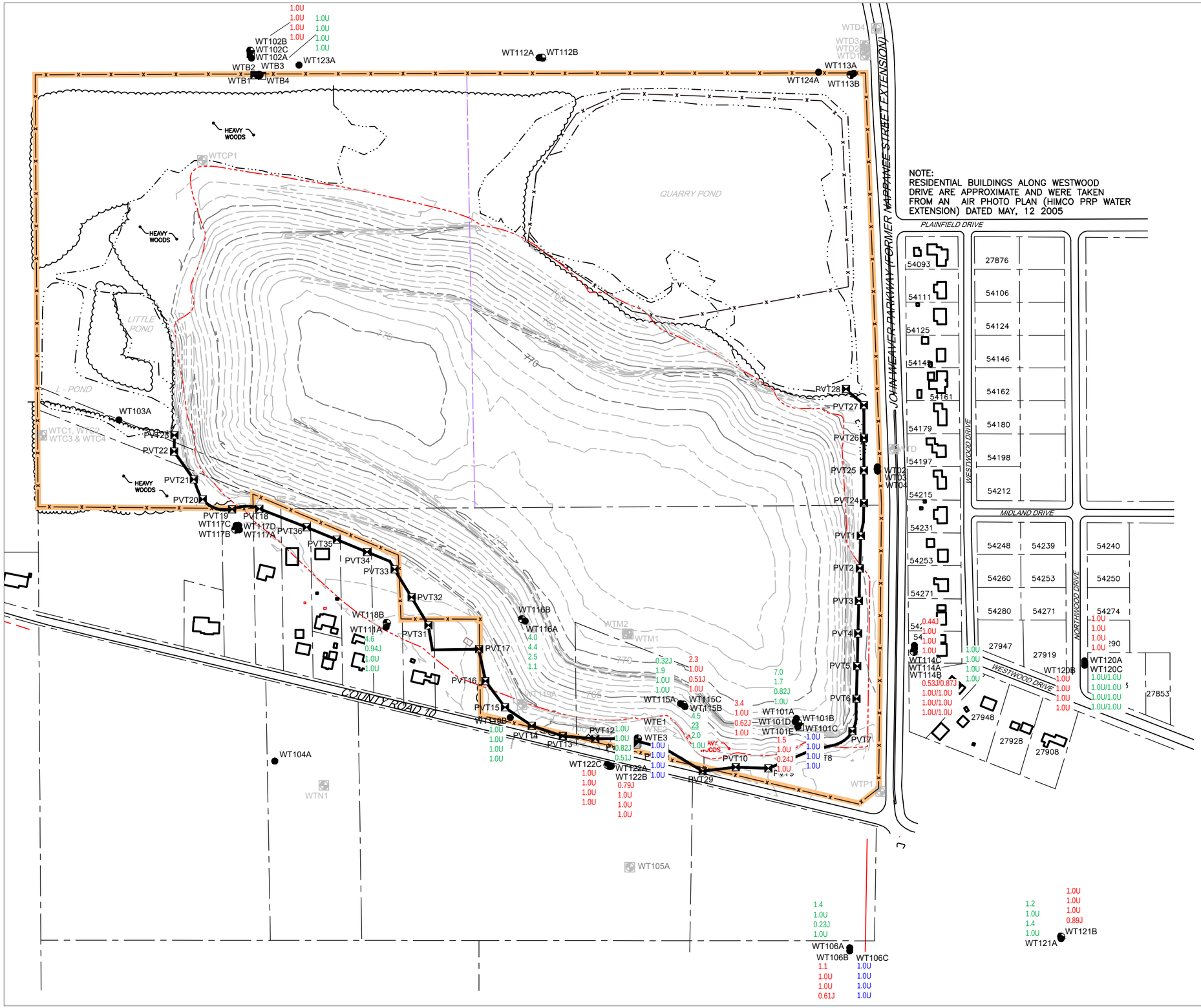


LEGEND

- PROPERTY BOUNDARY
- FENCE LINE
- --760--- AS-BUILT TOPSOIL CONTOUR
- LOWER AQUIFER MONITORING WELL
- INTERMEDIATE AQUIFER MONITORING WELL
- UPPER AQUIFER MONITORING WELL
- PASSIVE VAPOR TRENCH RISERS
- PASSIVE VAPOR TRENCH
- ABANDONED/DESTROYED MONITORING WELLS
- 4.5 1,1 DICHLOROETHANE CONCENTRATION ug/L
- 23 BENZENE CONCENTRATION ug/L
- 2.0 cis 1,2 DICHLOROETHANE CONCENTRATION ug/L
- 1.0U VINYL CHLORIDE CONCENTRATION ug/L
- UPPER AQUIFER SHOWN IN GREEN
- INTERMEDIATE AQUIFER SHOWN IN RED
- LOWER AQUIFER SHOWN IN BLUE

SOURCES:

SITE MAP BASED ON GHD SOURCE FILES DATED & MAY 16, 2019. **(INCLUDING PROPERTY BOUNDARIES)**

GOOGLE EARTH AERIAL PHOTOGRAPHY DATED MARCH 25, 2019.

Volatile Organic Compound Concentrations October - 2019

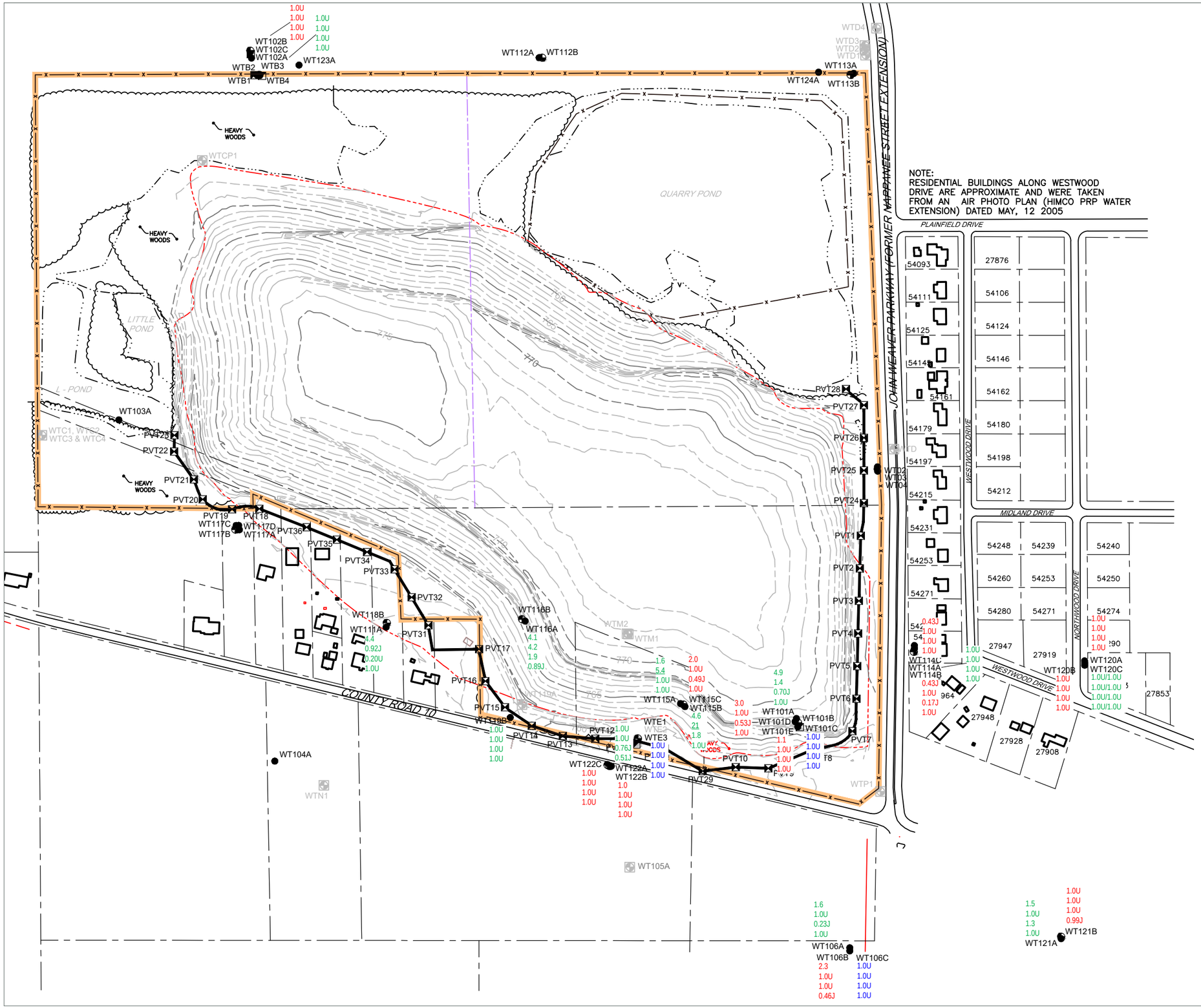
The HIMCO Site Trust
HIMCO Landfill
County Road 10
Elkhart, Indiana

Drawn W.A.W.
Designed W.A.W.
Approved J.E.H.
Date 12/22/20
Figure 4.1

Scale In Feet (Approximate)
0 300

GES Groundwater & Environmental Services, Inc.

M:\Graphics\1800-Cleveland\Misc\Bayer Himco Landfill Elkhart\Bayer Himco Landfill Elkhart NEW.dwg, B-300, 8/14/2019 9:34:35 AM, WWESTERLUND



LEGEND

- PROPERTY BOUNDARY
- FENCE LINE
- --760--- AS-BUILT TOPSOIL CONTOUR
- LOWER AQUIFER MONITORING WELL
- INTERMEDIATE AQUIFER MONITORING WELL
- UPPER AQUIFER MONITORING WELL
- PASSIVE VAPOR TRENCH RISERS
- PASSIVE VAPOR TRENCH
- ABANDONED/DESTROYED MONITORING WELLS
- 4.6 1,1 DICHLOROETHANE CONCENTRATION ug/L
- 21 BENZENE CONCENTRATION ug/L
- 1.8 cis 1,2 DICHLOROETHANE CONCENTRATION ug/L
- 1.0U VINYL CHLORIDE CONCENTRATION ug/L
- UPPER AQUIFER SHOWN IN GREEN
- INTERMEDIATE AQUIFER SHOWN IN RED
- LOWER AQUIFER SHOWN IN BLUE

SOURCES:

SITE MAP BASED ON GHD SOURCE FILES DATED & MAY 16, 2019. **(INCLUDING PROPERTY BOUNDARIES)**

GOOGLE EARTH AERIAL PHOTOGRAPHY DATED MARCH 25, 2019.

Volatile Organic Compound Concentrations October - 2020

The HIMCO Site Trust
HIMCO Landfill
County Road 10
Elkhart, Indiana

Drawn W.A.W.
Designed W.A.W.
Approved J.E.H.
Date 12/22/20
Figure 4.2

Scale In Feet (Approximate)
0 300

GES Groundwater & Environmental Services, Inc.

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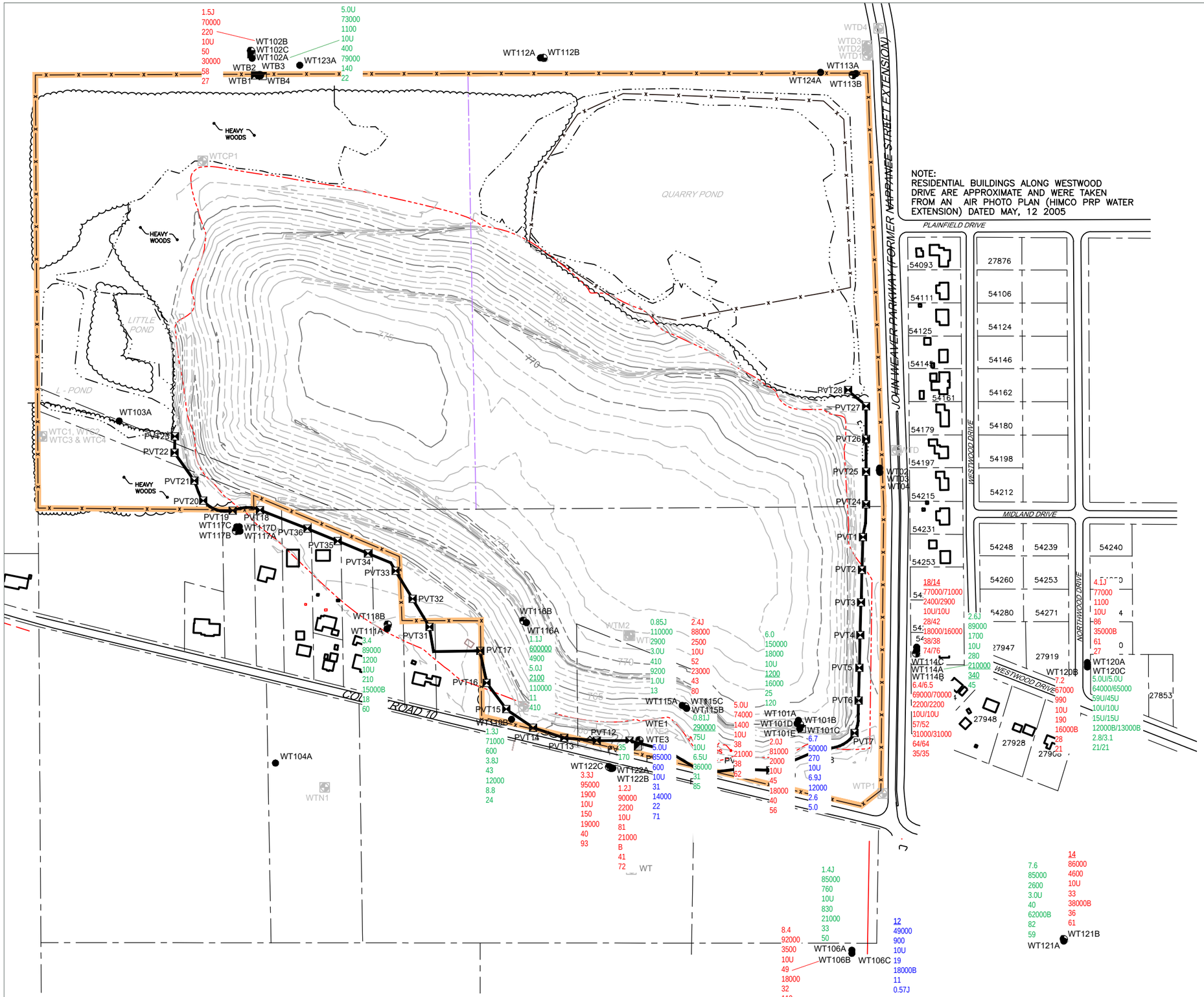

LEGEND

- PROPERTY BOUNDARY
- FENCE LINE
- 760 AS-BUILT TOPSOIL CONTOUR
- LOWER AQUIFER MONITORING WELL
- INTERMEDIATE AQUIFER MONITORING WELL
- UPPER AQUIFER MONITORING WELL
- PASSIVE VAPOR TRENCH RISERS
- PASSIVE VAPOR TRENCH
- ABANDONED/DESTROYED MONITORING WELLS

5.1	ARSENIC CONCENTRATION ug/L
190000	CALCIUM CONCENTRATION ug/L
21000B	IRON CONCENTRATION ug/L
3.0U	LEAD CONCENTRATION ug/L
1300	MANGANESE CONCENTRATION ug/L
20000	SODIUM CONCENTRATION ug/L
23	CHLORIDE CONCENTRATION ug/L
130	SULFATE CONCENTRATION ug/L

UPPER AQUIFER SHOWN IN GREEN

INTERMEDIATE AQUIFER SHOWN IN RED

LOWER AQUIFER SHOWN IN BLUE

SOURCES:

SITE MAP BASED ON GHD SOURCE FILES DATED & MAY 16, 2019. **(INCLUDING PROPERTY BOUNDARIES)**

GOOGLE EARTH AERIAL PHOTOGRAPHY DATED MARCH 25, 2019.

Metals Concentrations
October - 2019

The HIMCO Site Trust
HIMCO Landfill
County Road 10
Elkhart, Indiana

Drawn W.A.W.
Designed W.A.W.
Approved J.E.H.

Date 12/22/20
Figure 4.3

Scale In Feet (Approximate)
0 300

GES
Groundwater & Environmental Services, Inc.

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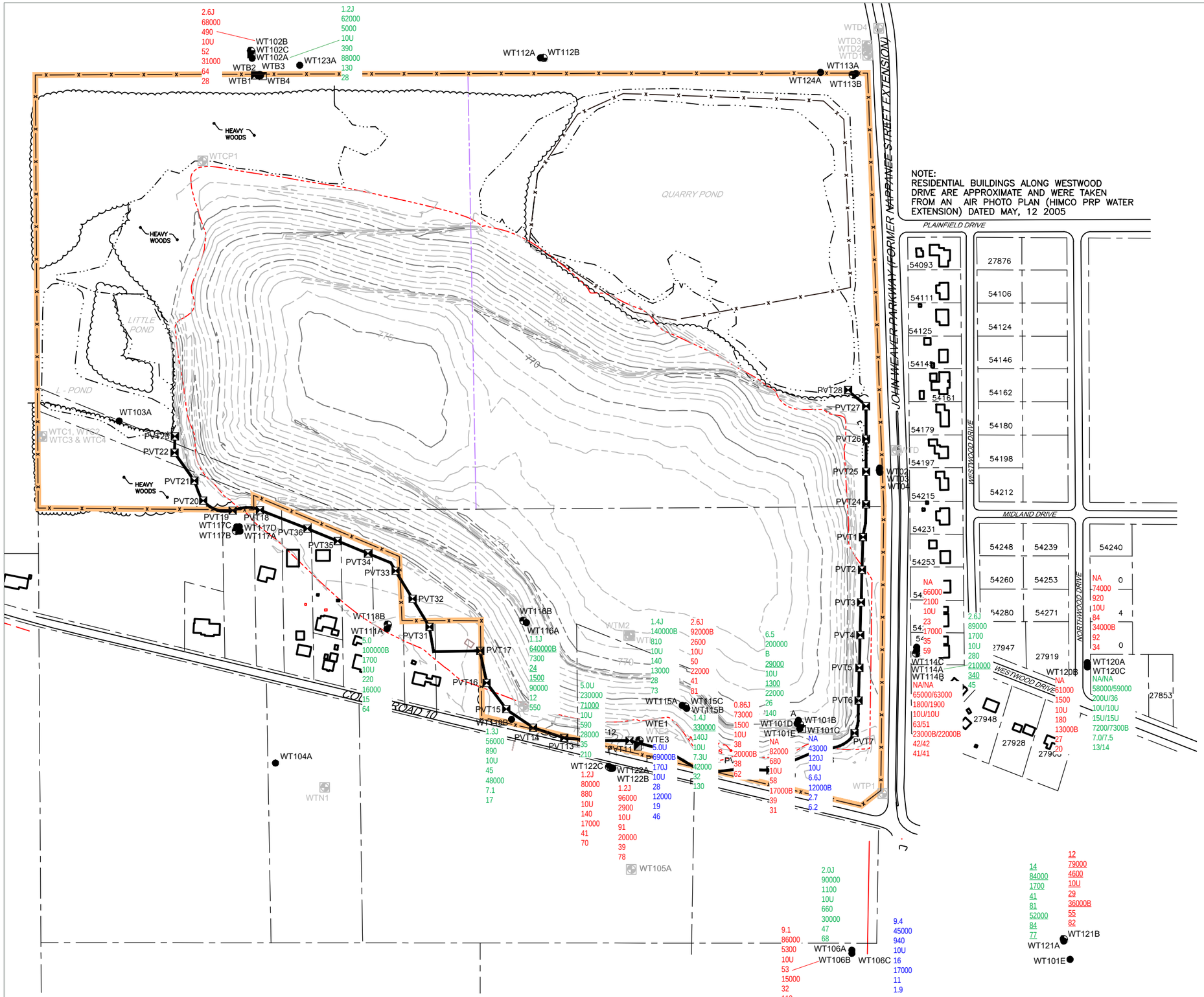

LEGEND

- PROPERTY BOUNDARY
- FENCE LINE
- --760--- AS-BUILT TOPSOIL CONTOUR
- LOWER AQUIFER MONITORING WELL
- INTERMEDIATE AQUIFER MONITORING WELL
- UPPER AQUIFER MONITORING WELL
- PASSIVE VAPOR TRENCH RISERS
- PASSIVE VAPOR TRENCH
- ABANDONED/DESTROYED MONITORING WELLS

1.1J	ARSENIC CONCENTRATION ug/L
640000B	CALCIUM CONCENTRATION ug/L
7300	IRON CONCENTRATION ug/L
24	LEAD CONCENTRATION ug/L
1500	MANGANESE CONCENTRATION ug/L
90000	SODIUM CONCENTRATION ug/L
12	CHLORIDE CONCENTRATION ug/L
550	SULFATE CONCENTRATION ug/L

UPPER AQUIFER SHOWN IN GREEN

INTERMEDIATE AQUIFER SHOWN IN RED

LOWER AQUIFER SHOWN IN BLUE

SOURCES:

SITE MAP BASED ON GHD SOURCE FILES DATED & MAY 16, 2019. **(INCLUDING PROPERTY BOUNDARIES)**

GOOGLE EARTH AERIAL PHOTOGRAPHY DATED MARCH 25, 2019.

Metals Concentrations
October - 2020

The HIMCO Site Trust
HIMCO Landfill
County Road 10
Elkhart, Indiana

Drawn W.A.W.
Designed W.A.W.
Approved J.E.H.

Date 12/22/20
Figure 4.4

Scale In Feet (Approximate)
0 300

GES
Groundwater & Environmental Services, Inc.

M:\Graphics\1800-Cleveland\Misc\Bayer Himco Landfill Elkhart\Bayer Himco Landfill Elkhart NEW.dwg, B-300, 8/14/2019 9:34:35 AM, WWESTERLUND

Tables

Table 1.1

Analytical Results Summary - VOC's
Himco Landfill
Elkhart, Indiana

Sample Location:			**WT101A**	**WT101A**	**WT101C**	**WT101C**	**WT101D**	**WT101D**	**WT101E**	**WT101E**	**WT102A**	**WT102A**
Sample ID:			**GW-WT101A-102519**	**GW-WT101A-102820**	**GW-WT101C-102419**	**GW-WT101C-102820**	**GW-WT101D-102519**	**GW-WT101D-102820**	**GW-WT101E-102419**	**GW-WT101E-102820**	**GW-WT102A-102419**	**GW-WT102A-102720**
Sample Date:			**10/25/2019**	**10/28/2020**	**10/24/2019**	**10/28/2020**	**10/25/2019**	**10/28/2020**	**10/24/2019**	**10/28/2020**	**10/24/2019**	**10/27/2020**
Sample Type:			**Normal**	**Normal**	**Normal**	**Normal**	**Normal**	**Normal**	**Normal**	**Normal**	**Normal**	**Normal**
Aquifer:			**Upper**	**Upper**	**Lower**	**Lower**	**Intermediate**	**Intermediate**	**Intermediate**	**Intermediate**	**Upper**	**Upper**
Parameters	**Units**	**GWRAOs**										
Volatile Organic Compounds												
1,1-Dichloroethane	ug/L	240	7.0	4.9	1.0 U	1.0 U	3.4	3.0	1.5	1.1	1.0 U	1.0 U
Benzene	ug/L	5	1.7	1.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	10000	--	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	ug/L	70	0.82 J	0.70 J	1.0 U	1.0 U	0.62 J	0.53 J	0.24 J	1.0 U	1.0 U	1.0 U
Vinyl chloride	ug/L	2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Footnotes:
Bold - detection above GWRAO
U - Not detected at the associated reporting limit.
J - Estimated concentration.

Table 1.1

Analytical Results Summary - VOC's
Himco Landfill
Elkhart, Indiana

Sample Location:		**WT102B**	**WT102B**	**WT106A**	**WT106A**	**WT106B**	**WT106B**	**WT106C**	**WT106C**	**WT111A**	**WT111A**
Sample ID:		**GW-WT102B-102419**	**GW-WT102B-102720**	**GW-WT106A-102419**	**GW-WT106A-102820**	**GW-WT106B-102419**	**GW-WT106B-102820**	**GW-WT106C-102319**	**GW-WT106C-102820**	**GW-WT111A-102319**	**GW-WT111A-102920**
Sample Date:		**10/24/2019**	**10/27/2020**	**10/24/2019**	**10/28/2020**	**10/24/2019**	**10/28/2020**	**10/23/2019**	**10/28/2020**	**10/23/2019**	**10/29/2020**
Sample Type:		**Normal**	**Normal**	**Normal**	**Normal**	**Normal**	**Normal**	**Normal**	**Normal**	**Normal**	**Normal**
Aquifer:		**Intermediate**	**Intermediate**	**Upper**	**Upper**	**Intermediate**	**Intermediate**	**Lower**	**Lower**	**Upper**	**Upper**
Parameters	**Units**										
Volatile Organic Compounds											
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.4	1.6	1.1	2.3	1.0 U	1.0 U	4.6	4.4
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.94 J	0.92 J
Carbon disulfide	ug/L	--	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	0.23 J	0.23 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.20 J
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.61 J	0.46 J	1.0 U	1.0 U	1.0 U	1.0 U

Footnotes:
Bold - detection above GWRAO
U - Not detected at the associated reporting limit.
J - Estimated concentration.

Table 1.1

Analytical Results Summary - VOC's
Himco Landfill
Elkhart, Indiana

Sample Location:		**WT114A**	**WT114A**	**WT114B**	**WT114B**	**WT114B**	**WT114B**	**WT114C**	**WT114C**	**WT114C**	**WT114C**
Sample ID:		**GW-WT114A-102419**	**GW-WT114A-102820**	**GW-WT114B-102419**	**GW-WT114B-102419-D**	**GW-WT114B-102820**	**GW-WT114B-102820-D**	**GW-WT114C-102419**	**GW-WT114C-102419-D**	**GW-WT114C-102820**	**GW-WT114C-102820-D**
Sample Date:		**10/24/2019**	**10/28/2020**	**10/24/2019**	**10/24/2019**	**10/28/2020**	**10/28/2020**	**10/24/2019**	**10/24/2019**	**10/28/2020**	**10/28/2020**
Sample Type:		**Normal**	**Normal**	**Normal**	**Duplicate**	**Normal**	**Duplicate**	**Normal**	**Duplicate**	**Normal**	**Duplicate**
Aquifer:		**Upper**	**Upper**	**Intermediate**	**Intermediate**	**Intermediate**	**Intermediate**	**Intermediate**	**Intermediate**	**Intermediate**	**Intermediate**
Parameters	**Units**										
Volatile Organic Compounds											
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	0.53 J	0.87 J	0.43 J	--	0.44 J	0.43 J	0.41 J	0.40 J
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	--	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	0.32 J	0.17 J	--	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U

Footnotes:
Bold - detection above GWRAO
U - Not detected at the associated reporting limit.
J - Estimated concentration.

Table 1.1

Analytical Results Summary - VOC's
Himco Landfill
Elkhart, Indiana

Sample Location:		**WT115A**	**WT115A**	**WT115B**	**WT115B**	**WT115C**	**WT115C**	**WT116A**	**WT116A**	**WT119B**	**WT119B**
Sample ID:		**GW-WT115A-102419**	**GW-WT115A-102920**	**GW-WT115B-102419**	**GW-WT115B-102920**	**GW-WT115C-102419**	**GW-WT115C-102920**	**GW-WT116A-102419**	**GW-WT116A-102920**	**GW-WT119B-102419**	**GW-WT119B-102820**
Sample Date:		**10/24/2019**	**10/29/2020**	**10/24/2019**	**10/29/2020**	**10/24/2019**	**10/29/2020**	**10/24/2019**	**10/29/2020**	**10/24/2019**	**10/28/2020**
Sample Type:		**Normal**	**Normal**	**Normal**	**Normal**	**Normal**	**Normal**	**Normal**	**Normal**	**Normal**	**Normal**
Aquifer:		**Upper**	**Upper**	**Upper**	**Upper**	**Intermediate**	**Intermediate**	**Upper**	**Upper**	**Upper**	**Upper**
Parameters	**Units**										
Volatile Organic Compounds											
1,1-Dichloroethane	ug/L	0.32 J	1.6	4.5	4.6	2.3	2.0	4.0	4.1	1.0 U	1.0 U
Benzene	ug/L	1.9	**5.4**	**23**	**21**	1.0 U	1.0 U	4.4	4.2	1.0 U	1.0 U
Carbon disulfide	ug/L	--	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	2.0	1.8	0.51 J	0.49 J	2.5	1.9	1.0 U	1.0 U
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.1	0.89 J	1.0 U	1.0 U

Footnotes:
Bold - detection above GWRAO
U - Not detected at the associated reporting limit.
J - Estimated concentration.

Table 1.1

Analytical Results Summary - VOC's
Himco Landfill
Elkhart, Indiana

Sample Location:		**WT120A**	**WT120A**	**WT120B**	**WT120B**	**WT120C**	**WT120C**	**WT120C**	**WT120C**	**WT121A**	**WT121A**
Sample ID:		**GW-WT120A-102319**	**GW-WT120A-102720**	**GW-WT120B-102319**	**GW-WT120B-102720**	**GW-WT120C-102319**	**GW-WT120C-102319-D**	**GW-WT120C-102820**	**GW-WT120C-102820-D**	**GW-WT121A-102319**	**GW-WT121A-111920**
Sample Date:		**10/23/2019**	**10/27/2020**	**10/23/2019**	**10/27/2020**	**10/23/2019**	**10/23/2019**	**10/28/2020**	**10/28/2020**	**10/23/2019**	**11/19/2020**
Sample Type:		**Normal**	**Normal**	**Normal**	**Normal**	**Normal**	**Duplicate**	**Normal**	**Duplicate**	**Normal**	**Normal**
Aquifer:		**Intermediate**	**Intermediate**	**Intermediate**	**Intermediate**	**Upper**	**Upper**	**Upper**	**Upper**	**Upper**	**Upper**
Parameters	**Units**										
Volatile Organic Compounds											
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.2	1.5
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	--	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.4	1.3
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Footnotes:
Bold - detection above GWRAO
U - Not detected at the associated reporting limit.
J - Estimated concentration.

Table 1.1

Analytical Results Summary - VOC's
Himco Landfill
Elkhart, Indiana

Sample Location:		**WT121B**	**WT121B**	**WT122A**	**WT122A**	**WT122B**	**WT122B**	**WT122C**	**WT122C**	**WTE3**	**WTE3**
Sample ID:		**GW-WT121B-102319**	**GW-WT121B-111920**	**GW-WT122A-102319**	**GW-WT122A-102820**	**GW-WT122B-102319**	**GW-WT122B-102820**	**GW-WT122C-102319**	**GW-WT122C-102820**	**GW-WTE3-102419**	**GW-WTE3-102920**
Sample Date:		**10/23/2019**	**11/19/2020**	**10/23/2019**	**10/28/2020**	**10/23/2019**	**10/28/2020**	**10/23/2019**	**10/28/2020**	**10/24/2019**	**10/29/2020**
Sample Type:		**Normal**	**Normal**	**Normal**	**Normal**	**Normal**	**Normal**	**Normal**	**Normal**	**Normal**	**Normal**
Aquifer:		**Intermediate**	**Intermediate**	**Upper**	**Upper**	**Intermediate**	**Intermediate**	**Intermediate**	**Intermediate**	**Lower**	**Lower**
Parameters	**Units**										
Volatile Organic Compounds											
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.79 J	1.0	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	--	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	0.82 J	0.76 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	ug/L	0.89 J	0.99 J	0.51 J	0.51 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Footnotes:
Bold - detection above GWRAO
U - Not detected at the associated reporting limit.
J - Estimated concentration.

Table 1.2

Analytical Results Summary - Metals
Lower Aquifer
Himco Landfill
Elkhart, Indiana

Sample Location:								**WT101C**	**WT101C**	**WT106C**	**WT106C**	**WTE3**	**WTE3**
Sample ID:								**GW-WT101C-102419**	**GW-WT101C-102820**	**GW-WT106C-102319**	**GW-WT106C-102820**	**GW-WTE3-102419**	**GW-WTE3-102920**
Sample Date:								**10/24/2019**	**10/28/2020**	**10/23/2019**	**10/28/2020**	**10/24/2019**	**10/29/2020**
Parameters	**Units**	***Primary MCL***	***Secondary MCL***	***RDA***	***RSL Tapwater***	***BV***	***GWRAO***						
Metals													
Aluminum	ug/L	-	50	-	37000	4910	37000	--	--	--	--	--	--
Arsenic	ug/L	10	-	-	0.045	5.58	10	6.7	6.1	**12**	9.4	5.0 U	5.0 U
Barium	ug/L	2000	-	-	7300	419	2000	--	--	--	--	--	--
Beryllium	ug/L	4	-	-	73	5.0 U	73	--	--	--	--	--	--
Calcium	ug/L	-	-	250000	-	239000	250000	50000	43000	49000	45000	85000	69000 B
Iron	ug/L	-	300	1000	26000	15300	26000	270	120 J	900	940	600	170 J
Lead	ug/L	15	-	-	-	3.9	15	10 U	10 U	10 U	10 U	10 U	10 U
Manganese	ug/L	-	50	-	880	1140	1140	6.9 J	6.6 J	19	16	31	28
Mercury	ug/L	2	-	-	0.57	0.20 U	2	--	--	--	--	--	--
Sodium	ug/L	-	-	150000	-	80600	150000	12000	12000 B	18000 B	17000	14000	12000
General Chemistry													
Chloride	mg/L	-	250	-	-	77.7	250	2.6	2.7	11	11	22	19
Sulfate	mg/L	-	250	-	-	73.2	250	5.0	6.2	0.57 J	1.9	71	46

Footnotes:
Bold - detection above GWRAO
U - Not detected at reporting limit
J - Estimated concentration

Table 1.3

Analytical Results Summary - Metals
Intermediate Aquifer
Himco Landfill
Elkhart, Indiana

Sample Location:								**WT101D**	**WT101D**	**WT101E**	**WT101E**	**WT102B**
Sample ID:								**GW-WT101D-102519**	**GW-WT101D-102820**	**GW-WT101E-102419**	**GW-WT101E-102820**	**GW-WT102B-102419**
Sample Date:								**10/25/2019**	**10/28/2020**	**10/24/2019**	**10/28/2020**	**10/24/2019**
Parameters	**Units**	***Primary MCL***	***Secondary MCL***	***RDA***	***RSL Tapwater***	***BV***	***GWRAO***					
Metals												
Aluminum	ug/L	-	50	-	37000	161	37000	--	--	--	--	--
Arsenic	ug/L	10	-	-	0.045	7.05	10	5.0 U	0.86 J	2.0 J	1.8 J	1.5 J
Barium	ug/L	2000	-	-	7300	200 U	2000	--	--	--	--	--
Beryllium	ug/L	4	-	-	73	5.0 U	5.0 U	--	--	--	--	--
Calcium	ug/L	-	-	250000	-	85800	250000	74000	73000	81000	82000	70000
Iron	ug/L	-	300	1000	26000	2170	26000	1400	1500	2000	680	220
Lead	ug/L	15	-	-	-	3.0 U	15	10 U	10 U	10 U	10 U	10 U
Manganese	ug/L	-	50	-	880	170	880	38	38	45	58	50
Mercury	ug/L	2	-	-	0.57	0.2 U	2	--	--	--	--	--
Sodium	ug/L	-	-	150000	-	31600	150000	21000	20000 B	18000	17000 B	30000
General Chemistry												
Chloride	mg/L	-	250	-	-	54.5	250	35	39	40	39	58
Sulfate	mg/L	-	250	-	-	370	370	62	67	56	31	27

Footnotes:
Bold - detection above GWRAO
U - Not detected at reporting limit
J - Estimated concentration

Table 1.3

Analytical Results Summary - Metals
Intermediate Aquifer
Himco Landfill
Elkhart, Indiana

Sample Location:		**WT102B**	**WT106B**	**WT106B**	**WT114B**	**WT114B**	**WT114B**	**WT114B**	**WT114C**
Sample ID:		**GW-WT102B-102720**	**GW-WT106B-102419**	**GW-WT106B-102820**	**GW-WT114B-102419**	**GW-WT114B-102419-D**	**GW-WT114B-102820**	**GW-WT114B-102419-D**	**GW-WT114C-102419**
Sample Date:		**10/27/2020**	**10/24/2019**	**10/28/2020**	**10/24/2019**	**10/24/2019**	**10/28/2020**	**10/28/2020**	**10/24/2019**
						Duplicate		**Duplicate**	
Parameters	**Units**								
Metals									
Aluminum	ug/L	--	--	--	--	--	--	--	--
Arsenic	ug/L	2.6 J	8.4	9.1	6.4	6.5	5.8	6.4	**18**
Barium	ug/L	--	--	--	--	--	--	--	--
Beryllium	ug/L	--	--	--	--	--	--	--	--
Calcium	ug/L	68000	95000	86000	69000	70000	65000	63000	77000
Iron	ug/L	490	3500	5300	2200	2200	1800	1900	2400
Lead	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Manganese	ug/L	52	49	53	57	52	63	51	28
Mercury	ug/L	--	--	--	--	--	--	--	--
Sodium	ug/L	31000	18000	15000	31000	31000	23000 B	22000 B	18000
General Chemistry									
Chloride	mg/L	64	32	32	64	64	42	42	38
Sulfate	mg/L	28	110	110	35	35	41	41	74

Footnotes:
Bold - detection above GWRAO
U - Not detected at reporting limit
J - Estimated concentration

Table 1.3

Analytical Results Summary - Metals
Intermediate Aquifer
Himco Landfill
Elkhart, Indiana

Sample Location:		**WT114C**	**WT114C**	**WT114C**	**WT115C**	**WT115C**	**WT120A**	**WT120A**	**WT120B**
Sample ID:		**GW-WT114C-102419-D**	**GW-WT114C-102820**	**GW-WT114C-102820-D**	**GW-WT115C-102419**	**GW-WT115C-102920**	**GW-WT120A-102319**	**GW-WT120A-102720**	**GW-WT120B-102319**
Sample Date:		**10/24/2019**	**10/28/2020**	**10/28/2020**	**10/24/2019**	**10/29/2020**	**10/23/2019**	**10/27/2020**	**10/23/2019**
		Duplicate		**Duplicate**					
Parameters	**Units**								
Metals									
Aluminum	ug/L	--	--	--	--	--	--	--	--
Arsenic	ug/L	**14**	**16**	--	2.4 J	2.6 J	4.1 J	3.5 J	7.2
Barium	ug/L	--	--	--	--	--	--	--	--
Beryllium	ug/L	--	--	--	--	--	--	--	--
Calcium	ug/L	71000	66000	--	88000	92000 B	77000	74000	67000
Iron	ug/L	2900	2100	--	2500	2600	1100	920	990
Lead	ug/L	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U
Manganese	ug/L	42	23	--	52	50	86	84	190
Mercury	ug/L	--	--	--	--	--	--	--	--
Sodium	ug/L	16000	17000 B	--	23000	22000	35000 B	34000 B	16000 B
General Chemistry									
Chloride	mg/L	38	35	--	43	41	61	92	28
Sulfate	mg/L	76	59	--	80	81	27	34	21

Footnotes:
Bold - detection above GWRAO
U - Not detected at reporting limit
J - Estimated concentration

Table 1.3

Analytical Results Summary - Metals
Intermediate Aquifer
Himco Landfill
Elkhart, Indiana

Sample Location:		**WT120B**	**WT121B**	**WT121B**	**WT122B**	**WT122B**	**WT122C**	**WT122C**
Sample ID:		**GW-WT120B-102720**	**GW-WT121B-102319**	**GW-WT121B-111920**	**GW-WT122B-102319**	**GW-WT122B-102820**	**GW-WT122C-102319**	**GW-WT122C-102820**
Sample Date:		**10/27/2020**	**10/23/2019**	**11/19/2020**	**10/23/2019**	**10/28/2020**	**10/23/2019**	**10/28/2020**
Parameters	**Units**							
Metals								
Aluminum	ug/L	--	--	--	--	--	--	--
Arsenic	ug/L	5.8	**14**	**12**	1.2 J	1.2 J	3.3 J	1.2 J
Barium	ug/L	--	--	--	--	--	--	--
Beryllium	ug/L	--	--	--	--	--	--	--
Calcium	ug/L	61000	86000	79000	90000	96000	95000	80000
Iron	ug/L	1500	4600	4600	2200	2900	1900	880
Lead	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Manganese	ug/L	180	33	29	81	91	150	140
Mercury	ug/L	--	--	--	--	--	--	--
Sodium	ug/L	13000 B	38000 B	36000	21000 B	20000	19000	17000
General Chemistry								
Chloride	mg/L	27	36	55	41	39	40	41
Sulfate	mg/L	20	61	82	72	78	93	70

Footnotes:
Bold - detection above GWRAO
U - Not detected at reporting limit
J - Estimated concentration

Table 1.4

Analytical Results Summary - Metals
Upper Aquifer
Himco Landfill
Elkhart, Indiana

Sample Location:								**WT101A**	**WT101A**	**WT102A**	**WT102A**	**WT106A**
Sample ID:								**GW-WT101A-102519**	**GW-WT101A-102820**	**GW-WT102A-102419**	**GW-WT102A-102720**	**GW-WT106A-102419**
Sample Date:								**10/25/2019**	**10/28/2020**	**10/24/2019**	**10/27/2020**	**10/24/2019**
Parameters	**Units**	***Primary MCL***	***Secondary MCL***	***RDA***	***RSL Tapwater***	***BV***	***GWRAO***					
Metals												
Aluminum	ug/L	-	50	-	37000	651	37000	--	--	--	--	--
Arsenic	ug/L	10	-	-	0.045	2 U	10	6.0	6.5	5.0 U	1.2 J	1.4 J
Barium	ug/L	2000	-	-	7300	200 U	2000	--	--	--	--	--
Beryllium	ug/L	4	-	-	73	5.0 U	5.0 U	--	--	--	--	--
Calcium	ug/L	-	-	250000	-	242000	250000	150000	200000 B	73000	62000	85000
Iron	ug/L	-	300	1000	26000	7100	26000	18000	**29000**	1100	5000	760
Lead	ug/L	15	-	-	-	3.0 U	15	10 U	10 U	10 U	10 U	10 U
Manganese	ug/L	-	50	-	880	1070	1070	**1200**	**1300**	400	390	830
Mercury	ug/L	2	-	-	0.57	0.2 U	2	--	--	--	--	--
Sodium	ug/L	-	-	150000	-	102000	150000	16000	22000	73000	88000	21000
General Chemistry												
Chloride	mg/L	-	250	-	-	228	250	25	26	140	130	33
Sulfate	mg/L	-	250	-	-	637	637	120	140	22	28	50

Footnotes:
Bold - detection above GWRAO
U - Not detected at reporting limit
J - Estimated concentration

Table 1.4

Analytical Results Summary - Metals
Upper Aquifer
Himco Landfill
Elkhart, Indiana

Sample Location:		**WT106A**	**WT111A**	**WT111A**	**WT114A**	**WT114A**	**WT115A**	**WT115A**	**WT115B**
Sample ID:		**GW-WT106A-102820**	**GW-WT111A-102319**	**GW-WT111A-102920**	**GW-WT114A-102419**	**GW-WT114A-102820**	**GW-WT115A-102419**	**GW-WT115A-102920**	**GW-WT115B-102419**
Sample Date:		**10/28/2020**	**10/23/2019**	**10/29/2020**	**10/24/2019**	**10/28/2020**	**10/24/2019**	**10/29/2020**	**10/24/2019**
Parameters	**Units**								
Metals									
Aluminum	ug/L	--	--	--	--	--	--	--	--
Arsenic	ug/L	2.0 J	3.4	5.0	2.6 J	5.0 U	0.85 J	1.4 J	0.81 J
Barium	ug/L	--	--	--	--	--	--	--	--
Beryllium	ug/L	--	--	--	--	--	--	--	--
Calcium	ug/L	90000	89000	100000 B	89000	91000	110000	140000 B	**290000**
Iron	ug/L	1100	1200	1700	1700	190 J	2900	810	75 U
Lead	ug/L	10 U	10 U	10 U	10 U	10 U	3.0 U	10 U	10 U
Manganese	ug/L	660	210	220	280	210	410	140	6.5 U
Mercury	ug/L	--	--	--	--	--	--	--	--
Sodium	ug/L	30000	15000 B	16000	**210000**	**230000**	9200	13000	36000
General Chemistry									
Chloride	mg/L	47	18	15	**340**	--	1.0 U	28	31
Sulfate	mg/L	68	60	64	45	--	13	73	85

Footnotes:
Bold - detection above GWRAO
U - Not detected at reporting limit
J - Estimated concentration

Table 1.4

Analytical Results Summary - Metals
Upper Aquifer
Himco Landfill
Elkhart, Indiana

Sample Location:		**WT115B**	**WT116A**	**WT116A**	**WT119B**	**WT119B**	**WT120C**	**WT120C**	**WT120C**
Sample ID:		**GW-WT115B-102920**	**GW-WT116A-102419**	**GW-WT116A-102920**	**GW-WT119B-102419**	**GW-WT119B-102820**	**GW-WT120C-102319**	**GW-WT120C-102319-D**	**GW-WT120C-102820**
Sample Date:		**10/29/2020**	**10/24/2019**	**10/29/2020**	**10/24/2019**	**10/28/2020**	**10/23/2019**	**10/23/2019**	**10/28/2020**
								Duplicate	
Parameters	**Units**								
Metals									
Aluminum	ug/L	--	--	--	--	--	--	--	--
Arsenic	ug/L	1.4 J	1.1 J	9.1	1.3 J	1.3 J	5.0 U	5.0 U	5.0 U
Barium	ug/L	--	--	--	--	--	--	--	--
Beryllium	ug/L	--	--	--	--	--	--	--	--
Calcium	ug/L	**330000**	**600000**	**640000 B**	71000	56000	64000	65000	58000
Iron	ug/L	140 J	4900	7300	600	890	59 U	45 J	200 U
Lead	ug/L	10 U	5.0 J	**24**	3.8 J	10 U	10 U	10 U	10 U
Manganese	ug/L	7.3 J	**2100**	**1500**	43	45	15 U	15 U	15 U
Mercury	ug/L	--	--	--	--	--	--	--	--
Sodium	ug/L	42000	110000	90000	12000	48000	12000 B	13000 B	7200
General Chemistry									
Chloride	mg/L	32	11	12	8.8	7.1	2.8	3.1	7.0
Sulfate	mg/L	130	410	550	24	17	21	21	13

Footnotes:
Bold - detection above GWRAO
U - Not detected at reporting limit
J - Estimated concentration

Table 1.4

Analytical Results Summary - Metals
Upper Aquifer
Himco Landfill
Elkhart, Indiana

Sample Location:		**WT120C**	**WT121A**	**WT121A**	**WT122A**	**WT122A**
Sample ID:		**GW-WT120C-102820-D**	**GW-WT121A-102319**	**GW-WT121A-111920**	**GW-WT122A-102319**	**GW-WT122A-102820**
Sample Date:		**10/28/2020**	**10/23/2019**	**11/19/2020**	**10/23/2019**	**10/28/2020**
		Duplicate				
Parameters	**Units**					
Metals						
Aluminum	ug/L	--	--	--	--	--
Arsenic	ug/L	5.0 U	7.6	**14**	--	5.0 U
Barium	ug/L	--	--	--	--	--
Beryllium	ug/L	--	--	--	--	--
Calcium	ug/L	59000	85000	84000	--	230000
Iron	ug/L	36	2600	1700	--	**71000**
Lead	ug/L	10 U	3.0 U	**41**	--	10 U
Manganese	ug/L	15 U	40	81	--	590
Mercury	ug/L	--	--	--	--	--
Sodium	ug/L	7300 B	62000 B	52000	--	28000
General Chemistry						
Chloride	mg/L	7.5	82	84	35	35
Sulfate	mg/L	14	59	77	170	210

Footnotes:
Bold - detection above GWRAO
U - Not detected at reporting limit
J - Estimated concentration

Table 2.1

Monitoring Well Status
Himco Landfill
Elkhart, Indiana

Well ID	Status	Installation Date	Screen Length (ft)	Material	Casing Diameter (inches)	Installed Depth (ft bgs)	Reference Elevation (ft AMSL)	Ground Surface (ft AMSL)	Top of Well Screen (ft AMSL)	Bottom of Well Screen (ft AMSL)	Aquifer Designation	Northing	Easting
Upper Aquifer Wells (760 - 710 ft AMSL)													
WT101A	Functional	11/12/1990	10.00	Stainless	2	16.3	768.69	765.67	759.37	749.37	Upper	2351887.31	235722.28
WT102A	Functional	11/10/1990	10.00	Stainless	2	16.0	768.50	766.19	760.19	750.19	Upper	2355111.73	234055.37
WT103A	Functional	11/11/1990	10.00	Stainless	2	16.0	760.11	757.60	751.60	741.60	Upper	2352799.65	233645.99
WT104A	Functional	11/12/1990	10.00	Stainless	2	16.3	765.50	761.75	755.45	745.45	Upper	2351753.96	234123.98
WT105A	Functional	11/10/1990	10.00	Stainless	2	16.0	762.37	760.07	754.07	744.07	Upper	2351430.59	235211.48
WT106A	Functional	11/9/1990	10.00	Stainless	2	16.3	760.98	758.46	752.16	742.16	Upper	2351184.52	235885.61
WT111A	Functional	9/10/1991	10.00	Stainless	2	20.0	766.00	764.30	754.30	744.30	Upper	2352165.35	234465.00
WT112A	Functional	8/23/1995	10.00	PVC	2	15.4	765.28	763.71	758.31	748.31	Upper	2353912.48	234933.96
WT113A	Functional	8/10/1995	10.00	PVC	2	21.7	771.27	769.32	757.62	747.62	Upper	2353866.00	235898.24
WT114A	Functional	8/21/1995	10.00	PVC	2	22.0	768.62	766.82	754.82	744.82	Upper	2352102.29	236069.62
WT115A	Functional	8/22/1995	10.00	PVC	2	17.4	766.65	762.52	755.12	745.12	Upper	2351932.55	235367.21
WT115B	Functional	2/22/2011	5.00	PVC	2	28.0	766.27	762.38	739.38	734.38	Upper	2351923.36	235380.68
WT116A	Functional	8/17/1995	10.00	PVC	2	12.6	767.21	763.43	760.83	750.83	Upper	2352185.01	234891.12
WT117A	Functional	8/15/1995	10.00	PVC	2	15.5	766.70	764.66	759.16	749.16	Upper	2352463.27	234015.45
WT117C	Functional	5/6/2010	5.00	PVC	2	28.0	766.53	763.74	740.74	735.71	Upper	2352476.42	234005.49
WT119A	Abandoned	10/14/1998	10.00	PVC	2	17.5	763.26				Upper	2351868.88	234816.74
WT119B	Functional	5/10/2010	10.00	PVC	2	18.0	764.87	760.61	752.32	742.32	Upper	2351889.06	234845.27
WT120C	Functional	2/24/2011	5.00	PVC	2	17.0	762.11	762.57	750.57	745.57	Upper	2352052.29	236578.54
WT121A	Functional	2/28/2011	5.00	PVC	2	24.0	758.48	758.87	739.87	734.87	Upper	2351213.71	236533.21
WT122A	Functional	2/23/2011	5.00	PVC	2	25.0	762.58	763.03	743.03	738.03	Upper	2351740.44	235154.91
WT123A	Functional	9/27/2011	10.00	PVC	2	17.0		NOT SURVEYED			Upper	NOT SURVEYED	
WT124A	Functional	9/27/2011	10.00	PVC	2	22.0		NOT SURVEYED			Upper	NOT SURVEYED	
WTB2	Functional	11/3/1977	10.00	Black Steel	2	11.9	762.70	760.82	758.92	748.92	Upper	2353858.07	234068.99
WTO1	Destroyed	5/1/1979	5.00	PVC	2	30.0		NOT SURVEYED			Upper	2352650.39	235975.90
WTO2	Functional	5/5/2010	5.00	PVC	2	37.0	765.95	763.15	731.15	726.15	Upper	2352659.27	235970.66

Table 2.1

Monitoring Well Status
Himco Landfill
Elkhart, Indiana

Well ID	Status	Installation Date	Screen Length (ft)	Material	Casing Diameter (inches)	Installed Depth (ft bgs)	Reference Elevation (ft AMSL)	Ground Surface (ft AMSL)	Top of Well Screen (ft AMSL)	Bottom of Well Screen (ft AMSL)	Aquifer Designation	Northing	Easting
Intermediate Aquifer Wells (710 - 610 ft AMSL)													
WT101B	Functional	12/14/1990	5.00	Stainless	2	98.0	768.95	764.89	671.89	666.89	Intermediate	2351874.25	235726.99
WT101D	Functional	5/3/2010	5.00	PVC	2	63.0	768.81	765.27	703.63	698.30	Intermediate	2351877.98	235718.51
WT101E	Functional	5/4/2010	5.00	PVC	2	123.0	768.68	764.30	643.52	638.52	Intermediate	2351862.22	235726.63
WT102B	Functional	12/2/1990	5.00	Stainless	2	65.4	768.22	765.87	705.47	700.47	Intermediate	2355133.90	234051.70
WT106B	Functional	5/10/2010	5.00	PVC	2	115.0	761.50	758.71	648.71	643.71	Intermediate	2351175.05	235885.57
WT112B	Functional	8/23/1995	5.00	PVC	2	59.4	765.54	763.55	709.15	704.15	Intermediate	2353912.39	234943.21
WT113B	Functional	8/10/1995	5.00	PVC	2	67.2	771.47	769.52	707.32	702.32	Intermediate	2353861.31	235888.26
WT114B	Functional	8/22/1995	5.00	PVC	2	65.3	768.77	766.95	706.65	701.65	Intermediate	2352092.21	236067.36
WT114C	Functional	5/11/2010	5.00	PVC	2	127.0	768.87	766.14	644.14	639.14	Intermediate	2352110.84	236068.83
WT115C	Functional	2/22/2011	5.00	PVC	2	68.0	766.03	762.37	699.37	694.37	Intermediate	2351928.83	235375.65
WT116B	Functional	8/17/1995	5.00	PVC	2	58.4	766.85	762.83	709.43	704.43	Intermediate	2352189.86	234881.45
WT117B	Functional	8/14/1995	5.00	PVC	2	61.3	766.13	764.20	707.90	702.90	Intermediate	2352463.66	234002.76
WT117D	Functional	5/6/2010	5.00	PVC	2	112.0	766.58	763.90	656.90	651.90	Intermediate	2352476.61	234013.25
WT118B	Functional	8/18/1995	5.00	PVC	2	62.5	765.99	763.56	706.06	701.06	Intermediate	2352178.19	234466.70
WT120A	Functional	5/12/2010	5.00	PVC	2	73.0	762.19	762.43	694.43	689.43	Intermediate	2352059.17	236578.58
WT120B	Functional	5/12/2010	5.00	PVC	2	117.0	762.18	762.58	650.58	645.58	Intermediate	2352065.60	236578.16
WT121B	Functional	2/28/2011	5.00	PVC	2	63.0	758.46	758.74	700.74	695.74	Intermediate	2351219.53	236532.99
WT122B	Functional	2/23/2011	5.00	PVC	2	63.0	762.75	762.98	704.98	699.98	Intermediate	2351740.49	235148.61
WT122C	Functional	2/24/2011	5.00	PVC	2	103.0	762.63	762.97	664.97	659.97	Intermediate	2351743.38	235142.97
WTB3	Functional	10/17/1977	10.00	PVC	5	135.0	762.74	760.62	635.62	625.62	Intermediate	2353858.37	234077.13
WTE1	Functional	10/11/1977	10.00	PVC	5	81.0	766.11	762.50	691.50	681.50	Intermediate	2351825.22	235236.59
WTO3	Functional	5/5/2010	5.00	PVC	2	92.0	765.95	763.00	676.00	671.00	Intermediate	2352652.85	235969.84
WTO4	Functional	5/4/2010	5.00	PVC	2	132.0	765.95	762.77	635.77	630.77	Intermediate	2352646.28	235971.31

Table 2.1

Monitoring Well Status
Himco Landfill
Elkhart, Indiana

Well ID	Status	Installation Date	Screen Length (ft)	Material	Casing Diameter (inches)	Installed Depth (ft bgs)	Reference Elevation (ft AMSL)	Ground Surface (ft AMSL)	Top of Well Screen (ft AMSL)	Bottom of Well Screen (ft AMSL)	Aquifer Designation	Northing	Easting
Lower Aquifer Wells (610 - 275 ft AMSL)													
WT101C	Functional	12/12/1990	5.00	Stainless	2	165.0	768.53	764.25	604.25	599.25	Lower	2351860.52	235732.51
WT102C	Functional	12/1/1990	5.00	Stainless	2	159.5	768.65	765.94	611.44	606.44	Lower	2355123.61	234053.78
WT106C	Functional	3/30/2011	5.00	PVC	2	208.0	757.80	758.06	555.06	550.06	Lower	2351154.95	235894.48
WTB1	Functional	10/6/1977	6.00	PVC	5	473.0	763.06	761.58	294.58	288.58	Lower	2353857.39	234061.79
WTB4	Functional	10/7/1977	5.00	PVC	5	173.0	761.77	760.67	592.67	587.67	Lower	2353855.62	234084.92
WTE3	Functional	10/11/1977	5.00	PVC	5	176.0	765.29	762.22	591.22	586.22	Lower	2351807.07	235231.75

Notes:
ft bgs Feet below ground surface
ft AMSL Feet above mean sea level
PVC Polyvinyl chloride

Table 2.2

Groundwter Monitoring Program
Himco Landfill
Elkhart, Indiana

Upper Aquifer Wells

Detection Monitoring Wells

WT101A
WT115A
WT115B
WT116A

Compliance Monitoring Wells

WT106A
WT111A
WT114A
WT119B
WT120C
WT121A
WT122A

Background Monitoring Well

WT102A

Intermediate Aquifer Wells

Detection Monitoring Wells

WT106B
WT114C
WT120B

Compliance Monitoring Wells

WT101D
WT101E
WT114B
WT115C
WT120A
WT121B
WT122B
WT122C

Background Monitoring Well

WT102B

Lower Aquifer Wells

Compliance Monitoring Wells

WT101C
WT106C
WTE3

Table 2.3

Groundwater Monitoring Program Parameter List
Himco Landfill
Elkhart, Indiana

Volatile Organic Compounds (VOCs)

Benzene
1,1-Dichloroethane
cis-1,2-Dichloroethene
Vinyl chloride

Metals

Arsenic
Calcium
Iron
Lead
Manganese
Sodium

General Chemistry

Chloride
Sulfate

Table 3.1

Summary of Groundwater Elevation Data
Himco Landfill
Elkhart, Indiana

	10/22/2019			10/23/2019		10/24/2019		10/25/2019	
	Depth to Water (ft BTOR)	Reference Elevation (ft AMSL)	Groundwater Elevation (ft AMSL)	Depth to Water (ft BTOR)	Groundwater Elevation (ft AMSL)	Depth to Water (ft BTOR)	Groundwater Elevation (ft AMSL)	Depth to Water (ft BTOR)	Groundwater Elevation (ft AMSL)
SW4	--	--	--	--	--	--	--	--	--
SW5	--	--	--	--	--	--	--	--	--
SW6	--	--	--	--	--	--	--	--	--
WT101A	15.31	768.69	753.38	--	--	--	--	15.31	753.38
WT101B	13.63	768.95	755.32	--	--	--	--	--	--
WT101C	15.09	768.53	753.44	--	--	15.09	753.44	--	--
WT101D	15.34	768.81	753.47	--	--	--	--	15.34	753.47
WT101E	15.18	768.68	753.50	--	--	15.18	753.50	--	--
WT102A	10.87	768.50	757.63	--	--	10.87	757.63	--	--
WT102B	10.54	768.22	757.68	--	--	10.54	757.68	--	--
WT102C	11.03	768.65	757.62	--	--	--	--	--	--
WT103A	6.05	760.11	754.06	--	--	--	--	--	--
WT104A	12.27	765.50	753.23	--	--	--	--	--	--
WT106A	8.56	760.98	752.42	--	--	8.56	752.42	--	--
WT106B	8.76	761.50	752.74	--	--	8.67	752.83	--	--
WT106C	10.23	757.80	747.57	10.23	747.57	--	--	--	--
WT111A	12.32	766.00	753.68	12.32	753.68	--	--	--	--
WT112A	9.27	765.28	756.01	--	--	--	--	--	--
WT112B	9.44	765.54	756.10	--	--	--	--	--	--
WT113A	15.62	771.27	755.65	--	--	--	--	--	--
WT113B	15.85	771.47	755.62	--	--	--	--	--	--
WT114A	15.25	768.62	753.37	--	--	15.25	753.37	--	--
WT114B	15.31	768.77	753.46	--	--	15.31	753.46	--	--
WT114C	15.28	768.87	753.59	--	--	15.28	753.59	--	--
WT115A	13.17	766.65	753.48	--	--	13.17	753.48	--	--
WT115B	12.88	766.27	753.39	--	--	12.88	753.39	--	--
WT115C	12.47	766.03	753.56	--	--	12.47	753.56	--	--
WT116A	12.84	767.21	754.37	--	--	12.84	754.37	--	--
WT116B	12.81	766.85	754.04	--	--	--	--	--	--
WT117A	12.95	766.70	753.75	--	--	--	--	--	--
WT117B	12.36	766.13	753.77	--	--	--	--	--	--
WT117C	12.76	766.53	753.77	--	--	--	--	--	--
WT117D	12.72	766.58	753.86	--	--	--	--	--	--
WT118B	12.07	765.99	753.92	--	--	--	--	--	--
WT119B	11.38	764.87	753.49	--	--	11.38	753.49	--	--
WT120A	8.74	762.19	753.45	8.74	753.45	--	--	--	--
WT120B	8.73	762.18	753.45	5.77	756.41	--	--	--	--

Table 3.1

Summary of Groundwater Elevation Data
Himco Landfill
Elkhart, Indiana

	10/22/2019			10/23/2019		10/24/2019		10/25/2019	
	Depth to Water (ft BTOR)	Reference Elevation (ft AMSL)	Groundwater Elevation (ft AMSL)	Depth to Water (ft BTOR)	Groundwater Elevation (ft AMSL)	Depth to Water (ft BTOR)	Groundwater Elevation (ft AMSL)	Depth to Water (ft BTOR)	Groundwater Elevation (ft AMSL)
WT120C	8.67	762.11	753.44	8.67	753.44	--	--	--	--
WT121A	6.53	758.48	751.95	6.53	751.95	--	--	--	--
WT121B	5.77	758.46	752.69	5.77	752.69	--	--	--	--
WT122A	9.53	762.58	753.05	9.53	753.05	--	--	--	--
WT122B	9.62	762.75	753.13	9.62	753.13	--	--	--	--
WT122C	9.39	762.63	753.24	9.39	753.24	--	--	--	--
WT123A	7.87	--	--	--	--	--	--	--	--
WT124A	16.03	--	--	--	--	--	--	--	--
WTB1	6.75	763.06	756.31	--	--	--	--	--	--
WTB2	6.65	762.70	756.05	--	--	--	--	--	--
WTB3	6.52	762.74	756.22	--	--	--	--	--	--
WTB4	5.42	761.77	756.35	--	--	--	--	--	--
WTE1	12.11	766.11	754.00	--	--	--	--	--	--
WTE3	11.73	765.29	753.56	--	--	11.73	753.56	--	--
WTO2	11.87	765.95	754.08	--	--	--	--	--	--
WTO3	11.37	765.95	754.58	--	--	--	--	--	--
WTO4	10.91	765.95	755.04	--	--	--	--	--	--

Table 3.1

Summary of Groundwater Elevation Data
Himco Landfill
Elkhart, Indiana

	10/26/2020			10/27/2020		10/28/2020		10/29/2020	
	Depth to Water (ft BTOR)	Reference Elevation (ft AMSL)	Groundwater Elevation (ft AMSL)	Depth to Water (ft BTOR)	Groundwater Elevation (ft AMSL)	Depth to Water (ft BTOR)	Groundwater Elevation (ft AMSL)	Depth to Water (ft BTOR)	Groundwater Elevation (ft AMSL)
SW4	--	--	--	--	--	--	--	--	--
SW5	--	--	--	--	--	--	--	--	--
SW6	--	--	--	--	--	--	--	--	--
WT101A	15.92	768.69	752.77	--	--	15.93	752.76	--	--
WT101B	13.60	768.95	755.35	--	--	--	--	--	--
WT101C	15.66	768.53	752.87	--	--	15.68	752.85	--	--
WT101D	15.94	768.81	752.87	--	--	15.96	752.85	--	--
WT101E	15.78	768.68	752.90	--	--	15.68	753.00	--	--
WT102A	11.58	768.50	756.92	11.58	756.92	--	--	--	--
WT102B	11.27	768.22	756.95	11.27	756.95	--	--	--	--
WT102C	11.75	768.65	756.90	--	--	--	--	--	--
WT103A	6.65	760.11	753.46	--	--	--	--	--	--
WT104A	12.93	765.50	752.57	--	--	--	--	--	--
WT106A	9.23	760.98	751.75	--	--	9.23	751.75	--	--
WT106B	9.43	761.50	752.07	--	--	9.43	752.07	--	--
WT106C	10.79	757.80	747.01	--	--	10.79	747.01	--	--
WT111A	13.17	766.00	752.83	--	--	--	--	13.20	752.80
WT112A	9.96	765.28	755.32	--	--	--	--	--	--
WT112B	10.14	765.54	755.40	--	--	--	--	--	--
WT113A	15.75	771.27	755.52	--	--	--	--	--	--
WT113B	16.55	771.47	754.92	--	--	--	--	--	--
WT114A	15.95	768.62	752.67	--	--	15.96	752.66	--	--
WT114B	15.97	768.77	752.80	--	--	16.04	752.73	--	--
WT114C	15.98	768.87	752.89	--	--	16.09	752.78	--	--
WT115A	13.75	766.65	752.90	--	--	--	--	13.62	753.03
WT115B	13.48	766.27	752.79	--	--	--	--	13.62	752.65
WT115C	13.07	766.03	752.96	--	--	--	--	13.11	752.92
WT116A	13.49	767.21	753.72	--	--	--	--	11.62	755.59
WT116B	13.40	766.85	753.45	--	--	--	--	--	--
WT117A	13.59	766.70	753.11	--	--	--	--	--	--
WT117B	12.99	766.13	753.14	--	--	--	--	--	--
WT117C	13.38	766.53	753.15	--	--	--	--	--	--
WT117D	13.36	766.58	753.22	--	--	--	--	--	--
WT118B	13.14	765.99	752.85	--	--	--	--	--	--
WT119B	11.98	764.87	752.89	--	--	11.98	752.76	--	--
WT120A	9.43	762.19	752.76	9.43	752.76	--	--	--	--
WT120B	9.40	762.18	752.78	9.41	752.77	--	--	--	--

Table 3.1

Summary of Groundwater Elevation Data
Himco Landfill
Elkhart, Indiana

	10/26/2020			10/27/2020		10/28/2020		11/19/2020	
	Depth to Water (ft BTOR)	Reference Elevation (ft AMSL)	Groundwater Elevation (ft AMSL)	Depth to Water (ft BTOR)	Groundwater Elevation (ft AMSL)	Depth to Water (ft BTOR)	Groundwater Elevation (ft AMSL)	Depth to Water (ft BTOR)	Groundwater Elevation (ft AMSL)
WT120C	9.34	762.11	752.77	--	--	9.34	752.77	--	--
WT121A	7.39	758.48	751.09	--	--	--	--	7.39	751.09
WT121B	6.59	758.46	751.87	--	--	--	--	6.59	751.87
WT122A	10.21	762.58	752.37	--	--	10.21	752.37	--	--
WT122B	10.28	762.75	752.47	--	--	10.28	752.47	--	--
WT122C	10.06	762.63	752.57	--	--	10.06	752.57	--	--
WT123A	8.51	--	--	--	--	--	--	--	--
WT124A	16.74	--	--	--	--	--	--	--	--
WTB1	7.46	763.06	755.60	--	--	--	--	--	--
WTB2	7.29	762.70	755.41	--	--	--	--	--	--
WTB3	7.19	762.74	755.55	--	--	--	--	--	--
WTB4	6.17	761.77	755.60	--	--	--	--	--	--
WTE1	12.71	766.11	753.40	--	--	--	--	--	--
WTE3	12.34	765.29	752.95	--	--	--	--	12.45	752.84
WTO2	12.51	765.95	753.44	--	--	--	--	--	--
WTO3	12.01	765.95	753.94	--	--	--	--	--	--
WTO4	11.53	765.95	754.42	--	--	--	--	--	--

Table 4.1

Stabilization Parameters
Himco Landfill
Elkhart, Indiana

Location	Date	Conductivity mS/cm	Dissolved Oxygen (DO) mg/L	Oxidation Reduction Potential (ORP) mV	pH s.u.	Temperature Deg C	Turbidity NTU
WT101A	10/28/2020	1.195	2.32	-57.6	6.40	16.6	1.4
WT101A	10/25/2019	0.840	0.0	-93.0	6.36	15.91	24.3
WT101C	10/28/2020	0.468	2.22	-82.6	7.66	13.8	32.4
WT101C	10/24/2019	0.324	0.0	-269.0	7.90	15.55	0.3
WT101D	10/28/2020	0.610	2.58	-182.2	7.39	14.4	0.8
WT101D	10/25/2019	0.466	0.0	-249.0	7.40	13.82	0.0
WT101E	10/28/2020	0.632	1.89	-205.4	6.94	13.9	8.4
WT101E	10/24/2019	0.488	0.0	-326.0	7.18	14.19	1.3
WT102A	10/27/2020	1.043	2.87	25.6	7.32	15.4	5.7
WT102A	10/24/2019	0.730	0.0	-53.0	7.90	14.67	3.9
WT102B	10/27/2020	0.795	1.53	-297.6	7.45	12.4	1.7
WT102B	10/24/2019	0.534	0.0	-267.0	7.86	12.50	3.9
WT106A	10/28/2020	0.664	2.12	-110.7	7.32	14.7	5.56
WT106A	10/24/2019	0.407	0.0	-104.0	7.64	14.92	27.4
WT106B	10/28/2020	0.670	1.47	-303.9	7.26	12.8	3.1
WT106B	10/24/2019	0.613	0.0	-254.0	7.53	12.48	0.2
WT106C	10/28/2020	0.426	1.80	-168.7	7.56	12.4	1.92
WT106C	10/23/2019	0.334	0.0	-132.0	7.79	12.59	1.4
WT111A	10/29/2020	0.768	1.13	-101.4	6.63	14.4	11.7
WT111A	10/23/2019	0.477	0.0	-28.0	6.86	14.17	28.9
WT114A	10/28/2020	1.922	3.19	14.9	7.08	16.1	1.1
WT114A	10/24/2019	1.270	2.65	-27.0	7.75	15.33	11.5
WT114B	10/28/2020	0.614	2.60	-24.6	7.19	13.4	0.4
WT114B	10/24/2019	0.449	0.0	-253.0	7.46	13.72	1.2
WT114C	10/28/2020	0.566	2.47	41.6	6.84	12.0	10.4
WT114C	10/24/2019	0.465	0.0	-233.0	7.97	13.08	0.2
WT115A	10/29/2020	0.614	0.84	-171.7	6.67	17.2	2.5
WT115A	10/24/2019	0.435	0.0	-239.0	7.02	14.37	1.1
WT115B	10/29/2020	2.110	0.80	-331.8	6.61	14.2	3.4
WT115B	10/24/2019	1.650	0.0	-344.0	6.88	12.09	0.0
WT115C	10/29/2020	0.740	0.80	-207.6	7.50	13.5	6.2
WT115C	10/24/2019	0.496	0.0	-197.0	7.42	15.96	0.0
WT116A	10/29/2020	2.642	0.93	-122.5	6.56	16.7	4.7
WT116A	10/24/2019	3.170	0.0	-101.0	6.57	14.57	2.5
WT119B	10/28/2020	0.408	1.38	-197.3	7.05	14.8	12.3
WT119B	10/24/2019	0.464	0.0	-84.0	7.12	13.59	11.1

Table 4.1

Stabilization Parameters
Himco Landfill
Elkhart, Indiana

Location	Date	Conductivity mS/cm	Dissolved Oxygen (DO) mg/L	Oxidation Reduction Potential (ORP) mV	pH s.u.	Temperature Deg C	Turbidity NTU
WT120A	10/27/2020	0.654	1.98	-266.0	6.89	12.8	49.3
WT120A	10/23/2019	0.577	0.0	-217.0	7.26	14.49	8.0
WT120B	10/27/2020	0.504	2.16	21.0	6.67	12.6	81.6
WT120B	10/23/2019	0.456	0.0	-177.0	7.22	13.58	4.2
WT120C	10/28/2020	0.445	3.06	74.8	7.02	17.2	5.5
WT120C	10/23/2019	0.371	0.0	-32.0	7.68	17.26	8.6
WT121A	11/19/2020	0.840	1.39	-236.5	7.54	14.00	7.34
WT121A	10/23/2019	0.671	0.0	-144.0	7.51	13.95	8.6
WT121B	11/19/2020	1.196	1.41	-292.7	7.32	13.30	1.57
WT121B	10/23/2019	0.956	0.0	-265.0	7.29	12.53	2.9
WT122A	10/28/2020	1.245	1.44	-177.1	6.88	14.8	4.7
WT122A	10/23/2019	0.938	0.0	-104.0	6.89	15.17	1.6
WT122B	10/28/2020	0.652	1.50	-191.7	7.37	13.8	6.5
WT122B	10/23/2019	0.593	1.39	-205.0	7.41	13.75	1.0
WT122C	10/28/2020	0.594	1.15	-310.1	7.12	13.4	0.0
WT122C	10/23/2019	0.586	2.53	-232.0	7.43	13.33	3.2
WTE3	10/29/2020	0.525	1.16	-217.4	7.40	12.1	3.9
WTE3	10/24/2019	0.505	0.0	-134.0	7.33	12.56	0.0

Table 4.2

Groundwater Analytical Results Summary - VOCs
Himco Landfill
Elkhart, Indiana

Parameters	Units	GWRAOs	Number of Samples	Number of Detections	Percentage of Detections	Number of Exceedances	Percentage of Exceedances	Minimum Detection	Maximum Detection
Volatile Organic Compounds									
1,1-	ug/L	240	59	30	50.8%	0	0.0%	0.32 J	7
Benzene	ug/L	5	59	10	16.9%	3	5.1%	0.92 J	23
cis-1,2-Dichloroethene	ug/L	70	59	20	33.9%	0	0.0%	0.17 J	2.5
Vinyl chloride	ug/L	2	59	8	13.6%	0	0.0%	0.46 J	1.1

Notes:

ug/l	Micrograms per liter
GW RAOs	Groundwater Remedial Action Objectives
J	Estimated concentration

Table 4.3

Groundwater Analytical Results Summary - Metals - Upper Aquifer
Himco Landfill
Elkhart, Indiana

Parameters	Units	Primary MCL	Secondary MCL	RDA	RSL Tapwater	BV	GWRAO	Number of Samples	Number of Detections	Percentage of Detections	Number of Exceedances	Percentage of Exceedances	Minimum Detection	Maximum Detection
Metals														
Arsenic	ug/L	10	-	-	0.045	2 U	10	25	18	72.0%	1	4.0%	0.81 J	14.0
Calcium	ug/L	-	-	250000	-	242000	250000	25	25	100.0%	4	16.0%	62000	640000
Iron	ug/L	-	300	1000	26000	7100	26000	25	22	88.0%	2	8.0%	36	71000
Lead	ug/L	15	-	-	-	3.0 U	15	25	4	16.0%	2	8.0%	3.8 J	41.0
Manganese	ug/L	-	50	-	880	1070	1070	25	20	80.0%	6	24.0%	7.3 J	2100
Sodium	ug/L	-	-	150000	-	102000	150000	25	25	100.0%	2	8.0%	480	270000
General Chemistry														
Chloride	mg/L	-	250	-	-	228	250	25	24	96.0%	1	4.0%	2.8	340
Sulfate	mg/L	-	250	-	-	637	637	25	25	100.0%	0	0.0%	13	550

Notes:

mg/L	Milligrams per liter
ug/L	Micrograms per liter
U	Not detected. The associated numerical value is the reporting detection limit.
J	Estimated concentration
N/A	Not available
-	Not applicable
MCL	Maximum Contaminant Level
RDA	Recommended Daily Allowance
RSL	Regional Screening Level
BV	Background Value
GW RAO	Groundwater Remedial Action Objective

Table 4.4

Groundwater Analytical Results Summary - Metals - Intermediate Aquifer
Himco landfill
Elkhart, Indiana

Parameters	Units	Primary MCL	Secondary MCL	RDA	RSL Tapwater	BV	GWRAO	Number of Samples	Number of Detections	Percentage of Detections	Number of Exceedances	Percentage of Exceedances	Minimum Detection	Maximum Detection
Metals														
Arsenic	ug/L	10	-	-	0.045	7.05	10	27	26	96.3%	5	18.5%	0.86 J	18
Calcium	ug/L	-	-	250000	-	85800	250000	27	27	100.0%	0	0.0%	61000	96000
Iron	ug/L	-	300	1000	26000	2170	26000	27	27	100.0%	0	0.0%	880	5300
Lead	ug/L	15	-	-	-	3.0 U	15	27	0	0.0%	0	0.0%	NA	NA
Manganese	ug/L	-	50	-	880	170	880	27	27	100.0%	0	0.0%	23	190
Sodium	ug/L	-	-	150000	-	31600	150000	27	27	100.0%	0	0.0%	15000	38000
General Chemisty														
Chloride	mg/L	-	250	-	-	54.5	250	27	27	100.0%	0	0.0%	27	92
Sulfate	mg/L	-	250	-	-	370	370	27	27	100.0%	0	0.0%	21	110

Notes:

mg/L	Milligram per liter
ug/L	Micrograms per liter
U	Not detected. The associated numerical value is the reporting detection limit.
J	Estimated concentration
N/A	Not available.
-	Not Applicable
MCL	Maximum Contaminant Level
RDA	Recommended Daily Allowance
RSL	Regional Screening Level
BV	Background Value
GW RAO	Groundwater Remedial Action Objective

Table 4.5

Groundwater Analytical Results Summary - Metals - Lower Aquifer
Himco Landfill
Elkhart, Indiana

Parameters	Units	Primary MCL	Secondary MCL	RDA	RSL Tapwater	BV	GWRAO	Number of Samples	Number of Detections	Percentage of Detections	Number of Exceedances	Percentage of Exceedances	Minimum Detection	Maximum Detection
Metals														
Arsenic	ug/L	10	-	-	0.045	5.58	10	6	4	66.7%	1	16.7%	6.1	12
Calcium	ug/L	-	-	250000	-	239000	250000	6	6	100.0%	0	0.0%	43000	85000
Iron	ug/L	-	300	1000	26000	15300	26000	6	6	100.0%	0	0.0%	120 J	940
Lead	ug/L	15	-	-	-	3.9	15	6	0	0.0%	0	0.0%	NA	NA
Manganese	ug/L	-	50	-	880	1140	1140	6	6	100.0%	0	0.0%	6.6 J	31
Sodium	ug/L	-	-	150000	-	80600	150000	6	6	100.0%	0	0.0%	12000	18000
General Chemistry														
Chloride	mg/L	-	250	-	-	77.7	250	6	6	100.0%	0	0.0%	2.6	22
Sulfate	mg/L	-	250	-	-	73.2	250	6	6	100.0%	0	0.0%	0.57 J	71

Notes:

mg/L	Milligram per liter.
µg/L	Micrograms per liter.
U	Not detected. The associated numerical value is the reporting detection limit.
J	Estimated concentration
N/A	Not available.
-	Not applicable.
MCL	Maximum Contaminant Level
RDA	Recommended Daily Allowance
RSL	Regional Screening Level
BV	Background Value
GW RAO	Groundwater Remedial Action Objective

Appendix A – Groundwater Analytical Reports

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

Laboratory Job ID: 240-121074-1
Client Project/Site: Bayer Himco Landfill

For:
Groundwater & Environmental Services Inc
1691 Georgetown Road, Unit G
Hudson, Ohio 44236

Attn: Mr. Steve Betts

Authorized for release by:
11/8/2019 11:32:42 AM

John McFadden, Project Manager I
(330)497-9396
john.mcfadden@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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

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

Table of Contents

Cover Page 1
Table of Contents 2
Definitions/Glossary 3
Case Narrative 4
Method Summary 6
Sample Summary 7
Detection Summary 8
Client Sample Results 12
Surrogate Summary 25
QC Sample Results 26
QC Association Summary 28
Lab Chronicle 30
Certification Summary 34
Chain of Custody 35

Definitions/Glossary

Client: Groundwater & Environmental Services Inc
Job ID: 240-121074-1
Project/Site: Bayer Himco Landfill

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Job ID: 240-121074-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: Groundwater & Environmental Services Inc

Project: Bayer Himco Landfill

Report Number: 240-121074-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, Canton attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The 300.0 Ion Chromatography analysis was performed at the Eurofins TestAmerica, Cedar Falls laboratory.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 10/24/2019 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.5º C.

The laboratory did not receive volume for metals for sample GW-WW-122A 102319 (240-121074-12).

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples GW-WT121A 102319 (240-121074-1), GW-WT121B 102319 (240-121074-2), GW-WT120A 102319 (240-121074-3), GW-WT120B 102319 (240-121074-4), GW-WT120B 102319-EB (240-121074-5), GW-WT120C 102319 (240-121074-6), GW-WT-111A 102319 (240-121074-7), GW-WT-106C 102319 (240-121074-8), GW-WT-122B 102319 (240-121074-9), GW-WT-122C 102319 (240-121074-10), GW-WT-120C 102319-DUP (240-121074-11), GW-WW-122A 102319 (240-121074-12) and TB-1 (240-121074-13) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260C. The samples were analyzed on 10/31/2019.

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

TOTAL RECOVERABLE METALS (ICP)

Samples GW-WT121A 102319 (240-121074-1), GW-WT121B 102319 (240-121074-2), GW-WT120A 102319 (240-121074-3), GW-WT120B 102319 (240-121074-4), GW-WT120B 102319-EB (240-121074-5), GW-WT120C 102319 (240-121074-6), GW-WT-111A

Job ID: 240-121074-1 (Continued)

Laboratory: Eurofins TestAmerica, Canton (Continued)

102319 (240-121074-7), GW-WT-106C 102319 (240-121074-8), GW-WT-122B 102319 (240-121074-9), GW-WT-122C 102319 (240-121074-10) and GW-WT-120C 102319-DUP (240-121074-11) were analyzed for total recoverable metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 10/25/2019 and analyzed on 10/28/2019 and 10/29/2019.

Sodium was detected in method blank MB 240-407517/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

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

TOTAL RECOVERABLE METALS (ICPMS)

Samples GW-WT121A 102319 (240-121074-1), GW-WT121B 102319 (240-121074-2), GW-WT120A 102319 (240-121074-3), GW-WT120B 102319 (240-121074-4), GW-WT120B 102319-EB (240-121074-5), GW-WT120C 102319 (240-121074-6), GW-WT-111A 102319 (240-121074-7), GW-WT-106C 102319 (240-121074-8), GW-WT-122B 102319 (240-121074-9), GW-WT-122C 102319 (240-121074-10) and GW-WT-120C 102319-DUP (240-121074-11) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 10/25/2019 and analyzed on 10/29/2019.

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

ION CHROMATOGRAPHY

Samples GW-WT121A 102319 (240-121074-1), GW-WT121B 102319 (240-121074-2), GW-WT120A 102319 (240-121074-3), GW-WT120B 102319 (240-121074-4), GW-WT120B 102319-EB (240-121074-5), GW-WT120C 102319 (240-121074-6), GW-WT-111A 102319 (240-121074-7), GW-WT-106C 102319 (240-121074-8), GW-WT-122B 102319 (240-121074-9), GW-WT-122C 102319 (240-121074-10), GW-WT-120C 102319-DUP (240-121074-11) and GW-WW-122A 102319 (240-121074-12) were analyzed for Ion Chromatography in accordance with EPA Method 300.0. The samples were analyzed on 11/02/2019, 11/04/2019 and 11/07/2019.

Chloride failed the recovery criteria high for the MS of sample GW-WT121A 102319MS (240-121074-1) in batch 310-259423.

Samples GW-WT121A 102319 (240-121074-1)[5X], GW-WT121B 102319 (240-121074-2)[5X], GW-WT120A 102319 (240-121074-3)[5X], GW-WT120B 102319 (240-121074-4)[5X], GW-WT120B 102319-EB (240-121074-5)[5X], GW-WT-111A 102319 (240-121074-7)[5X], GW-WT-106C 102319 (240-121074-8)[5X], GW-WT-122B 102319 (240-121074-9)[5X], GW-WT-122C 102319 (240-121074-10)[5X] and GW-WW-122A 102319 (240-121074-12)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

Method Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121074-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL CAN
300.0	Anions, Ion Chromatography	MCAWW	TAL CF
6010C	Metals (ICP)	SW846	TAL CAN
6020A	Metals (ICP/MS)	SW846	TAL CAN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CAN
5030C	Purge and Trap	SW846	TAL CAN

Protocol References:

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

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

Laboratory References:

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

TAL CF = Eurofins TestAmerica, Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Sample Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121074-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-121074-1	GW-WT121A 102319	Water	10/23/19 10:30	10/24/19 09:30	
240-121074-2	GW-WT121B 102319	Water	10/23/19 11:15	10/24/19 09:30	
240-121074-3	GW-WT120A 102319	Water	10/23/19 13:25	10/24/19 09:30	
240-121074-4	GW-WT120B 102319	Water	10/23/19 14:15	10/24/19 09:30	
240-121074-5	GW-WT120B 102319-EB	Water	10/23/19 14:20	10/24/19 09:30	
240-121074-6	GW-WT120C 102319	Water	10/23/19 12:50	10/24/19 09:30	
240-121074-7	GW-WT-111A 102319	Water	10/23/19 17:05	10/24/19 09:30	
240-121074-8	GW-WT-106C 102319	Water	10/23/19 18:05	10/24/19 09:30	
240-121074-9	GW-WT-122B 102319	Water	10/23/19 16:10	10/24/19 09:30	
240-121074-10	GW-WT-122C 102319	Water	10/23/19 15:30	10/24/19 09:30	
240-121074-11	GW-WT-120C 102319-DUP	Water	10/23/19 12:50	10/24/19 09:30	
240-121074-12	GW-WW-122A 102319	Water	10/23/19 15:30	10/24/19 09:30	
240-121074-13	TB-1	Water	10/23/19 00:00	10/24/19 09:30	

Detection Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121074-1

Client Sample ID: GW-WT121A 102319 — Lab Sample ID: 240-121074-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	1.2		1.0	0.17	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	1.4		1.0	0.16	ug/L	1		8260C	Total/NA
Chloride	82	F1	5.0	2.5	mg/L	5		300.0	Total/NA
Sulfate	59		5.0	2.5	mg/L	5		300.0	Total/NA
Calcium	85000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	2600		200	26	ug/L	1		6010C	Total Recoverable
Manganese	40		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	62000	B	5000	560	ug/L	1		6010C	Total Recoverable
Lead	3.0	J	10	2.8	ug/L	1		6010C	Total Recoverable
Arsenic	7.6		5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WT121B 102319 — Lab Sample ID: 240-121074-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.89	J	1.0	0.20	ug/L	1		8260C	Total/NA
Chloride	36		5.0	2.5	mg/L	5		300.0	Total/NA
Sulfate	61		5.0	2.5	mg/L	5		300.0	Total/NA
Calcium	86000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	4600		200	26	ug/L	1		6010C	Total Recoverable
Manganese	33		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	38000	B	5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	14		5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WT120A 102319 — Lab Sample ID: 240-121074-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	61		5.0	2.5	mg/L	5		300.0	Total/NA
Sulfate	27		5.0	2.5	mg/L	5		300.0	Total/NA
Calcium	77000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	1100		200	26	ug/L	1		6010C	Total Recoverable
Manganese	86		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	35000	B	5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	4.1	J	5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WT120B 102319 — Lab Sample ID: 240-121074-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	28		5.0	2.5	mg/L	5		300.0	Total/NA
Sulfate	21		5.0	2.5	mg/L	5		300.0	Total/NA
Calcium	67000		5000	310	ug/L	1		6010C	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121074-1

Client Sample ID: GW-WT120B 102319 (Continued) — Lab Sample ID: 240-121074-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	990		200	26	ug/L	1		6010C	Total Recoverable
Manganese	190		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	16000	B	5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	7.2		5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WT120B 102319-EB — Lab Sample ID: 240-121074-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	14		1.0	0.50	mg/L	1		300.0	Total/NA
Sulfate	58		5.0	2.5	mg/L	5		300.0	Total/NA
Calcium	93000		5000	310	ug/L	1		6010C	Total Recoverable
Sodium	4800	J B	5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	2.1	J	5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WT120C 102319 — Lab Sample ID: 240-121074-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2.8		1.0	0.50	mg/L	1		300.0	Total/NA
Sulfate	21		1.0	0.50	mg/L	1		300.0	Total/NA
Calcium	64000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	59	J	200	26	ug/L	1		6010C	Total Recoverable
Sodium	12000	B	5000	560	ug/L	1		6010C	Total Recoverable

Client Sample ID: GW-WT-111A 102319 — Lab Sample ID: 240-121074-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	4.6		1.0	0.17	ug/L	1		8260C	Total/NA
Benzene	0.94	J	1.0	0.13	ug/L	1		8260C	Total/NA
Chloride	18		5.0	2.5	mg/L	5		300.0	Total/NA
Sulfate	60		5.0	2.5	mg/L	5		300.0	Total/NA
Calcium	89000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	1200		200	26	ug/L	1		6010C	Total Recoverable
Manganese	210		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	15000	B	5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	3.4	J	5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WT-106C 102319 — Lab Sample ID: 240-121074-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	11		5.0	2.5	mg/L	5		300.0	Total/NA
Sulfate	0.57	J	1.0	0.50	mg/L	1		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121074-1

Client Sample ID: GW-WT-106C 102319 (Continued) — Lab Sample ID: 240-121074-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	49000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	900		200	26	ug/L	1		6010C	Total Recoverable
Manganese	19		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	18000	B	5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	12		5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WT-122B 102319 — Lab Sample ID: 240-121074-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.79	J	1.0	0.17	ug/L	1		8260C	Total/NA
Chloride	41		5.0	2.5	mg/L	5		300.0	Total/NA
Sulfate	72		5.0	2.5	mg/L	5		300.0	Total/NA
Calcium	90000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	2200		200	26	ug/L	1		6010C	Total Recoverable
Manganese	81		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	21000	B	5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	1.2	J	5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WT-122C 102319 — Lab Sample ID: 240-121074-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	40		5.0	2.5	mg/L	5		300.0	Total/NA
Sulfate	93		5.0	2.5	mg/L	5		300.0	Total/NA
Calcium	95000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	1900		200	26	ug/L	1		6010C	Total Recoverable
Manganese	150		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	19000	B	5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	3.3	J	5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WT-120C 102319-DUP — Lab Sample ID: 240-121074-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.1		1.0	0.50	mg/L	1		300.0	Total/NA
Sulfate	21		1.0	0.50	mg/L	1		300.0	Total/NA
Calcium	65000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	45	J	200	26	ug/L	1		6010C	Total Recoverable
Sodium	13000	B	5000	560	ug/L	1		6010C	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121074-1

Client Sample ID: GW-WW-122A 102319 — Lab Sample ID: 240-121074-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.82	J	1.0	0.16	ug/L	1		8260C	Total/NA
Vinyl chloride	0.51	J	1.0	0.20	ug/L	1		8260C	Total/NA
Chloride	35		5.0	2.5	mg/L	5		300.0	Total/NA
Sulfate	170		5.0	2.5	mg/L	5		300.0	Total/NA

Client Sample ID: TB-1 — Lab Sample ID: 240-121074-13

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121074-1

Client Sample ID: GW-WT121A 102319

Lab Sample ID: 240-121074-1

Date Collected: 10/23/19 10:30
Matrix: Water
Date Received: 10/24/19 09:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	1.2		1.0	0.17	ug/L			10/31/19 12:55	1
Benzene	1.0	U	1.0	0.13	ug/L			10/31/19 12:55	1
cis-1,2-Dichloroethene	1.4		1.0	0.16	ug/L			10/31/19 12:55	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/31/19 12:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*86*		*69 - 122*		*10/31/19 12:55*	*1*
Dibromofluoromethane (Surr)	*94*		*78 - 129*		*10/31/19 12:55*	*1*
4-Bromofluorobenzene (Surr)	*82*		*47 - 134*		*10/31/19 12:55*	*1*
1,2-Dichloroethane-d4 (Surr)	*84*		*75 - 130*		*10/31/19 12:55*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	82	F1	5.0	2.5	mg/L			11/02/19 17:33	5
Sulfate	59		5.0	2.5	mg/L			11/02/19 17:33	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	85000		5000	310	ug/L		10/25/19 14:00	10/28/19 23:18	1
Iron	2600		200	26	ug/L		10/25/19 14:00	10/28/19 23:18	1
Manganese	40		15	2.1	ug/L		10/25/19 14:00	10/28/19 23:18	1
Sodium	62000	B	5000	560	ug/L		10/25/19 14:00	10/28/19 23:18	1
Lead	3.0	J	10	2.8	ug/L		10/25/19 14:00	10/28/19 23:18	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	7.6		5.0	0.75	ug/L		10/25/19 14:00	10/29/19 17:07	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121074-1

Client Sample ID: GW-WT121B 102319

Lab Sample ID: 240-121074-2

Date Collected: 10/23/19 11:15
Matrix: Water
Date Received: 10/24/19 09:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/31/19 13:18	1
Benzene	1.0	U	1.0	0.13	ug/L			10/31/19 13:18	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/31/19 13:18	1
Vinyl chloride	**0.89**	**J**	1.0	0.20	ug/L			10/31/19 13:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*89*		*69 - 122*		*10/31/19 13:18*	*1*
Dibromofluoromethane (Surr)	*95*		*78 - 129*		*10/31/19 13:18*	*1*
4-Bromofluorobenzene (Surr)	*85*		*47 - 134*		*10/31/19 13:18*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*75 - 130*		*10/31/19 13:18*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**36**		5.0	2.5	mg/L			11/02/19 06:55	5
Sulfate	**61**		5.0	2.5	mg/L			11/02/19 06:55	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**86000**		5000	310	ug/L		10/25/19 14:00	10/28/19 23:22	1
Iron	**4600**		200	26	ug/L		10/25/19 14:00	10/28/19 23:22	1
Manganese	**33**		15	2.1	ug/L		10/25/19 14:00	10/28/19 23:22	1
Sodium	**38000**	**B**	5000	560	ug/L		10/25/19 14:00	10/28/19 23:22	1
Lead	10	U	10	2.8	ug/L		10/25/19 14:00	10/28/19 23:22	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**14**		5.0	0.75	ug/L		10/25/19 14:00	10/29/19 17:11	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121074-1

Client Sample ID: GW-WT120A 102319

Lab Sample ID: 240-121074-3

Date Collected: 10/23/19 13:25
Matrix: Water
Date Received: 10/24/19 09:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/31/19 13:40	1
Benzene	1.0	U	1.0	0.13	ug/L			10/31/19 13:40	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/31/19 13:40	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/31/19 13:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*69 - 122*		*10/31/19 13:40*	*1*
Dibromofluoromethane (Surr)	*101*		*78 - 129*		*10/31/19 13:40*	*1*
4-Bromofluorobenzene (Surr)	*91*		*47 - 134*		*10/31/19 13:40*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 130*		*10/31/19 13:40*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**61**		5.0	2.5	mg/L			11/02/19 07:11	5
Sulfate	**27**		5.0	2.5	mg/L			11/02/19 07:11	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**77000**		5000	310	ug/L		10/25/19 14:00	10/28/19 23:26	1
Iron	**1100**		200	26	ug/L		10/25/19 14:00	10/28/19 23:26	1
Manganese	**86**		15	2.1	ug/L		10/25/19 14:00	10/28/19 23:26	1
Sodium	**35000**	**B**	5000	560	ug/L		10/25/19 14:00	10/28/19 23:26	1
Lead	10	U	10	2.8	ug/L		10/25/19 14:00	10/28/19 23:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**4.1**	**J**	5.0	0.75	ug/L		10/25/19 14:00	10/29/19 17:16	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121074-1

Client Sample ID: GW-WT120B 102319

Lab Sample ID: 240-121074-4

Date Collected: 10/23/19 14:15
Matrix: Water
Date Received: 10/24/19 09:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/31/19 14:03	1
Benzene	1.0	U	1.0	0.13	ug/L			10/31/19 14:03	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/31/19 14:03	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/31/19 14:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*85*		*69 - 122*		*10/31/19 14:03*	*1*
Dibromofluoromethane (Surr)	*91*		*78 - 129*		*10/31/19 14:03*	*1*
4-Bromofluorobenzene (Surr)	*82*		*47 - 134*		*10/31/19 14:03*	*1*
1,2-Dichloroethane-d4 (Surr)	*81*		*75 - 130*		*10/31/19 14:03*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**28**		5.0	2.5	mg/L			11/02/19 07:28	5
Sulfate	**21**		5.0	2.5	mg/L			11/02/19 07:28	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**67000**		5000	310	ug/L		10/25/19 14:00	10/28/19 23:31	1
Iron	**990**		200	26	ug/L		10/25/19 14:00	10/28/19 23:31	1
Manganese	**190**		15	2.1	ug/L		10/25/19 14:00	10/28/19 23:31	1
Sodium	**16000**	**B**	5000	560	ug/L		10/25/19 14:00	10/28/19 23:31	1
Lead	10	U	10	2.8	ug/L		10/25/19 14:00	10/28/19 23:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**7.2**		5.0	0.75	ug/L		10/25/19 14:00	10/29/19 17:20	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121074-1

Client Sample ID: GW-WT120B 102319-EB

Lab Sample ID: 240-121074-5

Date Collected: 10/23/19 14:20
Date Received: 10/24/19 09:30

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/31/19 14:25	1
Benzene	1.0	U	1.0	0.13	ug/L			10/31/19 14:25	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/31/19 14:25	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/31/19 14:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*88*		*69 - 122*		*10/31/19 14:25*	*1*
Dibromofluoromethane (Surr)	*97*		*78 - 129*		*10/31/19 14:25*	*1*
4-Bromofluorobenzene (Surr)	*85*		*47 - 134*		*10/31/19 14:25*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*75 - 130*		*10/31/19 14:25*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**14**		1.0	0.50	mg/L			11/02/19 07:44	1
Sulfate	**58**		5.0	2.5	mg/L			11/07/19 10:41	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**93000**		5000	310	ug/L		10/25/19 14:00	10/28/19 23:35	1
Iron	200	U	200	26	ug/L		10/25/19 14:00	10/28/19 23:35	1
Manganese	15	U	15	2.1	ug/L		10/25/19 14:00	10/28/19 23:35	1
Sodium	**4800**	**J B**	5000	560	ug/L		10/25/19 14:00	10/28/19 23:35	1
Lead	10	U	10	2.8	ug/L		10/25/19 14:00	10/28/19 23:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**2.1**	**J**	5.0	0.75	ug/L		10/25/19 14:00	10/29/19 17:24	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121074-1

Client Sample ID: GW-WT120C 102319

Lab Sample ID: 240-121074-6

Date Collected: 10/23/19 12:50
Matrix: Water
Date Received: 10/24/19 09:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/31/19 14:48	1
Benzene	1.0	U	1.0	0.13	ug/L			10/31/19 14:48	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/31/19 14:48	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/31/19 14:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*84*		*69 - 122*		*10/31/19 14:48*	*1*
Dibromofluoromethane (Surr)	*91*		*78 - 129*		*10/31/19 14:48*	*1*
4-Bromofluorobenzene (Surr)	*80*		*47 - 134*		*10/31/19 14:48*	*1*
1,2-Dichloroethane-d4 (Surr)	*82*		*75 - 130*		*10/31/19 14:48*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2.8**		1.0	0.50	mg/L			11/02/19 08:00	1
Sulfate	**21**		1.0	0.50	mg/L			11/02/19 08:00	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**64000**		5000	310	ug/L		10/25/19 14:00	10/28/19 23:39	1
Iron	**59**	**J**	200	26	ug/L		10/25/19 14:00	10/28/19 23:39	1
Manganese	15	U	15	2.1	ug/L		10/25/19 14:00	10/28/19 23:39	1
Sodium	**12000**	**B**	5000	560	ug/L		10/25/19 14:00	10/28/19 23:39	1
Lead	10	U	10	2.8	ug/L		10/25/19 14:00	10/28/19 23:39	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	0.75	ug/L		10/25/19 14:00	10/29/19 17:28	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121074-1

Client Sample ID: GW-WT-111A 102319

Lab Sample ID: 240-121074-7

Date Collected: 10/23/19 17:05
Matrix: Water
Date Received: 10/24/19 09:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	**4.6**		1.0	0.17	ug/L			10/31/19 15:10	1
Benzene	**0.94**	**J**	1.0	0.13	ug/L			10/31/19 15:10	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/31/19 15:10	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/31/19 15:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*91*		*69 - 122*		*10/31/19 15:10*	*1*
Dibromofluoromethane (Surr)	*98*		*78 - 129*		*10/31/19 15:10*	*1*
4-Bromofluorobenzene (Surr)	*86*		*47 - 134*		*10/31/19 15:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*75 - 130*		*10/31/19 15:10*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**18**		5.0	2.5	mg/L			11/02/19 08:17	5
Sulfate	**60**		5.0	2.5	mg/L			11/02/19 08:17	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**89000**		5000	310	ug/L		10/25/19 14:00	10/28/19 23:44	1
Iron	**1200**		200	26	ug/L		10/25/19 14:00	10/28/19 23:44	1
Manganese	**210**		15	2.1	ug/L		10/25/19 14:00	10/28/19 23:44	1
Sodium	**15000**	**B**	5000	560	ug/L		10/25/19 14:00	10/28/19 23:44	1
Lead	10	U	10	2.8	ug/L		10/25/19 14:00	10/28/19 23:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**3.4**	**J**	5.0	0.75	ug/L		10/25/19 14:00	10/29/19 17:32	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121074-1

Client Sample ID: GW-WT-106C 102319

Lab Sample ID: 240-121074-8

Date Collected: 10/23/19 18:05
Date Received: 10/24/19 09:30

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/31/19 15:32	1
Benzene	1.0	U	1.0	0.13	ug/L			10/31/19 15:32	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/31/19 15:32	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/31/19 15:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*90*		*69 - 122*		*10/31/19 15:32*	*1*
Dibromofluoromethane (Surr)	*98*		*78 - 129*		*10/31/19 15:32*	*1*
4-Bromofluorobenzene (Surr)	*88*		*47 - 134*		*10/31/19 15:32*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*75 - 130*		*10/31/19 15:32*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**11**		5.0	2.5	mg/L			11/02/19 08:33	5
Sulfate	**0.57**	**J**	1.0	0.50	mg/L			11/04/19 09:54	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**49000**		5000	310	ug/L		10/25/19 14:00	10/28/19 23:48	1
Iron	**900**		200	26	ug/L		10/25/19 14:00	10/28/19 23:48	1
Manganese	**19**		15	2.1	ug/L		10/25/19 14:00	10/28/19 23:48	1
Sodium	**18000**	**B**	5000	560	ug/L		10/25/19 14:00	10/28/19 23:48	1
Lead	10	U	10	2.8	ug/L		10/25/19 14:00	10/28/19 23:48	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**12**		5.0	0.75	ug/L		10/25/19 14:00	10/29/19 17:37	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121074-1

Client Sample ID: GW-WT-122B 102319

Lab Sample ID: 240-121074-9

Date Collected: 10/23/19 16:10
Matrix: Water
Date Received: 10/24/19 09:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	**0.79**	**J**	1.0	0.17	ug/L			10/31/19 15:54	1
Benzene	1.0	U	1.0	0.13	ug/L			10/31/19 15:54	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/31/19 15:54	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/31/19 15:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*86*		*69 - 122*		*10/31/19 15:54*	*1*
Dibromofluoromethane (Surr)	*94*		*78 - 129*		*10/31/19 15:54*	*1*
4-Bromofluorobenzene (Surr)	*82*		*47 - 134*		*10/31/19 15:54*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*75 - 130*		*10/31/19 15:54*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**41**		5.0	2.5	mg/L			11/02/19 08:49	5
Sulfate	**72**		5.0	2.5	mg/L			11/02/19 08:49	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**90000**		5000	310	ug/L		10/25/19 14:00	10/29/19 00:01	1
Iron	**2200**		200	26	ug/L		10/25/19 14:00	10/29/19 00:01	1
Manganese	**81**		15	2.1	ug/L		10/25/19 14:00	10/29/19 00:01	1
Sodium	**21000**	**B**	5000	560	ug/L		10/25/19 14:00	10/29/19 00:01	1
Lead	10	U	10	2.8	ug/L		10/25/19 14:00	10/29/19 00:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.2**	**J**	5.0	0.75	ug/L		10/25/19 14:00	10/29/19 17:49	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121074-1

Client Sample ID: GW-WT-122C 102319

Lab Sample ID: 240-121074-10

Date Collected: 10/23/19 15:30
Matrix: Water
Date Received: 10/24/19 09:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/31/19 16:17	1
Benzene	1.0	U	1.0	0.13	ug/L			10/31/19 16:17	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/31/19 16:17	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/31/19 16:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*93*		*69 - 122*		*10/31/19 16:17*	*1*
Dibromofluoromethane (Surr)	*100*		*78 - 129*		*10/31/19 16:17*	*1*
4-Bromofluorobenzene (Surr)	*88*		*47 - 134*		*10/31/19 16:17*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*75 - 130*		*10/31/19 16:17*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**40**		5.0	2.5	mg/L			11/02/19 09:06	5
Sulfate	**93**		5.0	2.5	mg/L			11/02/19 09:06	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**95000**		5000	310	ug/L		10/25/19 14:00	10/29/19 00:05	1
Iron	**1900**		200	26	ug/L		10/25/19 14:00	10/29/19 00:05	1
Manganese	**150**		15	2.1	ug/L		10/25/19 14:00	10/29/19 00:05	1
Sodium	**19000**	**B**	5000	560	ug/L		10/25/19 14:00	10/29/19 00:05	1
Lead	10	U	10	2.8	ug/L		10/25/19 14:00	10/29/19 00:05	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**3.3**	**J**	5.0	0.75	ug/L		10/25/19 14:00	10/29/19 17:54	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121074-1

Client Sample ID: GW-WT-120C 102319-DUP

Lab Sample ID: 240-121074-11

Date Collected: 10/23/19 12:50
Date Received: 10/24/19 09:30

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/31/19 16:40	1
Benzene	1.0	U	1.0	0.13	ug/L			10/31/19 16:40	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/31/19 16:40	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/31/19 16:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*89*		*69 - 122*		*10/31/19 16:40*	*1*
Dibromofluoromethane (Surr)	*97*		*78 - 129*		*10/31/19 16:40*	*1*
4-Bromofluorobenzene (Surr)	*85*		*47 - 134*		*10/31/19 16:40*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*75 - 130*		*10/31/19 16:40*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.1**		1.0	0.50	mg/L			11/02/19 09:55	1
Sulfate	**21**		1.0	0.50	mg/L			11/02/19 09:55	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**65000**		5000	310	ug/L		10/25/19 14:00	10/29/19 00:10	1
Iron	**45**	**J**	200	26	ug/L		10/25/19 14:00	10/29/19 00:10	1
Manganese	15	U	15	2.1	ug/L		10/25/19 14:00	10/29/19 00:10	1
Sodium	**13000**	**B**	5000	560	ug/L		10/25/19 14:00	10/29/19 00:10	1
Lead	10	U	10	2.8	ug/L		10/25/19 14:00	10/29/19 00:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	0.75	ug/L		10/25/19 14:00	10/29/19 17:58	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121074-1

Client Sample ID: GW-WW-122A 102319

Lab Sample ID: 240-121074-12

Date Collected: 10/23/19 15:30
Matrix: Water
Date Received: 10/24/19 09:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/31/19 17:03	1
Benzene	1.0	U	1.0	0.13	ug/L			10/31/19 17:03	1
cis-1,2-Dichloroethene	**0.82**	**J**	1.0	0.16	ug/L			10/31/19 17:03	1
Vinyl chloride	**0.51**	**J**	1.0	0.20	ug/L			10/31/19 17:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*85*		*69 - 122*		*10/31/19 17:03*	*1*
Dibromofluoromethane (Surr)	*93*		*78 - 129*		*10/31/19 17:03*	*1*
4-Bromofluorobenzene (Surr)	*81*		*47 - 134*		*10/31/19 17:03*	*1*
1,2-Dichloroethane-d4 (Surr)	*85*		*75 - 130*		*10/31/19 17:03*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**35**		5.0	2.5	mg/L			11/02/19 10:11	5
Sulfate	**170**		5.0	2.5	mg/L			11/02/19 10:11	5

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121074-1

Client Sample ID: TB-1

Lab Sample ID: 240-121074-13

Date Collected: 10/23/19 00:00
Date Received: 10/24/19 09:30

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/31/19 17:25	1
Benzene	1.0	U	1.0	0.13	ug/L			10/31/19 17:25	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/31/19 17:25	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/31/19 17:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*88*		*69 - 122*		*10/31/19 17:25*	*1*
Dibromofluoromethane (Surr)	*98*		*78 - 129*		*10/31/19 17:25*	*1*
4-Bromofluorobenzene (Surr)	*82*		*47 - 134*		*10/31/19 17:25*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*75 - 130*		*10/31/19 17:25*	*1*

Surrogate Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121074-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	DBFM	BFB	DCA
Lab Sample ID	**Client Sample ID**	**(69-122)**	**(78-129)**	**(47-134)**	**(75-130)**
240-121074-1	GW-WT121A 102319	86	94	82	84
240-121074-2	GW-WT121B 102319	89	95	85	87
240-121074-3	GW-WT120A 102319	95	101	91	94
240-121074-4	GW-WT120B 102319	85	91	82	81
240-121074-5	GW-WT120B 102319-EB	88	97	85	88
240-121074-6	GW-WT120C 102319	84	91	80	82
240-121074-7	GW-WT-111A 102319	91	98	86	88
240-121074-8	GW-WT-106C 102319	90	98	88	89
240-121074-9	GW-WT-122B 102319	86	94	82	86
240-121074-10	GW-WT-122C 102319	93	100	88	91
240-121074-11	GW-WT-120C 102319-DUP	89	97	85	88
240-121074-12	GW-WW-122A 102319	85	93	81	85
240-121074-13	TB-1	88	98	82	88
LCS 240-408509/5	Lab Control Sample	96	104	92	93
MB 240-408509/8	Method Blank	94	102	90	93

Surrogate Legend

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

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-408509/8
Matrix: Water
Analysis Batch: 408509

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/31/19 12:19	1
Benzene	1.0	U	1.0	0.13	ug/L			10/31/19 12:19	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/31/19 12:19	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/31/19 12:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*69 - 122*		*10/31/19 12:19*	*1*
Dibromofluoromethane (Surr)	*102*		*78 - 129*		*10/31/19 12:19*	*1*
4-Bromofluorobenzene (Surr)	*90*		*47 - 134*		*10/31/19 12:19*	*1*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 130*		*10/31/19 12:19*	*1*

Lab Sample ID: LCS 240-408509/5
Matrix: Water
Analysis Batch: 408509

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	20.0	20.6		ug/L		103	74 - 126
Benzene	20.0	21.8		ug/L		109	77 - 123
cis-1,2-Dichloroethene	20.0	21.5		ug/L		107	75 - 124
Vinyl chloride	20.0	22.1		ug/L		110	61 - 134

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*96*		*69 - 122*
Dibromofluoromethane (Surr)	*104*		*78 - 129*
4-Bromofluorobenzene (Surr)	*92*		*47 - 134*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 310-259423/3
Matrix: Water
Analysis Batch: 259423

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	0.50	mg/L			11/02/19 05:00	1
Sulfate	1.0	U	1.0	0.50	mg/L			11/02/19 05:00	1

Lab Sample ID: LCS 310-259423/4
Matrix: Water
Analysis Batch: 259423

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	10.2		mg/L		102	90 - 110
Sulfate	10.0	10.1		mg/L		101	90 - 110

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 240-121074-1 MS — **Client Sample ID: GW-WT121A 102319**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 259423

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	82	F1	25.0	113	F1	mg/L		123	80 - 120
Sulfate	59		25.0	86.8		mg/L		109	80 - 120

Lab Sample ID: 240-121074-1 MSD — **Client Sample ID: GW-WT121A 102319**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 259423

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	82	F1	25.0	109		mg/L		105	80 - 120	4	15
Sulfate	59		25.0	86.9		mg/L		110	80 - 120	0	15

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 240-407517/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 407997 — **Prep Batch: 407517**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	5000	U	5000	310	ug/L		10/25/19 14:00	10/28/19 22:27	1
Iron	200	U	200	26	ug/L		10/25/19 14:00	10/28/19 22:27	1
Manganese	15	U	15	2.1	ug/L		10/25/19 14:00	10/28/19 22:27	1
Sodium	1070	J	5000	560	ug/L		10/25/19 14:00	10/28/19 22:27	1
Lead	10	U	10	2.8	ug/L		10/25/19 14:00	10/28/19 22:27	1

Lab Sample ID: LCS 240-407517/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 407997 — **Prep Batch: 407517**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	50000	48300		ug/L		97	80 - 120
Iron	10000	9460		ug/L		95	80 - 120
Manganese	1000	976		ug/L		98	80 - 120
Sodium	50000	47600		ug/L		95	80 - 120
Lead	1000	937		ug/L		94	80 - 120

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 240-407517/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 408124 — **Prep Batch: 407517**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	0.75	ug/L		10/25/19 14:00	10/29/19 15:52	1

Lab Sample ID: LCS 240-407517/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 408124 — **Prep Batch: 407517**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1000	1060		ug/L		106	80 - 120

QC Association Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121074-1

GC/MS VOA

Analysis Batch: 408509

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-121074-1	GW-WT121A 102319	Total/NA	Water	8260C	
240-121074-2	GW-WT121B 102319	Total/NA	Water	8260C	
240-121074-3	GW-WT120A 102319	Total/NA	Water	8260C	
240-121074-4	GW-WT120B 102319	Total/NA	Water	8260C	
240-121074-5	GW-WT120B 102319-EB	Total/NA	Water	8260C	
240-121074-6	GW-WT120C 102319	Total/NA	Water	8260C	
240-121074-7	GW-WT-111A 102319	Total/NA	Water	8260C	
240-121074-8	GW-WT-106C 102319	Total/NA	Water	8260C	
240-121074-9	GW-WT-122B 102319	Total/NA	Water	8260C	
240-121074-10	GW-WT-122C 102319	Total/NA	Water	8260C	
240-121074-11	GW-WT-120C 102319-DUP	Total/NA	Water	8260C	
240-121074-12	GW-WW-122A 102319	Total/NA	Water	8260C	
240-121074-13	TB-1	Total/NA	Water	8260C	
MB 240-408509/8	Method Blank	Total/NA	Water	8260C	
LCS 240-408509/5	Lab Control Sample	Total/NA	Water	8260C	

HPLC/IC

Analysis Batch: 259423

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-121074-1	GW-WT121A 102319	Total/NA	Water	300.0	
240-121074-2	GW-WT121B 102319	Total/NA	Water	300.0	
240-121074-3	GW-WT120A 102319	Total/NA	Water	300.0	
240-121074-4	GW-WT120B 102319	Total/NA	Water	300.0	
240-121074-5	GW-WT120B 102319-EB	Total/NA	Water	300.0	
240-121074-5	GW-WT120B 102319-EB	Total/NA	Water	300.0	
240-121074-6	GW-WT120C 102319	Total/NA	Water	300.0	
240-121074-7	GW-WT-111A 102319	Total/NA	Water	300.0	
240-121074-8	GW-WT-106C 102319	Total/NA	Water	300.0	
240-121074-8	GW-WT-106C 102319	Total/NA	Water	300.0	
240-121074-9	GW-WT-122B 102319	Total/NA	Water	300.0	
240-121074-10	GW-WT-122C 102319	Total/NA	Water	300.0	
240-121074-11	GW-WT-120C 102319-DUP	Total/NA	Water	300.0	
240-121074-12	GW-WW-122A 102319	Total/NA	Water	300.0	
MB 310-259423/3	Method Blank	Total/NA	Water	300.0	
LCS 310-259423/4	Lab Control Sample	Total/NA	Water	300.0	
240-121074-1 MS	GW-WT121A 102319	Total/NA	Water	300.0	
240-121074-1 MSD	GW-WT121A 102319	Total/NA	Water	300.0	

Metals

Prep Batch: 407517

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-121074-1	GW-WT121A 102319	Total Recoverable	Water	3005A	
240-121074-2	GW-WT121B 102319	Total Recoverable	Water	3005A	
240-121074-3	GW-WT120A 102319	Total Recoverable	Water	3005A	
240-121074-4	GW-WT120B 102319	Total Recoverable	Water	3005A	
240-121074-5	GW-WT120B 102319-EB	Total Recoverable	Water	3005A	
240-121074-6	GW-WT120C 102319	Total Recoverable	Water	3005A	
240-121074-7	GW-WT-111A 102319	Total Recoverable	Water	3005A	
240-121074-8	GW-WT-106C 102319	Total Recoverable	Water	3005A	
240-121074-9	GW-WT-122B 102319	Total Recoverable	Water	3005A	

Metals (Continued)

Prep Batch: 407517 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-121074-10	GW-WT-122C 102319	Total Recoverable	Water	3005A	
240-121074-11	GW-WT-120C 102319-DUP	Total Recoverable	Water	3005A	
MB 240-407517/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-407517/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-407517/3-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 407997

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-121074-1	GW-WT121A 102319	Total Recoverable	Water	6010C	407517
240-121074-2	GW-WT121B 102319	Total Recoverable	Water	6010C	407517
240-121074-3	GW-WT120A 102319	Total Recoverable	Water	6010C	407517
240-121074-4	GW-WT120B 102319	Total Recoverable	Water	6010C	407517
240-121074-5	GW-WT120B 102319-EB	Total Recoverable	Water	6010C	407517
240-121074-6	GW-WT120C 102319	Total Recoverable	Water	6010C	407517
240-121074-7	GW-WT-111A 102319	Total Recoverable	Water	6010C	407517
240-121074-8	GW-WT-106C 102319	Total Recoverable	Water	6010C	407517
240-121074-9	GW-WT-122B 102319	Total Recoverable	Water	6010C	407517
240-121074-10	GW-WT-122C 102319	Total Recoverable	Water	6010C	407517
240-121074-11	GW-WT-120C 102319-DUP	Total Recoverable	Water	6010C	407517
MB 240-407517/1-A	Method Blank	Total Recoverable	Water	6010C	407517
LCS 240-407517/2-A	Lab Control Sample	Total Recoverable	Water	6010C	407517

Analysis Batch: 408124

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-121074-1	GW-WT121A 102319	Total Recoverable	Water	6020A	407517
240-121074-2	GW-WT121B 102319	Total Recoverable	Water	6020A	407517
240-121074-3	GW-WT120A 102319	Total Recoverable	Water	6020A	407517
240-121074-4	GW-WT120B 102319	Total Recoverable	Water	6020A	407517
240-121074-5	GW-WT120B 102319-EB	Total Recoverable	Water	6020A	407517
240-121074-6	GW-WT120C 102319	Total Recoverable	Water	6020A	407517
240-121074-7	GW-WT-111A 102319	Total Recoverable	Water	6020A	407517
240-121074-8	GW-WT-106C 102319	Total Recoverable	Water	6020A	407517
240-121074-9	GW-WT-122B 102319	Total Recoverable	Water	6020A	407517
240-121074-10	GW-WT-122C 102319	Total Recoverable	Water	6020A	407517
240-121074-11	GW-WT-120C 102319-DUP	Total Recoverable	Water	6020A	407517
MB 240-407517/1-A	Method Blank	Total Recoverable	Water	6020A	407517
LCS 240-407517/3-A	Lab Control Sample	Total Recoverable	Water	6020A	407517

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121074-1

Client Sample ID: GW-WT121A 102319

Lab Sample ID: 240-121074-1
Date Collected: 10/23/19 10:30
Matrix: Water
Date Received: 10/24/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408509	10/31/19 12:55	HMB	TAL CAN
Total/NA	Analysis	300.0		5	259423	11/02/19 17:33	CJT	TAL CF
Total Recoverable	Prep	3005A			407517	10/25/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	407997	10/28/19 23:18	KLC	TAL CAN
Total Recoverable	Prep	3005A			407517	10/25/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408124	10/29/19 17:07	RKT	TAL CAN

Client Sample ID: GW-WT121B 102319

Lab Sample ID: 240-121074-2
Date Collected: 10/23/19 11:15
Matrix: Water
Date Received: 10/24/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408509	10/31/19 13:18	HMB	TAL CAN
Total/NA	Analysis	300.0		5	259423	11/02/19 06:55	CJT	TAL CF
Total Recoverable	Prep	3005A			407517	10/25/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	407997	10/28/19 23:22	KLC	TAL CAN
Total Recoverable	Prep	3005A			407517	10/25/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408124	10/29/19 17:11	RKT	TAL CAN

Client Sample ID: GW-WT120A 102319

Lab Sample ID: 240-121074-3
Date Collected: 10/23/19 13:25
Matrix: Water
Date Received: 10/24/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408509	10/31/19 13:40	HMB	TAL CAN
Total/NA	Analysis	300.0		5	259423	11/02/19 07:11	CJT	TAL CF
Total Recoverable	Prep	3005A			407517	10/25/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	407997	10/28/19 23:26	KLC	TAL CAN
Total Recoverable	Prep	3005A			407517	10/25/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408124	10/29/19 17:16	RKT	TAL CAN

Client Sample ID: GW-WT120B 102319

Lab Sample ID: 240-121074-4
Date Collected: 10/23/19 14:15
Matrix: Water
Date Received: 10/24/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408509	10/31/19 14:03	HMB	TAL CAN
Total/NA	Analysis	300.0		5	259423	11/02/19 07:28	CJT	TAL CF
Total Recoverable	Prep	3005A			407517	10/25/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	407997	10/28/19 23:31	KLC	TAL CAN
Total Recoverable	Prep	3005A			407517	10/25/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408124	10/29/19 17:20	RKT	TAL CAN

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121074-1

Client Sample ID: GW-WT120B 102319-EB

Lab Sample ID: 240-121074-5
Date Collected: 10/23/19 14:20
Matrix: Water
Date Received: 10/24/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408509	10/31/19 14:25	HMB	TAL CAN
Total/NA	Analysis	300.0		1	259423	11/02/19 07:44	CJT	TAL CF
Total/NA	Analysis	300.0		5	259423	11/07/19 10:41	CJT	TAL CF
Total Recoverable	Prep	3005A			407517	10/25/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	407997	10/28/19 23:35	KLC	TAL CAN
Total Recoverable	Prep	3005A			407517	10/25/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408124	10/29/19 17:24	RKT	TAL CAN

Client Sample ID: GW-WT120C 102319

Lab Sample ID: 240-121074-6
Date Collected: 10/23/19 12:50
Matrix: Water
Date Received: 10/24/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408509	10/31/19 14:48	HMB	TAL CAN
Total/NA	Analysis	300.0		1	259423	11/02/19 08:00	CJT	TAL CF
Total Recoverable	Prep	3005A			407517	10/25/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	407997	10/28/19 23:39	KLC	TAL CAN
Total Recoverable	Prep	3005A			407517	10/25/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408124	10/29/19 17:28	RKT	TAL CAN

Client Sample ID: GW-WT-111A 102319

Lab Sample ID: 240-121074-7
Date Collected: 10/23/19 17:05
Matrix: Water
Date Received: 10/24/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408509	10/31/19 15:10	HMB	TAL CAN
Total/NA	Analysis	300.0		5	259423	11/02/19 08:17	CJT	TAL CF
Total Recoverable	Prep	3005A			407517	10/25/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	407997	10/28/19 23:44	KLC	TAL CAN
Total Recoverable	Prep	3005A			407517	10/25/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408124	10/29/19 17:32	RKT	TAL CAN

Client Sample ID: GW-WT-106C 102319

Lab Sample ID: 240-121074-8
Date Collected: 10/23/19 18:05
Matrix: Water
Date Received: 10/24/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408509	10/31/19 15:32	HMB	TAL CAN
Total/NA	Analysis	300.0		5	259423	11/02/19 08:33	CJT	TAL CF
Total/NA	Analysis	300.0		1	259423	11/04/19 09:54	CJT	TAL CF
Total Recoverable	Prep	3005A			407517	10/25/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	407997	10/28/19 23:48	KLC	TAL CAN
Total Recoverable	Prep	3005A			407517	10/25/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408124	10/29/19 17:37	RKT	TAL CAN

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121074-1

Client Sample ID: GW-WT-122B 102319

Lab Sample ID: 240-121074-9
Date Collected: 10/23/19 16:10
Matrix: Water
Date Received: 10/24/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408509	10/31/19 15:54	HMB	TAL CAN
Total/NA	Analysis	300.0		5	259423	11/02/19 08:49	CJT	TAL CF
Total Recoverable	Prep	3005A			407517	10/25/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	407997	10/29/19 00:01	KLC	TAL CAN
Total Recoverable	Prep	3005A			407517	10/25/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408124	10/29/19 17:49	RKT	TAL CAN

Client Sample ID: GW-WT-122C 102319

Lab Sample ID: 240-121074-10
Date Collected: 10/23/19 15:30
Matrix: Water
Date Received: 10/24/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408509	10/31/19 16:17	HMB	TAL CAN
Total/NA	Analysis	300.0		5	259423	11/02/19 09:06	CJT	TAL CF
Total Recoverable	Prep	3005A			407517	10/25/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	407997	10/29/19 00:05	KLC	TAL CAN
Total Recoverable	Prep	3005A			407517	10/25/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408124	10/29/19 17:54	RKT	TAL CAN

Client Sample ID: GW-WT-120C 102319-DUP

Lab Sample ID: 240-121074-11
Date Collected: 10/23/19 12:50
Matrix: Water
Date Received: 10/24/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408509	10/31/19 16:40	HMB	TAL CAN
Total/NA	Analysis	300.0		1	259423	11/02/19 09:55	CJT	TAL CF
Total Recoverable	Prep	3005A			407517	10/25/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	407997	10/29/19 00:10	KLC	TAL CAN
Total Recoverable	Prep	3005A			407517	10/25/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408124	10/29/19 17:58	RKT	TAL CAN

Client Sample ID: GW-WW-122A 102319

Lab Sample ID: 240-121074-12
Date Collected: 10/23/19 15:30
Matrix: Water
Date Received: 10/24/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408509	10/31/19 17:03	HMB	TAL CAN
Total/NA	Analysis	300.0		5	259423	11/02/19 10:11	CJT	TAL CF

Client Sample ID: TB-1

Lab Sample ID: 240-121074-13
Date Collected: 10/23/19 00:00
Matrix: Water
Date Received: 10/24/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408509	10/31/19 17:25	HMB	TAL CAN

Laboratory References:

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

TAL CF = Eurofins TestAmerica, Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: Groundwater & Environmental Services Inc
Job ID: 240-121074-1
Project/Site: Bayer Himco Landfill

Laboratory: Eurofins TestAmerica, Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-20
Connecticut	State	PH-0590	12-31-19
Florida	NELAP	E87225	06-30-20
Georgia	State	4062	02-23-20
Illinois	NELAP	004498	07-31-20
Iowa	State	421	06-01-20
Kansas	NELAP	E-10336	04-30-20
Kentucky (UST)	State	112225	02-23-20
Kentucky (WW)	State	KY98016	12-31-19
Minnesota	NELAP	OH00048	12-31-19
Minnesota (Petrofund)	State Program	3506	07-31-21
New Jersey	NELAP	OH001	06-30-20
New York	NELAP	10975	03-31-20
Ohio VAP	State	CL0024	06-05-21
Oregon	NELAP	4062	02-23-20
Pennsylvania	NELAP	68-00340	08-31-20
Texas	NELAP	T104704517-18-10	08-31-20
USDA	US Federal Programs	P330-16-00404	12-28-19
Virginia	NELAP	010101	09-14-20
Washington	State	C971	01-12-20
West Virginia DEP	State	210	12-31-19

Laboratory: Eurofins TestAmerica, Cedar Falls

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
AIHA-LAP, LLC	Industrial Hygiene Laboratory Accreditation Program (IHLAP)	101044	11-01-20
Colorado	Petroleum Storage Tank Program	IA100001 (OR)	09-29-20
Georgia	State	IA100001 (OR)	09-29-20
Illinois	NELAP	200024	11-29-19
Iowa	State	007	12-01-19
Kansas	NELAP	E-10341	01-31-20
Minnesota	NELAP	019-999-319	12-31-19
Minnesota (Petrofund)	State Program	3349	08-22-21
Oregon	NELAP	IA100001	09-29-20
USDA	US Federal Programs	P330-19-00003	01-02-22

1.8/2.5

CHAIN OF CUSTODY Client: Bayer U S LLC

FED-EX Tracking #	Bottle Order Control #
Lab Quote #	Lab Job #

CLIENT/REPORTING INFORMATION

Groundwater & Environmental Services, Inc.
1691 Georgetown Road, Hudson, OH 44236
Project Manager: Stephen E. Betts **Phone #:** 877-505-9382
Region Email: GreatLakesRegion@gesonline.com

PROJECT INFORMATION

Project Name: Bayer Himco Landfill
Project Address: County Road 10, Elkhart, IN
Project PSID #: 766356

BILLING INFORMATION

Groundwater & Environmental Services, Inc.
ges-invoices@gesonline.com
ATTN: Accounts Payable
Invoice Instructions (Project #/ Phase / Task / Altorg)
1801906/02/206/1418

Sampler(s) Name: Chip Markovich / Bryan Allen Sampler(s) Name: Chip Bryan

Lab Sample #	Field ID / Point of Collection (Sys_loc_code)	Depth Interval (ft)	Date Sampled	Time Sampled	Sampler	Matrix	Total # Bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Amber	VOC 8260	Metals 6010	Arsnic 6020	Chemistry 300 (Sulfate, Chloride)				LAB USE ONLY
								number of preserved bottles									REQUESTED ANALYSIS (see Test Code sheet)							
–	GW - WT 121A 10 23 19		10/23/19	1030	CM	WG	5	3		1		1					3	1	1	1				
–	GW - WT 121B 10 23 19		10/23/19	11:15	CM	WG	5	3		1		1					3	1	1	1				
	GW - WT 120A 10 23 19		10/23/19	13:25	BA	WG	5	3		1		1					3	1	1	1				
–	GW - WT 120B 10 23 19		10/23/19	1415	BA	WG	5	3		1		1					3	1	1	1				
–	GW - WT 120B 10 23 19 - EB		10/23/19	1420	BA	WG	5	3		1		1					3	1	1	1				
–	GW - WT 120C 10 23 19		10/23/19	12:50	BA	WG	5	3		1		1					3	1	1	1				
–	GW - WT-111A 10 23 19		10/23/19	1705	BA	WG	5	3		1		1					3	1	1	1				
–	GW - WT-106L 10 23 19		10/23/19	1805	BA	WG	5	3		1		1					3	1	1	1				
–	GW - WT-122B 10 23 19		10/23/19	1610	CM	WG	5	3		1		1					3	1	1	1				
–	GW - WT-122C 10 23 19		10/23/19	1530	CM	WG	5	3		1		1					3	1	1	1				
–	GW - WT-120C 10 23 19 Dup		10/23/19	1250	BA	WG	5	3		1		1					3	1	1	1				
–	GW-WW-122A 10 23 19		10/23/19	1530	BA	WG	5	3		1		1					3	1	1	1				

Turnaround Time (Business Days) **Approved By (Lab PM) / Date**
- [x] Standard 14 Days ____/____
- [ ] 1 day RUSH ____/____
- [ ] Other ____ ____/____

Laboratory Information
Lab: SGS Accutest - Dayton, ~~New Jersey~~ CM
Address: 2235 Route 130, Dayton, New Jersey 08810
Phone: 732.355.4553
Lab PM: Viktoriya Pushkova
Lab PM Emai Viktoriya.Pushkova@sgs.com

TA Lab

Data Deliverable Information
- [ ] Commercial 'A' (Level 1) = Results Only
- [ ] Commercial 'B" (Level 2) = Results + QC Summary
- [ ] FULLT1 (Level 3 & 4)
- [ ] NJ Reduced = Results + QC Summary + Partial Raw Data
- [ ] Commercial 'C'
- [x] *NJ Data of Known Quality Protocol Reporting*
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [x] EDD Format ____
- [ ] Other ____

Please Email the EQ EDD Package to ges@equisonline.com
EQEDD Name: Bayer Himco Landfill_LabReport#.28489.EQEDD.zip

Sample Custody must be documented below each time samples change possession, including courier.

Relinquished By Sampler:	Date / Time:	Received By:
1 Chip Markovich	1 10/23/19 2000	1 FedeX
Relinquished By: 2	Date / Time: 2 10/24/19 9:30	Received By: 2
Relinquished By: 3	Date / Time: 3	Received By: 3

Custody Seal Number: [ ] Intact [ ] Not Intact [ ] Preserved where applicable [ ] On Ice Cooler Temp ____

240-121074 Chain of Custody

1-8/2.5

CHAIN OF CUSTODY Client: Bayer U S LLC

FED-EX Tracking #	Bottle Order Control #
Lab Quote #	Lab Job #

CLIENT/REPORTING INFORMATION

Groundwater & Environmental Services, Inc.
1691 Georgetown Road, Hudson, OH 44236

Project Manager: Stephen E. Betts **Phone #:** 877-505-9382

Region Email: GreatLakesRegion@gesonline.com

PROJECT INFORMATION

Project Name: Bayer Himco Landfill
Project Address: County Road 10, Elkhart, IN
Project PSID #: 766356

BILLING INFORMATION

Groundwater & Environmental Services, Inc.
ges-invoices@gesonline.com
ATTN: Accounts Payable

Invoice Instructions (Project #/ Phase / Task / Altorg)
1801906/02/206/1418

Sampler(s) Name: Bryan Allen

Sampler(s) Name: Bryan

Lab Sample #	Field ID / Point of Collection (Sys_loc_code)	Depth Interval (ft)	Date Sampled	Time Sampled	Sampler	Matrix	Total # Bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Amber	VOC 8260	Metals 6010	Arsnic 6020	Chemistry 300 (Sulfate, Chloride)				
	GW - 10 19		10/ /19			WG																		
	GW - 10 19		10/ /19			WG																		
	GW - 10 19		10/ /19			WG																		
	GW - 10 19		10/ /19			WG																		
	GW - 10 19		10/ /19			WG																		
	GW - 10 19		10/ /19			WG																		
	GW - 10 19		10/ /19			WG																		
	GW - 10 19		10/ /19			WG																		
	GW - 10 19		10/ /19			WG																		
	GW - 10 19		10/ /19			WG																		
	GW - 10 19		10/ /19			WG																		
	TB-1		—	—	—	W	2	X									X							

Turnaround Time (Business Days) **Approved By (Lab PM) / Date**

- [x] Standard 14 Days ____/____
- [ ] 1 day RUSH ____/____
- [ ] Other _____ ____/____

Laboratory Information

Lab: SGS Accutest - Dayton, New-Jersey
Address: 2235 Route 130, Dayton, New Jersey 08810
Phone: 732.355.4553
Lab PM: Viktoriya Pushkova
Lab PM Emai Viktoriya.Pushkova@sgs.com

Data Deliverable Information

- [ ] Commercial 'A' (Level 1) = Results Only
- [ ] Commercial 'B' (Level 2) = Results + QC Summary
- [ ] FULLT1 (Level 3 & 4)
- [ ] NJ Reduced = Results + QC Summary + Partial Raw Data
- [ ] Commercial 'C'
- [x] *NJ Data of Known Quality Protocol Reporting*
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [x] EDD Format _____
- [ ] Other _____

Please Email the EQ EDD Package to ges@equisonline.com
EQEDD Name: Bayer Himco Landfill_LabReport#.28489.EQEDD.zip

Sample Custody must be documented below each time samples change possession, including courier.

Relinquished By Sampler:	Date / Time:	Received By:
1 Bryan Allen	1 10/23/19 2000	1 Fedex
Relinquished By : 2	Date / Time: 2 10/24/19 9:30	Received By: 2
Relinquished By : 3	Date / Time: 3	Received By: 3

Custody Seal Number: [ ] Intact [ ] Not Intact [ ] Preserved where applicable [ ] On Ice Cooler Temp _____

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # :** 121074
Canton Facility

Client GES Site Name _____ Cooler unpacked by: Gil Brown

Cooler Received on 10/24/19 Opened on 10/24/19

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

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

TestAmerica Cooler # ETA Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# IR-10 (CF +0.7 °C) Observed Cooler Temp. 1.8 °C Corrected Cooler Temp. 2.5 °C
   IR GUN #IR-11 (CF +0.9°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
   -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
   -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
   -Were tamper/custody seals intact and uncompromised? Yes No NA
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels be reconciled with the COC? Yes No
9. Were correct bottle(s) used for the test(s) indicated? Yes No
10. Sufficient quantity received to perform indicated analyses? Yes No
11. Are these work share samples? Yes No
    If yes, Questions 12-16 have been checked at the originating laboratory.
12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# **HC991818**
13. Were VOAs on the COC? Yes No
14. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this. Yes No NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 25119 Yes No
16. Was a LL Hg or Me Hg trip blank present? _____ Yes No

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

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:

18. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

WI-NC-099

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
GW-WT121A 102319	240-121074-E-1	Plastic 500ml - with Nitric Acid	<2		
GW-WT121B 102319	240-121074-E-2	Plastic 500ml - with Nitric Acid	<2		
GW-WT120A 102319	240-121074-E-3	Plastic 500ml - with Nitric Acid	<2		
GW-WT120B 102319	240-121074-E-4	Plastic 500ml - with Nitric Acid	<2		
GW-WT120B 102319-EB	240-121074-E-5	Plastic 500ml - with Nitric Acid	<2		
GW-WT120C 102319	240-121074-E-6	Plastic 500ml - with Nitric Acid	<2		
GW-WT111A 102319	240-121074-E-7	Plastic 500ml - with Nitric Acid	<2		
GW-WT106C 102319	240-121074-E-8	Plastic 500ml - with Nitric Acid	<2		
GW-WT122B 102319	240-121074-E-9	Plastic 500ml - with Nitric Acid	<2		
GW-WT122C 102319	240-121074-E-10	Plastic 500ml - with Nitric Acid	<2		
GW-WT120C 102319-DUP	240-121074-E-11	Plastic 500ml - with Nitric Acid	<2		
GW-WW122A 102319	240-121074-E-12	Plastic 500ml - with Nitric Acid	<2		

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

Laboratory Job ID: 240-121123-1
Client Project/Site: Bayer Himco Landfill

For:
Groundwater & Environmental Services Inc
1691 Georgetown Road, Unit G
Hudson, Ohio 44236

Attn: Mr. Steve Betts

Authorized for release by:
11/8/2019 11:36:23 AM

John McFadden, Project Manager I
(330)497-9396
john.mcfadden@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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

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

Table of Contents

Cover Page 1
Table of Contents 2
Definitions/Glossary 3
Case Narrative 4
Method Summary 6
Sample Summary 7
Detection Summary 8
Client Sample Results 14
Surrogate Summary 33
QC Sample Results 34
QC Association Summary 40
Lab Chronicle 43
Certification Summary 48
Chain of Custody 49

Definitions/Glossary

Client: Groundwater & Environmental Services Inc
Job ID: 240-121123-1
Project/Site: Bayer Himco Landfill

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Job ID: 240-121123-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: Groundwater & Environmental Services Inc

Project: Bayer Himco Landfill

Report Number: 240-121123-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, Canton attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The 300.0 Ion Chromatography analysis was performed at the Eurofins TestAmerica, Cedar Falls laboratory.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT

The samples were received on 10/25/2019 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 4.6º C and 5.3º C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples GW-WT101E-102419 (240-121123-1), GW-WT101C-102419 (240-121123-2), GW-WT115C-102419 (240-121123-3), GW-WT115A-102419 (240-121123-4), GW-WT115B-102419 (240-121123-5), GW-WTE3-102419 (240-121123-6), GW-WT119B-102419 (240-121123-7), GW-WT116A-102419 (240-121123-8), GW-TB3-102419 (240-121123-9), GW-WT106B-102419 (240-121123-10), GW-WT106A-102419 (240-121123-11), GW-WT114C-102419 (240-121123-12), GW-WT114A-102419 (240-121123-13), GW-WT114B-102419 (240-121123-14), GW-WT102A-102419 (240-121123-15), GW-WT102B-102419 (240-121123-16), GW-WT114C-102419 (240-121123-19) and GW-TB-2-102419 (240-121123-20) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260C. The samples were analyzed on 10/31/2019 and 11/01/2019.

The pH of sample GW-WT116A-102419 (240-121123-8) was 7. The sample was analyzed within the normal 14 day holding time; however, experimental evidence suggests that some aromatic compounds in wastewater samples, notably, Benzene, Toluene, and Ethylbenzene are susceptible to biological degradation if sample is not preserved to a pH of 2.

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

Job ID: 240-121123-1 (Continued)

Laboratory: Eurofins TestAmerica, Canton (Continued)

TOTAL RECOVERABLE METALS (ICP)

Samples GW-WT101E-102419 (240-121123-1), GW-WT101C-102419 (240-121123-2), GW-WT115C-102419 (240-121123-3), GW-WT115A-102419 (240-121123-4), GW-WT115B-102419 (240-121123-5), GW-WTE3-102419 (240-121123-6), GW-WT119B-102419 (240-121123-7), GW-WT116A-102419 (240-121123-8), GW-WT106B-102419 (240-121123-10), GW-WT106A-102419 (240-121123-11), GW-WT114C-102419 (240-121123-12), GW-WT114A-102419 (240-121123-13), GW-WT114B-102419 (240-121123-14), GW-WT102A-102419 (240-121123-15), GW-WT102B-102419 (240-121123-16) and GW-WT114B-102419D (240-121123-18) were analyzed for total recoverable metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 10/28/2019 and analyzed on 10/29/2019 and 10/30/2019.

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

TOTAL RECOVERABLE METALS (ICPMS)

Samples GW-WT101E-102419 (240-121123-1), GW-WT101C-102419 (240-121123-2), GW-WT115C-102419 (240-121123-3), GW-WT115A-102419 (240-121123-4), GW-WT115B-102419 (240-121123-5), GW-WTE3-102419 (240-121123-6), GW-WT119B-102419 (240-121123-7), GW-WT116A-102419 (240-121123-8), GW-WT106B-102419 (240-121123-10), GW-WT106A-102419 (240-121123-11), GW-WT114C-102419 (240-121123-12), GW-WT114A-102419 (240-121123-13), GW-WT114B-102419 (240-121123-14), GW-WT102A-102419 (240-121123-15), GW-WT102B-102419 (240-121123-16) and GW-WT114B-102419D (240-121123-18) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 10/28/2019 and analyzed on 10/29/2019.

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

ION CHROMATOGRAPHY

Samples GW-WT101E-102419 (240-121123-1), GW-WT101C-102419 (240-121123-2), GW-WT115C-102419 (240-121123-3), GW-WT115A-102419 (240-121123-4), GW-WT115B-102419 (240-121123-5), GW-WTE3-102419 (240-121123-6), GW-WT119B-102419 (240-121123-7), GW-WT116A-102419 (240-121123-8), GW-WT106B-102419 (240-121123-10), GW-WT106A-102419 (240-121123-11), GW-WT114C-102419 (240-121123-12), GW-WT114A-102419 (240-121123-13), GW-WT114B-102419 (240-121123-14), GW-WT102A-102419 (240-121123-15), GW-WT102B-102419 (240-121123-16) and GW-WT114B-102419D (240-121123-18) were analyzed for Ion Chromatography in accordance with EPA Method 300.0. The samples were analyzed on 11/04/2019, 11/05/2019 and 11/06/2019.

Sulfate failed the recovery criteria low for the MS and MSD of sample GW-WT115A-102419 (240-121123-4) in batch 310-259797.

Samples GW-WT101E-102419 (240-121123-1)[5X], GW-WT115C-102419 (240-121123-3)[5X], GW-WT115B-102419 (240-121123-5)[5X], GW-WTE3-102419 (240-121123-6)[5X], GW-WT119B-102419 (240-121123-7)[2X], GW-WT116A-102419 (240-121123-8)[10X], GW-WT106B-102419 (240-121123-10)[5X], GW-WT114C-102419 (240-121123-12)[5X], GW-WT114A-102419 (240-121123-13)[10X], GW-WT114A-102419 (240-121123-13)[5X], GW-WT114B-102419 (240-121123-14)[5X], GW-WT102A-102419 (240-121123-15)[5X], GW-WT102B-102419 (240-121123-16)[5X] and GW-WT114B-102419D (240-121123-18)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

Method Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL CAN
300.0	Anions, Ion Chromatography	MCAWW	TAL CF
6010C	Metals (ICP)	SW846	TAL CAN
6020A	Metals (ICP/MS)	SW846	TAL CAN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CAN
5030C	Purge and Trap	SW846	TAL CAN

Protocol References:

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

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

Laboratory References:

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

TAL CF = Eurofins TestAmerica, Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Sample Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-121123-1	GW-WT101E-102419	Water	10/24/19 16:15	10/25/19 09:30	
240-121123-2	GW-WT101C-102419	Water	10/24/19 15:20	10/25/19 09:30	
240-121123-3	GW-WT115C-102419	Water	10/24/19 14:20	10/25/19 09:30	
240-121123-4	GW-WT115A-102419	Water	10/24/19 12:55	10/25/19 09:30	
240-121123-5	GW-WT115B-102419	Water	10/24/19 12:20	10/25/19 09:30	
240-121123-6	GW-WTE3-102419	Water	10/24/19 11:15	10/25/19 09:30	
240-121123-7	GW-WT119B-102419	Water	10/24/19 10:25	10/25/19 09:30	
240-121123-8	GW-WT116A-102419	Water	10/24/19 09:35	10/25/19 09:30	
240-121123-9	GW-TB3-102419	Water	10/24/19 00:00	10/25/19 09:30	
240-121123-10	GW-WT106B-102419	Water	10/24/19 09:20	10/25/19 09:30	
240-121123-11	GW-WT106A-102419	Water	10/24/19 10:05	10/25/19 09:30	
240-121123-12	GW-WT114C-102419	Water	10/24/19 11:15	10/25/19 09:30	
240-121123-13	GW-WT114A-102419	Water	10/24/19 13:15	10/25/19 09:30	
240-121123-14	GW-WT114B-102419	Water	10/24/19 14:00	10/25/19 09:30	
240-121123-15	GW-WT102A-102419	Water	10/24/19 15:15	10/25/19 09:30	
240-121123-16	GW-WT102B-102419	Water	10/24/19 16:10	10/25/19 09:30	
240-121123-18	GW-WT114B-102419D	Water	10/24/19 14:00	10/25/19 09:30	
240-121123-19	GW-WT114C-102419	Water	10/24/19 11:15	10/25/19 09:30	
240-121123-20	GW-TB-2-102419	Water	10/24/19 00:00	10/25/19 09:30	

Detection Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Client Sample ID: GW-WT101E-102419 — Lab Sample ID: 240-121123-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	1.5		1.0	0.17	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	0.24	J	1.0	0.16	ug/L	1		8260C	Total/NA
Chloride	40		1.0	0.50	mg/L	1		300.0	Total/NA
Sulfate	56		5.0	2.5	mg/L	5		300.0	Total/NA
Calcium	81000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	2000		200	26	ug/L	1		6010C	Total Recoverable
Manganese	45		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	18000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	2.0	J	5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WT101C-102419 — Lab Sample ID: 240-121123-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2.6		1.0	0.50	mg/L	1		300.0	Total/NA
Sulfate	5.0		1.0	0.50	mg/L	1		300.0	Total/NA
Calcium	50000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	270		200	26	ug/L	1		6010C	Total Recoverable
Manganese	6.9	J	15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	12000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	6.7		5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WT115C-102419 — Lab Sample ID: 240-121123-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	2.3		1.0	0.17	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	0.51	J	1.0	0.16	ug/L	1		8260C	Total/NA
Chloride	43		1.0	0.50	mg/L	1		300.0	Total/NA
Sulfate	80		5.0	2.5	mg/L	5		300.0	Total/NA
Calcium	88000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	2500		200	26	ug/L	1		6010C	Total Recoverable
Manganese	52		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	23000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	2.4	J	5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WT115A-102419 — Lab Sample ID: 240-121123-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.32	J	1.0	0.17	ug/L	1		8260C	Total/NA
Benzene	1.9		1.0	0.13	ug/L	1		8260C	Total/NA
Chloride	2.6		1.0	0.50	mg/L	1		300.0	Total/NA
Sulfate	41		1.0	0.50	mg/L	1		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Client Sample ID: GW-WT115A-102419 (Continued) — Lab Sample ID: 240-121123-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	82000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	8100		200	26	ug/L	1		6010C	Total Recoverable
Manganese	250		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	4600	J	5000	560	ug/L	1		6010C	Total Recoverable
Lead	18		10	2.8	ug/L	1		6010C	Total Recoverable
Arsenic	7.3		5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WT115B-102419 — Lab Sample ID: 240-121123-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	4.5		1.0	0.17	ug/L	1		8260C	Total/NA
Benzene	23		1.0	0.13	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	2.0		1.0	0.16	ug/L	1		8260C	Total/NA
Chloride	31		5.0	2.5	mg/L	5		300.0	Total/NA
Sulfate	85		5.0	2.5	mg/L	5		300.0	Total/NA
Calcium	290000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	75	J	200	26	ug/L	1		6010C	Total Recoverable
Manganese	6.5	J	15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	36000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	0.81	J	5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WTE3-102419 — Lab Sample ID: 240-121123-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	22		1.0	0.50	mg/L	1		300.0	Total/NA
Sulfate	71		5.0	2.5	mg/L	5		300.0	Total/NA
Calcium	85000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	600		200	26	ug/L	1		6010C	Total Recoverable
Manganese	31		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	14000		5000	560	ug/L	1		6010C	Total Recoverable

Client Sample ID: GW-WT119B-102419 — Lab Sample ID: 240-121123-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	8.8		2.0	1.0	mg/L	2		300.0	Total/NA
Sulfate	24		2.0	1.0	mg/L	2		300.0	Total/NA
Calcium	71000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	600		200	26	ug/L	1		6010C	Total Recoverable
Manganese	43		15	2.1	ug/L	1		6010C	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: GW-WT119B-102419 (Continued) — Lab Sample ID: 240-121123-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	12000		5000	560	ug/L	1		6010C	Total Recoverable
Lead	3.8	J	10	2.8	ug/L	1		6010C	Total Recoverable
Arsenic	1.3	J	5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WT116A-102419 — Lab Sample ID: 240-121123-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	4.0		1.0	0.17	ug/L	1		8260C	Total/NA
Benzene	4.4		1.0	0.13	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	2.5		1.0	0.16	ug/L	1		8260C	Total/NA
Vinyl chloride	1.1		1.0	0.20	ug/L	1		8260C	Total/NA
Chloride	11		1.0	0.50	mg/L	1		300.0	Total/NA
Sulfate	410		10	5.0	mg/L	10		300.0	Total/NA
Calcium	600000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	4900		200	26	ug/L	1		6010C	Total Recoverable
Manganese	2100		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	110000		5000	560	ug/L	1		6010C	Total Recoverable
Lead	5.0	J	10	2.8	ug/L	1		6010C	Total Recoverable
Arsenic	1.1	J	5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-TB3-102419 — Lab Sample ID: 240-121123-9

No Detections.

Client Sample ID: GW-WT106B-102419 — Lab Sample ID: 240-121123-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	1.1		1.0	0.17	ug/L	1		8260C	Total/NA
Vinyl chloride	0.61	J	1.0	0.20	ug/L	1		8260C	Total/NA
Chloride	32		1.0	0.50	mg/L	1		300.0	Total/NA
Sulfate	110		5.0	2.5	mg/L	5		300.0	Total/NA
Calcium	95000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	3500		200	26	ug/L	1		6010C	Total Recoverable
Manganese	49		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	18000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	8.4		5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WT106A-102419 — Lab Sample ID: 240-121123-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	1.4		1.0	0.17	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	0.23	J	1.0	0.16	ug/L	1		8260C	Total/NA
Chloride	33		1.0	0.50	mg/L	1		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: GW-WT106A-102419 (Continued) — Lab Sample ID: 240-121123-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	50		1.0	0.50	mg/L	1		300.0	Total/NA
Calcium	85000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	760		200	26	ug/L	1		6010C	Total Recoverable
Manganese	830		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	21000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	1.4	J	5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WT114C-102419 — Lab Sample ID: 240-121123-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.44	J	1.0	0.17	ug/L	1		8260C	Total/NA
Chloride	38		1.0	0.50	mg/L	1		300.0	Total/NA
Sulfate	74		5.0	2.5	mg/L	5		300.0	Total/NA
Calcium	77000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	2400		200	26	ug/L	1		6010C	Total Recoverable
Manganese	28		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	18000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	18		5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WT114A-102419 — Lab Sample ID: 240-121123-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	340		10	5.0	mg/L	10		300.0	Total/NA
Sulfate	45		5.0	2.5	mg/L	5		300.0	Total/NA
Calcium	89000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	1700		200	26	ug/L	1		6010C	Total Recoverable
Manganese	280		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	210000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	2.6	J	5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WT114B-102419 — Lab Sample ID: 240-121123-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.53	J	1.0	0.17	ug/L	1		8260C	Total/NA
Chloride	64		5.0	2.5	mg/L	5		300.0	Total/NA
Sulfate	35		1.0	0.50	mg/L	1		300.0	Total/NA
Calcium	69000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	2200		200	26	ug/L	1		6010C	Total Recoverable
Manganese	57		15	2.1	ug/L	1		6010C	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: GW-WT114B-102419 (Continued) — Lab Sample ID: 240-121123-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	31000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	6.4		5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WT102A-102419 — Lab Sample ID: 240-121123-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	140		5.0	2.5	mg/L	5		300.0	Total/NA
Sulfate	22		1.0	0.50	mg/L	1		300.0	Total/NA
Calcium	73000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	1100		200	26	ug/L	1		6010C	Total Recoverable
Manganese	400		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	92000		5000	560	ug/L	1		6010C	Total Recoverable

Client Sample ID: GW-WT102B-102419 — Lab Sample ID: 240-121123-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	58		5.0	2.5	mg/L	5		300.0	Total/NA
Sulfate	27		1.0	0.50	mg/L	1		300.0	Total/NA
Calcium	70000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	220		200	26	ug/L	1		6010C	Total Recoverable
Manganese	55		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	30000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	1.5	J	5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WT114B-102419D — Lab Sample ID: 240-121123-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	64		5.0	2.5	mg/L	5		300.0	Total/NA
Sulfate	35		1.0	0.50	mg/L	1		300.0	Total/NA
Calcium	70000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	2200		200	26	ug/L	1		6010C	Total Recoverable
Manganese	52		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	31000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	6.5		5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WT114C-102419 — Lab Sample ID: 240-121123-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.43	J	1.0	0.17	ug/L	1		8260C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Client Sample ID: GW-TB-2-102419

Lab Sample ID: 240-121123-20

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Client Sample ID: GW-WT101E-102419

Lab Sample ID: 240-121123-1

Date Collected: 10/24/19 16:15
Matrix: Water
Date Received: 10/25/19 09:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	**1.5**		1.0	0.17	ug/L			11/01/19 12:04	1
Benzene	1.0	U	1.0	0.13	ug/L			11/01/19 12:04	1
cis-1,2-Dichloroethene	**0.24**	**J**	1.0	0.16	ug/L			11/01/19 12:04	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/01/19 12:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*90*		*69 - 122*		*11/01/19 12:04*	*1*
Dibromofluoromethane (Surr)	*99*		*78 - 129*		*11/01/19 12:04*	*1*
4-Bromofluorobenzene (Surr)	*86*		*47 - 134*		*11/01/19 12:04*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*75 - 130*		*11/01/19 12:04*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**40**		1.0	0.50	mg/L			11/04/19 19:46	1
Sulfate	**56**		5.0	2.5	mg/L			11/06/19 00:59	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**81000**		5000	310	ug/L		10/28/19 14:00	10/29/19 23:29	1
Iron	**2000**		200	26	ug/L		10/28/19 14:00	10/29/19 23:29	1
Manganese	**45**		15	2.1	ug/L		10/28/19 14:00	10/29/19 23:29	1
Sodium	**18000**		5000	560	ug/L		10/28/19 14:00	10/29/19 23:29	1
Lead	10	U	10	2.8	ug/L		10/28/19 14:00	10/29/19 23:29	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**2.0**	**J**	5.0	0.75	ug/L		10/28/19 14:00	10/29/19 16:23	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Client Sample ID: GW-WT101C-102419

Lab Sample ID: 240-121123-2

Date Collected: 10/24/19 15:20
Matrix: Water
Date Received: 10/25/19 09:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/01/19 12:27	1
Benzene	1.0	U	1.0	0.13	ug/L			11/01/19 12:27	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/01/19 12:27	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/01/19 12:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*91*		*69 - 122*		*11/01/19 12:27*	*1*
Dibromofluoromethane (Surr)	*100*		*78 - 129*		*11/01/19 12:27*	*1*
4-Bromofluorobenzene (Surr)	*88*		*47 - 134*		*11/01/19 12:27*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*75 - 130*		*11/01/19 12:27*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2.6**		1.0	0.50	mg/L			11/04/19 20:02	1
Sulfate	**5.0**		1.0	0.50	mg/L			11/04/19 20:02	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**50000**		5000	310	ug/L		10/28/19 14:00	10/29/19 23:42	1
Iron	**270**		200	26	ug/L		10/28/19 14:00	10/29/19 23:42	1
Manganese	**6.9**	**J**	15	2.1	ug/L		10/28/19 14:00	10/29/19 23:42	1
Sodium	**12000**		5000	560	ug/L		10/28/19 14:00	10/29/19 23:42	1
Lead	10	U	10	2.8	ug/L		10/28/19 14:00	10/29/19 23:42	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**6.7**		5.0	0.75	ug/L		10/28/19 14:00	10/29/19 16:26	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Client Sample ID: GW-WT115C-102419

Lab Sample ID: 240-121123-3

Date Collected: 10/24/19 14:20
Matrix: Water
Date Received: 10/25/19 09:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	**2.3**		1.0	0.17	ug/L			11/01/19 12:50	1
Benzene	1.0	U	1.0	0.13	ug/L			11/01/19 12:50	1
cis-1,2-Dichloroethene	**0.51**	**J**	1.0	0.16	ug/L			11/01/19 12:50	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/01/19 12:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*91*		*69 - 122*		*11/01/19 12:50*	*1*
Dibromofluoromethane (Surr)	*101*		*78 - 129*		*11/01/19 12:50*	*1*
4-Bromofluorobenzene (Surr)	*86*		*47 - 134*		*11/01/19 12:50*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*75 - 130*		*11/01/19 12:50*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**43**		1.0	0.50	mg/L			11/04/19 20:48	1
Sulfate	**80**		5.0	2.5	mg/L			11/06/19 00:43	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**88000**		5000	310	ug/L		10/28/19 14:00	10/29/19 23:47	1
Iron	**2500**		200	26	ug/L		10/28/19 14:00	10/29/19 23:47	1
Manganese	**52**		15	2.1	ug/L		10/28/19 14:00	10/29/19 23:47	1
Sodium	**23000**		5000	560	ug/L		10/28/19 14:00	10/29/19 23:47	1
Lead	10	U	10	2.8	ug/L		10/28/19 14:00	10/29/19 23:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**2.4**	**J**	5.0	0.75	ug/L		10/28/19 14:00	10/29/19 16:28	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Client Sample ID: GW-WT115A-102419

Lab Sample ID: 240-121123-4

Date Collected: 10/24/19 12:55
Matrix: Water
Date Received: 10/25/19 09:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	**0.32**	**J**	1.0	0.17	ug/L			10/31/19 20:02	1
Benzene	**1.9**		1.0	0.13	ug/L			10/31/19 20:02	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/31/19 20:02	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/31/19 20:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*91*		*69 - 122*		*10/31/19 20:02*	*1*
Dibromofluoromethane (Surr)	*98*		*78 - 129*		*10/31/19 20:02*	*1*
4-Bromofluorobenzene (Surr)	*85*		*47 - 134*		*10/31/19 20:02*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*75 - 130*		*10/31/19 20:02*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2.6**		1.0	0.50	mg/L			11/04/19 21:04	1
Sulfate	**41**		1.0	0.50	mg/L			11/04/19 21:04	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**82000**		5000	310	ug/L		10/28/19 14:00	10/29/19 22:36	1
Iron	**8100**		200	26	ug/L		10/28/19 14:00	10/29/19 22:36	1
Manganese	**250**		15	2.1	ug/L		10/28/19 14:00	10/29/19 22:36	1
Sodium	**4600**	**J**	5000	560	ug/L		10/28/19 14:00	10/29/19 22:36	1
Lead	**18**		10	2.8	ug/L		10/28/19 14:00	10/29/19 22:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**7.3**		5.0	0.75	ug/L		10/28/19 14:00	10/29/19 15:57	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Client Sample ID: GW-WT115B-102419

Lab Sample ID: 240-121123-5

Date Collected: 10/24/19 12:20
Date Received: 10/25/19 09:30

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	4.5		1.0	0.17	ug/L			11/01/19 13:16	1
Benzene	23		1.0	0.13	ug/L			11/01/19 13:16	1
cis-1,2-Dichloroethene	2.0		1.0	0.16	ug/L			11/01/19 13:16	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/01/19 13:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*69 - 122*		*11/01/19 13:16*	*1*
Dibromofluoromethane (Surr)	*100*		*78 - 129*		*11/01/19 13:16*	*1*
4-Bromofluorobenzene (Surr)	*90*		*47 - 134*		*11/01/19 13:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 130*		*11/01/19 13:16*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	31		5.0	2.5	mg/L			11/04/19 21:52	5
Sulfate	85		5.0	2.5	mg/L			11/04/19 21:52	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	290000		5000	310	ug/L		10/28/19 14:00	10/29/19 23:52	1
Iron	75	J	200	26	ug/L		10/28/19 14:00	10/29/19 23:52	1
Manganese	6.5	J	15	2.1	ug/L		10/28/19 14:00	10/29/19 23:52	1
Sodium	36000		5000	560	ug/L		10/28/19 14:00	10/29/19 23:52	1
Lead	10	U	10	2.8	ug/L		10/28/19 14:00	10/29/19 23:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.81	J	5.0	0.75	ug/L		10/28/19 14:00	10/29/19 16:30	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Client Sample ID: GW-WTE3-102419

Lab Sample ID: 240-121123-6

Date Collected: 10/24/19 11:15
Matrix: Water
Date Received: 10/25/19 09:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/01/19 13:39	1
Benzene	1.0	U	1.0	0.13	ug/L			11/01/19 13:39	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/01/19 13:39	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/01/19 13:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*90*		*69 - 122*		*11/01/19 13:39*	*1*
Dibromofluoromethane (Surr)	*97*		*78 - 129*		*11/01/19 13:39*	*1*
4-Bromofluorobenzene (Surr)	*85*		*47 - 134*		*11/01/19 13:39*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*75 - 130*		*11/01/19 13:39*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**22**		1.0	0.50	mg/L			11/04/19 22:09	1
Sulfate	**71**		5.0	2.5	mg/L			11/06/19 00:27	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**85000**		5000	310	ug/L		10/28/19 14:00	10/29/19 23:56	1
Iron	**600**		200	26	ug/L		10/28/19 14:00	10/29/19 23:56	1
Manganese	**31**		15	2.1	ug/L		10/28/19 14:00	10/29/19 23:56	1
Sodium	**14000**		5000	560	ug/L		10/28/19 14:00	10/29/19 23:56	1
Lead	10	U	10	2.8	ug/L		10/28/19 14:00	10/29/19 23:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	0.75	ug/L		10/28/19 14:00	10/29/19 16:33	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Client Sample ID: GW-WT119B-102419

Lab Sample ID: 240-121123-7

Date Collected: 10/24/19 10:25
Date Received: 10/25/19 09:30

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/01/19 14:02	1
Benzene	1.0	U	1.0	0.13	ug/L			11/01/19 14:02	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/01/19 14:02	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/01/19 14:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*89*		*69 - 122*		*11/01/19 14:02*	*1*
Dibromofluoromethane (Surr)	*95*		*78 - 129*		*11/01/19 14:02*	*1*
4-Bromofluorobenzene (Surr)	*83*		*47 - 134*		*11/01/19 14:02*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*75 - 130*		*11/01/19 14:02*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**8.8**		2.0	1.0	mg/L			11/04/19 22:25	2
Sulfate	**24**		2.0	1.0	mg/L			11/04/19 22:25	2

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**71000**		5000	310	ug/L		10/28/19 14:00	10/30/19 00:01	1
Iron	**600**		200	26	ug/L		10/28/19 14:00	10/30/19 00:01	1
Manganese	**43**		15	2.1	ug/L		10/28/19 14:00	10/30/19 00:01	1
Sodium	**12000**		5000	560	ug/L		10/28/19 14:00	10/30/19 00:01	1
Lead	**3.8**	**J**	10	2.8	ug/L		10/28/19 14:00	10/30/19 00:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.3**	**J**	5.0	0.75	ug/L		10/28/19 14:00	10/29/19 16:35	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Client Sample ID: GW-WT116A-102419

Lab Sample ID: 240-121123-8

Date Collected: 10/24/19 09:35
Matrix: Water
Date Received: 10/25/19 09:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	4.0		1.0	0.17	ug/L			11/01/19 14:24	1
Benzene	4.4		1.0	0.13	ug/L			11/01/19 14:24	1
cis-1,2-Dichloroethene	2.5		1.0	0.16	ug/L			11/01/19 14:24	1
Vinyl chloride	1.1		1.0	0.20	ug/L			11/01/19 14:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*90*		*69 - 122*		*11/01/19 14:24*	*1*
Dibromofluoromethane (Surr)	*100*		*78 - 129*		*11/01/19 14:24*	*1*
4-Bromofluorobenzene (Surr)	*84*		*47 - 134*		*11/01/19 14:24*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*75 - 130*		*11/01/19 14:24*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11		1.0	0.50	mg/L			11/04/19 22:41	1
Sulfate	410		10	5.0	mg/L			11/05/19 23:40	10

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	600000		5000	310	ug/L		10/28/19 14:00	10/30/19 00:05	1
Iron	4900		200	26	ug/L		10/28/19 14:00	10/30/19 00:05	1
Manganese	2100		15	2.1	ug/L		10/28/19 14:00	10/30/19 00:05	1
Sodium	110000		5000	560	ug/L		10/28/19 14:00	10/30/19 00:05	1
Lead	5.0	J	10	2.8	ug/L		10/28/19 14:00	10/30/19 00:05	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.1	J	5.0	0.75	ug/L		10/28/19 14:00	10/29/19 16:37	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Client Sample ID: GW-TB3-102419

Lab Sample ID: 240-121123-9

Date Collected: 10/24/19 00:00

Matrix: Water

Date Received: 10/25/19 09:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/01/19 14:46	1
Benzene	1.0	U	1.0	0.13	ug/L			11/01/19 14:46	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/01/19 14:46	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/01/19 14:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*91*		*69 - 122*		*11/01/19 14:46*	*1*
Dibromofluoromethane (Surr)	*101*		*78 - 129*		*11/01/19 14:46*	*1*
4-Bromofluorobenzene (Surr)	*86*		*47 - 134*		*11/01/19 14:46*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*75 - 130*		*11/01/19 14:46*	*1*

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Client Sample ID: GW-WT106B-102419

Lab Sample ID: 240-121123-10

Date Collected: 10/24/19 09:20
Date Received: 10/25/19 09:30

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	**1.1**		1.0	0.17	ug/L			11/01/19 15:09	1
Benzene	1.0	U	1.0	0.13	ug/L			11/01/19 15:09	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/01/19 15:09	1
Vinyl chloride	**0.61**	**J**	1.0	0.20	ug/L			11/01/19 15:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*88*		*69 - 122*		*11/01/19 15:09*	*1*
Dibromofluoromethane (Surr)	*96*		*78 - 129*		*11/01/19 15:09*	*1*
4-Bromofluorobenzene (Surr)	*83*		*47 - 134*		*11/01/19 15:09*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*75 - 130*		*11/01/19 15:09*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**32**		1.0	0.50	mg/L			11/04/19 22:58	1
Sulfate	**110**		5.0	2.5	mg/L			11/05/19 23:24	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**95000**		5000	310	ug/L		10/28/19 14:00	10/30/19 00:10	1
Iron	**3500**		200	26	ug/L		10/28/19 14:00	10/30/19 00:10	1
Manganese	**49**		15	2.1	ug/L		10/28/19 14:00	10/30/19 00:10	1
Sodium	**18000**		5000	560	ug/L		10/28/19 14:00	10/30/19 00:10	1
Lead	10	U	10	2.8	ug/L		10/28/19 14:00	10/30/19 00:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**8.4**		5.0	0.75	ug/L		10/28/19 14:00	10/29/19 16:40	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Client Sample ID: GW-WT106A-102419

Lab Sample ID: 240-121123-11

Date Collected: 10/24/19 10:05
Date Received: 10/25/19 09:30

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	**1.4**		1.0	0.17	ug/L			11/01/19 15:31	1
Benzene	1.0	U	1.0	0.13	ug/L			11/01/19 15:31	1
cis-1,2-Dichloroethene	**0.23**	**J**	1.0	0.16	ug/L			11/01/19 15:31	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/01/19 15:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*92*		*69 - 122*		*11/01/19 15:31*	*1*
Dibromofluoromethane (Surr)	*98*		*78 - 129*		*11/01/19 15:31*	*1*
4-Bromofluorobenzene (Surr)	*87*		*47 - 134*		*11/01/19 15:31*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*75 - 130*		*11/01/19 15:31*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**33**		1.0	0.50	mg/L			11/04/19 23:14	1
Sulfate	**50**		1.0	0.50	mg/L			11/04/19 23:14	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**85000**		5000	310	ug/L		10/28/19 14:00	10/30/19 00:15	1
Iron	**760**		200	26	ug/L		10/28/19 14:00	10/30/19 00:15	1
Manganese	**830**		15	2.1	ug/L		10/28/19 14:00	10/30/19 00:15	1
Sodium	**21000**		5000	560	ug/L		10/28/19 14:00	10/30/19 00:15	1
Lead	10	U	10	2.8	ug/L		10/28/19 14:00	10/30/19 00:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.4**	**J**	5.0	0.75	ug/L		10/28/19 14:00	10/29/19 16:47	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Client Sample ID: GW-WT114C-102419

Lab Sample ID: 240-121123-12

Date Collected: 10/24/19 11:15
Date Received: 10/25/19 09:30

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	**0.44**	**J**	1.0	0.17	ug/L			11/01/19 15:54	1
Benzene	1.0	U	1.0	0.13	ug/L			11/01/19 15:54	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/01/19 15:54	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/01/19 15:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*92*		*69 - 122*		*11/01/19 15:54*	*1*
Dibromofluoromethane (Surr)	*100*		*78 - 129*		*11/01/19 15:54*	*1*
4-Bromofluorobenzene (Surr)	*85*		*47 - 134*		*11/01/19 15:54*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*75 - 130*		*11/01/19 15:54*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**38**		1.0	0.50	mg/L			11/05/19 00:03	1
Sulfate	**74**		5.0	2.5	mg/L			11/05/19 23:09	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**77000**		5000	310	ug/L		10/28/19 14:00	10/30/19 00:19	1
Iron	**2400**		200	26	ug/L		10/28/19 14:00	10/30/19 00:19	1
Manganese	**28**		15	2.1	ug/L		10/28/19 14:00	10/30/19 00:19	1
Sodium	**18000**		5000	560	ug/L		10/28/19 14:00	10/30/19 00:19	1
Lead	10	U	10	2.8	ug/L		10/28/19 14:00	10/30/19 00:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**18**		5.0	0.75	ug/L		10/28/19 14:00	10/29/19 16:49	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Client Sample ID: GW-WT114A-102419

Lab Sample ID: 240-121123-13

Date Collected: 10/24/19 13:15
Date Received: 10/25/19 09:30

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/01/19 16:16	1
Benzene	1.0	U	1.0	0.13	ug/L			11/01/19 16:16	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/01/19 16:16	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/01/19 16:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*92*		*69 - 122*		*11/01/19 16:16*	*1*
Dibromofluoromethane (Surr)	*100*		*78 - 129*		*11/01/19 16:16*	*1*
4-Bromofluorobenzene (Surr)	*86*		*47 - 134*		*11/01/19 16:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*75 - 130*		*11/01/19 16:16*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**340**		10	5.0	mg/L			11/05/19 22:53	10
Sulfate	**45**		5.0	2.5	mg/L			11/05/19 00:19	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**89000**		5000	310	ug/L		10/28/19 14:00	10/30/19 00:24	1
Iron	**1700**		200	26	ug/L		10/28/19 14:00	10/30/19 00:24	1
Manganese	**280**		15	2.1	ug/L		10/28/19 14:00	10/30/19 00:24	1
Sodium	**210000**		5000	560	ug/L		10/28/19 14:00	10/30/19 00:24	1
Lead	10	U	10	2.8	ug/L		10/28/19 14:00	10/30/19 00:24	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**2.6**	**J**	5.0	0.75	ug/L		10/28/19 14:00	10/29/19 16:51	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Client Sample ID: GW-WT114B-102419

Lab Sample ID: 240-121123-14

Date Collected: 10/24/19 14:00
Matrix: Water
Date Received: 10/25/19 09:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	**0.53**	**J**	1.0	0.17	ug/L			11/01/19 16:38	1
Benzene	1.0	U	1.0	0.13	ug/L			11/01/19 16:38	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/01/19 16:38	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/01/19 16:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*91*		*69 - 122*		*11/01/19 16:38*	*1*
Dibromofluoromethane (Surr)	*100*		*78 - 129*		*11/01/19 16:38*	*1*
4-Bromofluorobenzene (Surr)	*86*		*47 - 134*		*11/01/19 16:38*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*75 - 130*		*11/01/19 16:38*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**64**		5.0	2.5	mg/L			11/05/19 22:37	5
Sulfate	**35**		1.0	0.50	mg/L			11/05/19 00:36	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**69000**		5000	310	ug/L		10/28/19 14:00	10/30/19 00:38	1
Iron	**2200**		200	26	ug/L		10/28/19 14:00	10/30/19 00:38	1
Manganese	**57**		15	2.1	ug/L		10/28/19 14:00	10/30/19 00:38	1
Sodium	**31000**		5000	560	ug/L		10/28/19 14:00	10/30/19 00:38	1
Lead	10	U	10	2.8	ug/L		10/28/19 14:00	10/30/19 00:38	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**6.4**		5.0	0.75	ug/L		10/28/19 14:00	10/29/19 16:54	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Client Sample ID: GW-WT102A-102419

Lab Sample ID: 240-121123-15

Date Collected: 10/24/19 15:15
Date Received: 10/25/19 09:30

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/01/19 17:00	1
Benzene	1.0	U	1.0	0.13	ug/L			11/01/19 17:00	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/01/19 17:00	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/01/19 17:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*91*		*69 - 122*		*11/01/19 17:00*	*1*
Dibromofluoromethane (Surr)	*97*		*78 - 129*		*11/01/19 17:00*	*1*
4-Bromofluorobenzene (Surr)	*86*		*47 - 134*		*11/01/19 17:00*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*75 - 130*		*11/01/19 17:00*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**140**		5.0	2.5	mg/L			11/05/19 22:22	5
Sulfate	**22**		1.0	0.50	mg/L			11/05/19 00:52	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**73000**		5000	310	ug/L		10/28/19 14:00	10/29/19 23:07	1
Iron	**1100**		200	26	ug/L		10/28/19 14:00	10/29/19 23:07	1
Manganese	**400**		15	2.1	ug/L		10/28/19 14:00	10/29/19 23:07	1
Sodium	**92000**		5000	560	ug/L		10/28/19 14:00	10/29/19 23:07	1
Lead	10	U	10	2.8	ug/L		10/28/19 14:00	10/29/19 23:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	0.75	ug/L		10/28/19 14:00	10/29/19 16:08	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Client Sample ID: GW-WT102B-102419

Lab Sample ID: 240-121123-16

Date Collected: 10/24/19 16:10
Date Received: 10/25/19 09:30

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/01/19 17:22	1
Benzene	1.0	U	1.0	0.13	ug/L			11/01/19 17:22	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/01/19 17:22	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/01/19 17:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*90*		*69 - 122*		*11/01/19 17:22*	*1*
Dibromofluoromethane (Surr)	*100*		*78 - 129*		*11/01/19 17:22*	*1*
4-Bromofluorobenzene (Surr)	*86*		*47 - 134*		*11/01/19 17:22*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*75 - 130*		*11/01/19 17:22*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**58**		5.0	2.5	mg/L			11/05/19 21:35	5
Sulfate	**27**		1.0	0.50	mg/L			11/05/19 01:41	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**70000**		5000	310	ug/L		10/28/19 14:00	10/30/19 00:42	1
Iron	**220**		200	26	ug/L		10/28/19 14:00	10/30/19 00:42	1
Manganese	**55**		15	2.1	ug/L		10/28/19 14:00	10/30/19 00:42	1
Sodium	**30000**		5000	560	ug/L		10/28/19 14:00	10/30/19 00:42	1
Lead	10	U	10	2.8	ug/L		10/28/19 14:00	10/30/19 00:42	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.5**	**J**	5.0	0.75	ug/L		10/28/19 14:00	10/29/19 16:56	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Client Sample ID: GW-WT114B-102419D

Lab Sample ID: 240-121123-18

Date Collected: 10/24/19 14:00
Date Received: 10/25/19 09:30

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	64		5.0	2.5	mg/L			11/05/19 21:20	5
Sulfate	35		1.0	0.50	mg/L			11/05/19 01:58	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	70000		5000	310	ug/L		10/28/19 14:00	10/30/19 00:47	1
Iron	2200		200	26	ug/L		10/28/19 14:00	10/30/19 00:47	1
Manganese	52		15	2.1	ug/L		10/28/19 14:00	10/30/19 00:47	1
Sodium	31000		5000	560	ug/L		10/28/19 14:00	10/30/19 00:47	1
Lead	10	U	10	2.8	ug/L		10/28/19 14:00	10/30/19 00:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	6.5		5.0	0.75	ug/L		10/28/19 14:00	10/29/19 16:59	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Client Sample ID: GW-WT114C-102419

Lab Sample ID: 240-121123-19

Date Collected: 10/24/19 11:15

Matrix: Water

Date Received: 10/25/19 09:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	**0.43**	**J**	1.0	0.17	ug/L			11/01/19 17:45	1
Benzene	1.0	U	1.0	0.13	ug/L			11/01/19 17:45	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/01/19 17:45	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/01/19 17:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*91*		*69 - 122*		*11/01/19 17:45*	*1*
Dibromofluoromethane (Surr)	*97*		*78 - 129*		*11/01/19 17:45*	*1*
4-Bromofluorobenzene (Surr)	*85*		*47 - 134*		*11/01/19 17:45*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*75 - 130*		*11/01/19 17:45*	*1*

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Client Sample ID: GW-TB-2-102419

Lab Sample ID: 240-121123-20

Date Collected: 10/24/19 00:00

Matrix: Water

Date Received: 10/25/19 09:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/01/19 18:08	1
Benzene	1.0	U	1.0	0.13	ug/L			11/01/19 18:08	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/01/19 18:08	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/01/19 18:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*89*		*69 - 122*		*11/01/19 18:08*	*1*
Dibromofluoromethane (Surr)	*99*		*78 - 129*		*11/01/19 18:08*	*1*
4-Bromofluorobenzene (Surr)	*83*		*47 - 134*		*11/01/19 18:08*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*75 - 130*		*11/01/19 18:08*	*1*

Surrogate Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	DBFM	BFB	DCA
Lab Sample ID	Client Sample ID	(69-122)	(78-129)	(47-134)	(75-130)
240-121123-1	GW-WT101E-102419	90	99	86	89
240-121123-2	GW-WT101C-102419	91	100	88	90
240-121123-3	GW-WT115C-102419	91	101	86	92
240-121123-4	GW-WT115A-102419	91	98	85	91
240-121123-4 MS	GW-WT115A-102419	87	92	82	83
240-121123-4 MSD	GW-WT115A-102419	86	94	82	86
240-121123-5	GW-WT115B-102419	96	100	90	93
240-121123-6	GW-WTE3-102419	90	97	85	88
240-121123-7	GW-WT119B-102419	89	95	83	88
240-121123-8	GW-WT116A-102419	90	100	84	89
240-121123-9	GW-TB3-102419	91	101	86	90
240-121123-10	GW-WT106B-102419	88	96	83	87
240-121123-11	GW-WT106A-102419	92	98	87	89
240-121123-12	GW-WT114C-102419	92	100	85	90
240-121123-13	GW-WT114A-102419	92	100	86	91
240-121123-14	GW-WT114B-102419	91	100	86	90
240-121123-15	GW-WT102A-102419	91	97	86	89
240-121123-15 MS	GW-WT102A-102419	86	93	81	84
240-121123-15 MSD	GW-WT102A-102419	89	96	84	89
240-121123-16	GW-WT102B-102419	90	100	86	90
240-121123-19	GW-WT114C-102419	91	97	85	89
240-121123-20	GW-TB-2-102419	89	99	83	89
LCS 240-408509/5	Lab Control Sample	96	104	92	93
LCS 240-408716/6	Lab Control Sample	95	101	91	92
MB 240-408509/8	Method Blank	94	102	90	93
MB 240-408716/9	Method Blank	93	102	89	95

Surrogate Legend

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

QC Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-408509/8
Matrix: Water
Analysis Batch: 408509

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/31/19 12:19	1
Benzene	1.0	U	1.0	0.13	ug/L			10/31/19 12:19	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/31/19 12:19	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/31/19 12:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*69 - 122*		*10/31/19 12:19*	*1*
Dibromofluoromethane (Surr)	*102*		*78 - 129*		*10/31/19 12:19*	*1*
4-Bromofluorobenzene (Surr)	*90*		*47 - 134*		*10/31/19 12:19*	*1*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 130*		*10/31/19 12:19*	*1*

Lab Sample ID: LCS 240-408509/5
Matrix: Water
Analysis Batch: 408509

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	20.0	20.6		ug/L		103	74 - 126
Benzene	20.0	21.8		ug/L		109	77 - 123
cis-1,2-Dichloroethene	20.0	21.5		ug/L		107	75 - 124
Vinyl chloride	20.0	22.1		ug/L		110	61 - 134

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*96*		*69 - 122*
Dibromofluoromethane (Surr)	*104*		*78 - 129*
4-Bromofluorobenzene (Surr)	*92*		*47 - 134*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 130*

Lab Sample ID: 240-121123-4 MS
Matrix: Water
Analysis Batch: 408509

Client Sample ID: GW-WT115A-102419
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	0.32	J	20.0	19.7		ug/L		97	71 - 121
Benzene	1.9		20.0	22.7		ug/L		104	70 - 121
cis-1,2-Dichloroethene	1.0	U	20.0	20.0		ug/L		100	68 - 121
Vinyl chloride	1.0	U	20.0	19.2		ug/L		96	49 - 136

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Toluene-d8 (Surr)	*87*		*69 - 122*
Dibromofluoromethane (Surr)	*92*		*78 - 129*
4-Bromofluorobenzene (Surr)	*82*		*47 - 134*
1,2-Dichloroethane-d4 (Surr)	*83*		*75 - 130*

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

Lab Sample ID: 240-121123-4 MSD — **Client Sample ID: GW-WT115A-102419**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 408509

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethane	0.32	J	20.0	20.0		ug/L		99	71 - 121	2	35
Benzene	1.9		20.0	22.1		ug/L		101	70 - 121	2	35
cis-1,2-Dichloroethene	1.0	U	20.0	20.4		ug/L		102	68 - 121	2	35
Vinyl chloride	1.0	U	20.0	19.9		ug/L		100	49 - 136	4	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*86*		*69 - 122*
Dibromofluoromethane (Surr)	*94*		*78 - 129*
4-Bromofluorobenzene (Surr)	*82*		*47 - 134*
1,2-Dichloroethane-d4 (Surr)	*86*		*75 - 130*

Lab Sample ID: MB 240-408716/9 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 408716

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/01/19 11:39	1
Benzene	1.0	U	1.0	0.13	ug/L			11/01/19 11:39	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/01/19 11:39	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/01/19 11:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*93*		*69 - 122*		*11/01/19 11:39*	*1*
Dibromofluoromethane (Surr)	*102*		*78 - 129*		*11/01/19 11:39*	*1*
4-Bromofluorobenzene (Surr)	*89*		*47 - 134*		*11/01/19 11:39*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*75 - 130*		*11/01/19 11:39*	*1*

Lab Sample ID: LCS 240-408716/6 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 408716

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	20.0	19.8		ug/L		99	74 - 126
Benzene	20.0	21.1		ug/L		105	77 - 123
cis-1,2-Dichloroethene	20.0	20.7		ug/L		104	75 - 124
Vinyl chloride	20.0	21.5		ug/L		108	61 - 134

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*95*		*69 - 122*
Dibromofluoromethane (Surr)	*101*		*78 - 129*
4-Bromofluorobenzene (Surr)	*91*		*47 - 134*
1,2-Dichloroethane-d4 (Surr)	*92*		*75 - 130*

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

Lab Sample ID: 240-121123-15 MS — **Client Sample ID: GW-WT102A-102419**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 408716

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	1.0	U	20.0	20.0		ug/L		100	71 - 121
Benzene	1.0	U	20.0	21.4		ug/L		107	70 - 121
cis-1,2-Dichloroethene	1.0	U	20.0	20.9		ug/L		105	68 - 121
Vinyl chloride	1.0	U	20.0	19.2		ug/L		96	49 - 136

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Toluene-d8 (Surr)	*86*		*69 - 122*
Dibromofluoromethane (Surr)	*93*		*78 - 129*
4-Bromofluorobenzene (Surr)	*81*		*47 - 134*
1,2-Dichloroethane-d4 (Surr)	*84*		*75 - 130*

Lab Sample ID: 240-121123-15 MSD — **Client Sample ID: GW-WT102A-102419**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 408716

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethane	1.0	U	20.0	20.5		ug/L		103	71 - 121	3	35
Benzene	1.0	U	20.0	21.6		ug/L		108	70 - 121	1	35
cis-1,2-Dichloroethene	1.0	U	20.0	21.1		ug/L		106	68 - 121	1	35
Vinyl chloride	1.0	U	20.0	20.8		ug/L		104	49 - 136	8	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*89*		*69 - 122*
Dibromofluoromethane (Surr)	*96*		*78 - 129*
4-Bromofluorobenzene (Surr)	*84*		*47 - 134*
1,2-Dichloroethane-d4 (Surr)	*89*		*75 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 310-259797/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 259797

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	0.50	mg/L			11/04/19 19:15	1
Sulfate	1.0	U	1.0	0.50	mg/L			11/04/19 19:15	1

Lab Sample ID: LCS 310-259797/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 259797

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	10.1		mg/L		101	90 - 110
Sulfate	10.0	9.90		mg/L		99	90 - 110

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 240-121123-4 MS — **Client Sample ID: GW-WT115A-102419**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 259797

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.6		5.00	7.46		mg/L		97	80 - 120
Sulfate	41		5.00	44.6	4	mg/L		74	80 - 120

Lab Sample ID: 240-121123-4 MSD — **Client Sample ID: GW-WT115A-102419**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 259797

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	2.6		5.00	7.43		mg/L		96	80 - 120	0	15
Sulfate	41		5.00	44.6	4	mg/L		75	80 - 120	0	15

Lab Sample ID: 240-121123-15 MS — **Client Sample ID: GW-WT102A-102419**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 259797

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	22		5.00	26.6	4	mg/L		91	80 - 120

Lab Sample ID: 240-121123-15 MS — **Client Sample ID: GW-WT102A-102419**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 259797

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	140		25.0	164	4	mg/L		90	80 - 120

Lab Sample ID: 240-121123-15 MSD — **Client Sample ID: GW-WT102A-102419**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 259797

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	22		5.00	26.5	4	mg/L		89	80 - 120	0	15

Lab Sample ID: 240-121123-15 MSD — **Client Sample ID: GW-WT102A-102419**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 259797

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	140		25.0	164	4	mg/L		89	80 - 120	0	15

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 240-407877/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 408245 — **Prep Batch: 407877**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	5000	U	5000	310	ug/L		10/28/19 14:00	10/29/19 22:27	1
Iron	200	U	200	26	ug/L		10/28/19 14:00	10/29/19 22:27	1
Manganese	15	U	15	2.1	ug/L		10/28/19 14:00	10/29/19 22:27	1
Sodium	5000	U	5000	560	ug/L		10/28/19 14:00	10/29/19 22:27	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 240-407877/1-A
Matrix: Water
Analysis Batch: 408245

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 407877

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	10	U	10	2.8	ug/L		10/28/19 14:00	10/29/19 22:27	1

Lab Sample ID: LCS 240-407877/2-A
Matrix: Water
Analysis Batch: 408245

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 407877

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	50000	50700		ug/L		101	80 - 120
Iron	10000	10200		ug/L		102	80 - 120
Manganese	1000	1020		ug/L		102	80 - 120
Sodium	50000	50000		ug/L		100	80 - 120
Lead	1000	982		ug/L		98	80 - 120

Lab Sample ID: 240-121123-4 MS
Matrix: Water
Analysis Batch: 408245

Client Sample ID: GW-WT115A-102419
Prep Type: Total Recoverable
Prep Batch: 407877

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	82000		50000	131000		ug/L		97	75 - 125
Iron	8100		10000	18700		ug/L		106	75 - 125
Manganese	250		1000	1210		ug/L		96	75 - 125
Sodium	4600	J	50000	52000		ug/L		95	75 - 125
Lead	18		1000	939		ug/L		92	75 - 125

Lab Sample ID: 240-121123-4 MSD
Matrix: Water
Analysis Batch: 408245

Client Sample ID: GW-WT115A-102419
Prep Type: Total Recoverable
Prep Batch: 407877

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Calcium	82000		50000	131000		ug/L		98	75 - 125	1	20
Iron	8100		10000	19700		ug/L		117	75 - 125	5	20
Manganese	250		1000	1230		ug/L		98	75 - 125	2	20
Sodium	4600	J	50000	52400		ug/L		96	75 - 125	1	20
Lead	18		1000	948		ug/L		93	75 - 125	1	20

Lab Sample ID: 240-121123-15 MS
Matrix: Water
Analysis Batch: 408245

Client Sample ID: GW-WT102A-102419
Prep Type: Total Recoverable
Prep Batch: 407877

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	73000		50000	120000		ug/L		94	75 - 125
Iron	1100		10000	11100		ug/L		100	75 - 125
Manganese	400		1000	1390		ug/L		99	75 - 125
Sodium	92000		50000	138000		ug/L		91	75 - 125
Lead	10	U	1000	951		ug/L		95	75 - 125

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 240-121123-15 MSD — **Client Sample ID: GW-WT102A-102419**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 408245 — **Prep Batch: 407877**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Calcium	73000		50000	120000		ug/L		94	75 - 125	0	20
Iron	1100		10000	11100		ug/L		99	75 - 125	1	20
Manganese	400		1000	1370		ug/L		97	75 - 125	1	20
Sodium	92000		50000	139000		ug/L		93	75 - 125	1	20
Lead	10	U	1000	947		ug/L		95	75 - 125	0	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 240-407877/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 408247 — **Prep Batch: 407877**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	0.75	ug/L		10/28/19 14:00	10/29/19 15:52	1

Lab Sample ID: LCS 240-407877/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 408247 — **Prep Batch: 407877**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1000	997		ug/L		100	80 - 120

Lab Sample ID: 240-121123-4 MS — **Client Sample ID: GW-WT115A-102419**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 408247 — **Prep Batch: 407877**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	7.3		1000	1030		ug/L		102	75 - 125

Lab Sample ID: 240-121123-4 MSD — **Client Sample ID: GW-WT115A-102419**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 408247 — **Prep Batch: 407877**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	7.3		1000	1010		ug/L		100	75 - 125	2	20

Lab Sample ID: 240-121123-15 MS — **Client Sample ID: GW-WT102A-102419**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 408247 — **Prep Batch: 407877**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	5.0	U	1000	1040		ug/L		104	75 - 125

Lab Sample ID: 240-121123-15 MSD — **Client Sample ID: GW-WT102A-102419**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 408247 — **Prep Batch: 407877**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	5.0	U	1000	1030		ug/L		103	75 - 125	1	20

QC Association Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

GC/MS VOA

Analysis Batch: 408509

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-121123-4	GW-WT115A-102419	Total/NA	Water	8260C	
MB 240-408509/8	Method Blank	Total/NA	Water	8260C	
LCS 240-408509/5	Lab Control Sample	Total/NA	Water	8260C	
240-121123-4 MS	GW-WT115A-102419	Total/NA	Water	8260C	
240-121123-4 MSD	GW-WT115A-102419	Total/NA	Water	8260C	

Analysis Batch: 408716

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-121123-1	GW-WT101E-102419	Total/NA	Water	8260C	
240-121123-2	GW-WT101C-102419	Total/NA	Water	8260C	
240-121123-3	GW-WT115C-102419	Total/NA	Water	8260C	
240-121123-5	GW-WT115B-102419	Total/NA	Water	8260C	
240-121123-6	GW-WTE3-102419	Total/NA	Water	8260C	
240-121123-7	GW-WT119B-102419	Total/NA	Water	8260C	
240-121123-8	GW-WT116A-102419	Total/NA	Water	8260C	
240-121123-9	GW-TB3-102419	Total/NA	Water	8260C	
240-121123-10	GW-WT106B-102419	Total/NA	Water	8260C	
240-121123-11	GW-WT106A-102419	Total/NA	Water	8260C	
240-121123-12	GW-WT114C-102419	Total/NA	Water	8260C	
240-121123-13	GW-WT114A-102419	Total/NA	Water	8260C	
240-121123-14	GW-WT114B-102419	Total/NA	Water	8260C	
240-121123-15	GW-WT102A-102419	Total/NA	Water	8260C	
240-121123-16	GW-WT102B-102419	Total/NA	Water	8260C	
240-121123-19	GW-WT114C-102419	Total/NA	Water	8260C	
240-121123-20	GW-TB-2-102419	Total/NA	Water	8260C	
MB 240-408716/9	Method Blank	Total/NA	Water	8260C	
LCS 240-408716/6	Lab Control Sample	Total/NA	Water	8260C	
240-121123-15 MS	GW-WT102A-102419	Total/NA	Water	8260C	
240-121123-15 MSD	GW-WT102A-102419	Total/NA	Water	8260C	

HPLC/IC

Analysis Batch: 259797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-121123-1	GW-WT101E-102419	Total/NA	Water	300.0	
240-121123-1	GW-WT101E-102419	Total/NA	Water	300.0	
240-121123-2	GW-WT101C-102419	Total/NA	Water	300.0	
240-121123-3	GW-WT115C-102419	Total/NA	Water	300.0	
240-121123-3	GW-WT115C-102419	Total/NA	Water	300.0	
240-121123-4	GW-WT115A-102419	Total/NA	Water	300.0	
240-121123-5	GW-WT115B-102419	Total/NA	Water	300.0	
240-121123-6	GW-WTE3-102419	Total/NA	Water	300.0	
240-121123-6	GW-WTE3-102419	Total/NA	Water	300.0	
240-121123-7	GW-WT119B-102419	Total/NA	Water	300.0	
240-121123-8	GW-WT116A-102419	Total/NA	Water	300.0	
240-121123-8	GW-WT116A-102419	Total/NA	Water	300.0	
240-121123-10	GW-WT106B-102419	Total/NA	Water	300.0	
240-121123-10	GW-WT106B-102419	Total/NA	Water	300.0	
240-121123-11	GW-WT106A-102419	Total/NA	Water	300.0	
240-121123-12	GW-WT114C-102419	Total/NA	Water	300.0	
240-121123-12	GW-WT114C-102419	Total/NA	Water	300.0	

HPLC/IC (Continued)

Analysis Batch: 259797 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-121123-13	GW-WT114A-102419	Total/NA	Water	300.0	
240-121123-13	GW-WT114A-102419	Total/NA	Water	300.0	
240-121123-14	GW-WT114B-102419	Total/NA	Water	300.0	
240-121123-14	GW-WT114B-102419	Total/NA	Water	300.0	
240-121123-15	GW-WT102A-102419	Total/NA	Water	300.0	
240-121123-15	GW-WT102A-102419	Total/NA	Water	300.0	
240-121123-16	GW-WT102B-102419	Total/NA	Water	300.0	
240-121123-16	GW-WT102B-102419	Total/NA	Water	300.0	
240-121123-18	GW-WT114B-102419D	Total/NA	Water	300.0	
240-121123-18	GW-WT114B-102419D	Total/NA	Water	300.0	
MB 310-259797/3	Method Blank	Total/NA	Water	300.0	
LCS 310-259797/4	Lab Control Sample	Total/NA	Water	300.0	
240-121123-4 MS	GW-WT115A-102419	Total/NA	Water	300.0	
240-121123-4 MSD	GW-WT115A-102419	Total/NA	Water	300.0	
240-121123-15 MS	GW-WT102A-102419	Total/NA	Water	300.0	
240-121123-15 MS	GW-WT102A-102419	Total/NA	Water	300.0	
240-121123-15 MSD	GW-WT102A-102419	Total/NA	Water	300.0	
240-121123-15 MSD	GW-WT102A-102419	Total/NA	Water	300.0	

Metals

Prep Batch: 407877

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-121123-1	GW-WT101E-102419	Total Recoverable	Water	3005A	
240-121123-2	GW-WT101C-102419	Total Recoverable	Water	3005A	
240-121123-3	GW-WT115C-102419	Total Recoverable	Water	3005A	
240-121123-4	GW-WT115A-102419	Total Recoverable	Water	3005A	
240-121123-5	GW-WT115B-102419	Total Recoverable	Water	3005A	
240-121123-6	GW-WTE3-102419	Total Recoverable	Water	3005A	
240-121123-7	GW-WT119B-102419	Total Recoverable	Water	3005A	
240-121123-8	GW-WT116A-102419	Total Recoverable	Water	3005A	
240-121123-10	GW-WT106B-102419	Total Recoverable	Water	3005A	
240-121123-11	GW-WT106A-102419	Total Recoverable	Water	3005A	
240-121123-12	GW-WT114C-102419	Total Recoverable	Water	3005A	
240-121123-13	GW-WT114A-102419	Total Recoverable	Water	3005A	
240-121123-14	GW-WT114B-102419	Total Recoverable	Water	3005A	
240-121123-15	GW-WT102A-102419	Total Recoverable	Water	3005A	
240-121123-16	GW-WT102B-102419	Total Recoverable	Water	3005A	
240-121123-18	GW-WT114B-102419D	Total Recoverable	Water	3005A	
MB 240-407877/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-407877/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-407877/3-A	Lab Control Sample	Total Recoverable	Water	3005A	
240-121123-4 MS	GW-WT115A-102419	Total Recoverable	Water	3005A	
240-121123-4 MS	GW-WT115A-102419	Total Recoverable	Water	3005A	
240-121123-4 MSD	GW-WT115A-102419	Total Recoverable	Water	3005A	
240-121123-4 MSD	GW-WT115A-102419	Total Recoverable	Water	3005A	
240-121123-15 MS	GW-WT102A-102419	Total Recoverable	Water	3005A	
240-121123-15 MS	GW-WT102A-102419	Total Recoverable	Water	3005A	
240-121123-15 MSD	GW-WT102A-102419	Total Recoverable	Water	3005A	
240-121123-15 MSD	GW-WT102A-102419	Total Recoverable	Water	3005A	

QC Association Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Metals

Analysis Batch: 408245

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-121123-1	GW-WT101E-102419	Total Recoverable	Water	6010C	407877
240-121123-2	GW-WT101C-102419	Total Recoverable	Water	6010C	407877
240-121123-3	GW-WT115C-102419	Total Recoverable	Water	6010C	407877
240-121123-4	GW-WT115A-102419	Total Recoverable	Water	6010C	407877
240-121123-5	GW-WT115B-102419	Total Recoverable	Water	6010C	407877
240-121123-6	GW-WTE3-102419	Total Recoverable	Water	6010C	407877
240-121123-7	GW-WT119B-102419	Total Recoverable	Water	6010C	407877
240-121123-8	GW-WT116A-102419	Total Recoverable	Water	6010C	407877
240-121123-10	GW-WT106B-102419	Total Recoverable	Water	6010C	407877
240-121123-11	GW-WT106A-102419	Total Recoverable	Water	6010C	407877
240-121123-12	GW-WT114C-102419	Total Recoverable	Water	6010C	407877
240-121123-13	GW-WT114A-102419	Total Recoverable	Water	6010C	407877
240-121123-14	GW-WT114B-102419	Total Recoverable	Water	6010C	407877
240-121123-15	GW-WT102A-102419	Total Recoverable	Water	6010C	407877
240-121123-16	GW-WT102B-102419	Total Recoverable	Water	6010C	407877
240-121123-18	GW-WT114B-102419D	Total Recoverable	Water	6010C	407877
MB 240-407877/1-A	Method Blank	Total Recoverable	Water	6010C	407877
LCS 240-407877/2-A	Lab Control Sample	Total Recoverable	Water	6010C	407877
240-121123-4 MS	GW-WT115A-102419	Total Recoverable	Water	6010C	407877
240-121123-4 MSD	GW-WT115A-102419	Total Recoverable	Water	6010C	407877
240-121123-15 MS	GW-WT102A-102419	Total Recoverable	Water	6010C	407877
240-121123-15 MSD	GW-WT102A-102419	Total Recoverable	Water	6010C	407877

Analysis Batch: 408247

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-121123-1	GW-WT101E-102419	Total Recoverable	Water	6020A	407877
240-121123-2	GW-WT101C-102419	Total Recoverable	Water	6020A	407877
240-121123-3	GW-WT115C-102419	Total Recoverable	Water	6020A	407877
240-121123-4	GW-WT115A-102419	Total Recoverable	Water	6020A	407877
240-121123-5	GW-WT115B-102419	Total Recoverable	Water	6020A	407877
240-121123-6	GW-WTE3-102419	Total Recoverable	Water	6020A	407877
240-121123-7	GW-WT119B-102419	Total Recoverable	Water	6020A	407877
240-121123-8	GW-WT116A-102419	Total Recoverable	Water	6020A	407877
240-121123-10	GW-WT106B-102419	Total Recoverable	Water	6020A	407877
240-121123-11	GW-WT106A-102419	Total Recoverable	Water	6020A	407877
240-121123-12	GW-WT114C-102419	Total Recoverable	Water	6020A	407877
240-121123-13	GW-WT114A-102419	Total Recoverable	Water	6020A	407877
240-121123-14	GW-WT114B-102419	Total Recoverable	Water	6020A	407877
240-121123-15	GW-WT102A-102419	Total Recoverable	Water	6020A	407877
240-121123-16	GW-WT102B-102419	Total Recoverable	Water	6020A	407877
240-121123-18	GW-WT114B-102419D	Total Recoverable	Water	6020A	407877
MB 240-407877/1-A	Method Blank	Total Recoverable	Water	6020A	407877
LCS 240-407877/3-A	Lab Control Sample	Total Recoverable	Water	6020A	407877
240-121123-4 MS	GW-WT115A-102419	Total Recoverable	Water	6020A	407877
240-121123-4 MSD	GW-WT115A-102419	Total Recoverable	Water	6020A	407877
240-121123-15 MS	GW-WT102A-102419	Total Recoverable	Water	6020A	407877
240-121123-15 MSD	GW-WT102A-102419	Total Recoverable	Water	6020A	407877

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Client Sample ID: GW-WT101E-102419

Lab Sample ID: 240-121123-1
Date Collected: 10/24/19 16:15
Matrix: Water
Date Received: 10/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408716	11/01/19 12:04	HMB	TAL CAN
Total/NA	Analysis	300.0		1	259797	11/04/19 19:46	ACJ	TAL CF
Total/NA	Analysis	300.0		5	259797	11/06/19 00:59	ACJ	TAL CF
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	408245	10/29/19 23:29	WKD	TAL CAN
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408247	10/29/19 16:23	DSH	TAL CAN

Client Sample ID: GW-WT101C-102419

Lab Sample ID: 240-121123-2
Date Collected: 10/24/19 15:20
Matrix: Water
Date Received: 10/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408716	11/01/19 12:27	HMB	TAL CAN
Total/NA	Analysis	300.0		1	259797	11/04/19 20:02	ACJ	TAL CF
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	408245	10/29/19 23:42	WKD	TAL CAN
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408247	10/29/19 16:26	DSH	TAL CAN

Client Sample ID: GW-WT115C-102419

Lab Sample ID: 240-121123-3
Date Collected: 10/24/19 14:20
Matrix: Water
Date Received: 10/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408716	11/01/19 12:50	HMB	TAL CAN
Total/NA	Analysis	300.0		1	259797	11/04/19 20:48	ACJ	TAL CF
Total/NA	Analysis	300.0		5	259797	11/06/19 00:43	ACJ	TAL CF
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	408245	10/29/19 23:47	WKD	TAL CAN
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408247	10/29/19 16:28	DSH	TAL CAN

Client Sample ID: GW-WT115A-102419

Lab Sample ID: 240-121123-4
Date Collected: 10/24/19 12:55
Matrix: Water
Date Received: 10/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408509	10/31/19 20:02	HMB	TAL CAN
Total/NA	Analysis	300.0		1	259797	11/04/19 21:04	ACJ	TAL CF
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	408245	10/29/19 22:36	WKD	TAL CAN
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408247	10/29/19 15:57	DSH	TAL CAN

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Client Sample ID: GW-WT115B-102419

Lab Sample ID: 240-121123-5
Date Collected: 10/24/19 12:20
Matrix: Water
Date Received: 10/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408716	11/01/19 13:16	HMB	TAL CAN
Total/NA	Analysis	300.0		5	259797	11/04/19 21:52	ACJ	TAL CF
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	408245	10/29/19 23:52	WKD	TAL CAN
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408247	10/29/19 16:30	DSH	TAL CAN

Client Sample ID: GW-WTE3-102419

Lab Sample ID: 240-121123-6
Date Collected: 10/24/19 11:15
Matrix: Water
Date Received: 10/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408716	11/01/19 13:39	HMB	TAL CAN
Total/NA	Analysis	300.0		1	259797	11/04/19 22:09	ACJ	TAL CF
Total/NA	Analysis	300.0		5	259797	11/06/19 00:27	ACJ	TAL CF
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	408245	10/29/19 23:56	WKD	TAL CAN
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408247	10/29/19 16:33	DSH	TAL CAN

Client Sample ID: GW-WT119B-102419

Lab Sample ID: 240-121123-7
Date Collected: 10/24/19 10:25
Matrix: Water
Date Received: 10/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408716	11/01/19 14:02	HMB	TAL CAN
Total/NA	Analysis	300.0		2	259797	11/04/19 22:25	ACJ	TAL CF
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	408245	10/30/19 00:01	WKD	TAL CAN
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408247	10/29/19 16:35	DSH	TAL CAN

Client Sample ID: GW-WT116A-102419

Lab Sample ID: 240-121123-8
Date Collected: 10/24/19 09:35
Matrix: Water
Date Received: 10/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408716	11/01/19 14:24	HMB	TAL CAN
Total/NA	Analysis	300.0		1	259797	11/04/19 22:41	ACJ	TAL CF
Total/NA	Analysis	300.0		10	259797	11/05/19 23:40	ACJ	TAL CF
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	408245	10/30/19 00:05	WKD	TAL CAN
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408247	10/29/19 16:37	DSH	TAL CAN

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Client Sample ID: GW-TB3-102419 — Lab Sample ID: 240-121123-9

Date Collected: 10/24/19 00:00 — **Matrix: Water**
Date Received: 10/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408716	11/01/19 14:46	HMB	TAL CAN

Client Sample ID: GW-WT106B-102419 — Lab Sample ID: 240-121123-10

Date Collected: 10/24/19 09:20 — **Matrix: Water**
Date Received: 10/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408716	11/01/19 15:09	HMB	TAL CAN
Total/NA	Analysis	300.0		1	259797	11/04/19 22:58	ACJ	TAL CF
Total/NA	Analysis	300.0		5	259797	11/05/19 23:24	ACJ	TAL CF
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	408245	10/30/19 00:10	WKD	TAL CAN
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408247	10/29/19 16:40	DSH	TAL CAN

Client Sample ID: GW-WT106A-102419 — Lab Sample ID: 240-121123-11

Date Collected: 10/24/19 10:05 — **Matrix: Water**
Date Received: 10/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408716	11/01/19 15:31	HMB	TAL CAN
Total/NA	Analysis	300.0		1	259797	11/04/19 23:14	ACJ	TAL CF
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	408245	10/30/19 00:15	WKD	TAL CAN
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408247	10/29/19 16:47	DSH	TAL CAN

Client Sample ID: GW-WT114C-102419 — Lab Sample ID: 240-121123-12

Date Collected: 10/24/19 11:15 — **Matrix: Water**
Date Received: 10/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408716	11/01/19 15:54	HMB	TAL CAN
Total/NA	Analysis	300.0		1	259797	11/05/19 00:03	ACJ	TAL CF
Total/NA	Analysis	300.0		5	259797	11/05/19 23:09	ACJ	TAL CF
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	408245	10/30/19 00:19	WKD	TAL CAN
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408247	10/29/19 16:49	DSH	TAL CAN

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Client Sample ID: GW-WT114A-102419

Lab Sample ID: 240-121123-13
Date Collected: 10/24/19 13:15
Matrix: Water
Date Received: 10/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408716	11/01/19 16:16	HMB	TAL CAN
Total/NA	Analysis	300.0		5	259797	11/05/19 00:19	ACJ	TAL CF
Total/NA	Analysis	300.0		10	259797	11/05/19 22:53	ACJ	TAL CF
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	408245	10/30/19 00:24	WKD	TAL CAN
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408247	10/29/19 16:51	DSH	TAL CAN

Client Sample ID: GW-WT114B-102419

Lab Sample ID: 240-121123-14
Date Collected: 10/24/19 14:00
Matrix: Water
Date Received: 10/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408716	11/01/19 16:38	HMB	TAL CAN
Total/NA	Analysis	300.0		1	259797	11/05/19 00:36	ACJ	TAL CF
Total/NA	Analysis	300.0		5	259797	11/05/19 22:37	ACJ	TAL CF
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	408245	10/30/19 00:38	WKD	TAL CAN
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408247	10/29/19 16:54	DSH	TAL CAN

Client Sample ID: GW-WT102A-102419

Lab Sample ID: 240-121123-15
Date Collected: 10/24/19 15:15
Matrix: Water
Date Received: 10/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408716	11/01/19 17:00	HMB	TAL CAN
Total/NA	Analysis	300.0		1	259797	11/05/19 00:52	ACJ	TAL CF
Total/NA	Analysis	300.0		5	259797	11/05/19 22:22	ACJ	TAL CF
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	408245	10/29/19 23:07	WKD	TAL CAN
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408247	10/29/19 16:08	DSH	TAL CAN

Client Sample ID: GW-WT102B-102419

Lab Sample ID: 240-121123-16
Date Collected: 10/24/19 16:10
Matrix: Water
Date Received: 10/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408716	11/01/19 17:22	HMB	TAL CAN
Total/NA	Analysis	300.0		1	259797	11/05/19 01:41	ACJ	TAL CF
Total/NA	Analysis	300.0		5	259797	11/05/19 21:35	ACJ	TAL CF
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	408245	10/30/19 00:42	WKD	TAL CAN

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121123-1

Client Sample ID: GW-WT102B-102419 — Lab Sample ID: 240-121123-16

Date Collected: 10/24/19 16:10 — **Matrix: Water**
Date Received: 10/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408247	10/29/19 16:56	DSH	TAL CAN

Client Sample ID: GW-WT114B-102419D — Lab Sample ID: 240-121123-18

Date Collected: 10/24/19 14:00 — **Matrix: Water**
Date Received: 10/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	259797	11/05/19 01:58	ACJ	TAL CF
Total/NA	Analysis	300.0		5	259797	11/05/19 21:20	ACJ	TAL CF
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	408245	10/30/19 00:47	WKD	TAL CAN
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408247	10/29/19 16:59	DSH	TAL CAN

Client Sample ID: GW-WT114C-102419 — Lab Sample ID: 240-121123-19

Date Collected: 10/24/19 11:15 — **Matrix: Water**
Date Received: 10/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408716	11/01/19 17:45	HMB	TAL CAN

Client Sample ID: GW-TB-2-102419 — Lab Sample ID: 240-121123-20

Date Collected: 10/24/19 00:00 — **Matrix: Water**
Date Received: 10/25/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408716	11/01/19 18:08	HMB	TAL CAN

Laboratory References:

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

TAL CF = Eurofins TestAmerica, Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: Groundwater & Environmental Services Inc
Job ID: 240-121123-1
Project/Site: Bayer Himco Landfill

Laboratory: Eurofins TestAmerica, Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-20
Connecticut	State	PH-0590	12-31-19
Florida	NELAP	E87225	06-30-20
Georgia	State	4062	02-23-20
Illinois	NELAP	004498	07-31-20
Iowa	State	421	06-01-20
Kansas	NELAP	E-10336	04-30-20
Kentucky (UST)	State	112225	02-23-20
Kentucky (WW)	State	KY98016	12-31-19
Minnesota	NELAP	OH00048	12-31-19
Minnesota (Petrofund)	State Program	3506	07-31-21
New Jersey	NELAP	OH001	06-30-20
New York	NELAP	10975	03-31-20
Ohio VAP	State	CL0024	06-05-21
Oregon	NELAP	4062	02-23-20
Pennsylvania	NELAP	68-00340	08-31-20
Texas	NELAP	T104704517-18-10	08-31-20
USDA	US Federal Programs	P330-16-00404	12-28-19
Virginia	NELAP	010101	09-14-20
Washington	State	C971	01-12-20
West Virginia DEP	State	210	12-31-19

Laboratory: Eurofins TestAmerica, Cedar Falls

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
AIHA-LAP, LLC	Industrial Hygiene Laboratory Accreditation Program (IHLAP)	101044	11-01-20
Colorado	Petroleum Storage Tank Program	IA100001 (OR)	09-29-20
Georgia	State	IA100001 (OR)	09-29-20
Illinois	NELAP	200024	11-29-19
Iowa	State	007	12-01-19
Kansas	NELAP	E-10341	01-31-20
Minnesota	NELAP	019-999-319	12-31-19
Minnesota (Petrofund)	State Program	3349	08-22-21
Oregon	NELAP	IA100001	09-29-20
USDA	US Federal Programs	P330-19-00003	01-02-22

CHAIN OF CUSTODY

4.6/C5.3

FED-EX Tracking # 1194 6303 3969
Bottle Order Control #
Lab Quote #
Lab Job # 1801906

CLIENT/REPORTING INFORMATION	PROJECT INFORMATION	BILLING INFORMATION
Groundwater & Environmental Services, Inc. 1691 Georgetown Road, Hudson, OH 44236 **Project Manager:** Stephen E. Betts **Phone #:** 877-505-9382 PM Email: SBetts@gesonline.com fax 330-528-1481	**Project Name:** Bayer Himco Landfill **Project Address:** County Road 10, Elkhart, IN **Project PSID #:** 766356	Groundwater & Environmental Services, Inc. ap@gesonline.com ATTN: Accounts Payable **Invoice Instructions (Project #/ Phase / Task / Altorg)** 1801906/02/206/1418

REQUESTED ANALYSIS (see Test Code sheet) — LAB USE ONLY

Sampler(s) Name: Chip Markovich
Sampler(s) Name: Chip Markovich

Lab Sample #	Field ID / Point of Collection (Sys_loc_code)	Depth Interval (ft)	Date Sampled	Time Sampled	Sampler	Matrix	Total # Bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Amber	VOC 8260	Metals 6010	Arsnic 6020	Chemistry 300 (Sulfate, Chloride)				
GW	~~GW~~ WT101 E 10 24 19		10/24/19	1615	CM	WG	5	3		1		1					3	1	1	1				
GW	~~GW~~ WT101 E 10 24 19		10/24/19	1520	CM	WG	5	3		1		1					3	1	1	1				
	GW - WT115C 10 24 19		10/24/19	1420	CM	WG	5	3		1		1					3	1	1	1				
	GW - WT115A 10 24 19		10/24/19	1255	CM	WG	5	3		1		1					3	1	1	1				
	GW - WT115A 10 24 19 -M		10/24/19	1255	CM	WG	10	6		2		2					6	2	2	2				
	GW - WT115B 10 24 19		10/24/19	1220	CM	WG	5	3		1		1					3	1	1	1				
	GW - WT E3 10 24 19		10/24/19	1115	CM	WG	5	3		1		1					3	1	1	1				
	GW - WT119B 10 24 19		10/24/19	1025	CM	WG	5	3		1		1					3	1	1	1				
	GW - WT116A 10 24 19		10/24/19	435	CM	WG	5	3		1		1					3	1	1	1				
	GW - YB 3 10 24 19		10/24/19	—	CM	WG	1										1							
	GW - 10 19		10/ /19			WG																		

Turnaround Time (Business Days) — Approved By (Lab PM) / Date
- ☐ Standard 14 Days ____/____
- ☐ 1 day RUSH ____/____
- ☐ Other ____ ____/____

Laboratory Information
- Lab: Test America
- Address: North Canton OH
- Phone:
- Lab PM:
- Lab PM Emai

Data Deliverable Information
- ☐ Commercial 'A' (Level 1) = Results Only
- ☐ Commercial 'B' (Level 2) = Results + QC Summary
- ☐ FULLT1 (Level 3 & 4)
- ☐ NJ Reduced = Results + QC Summary + Partial Raw Data
- ☐ Commercial 'C'
- ☐ *NJ Data of Known Quality Protocol Reporting*
- ☐ NYASP Category A
- ☐ NYASP Category B
- ☐ State Forms
- ☑ EDD Format
- ☐ Other

Please Email the EQ EDD Package to ges@equisonline.com
EQEDD Name: Bayer Himco Landfill_LabReport#.28489.EQEDD.zip

Sample Custody must be documented below each time samples change possession, including courier.

Relinquished By Sampler:	Date / Time:	Received By:
1 Chip Markovich	1 10/24/19 1800	1 fedex
Relinquished By: 2	Date / Time: 2	Received By: 2 10-25-19 930
Relinquished By: 3	Date / Time: 3	Received By: 3

Custody Seal Number: ☐ Intact ☐ Not Intact ☐ Preserved where applicable ☐ On Ice Cooler Temp ____

Cooler 1 of 2

240-121123 Chain of Custody

3.9/14.6

CHAIN OF CUSTODY

Client: Bayer U S LLC

FED-EX Tracking # 1194 6303 3920
Bottle Order Control #
Lab Quote #
Lab Job # 1801906

CLIENT/REPORTING INFORMATION	PROJECT INFORMATION	BILLING INFORMATION
Groundwater & Environmental Services, Inc. 1691 Georgetown Road, Hudson, OH 44236 **Project Manager:** Stephen E. Betts **Phone #:** 877-505-9382 Region Email: GreatLakesRegion@gesonline.com	**Project Name:** Bayer Himco Landfill **Project Address:** County Road 10, Elkhart, IN **Project PSID #:** 766356	Groundwater & Environmental Services, Inc. ges-invoices@gesonline.com ATTN: Accounts Payable **Invoice Instructions (Project #/ Phase / Task / Altorg)** 1801906/02/206/1418

Sampler(s) Name: Bryan Allen
Sampler(s) Name: By All

Lab Sample #	Field ID / Point of Collection (Sys_loc_code)	Depth Interval (ft)	Date Sampled	Time Sampled	Sampler	Matrix	Total # Bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Amber	VOC 8260	Metals 6010	Arsnic 6020	Chemistry 300 (Sulfate, Chloride)				LAB USE ONLY
	GW - WT106B 10 24 19		10/24/19	920	BA	WG	5	3X		1		1					X	X	X	X				
	GW - WT106A 10 24 19		10/24/19	1005	BA	WG	5	3X		1		1					X	X	X	X				
	GW - WT114 C 10 24 19		10/24/19	1115	BA	WG	5	3X		1		1					X	X	X	X				
	GW - WT114 A 10 24 19		10/24/19	1315	BA	WG	5	3X		1		1					X	X	X	X				
	GW - WT114 B 10 24 19		10/24/19	1400	BA	WG	5	3X		1		1					X	X	X	X				
	GW - WT102 A 10 24 19		10/24/19	1515	BA	WG	5	3X		1		1					X	X	X	X				
	GW - WT-102B 10 24 19		10/24/19	1610	BA	WG	5	3X		1		1					X	X	X	X				
	GW - WT102A 10 24 19 M		10/24/19	1515	BA	WG	5	3X		1		1					X	X	X	X				
	GW - WT114B 10 24 19 D		10/24/19	1400	BA	WG	2	3X		1		1					X	X	X	X				
	GW - WT114C 10 24 19		10/24/19	1115	BA	WG	3	3									X							
	GW - TB-2 10 24 19		10/24/19	—	cm	WG	1										1							

Turnaround Time (Business Days) — Approved By (Lab PM) / Date
- [x] Standard 14 Days ____/____
- [ ] 1 day RUSH ____/____
- [ ] Other ____ ____/____

Laboratory Information
Lab: SGS Accutest - Dayton, New Jersey
Address: 2235 Route 130, Dayton, New Jersey 08810
Phone: 732.355.4553
Lab PM: Viktoriya Pushkova
Lab PM Emai Viktoriya.Pushkova@sgs.com

Data Deliverable Information
- [ ] Commercial 'A' (Level 1) = Results Only
- [ ] Commercial 'B' (Level 2) = Results + QC Summary
- [ ] FULLT1 (Level 3 & 4)
- [ ] NJ Reduced = Results + QC Summary + Partial Raw Data
- [ ] Commercial 'C'
- [x] *NJ Data of Known Quality Protocol Reporting*
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [x] EDD Format ____
- [ ] Other ____

test America
north canton

Please Email the EQ EDD Package to ges@equisonline.com
EQEDD Name: Bayer Himco Landfill_LabReport#.28489.EQEDD.zip

Sample Custody must be documented below each time samples change possession, including courier.

Relinquished By Sampler	Date / Time	Received By
1 By All	1 10/24/19 1645	1 Chy All
Relinquished By: 2 Chy All	Date / Time: 2 10/24/19 1800	Received By: 2 fedex
Relinquished By: 3	Date / Time: 3	Received By: 3 10-25-19 930

Custody Seal Number: [ ] Intact [ ] Not Intact [ ] Preserved where applicable [ ] On Ice Cooler Temp ____

Cooler 2 of 2

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # :** 121123
Canton Facility

Client GES Site Name _____ Cooler unpacked by:

Cooler Received on 10-25-19 Opened on 10-25-19

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

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

TestAmerica Cooler # 7A Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

☑ See Multiple Cooler Form

1. Cooler temperature upon receipt
   IR GUN# IR-10 (CF +0.7 °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C
   IR GUN #IR-11 (CF +0.9°C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 2 Yes No
   - Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
   - Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
   - Were tamper/custody seals intact and uncompromised? Yes No NA
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels be reconciled with the COC? Yes No
9. Were correct bottle(s) used for the test(s) indicated? Yes No
10. Sufficient quantity received to perform indicated analyses? Yes No
11. Are these work share samples? Yes No
    If yes, Questions 12-16 have been checked at the originating laboratory.
12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# **HC991818**
13. Were VOAs on the COC? Yes No
14. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this. Yes No NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # NA Yes No
16. Was a LL Hg or Me Hg trip blank present? _____ Yes No

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by: MS

18. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

WI-NC-099

Login # : 121123

Eurofins TestAmerica Canton Sample Receipt Multiple Cooler Form				
Cooler Description (Circle)	IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
TA Client Box Other	IR-10 IR-11	3.9	4.6	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11	4.6	5.3	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
☐ See Temperature Excursion Form				

WI-NC-099 Cooler Receipt Form Page 2 – Multiple Coolers

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
GW-WT-101E-102419	240-121123-E-1	Plastic 500ml - with Nitric Acid	<2		
GW-WT-101C-102419	240-121123-E-2	Plastic 500ml - with Nitric Acid	<2		
GW-WT-115C-102419	240-121123-E-3	Plastic 500ml - with Nitric Acid	<2		
GW-WT-115A-102419	240-121123-M-4	Plastic 500ml - with Nitric Acid	<2		
GW-WT-115A-102419	240-121123-N-4	Plastic 500ml - with Nitric Acid	<2		
GW-WT-115A-102419	240-121123-O-4	Plastic 500ml - with Nitric Acid	<2		
GW-WT-115B-102419	240-121123-E-5	Plastic 500ml - with Nitric Acid	<2		
GW-WT-E3-102419	240-121123-E-6	Plastic 500ml - with Nitric Acid	<2		
GW-WT-119B-102419	240-121123-E-7	Plastic 500ml - with Nitric Acid	<2		
GW-WT-116A-102419	240-121123-E-8	Plastic 500ml - with Nitric Acid	<2		
GW-WT-WT106B-102419	240-121123-E-10	Plastic 500ml - with Nitric Acid	<2		
GW-WT-WT106A-102419	240-121123-E-11	Plastic 500ml - with Nitric Acid	<2		
GW-WT-WT114C-102419	240-121123-E-12	Plastic 500ml - with Nitric Acid	<2		
GW-WT-WT114A-102419	240-121123-E-13	Plastic 500ml - with Nitric Acid	<2		
GW-WT-WT114B-102419	240-121123-E-14	Plastic 500ml - with Nitric Acid	<2		
GW-WT-WT102A-102419	240-121123-E-15	Plastic 500ml - with Nitric Acid	<2		
GW-WT-WT102B-102419	240-121123-E-16	Plastic 500ml - with Nitric Acid	<2		
GW-WT-WT102A-102419M	240-121123-E-17	Plastic 500ml - with Nitric Acid	<2		
GW-WT-WT114B-102419D	240-121123-B-18	Plastic 500ml - with Nitric Acid	<2		

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

Laboratory Job ID: 240-121210-1
Client Project/Site: Bayer Himco Landfill

For:
Groundwater & Environmental Services Inc
1691 Georgetown Road, Unit G
Hudson, Ohio 44236

Attn: Mr. Steve Betts

Authorized for release by:
11/11/2019 1:56:03 PM

John McFadden, Project Manager I
(330)497-9396
john.mcfadden@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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

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

Table of Contents

Cover Page 1
Table of Contents 2
Definitions/Glossary 3
Case Narrative 4
Method Summary 6
Sample Summary 7
Detection Summary 8
Client Sample Results 9
Surrogate Summary 13
QC Sample Results 14
QC Association Summary 16
Lab Chronicle 17
Certification Summary 18
Chain of Custody 19

Definitions/Glossary

Client: Groundwater & Environmental Services Inc
Job ID: 240-121210-1
Project/Site: Bayer Himco Landfill

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Job ID: 240-121210-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

CASE NARRATIVE

Client: Groundwater & Environmental Services Inc

Project: Bayer Himco Landfill

Report Number: 240-121210-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Eurofins TestAmerica, Canton attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The 300.0 Ion Chromatography analysis was performed at the Eurofins TestAmerica, Cedar Falls laboratory.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

This laboratory report is confidential and is intended for the sole use of Eurofins TestAmerica and its client.

RECEIPT
The samples were received on 10/26/2019 10:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.8º C.

The laboratory received only vials for sample GW-WT 101A 102519-E (240-121210-1). All analyses listed on the Chain of Custody were marked. The laboratory will only analyze for VOCs per volume received.

VOLATILE ORGANIC COMPOUNDS (GCMS)
Samples GW-WT 101A 102519-E (240-121210-1), GW-WT 101A 102519 (240-121210-2), GW-WT 101D 102519 (240-121210-3) and GW-TB-4 102519 (240-121210-4) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260C. The samples were analyzed on 11/03/2019.

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

TOTAL RECOVERABLE METALS (ICP)
Samples GW-WT 101A 102519 (240-121210-2) and GW-WT 101D 102519 (240-121210-3) were analyzed for total recoverable metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 10/28/2019 and analyzed on 10/30/2019.

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

Job ID: 240-121210-1 (Continued)

Laboratory: Eurofins TestAmerica, Canton (Continued)

TOTAL RECOVERABLE METALS (ICPMS)

Samples GW-WT 101A 102519 (240-121210-2) and GW-WT 101D 102519 (240-121210-3) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020A. The samples were prepared on 10/28/2019 and analyzed on 10/29/2019.

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

ION CHROMATOGRAPHY

Samples GW-WT 101A 102519 (240-121210-2) and GW-WT 101D 102519 (240-121210-3) were analyzed for Ion Chromatography in accordance with EPA Method 300.0. The samples were analyzed on 11/02/2019.

Samples GW-WT 101A 102519 (240-121210-2)[5X] and GW-WT 101D 102519 (240-121210-3)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

Method Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121210-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL CAN
300.0	Anions, Ion Chromatography	MCAWW	TAL CF
6010C	Metals (ICP)	SW846	TAL CAN
6020A	Metals (ICP/MS)	SW846	TAL CAN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CAN
5030C	Purge and Trap	SW846	TAL CAN

Protocol References:

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

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

Laboratory References:

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

TAL CF = Eurofins TestAmerica, Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Sample Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121210-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-121210-1	GW-WT 101A 102519-E	Water	10/25/19 09:30	10/26/19 10:00	
240-121210-2	GW-WT 101A 102519	Water	10/25/19 10:05	10/26/19 10:00	
240-121210-3	GW-WT 101D 102519	Water	10/25/19 10:35	10/26/19 10:00	
240-121210-4	GW-TB-4 102519	Water	10/25/19 00:00	10/26/19 10:00	

Detection Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121210-1

Client Sample ID: GW-WT 101A 102519-E — Lab Sample ID: 240-121210-1

No Detections.

Client Sample ID: GW-WT 101A 102519 — Lab Sample ID: 240-121210-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	7.0		1.0	0.17	ug/L	1		8260C	Total/NA
Benzene	1.7		1.0	0.13	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	0.82	J	1.0	0.16	ug/L	1		8260C	Total/NA
Chloride	25		5.0	2.5	mg/L	5		300.0	Total/NA
Sulfate	120		5.0	2.5	mg/L	5		300.0	Total/NA
Calcium	150000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	18000		200	26	ug/L	1		6010C	Total Recoverable
Manganese	1200		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	16000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	6.0		5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WT 101D 102519 — Lab Sample ID: 240-121210-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	3.4		1.0	0.17	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	0.62	J	1.0	0.16	ug/L	1		8260C	Total/NA
Chloride	35		5.0	2.5	mg/L	5		300.0	Total/NA
Sulfate	62		5.0	2.5	mg/L	5		300.0	Total/NA
Calcium	74000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	1400		200	26	ug/L	1		6010C	Total Recoverable
Manganese	38		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	21000		5000	560	ug/L	1		6010C	Total Recoverable

Client Sample ID: GW-TB-4 102519 — Lab Sample ID: 240-121210-4

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121210-1

Client Sample ID: GW-WT 101A 102519-E

Lab Sample ID: 240-121210-1

Date Collected: 10/25/19 09:30

Matrix: Water

Date Received: 10/26/19 10:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/03/19 14:03	1
Benzene	1.0	U	1.0	0.13	ug/L			11/03/19 14:03	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/03/19 14:03	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/03/19 14:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*87*		*69 - 122*		*11/03/19 14:03*	*1*
Dibromofluoromethane (Surr)	*95*		*78 - 129*		*11/03/19 14:03*	*1*
4-Bromofluorobenzene (Surr)	*81*		*47 - 134*		*11/03/19 14:03*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*75 - 130*		*11/03/19 14:03*	*1*

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121210-1

Client Sample ID: GW-WT 101A 102519

Lab Sample ID: 240-121210-2

Date Collected: 10/25/19 10:05
Matrix: Water
Date Received: 10/26/19 10:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	**7.0**		1.0	0.17	ug/L			11/03/19 14:25	1
Benzene	**1.7**		1.0	0.13	ug/L			11/03/19 14:25	1
cis-1,2-Dichloroethene	**0.82**	**J**	1.0	0.16	ug/L			11/03/19 14:25	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/03/19 14:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*91*		*69 - 122*		*11/03/19 14:25*	*1*
Dibromofluoromethane (Surr)	*98*		*78 - 129*		*11/03/19 14:25*	*1*
4-Bromofluorobenzene (Surr)	*85*		*47 - 134*		*11/03/19 14:25*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*75 - 130*		*11/03/19 14:25*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**25**		5.0	2.5	mg/L			11/02/19 03:02	5
Sulfate	**120**		5.0	2.5	mg/L			11/02/19 03:02	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**150000**		5000	310	ug/L		10/28/19 14:00	10/30/19 01:01	1
Iron	**18000**		200	26	ug/L		10/28/19 14:00	10/30/19 01:01	1
Manganese	**1200**		15	2.1	ug/L		10/28/19 14:00	10/30/19 01:01	1
Sodium	**16000**		5000	560	ug/L		10/28/19 14:00	10/30/19 01:01	1
Lead	10	U	10	2.8	ug/L		10/28/19 14:00	10/30/19 01:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**6.0**		5.0	0.75	ug/L		10/28/19 14:00	10/29/19 17:01	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121210-1

Client Sample ID: GW-WT 101D 102519

Lab Sample ID: 240-121210-3

Date Collected: 10/25/19 10:35
Matrix: Water
Date Received: 10/26/19 10:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	**3.4**		1.0	0.17	ug/L			11/03/19 14:48	1
Benzene	1.0	U	1.0	0.13	ug/L			11/03/19 14:48	1
cis-1,2-Dichloroethene	**0.62**	**J**	1.0	0.16	ug/L			11/03/19 14:48	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/03/19 14:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*69 - 122*		*11/03/19 14:48*	*1*
Dibromofluoromethane (Surr)	*102*		*78 - 129*		*11/03/19 14:48*	*1*
4-Bromofluorobenzene (Surr)	*87*		*47 - 134*		*11/03/19 14:48*	*1*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 130*		*11/03/19 14:48*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**35**		5.0	2.5	mg/L			11/02/19 03:19	5
Sulfate	**62**		5.0	2.5	mg/L			11/02/19 03:19	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**74000**		5000	310	ug/L		10/28/19 14:00	10/30/19 01:05	1
Iron	**1400**		200	26	ug/L		10/28/19 14:00	10/30/19 01:05	1
Manganese	**38**		15	2.1	ug/L		10/28/19 14:00	10/30/19 01:05	1
Sodium	**21000**		5000	560	ug/L		10/28/19 14:00	10/30/19 01:05	1
Lead	10	U	10	2.8	ug/L		10/28/19 14:00	10/30/19 01:05	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	0.75	ug/L		10/28/19 14:00	10/29/19 17:03	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121210-1

Client Sample ID: GW-TB-4 102519

Lab Sample ID: 240-121210-4

Date Collected: 10/25/19 00:00

Matrix: Water

Date Received: 10/26/19 10:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/03/19 15:10	1
Benzene	1.0	U	1.0	0.13	ug/L			11/03/19 15:10	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/03/19 15:10	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/03/19 15:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*88*		*69 - 122*		*11/03/19 15:10*	*1*
Dibromofluoromethane (Surr)	*96*		*78 - 129*		*11/03/19 15:10*	*1*
4-Bromofluorobenzene (Surr)	*80*		*47 - 134*		*11/03/19 15:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*75 - 130*		*11/03/19 15:10*	*1*

Surrogate Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121210-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	DBFM	BFB	DCA
Lab Sample ID	**Client Sample ID**	**(69-122)**	**(78-129)**	**(47-134)**	**(75-130)**
240-121210-1	GW-WT 101A 102519-E	87	95	81	88
240-121210-2	GW-WT 101A 102519	91	98	85	89
240-121210-3	GW-WT 101D 102519	94	102	87	93
240-121210-4	GW-TB-4 102519	88	96	80	87
LCS 240-408903/7	Lab Control Sample	94	99	88	89
MB 240-408903/8	Method Blank	95	101	87	93

Surrogate Legend

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

QC Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121210-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-408903/8
Matrix: Water
Analysis Batch: 408903

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/03/19 09:55	1
Benzene	1.0	U	1.0	0.13	ug/L			11/03/19 09:55	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/03/19 09:55	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/03/19 09:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*69 - 122*		*11/03/19 09:55*	*1*
Dibromofluoromethane (Surr)	*101*		*78 - 129*		*11/03/19 09:55*	*1*
4-Bromofluorobenzene (Surr)	*87*		*47 - 134*		*11/03/19 09:55*	*1*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 130*		*11/03/19 09:55*	*1*

Lab Sample ID: LCS 240-408903/7
Matrix: Water
Analysis Batch: 408903

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	20.0	22.2		ug/L		111	74 - 126
Benzene	20.0	23.8		ug/L		119	77 - 123
cis-1,2-Dichloroethene	20.0	22.8		ug/L		114	75 - 124
Vinyl chloride	20.0	19.5		ug/L		97	61 - 134

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*94*		*69 - 122*
Dibromofluoromethane (Surr)	*99*		*78 - 129*
4-Bromofluorobenzene (Surr)	*88*		*47 - 134*
1,2-Dichloroethane-d4 (Surr)	*89*		*75 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 310-259402/3
Matrix: Water
Analysis Batch: 259402

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	0.50	mg/L			11/01/19 21:20	1
Sulfate	1.0	U	1.0	0.50	mg/L			11/01/19 21:20	1

Lab Sample ID: LCS 310-259402/4
Matrix: Water
Analysis Batch: 259402

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.99		mg/L		100	90 - 110
Sulfate	10.0	9.94		mg/L		99	90 - 110

QC Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121210-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 240-407877/1-A
Matrix: Water
Analysis Batch: 408245

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 407877

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	5000	U	5000	310	ug/L		10/28/19 14:00	10/29/19 22:27	1
Iron	200	U	200	26	ug/L		10/28/19 14:00	10/29/19 22:27	1
Manganese	15	U	15	2.1	ug/L		10/28/19 14:00	10/29/19 22:27	1
Sodium	5000	U	5000	560	ug/L		10/28/19 14:00	10/29/19 22:27	1
Lead	10	U	10	2.8	ug/L		10/28/19 14:00	10/29/19 22:27	1

Lab Sample ID: LCS 240-407877/2-A
Matrix: Water
Analysis Batch: 408245

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 407877

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	50000	50700		ug/L		101	80 - 120
Iron	10000	10200		ug/L		102	80 - 120
Manganese	1000	1020		ug/L		102	80 - 120
Sodium	50000	50000		ug/L		100	80 - 120
Lead	1000	982		ug/L		98	80 - 120

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 240-407877/1-A
Matrix: Water
Analysis Batch: 408247

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 407877

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	0.75	ug/L		10/28/19 14:00	10/29/19 15:52	1

Lab Sample ID: LCS 240-407877/3-A
Matrix: Water
Analysis Batch: 408247

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 407877

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1000	997		ug/L		100	80 - 120

QC Association Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121210-1

GC/MS VOA

Analysis Batch: 408903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-121210-1	GW-WT 101A 102519-E	Total/NA	Water	8260C	
240-121210-2	GW-WT 101A 102519	Total/NA	Water	8260C	
240-121210-3	GW-WT 101D 102519	Total/NA	Water	8260C	
240-121210-4	GW-TB-4 102519	Total/NA	Water	8260C	
MB 240-408903/8	Method Blank	Total/NA	Water	8260C	
LCS 240-408903/7	Lab Control Sample	Total/NA	Water	8260C	

HPLC/IC

Analysis Batch: 259402

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-121210-2	GW-WT 101A 102519	Total/NA	Water	300.0	
240-121210-3	GW-WT 101D 102519	Total/NA	Water	300.0	
MB 310-259402/3	Method Blank	Total/NA	Water	300.0	
LCS 310-259402/4	Lab Control Sample	Total/NA	Water	300.0	

Metals

Prep Batch: 407877

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-121210-2	GW-WT 101A 102519	Total Recoverable	Water	3005A	
240-121210-3	GW-WT 101D 102519	Total Recoverable	Water	3005A	
MB 240-407877/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-407877/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-407877/3-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 408245

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-121210-2	GW-WT 101A 102519	Total Recoverable	Water	6010C	407877
240-121210-3	GW-WT 101D 102519	Total Recoverable	Water	6010C	407877
MB 240-407877/1-A	Method Blank	Total Recoverable	Water	6010C	407877
LCS 240-407877/2-A	Lab Control Sample	Total Recoverable	Water	6010C	407877

Analysis Batch: 408247

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-121210-2	GW-WT 101A 102519	Total Recoverable	Water	6020A	407877
240-121210-3	GW-WT 101D 102519	Total Recoverable	Water	6020A	407877
MB 240-407877/1-A	Method Blank	Total Recoverable	Water	6020A	407877
LCS 240-407877/3-A	Lab Control Sample	Total Recoverable	Water	6020A	407877

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-121210-1

Client Sample ID: GW-WT 101A 102519-E

Lab Sample ID: 240-121210-1
Date Collected: 10/25/19 09:30
Matrix: Water
Date Received: 10/26/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408903	11/03/19 14:03	HMB	TAL CAN

Client Sample ID: GW-WT 101A 102519

Lab Sample ID: 240-121210-2
Date Collected: 10/25/19 10:05
Matrix: Water
Date Received: 10/26/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408903	11/03/19 14:25	HMB	TAL CAN
Total/NA	Analysis	300.0		5	259402	11/02/19 03:02	CJT	TAL CF
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	408245	10/30/19 01:01	WKD	TAL CAN
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408247	10/29/19 17:01	DSH	TAL CAN

Client Sample ID: GW-WT 101D 102519

Lab Sample ID: 240-121210-3
Date Collected: 10/25/19 10:35
Matrix: Water
Date Received: 10/26/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408903	11/03/19 14:48	HMB	TAL CAN
Total/NA	Analysis	300.0		5	259402	11/02/19 03:19	CJT	TAL CF
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	408245	10/30/19 01:05	WKD	TAL CAN
Total Recoverable	Prep	3005A			407877	10/28/19 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	408247	10/29/19 17:03	DSH	TAL CAN

Client Sample ID: GW-TB-4 102519

Lab Sample ID: 240-121210-4
Date Collected: 10/25/19 00:00
Matrix: Water
Date Received: 10/26/19 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	408903	11/03/19 15:10	HMB	TAL CAN

Laboratory References:

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

TAL CF = Eurofins TestAmerica, Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: Groundwater & Environmental Services Inc
Job ID: 240-121210-1
Project/Site: Bayer Himco Landfill

Laboratory: Eurofins TestAmerica, Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-20
Connecticut	State	PH-0590	12-31-19
Florida	NELAP	E87225	06-30-20
Georgia	State	4062	02-23-20
Illinois	NELAP	004498	07-31-20
Iowa	State	421	06-01-20
Kansas	NELAP	E-10336	04-30-20
Kentucky (UST)	State	112225	02-23-20
Kentucky (WW)	State	KY98016	12-31-19
Minnesota	NELAP	OH00048	12-31-19
Minnesota (Petrofund)	State Program	3506	07-31-21
New Jersey	NELAP	OH001	06-30-20
New York	NELAP	10975	03-31-20
Ohio VAP	State	CL0024	06-05-21
Oregon	NELAP	4062	02-23-20
Pennsylvania	NELAP	68-00340	08-31-20
Texas	NELAP	T104704517-18-10	08-31-20
USDA	US Federal Programs	P330-16-00404	12-28-19
Virginia	NELAP	010101	09-14-20
Washington	State	C971	01-12-20
West Virginia DEP	State	210	12-31-19

Laboratory: Eurofins TestAmerica, Cedar Falls

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
AIHA-LAP, LLC	Industrial Hygiene Laboratory Accreditation Program (IHLAP)	101044	11-01-20
Colorado	Petroleum Storage Tank Program	IA100001 (OR)	09-29-20
Georgia	State	IA100001 (OR)	09-29-20
Illinois	NELAP	200024	11-29-19
Iowa	State	007	12-01-19
Kansas	NELAP	E-10341	01-31-20
Minnesota	NELAP	019-999-319	12-31-19
Minnesota (Petrofund)	State Program	3349	08-22-21
Oregon	NELAP	IA100001	09-29-20
USDA	US Federal Programs	P330-19-00003	01-02-22

2.1/2.8

Chain of Custody Record

398651

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Address:

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other: Sedex 1194 6303 3958

TAL-8210

Client Contact	Project Manager: Steve Betts	Site Contact: Steve Betts	Date: 10/25/19	COC No:
Company Name: GSS Inc	Tel/Email: Sbetts@gesonline.com	Lab Contact: J. McFadden	Carrier: fedex	1 of 1 COCs
Address: Hudson OH 44236	Analysis Turnaround Time			Sampler:
City/State/Zip:	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 800-263-1545	TAT if different from Below			Walk-in Client:
Fax:	☒ 2 weeks			Lab Sampling:
Project Name: Bayer - Hanco	☐ 1 week			
Site: Bayer Elkhart	☐ 2 days			Job / SDG No.:
PO #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	VOC 8260	Metals 6010	Arsenic 6020	Chem 300 (Sulfate, Chloride)	Sample Specific Notes:
GW-WT 101A 102519-E	10/25/19	930	G	W	3	N	N	3	1	1	1	
GW-WT 101A 102519	10/25/19	1005	G	W	5	N	N	3	1	1	1	
GW-WT 101D 102519	10/25/19	1035	G	W	5	N	N	3	1	1	1	
GW-TB-4 102519	10/25/19	—	—	W	1	N	N	3	1	1	1	

240-121210 Chain of Custody

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

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Send EDD to gese equisonline.com, sbetts@gesonline.com EDD Bayer Hanco Landfill - Lab Rpt #, 28489, EQ EDD.zip

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: 122330 | Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Chris Markovich	GSS	1200 10/25/19	fedex		1800 10/25
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			[illegible]	EIA	10/26/19 10:00
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # :** 121210
Canton Facility

Client GES Site Name _____ Cooler unpacked by: Gal Brown
Cooler Received on 10/26/19 Opened on 10/26/19
FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

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

TestAmerica Cooler # ETA Foam Box Client Cooler Box Other _____
Packing material used: Bubble Wrap Foam Plastic Bag None Other _____
COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# IR-10 (CF +0.7 °C) Observed Cooler Temp. 2.1 °C Corrected Cooler Temp. 2.8 °C
   IR GUN #IR-11 (CF +0.9°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
   -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
   -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
   -Were tamper/custody seals intact and uncompromised? Yes No NA
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels be reconciled with the COC? Yes No
9. Were correct bottle(s) used for the test(s) indicated? Yes No
10. Sufficient quantity received to perform indicated analyses? Yes No
11. Are these work share samples? Yes No
    If yes, Questions 12-16 have been checked at the originating laboratory.
12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# **HC991818**
13. Were VOAs on the COC? Yes No
14. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this. Yes No NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 017701E Yes No
16. Was a LL Hg or Me Hg trip blank present? _____ Yes No

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

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by: E.

Only received 3X40ml for GW-WT 1014 102519 - All tests marked on COC, Will log only for VOC.

18. SAMPLE CONDITION
Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION
Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

WI-NC-099

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
GW-WT-101A 102519	240-121210-E-2	Plastic 500ml - with Nitric Acid	<2	_____	_____
GW-WT-101D 102519	240-121210-E-3	Plastic 500ml - with Nitric Acid	<2	_____	_____

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ANALYTICAL REPORT

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

Laboratory Job ID: 240-139183-1
Client Project/Site: Bayer Himco Landfill

For:
Groundwater & Environmental Services Inc
1691 Georgetown Road, Unit G
Hudson, Ohio 44236

Attn: Mr. Steve Betts

Roxanne Cisneros

Authorized for release by:
11/23/2020 1:53:11 PM

Roxanne Cisneros, Senior Project Manager
(615)301-5761
roxanne.cisneros@Eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at:
www.eurofinsus.com/Env

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

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

Table of Contents

Cover Page 1
Table of Contents 2
Definitions/Glossary 3
Case Narrative 4
Method Summary 5
Sample Summary 6
Detection Summary 7
Client Sample Results 13
Surrogate Summary 35
QC Sample Results 36
QC Association Summary 42
Lab Chronicle 46
Certification Summary 52
Chain of Custody 53

Definitions/Glossary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Job ID: 240-139183-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-139183-1

Comments
No additional comments.

Receipt
The samples were received on 10/29/2020 9:30 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.3º C and 2.6º C.

GC/MS VOA
Methods 8260C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 240-458907.

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

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

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

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

Job ID: 240-139183-2

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-139183-2

Comments
No additional comments.

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

Method Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL CAN
6010C	Metals (ICP)	SW846	TAL CAN
6020A	Metals (ICP/MS)	SW846	TAL CAN
300.0	Anions, Ion Chromatography	MCAWW	TAL CAN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CAN
5030C	Purge and Trap	SW846	TAL CAN

Protocol References:

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

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

Laboratory References:

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

Sample Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-139183-1	GW-WT-120B 102720	Water	10/27/20 15:50	10/29/20 16:22	
240-139183-2	GW-WT-120B 102720E	Water	10/27/20 15:50	10/29/20 16:22	
240-139183-3	GW-WT-120A 102720	Water	10/27/20 17:30	10/29/20 16:22	
240-139183-4	GW-WT-120C 102820	Water	10/28/20 09:30	10/29/20 16:22	
240-139183-5	GW-WT-114C 102820	Water	10/28/20 11:10	10/29/20 16:22	
240-139183-6	GW-WT-120C 102820D	Water	10/28/20 09:30	10/29/20 16:22	
240-139183-7	GW-WT-114C 102820D	Water	10/28/20 11:10	10/29/20 16:22	
240-139183-8	GW-WT-114B 102820D	Water	10/28/20 12:50	10/29/20 16:22	
240-139183-9	GW-WT-114B 102820	Water	10/28/20 12:50	10/29/20 16:22	
240-139183-10	GW-WT-114A 102820	Water	10/28/20 12:00	10/29/20 16:22	
240-139183-11	GW-WT-101C 102820	Water	10/28/20 15:15	10/29/20 16:22	
240-139183-12	GW-WT-101E 102720	Water	10/28/20 16:20	10/29/20 16:22	
240-139183-13	GW-WT-102A 102720	Water	10/27/20 15:50	10/29/20 16:22	
240-139183-14	GW-WT-102B 102720	Water	10/27/20 16:37	10/29/20 16:22	
240-139183-15	GW-WT-106C 102820	Water	10/28/20 10:35	10/29/20 16:22	
240-139183-16	GW-WT-106B 102820	Water	10/28/20 11:38	10/29/20 16:22	
240-139183-17	GW-WT-106A 102820	Water	10/28/20 12:20	10/29/20 16:22	
240-139183-18	GW-WT-122A 102820	Water	10/28/20 13:40	10/29/20 16:22	
240-139183-19	GW-WT-122B 102820	Water	10/28/20 14:25	10/29/20 16:22	
240-139183-20	GW-WT-122C 102820	Water	10/28/20 15:00	10/29/20 16:22	
240-139183-21	GW-WT-119B 102820	Water	10/28/20 15:55	10/29/20 16:22	
240-139183-22	TB-1 102820	Water	10/28/20 00:00	10/29/20 09:30	

Detection Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-120B 102720 — Lab Sample ID: 240-139183-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	61000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	1500		200	26	ug/L	1		6010C	Total Recoverable
Manganese	180		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	13000	B	5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	5.8		5.0	0.75	ug/L	1		6020A	Total Recoverable
Chloride	27		1.0	0.28	mg/L	1		300.0	Total/NA
Sulfate	20		1.0	0.35	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT-120B 102720E — Lab Sample ID: 240-139183-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	3.4	J	10	2.8	ug/L	1		6010C	Total Recoverable

Client Sample ID: GW-WT-120A 102720 — Lab Sample ID: 240-139183-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	74000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	920		200	26	ug/L	1		6010C	Total Recoverable
Manganese	84		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	34000	B	5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	3.5	J	5.0	0.75	ug/L	1		6020A	Total Recoverable
Chloride	92		1.0	0.28	mg/L	1		300.0	Total/NA
Sulfate	34		1.0	0.35	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT-120C 102820 — Lab Sample ID: 240-139183-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	58000		5000	310	ug/L	1		6010C	Total Recoverable
Sodium	7200	B	5000	560	ug/L	1		6010C	Total Recoverable
Chloride	7.0		1.0	0.28	mg/L	1		300.0	Total/NA
Sulfate	13		1.0	0.35	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT-114C 102820 — Lab Sample ID: 240-139183-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.41	J	1.0	0.17	ug/L	1		8260C	Total/NA
Calcium	66000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	2100		200	26	ug/L	1		6010C	Total Recoverable
Manganese	23		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	17000	B	5000	560	ug/L	1		6010C	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-114C 102820 (Continued) — Lab Sample ID: 240-139183-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	16		5.0	0.75	ug/L	1		6020A	Total Recoverable
Chloride	35		1.0	0.28	mg/L	1		300.0	Total/NA
Sulfate	59		1.0	0.35	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT-120C 102820D — Lab Sample ID: 240-139183-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	59000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	36	J	200	26	ug/L	1		6010C	Total Recoverable
Sodium	7300	B	5000	560	ug/L	1		6010C	Total Recoverable
Chloride	7.5		1.0	0.28	mg/L	1		300.0	Total/NA
Sulfate	14		1.0	0.35	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT-114C 102820D — Lab Sample ID: 240-139183-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.40	J	1.0	0.17	ug/L	1		8260C	Total/NA

Client Sample ID: GW-WT-114B 102820D — Lab Sample ID: 240-139183-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	63000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	1900		200	26	ug/L	1		6010C	Total Recoverable
Manganese	51		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	22000	B	5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	6.4		5.0	0.75	ug/L	1		6020A	Total Recoverable
Chloride	42		1.0	0.28	mg/L	1		300.0	Total/NA
Sulfate	41		1.0	0.35	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT-114B 102820 — Lab Sample ID: 240-139183-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.17	J	1.0	0.16	ug/L	1		8260C	Total/NA
1,1-Dichloroethane	0.43	J	1.0	0.17	ug/L	1		8260C	Total/NA
Calcium	65000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	1800		200	26	ug/L	1		6010C	Total Recoverable
Manganese	63		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	23000	B	5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	5.8		5.0	0.75	ug/L	1		6020A	Total Recoverable
Chloride	42		1.0	0.28	mg/L	1		300.0	Total/NA
Sulfate	41		1.0	0.35	mg/L	1		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-114A 102820 — Lab Sample ID: 240-139183-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	91000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	190	J	200	26	ug/L	1		6010C	Total Recoverable
Manganese	210		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	230000	B	5000	560	ug/L	1		6010C	Total Recoverable

Client Sample ID: GW-WT-101C 102820 — Lab Sample ID: 240-139183-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	43000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	120	J	200	26	ug/L	1		6010C	Total Recoverable
Manganese	6.6	J	15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	12000	B	5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	6.1		5.0	0.75	ug/L	1		6020A	Total Recoverable
Chloride	2.7		1.0	0.28	mg/L	1		300.0	Total/NA
Sulfate	6.2		1.0	0.35	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT-101E 102720 — Lab Sample ID: 240-139183-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	1.1		1.0	0.17	ug/L	1		8260C	Total/NA
Calcium	82000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	680		200	26	ug/L	1		6010C	Total Recoverable
Manganese	58		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	17000	B	5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	1.8	J	5.0	0.75	ug/L	1		6020A	Total Recoverable
Chloride	39		1.0	0.28	mg/L	1		300.0	Total/NA
Sulfate	31		1.0	0.35	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT-102A 102720 — Lab Sample ID: 240-139183-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	62000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	5000		200	26	ug/L	1		6010C	Total Recoverable
Manganese	390		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	88000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	1.2	J	5.0	0.75	ug/L	1		6020A	Total Recoverable
Chloride	130		1.0	0.28	mg/L	1		300.0	Total/NA
Sulfate	28		1.0	0.35	mg/L	1		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-102B 102720 — Lab Sample ID: 240-139183-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	68000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	490		200	26	ug/L	1		6010C	Total Recoverable
Manganese	52		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	31000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	2.6	J	5.0	0.75	ug/L	1		6020A	Total Recoverable
Chloride	64		1.0	0.28	mg/L	1		300.0	Total/NA
Sulfate	28		1.0	0.35	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT-106C 102820 — Lab Sample ID: 240-139183-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	45000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	940		200	26	ug/L	1		6010C	Total Recoverable
Manganese	16		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	17000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	9.4		5.0	0.75	ug/L	1		6020A	Total Recoverable
Chloride	11		1.0	0.28	mg/L	1		300.0	Total/NA
Sulfate	1.9		1.0	0.35	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT-106B 102820 — Lab Sample ID: 240-139183-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	2.3		1.0	0.17	ug/L	1		8260C	Total/NA
Vinyl chloride	0.46	J	1.0	0.20	ug/L	1		8260C	Total/NA
Calcium	86000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	5300		200	26	ug/L	1		6010C	Total Recoverable
Manganese	53		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	15000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	9.1		5.0	0.75	ug/L	1		6020A	Total Recoverable
Chloride	32		1.0	0.28	mg/L	1		300.0	Total/NA
Sulfate	110		1.0	0.35	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT-106A 102820 — Lab Sample ID: 240-139183-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.23	J	1.0	0.16	ug/L	1		8260C	Total/NA
1,1-Dichloroethane	1.6		1.0	0.17	ug/L	1		8260C	Total/NA
Calcium	90000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	1100		200	26	ug/L	1		6010C	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: GW-WT-106A 102820 (Continued) — Lab Sample ID: 240-139183-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	660		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	30000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	2.0	J	5.0	0.75	ug/L	1		6020A	Total Recoverable
Chloride	47		1.0	0.28	mg/L	1		300.0	Total/NA
Sulfate	68		1.0	0.35	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT-122A 102820 — Lab Sample ID: 240-139183-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.76	J	1.0	0.16	ug/L	1		8260C	Total/NA
Calcium	230000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	7100		200	26	ug/L	1		6010C	Total Recoverable
Manganese	590		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	28000		5000	560	ug/L	1		6010C	Total Recoverable
Chloride	35		5.0	1.4	mg/L	5		300.0	Total/NA
Sulfate	210		5.0	1.7	mg/L	5		300.0	Total/NA

Client Sample ID: GW-WT-122B 102820 — Lab Sample ID: 240-139183-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	1.0		1.0	0.17	ug/L	1		8260C	Total/NA
Calcium	96000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	2900		200	26	ug/L	1		6010C	Total Recoverable
Manganese	91		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	20000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	1.2	J	5.0	0.75	ug/L	1		6020A	Total Recoverable
Chloride	39		1.0	0.28	mg/L	1		300.0	Total/NA
Sulfate	78		1.0	0.35	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT-122C 102820 — Lab Sample ID: 240-139183-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	80000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	880		200	26	ug/L	1		6010C	Total Recoverable
Manganese	140		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	17000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	1.2	J	5.0	0.75	ug/L	1		6020A	Total Recoverable
Chloride	41		1.0	0.28	mg/L	1		300.0	Total/NA
Sulfate	70		1.0	0.35	mg/L	1		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-119B 102820 — Lab Sample ID: 240-139183-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	56000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	890		200	26	ug/L	1		6010C	Total Recoverable
Manganese	45		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	48000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	1.3	J	5.0	0.75	ug/L	1		6020A	Total Recoverable
Chloride	7.1		1.0	0.28	mg/L	1		300.0	Total/NA
Sulfate	17		1.0	0.35	mg/L	1		300.0	Total/NA

Client Sample ID: TB-1 102820 — Lab Sample ID: 240-139183-22

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-120B 102720

Lab Sample ID: 240-139183-1

Date Collected: 10/27/20 15:50
Matrix: Water
Date Received: 10/29/20 16:22

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			11/02/20 17:45	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/02/20 17:45	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/02/20 17:45	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/02/20 17:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*47 - 134*		*11/02/20 17:45*	*1*
Dibromofluoromethane (Surr)	*82*		*78 - 129*		*11/02/20 17:45*	*1*
1,2-Dichloroethane-d4 (Surr)	*84*		*75 - 130*		*11/02/20 17:45*	*1*
Toluene-d8 (Surr)	*99*		*69 - 122*		*11/02/20 17:45*	*1*

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**61000**		5000	310	ug/L		10/30/20 14:00	11/02/20 23:11	1
Iron	**1500**		200	26	ug/L		10/30/20 14:00	11/02/20 23:11	1
Lead	10	U	10	2.8	ug/L		10/30/20 14:00	11/02/20 23:11	1
Manganese	**180**		15	2.1	ug/L		10/30/20 14:00	11/02/20 23:11	1
Sodium	**13000**	**B**	5000	560	ug/L		10/30/20 14:00	11/02/20 23:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**5.8**		5.0	0.75	ug/L		11/19/20 14:00	11/20/20 12:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**27**		1.0	0.28	mg/L			11/13/20 19:19	1
Sulfate	**20**		1.0	0.35	mg/L			11/13/20 19:19	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-120B 102720E

Lab Sample ID: 240-139183-2

Date Collected: 10/27/20 15:50
Date Received: 10/29/20 16:22

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			11/02/20 18:07	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/02/20 18:07	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/02/20 18:07	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/02/20 18:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*47 - 134*		*11/02/20 18:07*	*1*
Dibromofluoromethane (Surr)	*82*		*78 - 129*		*11/02/20 18:07*	*1*
1,2-Dichloroethane-d4 (Surr)	*84*		*75 - 130*		*11/02/20 18:07*	*1*
Toluene-d8 (Surr)	*98*		*69 - 122*		*11/02/20 18:07*	*1*

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	5000	U	5000	310	ug/L		10/30/20 14:00	11/02/20 23:15	1
Iron	200	U	200	26	ug/L		10/30/20 14:00	11/02/20 23:15	1
Lead	**3.4**	**J**	10	2.8	ug/L		10/30/20 14:00	11/02/20 23:15	1
Manganese	15	U	15	2.1	ug/L		10/30/20 14:00	11/02/20 23:15	1
Sodium	5000	U	5000	560	ug/L		10/30/20 14:00	11/02/20 23:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	0.75	ug/L		11/19/20 14:00	11/20/20 12:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	0.28	mg/L			11/13/20 19:39	1
Sulfate	1.0	U	1.0	0.35	mg/L			11/13/20 19:39	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-120A 102720

Lab Sample ID: 240-139183-3

Date Collected: 10/27/20 17:30
Date Received: 10/29/20 16:22

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			11/02/20 18:29	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/02/20 18:29	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/02/20 18:29	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/02/20 18:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*47 - 134*		*11/02/20 18:29*	*1*
Dibromofluoromethane (Surr)	*80*		*78 - 129*		*11/02/20 18:29*	*1*
1,2-Dichloroethane-d4 (Surr)	*82*		*75 - 130*		*11/02/20 18:29*	*1*
Toluene-d8 (Surr)	*95*		*69 - 122*		*11/02/20 18:29*	*1*

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**74000**		5000	310	ug/L		10/30/20 14:00	11/02/20 23:19	1
Iron	**920**		200	26	ug/L		10/30/20 14:00	11/02/20 23:19	1
Lead	10	U	10	2.8	ug/L		10/30/20 14:00	11/02/20 23:19	1
Manganese	**84**		15	2.1	ug/L		10/30/20 14:00	11/02/20 23:19	1
Sodium	**34000**	**B**	5000	560	ug/L		10/30/20 14:00	11/02/20 23:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**3.5**	**J**	5.0	0.75	ug/L		11/19/20 14:00	11/20/20 12:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**92**		1.0	0.28	mg/L			11/13/20 20:00	1
Sulfate	**34**		1.0	0.35	mg/L			11/13/20 20:00	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-120C 102820

Lab Sample ID: 240-139183-4

Date Collected: 10/28/20 09:30
Matrix: Water
Date Received: 10/29/20 16:22

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			10/31/20 17:59	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/31/20 17:59	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/31/20 17:59	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/31/20 17:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*47 - 134*		*10/31/20 17:59*	*1*
Dibromofluoromethane (Surr)	*86*		*78 - 129*		*10/31/20 17:59*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*75 - 130*		*10/31/20 17:59*	*1*
Toluene-d8 (Surr)	*101*		*69 - 122*		*10/31/20 17:59*	*1*

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**58000**		5000	310	ug/L		10/30/20 14:00	11/02/20 23:24	1
Iron	200	U	200	26	ug/L		10/30/20 14:00	11/02/20 23:24	1
Lead	10	U	10	2.8	ug/L		10/30/20 14:00	11/02/20 23:24	1
Manganese	15	U	15	2.1	ug/L		10/30/20 14:00	11/02/20 23:24	1
Sodium	**7200**	**B**	5000	560	ug/L		10/30/20 14:00	11/02/20 23:24	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	0.75	ug/L		11/19/20 14:00	11/20/20 12:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**7.0**		1.0	0.28	mg/L			11/13/20 20:20	1
Sulfate	**13**		1.0	0.35	mg/L			11/13/20 20:20	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-114C 102820

Lab Sample ID: 240-139183-5

Date Collected: 10/28/20 11:10
Date Received: 10/29/20 16:22

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			10/31/20 18:21	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/31/20 18:21	1
1,1-Dichloroethane	**0.41**	**J**	1.0	0.17	ug/L			10/31/20 18:21	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/31/20 18:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*111*		*47 - 134*		*10/31/20 18:21*	*1*
Dibromofluoromethane (Surr)	*87*		*78 - 129*		*10/31/20 18:21*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*75 - 130*		*10/31/20 18:21*	*1*
Toluene-d8 (Surr)	*102*		*69 - 122*		*10/31/20 18:21*	*1*

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**66000**		5000	310	ug/L		10/30/20 14:00	11/02/20 23:36	1
Iron	**2100**		200	26	ug/L		10/30/20 14:00	11/02/20 23:36	1
Lead	10	U	10	2.8	ug/L		10/30/20 14:00	11/02/20 23:36	1
Manganese	**23**		15	2.1	ug/L		10/30/20 14:00	11/02/20 23:36	1
Sodium	**17000**	**B**	5000	560	ug/L		10/30/20 14:00	11/02/20 23:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**16**		5.0	0.75	ug/L		11/19/20 14:00	11/20/20 13:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**35**		1.0	0.28	mg/L			11/13/20 21:20	1
Sulfate	**59**		1.0	0.35	mg/L			11/13/20 21:20	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-120C 102820D

Lab Sample ID: 240-139183-6

Date Collected: 10/28/20 09:30
Date Received: 10/29/20 16:22

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			10/31/20 18:43	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/31/20 18:43	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/31/20 18:43	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/31/20 18:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*47 - 134*		*10/31/20 18:43*	*1*
Dibromofluoromethane (Surr)	*85*		*78 - 129*		*10/31/20 18:43*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*75 - 130*		*10/31/20 18:43*	*1*
Toluene-d8 (Surr)	*97*		*69 - 122*		*10/31/20 18:43*	*1*

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**59000**		5000	310	ug/L		10/30/20 14:00	11/02/20 23:41	1
Iron	**36**	**J**	200	26	ug/L		10/30/20 14:00	11/02/20 23:41	1
Lead	10	U	10	2.8	ug/L		10/30/20 14:00	11/02/20 23:41	1
Manganese	15	U	15	2.1	ug/L		10/30/20 14:00	11/02/20 23:41	1
Sodium	**7300**	**B**	5000	560	ug/L		10/30/20 14:00	11/02/20 23:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	0.75	ug/L		11/19/20 14:00	11/20/20 13:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**7.5**		1.0	0.28	mg/L			11/13/20 13:48	1
Sulfate	**14**		1.0	0.35	mg/L			11/13/20 13:48	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-114C 102820D

Lab Sample ID: 240-139183-7

Date Collected: 10/28/20 11:10
Date Received: 10/29/20 16:22

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			10/31/20 19:05	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/31/20 19:05	1
1,1-Dichloroethane	**0.40**	**J**	1.0	0.17	ug/L			10/31/20 19:05	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/31/20 19:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*47 - 134*		*10/31/20 19:05*	*1*
Dibromofluoromethane (Surr)	*84*		*78 - 129*		*10/31/20 19:05*	*1*
1,2-Dichloroethane-d4 (Surr)	*85*		*75 - 130*		*10/31/20 19:05*	*1*
Toluene-d8 (Surr)	*98*		*69 - 122*		*10/31/20 19:05*	*1*

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-114B 102820D

Lab Sample ID: 240-139183-8

Date Collected: 10/28/20 12:50
Date Received: 10/29/20 16:22

Matrix: Water

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	63000		5000	310	ug/L		10/30/20 14:00	11/02/20 23:45	1
Iron	1900		200	26	ug/L		10/30/20 14:00	11/02/20 23:45	1
Lead	10	U	10	2.8	ug/L		10/30/20 14:00	11/02/20 23:45	1
Manganese	51		15	2.1	ug/L		10/30/20 14:00	11/02/20 23:45	1
Sodium	22000	B	5000	560	ug/L		10/30/20 14:00	11/02/20 23:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	6.4		5.0	0.75	ug/L		11/19/20 14:00	11/20/20 13:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	42		1.0	0.28	mg/L			11/13/20 14:10	1
Sulfate	41		1.0	0.35	mg/L			11/13/20 14:10	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-114B 102820

Lab Sample ID: 240-139183-9

Date Collected: 10/28/20 12:50
Date Received: 10/29/20 16:22

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			10/31/20 19:28	1
cis-1,2-Dichloroethene	**0.17**	**J**	1.0	0.16	ug/L			10/31/20 19:28	1
1,1-Dichloroethane	**0.43**	**J**	1.0	0.17	ug/L			10/31/20 19:28	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/31/20 19:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*47 - 134*		*10/31/20 19:28*	*1*
Dibromofluoromethane (Surr)	*85*		*78 - 129*		*10/31/20 19:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*75 - 130*		*10/31/20 19:28*	*1*
Toluene-d8 (Surr)	*102*		*69 - 122*		*10/31/20 19:28*	*1*

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**65000**		5000	310	ug/L		10/30/20 14:00	11/02/20 23:49	1
Iron	**1800**		200	26	ug/L		10/30/20 14:00	11/02/20 23:49	1
Lead	10	U	10	2.8	ug/L		10/30/20 14:00	11/02/20 23:49	1
Manganese	**63**		15	2.1	ug/L		10/30/20 14:00	11/02/20 23:49	1
Sodium	**23000**	**B**	5000	560	ug/L		10/30/20 14:00	11/02/20 23:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**5.8**		5.0	0.75	ug/L		11/19/20 14:00	11/20/20 13:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**42**		1.0	0.28	mg/L			11/13/20 14:32	1
Sulfate	**41**		1.0	0.35	mg/L			11/13/20 14:32	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-114A 102820

Lab Sample ID: 240-139183-10

Date Collected: 10/28/20 12:00
Matrix: Water
Date Received: 10/29/20 16:22

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			10/31/20 19:50	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/31/20 19:50	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/31/20 19:50	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/31/20 19:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*47 - 134*		*10/31/20 19:50*	*1*
Dibromofluoromethane (Surr)	*86*		*78 - 129*		*10/31/20 19:50*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*75 - 130*		*10/31/20 19:50*	*1*
Toluene-d8 (Surr)	*102*		*69 - 122*		*10/31/20 19:50*	*1*

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**91000**		5000	310	ug/L		10/30/20 14:00	11/02/20 23:53	1
Iron	**190**	**J**	200	26	ug/L		10/30/20 14:00	11/02/20 23:53	1
Lead	10	U	10	2.8	ug/L		10/30/20 14:00	11/02/20 23:53	1
Manganese	**210**		15	2.1	ug/L		10/30/20 14:00	11/02/20 23:53	1
Sodium	**230000**	**B**	5000	560	ug/L		10/30/20 14:00	11/02/20 23:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	0.75	ug/L		11/19/20 14:00	11/20/20 13:11	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-101C 102820

Lab Sample ID: 240-139183-11

Date Collected: 10/28/20 15:15
Date Received: 10/29/20 16:22

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			10/31/20 20:12	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/31/20 20:12	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/31/20 20:12	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/31/20 20:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*47 - 134*		*10/31/20 20:12*	*1*
Dibromofluoromethane (Surr)	*83*		*78 - 129*		*10/31/20 20:12*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*75 - 130*		*10/31/20 20:12*	*1*
Toluene-d8 (Surr)	*96*		*69 - 122*		*10/31/20 20:12*	*1*

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**43000**		5000	310	ug/L		10/30/20 14:00	11/02/20 23:58	1
Iron	**120**	**J**	200	26	ug/L		10/30/20 14:00	11/02/20 23:58	1
Lead	10	U	10	2.8	ug/L		10/30/20 14:00	11/02/20 23:58	1
Manganese	**6.6**	**J**	15	2.1	ug/L		10/30/20 14:00	11/02/20 23:58	1
Sodium	**12000**	**B**	5000	560	ug/L		10/30/20 14:00	11/02/20 23:58	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**6.1**		5.0	0.75	ug/L		11/19/20 14:00	11/20/20 13:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2.7**		1.0	0.28	mg/L			11/13/20 14:54	1
Sulfate	**6.2**		1.0	0.35	mg/L			11/13/20 14:54	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-101E 102720

Lab Sample ID: 240-139183-12

Date Collected: 10/28/20 16:20
Date Received: 10/29/20 16:22

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			10/31/20 20:34	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/31/20 20:34	1
1,1-Dichloroethane	**1.1**		1.0	0.17	ug/L			10/31/20 20:34	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/31/20 20:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*111*		*47 - 134*		*10/31/20 20:34*	*1*
Dibromofluoromethane (Surr)	*89*		*78 - 129*		*10/31/20 20:34*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*75 - 130*		*10/31/20 20:34*	*1*
Toluene-d8 (Surr)	*101*		*69 - 122*		*10/31/20 20:34*	*1*

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**82000**		5000	310	ug/L		10/30/20 14:00	11/03/20 00:02	1
Iron	**680**		200	26	ug/L		10/30/20 14:00	11/03/20 00:02	1
Lead	10	U	10	2.8	ug/L		10/30/20 14:00	11/03/20 00:02	1
Manganese	**58**		15	2.1	ug/L		10/30/20 14:00	11/03/20 00:02	1
Sodium	**17000**	**B**	5000	560	ug/L		10/30/20 14:00	11/03/20 00:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.8**	**J**	5.0	0.75	ug/L		11/19/20 14:00	11/20/20 13:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**39**		1.0	0.28	mg/L			11/13/20 15:15	1
Sulfate	**31**		1.0	0.35	mg/L			11/13/20 15:15	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-102A 102720

Lab Sample ID: 240-139183-13

Date Collected: 10/27/20 15:50
Matrix: Water
Date Received: 10/29/20 16:22

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			10/31/20 20:57	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/31/20 20:57	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/31/20 20:57	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/31/20 20:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*47 - 134*		*10/31/20 20:57*	*1*
Dibromofluoromethane (Surr)	*86*		*78 - 129*		*10/31/20 20:57*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*75 - 130*		*10/31/20 20:57*	*1*
Toluene-d8 (Surr)	*99*		*69 - 122*		*10/31/20 20:57*	*1*

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**62000**		5000	310	ug/L		10/30/20 14:00	11/02/20 18:09	1
Iron	**5000**		200	26	ug/L		10/30/20 14:00	11/02/20 18:09	1
Lead	10	U	10	2.8	ug/L		10/30/20 14:00	11/02/20 18:09	1
Manganese	**390**		15	2.1	ug/L		10/30/20 14:00	11/02/20 18:09	1
Sodium	**88000**		5000	560	ug/L		10/30/20 14:00	11/02/20 18:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.2**	**J**	5.0	0.75	ug/L		10/30/20 14:00	11/02/20 20:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**130**		1.0	0.28	mg/L			11/13/20 15:37	1
Sulfate	**28**		1.0	0.35	mg/L			11/13/20 15:37	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-102B 102720

Lab Sample ID: 240-139183-14

Date Collected: 10/27/20 16:37
Matrix: Water
Date Received: 10/29/20 16:22

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			10/31/20 21:19	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/31/20 21:19	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/31/20 21:19	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/31/20 21:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*111*		*47 - 134*		*10/31/20 21:19*	*1*
Dibromofluoromethane (Surr)	*90*		*78 - 129*		*10/31/20 21:19*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*75 - 130*		*10/31/20 21:19*	*1*
Toluene-d8 (Surr)	*102*		*69 - 122*		*10/31/20 21:19*	*1*

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**68000**		5000	310	ug/L		10/30/20 14:00	11/02/20 17:44	1
Iron	**490**		200	26	ug/L		10/30/20 14:00	11/02/20 17:44	1
Lead	10	U	10	2.8	ug/L		10/30/20 14:00	11/02/20 17:44	1
Manganese	**52**		15	2.1	ug/L		10/30/20 14:00	11/02/20 17:44	1
Sodium	**31000**		5000	560	ug/L		10/30/20 14:00	11/02/20 17:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**2.6**	**J**	5.0	0.75	ug/L		10/30/20 14:00	11/02/20 20:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**64**		1.0	0.28	mg/L			11/13/20 15:59	1
Sulfate	**28**		1.0	0.35	mg/L			11/13/20 15:59	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-106C 102820

Date Collected: 10/28/20 10:35
Date Received: 10/29/20 16:22

Lab Sample ID: 240-139183-15

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			10/31/20 22:47	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/31/20 22:47	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/31/20 22:47	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/31/20 22:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*47 - 134*		*10/31/20 22:47*	*1*
Dibromofluoromethane (Surr)	*88*		*78 - 129*		*10/31/20 22:47*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*75 - 130*		*10/31/20 22:47*	*1*
Toluene-d8 (Surr)	*100*		*69 - 122*		*10/31/20 22:47*	*1*

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**45000**		5000	310	ug/L		10/30/20 14:00	11/02/20 18:13	1
Iron	**940**		200	26	ug/L		10/30/20 14:00	11/02/20 18:13	1
Lead	10	U	10	2.8	ug/L		10/30/20 14:00	11/02/20 18:13	1
Manganese	**16**		15	2.1	ug/L		10/30/20 14:00	11/02/20 18:13	1
Sodium	**17000**		5000	560	ug/L		10/30/20 14:00	11/02/20 18:13	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**9.4**		5.0	0.75	ug/L		10/30/20 14:00	11/02/20 20:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**11**		1.0	0.28	mg/L			11/13/20 17:47	1
Sulfate	**1.9**		1.0	0.35	mg/L			11/13/20 17:47	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-106B 102820

Lab Sample ID: 240-139183-16

Date Collected: 10/28/20 11:38
Date Received: 10/29/20 16:22

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			10/31/20 23:09	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/31/20 23:09	1
1,1-Dichloroethane	**2.3**		1.0	0.17	ug/L			10/31/20 23:09	1
Vinyl chloride	**0.46**	**J**	1.0	0.20	ug/L			10/31/20 23:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*47 - 134*		*10/31/20 23:09*	*1*
Dibromofluoromethane (Surr)	*87*		*78 - 129*		*10/31/20 23:09*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*75 - 130*		*10/31/20 23:09*	*1*
Toluene-d8 (Surr)	*99*		*69 - 122*		*10/31/20 23:09*	*1*

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**86000**		5000	310	ug/L		10/30/20 14:00	11/02/20 18:26	1
Iron	**5300**		200	26	ug/L		10/30/20 14:00	11/02/20 18:26	1
Lead	10	U	10	2.8	ug/L		10/30/20 14:00	11/02/20 18:26	1
Manganese	**53**		15	2.1	ug/L		10/30/20 14:00	11/02/20 18:26	1
Sodium	**15000**		5000	560	ug/L		10/30/20 14:00	11/02/20 18:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**9.1**		5.0	0.75	ug/L		10/30/20 14:00	11/02/20 20:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**32**		1.0	0.28	mg/L			11/13/20 18:09	1
Sulfate	**110**		1.0	0.35	mg/L			11/13/20 18:09	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-106A 102820

Lab Sample ID: 240-139183-17

Date Collected: 10/28/20 12:20
Date Received: 10/29/20 16:22

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			11/02/20 18:51	1
cis-1,2-Dichloroethene	**0.23**	**J**	1.0	0.16	ug/L			11/02/20 18:51	1
1,1-Dichloroethane	**1.6**		1.0	0.17	ug/L			11/02/20 18:51	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/02/20 18:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*47 - 134*		*11/02/20 18:51*	*1*
Dibromofluoromethane (Surr)	*82*		*78 - 129*		*11/02/20 18:51*	*1*
1,2-Dichloroethane-d4 (Surr)	*84*		*75 - 130*		*11/02/20 18:51*	*1*
Toluene-d8 (Surr)	*97*		*69 - 122*		*11/02/20 18:51*	*1*

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**90000**		5000	310	ug/L		10/30/20 14:00	11/02/20 18:30	1
Iron	**1100**		200	26	ug/L		10/30/20 14:00	11/02/20 18:30	1
Lead	10	U	10	2.8	ug/L		10/30/20 14:00	11/02/20 18:30	1
Manganese	**660**		15	2.1	ug/L		10/30/20 14:00	11/02/20 18:30	1
Sodium	**30000**		5000	560	ug/L		10/30/20 14:00	11/02/20 18:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**2.0**	**J**	5.0	0.75	ug/L		10/30/20 14:00	11/02/20 20:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**47**		1.0	0.28	mg/L			11/13/20 18:30	1
Sulfate	**68**		1.0	0.35	mg/L			11/13/20 18:30	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-122A 102820

Lab Sample ID: 240-139183-18

Date Collected: 10/28/20 13:40
Date Received: 10/29/20 16:22

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			11/02/20 19:14	1
cis-1,2-Dichloroethene	**0.76**	**J**	1.0	0.16	ug/L			11/02/20 19:14	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/02/20 19:14	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/02/20 19:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*47 - 134*		*11/02/20 19:14*	*1*
Dibromofluoromethane (Surr)	*86*		*78 - 129*		*11/02/20 19:14*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*75 - 130*		*11/02/20 19:14*	*1*
Toluene-d8 (Surr)	*102*		*69 - 122*		*11/02/20 19:14*	*1*

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**230000**		5000	310	ug/L		10/30/20 14:00	11/02/20 18:34	1
Iron	**7100**		200	26	ug/L		10/30/20 14:00	11/02/20 18:34	1
Lead	10	U	10	2.8	ug/L		10/30/20 14:00	11/02/20 18:34	1
Manganese	**590**		15	2.1	ug/L		10/30/20 14:00	11/02/20 18:34	1
Sodium	**28000**		5000	560	ug/L		10/30/20 14:00	11/02/20 18:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	0.75	ug/L		10/30/20 14:00	11/02/20 20:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**35**		5.0	1.4	mg/L			11/13/20 18:52	5
Sulfate	**210**		5.0	1.7	mg/L			11/13/20 18:52	5

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-122B 102820

Lab Sample ID: 240-139183-19

Date Collected: 10/28/20 14:25
Matrix: Water
Date Received: 10/29/20 16:22

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			11/02/20 19:36	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/02/20 19:36	1
1,1-Dichloroethane	**1.0**		1.0	0.17	ug/L			11/02/20 19:36	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/02/20 19:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*47 - 134*		*11/02/20 19:36*	*1*
Dibromofluoromethane (Surr)	*85*		*78 - 129*		*11/02/20 19:36*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*75 - 130*		*11/02/20 19:36*	*1*
Toluene-d8 (Surr)	*100*		*69 - 122*		*11/02/20 19:36*	*1*

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**96000**		5000	310	ug/L		10/30/20 14:00	11/02/20 18:39	1
Iron	**2900**		200	26	ug/L		10/30/20 14:00	11/02/20 18:39	1
Lead	10	U	10	2.8	ug/L		10/30/20 14:00	11/02/20 18:39	1
Manganese	**91**		15	2.1	ug/L		10/30/20 14:00	11/02/20 18:39	1
Sodium	**20000**		5000	560	ug/L		10/30/20 14:00	11/02/20 18:39	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.2**	**J**	5.0	0.75	ug/L		10/30/20 14:00	11/02/20 20:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**39**		1.0	0.28	mg/L			11/13/20 19:14	1
Sulfate	**78**		1.0	0.35	mg/L			11/13/20 19:14	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-122C 102820

Lab Sample ID: 240-139183-20

Date Collected: 10/28/20 15:00
Date Received: 10/29/20 16:22

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			11/02/20 19:58	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/02/20 19:58	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/02/20 19:58	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/02/20 19:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*47 - 134*		*11/02/20 19:58*	*1*
Dibromofluoromethane (Surr)	*84*		*78 - 129*		*11/02/20 19:58*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*75 - 130*		*11/02/20 19:58*	*1*
Toluene-d8 (Surr)	*95*		*69 - 122*		*11/02/20 19:58*	*1*

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**80000**		5000	310	ug/L		10/30/20 14:00	11/02/20 18:43	1
Iron	**880**		200	26	ug/L		10/30/20 14:00	11/02/20 18:43	1
Lead	10	U	10	2.8	ug/L		10/30/20 14:00	11/02/20 18:43	1
Manganese	**140**		15	2.1	ug/L		10/30/20 14:00	11/02/20 18:43	1
Sodium	**17000**		5000	560	ug/L		10/30/20 14:00	11/02/20 18:43	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.2**	**J**	5.0	0.75	ug/L		10/30/20 14:00	11/02/20 21:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**41**		1.0	0.28	mg/L			11/13/20 20:19	1
Sulfate	**70**		1.0	0.35	mg/L			11/13/20 20:19	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-119B 102820

Date Collected: 10/28/20 15:55
Date Received: 10/29/20 16:22

Lab Sample ID: 240-139183-21

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			11/02/20 20:20	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/02/20 20:20	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/02/20 20:20	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/02/20 20:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*47 - 134*		*11/02/20 20:20*	*1*
Dibromofluoromethane (Surr)	*84*		*78 - 129*		*11/02/20 20:20*	*1*
1,2-Dichloroethane-d4 (Surr)	*84*		*75 - 130*		*11/02/20 20:20*	*1*
Toluene-d8 (Surr)	*96*		*69 - 122*		*11/02/20 20:20*	*1*

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**56000**		5000	310	ug/L		10/30/20 14:00	11/02/20 18:47	1
Iron	**890**		200	26	ug/L		10/30/20 14:00	11/02/20 18:47	1
Lead	10	U	10	2.8	ug/L		10/30/20 14:00	11/02/20 18:47	1
Manganese	**45**		15	2.1	ug/L		10/30/20 14:00	11/02/20 18:47	1
Sodium	**48000**		5000	560	ug/L		10/30/20 14:00	11/02/20 18:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.3**	**J**	5.0	0.75	ug/L		10/30/20 14:00	11/02/20 21:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**7.1**		1.0	0.28	mg/L			11/13/20 20:41	1
Sulfate	**17**		1.0	0.35	mg/L			11/13/20 20:41	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: TB-1 102820

Date Collected: 10/28/20 00:00
Date Received: 10/29/20 09:30

Lab Sample ID: 240-139183-22

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			11/02/20 20:42	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/02/20 20:42	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/02/20 20:42	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/02/20 20:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*47 - 134*		*11/02/20 20:42*	*1*
Dibromofluoromethane (Surr)	*84*		*78 - 129*		*11/02/20 20:42*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*75 - 130*		*11/02/20 20:42*	*1*
Toluene-d8 (Surr)	*97*		*69 - 122*		*11/02/20 20:42*	*1*

Surrogate Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	DCA	TOL
Lab Sample ID	Client Sample ID	(47-134)	(78-129)	(75-130)	(69-122)
240-139183-1	GW-WT-120B 102720	103	82	84	99
240-139183-2	GW-WT-120B 102720E	103	82	84	98
240-139183-3	GW-WT-120A 102720	100	80	82	95
240-139183-4	GW-WT-120C 102820	107	86	89	101
240-139183-5	GW-WT-114C 102820	111	87	90	102
240-139183-6	GW-WT-120C 102820D	106	85	87	97
240-139183-7	GW-WT-114C 102820D	104	84	85	98
240-139183-9	GW-WT-114B 102820	112	85	89	102
240-139183-10	GW-WT-114A 102820	106	86	88	102
240-139183-11	GW-WT-101C 102820	100	83	87	96
240-139183-12	GW-WT-101E 102720	111	89	89	101
240-139183-13	GW-WT-102A 102720	106	86	87	99
240-139183-14	GW-WT-102B 102720	111	90	90	102
240-139183-14 MS	GW-WT-102B 102720	105	86	85	100
240-139183-14 MSD	GW-WT-102B 102720	102	82	82	99
240-139183-15	GW-WT-106C 102820	109	88	89	100
240-139183-16	GW-WT-106B 102820	108	87	87	99
240-139183-17	GW-WT-106A 102820	103	82	84	97
240-139183-18	GW-WT-122A 102820	110	86	88	102
240-139183-19	GW-WT-122B 102820	105	85	87	100
240-139183-20	GW-WT-122C 102820	102	84	86	95
240-139183-21	GW-WT-119B 102820	101	84	84	96
240-139183-22	TB-1 102820	104	84	86	97
LCS 240-458709/5	Lab Control Sample	108	89	88	103
LCS 240-458907/5	Lab Control Sample	101	85	85	97
MB 240-458709/8	Method Blank	106	85	86	98
MB 240-458907/8	Method Blank	108	88	90	100

Surrogate Legend

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

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-458709/8
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 458709

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			10/31/20 14:39	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/31/20 14:39	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/31/20 14:39	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/31/20 14:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*47 - 134*		*10/31/20 14:39*	*1*
Dibromofluoromethane (Surr)	*85*		*78 - 129*		*10/31/20 14:39*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*75 - 130*		*10/31/20 14:39*	*1*
Toluene-d8 (Surr)	*98*		*69 - 122*		*10/31/20 14:39*	*1*

Lab Sample ID: LCS 240-458709/5
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 458709

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	20.0	19.5		ug/L		97	77 - 123
cis-1,2-Dichloroethene	20.0	17.6		ug/L		88	75 - 124
1,1-Dichloroethane	20.0	20.4		ug/L		102	74 - 126
Vinyl chloride	20.0	21.1		ug/L		105	61 - 134

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*108*		*47 - 134*
Dibromofluoromethane (Surr)	*89*		*78 - 129*
1,2-Dichloroethane-d4 (Surr)	*88*		*75 - 130*
Toluene-d8 (Surr)	*103*		*69 - 122*

Lab Sample ID: 240-139183-14 MS
Client Sample ID: GW-WT-102B 102720
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 458709

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	1.0	U	20.0	18.9		ug/L		95	70 - 121
cis-1,2-Dichloroethene	1.0	U	20.0	16.8		ug/L		84	68 - 121
1,1-Dichloroethane	1.0	U	20.0	19.5		ug/L		98	71 - 121
Vinyl chloride	1.0	U	20.0	20.4		ug/L		102	49 - 136

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*47 - 134*
Dibromofluoromethane (Surr)	*86*		*78 - 129*
1,2-Dichloroethane-d4 (Surr)	*85*		*75 - 130*
Toluene-d8 (Surr)	*100*		*69 - 122*

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

Lab Sample ID: 240-139183-14 MSD
Client Sample ID: GW-WT-102B 102720
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 458709

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	1.0	U	20.0	18.9		ug/L		95	70 - 121	0	35
cis-1,2-Dichloroethene	1.0	U	20.0	16.9		ug/L		84	68 - 121	1	35
1,1-Dichloroethane	1.0	U	20.0	19.6		ug/L		98	71 - 121	0	35
Vinyl chloride	1.0	U	20.0	20.2		ug/L		101	49 - 136	1	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*47 - 134*
Dibromofluoromethane (Surr)	*82*		*78 - 129*
1,2-Dichloroethane-d4 (Surr)	*82*		*75 - 130*
Toluene-d8 (Surr)	*99*		*69 - 122*

Lab Sample ID: MB 240-458907/8
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 458907

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			11/02/20 17:23	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/02/20 17:23	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/02/20 17:23	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/02/20 17:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*47 - 134*		*11/02/20 17:23*	*1*
Dibromofluoromethane (Surr)	*88*		*78 - 129*		*11/02/20 17:23*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*75 - 130*		*11/02/20 17:23*	*1*
Toluene-d8 (Surr)	*100*		*69 - 122*		*11/02/20 17:23*	*1*

Lab Sample ID: LCS 240-458907/5
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 458907

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	20.0	19.5		ug/L		97	77 - 123
cis-1,2-Dichloroethene	20.0	17.8		ug/L		89	75 - 124
1,1-Dichloroethane	20.0	20.6		ug/L		103	74 - 126
Vinyl chloride	20.0	20.0		ug/L		100	61 - 134

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*47 - 134*
Dibromofluoromethane (Surr)	*85*		*78 - 129*
1,2-Dichloroethane-d4 (Surr)	*85*		*75 - 130*
Toluene-d8 (Surr)	*97*		*69 - 122*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 240-458561/1-A
Matrix: Water
Analysis Batch: 458984

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 458561

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	5000	U	5000	310	ug/L		10/30/20 14:00	11/02/20 17:36	1
Iron	200	U	200	26	ug/L		10/30/20 14:00	11/02/20 17:36	1
Lead	10	U	10	2.8	ug/L		10/30/20 14:00	11/02/20 17:36	1
Manganese	15	U	15	2.1	ug/L		10/30/20 14:00	11/02/20 17:36	1
Sodium	5000	U	5000	560	ug/L		10/30/20 14:00	11/02/20 17:36	1

Lab Sample ID: LCS 240-458561/2-A
Matrix: Water
Analysis Batch: 458984

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 458561

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	50000	46900		ug/L		94	80 - 120
Iron	10000	9410		ug/L		94	80 - 120
Lead	1000	914		ug/L		91	80 - 120
Manganese	1000	923		ug/L		92	80 - 120
Sodium	50000	45500		ug/L		91	80 - 120

Lab Sample ID: 240-139183-14 MS
Matrix: Water
Analysis Batch: 458984

Client Sample ID: GW-WT-102B 102720
Prep Type: Total Recoverable
Prep Batch: 458561

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	68000		50000	118000		ug/L		99	75 - 125
Iron	490		10000	10400		ug/L		99	75 - 125
Lead	10	U	1000	941		ug/L		94	75 - 125
Manganese	52		1000	1000		ug/L		95	75 - 125
Sodium	31000		50000	79700		ug/L		97	75 - 125

Lab Sample ID: 240-139183-14 MSD
Matrix: Water
Analysis Batch: 458984

Client Sample ID: GW-WT-102B 102720
Prep Type: Total Recoverable
Prep Batch: 458561

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Calcium	68000		50000	118000		ug/L		100	75 - 125	0	20
Iron	490		10000	10400		ug/L		99	75 - 125	0	20
Lead	10	U	1000	960		ug/L		96	75 - 125	2	20
Manganese	52		1000	1020		ug/L		97	75 - 125	2	20
Sodium	31000		50000	79700		ug/L		97	75 - 125	0	20

Lab Sample ID: MB 240-458570/1-A
Matrix: Water
Analysis Batch: 458984

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 458570

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	5000	U	5000	310	ug/L		10/30/20 14:00	11/02/20 22:34	1
Iron	200	U	200	26	ug/L		10/30/20 14:00	11/02/20 22:34	1
Lead	10	U	10	2.8	ug/L		10/30/20 14:00	11/02/20 22:34	1
Manganese	15	U	15	2.1	ug/L		10/30/20 14:00	11/02/20 22:34	1
Sodium	1560	J	5000	560	ug/L		10/30/20 14:00	11/02/20 22:34	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 240-458570/2-A
Matrix: Water
Analysis Batch: 458984

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 458570

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	50000	46200		ug/L		92	80 - 120
Iron	10000	9270		ug/L		93	80 - 120
Lead	1000	911		ug/L		91	80 - 120
Manganese	1000	900		ug/L		90	80 - 120
Sodium	50000	44600		ug/L		89	80 - 120

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 240-458561/1-A
Matrix: Water
Analysis Batch: 459032

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 458561

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	0.75	ug/L		10/30/20 14:00	11/02/20 20:21	1

Lab Sample ID: LCS 240-458561/3-A
Matrix: Water
Analysis Batch: 459032

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 458561

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1000	882		ug/L		88	80 - 120

Lab Sample ID: 240-139183-14 MS
Matrix: Water
Analysis Batch: 459032

Client Sample ID: GW-WT-102B 102720
Prep Type: Total Recoverable
Prep Batch: 458561

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	2.6	J	1000	952		ug/L		95	75 - 125

Lab Sample ID: 240-139183-14 MSD
Matrix: Water
Analysis Batch: 459032

Client Sample ID: GW-WT-102B 102720
Prep Type: Total Recoverable
Prep Batch: 458561

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	2.6	J	1000	891		ug/L		89	75 - 125	7	20

Lab Sample ID: MB 240-461841/1-A
Matrix: Water
Analysis Batch: 462326

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 461841

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	0.75	ug/L		11/19/20 14:00	11/20/20 12:33	1

Lab Sample ID: LCS 240-461841/2-A
Matrix: Water
Analysis Batch: 462326

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 461841

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1000	942		ug/L		94	80 - 120

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

Lab Sample ID: 240-139183-1 MS — **Client Sample ID: GW-WT-120B 102720**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 462326 — **Prep Batch: 461841**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	5.8		1000	948		ug/L		94	75 - 125

Lab Sample ID: 240-139183-1 MSD — **Client Sample ID: GW-WT-120B 102720**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 462326 — **Prep Batch: 461841**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	5.8		1000	950		ug/L		94	75 - 125	0	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 240-460749/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 460749

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	0.28	mg/L			11/13/20 09:10	1
Sulfate	1.0	U	1.0	0.35	mg/L			11/13/20 09:10	1

Lab Sample ID: MB 240-460749/49 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 460749

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	0.28	mg/L			11/14/20 00:41	1
Sulfate	1.0	U	1.0	0.35	mg/L			11/14/20 00:41	1

Lab Sample ID: LCS 240-460749/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 460749

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	50.0		mg/L		100	90 - 110
Sulfate	50.0	51.4		mg/L		103	90 - 110

Lab Sample ID: LCS 240-460749/50 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 460749

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	50.0		mg/L		100	90 - 110
Sulfate	50.0	51.5		mg/L		103	90 - 110

Lab Sample ID: 240-139183-5 MS — **Client Sample ID: GW-WT-114C 102820**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 460749

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	35		50.0	88.9		mg/L		107	80 - 120
Sulfate	59		50.0	112		mg/L		107	80 - 120

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 240-139183-5 MSD — **Client Sample ID: GW-WT-114C 102820**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 460749

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	35		50.0	90.4		mg/L		110	80 - 120	2	15
Sulfate	59		50.0	114		mg/L		110	80 - 120	1	15

Lab Sample ID: MB 240-460751/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 460751

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	0.28	mg/L			11/13/20 13:05	1
Sulfate	1.0	U	1.0	0.35	mg/L			11/13/20 13:05	1

Lab Sample ID: LCS 240-460751/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 460751

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	50.3		mg/L		101	90 - 110
Sulfate	50.0	52.0		mg/L		104	90 - 110

Lab Sample ID: 240-139183-14 MS — **Client Sample ID: GW-WT-102B 102720**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 460751

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	64		50.0	115		mg/L		104	80 - 120
Sulfate	28		50.0	82.5		mg/L		109	80 - 120

Lab Sample ID: 240-139183-14 MSD — **Client Sample ID: GW-WT-102B 102720**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 460751

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	64		50.0	116		mg/L		105	80 - 120	1	15
Sulfate	28		50.0	83.5		mg/L		111	80 - 120	1	15

Lab Sample ID: 240-139183-19 MS — **Client Sample ID: GW-WT-122B 102820**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 460751

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	39		50.0	92.8		mg/L		108	80 - 120
Sulfate	78		50.0	132		mg/L		107	80 - 120

Lab Sample ID: 240-139183-19 MSD — **Client Sample ID: GW-WT-122B 102820**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 460751

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	39		50.0	93.9		mg/L		110	80 - 120	1	15
Sulfate	78		50.0	133		mg/L		109	80 - 120	1	15

QC Association Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

GC/MS VOA

Analysis Batch: 458709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-139183-4	GW-WT-120C 102820	Total/NA	Water	8260C	
240-139183-5	GW-WT-114C 102820	Total/NA	Water	8260C	
240-139183-6	GW-WT-120C 102820D	Total/NA	Water	8260C	
240-139183-7	GW-WT-114C 102820D	Total/NA	Water	8260C	
240-139183-9	GW-WT-114B 102820	Total/NA	Water	8260C	
240-139183-10	GW-WT-114A 102820	Total/NA	Water	8260C	
240-139183-11	GW-WT-101C 102820	Total/NA	Water	8260C	
240-139183-12	GW-WT-101E 102720	Total/NA	Water	8260C	
240-139183-13	GW-WT-102A 102720	Total/NA	Water	8260C	
240-139183-14	GW-WT-102B 102720	Total/NA	Water	8260C	
240-139183-15	GW-WT-106C 102820	Total/NA	Water	8260C	
240-139183-16	GW-WT-106B 102820	Total/NA	Water	8260C	
MB 240-458709/8	Method Blank	Total/NA	Water	8260C	
LCS 240-458709/5	Lab Control Sample	Total/NA	Water	8260C	
240-139183-14 MS	GW-WT-102B 102720	Total/NA	Water	8260C	
240-139183-14 MSD	GW-WT-102B 102720	Total/NA	Water	8260C	

Analysis Batch: 458907

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-139183-1	GW-WT-120B 102720	Total/NA	Water	8260C	
240-139183-2	GW-WT-120B 102720E	Total/NA	Water	8260C	
240-139183-3	GW-WT-120A 102720	Total/NA	Water	8260C	
240-139183-17	GW-WT-106A 102820	Total/NA	Water	8260C	
240-139183-18	GW-WT-122A 102820	Total/NA	Water	8260C	
240-139183-19	GW-WT-122B 102820	Total/NA	Water	8260C	
240-139183-20	GW-WT-122C 102820	Total/NA	Water	8260C	
240-139183-21	GW-WT-119B 102820	Total/NA	Water	8260C	
240-139183-22	TB-1 102820	Total/NA	Water	8260C	
MB 240-458907/8	Method Blank	Total/NA	Water	8260C	
LCS 240-458907/5	Lab Control Sample	Total/NA	Water	8260C	

Metals

Prep Batch: 458561

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-139183-13	GW-WT-102A 102720	Total Recoverable	Water	3005A	
240-139183-14	GW-WT-102B 102720	Total Recoverable	Water	3005A	
240-139183-15	GW-WT-106C 102820	Total Recoverable	Water	3005A	
240-139183-16	GW-WT-106B 102820	Total Recoverable	Water	3005A	
240-139183-17	GW-WT-106A 102820	Total Recoverable	Water	3005A	
240-139183-18	GW-WT-122A 102820	Total Recoverable	Water	3005A	
240-139183-19	GW-WT-122B 102820	Total Recoverable	Water	3005A	
240-139183-20	GW-WT-122C 102820	Total Recoverable	Water	3005A	
240-139183-21	GW-WT-119B 102820	Total Recoverable	Water	3005A	
MB 240-458561/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-458561/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-458561/3-A	Lab Control Sample	Total Recoverable	Water	3005A	
240-139183-14 MS	GW-WT-102B 102720	Total Recoverable	Water	3005A	
240-139183-14 MS	GW-WT-102B 102720	Total Recoverable	Water	3005A	
240-139183-14 MSD	GW-WT-102B 102720	Total Recoverable	Water	3005A	
240-139183-14 MSD	GW-WT-102B 102720	Total Recoverable	Water	3005A	

QC Association Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Metals

Prep Batch: 458570

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-139183-1	GW-WT-120B 102720	Total Recoverable	Water	3005A	
240-139183-2	GW-WT-120B 102720E	Total Recoverable	Water	3005A	
240-139183-3	GW-WT-120A 102720	Total Recoverable	Water	3005A	
240-139183-4	GW-WT-120C 102820	Total Recoverable	Water	3005A	
240-139183-5	GW-WT-114C 102820	Total Recoverable	Water	3005A	
240-139183-6	GW-WT-120C 102820D	Total Recoverable	Water	3005A	
240-139183-8	GW-WT-114B 102820D	Total Recoverable	Water	3005A	
240-139183-9	GW-WT-114B 102820	Total Recoverable	Water	3005A	
240-139183-10	GW-WT-114A 102820	Total Recoverable	Water	3005A	
240-139183-11	GW-WT-101C 102820	Total Recoverable	Water	3005A	
240-139183-12	GW-WT-101E 102720	Total Recoverable	Water	3005A	
MB 240-458570/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-458570/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 458984

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-139183-1	GW-WT-120B 102720	Total Recoverable	Water	6010C	458570
240-139183-2	GW-WT-120B 102720E	Total Recoverable	Water	6010C	458570
240-139183-3	GW-WT-120A 102720	Total Recoverable	Water	6010C	458570
240-139183-4	GW-WT-120C 102820	Total Recoverable	Water	6010C	458570
240-139183-5	GW-WT-114C 102820	Total Recoverable	Water	6010C	458570
240-139183-6	GW-WT-120C 102820D	Total Recoverable	Water	6010C	458570
240-139183-8	GW-WT-114B 102820D	Total Recoverable	Water	6010C	458570
240-139183-9	GW-WT-114B 102820	Total Recoverable	Water	6010C	458570
240-139183-10	GW-WT-114A 102820	Total Recoverable	Water	6010C	458570
240-139183-11	GW-WT-101C 102820	Total Recoverable	Water	6010C	458570
240-139183-12	GW-WT-101E 102720	Total Recoverable	Water	6010C	458570
240-139183-13	GW-WT-102A 102720	Total Recoverable	Water	6010C	458561
240-139183-14	GW-WT-102B 102720	Total Recoverable	Water	6010C	458561
240-139183-15	GW-WT-106C 102820	Total Recoverable	Water	6010C	458561
240-139183-16	GW-WT-106B 102820	Total Recoverable	Water	6010C	458561
240-139183-17	GW-WT-106A 102820	Total Recoverable	Water	6010C	458561
240-139183-18	GW-WT-122A 102820	Total Recoverable	Water	6010C	458561
240-139183-19	GW-WT-122B 102820	Total Recoverable	Water	6010C	458561
240-139183-20	GW-WT-122C 102820	Total Recoverable	Water	6010C	458561
240-139183-21	GW-WT-119B 102820	Total Recoverable	Water	6010C	458561
MB 240-458561/1-A	Method Blank	Total Recoverable	Water	6010C	458561
MB 240-458570/1-A	Method Blank	Total Recoverable	Water	6010C	458570
LCS 240-458561/2-A	Lab Control Sample	Total Recoverable	Water	6010C	458561
LCS 240-458570/2-A	Lab Control Sample	Total Recoverable	Water	6010C	458570
240-139183-14 MS	GW-WT-102B 102720	Total Recoverable	Water	6010C	458561
240-139183-14 MSD	GW-WT-102B 102720	Total Recoverable	Water	6010C	458561

Analysis Batch: 459032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-139183-13	GW-WT-102A 102720	Total Recoverable	Water	6020A	458561
240-139183-14	GW-WT-102B 102720	Total Recoverable	Water	6020A	458561
240-139183-15	GW-WT-106C 102820	Total Recoverable	Water	6020A	458561
240-139183-16	GW-WT-106B 102820	Total Recoverable	Water	6020A	458561
240-139183-17	GW-WT-106A 102820	Total Recoverable	Water	6020A	458561
240-139183-18	GW-WT-122A 102820	Total Recoverable	Water	6020A	458561

Metals (Continued)

Analysis Batch: 459032 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-139183-19	GW-WT-122B 102820	Total Recoverable	Water	6020A	458561
240-139183-20	GW-WT-122C 102820	Total Recoverable	Water	6020A	458561
240-139183-21	GW-WT-119B 102820	Total Recoverable	Water	6020A	458561
MB 240-458561/1-A	Method Blank	Total Recoverable	Water	6020A	458561
LCS 240-458561/3-A	Lab Control Sample	Total Recoverable	Water	6020A	458561
240-139183-14 MS	GW-WT-102B 102720	Total Recoverable	Water	6020A	458561
240-139183-14 MSD	GW-WT-102B 102720	Total Recoverable	Water	6020A	458561

Prep Batch: 461841

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-139183-1	GW-WT-120B 102720	Total Recoverable	Water	3005A	
240-139183-2	GW-WT-120B 102720E	Total Recoverable	Water	3005A	
240-139183-3	GW-WT-120A 102720	Total Recoverable	Water	3005A	
240-139183-4	GW-WT-120C 102820	Total Recoverable	Water	3005A	
240-139183-5	GW-WT-114C 102820	Total Recoverable	Water	3005A	
240-139183-6	GW-WT-120C 102820D	Total Recoverable	Water	3005A	
240-139183-8	GW-WT-114B 102820D	Total Recoverable	Water	3005A	
240-139183-9	GW-WT-114B 102820	Total Recoverable	Water	3005A	
240-139183-10	GW-WT-114A 102820	Total Recoverable	Water	3005A	
240-139183-11	GW-WT-101C 102820	Total Recoverable	Water	3005A	
240-139183-12	GW-WT-101E 102720	Total Recoverable	Water	3005A	
MB 240-461841/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-461841/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
240-139183-1 MS	GW-WT-120B 102720	Total Recoverable	Water	3005A	
240-139183-1 MSD	GW-WT-120B 102720	Total Recoverable	Water	3005A	

Analysis Batch: 462326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-139183-1	GW-WT-120B 102720	Total Recoverable	Water	6020A	461841
240-139183-2	GW-WT-120B 102720E	Total Recoverable	Water	6020A	461841
240-139183-3	GW-WT-120A 102720	Total Recoverable	Water	6020A	461841
240-139183-4	GW-WT-120C 102820	Total Recoverable	Water	6020A	461841
240-139183-5	GW-WT-114C 102820	Total Recoverable	Water	6020A	461841
240-139183-6	GW-WT-120C 102820D	Total Recoverable	Water	6020A	461841
240-139183-8	GW-WT-114B 102820D	Total Recoverable	Water	6020A	461841
240-139183-9	GW-WT-114B 102820	Total Recoverable	Water	6020A	461841
240-139183-10	GW-WT-114A 102820	Total Recoverable	Water	6020A	461841
240-139183-11	GW-WT-101C 102820	Total Recoverable	Water	6020A	461841
240-139183-12	GW-WT-101E 102720	Total Recoverable	Water	6020A	461841
MB 240-461841/1-A	Method Blank	Total Recoverable	Water	6020A	461841
LCS 240-461841/2-A	Lab Control Sample	Total Recoverable	Water	6020A	461841
240-139183-1 MS	GW-WT-120B 102720	Total Recoverable	Water	6020A	461841
240-139183-1 MSD	GW-WT-120B 102720	Total Recoverable	Water	6020A	461841

General Chemistry

Analysis Batch: 460749

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-139183-1	GW-WT-120B 102720	Total/NA	Water	300.0	
240-139183-2	GW-WT-120B 102720E	Total/NA	Water	300.0	
240-139183-3	GW-WT-120A 102720	Total/NA	Water	300.0	

General Chemistry (Continued)

Analysis Batch: 460749 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-139183-4	GW-WT-120C 102820	Total/NA	Water	300.0	
240-139183-5	GW-WT-114C 102820	Total/NA	Water	300.0	
MB 240-460749/3	Method Blank	Total/NA	Water	300.0	
MB 240-460749/49	Method Blank	Total/NA	Water	300.0	
LCS 240-460749/4	Lab Control Sample	Total/NA	Water	300.0	
LCS 240-460749/50	Lab Control Sample	Total/NA	Water	300.0	
240-139183-5 MS	GW-WT-114C 102820	Total/NA	Water	300.0	
240-139183-5 MSD	GW-WT-114C 102820	Total/NA	Water	300.0	

Analysis Batch: 460751

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-139183-6	GW-WT-120C 102820D	Total/NA	Water	300.0	
240-139183-8	GW-WT-114B 102820D	Total/NA	Water	300.0	
240-139183-9	GW-WT-114B 102820	Total/NA	Water	300.0	
240-139183-11	GW-WT-101C 102820	Total/NA	Water	300.0	
240-139183-12	GW-WT-101E 102720	Total/NA	Water	300.0	
240-139183-13	GW-WT-102A 102720	Total/NA	Water	300.0	
240-139183-14	GW-WT-102B 102720	Total/NA	Water	300.0	
240-139183-15	GW-WT-106C 102820	Total/NA	Water	300.0	
240-139183-16	GW-WT-106B 102820	Total/NA	Water	300.0	
240-139183-17	GW-WT-106A 102820	Total/NA	Water	300.0	
240-139183-18	GW-WT-122A 102820	Total/NA	Water	300.0	
240-139183-19	GW-WT-122B 102820	Total/NA	Water	300.0	
240-139183-20	GW-WT-122C 102820	Total/NA	Water	300.0	
240-139183-21	GW-WT-119B 102820	Total/NA	Water	300.0	
MB 240-460751/3	Method Blank	Total/NA	Water	300.0	
LCS 240-460751/4	Lab Control Sample	Total/NA	Water	300.0	
240-139183-14 MS	GW-WT-102B 102720	Total/NA	Water	300.0	
240-139183-14 MSD	GW-WT-102B 102720	Total/NA	Water	300.0	
240-139183-19 MS	GW-WT-122B 102820	Total/NA	Water	300.0	
240-139183-19 MSD	GW-WT-122B 102820	Total/NA	Water	300.0	

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-120B 102720

Lab Sample ID: 240-139183-1
Date Collected: 10/27/20 15:50
Matrix: Water
Date Received: 10/29/20 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	458907	11/02/20 17:45	TJL1	TAL CAN
Total Recoverable	Prep	3005A			458570	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	458984	11/02/20 23:11	WKD	TAL CAN
Total Recoverable	Prep	3005A			461841	11/19/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	462326	11/20/20 12:37	DSH	TAL CAN
Total/NA	Analysis	300.0		1	460749	11/13/20 19:19	JMB	TAL CAN

Client Sample ID: GW-WT-120B 102720E

Lab Sample ID: 240-139183-2
Date Collected: 10/27/20 15:50
Matrix: Water
Date Received: 10/29/20 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	458907	11/02/20 18:07	TJL1	TAL CAN
Total Recoverable	Prep	3005A			458570	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	458984	11/02/20 23:15	WKD	TAL CAN
Total Recoverable	Prep	3005A			461841	11/19/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	462326	11/20/20 12:49	DSH	TAL CAN
Total/NA	Analysis	300.0		1	460749	11/13/20 19:39	JMB	TAL CAN

Client Sample ID: GW-WT-120A 102720

Lab Sample ID: 240-139183-3
Date Collected: 10/27/20 17:30
Matrix: Water
Date Received: 10/29/20 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	458907	11/02/20 18:29	TJL1	TAL CAN
Total Recoverable	Prep	3005A			458570	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	458984	11/02/20 23:19	WKD	TAL CAN
Total Recoverable	Prep	3005A			461841	11/19/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	462326	11/20/20 12:52	DSH	TAL CAN
Total/NA	Analysis	300.0		1	460749	11/13/20 20:00	JMB	TAL CAN

Client Sample ID: GW-WT-120C 102820

Lab Sample ID: 240-139183-4
Date Collected: 10/28/20 09:30
Matrix: Water
Date Received: 10/29/20 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	458709	10/31/20 17:59	TJL1	TAL CAN
Total Recoverable	Prep	3005A			458570	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	458984	11/02/20 23:24	WKD	TAL CAN
Total Recoverable	Prep	3005A			461841	11/19/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	462326	11/20/20 12:54	DSH	TAL CAN
Total/NA	Analysis	300.0		1	460749	11/13/20 20:20	JMB	TAL CAN

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-114C 102820

Lab Sample ID: 240-139183-5
Date Collected: 10/28/20 11:10
Matrix: Water
Date Received: 10/29/20 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	458709	10/31/20 18:21	TJL1	TAL CAN
Total Recoverable	Prep	3005A			458570	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	458984	11/02/20 23:36	WKD	TAL CAN
Total Recoverable	Prep	3005A			461841	11/19/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	462326	11/20/20 13:02	DSH	TAL CAN
Total/NA	Analysis	300.0		1	460749	11/13/20 21:20	JMB	TAL CAN

Client Sample ID: GW-WT-120C 102820D

Lab Sample ID: 240-139183-6
Date Collected: 10/28/20 09:30
Matrix: Water
Date Received: 10/29/20 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	458709	10/31/20 18:43	TJL1	TAL CAN
Total Recoverable	Prep	3005A			458570	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	458984	11/02/20 23:41	WKD	TAL CAN
Total Recoverable	Prep	3005A			461841	11/19/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	462326	11/20/20 13:04	DSH	TAL CAN
Total/NA	Analysis	300.0		1	460751	11/13/20 13:48	JMB	TAL CAN

Client Sample ID: GW-WT-114C 102820D

Lab Sample ID: 240-139183-7
Date Collected: 10/28/20 11:10
Matrix: Water
Date Received: 10/29/20 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	458709	10/31/20 19:05	TJL1	TAL CAN

Client Sample ID: GW-WT-114B 102820D

Lab Sample ID: 240-139183-8
Date Collected: 10/28/20 12:50
Matrix: Water
Date Received: 10/29/20 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			458570	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	458984	11/02/20 23:45	WKD	TAL CAN
Total Recoverable	Prep	3005A			461841	11/19/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	462326	11/20/20 13:07	DSH	TAL CAN
Total/NA	Analysis	300.0		1	460751	11/13/20 14:10	JMB	TAL CAN

Client Sample ID: GW-WT-114B 102820

Lab Sample ID: 240-139183-9
Date Collected: 10/28/20 12:50
Matrix: Water
Date Received: 10/29/20 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	458709	10/31/20 19:28	TJL1	TAL CAN
Total Recoverable	Prep	3005A			458570	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	458984	11/02/20 23:49	WKD	TAL CAN

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-114B 102820
Lab Sample ID: 240-139183-9
Date Collected: 10/28/20 12:50
Matrix: Water
Date Received: 10/29/20 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			461841	11/19/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	462326	11/20/20 13:09	DSH	TAL CAN
Total/NA	Analysis	300.0		1	460751	11/13/20 14:32	JMB	TAL CAN

Client Sample ID: GW-WT-114A 102820
Lab Sample ID: 240-139183-10
Date Collected: 10/28/20 12:00
Matrix: Water
Date Received: 10/29/20 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	458709	10/31/20 19:50	TJL1	TAL CAN
Total Recoverable	Prep	3005A			458570	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	458984	11/02/20 23:53	WKD	TAL CAN
Total Recoverable	Prep	3005A			461841	11/19/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	462326	11/20/20 13:11	DSH	TAL CAN

Client Sample ID: GW-WT-101C 102820
Lab Sample ID: 240-139183-11
Date Collected: 10/28/20 15:15
Matrix: Water
Date Received: 10/29/20 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	458709	10/31/20 20:12	TJL1	TAL CAN
Total Recoverable	Prep	3005A			458570	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	458984	11/02/20 23:58	WKD	TAL CAN
Total Recoverable	Prep	3005A			461841	11/19/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	462326	11/20/20 13:14	DSH	TAL CAN
Total/NA	Analysis	300.0		1	460751	11/13/20 14:54	JMB	TAL CAN

Client Sample ID: GW-WT-101E 102720
Lab Sample ID: 240-139183-12
Date Collected: 10/28/20 16:20
Matrix: Water
Date Received: 10/29/20 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	458709	10/31/20 20:34	TJL1	TAL CAN
Total Recoverable	Prep	3005A			458570	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	458984	11/03/20 00:02	WKD	TAL CAN
Total Recoverable	Prep	3005A			461841	11/19/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	462326	11/20/20 13:17	DSH	TAL CAN
Total/NA	Analysis	300.0		1	460751	11/13/20 15:15	JMB	TAL CAN

Client Sample ID: GW-WT-102A 102720
Lab Sample ID: 240-139183-13
Date Collected: 10/27/20 15:50
Matrix: Water
Date Received: 10/29/20 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	458709	10/31/20 20:57	TJL1	TAL CAN

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-102A 102720

Lab Sample ID: 240-139183-13
Date Collected: 10/27/20 15:50
Matrix: Water
Date Received: 10/29/20 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			458561	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	458984	11/02/20 18:09	WKD	TAL CAN
Total Recoverable	Prep	3005A			458561	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	459032	11/02/20 20:40	DSH	TAL CAN
Total/NA	Analysis	300.0		1	460751	11/13/20 15:37	JMB	TAL CAN

Client Sample ID: GW-WT-102B 102720

Lab Sample ID: 240-139183-14
Date Collected: 10/27/20 16:37
Matrix: Water
Date Received: 10/29/20 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	458709	10/31/20 21:19	TJL1	TAL CAN
Total Recoverable	Prep	3005A			458561	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	458984	11/02/20 17:44	WKD	TAL CAN
Total Recoverable	Prep	3005A			458561	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	459032	11/02/20 20:26	DSH	TAL CAN
Total/NA	Analysis	300.0		1	460751	11/13/20 15:59	JMB	TAL CAN

Client Sample ID: GW-WT-106C 102820

Lab Sample ID: 240-139183-15
Date Collected: 10/28/20 10:35
Matrix: Water
Date Received: 10/29/20 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	458709	10/31/20 22:47	TJL1	TAL CAN
Total Recoverable	Prep	3005A			458561	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	458984	11/02/20 18:13	WKD	TAL CAN
Total Recoverable	Prep	3005A			458561	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	459032	11/02/20 20:42	DSH	TAL CAN
Total/NA	Analysis	300.0		1	460751	11/13/20 17:47	JMB	TAL CAN

Client Sample ID: GW-WT-106B 102820

Lab Sample ID: 240-139183-16
Date Collected: 10/28/20 11:38
Matrix: Water
Date Received: 10/29/20 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	458709	10/31/20 23:09	TJL1	TAL CAN
Total Recoverable	Prep	3005A			458561	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	458984	11/02/20 18:26	WKD	TAL CAN
Total Recoverable	Prep	3005A			458561	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	459032	11/02/20 20:50	DSH	TAL CAN
Total/NA	Analysis	300.0		1	460751	11/13/20 18:09	JMB	TAL CAN

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-106A 102820

Lab Sample ID: 240-139183-17
Date Collected: 10/28/20 12:20
Matrix: Water
Date Received: 10/29/20 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	458907	11/02/20 18:51	TJL1	TAL CAN
Total Recoverable	Prep	3005A			458561	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	458984	11/02/20 18:30	WKD	TAL CAN
Total Recoverable	Prep	3005A			458561	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	459032	11/02/20 20:52	DSH	TAL CAN
Total/NA	Analysis	300.0		1	460751	11/13/20 18:30	JMB	TAL CAN

Client Sample ID: GW-WT-122A 102820

Lab Sample ID: 240-139183-18
Date Collected: 10/28/20 13:40
Matrix: Water
Date Received: 10/29/20 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	458907	11/02/20 19:14	TJL1	TAL CAN
Total Recoverable	Prep	3005A			458561	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	458984	11/02/20 18:34	WKD	TAL CAN
Total Recoverable	Prep	3005A			458561	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	459032	11/02/20 20:55	DSH	TAL CAN
Total/NA	Analysis	300.0		5	460751	11/13/20 18:52	JMB	TAL CAN

Client Sample ID: GW-WT-122B 102820

Lab Sample ID: 240-139183-19
Date Collected: 10/28/20 14:25
Matrix: Water
Date Received: 10/29/20 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	458907	11/02/20 19:36	TJL1	TAL CAN
Total Recoverable	Prep	3005A			458561	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	458984	11/02/20 18:39	WKD	TAL CAN
Total Recoverable	Prep	3005A			458561	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	459032	11/02/20 20:57	DSH	TAL CAN
Total/NA	Analysis	300.0		1	460751	11/13/20 19:14	JMB	TAL CAN

Client Sample ID: GW-WT-122C 102820

Lab Sample ID: 240-139183-20
Date Collected: 10/28/20 15:00
Matrix: Water
Date Received: 10/29/20 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	458907	11/02/20 19:58	TJL1	TAL CAN
Total Recoverable	Prep	3005A			458561	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	458984	11/02/20 18:43	WKD	TAL CAN
Total Recoverable	Prep	3005A			458561	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	459032	11/02/20 21:00	DSH	TAL CAN
Total/NA	Analysis	300.0		1	460751	11/13/20 20:19	JMB	TAL CAN

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139183-1

Client Sample ID: GW-WT-119B 102820

Lab Sample ID: 240-139183-21
Date Collected: 10/28/20 15:55
Matrix: Water
Date Received: 10/29/20 16:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	458907	11/02/20 20:20	TJL1	TAL CAN
Total Recoverable	Prep	3005A			458561	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	458984	11/02/20 18:47	WKD	TAL CAN
Total Recoverable	Prep	3005A			458561	10/30/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	459032	11/02/20 21:02	DSH	TAL CAN
Total/NA	Analysis	300.0		1	460751	11/13/20 20:41	JMB	TAL CAN

Client Sample ID: TB-1 102820

Lab Sample ID: 240-139183-22
Date Collected: 10/28/20 00:00
Matrix: Water
Date Received: 10/29/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	458907	11/02/20 20:42	TJL1	TAL CAN

Laboratory References:

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

Accreditation/Certification Summary

Client: Groundwater & Environmental Services Inc
Job ID: 240-139183-1
Project/Site: Bayer Himco Landfill

Laboratory: Eurofins TestAmerica, Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-21
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-21
Illinois	NELAP	004498	07-31-21
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21
Kentucky (UST)	State	112225	02-23-21
Kentucky (WW)	State	KY98016	12-31-20
Minnesota	NELAP	OH00048	12-31-20
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-21
Ohio VAP	State	CL0024	06-05-21
Oregon	NELAP	4062	02-24-21
Pennsylvania	NELAP	68-00340	08-31-21
Texas	NELAP	T104704517-18-10	08-31-21
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-21
Washington	State	C971	01-12-21
West Virginia DEP	State	210	12-31-20

1-7/26

CHAIN OF CUSTODY

PAGE 1 OF

FED-EX Tracking #	Bottle Order Control #
Lab Quote #	Lab Job #

CLIENT/REPORTING INFORMATION	PROJECT INFORMATION	BILLING INFORMATION	REQUESTED ANALYSIS (see Test Code sheet)	LAB USE ONLY
Groundwater & Environmental Services, Inc. 1691 Georgetown Road, Hudson, OH 44236 **Project Manager:** Stephen E. Betts **Phone #:** 877-505-9382 PM Email: **SBetts@gesonline.com** fax **330-528-1481**	**Project Name:** Bayer Himco Landfill **Project Address:** County Road 10, Elkhart, IN **Project PSID #:** 857038	Groundwater & Environmental Services, Inc. ap@gesonline.com ATTN: Accounts Payable **Invoice Instructions (Project #/ Phase / Task / Altorg)** 1801906/02/206/1418		

Sampler(s) Name: Sampler(s) Name:

Lab Sample #	Field ID / Point of Collection (Sys_loc_code)	Depth Interval (ft)	Date Sampled	Time Sampled	Sampler	Matrix	Total # Bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Amber	VOC 8260	Metals 6010	Arsnic 6020	Chemistry 300 (Sulfate, Chloride)				
	GW - WT 120B 10 27 20		10/27/20	1550	BA	WG	5	X		X		X					X	X		X				
	GW - WT-120B 10 27 20 E		10/27/20	1550	BA	WG	5	X		X		X					X	X		X				
	GW - WT-120A 10 27 20		10/27/20	1730	BA	WG	5	X		X		X					X	X		X				
	GW - WT-120C 10 28 20		10/28/20	930	BA	WG	5	X		X		X					X	X		X				
	GW - WT-114C 10 28 20		10/28/20	110	BA	WG	5	X		X		X					X	X		X				
	GW - WT-120C 10 28 20 D		10/28/20	930	BA	WG	5	X		X		X					X	X		X				
	GW - WT-114C 10 28 20 D		10/28/20	1110	BA	WG	3	X									X							
	GW - WT-114B 10 28 20 D		10/28/20	1250	BA	WG	2	X		X		X						X		X				
	GW - WT-114B 10 28 20		10/28/20	1250	BA	WG	5	X		X		X					X	X		X				
	GW - WT-114A 10 28 20		10/28/20	1200	BA	WG	5	X		X		X					X	X						
	GW - WT-101C 10 28 20		10/28/20	1515	BA	WG	5	X		X		X					X	X		X				
	GW-WT-101E 10 28 20		10/28/20	1620	BA	WG	5	X		X		X					X	X		X				

Turnaround Time (Business Days) Approved By (Lab PM) / Date

- ☐ Standard 14 Days _____ /
- ☐ 1 day RUSH _____ /
- ☐ Other _____ _____ /

Laboratory Information

Lab: _____
Address: _____
Phone: _____
Lab PM: _____
Lab PM Emai _____

Data Deliverable Information

- ☐ Commercial 'A' (Level 1) = Results Only
- ☐ Commercial 'B' (Level 2) = Results + QC Summary
- ☐ FULLT1 (Level 3 & 4)
- ☐ NJ Reduced = Results + QC Summary + Partial Raw Data
- ☐ Commercial 'C'
- ☐ *NJ Data of Known Quality Protocol Reporting*
- ☐ NYASP Category A
- ☐ NYASP Category B
- ☐ State Forms
- ☑ EDD Format _____
- ☐ Other _____

Please Email the EQ EDD Package to ges@equisonline.com

EQEDD Name: Bayer Himco Landfill_LabReport#.28489.EQEDD.zip

240-139183 Chain of Custody

Sample Custody must be documented below each time samples change possession, including courier.

Relinquished By Sampler:	Date / Time:	Received By:
1 [signature]	1 10/28/30 1630	1 [signature]
Relinquished By: 2 [signature]	Date / Time: 2 10/28/20 1730	Received By: 2 fedex
Relinquished By: 3	Date / Time: 3 10-29/20 930	Received By: 3 [signature] ETA

Custody Seal Number: ☐ Intact ☐ Not Intact ☐ Preserved where applicable ☐ On Ice Cooler Temp _____

0.4/13

CHAIN OF CUSTODY

PAGE OF

FED-EX Tracking #	Bottle Order Control #
Lab Quote #	Lab Job #

CLIENT/REPORTING INFORMATION

Groundwater & Environmental Services, Inc.
1691 Georgetown Road, Hudson, OH 44236

Project Manager: Stephen E. Betts
Phone #: 877-505-9382
PM Email: **SBetts@gesonline.com**
fax **330-528-1481**

PROJECT INFORMATION

Project Name: Bayer Himco Landfill
Project Address: County Road 10, Elkhart, IN
Project PSID #: 857038

BILLING INFORMATION

Groundwater & Environmental Services, Inc.
ap@gesonline.com
ATTN: Accounts Payable

Invoice Instructions (Project #/ Phase / Task / Altorg)
1801906/02/206/1418

REQUESTED ANALYSIS (see Test Code sheet)

Sampler(s) Name:

Sampler(s) Name:

number of preserved bottles

Lab Sample #	Field ID / Point of Collection (Sys_loc_code)	Depth Interval (ft)	Date Sampled	Time Sampled	Sampler	Matrix	Total # Bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Amber	VOC 8260	Metals 6010	Arsnic 6020	Chemistry 300 (Sulfate, Chloride)				LAB USE ONLY
	GW - ~~WT-21A~~ 10 20		10/ /20			WG																		
	GW - WT-102A 10 27 20		10/27/20	1550	GES	WG	5	X		X		X					3	1	1	1				
	GW - WT-102B 10 27 20		10/27/20	1637	GES	WG	5	X		X		X					3	1	1	1				
	GW - WT-102B 10 27 20 m		10/27/20	1637	GES	WG	10	X		X		X					6	2	2	2				
	GW - WT 106 C 10 28 20		10/28/20	1035	GES	WG	5	X		X		X					3	1	1	1				
	GW - WT 106 B 10 28 20		10/28/20	1138	GES	WG	5	X		X		X					3	1	1	1				
	GW - WT 106A 10 28 20		10/28/20	1220	GES	WG	5	X		X		X					3	1	1	1				
	GW - WT 122A 10 28 20		10/28/20	1340	GES	WG	5	X		X		X					3	1	1	1				
	GW - WT 122B 10 28 20		10/28/20	1425	GES	WG	5	X		X		X					3	1	1	1				
	GW - WT 122C 10 28 20		10/28/20	1500	GES	WG	5	X		X		X					3	1	1	1				
	GW - WT 119B 10 28 20		10/28/20	1555	GES	WG	5	X		X		X					3	1	1	1				
	TB-1 10 28 20		10/28/20	—	—	W	2										2							

Turnaround Time (Business Days) Approved By (Lab PM) / Date

- ☐ Standard 14 Days _____ /
- ☐ 1 day RUSH _____ /
- ☐ Other _____ _____ /

Laboratory Information

Lab: Test America
Address:
Phone:
Lab PM:
Lab PM Emai

Data Deliverable Information

- ☐ Commercial 'A' (Level 1) = Results Only
- ☐ Commercial 'B' (Level 2) = Results + QC Summary
- ☐ FULLT1 (Level 3 & 4)
- ☐ NJ Reduced = Results + QC Summary + Partial Raw Data
- ☐ Commercial 'C'
- ☐ *NJ Data of Known Quality Protocol Reporting*
- ☐ NYASP Category A
- ☐ NYASP Category B
- ☐ State Forms
- ☑ EDD Format _____
- ☐ Other _____

Please Email the EQ EDD Package to ges@equisonline.com
EQEDD Name: Bayer Himco Landfill_LabReport#.28489.EQEDD.zip

Sample Custody must be documented below each time samples change possession, including courier.

Relinquished By Sampler:	Date / Time:	Received By:
1 Chip Markovich	1 10/28/20 1700	1 fedex
Relinquished By: 2	Date / Time: 2 10-29-20 930	Received By: 2 [signature] ETA
Relinquished By: 3	Date / Time: 3	Received By: 3

Custody Seal Number: ☐ Intact ☐ Not Intact ☐ **Preserved where applicable** ☐ **On Ice** **Cooler Temp** _____

Eurofins TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility

Login # : 139183

Client GES Site Name _____ Cooler unpacked by: Matkmor

Cooler Received on 10-29-20 Opened on 10-29-20

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

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

TestAmerica Cooler # TA Foam Box Client Cooler Box Other _____

Packing material used: ~~Bubble Wrap~~ Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# IR-11 (CF +0.9 °C) Observed Cooler Temp. 1.7 °C Corrected Cooler Temp. 2.6 °C
   IR GUN #IR-12 (CF +0.5°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
   -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
   -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
   -Were tamper/custody seals intact and uncompromised? Yes No NA
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp(Y/N)?
10. Were correct bottle(s) used for the test(s) indicated? Yes No
11. Sufficient quantity received to perform indicated analyses? Yes No
12. Are these work share samples and all listed on the COC? Yes No
    If yes, Questions 13-17 have been checked at the originating laboratory.
13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# **HC907861**
14. Were VOAs on the COC? Yes No
15. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this. Yes No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
17. Was a LL Hg or Me Hg trip blank present? _____ Yes No

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

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

~~H4BD vials missing~~ AJG 10-29-20
~~H4BD bottles missing~~
2 extra TB-1 VOAs

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

WI-NC-099

Login # : 139193

Eurofins TestAmerica Canton Sample Receipt Multiple Cooler Form				
Cooler Description (Circle)	IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
TA Client Box Other	IR-10 IR-11	1.7	2.6	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11	0.4	1.3	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
☐ See Temperature Excursion Form				

WI-NC-099 Cooler Receipt Form Page 2 – Multiple Coolers

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservative Added (mls)	Lot #
GW-WT-120B 102720	240-139183-E-1	Plastic 500ml - with Nitric Acid	<2			
GW-WT-120B 102720E	240-139183-E-2	Plastic 500ml - with Nitric Acid	<2			
GW-WT-120A 102720	240-139183-E-3	Plastic 500ml - with Nitric Acid	<2			
GW-WT-120C 102820	240-139183-E-4	Plastic 500ml - with Nitric Acid	<2			
GW-WT-114C 102820	240-139183-E-5	Plastic 500ml - with Nitric Acid	<2			
GW-WT-120C 102820D	240-139183-E-6	Plastic 500ml - with Nitric Acid	<2			
GW-WT-114B 102820D	240-139183-B-8	Plastic 500ml - with Nitric Acid	<2			
GW-WT-114B 102820	240-139183-E-9	Plastic 500ml - with Nitric Acid	<2			
GW-WT-114A 102820	240-139183-E-10	Plastic 500ml - with Nitric Acid	<2			
GW-WT-101C 102820	240-139183-E-11	Plastic 500ml - with Nitric Acid	<2			
GW-WT-101E 102720	240-139183-E-12	Plastic 500ml - with Nitric Acid	<2			
GW-WT-102A 102720	240-139183-E-13	Plastic 500ml - with Nitric Acid	<2			
GW-WT-102B 102720	240-139183-M-14	Plastic 500ml - with Nitric Acid	<2			
GW-WT-102B 102720	240-139183-N-14	Plastic 500ml - with Nitric Acid	<2			
GW-WT-102B 102720	240-139183-O-14	Plastic 500ml - with Nitric Acid	<2			
GW-WT-106C 102820	240-139183-E-15	Plastic 500ml - with Nitric Acid	<2			
GW-WT-106B 102820	240-139183-E-16	Plastic 500ml - with Nitric Acid	<2			
GW-WT-106A 102820	240-139183-E-17	Plastic 500ml - with Nitric Acid	<2			
GW-WT-122A 102820	240-139183-E-18	Plastic 500ml - with Nitric Acid	<2			
GW-WT-122B 102820	240-139183-E-19	Plastic 500ml - with Nitric Acid	<2			
GW-WT-122C 102820	240-139183-E-20	Plastic 500ml - with Nitric Acid	<2			
GW-WT-119B 102820	240-139183-F-21	Plastic 500ml - with Nitric Acid	<2			

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

Laboratory Job ID: 240-139353-1
Client Project/Site: Bayer Himco Landfill

For:
Groundwater & Environmental Services Inc
1691 Georgetown Road, Unit G
Hudson, Ohio 44236

Attn: Mr. Steve Betts

Roxanne Cisneros

Authorized for release by:
11/24/2020 5:31:45 PM

Roxanne Cisneros, Senior Project Manager
(615)301-5761
roxanne.cisneros@Eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

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

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

Table of Contents

Cover Page 1
Table of Contents 2
Definitions/Glossary 3
Case Narrative 4
Method Summary 5
Sample Summary 6
Detection Summary 7
Client Sample Results 10
Surrogate Summary 21
QC Sample Results 22
QC Association Summary 25
Lab Chronicle 27
Certification Summary 30
Chain of Custody 31
Receipt Checklists 36

Definitions/Glossary

Client: Groundwater & Environmental Services Inc
Job ID: 240-139353-1
Project/Site: Bayer Himco Landfill

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Job ID: 240-139353-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-139353-1

Comments
No additional comments.

Receipt
The samples were received on 10/31/2020 9:30 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.1º C.

GC/MS VOA
Method 8260C: The pH of sample GW-WT116A 102920 (240-139353-8) was greater than 2. The sample was analyzed within the normal 14 day holding time; however, experimental evidence suggests that some aromatic compounds in wastewater samples, notably, Benzene, Toluene, and Ethylbenzene are susceptible to biological degradation if samples are not preserved to a pH of 2.

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

HPLC/IC
Method 300.0: The following sample was diluted due to the nature of the sample matrix: GW-WT101A 102820 (240-139353-2). Elevated reporting limits (RLs) are provided.

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

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

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

Method Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139353-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL CAN
300.0	Anions, Ion Chromatography	MCAWW	TAL CF
6010C	Metals (ICP)	SW846	TAL CAN
6020A	Metals (ICP/MS)	SW846	TAL CAN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CAN
5030C	Purge and Trap	SW846	TAL CAN

Protocol References:

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

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

Laboratory References:

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

TAL CF = Eurofins TestAmerica, Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Sample Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139353-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-139353-1	GW-WT101D 102820	Water	10/28/20 17:40	10/31/20 09:30	
240-139353-2	GW-WT101A 102820	Water	10/28/20 18:10	10/31/20 09:30	
240-139353-3	GW-WT1101A 102820E	Water	10/28/20 18:10	10/31/20 09:30	
240-139353-4	GW-WT115B 102920	Water	10/29/20 09:45	10/31/20 09:30	
240-139353-5	GW-WT115C 102920	Water	10/29/20 10:20	10/31/20 09:30	
240-139353-6	GW-WT115A 102920	Water	10/29/20 11:00	10/31/20 09:30	
240-139353-7	GW-WTE3 102920	Water	10/29/20 12:30	10/31/20 09:30	
240-139353-8	GW-WT116A 102920	Water	10/29/20 13:35	10/31/20 09:30	
240-139353-9	GW-WT-111A 102920	Water	10/29/20 15:10	10/31/20 09:30	
240-139353-10	GW-WT115A 102920M	Water	10/29/20 11:00	10/31/20 09:30	
240-139353-11	TB-3	Water	10/29/20 00:00	10/31/20 09:30	

Detection Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139353-1

Client Sample ID: GW-WT101D 102820 — Lab Sample ID: 240-139353-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.53	J	1.0	0.16	ug/L	1		8260C	Total/NA
1,1-Dichloroethane	3.0		1.0	0.17	ug/L	1		8260C	Total/NA
Chloride	39		5.0	2.0	mg/L	5		300.0	Total/NA
Sulfate	67		5.0	3.6	mg/L	5		300.0	Total/NA
Calcium	73000	B	5000	310	ug/L	1		6010C	Total Recoverable
Iron	1500		200	26	ug/L	1		6010C	Total Recoverable
Manganese	38		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	20000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	0.86	J	5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WT101A 102820 — Lab Sample ID: 240-139353-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.4		1.0	0.13	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	0.70	J	1.0	0.16	ug/L	1		8260C	Total/NA
1,1-Dichloroethane	4.9		1.0	0.17	ug/L	1		8260C	Total/NA

Client Sample ID: GW-WT1101A 102820E — Lab Sample ID: 240-139353-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	26		5.0	2.0	mg/L	5		300.0	Total/NA
Sulfate	140		5.0	3.6	mg/L	5		300.0	Total/NA
Calcium	200000	B	5000	310	ug/L	1		6010C	Total Recoverable
Iron	29000		200	26	ug/L	1		6010C	Total Recoverable
Manganese	1300		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	22000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	6.5		5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WT115B 102920 — Lab Sample ID: 240-139353-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	21		1.0	0.13	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	1.8		1.0	0.16	ug/L	1		8260C	Total/NA
1,1-Dichloroethane	4.6		1.0	0.17	ug/L	1		8260C	Total/NA
Chloride	32		5.0	2.0	mg/L	5		300.0	Total/NA
Sulfate	130		5.0	3.6	mg/L	5		300.0	Total/NA
Calcium	330000	B	5000	310	ug/L	1		6010C	Total Recoverable
Iron	140	J	200	26	ug/L	1		6010C	Total Recoverable
Manganese	7.3	J	15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	42000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	1.4	J	5.0	0.75	ug/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139353-1

Client Sample ID: GW-WT115C 102920 — Lab Sample ID: 240-139353-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.49	J	1.0	0.16	ug/L	1		8260C	Total/NA
1,1-Dichloroethane	2.0		1.0	0.17	ug/L	1		8260C	Total/NA
Chloride	41		5.0	2.0	mg/L	5		300.0	Total/NA
Sulfate	81		10	7.1	mg/L	10		300.0	Total/NA
Calcium	92000	B	5000	310	ug/L	1		6010C	Total Recoverable
Iron	2600		200	26	ug/L	1		6010C	Total Recoverable
Manganese	50		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	22000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	2.6	J	5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WT115A 102920 — Lab Sample ID: 240-139353-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	5.4		1.0	0.13	ug/L	1		8260C	Total/NA
1,1-Dichloroethane	1.6		1.0	0.17	ug/L	1		8260C	Total/NA
Chloride	28		1.0	0.40	mg/L	1		300.0	Total/NA
Sulfate	73		1.0	0.71	mg/L	1		300.0	Total/NA
Calcium	140000	B	5000	310	ug/L	1		6010C	Total Recoverable
Iron	810		200	26	ug/L	1		6010C	Total Recoverable
Manganese	140		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	13000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	1.4	J	5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WTE3 102920 — Lab Sample ID: 240-139353-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	19		5.0	2.0	mg/L	5		300.0	Total/NA
Sulfate	46		5.0	3.6	mg/L	5		300.0	Total/NA
Calcium	69000	B	5000	310	ug/L	1		6010C	Total Recoverable
Iron	170	J	200	26	ug/L	1		6010C	Total Recoverable
Manganese	28		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	12000		5000	560	ug/L	1		6010C	Total Recoverable

Client Sample ID: GW-WT116A 102920 — Lab Sample ID: 240-139353-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	4.2		1.0	0.13	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	1.9		1.0	0.16	ug/L	1		8260C	Total/NA
1,1-Dichloroethane	4.1		1.0	0.17	ug/L	1		8260C	Total/NA
Vinyl chloride	0.89	J	1.0	0.20	ug/L	1		8260C	Total/NA
Chloride	12		5.0	2.0	mg/L	5		300.0	Total/NA
Sulfate	550		10	7.1	mg/L	10		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139353-1

Client Sample ID: GW-WT116A 102920 (Continued) — Lab Sample ID: 240-139353-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	640000	B	5000	310	ug/L	1		6010C	Total Recoverable
Iron	7300		200	26	ug/L	1		6010C	Total Recoverable
Lead	24		10	2.8	ug/L	1		6010C	Total Recoverable
Manganese	1500		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	90000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	9.1		5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WT-111A 102920 — Lab Sample ID: 240-139353-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.92	J	1.0	0.13	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	0.20	J	1.0	0.16	ug/L	1		8260C	Total/NA
1,1-Dichloroethane	4.4		1.0	0.17	ug/L	1		8260C	Total/NA
Chloride	15		5.0	2.0	mg/L	5		300.0	Total/NA
Sulfate	64		5.0	3.6	mg/L	5		300.0	Total/NA
Calcium	100000	B	5000	310	ug/L	1		6010C	Total Recoverable
Iron	1700		200	26	ug/L	1		6010C	Total Recoverable
Manganese	220		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	16000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	5.0		5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: GW-WT115A 102920M — Lab Sample ID: 240-139353-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	6.0		1.0	0.13	ug/L	1		8260C	Total/NA
1,1-Dichloroethane	1.8		1.0	0.17	ug/L	1		8260C	Total/NA
Chloride	22		1.0	0.40	mg/L	1		300.0	Total/NA
Sulfate	52		1.0	0.71	mg/L	1		300.0	Total/NA
Calcium	130000	B	5000	310	ug/L	1		6010C	Total Recoverable
Iron	790		200	26	ug/L	1		6010C	Total Recoverable
Manganese	160		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	11000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	1.4	J	5.0	0.75	ug/L	1		6020A	Total Recoverable

Client Sample ID: TB-3 — Lab Sample ID: 240-139353-11

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139353-1

Client Sample ID: GW-WT101D 102820

Date Collected: 10/28/20 17:40
Date Received: 10/31/20 09:30

Lab Sample ID: 240-139353-1

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			11/09/20 18:46	1
cis-1,2-Dichloroethene	**0.53**	**J**	1.0	0.16	ug/L			11/09/20 18:46	1
1,1-Dichloroethane	**3.0**		1.0	0.17	ug/L			11/09/20 18:46	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/09/20 18:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*47 - 134*		*11/09/20 18:46*	*1*
Dibromofluoromethane (Surr)	*103*		*78 - 129*		*11/09/20 18:46*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 130*		*11/09/20 18:46*	*1*
Toluene-d8 (Surr)	*100*		*69 - 122*		*11/09/20 18:46*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**39**		5.0	2.0	mg/L			11/20/20 19:43	5
Sulfate	**67**		5.0	3.6	mg/L			11/20/20 19:43	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**73000**	**B**	5000	310	ug/L		11/03/20 14:00	11/04/20 21:46	1
Iron	**1500**		200	26	ug/L		11/03/20 14:00	11/04/20 21:46	1
Lead	10	U	10	2.8	ug/L		11/03/20 14:00	11/04/20 21:46	1
Manganese	**38**		15	2.1	ug/L		11/03/20 14:00	11/04/20 21:46	1
Sodium	**20000**		5000	560	ug/L		11/03/20 14:00	11/04/20 21:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.86**	**J**	5.0	0.75	ug/L		11/03/20 14:00	11/06/20 00:00	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139353-1

Client Sample ID: GW-WT101A 102820

Lab Sample ID: 240-139353-2

Date Collected: 10/28/20 18:10
Matrix: Water
Date Received: 10/31/20 09:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**1.4**		1.0	0.13	ug/L			11/09/20 19:08	1
cis-1,2-Dichloroethene	**0.70**	**J**	1.0	0.16	ug/L			11/09/20 19:08	1
1,1-Dichloroethane	**4.9**		1.0	0.17	ug/L			11/09/20 19:08	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/09/20 19:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*47 - 134*		*11/09/20 19:08*	*1*
Dibromofluoromethane (Surr)	*102*		*78 - 129*		*11/09/20 19:08*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 130*		*11/09/20 19:08*	*1*
Toluene-d8 (Surr)	*100*		*69 - 122*		*11/09/20 19:08*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.0	U	5.0	2.0	mg/L			11/20/20 21:01	5
Sulfate	5.0	U	5.0	3.6	mg/L			11/20/20 21:01	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	5000	U	5000	310	ug/L		11/03/20 14:00	11/13/20 11:57	1
Iron	200	U	200	26	ug/L		11/03/20 14:00	11/13/20 11:57	1
Lead	10	U	10	2.8	ug/L		11/03/20 14:00	11/13/20 11:57	1
Manganese	15	U	15	2.1	ug/L		11/03/20 14:00	11/13/20 11:57	1
Sodium	5000	U	5000	560	ug/L		11/03/20 14:00	11/13/20 11:57	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	0.75	ug/L		11/03/20 14:00	11/06/20 00:02	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139353-1

Client Sample ID: GW-WT1101A 102820E

Lab Sample ID: 240-139353-3

Date Collected: 10/28/20 18:10
Date Received: 10/31/20 09:30

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			11/09/20 19:31	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/09/20 19:31	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/09/20 19:31	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/09/20 19:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*47 - 134*		*11/09/20 19:31*	*1*
Dibromofluoromethane (Surr)	*102*		*78 - 129*		*11/09/20 19:31*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 130*		*11/09/20 19:31*	*1*
Toluene-d8 (Surr)	*99*		*69 - 122*		*11/09/20 19:31*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**26**		5.0	2.0	mg/L			11/20/20 21:16	5
Sulfate	**140**		5.0	3.6	mg/L			11/20/20 21:16	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**200000**	**B**	5000	310	ug/L		11/03/20 14:00	11/04/20 22:15	1
Iron	**29000**		200	26	ug/L		11/03/20 14:00	11/04/20 22:15	1
Lead	10	U	10	2.8	ug/L		11/03/20 14:00	11/04/20 22:15	1
Manganese	**1300**		15	2.1	ug/L		11/03/20 14:00	11/04/20 22:15	1
Sodium	**22000**		5000	560	ug/L		11/03/20 14:00	11/04/20 22:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**6.5**		5.0	0.75	ug/L		11/03/20 14:00	11/06/20 00:42	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139353-1

Client Sample ID: GW-WT115B 102920

Lab Sample ID: 240-139353-4

Date Collected: 10/29/20 09:45
Matrix: Water
Date Received: 10/31/20 09:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	21		1.0	0.13	ug/L			11/09/20 19:53	1
cis-1,2-Dichloroethene	1.8		1.0	0.16	ug/L			11/09/20 19:53	1
1,1-Dichloroethane	4.6		1.0	0.17	ug/L			11/09/20 19:53	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/09/20 19:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*47 - 134*		*11/09/20 19:53*	*1*
Dibromofluoromethane (Surr)	*97*		*78 - 129*		*11/09/20 19:53*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 130*		*11/09/20 19:53*	*1*
Toluene-d8 (Surr)	*97*		*69 - 122*		*11/09/20 19:53*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	32		5.0	2.0	mg/L			11/20/20 21:32	5
Sulfate	130		5.0	3.6	mg/L			11/20/20 21:32	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	330000	B	5000	310	ug/L		11/03/20 14:00	11/04/20 22:19	1
Iron	140	J	200	26	ug/L		11/03/20 14:00	11/04/20 22:19	1
Lead	10	U	10	2.8	ug/L		11/03/20 14:00	11/04/20 22:19	1
Manganese	7.3	J	15	2.1	ug/L		11/03/20 14:00	11/04/20 22:19	1
Sodium	42000		5000	560	ug/L		11/03/20 14:00	11/04/20 22:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.4	J	5.0	0.75	ug/L		11/03/20 14:00	11/06/20 00:44	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139353-1

Client Sample ID: GW-WT115C 102920

Lab Sample ID: 240-139353-5

Date Collected: 10/29/20 10:20
Matrix: Water
Date Received: 10/31/20 09:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			11/09/20 20:15	1
cis-1,2-Dichloroethene	**0.49**	**J**	1.0	0.16	ug/L			11/09/20 20:15	1
1,1-Dichloroethane	**2.0**		1.0	0.17	ug/L			11/09/20 20:15	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/09/20 20:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*47 - 134*		*11/09/20 20:15*	*1*
Dibromofluoromethane (Surr)	*105*		*78 - 129*		*11/09/20 20:15*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 130*		*11/09/20 20:15*	*1*
Toluene-d8 (Surr)	*102*		*69 - 122*		*11/09/20 20:15*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**41**		5.0	2.0	mg/L			11/20/20 21:48	5
Sulfate	**81**		10	7.1	mg/L			11/23/20 11:52	10

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**92000**	**B**	5000	310	ug/L		11/03/20 14:00	11/04/20 22:24	1
Iron	**2600**		200	26	ug/L		11/03/20 14:00	11/04/20 22:24	1
Lead	10	U	10	2.8	ug/L		11/03/20 14:00	11/04/20 22:24	1
Manganese	**50**		15	2.1	ug/L		11/03/20 14:00	11/04/20 22:24	1
Sodium	**22000**		5000	560	ug/L		11/03/20 14:00	11/04/20 22:24	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**2.6**	**J**	5.0	0.75	ug/L		11/03/20 14:00	11/06/20 00:52	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139353-1

Client Sample ID: GW-WT115A 102920

Lab Sample ID: 240-139353-6

Date Collected: 10/29/20 11:00
Matrix: Water
Date Received: 10/31/20 09:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**5.4**		1.0	0.13	ug/L			11/09/20 20:38	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/09/20 20:38	1
1,1-Dichloroethane	**1.6**		1.0	0.17	ug/L			11/09/20 20:38	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/09/20 20:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*47 - 134*		*11/09/20 20:38*	*1*
Dibromofluoromethane (Surr)	*103*		*78 - 129*		*11/09/20 20:38*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 130*		*11/09/20 20:38*	*1*
Toluene-d8 (Surr)	*99*		*69 - 122*		*11/09/20 20:38*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**28**		1.0	0.40	mg/L			11/20/20 22:04	1
Sulfate	**73**		1.0	0.71	mg/L			11/20/20 22:04	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**140000**	**B**	5000	310	ug/L		11/03/20 14:00	11/04/20 22:28	1
Iron	**810**		200	26	ug/L		11/03/20 14:00	11/04/20 22:28	1
Lead	10	U	10	2.8	ug/L		11/03/20 14:00	11/04/20 22:28	1
Manganese	**140**		15	2.1	ug/L		11/03/20 14:00	11/04/20 22:28	1
Sodium	**13000**		5000	560	ug/L		11/03/20 14:00	11/04/20 22:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.4**	**J**	5.0	0.75	ug/L		11/03/20 14:00	11/06/20 00:54	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139353-1

Client Sample ID: GW-WTE3 102920

Lab Sample ID: 240-139353-7

Date Collected: 10/29/20 12:30
Matrix: Water
Date Received: 10/31/20 09:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			11/09/20 21:00	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/09/20 21:00	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/09/20 21:00	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/09/20 21:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*47 - 134*		*11/09/20 21:00*	*1*
Dibromofluoromethane (Surr)	*105*		*78 - 129*		*11/09/20 21:00*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 130*		*11/09/20 21:00*	*1*
Toluene-d8 (Surr)	*103*		*69 - 122*		*11/09/20 21:00*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**19**		5.0	2.0	mg/L			11/20/20 22:20	5
Sulfate	**46**		5.0	3.6	mg/L			11/20/20 22:20	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**69000**	**B**	5000	310	ug/L		11/03/20 14:00	11/04/20 22:32	1
Iron	**170**	**J**	200	26	ug/L		11/03/20 14:00	11/04/20 22:32	1
Lead	10	U	10	2.8	ug/L		11/03/20 14:00	11/04/20 22:32	1
Manganese	**28**		15	2.1	ug/L		11/03/20 14:00	11/04/20 22:32	1
Sodium	**12000**		5000	560	ug/L		11/03/20 14:00	11/04/20 22:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	0.75	ug/L		11/03/20 14:00	11/06/20 00:57	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139353-1

Client Sample ID: GW-WT116A 102920

Lab Sample ID: 240-139353-8

Date Collected: 10/29/20 13:35
Matrix: Water
Date Received: 10/31/20 09:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	4.2		1.0	0.13	ug/L			11/09/20 21:22	1
cis-1,2-Dichloroethene	1.9		1.0	0.16	ug/L			11/09/20 21:22	1
1,1-Dichloroethane	4.1		1.0	0.17	ug/L			11/09/20 21:22	1
Vinyl chloride	0.89	J	1.0	0.20	ug/L			11/09/20 21:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*47 - 134*		*11/09/20 21:22*	*1*
Dibromofluoromethane (Surr)	*104*		*78 - 129*		*11/09/20 21:22*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*75 - 130*		*11/09/20 21:22*	*1*
Toluene-d8 (Surr)	*101*		*69 - 122*		*11/09/20 21:22*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	12		5.0	2.0	mg/L			11/20/20 22:37	5
Sulfate	550		10	7.1	mg/L			11/23/20 12:07	10

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	640000	B	5000	310	ug/L		11/03/20 14:00	11/04/20 22:36	1
Iron	7300		200	26	ug/L		11/03/20 14:00	11/04/20 22:36	1
Lead	24		10	2.8	ug/L		11/03/20 14:00	11/04/20 22:36	1
Manganese	1500		15	2.1	ug/L		11/03/20 14:00	11/04/20 22:36	1
Sodium	90000		5000	560	ug/L		11/03/20 14:00	11/04/20 22:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	9.1		5.0	0.75	ug/L		11/03/20 14:00	11/06/20 00:59	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139353-1

Client Sample ID: GW-WT-111A 102920

Lab Sample ID: 240-139353-9

Date Collected: 10/29/20 15:10
Date Received: 10/31/20 09:30

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.92**	**J**	1.0	0.13	ug/L			11/09/20 21:44	1
cis-1,2-Dichloroethene	**0.20**	**J**	1.0	0.16	ug/L			11/09/20 21:44	1
1,1-Dichloroethane	**4.4**		1.0	0.17	ug/L			11/09/20 21:44	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/09/20 21:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*47 - 134*		*11/09/20 21:44*	*1*
Dibromofluoromethane (Surr)	*103*		*78 - 129*		*11/09/20 21:44*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 130*		*11/09/20 21:44*	*1*
Toluene-d8 (Surr)	*102*		*69 - 122*		*11/09/20 21:44*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**15**		5.0	2.0	mg/L			11/20/20 22:53	5
Sulfate	**64**		5.0	3.6	mg/L			11/20/20 22:53	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**100000**	**B**	5000	310	ug/L		11/03/20 14:00	11/04/20 22:41	1
Iron	**1700**		200	26	ug/L		11/03/20 14:00	11/04/20 22:41	1
Lead	10	U	10	2.8	ug/L		11/03/20 14:00	11/04/20 22:41	1
Manganese	**220**		15	2.1	ug/L		11/03/20 14:00	11/04/20 22:41	1
Sodium	**16000**		5000	560	ug/L		11/03/20 14:00	11/04/20 22:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**5.0**		5.0	0.75	ug/L		11/03/20 14:00	11/06/20 01:02	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139353-1

Client Sample ID: GW-WT115A 102920M

Lab Sample ID: 240-139353-10

Date Collected: 10/29/20 11:00
Matrix: Water
Date Received: 10/31/20 09:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**6.0**		1.0	0.13	ug/L			11/09/20 22:06	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/09/20 22:06	1
1,1-Dichloroethane	**1.8**		1.0	0.17	ug/L			11/09/20 22:06	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/09/20 22:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*47 - 134*		*11/09/20 22:06*	*1*
Dibromofluoromethane (Surr)	*102*		*78 - 129*		*11/09/20 22:06*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 130*		*11/09/20 22:06*	*1*
Toluene-d8 (Surr)	*99*		*69 - 122*		*11/09/20 22:06*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**22**		1.0	0.40	mg/L			11/20/20 23:09	1
Sulfate	**52**		1.0	0.71	mg/L			11/20/20 23:09	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**130000**	**B**	5000	310	ug/L		11/03/20 14:00	11/04/20 22:45	1
Iron	**790**		200	26	ug/L		11/03/20 14:00	11/04/20 22:45	1
Lead	10	U	10	2.8	ug/L		11/03/20 14:00	11/04/20 22:45	1
Manganese	**160**		15	2.1	ug/L		11/03/20 14:00	11/04/20 22:45	1
Sodium	**11000**		5000	560	ug/L		11/03/20 14:00	11/04/20 22:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.4**	**J**	5.0	0.75	ug/L		11/03/20 14:00	11/06/20 01:04	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139353-1

Client Sample ID: TB-3

Date Collected: 10/29/20 00:00
Date Received: 10/31/20 09:30

Lab Sample ID: 240-139353-11

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			11/09/20 22:28	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/09/20 22:28	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/09/20 22:28	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/09/20 22:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*47 - 134*		*11/09/20 22:28*	*1*
Dibromofluoromethane (Surr)	*105*		*78 - 129*		*11/09/20 22:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 130*		*11/09/20 22:28*	*1*
Toluene-d8 (Surr)	*99*		*69 - 122*		*11/09/20 22:28*	*1*

Surrogate Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139353-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	DCA	TOL
Lab Sample ID	**Client Sample ID**	**(47-134)**	**(78-129)**	**(75-130)**	**(69-122)**
240-139353-1	GW-WT101D 102820	90	103	101	100
240-139353-2	GW-WT101A 102820	91	102	101	100
240-139353-3	GW-WT1101A 102820E	90	102	98	99
240-139353-4	GW-WT115B 102920	89	97	94	97
240-139353-5	GW-WT115C 102920	92	105	102	102
240-139353-6	GW-WT115A 102920	89	103	98	99
240-139353-7	GW-WTE3 102920	93	105	101	103
240-139353-8	GW-WT116A 102920	92	104	103	101
240-139353-9	GW-WT-111A 102920	91	103	100	102
240-139353-10	GW-WT115A 102920M	91	102	99	99
240-139353-11	TB-3	90	105	99	99
LCS 240-460012/5	Lab Control Sample	99	97	92	104
MB 240-460012/8	Method Blank	93	103	100	103

Surrogate Legend

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

QC Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139353-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-460012/8
Matrix: Water
Analysis Batch: 460012

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			11/09/20 18:25	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/09/20 18:25	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/09/20 18:25	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/09/20 18:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*47 - 134*		*11/09/20 18:25*	*1*
Dibromofluoromethane (Surr)	*103*		*78 - 129*		*11/09/20 18:25*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 130*		*11/09/20 18:25*	*1*
Toluene-d8 (Surr)	*103*		*69 - 122*		*11/09/20 18:25*	*1*

Lab Sample ID: LCS 240-460012/5
Matrix: Water
Analysis Batch: 460012

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	20.0	21.1		ug/L		105	77 - 123
cis-1,2-Dichloroethene	20.0	20.3		ug/L		101	75 - 124
1,1-Dichloroethane	20.0	20.6		ug/L		103	74 - 126
Vinyl chloride	20.0	18.4		ug/L		92	61 - 134

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*47 - 134*
Dibromofluoromethane (Surr)	*97*		*78 - 129*
1,2-Dichloroethane-d4 (Surr)	*92*		*75 - 130*
Toluene-d8 (Surr)	*104*		*69 - 122*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 310-300457/3
Matrix: Water
Analysis Batch: 300457

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	0.40	mg/L			11/20/20 19:12	1
Sulfate	1.0	U	1.0	0.71	mg/L			11/20/20 19:12	1

Lab Sample ID: LCS 310-300457/4
Matrix: Water
Analysis Batch: 300457

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.94		mg/L		99	90 - 110
Sulfate	10.0	10.2		mg/L		102	90 - 110

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 240-139353-1 MS — **Client Sample ID: GW-WT101D 102820**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 300457

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	39		25.0	61.3		mg/L		91	80 - 120
Sulfate	67		25.0	90.7		mg/L		94	80 - 120

Lab Sample ID: 240-139353-1 MSD — **Client Sample ID: GW-WT101D 102820**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 300457

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	39		25.0	62.6		mg/L		96	80 - 120	2	15
Sulfate	67		25.0	91.7		mg/L		98	80 - 120	1	15

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 240-459031/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 459250 — **Prep Batch: 459031**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	361	J	5000	310	ug/L		11/03/20 14:00	11/04/20 21:34	1
Iron	200	U	200	26	ug/L		11/03/20 14:00	11/04/20 21:34	1
Lead	10	U	10	2.8	ug/L		11/03/20 14:00	11/04/20 21:34	1
Manganese	15	U	15	2.1	ug/L		11/03/20 14:00	11/04/20 21:34	1
Sodium	5000	U	5000	560	ug/L		11/03/20 14:00	11/04/20 21:34	1

Lab Sample ID: LCS 240-459031/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 459250 — **Prep Batch: 459031**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	50000	46700		ug/L		93	80 - 120
Iron	10000	9340		ug/L		93	80 - 120
Lead	1000	919		ug/L		92	80 - 120
Manganese	1000	930		ug/L		93	80 - 120
Sodium	50000	46100		ug/L		92	80 - 120

Lab Sample ID: 240-139353-1 MS — **Client Sample ID: GW-WT101D 102820**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 459250 — **Prep Batch: 459031**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	73000	B	50000	120000		ug/L		94	75 - 125
Iron	1500		10000	10800		ug/L		93	75 - 125
Lead	10	U	1000	915		ug/L		91	75 - 125
Manganese	38		1000	967		ug/L		93	75 - 125
Sodium	20000		50000	65900		ug/L		92	75 - 125

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 240-139353-1 MSD — **Client Sample ID: GW-WT101D 102820**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 459250 — **Prep Batch: 459031**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Calcium	73000	B	50000	126000		ug/L		106	75 - 125	5	20
Iron	1500		10000	11500		ug/L		100	75 - 125	6	20
Lead	10	U	1000	977		ug/L		98	75 - 125	7	20
Manganese	38		1000	1030		ug/L		99	75 - 125	6	20
Sodium	20000		50000	69900		ug/L		100	75 - 125	6	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 240-459031/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 459611 — **Prep Batch: 459031**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	0.75	ug/L		11/03/20 14:00	11/05/20 23:55	1

Lab Sample ID: LCS 240-459031/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 459611 — **Prep Batch: 459031**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1000	970		ug/L		97	80 - 120

Lab Sample ID: 240-139353-2 MS — **Client Sample ID: GW-WT101A 102820**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 459611 — **Prep Batch: 459031**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	5.0	U	1000	959		ug/L		96	75 - 125

Lab Sample ID: 240-139353-2 MSD — **Client Sample ID: GW-WT101A 102820**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 459611 — **Prep Batch: 459031**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	5.0	U	1000	967		ug/L		97	75 - 125	1	20

QC Association Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139353-1

GC/MS VOA

Analysis Batch: 460012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-139353-1	GW-WT101D 102820	Total/NA	Water	8260C	
240-139353-2	GW-WT101A 102820	Total/NA	Water	8260C	
240-139353-3	GW-WT1101A 102820E	Total/NA	Water	8260C	
240-139353-4	GW-WT115B 102920	Total/NA	Water	8260C	
240-139353-5	GW-WT115C 102920	Total/NA	Water	8260C	
240-139353-6	GW-WT115A 102920	Total/NA	Water	8260C	
240-139353-7	GW-WTE3 102920	Total/NA	Water	8260C	
240-139353-8	GW-WT116A 102920	Total/NA	Water	8260C	
240-139353-9	GW-WT-111A 102920	Total/NA	Water	8260C	
240-139353-10	GW-WT115A 102920M	Total/NA	Water	8260C	
240-139353-11	TB-3	Total/NA	Water	8260C	
MB 240-460012/8	Method Blank	Total/NA	Water	8260C	
LCS 240-460012/5	Lab Control Sample	Total/NA	Water	8260C	

HPLC/IC

Analysis Batch: 300457

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-139353-1	GW-WT101D 102820	Total/NA	Water	300.0	
240-139353-2	GW-WT101A 102820	Total/NA	Water	300.0	
240-139353-3	GW-WT1101A 102820E	Total/NA	Water	300.0	
240-139353-4	GW-WT115B 102920	Total/NA	Water	300.0	
240-139353-5	GW-WT115C 102920	Total/NA	Water	300.0	
240-139353-5	GW-WT115C 102920	Total/NA	Water	300.0	
240-139353-6	GW-WT115A 102920	Total/NA	Water	300.0	
240-139353-7	GW-WTE3 102920	Total/NA	Water	300.0	
240-139353-8	GW-WT116A 102920	Total/NA	Water	300.0	
240-139353-8	GW-WT116A 102920	Total/NA	Water	300.0	
240-139353-9	GW-WT-111A 102920	Total/NA	Water	300.0	
240-139353-10	GW-WT115A 102920M	Total/NA	Water	300.0	
MB 310-300457/3	Method Blank	Total/NA	Water	300.0	
LCS 310-300457/4	Lab Control Sample	Total/NA	Water	300.0	
240-139353-1 MS	GW-WT101D 102820	Total/NA	Water	300.0	
240-139353-1 MSD	GW-WT101D 102820	Total/NA	Water	300.0	

Metals

Prep Batch: 459031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-139353-1	GW-WT101D 102820	Total Recoverable	Water	3005A	
240-139353-2	GW-WT101A 102820	Total Recoverable	Water	3005A	
240-139353-3	GW-WT1101A 102820E	Total Recoverable	Water	3005A	
240-139353-4	GW-WT115B 102920	Total Recoverable	Water	3005A	
240-139353-5	GW-WT115C 102920	Total Recoverable	Water	3005A	
240-139353-6	GW-WT115A 102920	Total Recoverable	Water	3005A	
240-139353-7	GW-WTE3 102920	Total Recoverable	Water	3005A	
240-139353-8	GW-WT116A 102920	Total Recoverable	Water	3005A	
240-139353-9	GW-WT-111A 102920	Total Recoverable	Water	3005A	
240-139353-10	GW-WT115A 102920M	Total Recoverable	Water	3005A	
MB 240-459031/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-459031/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-459031/3-A	Lab Control Sample	Total Recoverable	Water	3005A	

Metals (Continued)

Prep Batch: 459031 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-139353-1 MS	GW-WT101D 102820	Total Recoverable	Water	3005A	
240-139353-1 MSD	GW-WT101D 102820	Total Recoverable	Water	3005A	
240-139353-2 MS	GW-WT101A 102820	Total Recoverable	Water	3005A	
240-139353-2 MSD	GW-WT101A 102820	Total Recoverable	Water	3005A	

Analysis Batch: 459250

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-139353-1	GW-WT101D 102820	Total Recoverable	Water	6010C	459031
240-139353-3	GW-WT1101A 102820E	Total Recoverable	Water	6010C	459031
240-139353-4	GW-WT115B 102920	Total Recoverable	Water	6010C	459031
240-139353-5	GW-WT115C 102920	Total Recoverable	Water	6010C	459031
240-139353-6	GW-WT115A 102920	Total Recoverable	Water	6010C	459031
240-139353-7	GW-WTE3 102920	Total Recoverable	Water	6010C	459031
240-139353-8	GW-WT116A 102920	Total Recoverable	Water	6010C	459031
240-139353-9	GW-WT-111A 102920	Total Recoverable	Water	6010C	459031
240-139353-10	GW-WT115A 102920M	Total Recoverable	Water	6010C	459031
MB 240-459031/1-A	Method Blank	Total Recoverable	Water	6010C	459031
LCS 240-459031/2-A	Lab Control Sample	Total Recoverable	Water	6010C	459031
240-139353-1 MS	GW-WT101D 102820	Total Recoverable	Water	6010C	459031
240-139353-1 MSD	GW-WT101D 102820	Total Recoverable	Water	6010C	459031

Analysis Batch: 459611

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-139353-1	GW-WT101D 102820	Total Recoverable	Water	6020A	459031
240-139353-2	GW-WT101A 102820	Total Recoverable	Water	6020A	459031
240-139353-3	GW-WT1101A 102820E	Total Recoverable	Water	6020A	459031
240-139353-4	GW-WT115B 102920	Total Recoverable	Water	6020A	459031
240-139353-5	GW-WT115C 102920	Total Recoverable	Water	6020A	459031
240-139353-6	GW-WT115A 102920	Total Recoverable	Water	6020A	459031
240-139353-7	GW-WTE3 102920	Total Recoverable	Water	6020A	459031
240-139353-8	GW-WT116A 102920	Total Recoverable	Water	6020A	459031
240-139353-9	GW-WT-111A 102920	Total Recoverable	Water	6020A	459031
240-139353-10	GW-WT115A 102920M	Total Recoverable	Water	6020A	459031
MB 240-459031/1-A	Method Blank	Total Recoverable	Water	6020A	459031
LCS 240-459031/3-A	Lab Control Sample	Total Recoverable	Water	6020A	459031
240-139353-2 MS	GW-WT101A 102820	Total Recoverable	Water	6020A	459031
240-139353-2 MSD	GW-WT101A 102820	Total Recoverable	Water	6020A	459031

Analysis Batch: 460868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-139353-2	GW-WT101A 102820	Total Recoverable	Water	6010C	459031

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139353-1

Client Sample ID: GW-WT101D 102820

Lab Sample ID: 240-139353-1
Date Collected: 10/28/20 17:40
Matrix: Water
Date Received: 10/31/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	460012	11/09/20 18:46	TJL1	TAL CAN
Total/NA	Analysis	300.0		5	300457	11/20/20 19:43	ACJ	TAL CF
Total Recoverable	Prep	3005A			459031	11/03/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	459250	11/04/20 21:46	WKD	TAL CAN
Total Recoverable	Prep	3005A			459031	11/03/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	459611	11/06/20 00:00	DSH	TAL CAN

Client Sample ID: GW-WT101A 102820

Lab Sample ID: 240-139353-2
Date Collected: 10/28/20 18:10
Matrix: Water
Date Received: 10/31/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	460012	11/09/20 19:08	TJL1	TAL CAN
Total/NA	Analysis	300.0		5	300457	11/20/20 21:01	ACJ	TAL CF
Total Recoverable	Prep	3005A			459031	11/03/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	460868	11/13/20 11:57	WKD	TAL CAN
Total Recoverable	Prep	3005A			459031	11/03/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	459611	11/06/20 00:02	DSH	TAL CAN

Client Sample ID: GW-WT1101A 102820E

Lab Sample ID: 240-139353-3
Date Collected: 10/28/20 18:10
Matrix: Water
Date Received: 10/31/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	460012	11/09/20 19:31	TJL1	TAL CAN
Total/NA	Analysis	300.0		5	300457	11/20/20 21:16	ACJ	TAL CF
Total Recoverable	Prep	3005A			459031	11/03/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	459250	11/04/20 22:15	WKD	TAL CAN
Total Recoverable	Prep	3005A			459031	11/03/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	459611	11/06/20 00:42	DSH	TAL CAN

Client Sample ID: GW-WT115B 102920

Lab Sample ID: 240-139353-4
Date Collected: 10/29/20 09:45
Matrix: Water
Date Received: 10/31/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	460012	11/09/20 19:53	TJL1	TAL CAN
Total/NA	Analysis	300.0		5	300457	11/20/20 21:32	ACJ	TAL CF
Total Recoverable	Prep	3005A			459031	11/03/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	459250	11/04/20 22:19	WKD	TAL CAN
Total Recoverable	Prep	3005A			459031	11/03/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	459611	11/06/20 00:44	DSH	TAL CAN

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139353-1

Client Sample ID: GW-WT115C 102920

Lab Sample ID: 240-139353-5
Date Collected: 10/29/20 10:20
Matrix: Water
Date Received: 10/31/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	460012	11/09/20 20:15	TJL1	TAL CAN
Total/NA	Analysis	300.0		5	300457	11/20/20 21:48	ACJ	TAL CF
Total/NA	Analysis	300.0		10	300457	11/23/20 11:52	ACJ	TAL CF
Total Recoverable	Prep	3005A			459031	11/03/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	459250	11/04/20 22:24	WKD	TAL CAN
Total Recoverable	Prep	3005A			459031	11/03/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	459611	11/06/20 00:52	DSH	TAL CAN

Client Sample ID: GW-WT115A 102920

Lab Sample ID: 240-139353-6
Date Collected: 10/29/20 11:00
Matrix: Water
Date Received: 10/31/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	460012	11/09/20 20:38	TJL1	TAL CAN
Total/NA	Analysis	300.0		1	300457	11/20/20 22:04	ACJ	TAL CF
Total Recoverable	Prep	3005A			459031	11/03/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	459250	11/04/20 22:28	WKD	TAL CAN
Total Recoverable	Prep	3005A			459031	11/03/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	459611	11/06/20 00:54	DSH	TAL CAN

Client Sample ID: GW-WTE3 102920

Lab Sample ID: 240-139353-7
Date Collected: 10/29/20 12:30
Matrix: Water
Date Received: 10/31/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	460012	11/09/20 21:00	TJL1	TAL CAN
Total/NA	Analysis	300.0		5	300457	11/20/20 22:20	ACJ	TAL CF
Total Recoverable	Prep	3005A			459031	11/03/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	459250	11/04/20 22:32	WKD	TAL CAN
Total Recoverable	Prep	3005A			459031	11/03/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	459611	11/06/20 00:57	DSH	TAL CAN

Client Sample ID: GW-WT116A 102920

Lab Sample ID: 240-139353-8
Date Collected: 10/29/20 13:35
Matrix: Water
Date Received: 10/31/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	460012	11/09/20 21:22	TJL1	TAL CAN
Total/NA	Analysis	300.0		5	300457	11/20/20 22:37	ACJ	TAL CF
Total/NA	Analysis	300.0		10	300457	11/23/20 12:07	ACJ	TAL CF
Total Recoverable	Prep	3005A			459031	11/03/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	459250	11/04/20 22:36	WKD	TAL CAN
Total Recoverable	Prep	3005A			459031	11/03/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	459611	11/06/20 00:59	DSH	TAL CAN

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-139353-1

Client Sample ID: GW-WT-111A 102920

Lab Sample ID: 240-139353-9
Date Collected: 10/29/20 15:10
Matrix: Water
Date Received: 10/31/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	460012	11/09/20 21:44	TJL1	TAL CAN
Total/NA	Analysis	300.0		5	300457	11/20/20 22:53	ACJ	TAL CF
Total Recoverable	Prep	3005A			459031	11/03/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	459250	11/04/20 22:41	WKD	TAL CAN
Total Recoverable	Prep	3005A			459031	11/03/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	459611	11/06/20 01:02	DSH	TAL CAN

Client Sample ID: GW-WT115A 102920M

Lab Sample ID: 240-139353-10
Date Collected: 10/29/20 11:00
Matrix: Water
Date Received: 10/31/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	460012	11/09/20 22:06	TJL1	TAL CAN
Total/NA	Analysis	300.0		1	300457	11/20/20 23:09	ACJ	TAL CF
Total Recoverable	Prep	3005A			459031	11/03/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	459250	11/04/20 22:45	WKD	TAL CAN
Total Recoverable	Prep	3005A			459031	11/03/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	459611	11/06/20 01:04	DSH	TAL CAN

Client Sample ID: TB-3

Lab Sample ID: 240-139353-11
Date Collected: 10/29/20 00:00
Matrix: Water
Date Received: 10/31/20 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	460012	11/09/20 22:28	TJL1	TAL CAN

Laboratory References:

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

TAL CF = Eurofins TestAmerica, Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: Groundwater & Environmental Services Inc
Job ID: 240-139353-1
Project/Site: Bayer Himco Landfill

Laboratory: Eurofins TestAmerica, Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-21
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-21
Illinois	NELAP	004498	07-31-21
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21
Kentucky (UST)	State	112225	02-23-21
Kentucky (WW)	State	KY98016	12-31-20
Minnesota	NELAP	OH00048	12-31-20
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-21
Ohio VAP	State	CL0024	06-05-21
Oregon	NELAP	4062	02-24-21
Pennsylvania	NELAP	68-00340	08-31-21
Texas	NELAP	T104704517-18-10	08-31-21
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-21
Washington	State	C971	01-12-21
West Virginia DEP	State	210	12-31-20

Laboratory: Eurofins TestAmerica, Cedar Falls

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Colorado	Petroleum Storage Tank Program	IA100001 (OR)	09-29-21
Georgia	State	IA100001 (OR)	09-29-21
Illinois	NELAP	200024	11-29-20
Iowa	State	007	12-01-21
Kansas	NELAP	E-10341	01-31-21
Minnesota	NELAP	019-999-319	12-31-21
Minnesota (Petrofund)	State	3349	08-22-21
North Dakota	State	R-186	09-29-21
Oregon	NELAP	IA100001	09-29-21
USDA	US Federal Programs	P330-19-00003	01-02-22

2-5/3-4

CHAIN OF CUSTODY

PAGE 1 OF 1

FED-EX Tracking #	Bottle Order Control #
Lab Quote #	Lab Job #

CLIENT/REPORTING INFORMATION

Groundwater & Environmental Services, Inc.
1691 Georgetown Road, Hudson, OH 44236

Project Manager: Stephen E. Betts
Phone #: 877-505-9382
PM Email: **SBetts@gesonline.com**
fax **330-528-1481**

PROJECT INFORMATION

Project Name: Bayer Himco Landfill
Project Address: County Road 10, Elkhart, IN
Project PSID #: 857038

BILLING INFORMATION

Groundwater & Environmental Services, Inc.
ap@gesonline.com
ATTN: Accounts Payable

Invoice Instructions (Project #/ Phase / Task / Altorg)
1801906/02/206/1418

REQUESTED ANALYSIS (see Test Code sheet) — **LAB USE ONLY**

Sampler(s) Name: Bryan Allen

Sampler(s) Name:

Lab Sample #	Field ID / Point of Collection (Sys_loc_code)	Depth Interval (ft)	Date Sampled	Time Sampled	Sampler	Matrix	Total # Bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Amber	VOC 8260	Metals 6010	Arsnic 6020	Chemistry 300 (Sulfate, Chloride)				
	GW -WT01D 10 28 20		10/28 /20	1740	BA	WG	5	X		X		X					X	X	X	X				
	GW -WT01A 10 28 20		10/28 /20	1810	BA	WG	5	X		X		X					X	X	X	X				
	GW -WT01A 10 28 20 E		10/28 /20	1810	BA	WG	5	X		X		X	X				X	X	X	X				
	GW - WT-115B 10 29 20		10/29 /20	945	BA	WG	5	X		X		X					X	X	X	X				
	GW - WT 115C 10 29 20		10/29 /20	1020	BA	WG	5	X		X		X					X	X	X	X				
	GW - WT115A 10 29 20		10/29 /20	1100	BA	WG	5	X		X		X					X	X	X	X				
	GW - WT E3 10 29 20		10/29 /20	1230	BA	WG	5	X		X		X					X	X	X	X				
	GW - WT 116A 10 29 20		10/29 /20	1335	BA	WG	5	X		X		X					X	X	X	X				
	GW - WT-111A 10 29 20		10/29 /20	1510	BA	WG	5	X		X		X					X	X	X	X				
	GW - WT115A 10 29 20 M		10/29 /20	1100	BA	WG	10	X		X		X					X	X	X	X				
	GW - 10 20		10/ /20			WG																		
	TB-3						2			X							X							

Turnaround Time (Business Days) Approved By (Lab PM) / Date

- ☐ Standard 14 Days _____ /
- ☐ 1 day RUSH _____ /
- ☐ Other _____ _____ /

Laboratory Information

Lab: _____
Address: _____
Phone: _____
Lab PM: _____
Lab PM Emai _____

Data Deliverable Information

- ☐ Commercial 'A' (Level 1) = Results Only
- ☐ Commercial 'B' (Level 2) = Results + QC Summary
- ☐ FULLT1 (Level 3 & 4)
- ☐ NJ Reduced = Results + QC Summary + Partial Raw Data
- ☐ Commercial 'C'
- ☐ *NJ Data of*
- ☐ NYASP Cat
- ☐ NYASP Cat
- ☐ State Forms
- ☑ EDD Format
- ☐ Other _____

240-139353 Chain of Custody

Please Email the EQ EDD Package to ges@equisonline.com
EQEDD Name: Bayer Himco Landfill_LabReport#.28489.EQEDD.zip

Sample Custody must be documented below each time samples change possession, including courier.

Relinquished By Sampler	Date / Time	Received By
1 By Allen	1 10/30/20 1315	1 FedEx
Relinquished By : 2	Date / Time: 2	Received By: 2 ETA 10-31-20 930
Relinquished By : 3	Date / Time: 3	Received By: 3

Custody Seal Number: ☐ Intact ☐ Not Intact ☐ Preserved where applicable ☐ On Ice **Cooler Temp** _____

Eurofins TestAmerica Canton Sample Receipt Form/Narrative **Login # :** 139353
Canton Facility

Client GES Site Name _____ Cooler unpacked by: Tammy Rayer

Cooler Received on 10-31-20 Opened on 10-31-20

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

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

TestAmerica Cooler # TA Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# IR-11 (CF **+0.9** °C) Observed Cooler Temp. 2.5 °C Corrected Cooler Temp. 3.4 °C
   IR GUN #IR-12 (CF **+0.5**°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
   -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
   -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
   -Were tamper/custody seals intact and uncompromised? Yes No NA
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp(Y/N)?
10. Were correct bottle(s) used for the test(s) indicated? Yes No
11. Sufficient quantity received to perform indicated analyses? Yes No
12. Are these work share samples and all listed on the COC? Yes No
    If yes, Questions 13-17 have been checked at the originating laboratory.
13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# **HC907861**
14. Were VOAs on the COC? Yes No
15. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this. Yes No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
17. Was a LL Hg or Me Hg trip blank present? _____ Yes No

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

WI-NC-099

eurofins | Environment Testing TestAmerica

240-139353 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: ETA Canton

City/State: CITY North Canton STATE OH | Project: Bayer Himco Landfill

Receipt Information

Date/Time Received: DATE 11-19-20 TIME 0945 | Received By: ER

Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☐ Yes	☒ No	*If yes:* Cooler # _____ of _____
Cooler Custody Seals Present?	☐ Yes	☒ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes	☒ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: 0 | Correction Factor (°C): 0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): | Corrected Temp (°C):

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:	plastic 250 ml	
Uncorrected Temp (°C):	3.8	
Corrected Temp (°C):	3.8	

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Document: CF-LG-WI-002
Revision: 25
Date: 06/17/2019

Eurofins TestAmerica, Cedar Falls

General temperature criteria is 0 to 6°C
Bacteria temperature criteria is 0 to 10°C

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Phone: 330-497-9396 Fax: 330-497-0772

Chain of Custody Record

eurofins Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	Carrier Tracking No(s):	COC No: 240-128493.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@Eurofinset.com	State of Origin: Indiana	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc		Accreditations Required (See note):		Job #: 240-139353-1
Address: 3019 Venture Way, ,	Due Date Requested: 11/24/2020			
City: Cedar Falls	TAT Requested (days):			
State, Zip: IA, 50613				
Phone: 319-277-2401(Tel) 319-277-2425(Fax)	PO #:			
Email:	WO #:			
Project Name: Bayer Himco Landfill	Project #: 24022381			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	300_ORGFM_28D/ Chloride and Sulfate	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
GW-WT101D 102820 (240-139353-1)	10/28/20	17:40 Eastern		Water			X	1	
GW-WT101A 102820 (240-139353-2)	10/28/20	18:10 Eastern		Water			X	1	
GW-WT1101A 102820E (240-139353-3)	10/28/20	18:10 Eastern		Water			X	1	
GW-WT115B 102920 (240-139353-4)	10/29/20	09:45 Eastern		Water			X	1	
GW-WT115C 102920 (240-139353-5)	10/29/20	10:20 Eastern		Water			X	1	
GW-WT115A 102920 (240-139353-6)	10/29/20	11:00 Eastern		Water			X	1	
GW-WTE3 102920 (240-139353-7)	10/29/20	12:30 Eastern		Water			X	1	
GW-WT116A 102920 (240-139353-8)	10/29/20	13:35 Eastern		Water			X	1	
GW-WT-111A 102920 (240-139353-9)	10/29/20	15:10 Eastern		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	11-18-20 1254	TAL	[signature]	111920 0945	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 11/01/2020

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Phone: 330-497-9396 Fax: 330-497-0772

Chain of Custody Record

eurofins Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cisneros, Roxanne	Carrier Tracking No(s):	COC No: 240-128493.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: roxanne.cisneros@Eurofinset.com	State of Origin: Indiana	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc		Accreditations Required (See note):		Job #: 240-139353-1
Address: 3019 Venture Way, ,	Due Date Requested: 11/24/2020			
City: Cedar Falls	TAT Requested (days):			
State, Zip: IA, 50613				
Phone: 319-277-2401(Tel) 319-277-2425(Fax)	PO #:			
Email:	WO #:			
Project Name: Bayer Himco Landfill	Project #: 24022381			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	300_ORGFM_28D/ Chloride and Sulfate	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
GW-WT115A 102920M (240-139353-10)	10/29/20	11:00 Eastern		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	11-18-20 1255	ALS	[signature]	11-19-20 0945	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 11/01/2020

Login Sample Receipt Checklist

Client: Groundwater & Environmental Services Inc

Job Number: 240-139353-1

Login Number: 139353
List Number: 2
Creator: Ramos, Eric F

List Source: Eurofins TestAmerica, Cedar Falls
List Creation: 11/19/20 11:43 AM

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

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ANALYTICAL REPORT

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

Laboratory Job ID: 240-140753-1
Client Project/Site: Bayer Himco Landfill

For:
Groundwater & Environmental Services Inc
1691 Georgetown Road, Unit G
Hudson, Ohio 44236

Attn: Mr. Steve Betts

Roxanne Cisneros

Authorized for release by:
12/8/2020 5:50:04 PM

Roxanne Cisneros, Senior Project Manager
(615)301-5761
roxanne.cisneros@Eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

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

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

Table of Contents

Cover Page 1
Table of Contents 2
Definitions/Glossary 3
Case Narrative 4
Method Summary 5
Sample Summary 6
Detection Summary 7
Client Sample Results 8
Surrogate Summary 12
QC Sample Results 13
QC Association Summary 16
Lab Chronicle 17
Certification Summary 18
Chain of Custody 19

Definitions/Glossary

Client: Groundwater & Environmental Services Inc
Job ID: 240-140753-1
Project/Site: Bayer Himco Landfill

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Case Narrative

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-140753-1

Job ID: 240-140753-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative
240-140753-1

Comments
No additional comments.

Receipt
The samples were received on 11/21/2020 10:00 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.2º C.

GC/MS VOA
Method 8260C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 240-463327.

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

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

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

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

Method Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-140753-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL CAN
6010C	Metals (ICP)	SW846	TAL CAN
6020A	Metals (ICP/MS)	SW846	TAL CAN
300.0	Anions, Ion Chromatography	MCAWW	TAL CAN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CAN
5030C	Purge and Trap	SW846	TAL CAN

Protocol References:

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

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

Laboratory References:

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

Sample Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-140753-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-140753-1	GWWT-121B 111920-EB	Water	11/19/20 10:40	11/21/20 10:00	
240-140753-2	GWWT-121B 111920	Water	11/19/20 11:25	11/21/20 10:00	
240-140753-3	GWWT-121A 111920	Water	11/19/20 12:05	11/21/20 10:00	
240-140753-4	TB-3 111920	Water	11/19/20 00:00	11/21/20 10:00	

Detection Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-140753-1

Client Sample ID: GWWT-121B 111920-EB — Lab Sample ID: 240-140753-1

No Detections.

Client Sample ID: GWWT-121B 111920 — Lab Sample ID: 240-140753-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.99	J	1.0	0.20	ug/L	1		8260C	Total/NA
Calcium	79000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	4600		200	26	ug/L	1		6010C	Total Recoverable
Manganese	29		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	36000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	12		5.0	0.75	ug/L	1		6020A	Total Recoverable
Chloride	55		5.0	1.4	mg/L	5		300.0	Total/NA
Sulfate	82		5.0	1.7	mg/L	5		300.0	Total/NA

Client Sample ID: GWWT-121A 111920 — Lab Sample ID: 240-140753-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.5		1.0	0.16	ug/L	1		8260C	Total/NA
1,1-Dichloroethane	1.3		1.0	0.17	ug/L	1		8260C	Total/NA
Calcium	84000		5000	310	ug/L	1		6010C	Total Recoverable
Iron	17000		200	26	ug/L	1		6010C	Total Recoverable
Lead	41		10	2.8	ug/L	1		6010C	Total Recoverable
Manganese	81		15	2.1	ug/L	1		6010C	Total Recoverable
Sodium	52000		5000	560	ug/L	1		6010C	Total Recoverable
Arsenic	14		5.0	0.75	ug/L	1		6020A	Total Recoverable
Chloride	84		1.0	0.28	mg/L	1		300.0	Total/NA
Sulfate	77		1.0	0.35	mg/L	1		300.0	Total/NA

Client Sample ID: TB-3 111920 — Lab Sample ID: 240-140753-4

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-140753-1

Client Sample ID: GWWT-121B 111920-EB

Lab Sample ID: 240-140753-1

Date Collected: 11/19/20 10:40

Matrix: Water

Date Received: 11/21/20 10:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			11/30/20 19:35	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/30/20 19:35	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/30/20 19:35	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/30/20 19:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*47 - 134*		*11/30/20 19:35*	*1*
Dibromofluoromethane (Surr)	*104*		*78 - 129*		*11/30/20 19:35*	*1*
1,2-Dichloroethane-d4 (Surr)	*106*		*75 - 130*		*11/30/20 19:35*	*1*
Toluene-d8 (Surr)	*98*		*69 - 122*		*11/30/20 19:35*	*1*

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-140753-1

Client Sample ID: GWWT-121B 111920

Lab Sample ID: 240-140753-2

Date Collected: 11/19/20 11:25
Matrix: Water
Date Received: 11/21/20 10:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			11/30/20 19:57	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/30/20 19:57	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/30/20 19:57	1
Vinyl chloride	**0.99**	**J**	1.0	0.20	ug/L			11/30/20 19:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*47 - 134*		*11/30/20 19:57*	*1*
Dibromofluoromethane (Surr)	*105*		*78 - 129*		*11/30/20 19:57*	*1*
1,2-Dichloroethane-d4 (Surr)	*108*		*75 - 130*		*11/30/20 19:57*	*1*
Toluene-d8 (Surr)	*100*		*69 - 122*		*11/30/20 19:57*	*1*

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**79000**		5000	310	ug/L		11/23/20 14:00	11/30/20 09:07	1
Iron	**4600**		200	26	ug/L		11/23/20 14:00	11/30/20 09:07	1
Lead	10	U	10	2.8	ug/L		11/23/20 14:00	11/30/20 09:07	1
Manganese	**29**		15	2.1	ug/L		11/23/20 14:00	11/30/20 09:07	1
Sodium	**36000**		5000	560	ug/L		11/23/20 14:00	11/30/20 09:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**12**		5.0	0.75	ug/L		11/23/20 14:00	12/01/20 21:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**55**		5.0	1.4	mg/L			12/05/20 02:01	5
Sulfate	**82**		5.0	1.7	mg/L			12/05/20 02:01	5

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-140753-1

Client Sample ID: GWWT-121A 111920

Lab Sample ID: 240-140753-3

Date Collected: 11/19/20 12:05
Date Received: 11/21/20 10:00

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			11/30/20 20:19	1
cis-1,2-Dichloroethene	**1.5**		1.0	0.16	ug/L			11/30/20 20:19	1
1,1-Dichloroethane	**1.3**		1.0	0.17	ug/L			11/30/20 20:19	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/30/20 20:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*47 - 134*		*11/30/20 20:19*	*1*
Dibromofluoromethane (Surr)	*106*		*78 - 129*		*11/30/20 20:19*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*75 - 130*		*11/30/20 20:19*	*1*
Toluene-d8 (Surr)	*101*		*69 - 122*		*11/30/20 20:19*	*1*

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**84000**		5000	310	ug/L		11/23/20 14:00	11/30/20 09:03	1
Iron	**17000**		200	26	ug/L		11/23/20 14:00	11/30/20 09:03	1
Lead	**41**		10	2.8	ug/L		11/23/20 14:00	11/30/20 09:03	1
Manganese	**81**		15	2.1	ug/L		11/23/20 14:00	11/30/20 09:03	1
Sodium	**52000**		5000	560	ug/L		11/23/20 14:00	11/30/20 09:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**14**		5.0	0.75	ug/L		11/23/20 14:00	12/01/20 21:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**84**		1.0	0.28	mg/L			12/05/20 02:21	1
Sulfate	**77**		1.0	0.35	mg/L			12/05/20 02:21	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-140753-1

Client Sample ID: TB-3 111920

Date Collected: 11/19/20 00:00
Date Received: 11/21/20 10:00

Lab Sample ID: 240-140753-4

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			11/30/20 20:42	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/30/20 20:42	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/30/20 20:42	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/30/20 20:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*47 - 134*		*11/30/20 20:42*	*1*
Dibromofluoromethane (Surr)	*108*		*78 - 129*		*11/30/20 20:42*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*75 - 130*		*11/30/20 20:42*	*1*
Toluene-d8 (Surr)	*100*		*69 - 122*		*11/30/20 20:42*	*1*

Surrogate Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-140753-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	DCA	TOL
Lab Sample ID	**Client Sample ID**	**(47-134)**	**(78-129)**	**(75-130)**	**(69-122)**
240-140753-1	GWWT-121B 111920-EB	89	104	106	98
240-140753-2	GWWT-121B 111920	92	105	108	100
240-140753-3	GWWT-121A 111920	91	106	109	101
240-140753-4	TB-3 111920	91	108	107	100
LCS 240-463327/5	Lab Control Sample	102	100	100	103
MB 240-463327/8	Method Blank	91	109	110	99

Surrogate Legend

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

QC Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-140753-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 240-463327/8
Matrix: Water
Analysis Batch: 463327

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			11/30/20 16:59	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/30/20 16:59	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/30/20 16:59	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/30/20 16:59	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*47 - 134*		*11/30/20 16:59*	*1*
Dibromofluoromethane (Surr)	*109*		*78 - 129*		*11/30/20 16:59*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*75 - 130*		*11/30/20 16:59*	*1*
Toluene-d8 (Surr)	*99*		*69 - 122*		*11/30/20 16:59*	*1*

Lab Sample ID: LCS 240-463327/5
Matrix: Water
Analysis Batch: 463327

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	20.0	21.1		ug/L		106	77 - 123
cis-1,2-Dichloroethene	20.0	20.7		ug/L		104	75 - 124
1,1-Dichloroethane	20.0	21.5		ug/L		107	74 - 126
Vinyl chloride	20.0	20.6		ug/L		103	61 - 134

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*47 - 134*
Dibromofluoromethane (Surr)	*100*		*78 - 129*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 130*
Toluene-d8 (Surr)	*103*		*69 - 122*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 240-462391/1-A
Matrix: Water
Analysis Batch: 463261

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 462391

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	5000	U	5000	310	ug/L		11/23/20 14:00	11/30/20 08:50	1
Iron	200	U	200	26	ug/L		11/23/20 14:00	11/30/20 08:50	1
Lead	10	U	10	2.8	ug/L		11/23/20 14:00	11/30/20 08:50	1
Manganese	15	U	15	2.1	ug/L		11/23/20 14:00	11/30/20 08:50	1
Sodium	5000	U	5000	560	ug/L		11/23/20 14:00	11/30/20 08:50	1

Lab Sample ID: LCS 240-462391/2-A
Matrix: Water
Analysis Batch: 463261

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 462391

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	50000	49700		ug/L		99	80 - 120
Iron	10000	10100		ug/L		101	80 - 120
Lead	1000	968		ug/L		97	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 240-462391/2-A
Matrix: Water
Analysis Batch: 463261

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 462391

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Manganese	1000	989		ug/L		99	80 - 120
Sodium	50000	50300		ug/L		101	80 - 120

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 240-462391/1-A
Matrix: Water
Analysis Batch: 463601

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 462391

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	0.75	ug/L		11/23/20 14:00	12/01/20 20:53	1

Lab Sample ID: LCS 240-462391/3-A
Matrix: Water
Analysis Batch: 463601

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 462391

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1000	889		ug/L		89	80 - 120

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 240-463928/3
Matrix: Water
Analysis Batch: 463928

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	0.28	mg/L			12/04/20 17:38	1
Sulfate	1.0	U	1.0	0.35	mg/L			12/04/20 17:38	1

Lab Sample ID: LCS 240-463928/4
Matrix: Water
Analysis Batch: 463928

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	50.4		mg/L		101	90 - 110
Sulfate	50.0	52.0		mg/L		104	90 - 110

Lab Sample ID: 240-140753-3 MS
Matrix: Water
Analysis Batch: 463928

Client Sample ID: GWWT-121A 111920
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	84		50.0	138		mg/L		108	80 - 120
Sulfate	77		50.0	131		mg/L		108	80 - 120

Lab Sample ID: 240-140753-3 MSD
Matrix: Water
Analysis Batch: 463928

Client Sample ID: GWWT-121A 111920
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	84		50.0	140		mg/L		112	80 - 120	1	15

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 240-140753-3 MSD
Client Sample ID: GWWT-121A 111920
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 463928

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	77		50.0	133		mg/L		112	80 - 120	2	15

QC Association Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-140753-1

GC/MS VOA

Analysis Batch: 463327

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-140753-1	GWWT-121B 111920-EB	Total/NA	Water	8260C	
240-140753-2	GWWT-121B 111920	Total/NA	Water	8260C	
240-140753-3	GWWT-121A 111920	Total/NA	Water	8260C	
240-140753-4	TB-3 111920	Total/NA	Water	8260C	
MB 240-463327/8	Method Blank	Total/NA	Water	8260C	
LCS 240-463327/5	Lab Control Sample	Total/NA	Water	8260C	

Metals

Prep Batch: 462391

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-140753-2	GWWT-121B 111920	Total Recoverable	Water	3005A	
240-140753-3	GWWT-121A 111920	Total Recoverable	Water	3005A	
MB 240-462391/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-462391/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-462391/3-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 463261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-140753-2	GWWT-121B 111920	Total Recoverable	Water	6010C	462391
240-140753-3	GWWT-121A 111920	Total Recoverable	Water	6010C	462391
MB 240-462391/1-A	Method Blank	Total Recoverable	Water	6010C	462391
LCS 240-462391/2-A	Lab Control Sample	Total Recoverable	Water	6010C	462391

Analysis Batch: 463601

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-140753-2	GWWT-121B 111920	Total Recoverable	Water	6020A	462391
240-140753-3	GWWT-121A 111920	Total Recoverable	Water	6020A	462391
MB 240-462391/1-A	Method Blank	Total Recoverable	Water	6020A	462391
LCS 240-462391/3-A	Lab Control Sample	Total Recoverable	Water	6020A	462391

General Chemistry

Analysis Batch: 463928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-140753-2	GWWT-121B 111920	Total/NA	Water	300.0	
240-140753-3	GWWT-121A 111920	Total/NA	Water	300.0	
MB 240-463928/3	Method Blank	Total/NA	Water	300.0	
LCS 240-463928/4	Lab Control Sample	Total/NA	Water	300.0	
240-140753-3 MS	GWWT-121A 111920	Total/NA	Water	300.0	
240-140753-3 MSD	GWWT-121A 111920	Total/NA	Water	300.0	

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: Bayer Himco Landfill

Job ID: 240-140753-1

Client Sample ID: GWWT-121B 111920-EB

Lab Sample ID: 240-140753-1
Date Collected: 11/19/20 10:40
Matrix: Water
Date Received: 11/21/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	463327	11/30/20 19:35	TJL1	TAL CAN

Client Sample ID: GWWT-121B 111920

Lab Sample ID: 240-140753-2
Date Collected: 11/19/20 11:25
Matrix: Water
Date Received: 11/21/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	463327	11/30/20 19:57	TJL1	TAL CAN
Total Recoverable	Prep	3005A			462391	11/23/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	463261	11/30/20 09:07	WKD	TAL CAN
Total Recoverable	Prep	3005A			462391	11/23/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	463601	12/01/20 21:22	KLC	TAL CAN
Total/NA	Analysis	300.0		5	463928	12/05/20 02:01	JWW	TAL CAN

Client Sample ID: GWWT-121A 111920

Lab Sample ID: 240-140753-3
Date Collected: 11/19/20 12:05
Matrix: Water
Date Received: 11/21/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	463327	11/30/20 20:19	TJL1	TAL CAN
Total Recoverable	Prep	3005A			462391	11/23/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6010C		1	463261	11/30/20 09:03	WKD	TAL CAN
Total Recoverable	Prep	3005A			462391	11/23/20 14:00	MRL	TAL CAN
Total Recoverable	Analysis	6020A		1	463601	12/01/20 21:20	KLC	TAL CAN
Total/NA	Analysis	300.0		1	463928	12/05/20 02:21	JWW	TAL CAN

Client Sample ID: TB-3 111920

Lab Sample ID: 240-140753-4
Date Collected: 11/19/20 00:00
Matrix: Water
Date Received: 11/21/20 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	463327	11/30/20 20:42	TJL1	TAL CAN

Laboratory References:

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

Accreditation/Certification Summary

Client: Groundwater & Environmental Services Inc
Job ID: 240-140753-1
Project/Site: Bayer Himco Landfill

Laboratory: Eurofins TestAmerica, Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-21
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-21
Illinois	NELAP	004498	07-31-21
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21
Kentucky (UST)	State	112225	02-23-21
Kentucky (WW)	State	KY98016	12-31-20
Minnesota	NELAP	OH00048	12-31-20
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-21
Ohio VAP	State	CL0024	06-05-21
Oregon	NELAP	4062	02-24-21
Pennsylvania	NELAP	68-00340	08-31-21
Texas	NELAP	T104704517-18-10	08-31-21
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-21
Washington	State	C971	01-12-21
West Virginia DEP	State	210	12-31-20

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Phone: 330-497-9396 Fax: 330-497-0772

Chain of Custody Record

33/42

eurofins | Environment Testing America

Client Information	Sampler: Chip Markovich	Lab PM: Cisneros, Roxanne	Carrier Tracking No(s):	COC No: 240-76261-30542.1
Client Contact: [redacted] Steve Betts	Phone: 317 376 6270	E-Mail: roxanne.cisneros@Eurofinset.com		Page: Page 1 of 1
Company: [redacted] GES, Inc				Job #:
Address: [redacted] 1737 Georgetown Rd, Unit E	Due Date Requested: 14 Day			
City: [redacted] Hudson	TAT Requested (days): 14 Day			
State, Zip: [redacted] OH 44236				
Phone: 877 5059382	PO #: [redacted] 857038			
Email: [redacted] sbetts@gesonline.com	WO #:			
Project Name: [redacted] Bayer Himco	Project #: [redacted]			
Site: Bayer Himco - Elkhart In	SSOW#:			

Email EQ EDD to gese@equisonline.com

Bayer Himco Landfill_Lab Report #. 28489.

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	624_5ml - Priority Pollutant VOCs	608_PCB, 608_Pest, 625	1664A_NP_HEM and SGT HEM	624_5ml_(MOD) Priority Pollutant VOCs	VOC 8260	Metals 6010	Arsenic 6020	Chemistry 300 (sulfate/chloride)	Total Number of containers	Special Instructions/Note:
				Preservation Code:			A	N	S	A						
GW EB WT-121B 111920-EB	11/19/20	1040	GW	Water	✓	N					3	~~3~~	~~1~~			
GW WT-121B 111920	11/19/20	1125	GW	Water	N	N					3	1	1	1		
GW WT 121A 111920	11/19/20	1205	GW	Water	N	N					3	1	1	1		
TB-3 111920				Water	N	N					2					
				Water												
				Water												
				Water												
				Water												
				Water												
				Water												
				Water												

240-140753 Chain of Custody

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Chip [signature]	11/19/2020 1700	Sedex	Sedex	11/19/2020 1700	
			[signature]	11-21-20 1000	ETA

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Eurofins TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility

Login # : 140753

Client GES Inc Site Name _____ Cooler unpacked by: Matt Snyder

Cooler Received on 11-21-20 Opened on 11-21-20

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

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

TestAmerica Cooler # TA Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# IR-11 (CF **+0.9** °C) Observed Cooler Temp. 3.3 °C Corrected Cooler Temp. 4.2 °C
   IR GUN #IR-12 (CF **+0.5**°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 7 Yes No
   -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
   -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
   -Were tamper/custody seals intact and uncompromised? Yes No NA
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp(Y/N)?
10. Were correct bottle(s) used for the test(s) indicated? Yes No
11. Sufficient quantity received to perform indicated analyses? Yes No
12. Are these work share samples and all listed on the COC? Yes No
    If yes, Questions 13-17 have been checked at the originating laboratory.
13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# **HC907861**
14. Were VOAs on the COC? Yes No
15. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this. Yes No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
17. Was a LL Hg or Me Hg trip blank present? _____ Yes No

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

WI-NC-099

Appendix B – Field Notes

AIR MONITORING LOG Soil Gas Points

PSID: 766356 | Date: 10/21 10/22

Project Location: County Road 10, Elkhart | Project Number: 1801906

Sampling Method: Eagle II Meter: SN ; Solinist Water Level Meter: SN | Geologist/ Engineer: Bryan Allen

SGP#	DTW	% O_2	LEL	CO	H2S	Pressure	Damage Observed?	Comments/Repairs Done/Maintenance Needed
5	d/9.82	20.9	0	0	0	-0.003	none	none (10/21)
100	—	20.8	0	0	0	+0.001	none	none - could not gauge cap stuck 10/21
101	d/9.02	20.9	0	0	0	0.000	none	none 10/21
102	—	17.4	0	0	0	-0.005	None	none could not get cap off no gauge 10/21
103	d/11.78	14.2	0	0	0	-0.115	none	none 10/21
104	d/8.90	17.1	0	16	0	+0.025	N	N 10/21
105	d/11.30	20.9	0	0	0	+0.032	N	N 10/21
106	d/10.77	15.4	0	0	0	-0.139	N	N 10/21
107	d/9.75	2.4	18	0	3.0	+0.102	N	N 10/21
115	—	1.6	6	0	0	+0.315	N	N could not get cap off 10/21
108	d/9.28	2.1	16	0	0	-0.036	N	N 10/21
109	—	3.9	[illegible]	0	0	+0.015	N	N could not get cap off open 10/21
110	5.02	20.1	0	0	0	-0.483	N	N 10/21
111	—	16.3	0	0	0	+0.030	N	N could not open to gauge 10/21
112	6.65	16.6	0	0	0	+0.005	N	N 10/21
113	—	11.7	0	0	0	+0.008	N	N could not open to gauge 10/22
114R	d/9.92	2.3	78	0	0	+0.024	N	N 10/21
116	6.29	2.1	100	0	16.5	-0.047	N	N 10/22
117S	—	2.3	0	0	0	-0.010	N	N 10/22
117D	—	7.3	0	0	0	-0.048	N	N 10/22
118	9.62	1.6	100	0	15	+0.550	N	N 10/21
119S	—	19.1	[illegible]	0	0	+0.007	N	N 10/21
119D	—	18.6	[illegible]	0	0	0.006	N	N 10/21
16	d/9.83	20.9	0	0	0	+0.004	N	N 10/22
15	d/9.69	20.9	0	0	0	+0.004	N	N 10/22
14	d/9.95	20.9	0	0	0	+0.006	N	N 10/22
13	d/9.02	20.9	0	0	0	+0.004	N	N 10/22
25S	—	20.9	0	0	0	+0.012	N	N 10/22
25D	—	20.9	0	0	0	+0.006	N	N 10/22
26S								Dog - could not access 10/22
26D								10/22
27S	—	20.9	0	0	0	+0.013	N	N 10/22
27D	—	20.7	0	0	0	-0.053	N	N 10/22

Calibration

Date/Time	CO	O2	H2S	LEL	CAL/Bump	Date/Time	CO	O2	H2S	LEL	CAL/Bump
10/21 11:30	50/50	18/18	10/10	50/50	cal	10/22	49/50	18.2/18	9.9/10	51/50	Bump - pass

AIR MONITORING LOG Passive Venting Trench

PSID	766356	Date:	10-21-19 10/22/19
Project Location:	County Road 10, Elkhart	Project Number:	1801906
Sampling Method:	Eagle II Meter: SN ; Solinist Water Level Meter: SN	Geologist/ Engineer:	Bryan Allen

PVT #	DTW	% O_2	LEL	CO	H2S	Flow (CFM/ft/min) Average taken 3 times			Top Spins?	Comments/Repairs Done/Maintenance Needed
28	dry/2.35	20.9	0	0	0	[illegible], 80	— , 124	— , 50	Y	None
27	dry/2.69	20.9	0	0	0	— , 32	— , 36	— , 27	Y	Animal burrow - filled in
26	d/v/4.75	20.3	0	0	0	15.05, 161	13.70, 152	6.64, 98	Y	none
25	dry/8.10	18.6	0	0	0	4.2, 45	4.35 52	2.19, 32	Y	Animal burrow - filled in
24	d/7.24	19.6	0	0	0	4.98, 57	3.32, 39	6.04, 59	Y	none
1	d/7.31	19.7	0	0	0	2.16, 26	1.32, 19	4.70, 54	Y	none
2	d/8.31	20.9	0	0	0	8.18, 91	7.98, 70	4.99, 68	Y	None
3	d/7.71	20.0	0	0	0	1.91, 22	1.78, 20	1.67, 19	Y	none
4	d/8.0	20.9	0	0	0	1.88, 20	4.23, 51	2.20, 32	Y	none
5	d/8.81	20.9	0	0	0	0.61, 10	2.00, 25	4.00, 40	Y	None
6	d/8.60	20.7	0	0	0	4.61, 59	3.42, 35	2.47, 80	Y	none
8	d/7.58	18.0	0	0	0	9.31, 99	8.21, 75	5.10, 68	Y	none
9	d/6.69	19.3	0	0	0	28.12, 340	28.11, 271	26.01, 265	Y	fan spinning w/ readings
10	d/7.00	20.9	0	0	0	6.97, 80	5.01, 51	6.64, 76	Y	none
29	d/5.97	20.9	0	0	0	3.22, 34	3.42, 35	3.47, 42	Y	none
30	d/6.90	20.9	0	0	0	7.10, 74	8.59 94	4.27, 60	Y	none
11	d/7.28	18.3	0	0	0	10.53, 148	9.37, 101	9.40, 115	Y	None
12	d/4.50	16.3	0	0	0	4.25, 45	4.31, 62	4.12, 53	Y	None
13	d/4.30	20.9	0	0	0	8.11, 82	5.00, 56	3.41, 30	Y	None fan spinning w/ Read
14	d/5.15	20.1	0	0	0	1.92, 18	3.34, 33	4.11, 42	Y	Spinning w/ Readings
15	d/6.18	20.9	0	0	0	2.70, 30	2.51, 25	2.90, 37	Y	None
16	d/6.49	20.9	0	0	0	2.08, 20	3.77, 45	2.66, 30	Y	~
17	d/6.82	20.9	0	0	0	— , —	— , —	— , —	Y	could not find permit. buried
31	d/5.95	20.9	0	0	0	6.59, 73	9.87, 115	10.93, 141	Y	~
32	d/5.75	20.9	0	0	0	4.57, 42	8.34, 94	13.89, [illegible]	Y	~
33	d/5.10	20.9	0	0	0	3.73, 45	3.92, 47	2.31, 27	N	spinner needs checked
7	d/8.05	20.9	0	0	0	1.4, 12	0.7, 8	1.04, 10	Y	~ (10/22)
34	d/5.82	20.9	0	0	0	3.71, 43	1.64, 20	1.38, 19	Y	~
35	d/6.82	20.1	0	0	0	6.21, 62	4.39, 43	5.92, 69	Y	~
36	d/6.51	20.9	0	0	0	0.59, 9	0.71, 12	1.01, 15	Y	~
18	d/5.96	20.9	0	0	0	0.31, 4	0.36, 5	0.48, 9	Y	~
19	d/6.52	20.9	0	0	0	0.27, 5	0.69, 9	0.40, 5	Y	~
20	d/6.15	15.6	0	0	0	1.47, 15	1.10, 10	3.13, 36	Y	~
21	d/5.80	20.9	0	0	0	1.36, 13	1.47, 15	2.69, 34	Y	~
22	2.90	19.9	0	0	0	4.77, 35	1.98, 23	1.71, 22	Y	~
23	2.59	18.5	0	0	0	2.59, 39	2.19, 29	0.98, 12	Y	~

Calibration

Date/Time 10/21	CO	O2	H2S	LEL	CAL/Bump	Date/Time 10/22/19	CO	O2	H2S	LEL	CAL/Bump
9:30	50/50	18/18	25/25	50/50	Cal	10/22	49/50	18.2/18	9.9/10	51/50	Bump - Pass

Groundwater Gauging Sheet
Bayer/HIMCO Landfill
CR 10 and John Weaver Parkway
Elkhart, Indiana

Date: 4/ /2019

GES Personnel:

Well ID	Well Depth	TOC	Depth To Water	Adjusted GW Elevation
Little-POND			—	
L-POND			—	
Q-POND			—	
SW4				
SW5		could	not fm	
SW6				
WTO2		756.58	11.87	
WTO3		756.65	11.37	
WTO4		756.71	10.91	
WT101A	S	755.94	15.31	
WT101B		755.36	13.63	
WT101C	D	755.99	15.09	
WT101D	I	756.02	15.34	
WT101E	I	756.05	15.18	
WT102A	S	759.59	10.87	
WT102B	I	759.69	10.54	
WT102C		759.59	11.03	
WT103A		756.04	6.05	
T104A		755.44	12.27	
WT106A	S	754.90	8.56	
WT106B	I	755.19	8.76	
WT106C	D	749.44	10.23	
WT111A	S	755.76	12.32	
WT112A		758.02	9.27	
WT112B		758.10	9.44	
WT113A		757.75	15.62	
WT113B		757.70	15.85	
WT114A	S	755.83	15.25	
WT114B	I	755.96	15.31	
WT114C	I	756.04	15.28	
WT115A	S	755.99	13.17	
WT115B	S	755.91	12.88	
WT115C	I	756.06	12.47	
WT116A	S	756.64	12.84	
WT116B		756.41	12.81	
WT117A		755.88	12.95	
WT117B		755.88	12.36	
WT117C		755.90	12.76	
WT117D		755.94	12.72	
T118B		755.75	12.07	
WT119B	S	755.93	11.38	
WT120A	I	755.89	8.74	(2)
WT120B	I	755.88	8.73	(3)
WT120C	S	755.89	8.67	(1)

Well ID	Well Depth	TOC	Depth To Water	Adjusted GW Elevation
WT121A	S	754.33	6.53	
WT121B	I	755.12	5.77	
WT122A	S	755.50	9.53	
WT122B	I	755.56	9.62	
WT122C	I	755.65	9.39	
WT123A	D	758.12	7.87	
WT124A		757.73	16.03	
WTB1		758.30	dry / 6.75	
WTB2		758.06	6.65	
WTB3		758.26	6.52	
WTB4		758.27	5.42	
WTE1		756.50	12.11	
WTE3	D	756.01	11.73	

Wells to gauge 57

Shade	Sample Wells
S	Shallow Well
I	Intermediate Well
D	Deep Well
TOC	Top of Casing

Black 10/22
Blue 10/23

Maps:

Site Map

On-site and off-site map

\\svrrmt92-vm2\
-01\Projects\Bayer

\\svrrmt92-vm2\
-01\Projects\Bayer

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-121A 102319

Sample Date: 10 / 23 / 2019

Sample Time: 1030

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 950 Activity End: 10:45

Weather: clear, sunny, little wind, no precip within 24 hrs

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Well Depth: 754.33 feet (from top of well casing) Water Depth: 6.53 (from top of well casing) feet using Interface Probe (measuring device) Shallow Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet: 754.3

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
X	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: Horiba

Purge Vol. (gal)	<0.1	<0.25	<0.5	<0.75	≈1.0	≈1.25	≈1.50	≈1.75
Time	10:07	10:10	10:14	10:17	10:20	10:23	10:26	1029
Temperature (C°)	12.13	12.71	13.65	13.87	13.94	13.95	13.[illegible]	13.95
Cond at 25°C (mS/cm)	0.677	0.674	0.670	0.668	0.669	0.668	0.672	0.671
DO (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
pH (Units)	6.58	6.80	7.19	7.32	7.40	7.47	7.50	7.51
ORP (mV)	-60	-72	-104	-120	-129	-139	-142	-144
Turb (NTU)	98.3	84.0	70.8	59.9	46.9	12.7	9.3	8.6
Volume Purged (gal)		≈2 gal						

Water Appearance (describe color, clarity odor:) cloudy, dark, clearing w/time

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear, slight gray color

QA/QC Samples (circle): None Duplicate Equipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

Sampled WT-121A @ 1030

NAME (Print): Chip Markovich

SIGNATURE: Chip Markovich

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-121B 10 2319
Sample Date: 10 / 23 / 2019
Sample Time: 11:15

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1050 Activity End: 1119

Weather: Clear, sunny, cool, ≈45°F, some wind

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Well Depth: 755.12 feet (from top of well casing) Water Depth: 5.77 feet (from top of well casing) using Interface Probe (measuring device) Intermediate Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet: 755.1

- [ ] .041 gal/ft (1 in)
- [ ] .09 gal/ft (1.5 in)
- [x] .16 gal/ft (2 in)
- [ ] .65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: Horiba

Purge Vol. (gal)	<0.1	<0.25	≈0.5	≈0.75	≈1.0	End	
Time	1057	1100	1104	11:07	11:10		
Temperature (C°)	11.85	12.31	12.37	12.50	12.53		
Cond at 25°C (mS/cm)	0.827	0.896	0.929	0.954	0.956		
DO (mg/l)	0.0	0.0	0.0	0.0	0.0		
pH (Units)	7.02	7.16	7.23	7.28	7.29		
ORP (mV)	-246	-263	-265	-265	-265		
Turb (NTU)	6.3	3.9	3.2	3.0	2.9		

Volume Purged (gal) ≈1.25

Water Appearance (describe color, clarity odor:) Clear, odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear, odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print): Chip Markovich

SIGNATURE: Chip Chik

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-122C 10 23 19

Sample Date: 10 / 23 / 2019

Sample Time: 1530

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN

Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1445

Activity End: 1540

Weather: cloudy, light wind, no precip 72h hrs, ~50°F

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Well Depth: 755.65 feet (from top of well casing)

Water Depth: 9.39 (from top of well casing) feet using Interface Probe (measuring device) Intermediate Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column 755.7 feet

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
X	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: Horiba

Purge Vol. (gal)	<0.1	≈0.5	≈1.0	≈1.5	≈2.0	≈2.5	≈3.0	≈3.5	
Time	1500	1503	1507	1511	1514	1517	1520	1521	
Temperature (C°)	13.04	13.06	13.11	13.38	13.48	13.53	13.65	13.23	
Cond at 25°C (mS/cm)	0.587	0.588	0.590	0.585	0.585	0.586	0.589	0.587	
DO (mg/l)	4.80	4.73	5.85	5.03	4.66	4.05	2.91	2.72	
pH (Units)	6.98	7.07	7.34	7.58	7.43	7.42	7.36	7.42	
ORP (mV)	-223	-243	-239	-205	-218	-229	-232	-232	
Turb (NTU)	72.2	20.1	12.4	8.4	3.4	2.8	3.7	3.1	
Volume Purged (gal)		≈4 gal							

Water Appearance (describe color, clarity odor:) cloudy, clearing w/ time

4.0
1526
13.33
0.586
2.53
7.43
-232
3.2

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear, odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020		500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

sampled 1530

NAME (Print) Chip Markovich

SIGNATURE: [signature]

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-122B 10 23 19

Sample Date: 10 / 23 / 2019

Sample Time: 1610

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1540 Activity End: 1620

Weather: Clear, sunny, little wind

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Well Depth: 755.56 feet (from top of well casing) Water Depth: 9.62 feet (from top of well casing) using Interface Probe (measuring device) Intermediate Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet: 755.6

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
X	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: Horiba

Purge Vol. (gal)	≈0.25	≈0.75	≈1.5	≈2.0	≈2.5	≈3.0	3.5
Time	15:49	15:52	1555	1558	1601	16:04	16:07
Temperature (C°)	13.77	13.92	13.64	13.63	13.66	13.73	13.75
Cond at 25°C (mS/cm)	0.579	0.584	0.585	0.588	0.591	0.593	0.593
DO (mg/l)	1.25	0.0	1.66	1.84	1.35	1.50	1.39
pH (Units)	7.34	7.98	7.47	7.45	7.44	7.41	7.41
ORP (mV)	-245	-242	-234	-204	-207	-204	-205
Turb (NTU)	4.8	0.9	0.0	0.0	0.3	0.8	1.0
Volume Purged (gal)		≈4.0					

Water Appearance (describe color, clarity odor:) Clear, slight odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear, slight odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

Sample @ 1610

NAME (Print): Chip Markovich

SIGNATURE: Chip Chk

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-116A 10 2419
Sample Date: 10 / 24 / 2019
Sample Time: 935

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 850 Activity End: 945

Weather: cloudy, little wind, no precip predicted, ~40°F

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-Up

WATER LEVEL/WELL DATA

Well Depth: 756.64 feet (from top of well casing) Water Depth: 12.84 (from top of well casing) feet using Interface Probe (measuring device) Shallow Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet: 756.6

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
X	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

756.6

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: Horiba

Purge Vol. (gal)	<0.1	≈1.5	≈2.00	≈2.50	3.0	3.5	
Time	9:08	9:18	9:21	9:24	9:27	930	
Temperature (C°)	14.99	14.22	14.33	14.54	14.64	14.57	
Cond at 25°C (mS/cm)	—	3.27	3.28	3.22	3.20	3.17	
DO (mg/l)	3.93	0.0	0.0	0.0	0.0	0.0	
pH (Units)	6.81	6.29	6.45	6.52	6.54	6.57	
ORP (mV)	-74	-39	-75	-88	-94	-101	
Turb (NTU)	113	10.7	8.9	6.1	4.1	2.5	
Volume Purged (gal)		≈3.75					

Water Appearance (describe color, clarity odor:) cloudy, clearing w/ time, odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear, odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

due to high turbidity, let pump run for ≈10 min w/out readings

Sampled 9:35

NAME (Print): Chip Markovich

SIGNATURE: [signature]

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-119B 102419
Sample Date: 10 / 24 / 2019
Sample Time: 1025

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1000 Activity End:

Weather: Cloudy, ≈45°F, little wind, no precip predicted

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-Up

WATER LEVEL/WELL DATA

Well Depth: 755.93 feet (from top of well casing) Water Depth: 11.38 (from top of well casing) feet using Interface Probe (measuring device) Shallow Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet

		.041 gal/ft (1 in)
		.09 gal/ft (1.5 in)
	X	.16 gal/ft (2 in)
755.9		.65 gal/ft (4 in)

755.9

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: Horiba

Purge Vol. (gal)	<0.1	<0.75	≈1.0	≈1.25	≈1.5		
Time	1008	1013	1016	1020	1023		
Temperature (C°)	13.57	13.51	13.52	13.56	13.59		
Cond at 25°C (mS/cm)	0.459	0.451	0.435	0.461	0.464		
DO (mg/l)	0.08	0.0	0.0	0.0	0.0		
pH (Units)	7.29	7.21	7.17	7.14	7.12		
ORP (mV)	-65	-80	-82	-82	-84		
Turb (NTU)	54.4	36.6	15.5	13.6	11.1		
Volume Purged (gal)		1.5					

Water Appearance (describe color, clarity odor:) cloudy, slight odor, brown

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear, slight odor, slight brown hue

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

Sampled 10:25

NAME (Print) Chip Markovich

SIGNATURE: Chip Chill

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WTE3 10 2419
Sample Date: 10 / 24 / 2019
Sample Time: 1115

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1050 Activity End: 1130

Weather: cloudy, overcast, little sun, ≈ 50°F, last precip 24 hrs

Well Type and Location: On-Site / Off-Site Flush Mount / Stickup

WATER LEVEL/WELL DATA

Well Depth: _____ feet (from top of well casing) Water Depth: 11.73 feet (from top of well casing) using Interface Probe (measuring device) deep

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet: 0.0

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

6" well

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: Horiba

Purge Vol. (gal)	~0.5	~0.9	≈1.3	~~1.75~~	≈2.25		
Time	1101	1104	1107	1110	1113		
Temperature (C°)	12.18	12.24	12.30	12.44	12.56		
Cond at 25°C (mS/cm)	0.437	0.503	0.504	0.505	0.505		
DO (mg/l)	1.35	0.0	0.0	0.0	0.0		
pH (Units)	7.38	7.34	7.32	7.32	7.33		
ORP (mV)	-148	~~0.503~~ -135	-131	-131	-134		
Turb (NTU)	0.0	0.0	0.0	0.0	0.0		
Volume Purged (gal)		≈2.5					

Water Appearance (describe color, clarity odor:) clear, no odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of 2nd If No, Explain:

Sample Water Appearance (color, clarity, odor): clear, no odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

Sampled 1115

NAME (Print): Chip Markovich

SIGNATURE: [signature]

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-115B 102419
Sample Date: 10 / 24 / 2019
Sample Time: 1220

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN
Project No.: 1801906
Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales
Activity Start: 1150
Activity End: 1225
Weather: cloudy, little sun, little wind, no precip w/in 24 hrs
Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Well Depth: 755.91 feet (from top of well casing)
Water Depth: 12.88 (from top of well casing) feet using Interface Probe (measuring device)
Shallow Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet: 755.9

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
X	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

755.9

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: Horiba

Purge Vol. (gal)	<0.25	≈0.5	≈1.0	1.5	2.0		
Time	12:03	1206	1209	1212	1215		
Temperature (C°)	12.51	12.60	12.77	~~12.84~~ 12.87	13.01		
Cond at 25°C (mS/cm)	1.69	1.67	1.66	1.66	1.65		
DO (mg/l)	1.02	0.00	0.00	0.0	0.0		
pH (Units)	6.93	6.87	6.86	6.87	6.88		
ORP (mV)	~~-287~~	-320	-334	-339	-344		
Turb (NTU)	6.0	4.1	0.0	0.0	0.0		

Volume Purged (gal) ≈2.25

Water Appearance (describe color, clarity odor.) odor, slight gray hue

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes or No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear, slight odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

Sampled 1220

NAME (Print): Chip Markovich
SIGNATURE: Chip Markovich

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-115A 10 24 19

Sample Date: 10 / 24 / 2019

Sample Time: 1255

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1230 Activity End: ≈ 1300

Weather: Cloudy, overcast, little sun, little wind, no precip w/in 24 hrs

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Well Depth: 755.99 feet (from top of well casing) Water Depth: 13.17 feet (from top of well casing) using Interface Probe (measuring device) Shallow Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet

		.041 gal/ft (1 in)
		.09 gal/ft (1.5 in)
	X	.16 gal/ft (2 in)
756.0		.65 gal/ft (4 in) 756.0

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: Horiba

Purge Vol. (gal)	<0.25	≈0.5	≈1.0	≈1.25	≈1.50		
Time	1235	1238	1241	1244	1247		
Temperature (C°)	13.62	13.77	13.99	14.25	14.37		
Cond at 25°C (mS/cm)	0.367	0.397	0.422	0.434	0.435		
DO (mg/l)	5.00	0.0	0.0	0.0	0.0		
pH (Units)	7.16	7.04	7.05	7.02	7.02		
ORP (mV)	-233	-239	-241	-239	-239		
Turb (NTU)	30.9	16.0	4.2	2.4	1.1		
Volume Purged (gal)		≈2.0					

Water Appearance (describe color, clarity odor:) Cloudy, opaque, odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): Clear, slight odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected): GW-WT115A 102419-MS

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	MS/D	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	6	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	2	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	2	500ml	Poly	HNO3	N	Y
Chemistry	300	1	2	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

MS/MSD Sampled 12:55

NAME (Print) Chip Markovich

SIGNATURE: [signature]

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-115C 10 24 19
Sample Date: 10 / 24 / 2019
Sample Time: 1420

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN — Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1350 — Activity End: 1440

Weather: Mostly Sunny, some clouds, some wind, no precip predicted

Well Type and Location: On-Site / Off-Site — Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Well Depth: 756.06 feet (from top of well casing) — Water Depth: 12.47 (from top of well casing) feet using Interface Probe (measuring device) — Intermediate Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet: 756.1

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
X	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

756.1

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: Horiba

Purge Vol. (gal)	<0.5	=1.0	=1.5	=2.0	=2.5	=3.0	
Time	1406	1409	1412	1415	1418	1421	
Temperature (C°)	16.86	16.49	16.16	16.04	15.96		
Cond at 25°C (mS/cm)	0.472	0.479	0.488	0.493	0.496		
DO (mg/l)	0.0	0.0	0.0	0.0	0.0		
pH (Units)	7.45	7.50	7.50	7.47	7.42		
ORP (mV)	-198	-212	-207	-202	-197		
Turb (NTU)	3.1	1.5	0.0	0.0	0.0		
Volume Purged (gal)		=3.5					

Water Appearance (describe color, clarity odor:) Clear

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear, no odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

Sampled 1420

NAME (Print): Chip Markovich

SIGNATURE: Chip Markovich

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-101C 102719

Sample Date: 10 / 24 / 2019

Sample Time: 1520

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1450 Activity End: 1530

Weather: Cloudy, overcast, little sun, [illegible]°F, little wind

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Well Depth: 755.94 feet (from top of well casing) Water Depth: 15.09 feet (from top of well casing) using Interface Probe (measuring device) Shallow Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet: 755.9

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
X	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

755.9

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: Horiba

Purge Vol. (gal)	<0.25	=0.75	=1.5	2.25	3.0		
Time	1505	1508	1511	1514	1517		
Temperature (C°)	16.34	16.09	15.74	15.66	15.55		
Cond at 25°C (mS/cm)	0.337	0.337	0.342	0.343	0.334		
DO (mg/l)	0.0	0.0	0.0	0.0	0.0		
pH (Units)	7.91	7.96	7.93	7.93	7.90		
ORP (mV)	-197	-239	-263	-266	-269		
Turb (NTU)	2.6	1.2	0.4	0.2	0.3		
Volume Purged (gal)		=3.25					

Water Appearance (describe color, clarity odor:) Clear, low to no odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): Clear no odor

QA/QC Samples (circle): None Duplicate Equipment Blank MS/MSD ID (if collected): [redacted]

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NO QA/QC

Sampled 1520

NAME (Print): Chip Markovich

SIGNATURE: [signature]

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-101E 102419
Sample Date: 10/24/2019
Sample Time: 1615

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN — Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1540 — Activity End: 1630

Weather: Cloudy, overcast, little sun, little wind, ≈50°F

Well Type and Location: On-Site / Off-Site — Flush Mount / Stick-Up

WATER LEVEL/WELL DATA

Well Depth: 756.05 feet (from top of well casing) — Water Depth: 15.18 feet (from top of well casing) using Interface Probe (measuring device) — Intermediate Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet: 756.1

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
X	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

756.1

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: Horiba

Purge Vol. (gal)	<0.1	≈0.25	≈0.5	≈0.75	≈1.0	≈1.25
Time	1558	1601	1604	1607	1610	1613
Temperature (C°)	14.47	14.23	14.17	14.15	14.17	14.19
Cond at 25°C (mS/cm)	0.487	0.489	0.489	0.487	0.488	0.488
DO (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0
pH (Units)	6.87	6.94	7.00	7.11	7.13	7.18
ORP (mV)	-239	-266	-283	-305	-317	-326
Turb (NTU)	2.0	2.6	2.6	1.3	1.2	1.3
Volume Purged (gal)		≈1.5				

Water Appearance (describe color, clarity odor:) Clear, little odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes or No. If No, Explain:

Sample Water Appearance (color, clarity, odor): Clear, little odor, slight hue

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

Sampled 1615

NAME (Print): Chip Markovich

SIGNATURE: [signature]

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-101A 10 25 19

Sample Date: 10 / 25 / 2019

Sample Time: 1005

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 930 Activity End: ~1010

Weather: Cloudy, overcast, ~45°F.

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Well Depth: 755.94 feet (from top of well casing) Water Depth: 15.31 feet (from top of well casing) using Interface Probe (measuring device) Shallow Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column 755.9 feet

- [ ] .041 gal/ft (1 in)
- [ ] .09 gal/ft (1.5 in)
- [x] .16 gal/ft (2 in)
- [ ] .65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: Horiba

Purge Vol. (gal)	<0.25	~0.5	~0.75	~1.0	~1.25	~1.50	
Time	945	950	953	956	959	1002	
Temperature (C°)	14.38	14.92	15.55	15.85	15.86	15.91	
Cond at 25°C (mS/cm)	0.839	0.823	0.835	0.837	0.838	0.840	
DO (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	
pH (Units)	6.09	6.23	6.29	6.30	6.35	6.36	
ORP (mV)	-63	-62	-76	-89	-90	-93	
Turb (NTU)	49.3	47.2	46.3	40.3	37.3	34.3	

Volume Purged (gal) ~1.75

Water Appearance (describe color, clarity odor:) odor, slight brown to gray hue

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): slight brown hue, odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected): GW-WT 101A 102519-EB

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

Collected EB @ 9:30 prior to collecting sample. VOC only

NAME (Print): Chip Markovich

SIGNATURE: Chip Markovich

Sampled 10:05

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-101D 10 25 19
Sample Date: 10 / 25 / 2019
Sample Time: 1035

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906
Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales
Activity Start: 1012 Activity End: 1050
Weather: Cloudy
Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Well Depth: 756.02 feet (from top of well casing) Water Depth: 15.34 feet (from top of well casing) using Interface Probe (measuring device) Intermediate Well
Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet: 756.0

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
∝	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: Horiba

Purge Vol. (gal)	<0.25	=0.75	=1.25	=1.50	=1.75		
Time	1019	1022	1025	1028	1031		
Temperature (C°)	12.60	13.50	13.74	13.79	13.82		
Cond at 25°C (mS/cm)	0.445	0.456	0.463	0.466	0.466		
DO (mg/l)	0.72	0.0	0.0	0.0	0.0		
pH (Units)	7.02	7.12	7.28	7.38	7.40		
ORP (mV)	-242	-263	-259	-251	-249		
Turb (NTU)	2.2	2.2	0.8	0.2	0.0		
Volume Purged (gal)		=2.0					

Water Appearance (describe color, clarity odor:) clear, low odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:
Sample Water Appearance (color, clarity, odor): clear, low odor
QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

Sampled 1035

NAME (Print) Chip Markovich
SIGNATURE: Chip Markovich

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-120C 10 23 19

Sample Date: 10 / 23 / 2019

Sample Time: 1250

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1200 Activity End: 1300

Weather: 50 sunny

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Well Depth: 755.89 feet (from top of well casing) Water Depth: 8.67 (from top of well casing) feet using Interface Probe (measuring device) Shallow Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet: 755.9

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: Horiba U-52

Purge Vol. (gal)	0.2	0.5	0.8	1.1	1.4	1.75	1.9
Time	1228	1231	1234	1237	1240	1243	1246
Temperature (C°)	16.93	17.63	17.43	17.03	17.19	17.29	17.26
Cond at 25°C (mS/cm)	0.371	0.374	0.372	0.371	0.373	0.371	0.371
DO (mg/l)	1.92	1.01	0.84	0.37	0.04	0.02	0.03
pH (Units)	7.51	7.59	7.60	7.65	7.63	7.67	7.68
ORP (mV)	-50	-46	-41	-33	-30	-31	-32
Turb (NTU)	16.9	12.8	10.7	9.5	8.7	8.9	8.6
Volume Purged (gal)		2.0					

Water Appearance (describe color, clarity odor:) Clear, No odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): Clear, No odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print): Bryan Allen

SIGNATURE: By All

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-120B 102319

Sample Date: 10 / 23 / 2019

Sample Time: 1415

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN

Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1340

Activity End: 1425

Weather: 55 Cloudy

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Well Depth: 755.88 feet (from top of well casing)

Water Depth: 5.77 (from top of well casing) feet using Interface Probe (measuring device)

Intermediate Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet: 755.9

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: Horiba U52

Purge Vol. (gal)	1	1.5	1.75	2.00	2.25	2.5	2.75	
Time	1351	1354	1357	1400	1403	1406	1409	1412
Temperature (C°)	12.90	13.54	13.41	13.58	13.54	13.48	13.47	13.58
Cond at 25°C (mS/cm)	0.467	0.457	0.456	0.457	0.456	0.456	0.456	0.455
DO (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
pH (Units)	6.37	6.97	6.69	6.69	7.04	7.21	7.19	7.22
ORP (mV)	-116	-157	-150	-152	-169	-177	-176	-177
Turb (NTU)	10.4	6.7	5.7	5.2	4.5	4.8	4.5	4.2
Volume Purged (gal)		2.75						

Water Appearance (describe color, clarity odor:) Clear no odor

SAMPLING PROCEDURES

Sampling Method same as purge method Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): Clear, No odor

QA/QC Samples (circle): None Duplicate Equipment Blank MS/MSD ID (if collected): GW-WT-120B 102319-EB

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

GW-WT-120B 102319-EB @ 1420 from pump

NAME (Print): Bryan Allen

SIGNATURE: By All

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-120A 10 23 19
Sample Date: 10 / 23 / 2019
Sample Time: 1325

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1255 Activity End: 1330

Weather: 55 cloudy

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Well Depth: 755.89 feet (from top of well casing) Water Depth: 8.74 (from top of well casing) feet using Interface Probe (measuring device) Intermediate Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet: 755.9

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: U-52

Purge Vol. (gal)	0.2	0.5	0.75	1	1.25	1.5	
Time	1305	1308	1311	1314	1317	1320	
Temperature (C°)	14.93	14.51	14.51	14.55	14.53	14.49	
Cond at 25°C (mS/cm)	0.558	0.577	0.578	0.578	0.577	0.577	
DO (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	
pH (Units)	6.58	6.88	7.04	7.20	7.24	7.26	
ORP (mV)	-166	-208	-214	-217	-217	-217	
Turb (NTU)	11.8	9.5	8.4	8.3	8.1	8.0	

Volume Purged (gal) 1.5

Water Appearance (describe color, clarity odor:) Clear No odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes / No. If No, Explain:

Sample Water Appearance (color, clarity, odor): Clear No odor

QA/QC Samples (circle): None Duplicate Equipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print): Bryan Allen

SIGNATURE: [signature]

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-122A 10 23 19
Sample Date: 10 / 23 / 2019
Sample Time: 1530

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1500 Activity End: 1540

Weather: 55 Cloudy

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Well Depth: 755.50 feet (from top of well casing) Water Depth: 9.53 feet (from top of well casing) using Interface Probe (measuring device) Shallow Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet: 755.5

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: Horiba U-52

Purge Vol. (gal)	0.1	0.25	0.5	0.75	1.0		
Time	1516	1519	1522	1525	1528		
Temperature (C°)	14.09	14.28	14.82	15.01	15.17		
Cond at 25°C (mS/cm)	0.959	0.941	0.936	0.937	0.938		
DO (mg/l)	0.0	0.0	0.0	0.0	0.0		
pH (Units)	6.83	6.86	6.87	6.89	6.89		
ORP (mV)	-87	-93	-98	-101	-104		
Turb (NTU)	13.1	4.1	1.9	1.7	1.6		
Volume Purged (gal)		1.0					

Water Appearance (describe color, clarity odor:) Clear, no odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): Clear, no odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print) Bryan Allen

SIGNATURE: Bj All

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-106C 10 23 19
Sample Date: 10 / 23 / 2019
Sample Time: 1805

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 530, 1730 Activity End: 1825

Weather: 55 Cloudy

Well Type and Location: On-Site Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Well Depth: 749.44 feet (from top of well casing) Water Depth: 10.23 feet (from top of well casing) using Interface Probe (measuring device) Deep Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet: 749.4

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: Horiba U-52

Purge Vol. (gal)	0.5	0.75	1.0	1.25	1.5		
Time	1752	1755	1758	1801	1804		
Temperature (C°)	12.68	12.55	12.54	12.56	12.59		
Cond at 25°C (mS/cm)	0.336	0.335	0.334	0.334	0.334		
DO (mg/l)	0.0	0.0	0.0	0.0	0.0		
pH (Units)	7.75	7.80	7.81	7.80	7.79		
ORP (mV)	-100	-118	-127	-130	-132		
Turb (NTU)	2.6	4.9	1.6	1.5	1.4		

Volume Purged (gal) 1.5

Water Appearance (describe color, clarity odor:) Clear, No odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): Clear, No odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print) Bryan Allen

SIGNATURE: Bryan Allen

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-111A 10 23 19
Sample Date: 10 / 23 / 2019
Sample Time: 1705

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1645 Activity End: 1725

Weather: 55 Cloudy

Well Type and Location: On-Site Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Well Depth: 755.76 feet (from top of well casing) Water Depth: 12.32 (from top of well casing) feet using Interface Probe (measuring device) Shallow Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column 755.8 feet

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: Horiba U-52

Purge Vol. (gal)	0.2	0.5	0.75	1	1.25	1.5	1.75
Time	1645	1648	1651	1654	1657	1700	1703
Temperature (C°)	14.08	14.21	14.36	14.32	14.24	14.21	14.15
Cond at 25°C (mS/cm)	0.568	0.520	0.502	0.493	0.480	0.478	0.477
DO (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
pH (Units)	6.93	6.90	6.90	6.88	6.87	6.86	6.86
ORP (mV)	-31	-31	-30	-29	-28	-27	-28
Turb (NTU)	289	184	91	63.1	36.8	29.6	28.9

Volume Purged (gal): 1.75

Water Appearance (describe color, clarity odor.): Brown, no odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear, no odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print): Bryan Allen

SIGNATURE: Bryan Allen

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-114B 10 24 19
Sample Date: 10 / 24 / 2019
Sample Time: 1400

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906
Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales
Activity Start: 1325 Activity End: 1430
Weather: 55 Cloudy
Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Well Depth: 755.96 feet (from top of well casing) Water Depth: 15.31 (from top of well casing) feet using Interface Probe (measuring device) Intermediate Well
Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet: 756.0
.041 gal/ft (1 in)
.09 gal/ft (1.5 in)
.16 gal/ft (2 in)
.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: Horiba U52

Purge Vol. (gal)	0.3	0.5	0.75	1.0	1.3	1.5	
Time	1335	1338	1341	1344	1347	1350	
Temperature (C°)	13.10	13.01	13.22	13.52	13.54	13.72	
Cond at 25°C (mS/cm)	0.490	0.471	0.462	0.451	0.450	0.449	
DO (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	
pH (Units)	7.54	7.53	7.50	7.48	7.47	7.46	
ORP (mV)	-232	-247	-250	-251	-252	-253	
Turb (NTU)	7.2	6.6	3.1	1.4	1.3	1.2	
Volume Purged (gal)		1.5					

Water Appearance (describe color, clarity odor:) clear, no odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:
Sample Water Appearance (color, clarity, odor): clear, no odor
QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print) Bryan Allen
SIGNATURE: By All

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-114C 10 24 19

Sample Date: 10 / 24 / 2019

Sample Time: 1115

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN

Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1035

Activity End: 1130

Weather: SS Cloudy

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Well Depth: 756.04 feet (from top of well casing)

Water Depth: 15.28 (from top of well casing) feet using Interface Probe (measuring device)

Intermediate Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet

756.0

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: Horiba U52

Purge Vol. (gal)	~~0.3~~ 0.3	0.6	0.9	1.2	1.5	1.8	
Time	1059	1102	1105	1108	1111	1114	
Temperature (C°)	12.95	12.93	12.97	13.04	13.05	13.08	
Cond at 25°C (mS/cm)	0.462	0.466	0.470	0.468	0.466	0.465	
DO (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	
pH (Units)	7.44	7.64	7.86	7.94	7.96	7.97	
ORP (mV)	-222	-237	-240	-237	-234	-233	
Turb (NTU)	2.9	1.3	0.4	0.3	0.2	0.2	
Volume Purged (gal)		2.0					

Water Appearance (describe color, clarity odor:) clear no odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear no odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print) Bryan Allen

SIGNATURE: B. All

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-114A 10 24 19
Sample Date: 10 / 24 / 2019
Sample Time: 1315

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: (Bryan Allen) Chip Markovich / Thomas Bales

Activity Start: 1230 Activity End: 1330

Weather: SS Cloudy

Well Type and Location: On-Site / (Off-Site) Flush Mount / (Stick-up)

WATER LEVEL/WELL DATA

Well Depth: 755.83 feet (from top of well casing) Water Depth: 15.25 (from top of well casing) feet using Interface Probe (measuring device) Shallow Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet: 755.8

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic (Geosub)

FIELD PARAMETERS

Monitoring Equipment Used: Horiba U-52

Purge Vol. (gal)	0.3	0.6	0.9	1.2	1.5	1.8	
Time	1255	1258	1301	1304	1307	1310	
Temperature (C°)	1357	15.00	15.11	15.26	15.32	15.33	
Cond at 25°C (mS/cm)	1.21	1.23	1.23	1.23	1.26	1.27	
DO (mg/l)	4.17	3.15	2.75	2.70	2.68	2.65	
pH (Units)	7.77	7.74	7.75	7.75	7.75	7.75	
ORP (mV)	15	-12	-19	-23	-25	-27	
Turb (NTU)	111	34.2	24.2	12.0	11.7	11.5	
Volume Purged (gal)		2.0					

Water Appearance (describe color, clarity odor:) Brown, No odor

SAMPLING PROCEDURES

Sampling Method same as purge method: (Yes) of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): Brown

QA/QC Samples (circle): (None) (Duplicate) Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print) Bryan Allen

SIGNATURE: Bryan Allen

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: ~~WT-100B~~ WT-102B 10 24 19
Sample Date: 10 / 24 / 2019
Sample Time: 1610

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1540 Activity End: 1630

Weather: SS Cloudy

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Well Depth: ~~755.10~~ 759.09 feet (from top of well casing) Water Depth: 10.54 (from top of well casing) feet using Interface Probe (measuring device) Intermediate Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet: 755.2

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: Horiba U-52

Purge Vol. (gal)	0.3	0.5	0.75	1	1.25		
Time	1554	1557	1600	1603	1606		
Temperature (C°)	12.14	12.23	12.48	12.51	12.50		
Cond at 25°C (mS/cm)	0.535	0.531	0.535	0.534	0.534		
DO (mg/l)	0.15	0.0	0.0	0.0	0.0		
pH (Units)	7.77	7.80	7.83	7.85	7.86		
ORP (mV)	-243	-268	-268	-268	-267		
Turb (NTU)	60	44	4.1	4.2	3.9		
Volume Purged (gal)		1.5					

Water Appearance (describe color, clarity odor:) Clear, no odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear, no odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print): Bryan Allen

SIGNATURE: Bryan Allen

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-106A 1024 19
Sample Date: 10 / 24 / 2019
Sample Time: 1005

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 940 Activity End: 1020

Weather:

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Well Depth: 754.90 feet (from top of well casing) Water Depth: 8.56 (from top of well casing) feet using Interface Probe (measuring device) Shallow Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet: 754.9

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used:

Purge Vol. (gal)	0.3	0.5	0.8	1.1	1.4	1.6	
Time	947	950	953	957	1000	1003	
Temperature (C°)	13.74	13.92	14.41	14.81	14.86	14.92	
Cond at 25°C (mS/cm)	0.349	0.364	0.378	0.400	0.406	0.407	
DO (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	
pH (Units)	7.60	7.61	7.62	7.62	7.65	7.64	
ORP (mV)	-118	-115	-112	-107	-105	-104	
Turb (NTU)	52.9	47.6	31.2	28.1	27.2	27.4	
Volume Purged (gal)		1.6					

Water Appearance (describe color, clarity odor:) clear, no odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear no odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print) Bryan Allen

SIGNATURE: Bryan Allen

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: ~~WT-102B~~ WT-106B 10 24 19
Sample Date: 10 /24 /2019
Sample Time: 920

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906
Personnel Present: (Bryan Allen) / Chip Markovich / Thomas Bales
Activity Start: 840 Activity End: 935
Weather: 45 Cloudy
Well Type and Location: On-Site (Off-Site) Flush Mount (Stick-up)

WATER LEVEL/WELL DATA

Well Depth: ~~759.09~~ 755.19 feet (from top of well casing) Water Depth: 876 (from top of well casing) feet using Interface Probe (measuring device) Intermediate Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet: 759.7

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic (Geosub)

FIELD PARAMETERS

Monitoring Equipment Used: Horiba U52

Purge Vol. (gal)	0.3	0.6	0.9	1.2	1.5		
Time	904	907	910	912	915		
Temperature (C°)	12.25	12.32	12.35	12.46	12.48		
Cond at 25°C (mS/cm)	0.626	0.614	0.609	0.612	0.613		
DO (mg/l)	0.0	0.0	0.0	0.0	0.0		
pH (Units)	7.38	7.42	7.48	7.52	7.53		
ORP (mV)	-228	-239	-250	-253	-254		
Turb (NTU)	5.3	4.1	0.2	0.3	0.2		
Volume Purged (gal)		1.5					

Water Appearance (describe color, clarity odor:) clear, no odor

SAMPLING PROCEDURES

Sampling Method same as purge method: (Yes) of No. If No, Explain:
Sample Water Appearance (color, clarity, odor): clear, no odor
QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print): Bryan Allen
SIGNATURE: By All

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-102A 102419
Sample Date: 10 / 24 / 2019
Sample Time: 1515

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN
Project No.: 1801906
Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales
Activity Start: 1435
Activity End: 1530
Weather: 55 cloudy
Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Well Depth: 759.59 feet (from top of well casing)
Water Depth: 10.80 (from top of well casing) feet using Interface Probe (measuring device)
Shallow Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet
759.6

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: Horiba U52

Purge Vol. (gal)	0.3	0.5	0.75	1	1.25	1.5	
Time	1457	1500	1503	1506	1509	1512	
Temperature (C°)	14.19	14.44	14.51	14.59	14.65	14.67	
Cond at 25°C (mS/cm)	0.746	0.747	0.735	0.736	0.731	0.730	
DO (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	
pH (Units)	7.93	7.93	7.92	7.92	7.91	7.90	
ORP (mV)	-56	-53	-52	-52	-53	-53	
Turb (NTU)	66.5	34.9	12.2	4.0	3.8	3.9	
Volume Purged (gal)		1.75					

Water Appearance (describe color, clarity odor:) Brown No odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes / of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): No odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print) Bryan Allen
SIGNATURE: By [signature]

Table 2.2

Groundwater Monitoring Program
Himco Site
Elkhart, Indiana

Upper Aquifer Wells

Detection Monitoring Wells

WT101A
WT115A
WT115B
WT116A

Compliance Monitoring Wells

WT106A
WT111A
WT114A
WT119B
WT120C
WT121A
WT122A

Background Monitoring Well

WT102A

Intermediate Aquifer Wells

Detection Monitoring Wells

WT106B
WT114C
WT120B

Compliance Monitoring Wells

WT101D
WT101E
WT114B
WT115C
WT120A
WT121B
WT122B
WT122C

Background Monitoring Well

WT102B

Lower Aquifer Wells

Compliance Monitoring Wells

WT101C
WT106C
WTE3

Groundwater Gauging Sheet
Bayer/HIMCO Landfill
CR 10 and John Weaver Parkway
Elkhart, Indiana

10/26/2020

Date: 4/ /2019

GES Personnel: Markovich

Well ID	Well Depth	TOC	Depth To Water	Adjusted GW Elevation
Little-POND				
L-POND				
Q-POND				
SW4				
SW5				
SW6				
WTO2		756.58	12.51 / 12.51	
WTO3		756.65	12.01 / 12.01	
WTO4		756.71	11.53 / 11.53	
WT101A	S	755.94	15.92 / 15.92	
WT101B		755.36	13.60 / 13.60	
WT101C	D	755.99	15.66 / 15.66	
WT101D	I	756.02	15.94 / 15.94	
WT101E	I	756.05	15.78 / 15.78	
WT102A	S	759.59	11.58 / 11.58	
WT102B	I	759.69	11.27 / 11.27	
WT102C		759.59	11.75 / 11.75	
WT103A		756.04	6.65 / 6.65	
WT104A		755.44	12.93 / 12.93	
WT106A	S	754.90	9.23 / 9.23	
WT106B	I	755.19	9.43 / 9.43	
WT106C	D	749.44	10.79 / 10.79	
WT111A	S	755.76	13.17 / 13.17	
WT112A		758.02	9.96 / 9.96	
WT112B		758.10	10.14 / 10.14	
WT113A		757.75	15.75 / Dry	
WT113B		757.70	16.55 / 16.55	
WT114A	S	755.83	15.95 / 15.95	
WT114B	I	755.96	15.97 / 15.97	
WT114C	I	756.04	15.98 / 15.98	
WT115A	S	755.99	13.75 / 13.75	
WT115B	S	755.91	13.48 / 13.48	
WT115C	I	756.06	13.07 / 13.07	
WT116A	S	756.64	13.49 / 13.49	
WT116B		756.41	13.40 / 13.40	
WT117A		755.88	13.59 / 13.59	
WT117B		755.88	12.99 / 12.99	
WT117C		755.90	13.38 / 13.38	
WT117D		755.94	13.36 / 13.36	
WT118B		755.75	13.14 / 13.14	
WT119B	S	755.93	11.98 / 11.98	
WT120A	I	755.89	9.43 / 9.43	
WT120B	I	755.88	9.40 / 9.40	
WT120C	S	755.89	9.34 / 9.34	

Well ID	Well Depth	TOC	Depth To Water	Adjusted GW Elevation
*WT121A	S	754.33		
*WT121B	I	755.12		
WT122A	S	755.50	10.21 / 10.21	
WT122B	I	755.56	10.28 / 10.28	
WT122C	I	755.65	10.06 / 10.06	
WT123A		758.12	8.51 / 8.51	
WT124A		757.73	16.79 / 16.79	
WTB1		758.30	7.46 / 7.46	
WTB2		758.06	7.29 / 7.29	
WTB3		758.26	7.19 / 7.19	
WTB4		758.27	6.17 / 6.17	
WTE1		756.50	12.71	
WTE3	D	756.01	12.39	

Wells to gauge 57

Shade Sample Wells
S Shallow Well
I Intermediate Well
D Deep Well
TOC Top of Casing

Maps:

Site Map On-site and off-site map

\\svrrmt92-vm2\
-01\Projects\Bayer

\\svrrmt92-vm2\
-01\Projects\Bayer

*WT 121A WT 121B may be destroyed

WT 104A - closed until 10/27

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-114B 102820
Sample Date: 10/28/2020
Sample Time: 1555

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1530 Activity End: 1410

Weather: clear, sunny, ~50 F, last precip <24 hrs

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Top of Casing ~~750.96~~ feet (from top of well casing) Water Depth: _____ feet (from top of well casing) using Interface Probe (measuring device) Intermediate Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Depth to Water in feet: 756.0

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: YSI Pro DSS

Purge Vol. (gal)	0.25	0.5 1540	0.75	1.0	1.33	1.66	
Time	1537	~~1540~~	1543	1546	1549	1552	
Temperature (C°)	13.6	14.2	14.5	14.6	14.7	14.8	
Cond at 25°C (mS/cm)	0.399	0.399	0.409	0.407	0.407	0.408	
DO (mg/l)	5.45	2.69	2.09	1.75	1.59	1.38	
pH (Units)	7.24	7.10	7.07	7.06	7.06	7.05	
ORP (mV)	-163.5	-185.3	-189.3	-192.1	-193.8	-197.3	
Turb (NTU)	149	34.5	23.9	17.0	14.3	12.31	

Volume Purged (gal) ~2.0

Water Appearance (describe color, clarity odor:) Clear no odor ~~to~~ gray hue

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear, brown hue

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

Sampled 1555

NAME (Print): Chip Markovich

SIGNATURE: Chip Mk

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-122B 1028 20
Sample Date: 10 / 28 / 2020
Sample Time: 1425

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN
Project No.: 1801906
Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales
Activity Start: 1348
Activity End:
Weather: clear, Sunny, little wind, lost precip > 24 hrs, ≈50°F
Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Top of Casing 755.56 feet (from top of well casing)
Water Depth: (from top of well casing) feet using Interface Probe (measuring device)
Intermediate Well
Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Depth to Water in feet: 755.6

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: YSI Pro DSS

Purge Vol. (gal)	≈0.25	≈0.5	≈0.75	≈1.0	≈1.25	≈1.5	≈1.75
Time	1353	1356	1359	1402	1405	1410	14:14
Temperature (C°)	12.7	13.1	13.4	13.6	13.5	13.0	13.3
Cond at 25°C (mS/cm)	0.640	0.644	0.650	0.652	0.652	0.652	0.650
DO (mg/l)	5.24	2.96	2.12	1.74	1.62	5.36	2.71
pH (Units)	7.34	7.35	7.37	7.38	7.38	7.43	7.35
ORP (mV)	-236.3	-245.5	-242.5	-238.7	-236.9	-142.8	-178.6
Turb (NTU)	39.2	39.2	24.2	17.62	16.5	13.6	11.6

Volume Purged (gal)

Water Appearance (describe color, clarity odor:) cloudy, gray hue, odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor):

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

1406 - generator out of gas
~~[illegible]~~ used B. Allen generator
Sampled 1425

NAME (Print): Chip Markovich
SIGNATURE:

cont.

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT122B **10 28 20**

Sample Date: 10 / 28 / 2020
Sample Time: 1425

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: Activity End:

Weather:

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Well Depth: _____ feet (from top of well casing) Water Depth: _____ (from top of well casing) feet using Interface Probe (measuring device)

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet

0.0

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: YSI Pro DSS

Purge Vol. (gal)	~~1417~~ 2.0	2.25	2.50				
Time	1417	1420	1423				
Temperature (C°)	13.5	13.6	13.8				
Cond at 25°C (mS/cm)	0.651	0.652	0.652				
DO (mg/l)	2.06	1.75	1.50				
pH (Units)	7.36	7.36	7.37				
ORP (mV)	-185.3	-187.6	-191.2				
Turb (NTU)	7.25	5.21	6.5				
Volume Purged (gal)							

Water Appearance (describe color, clarity odor:)

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor):

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print) Chip Markovich

SIGNATURE:

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-122A 10 28 20

Sample Date: 10 / 28 / 2020

Sample Time: 1340

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1305 Activity End:

Weather: clear, sunny, ≈50°F, last precip <24 hrs

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Top of Casing 755.50 feet (from top of well casing) Water Depth: (from top of well casing) feet using Interface Probe (measuring device) Shallow Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Depth to Water in feet: 755.5

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: YSI Pro DSS

Purge Vol. (gal)	≈0.25	≈0.5	≈0.75	≈1.0	≈1.25	≈1.5	≈1.75
Time	1325	1323	1326	1329	1332	1335	1338
Temperature (C°)	~~14.6~~ 14.0	13.30	14.0	14.1	14.3	14.7	14.8
Cond at 25°C (mS/cm)	1.289	1.262	1.250	1.249	1.247	1.245	1.245
DO (mg/l)	4.79	2.91	2.06	2.00	1.82	1.54	1.44
pH (Units)	6.92	6.88	6.87	6.87	6.88	6.88	6.88
ORP (mV)	-150.6	-150.7	-164.8	-166.2	-171.6	-176.1	-177.1
Turb (NTU)	69.6	16.4	7.69	7.76	6.36	4.94	4.65
Volume Purged (gal)		≈1.75					

Water Appearance (describe color, clarity odor): clear, no odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear, no odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

sampled 1340

NAME (Print): Chip Markovich

SIGNATURE: Chip Markovich

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-106A 10 28 20

Sample Date: 10 / 28 / 2020
Sample Time: 1220

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1150 Activity End: 1235

Weather: clear, sunny, ~50°F, last precip <24 hrs

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Top of Casing 754.90 feet (from top of well casing) Water Depth: _____ feet (from top of well casing) using Interface Probe (measuring device) Shallow Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Depth to Water in feet: 754.9

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: YSI Pro DSS

Purge Vol. (gal)	0.25	0.75	≈1.0	≈1.25	≈1.5	≈2.0	≈2.25
Time	1157	1204	1207	1210	1213	1216	1219
Temperature (C°)		14.0	14.4	14.5	14.6	14.7	14.7
Cond at 25°C (mS/cm)		0.630	0.668	0.656	0.659	0.664	0.664
DO (mg/l)		5.45	2.87	2.53	2.34	2.30	2.12
pH (Units)		7.35	7.28	7.30	7.31	7.32	7.32
ORP (mV)		-112.3	-117.3	-116.3	-114.4	-112.5	-110.7
Turb (NTU)	1000+	125.6	31.6	20.1	11.8	7.4	5.56
Volume Purged (gal)	9.27	≈2.5					9.28

Water Appearance (describe color, clarity odor:) Brown, very turbid no odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear, no odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

Let well purge for ≈5 min to clear sediment

NAME (Print): chip

SIGNATURE: chip Markovich

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-106C 10 28 20

Sample Date: 10 / 28 / 2020

Sample Time: 1035

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN

Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1000

Activity End: 1055

Weather: clear, sunny, little wind, ~50, last precip <24 hrs

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Top of Casing 749.44 feet (from top of well casing)

Water Depth: _____ feet (from top of well casing) using Interface Probe (measuring device)

Deep Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Depth to Water in feet: 749.4

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: YSI Pro DSS

Purge Vol. (gal)	0.25	~0.5	<1.00	~1.0	~1.25	~1.5	
Time	1015	1020	1023	1027	1030	1033	
Temperature (C°)	11.6	11.9	12.0	12.4	12.2	12.4	
Cond at 25°C (mS/cm)	0.431	0.429	0.429	0.428	0.427	0.426	
DO (mg/l)	6.86	3.60	2.86	2.20	1.99	1.80	
pH (Units)	7.36	7.40	7.45	7.52	7.53	7.56	
ORP (mV)	-72.7	-117.6	-133.6	-152.6	-160.6	-168.7	
Turb (NTU)	3.29	2.37	2.20	1.98	1.83	1.92	
Volume Purged (gal)	11.06						

Water Appearance (describe color, clarity odor:) clear, no odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear, no odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

Sampled 1035

NAME (Print): Chip Markovich

SIGNATURE: Chip

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-106B 10 2 8 20

Sample Date: 10 / 28 / 2020

Sample Time: 1138

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1100 Activity End:

Weather: Clear, sunny, little wind, ≈50°F, last precip ~24 hrs

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Top of Casing 755.19 feet (from top of well casing) Water Depth: (from top of well casing) feet using Interface Probe (measuring device) Intermediate Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Depth to Water in feet: 755.2

- [ ] .041 gal/ft (1 in)
- [ ] .09 gal/ft (1.5 in)
- [ ] .16 gal/ft (2 in)
- [ ] .65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: YSI Pro DSS

Purge Vol. (gal)	<0.25	≈0.5	≈0.75	1.0	1.25	1.5	
Time	1121	1124	1127	1130	1133	1136	
Temperature (C°)	11.9	12.2	12.3	12.7	12.8	12.8	
Cond at 25°C (mS/cm)	0.682	0.673	0.669	0.667	0.668	0.670	
DO (mg/l)	5.50	3.20	2.45	1.74	1.60	1.47	
pH (Units)	7.16	7.20	7.20	7.23	7.24	7.26	
ORP (mV)	-284.4	-304.8	-309.8	-307.4	-305.5	303.9	
Turb (NTU)	6.51	37.2	23.4	7.64	5.20	3.07	

Volume Purged (gal)

Water Appearance (describe color, clarity odor:) clear, odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor):

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

Sampled 1138

NAME (Print): Chip Markovich

SIGNATURE:

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-102B 10 27 20

Sample Date: 10 / 27 / 2020
Sample Time: 16:37

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN
Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 16:10
Activity End: 16:50

Weather: Cloudy, overcast, little wind, ≈40°F last precip <24 hrs

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-Up

WATER LEVEL/WELL DATA

Top of Casing 759.69 feet (from top of well casing)
Water Depth: _____ feet (from top of well casing) using Interface Probe (measuring device)
Intermediate Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Depth to Water in feet: 759.7

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: YSI Pro DSS

Purge Vol. (gal)	<0.25	≈0.5	≈0.75	≈1.0	≈1.25	≈1.5	Sampled
Time	16:19	16:22	16:26	1629	1632	1635	1637
Temperature (C°)	11.3	11.8	12.2	12.4	12.3	12.4	
Cond at 25°C (mS/cm)	0.786	0.782	0.783	0.783	0.791	0.795	
DO (mg/l)	4.69	2.93	2.17	1.89	1.60	1.53	
pH (Units)	7.22	7.24	7.28	7.30	7.41	7.45	
ORP (mV)	-232.0	-257.6	-276.5	-285.6	-296.3	-297.6	
Turb (NTU)	1.62	2.19	2.07	1.86	1.96	1.69	
Volume Purged (gal)	14.48	≈	14.48				

Water Appearance (describe color, clarity odor:) clear, no odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear, no odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected): WT-102B 102720 MS/D

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

sampled 16:37

NAME (Print): Chip Markovich
SIGNATURE: [signature]

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-102A 10 27 20

Sample Date: 10 / 27 / 2020

Sample Time: 1550

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN

Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1500

Activity End: 1405

Weather: cloudy, overcast, little sun, rain, last precip event <24 hrs. =40°F

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Top of Casing 759.59 feet (from top of well casing)

Water Depth: (from top of well casing) feet using Interface Probe (measuring device) Shallow Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Depth to Water in feet: 759.6

- [ ] .041 gal/ft (1 in)
- [ ] .09 gal/ft (1.5 in)
- [x] .16 gal/ft (2 in)
- [ ] .65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: Pro DDS YSI

Purge Vol. (gal)	<0.25	<0.5	<0.75	<1.0	=1.25	=1.5	=1.75
Time	1531	1534	1537	1540	1543	1546	1548
Temperature (C°)	13.9	14.8	15.1	15.2	15.3	15.3	15.4
Cond at 25°C (mS/cm)	1.055	1.050	1.050	1.051	1.047	1.043	1.043
DO (mg/l)	4.72	3.78	3.41	3.16	2.98	2.91	2.87
pH (Units)	7.28	7.21	7.22	7.27	7.30	7.31	7.32
ORP (mV)	176.8	140.7	112.8	55.7	27.9	26.5	25.6
Turb (NTU)	153.4	70.6	41.9	23.7	10.1	7.29	5.7
DTW Volume Purged (gal)	11.61	=2.0	11.61			11.61	11.61

Water Appearance (describe color, clarity odor:) cloudy, brown, no odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): Clear, no odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

Sampled 1550

NAME (Print): Chip Markovich

SIGNATURE:

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-122C 10 28 20
Sample Date: 10 / 28 / 2020
Sample Time: 1500

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1435 Activity End:

Weather: clear, sunny, little wind, ≈50°F last precip 2 days

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Top of Casing 755.65 feet (from top of well casing) Water Depth: _____ feet (from top of well casing) using Interface Probe (measuring device) Intermediate Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Depth to Water in feet: 755.7

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: YSI Pro DSS

Purge Vol. (gal)	0.25	≈0.5	≈0.75	≈1.0	≈1.33	1.66	
Time	1444	1447	1450	1453	1456	1459	
Temperature (C°)	13.0	12.9	13.0	13.3	13.4	13.4	
Cond at 25°C (mS/cm)	0.599	0.598	0.596	0.595	0.595	0.594	
DO (mg/l)	4.64	2.74	1.92	1.54	1.34	1.15	
pH (Units)	7.04	7.07	7.10	7.10	7.10	7.12	
ORP (mV)	-287.0	-300.2	-303.2	-306.2	-308.0	-310.1	
Turb (NTU)	6.0	3.7	1.62	0.00	0.0	0.0	

Volume Purged (gal) ≈ 2.0

Water Appearance (describe color, clarity odor:) clear, odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear, odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

Sampled 1500

NAME (Print): Chip Markovich

SIGNATURE: Chip Ch

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-121B 10 20

Sample Date: / / 2020

Sample Time:

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: Activity End:

Weather:

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Top of Casing 755.12 feet (from top of well casing) Water Depth: (from top of well casing) feet using Interface Probe (measuring device) Intermediate Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Depth to Water in feet 755.1

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used:

Purge Vol. (gal)							
Time							
Temperature (C°)							
Cond at 25°C (mS/cm)							
DO (mg/l)							
pH (Units)							
ORP (mV)							
Turb (NTU)							
Volume Purged (gal)							

Water Appearance (describe color, clarity odor:)

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor):

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

Could not locate
possibly destroyed

NAME (Print) Chip Markovich

SIGNATURE: Chip Markovich

Scanned with CamScanner

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-121A 10 20

Sample Date: / / 2020

Sample Time:

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: Activity End:

Weather:

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Top of Casing 754.33 feet (from top of well casing) Water Depth: (from top of well casing) feet using Interface Probe (measuring device) Shallow Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Depth to Water in feet 754.3

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used:

Purge Vol. (gal)							
Time							
Temperature (C°)							
Cond at 25°C (mS/cm)							
DO (mg/l)							
pH (Units)							
ORP (mV)							
Turb (NTU)							

Volume Purged (gal)

Water Appearance (describe color, clarity odor:)

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor):

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

Could not locate
possibly buried

NAME (Print) Chip Markovich

SIGNATURE:

Scanned with CamScanner

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-120B 10 27 20

Sample Date: 10 / 27 / 2020

Sample Time: 1550

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN

Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1450

Activity End: 1605

Weather: 40 rainy

Well Type and Location: On-Site / Off-Site / Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Top of Casing 755.88 feet (from top of well casing)

Water Depth: 9.41 feet (from top of well casing) using Interface Probe (measuring device)

Intermediate Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Depth to Water in feet: 755.9

- [ ] .041 gal/ft (1 in)
- [ ] .09 gal/ft (1.5 in)
- [x] .16 gal/ft (2 in)
- [ ] .65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: ProDSS (YSI)

Purge Vol. (gal)	0.2	0.3	0.4	0.5	0.6	0.7	0.8
Time	1527	1530	1533	1536	1539	1542	1545
Temperature (C°)	12.0	12.5	12.5	12.6	12.6	12.6	12.6
Cond at 25°C (mS/cm)	0.515	0.515	0.511	0.506	0.505	0.504	0.504
DO (mg/l)	5.37	3.38	2.66	2.35	2.26	2.19	2.16
pH (Units)	6.62	6.49	6.56	6.64	6.67	6.69	6.67
ORP (mV)	68.9	46.3	34.8	27.4	24.8	22.2	21.0
Turb (NTU)	21.9	94.6	60.9	78.7	80.2	81.4	81.6
Volume Purged (gal)		0.8					

Water Appearance (describe color, clarity odor.): Clear, no odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes / No. If No, Explain:

Sample Water Appearance (color, clarity, odor): Clear, no odor

QA/QC Samples (circle): None Duplicate Equipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print): Bryan Allen

SIGNATURE: Bryan Allen

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: **WT-120A** **10 27 20**

Sample Date: 10 / 27 / 2020

Sample Time: 1730

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1658 Activity End: 1750

Weather: 40 cloudy

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Top of Casing 755.89 feet (from top of well casing) Water Depth: _____ feet (from top of well casing) using Interface Probe (measuring device) Intermediate Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Depth to Water in feet: 755.9

- [ ] .041 gal/ft (1 in)
- [ ] .09 gal/ft (1.5 in)
- [x] .16 gal/ft (2 in)
- [ ] .65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: YSI ProDSS

Purge Vol. (gal)	0.2	0.3	0.4	0.5	0.6	0.7	0.8
Time	1707	1710	1713	1716	1719	1722	1725
Temperature (C°)	12.1	13.0	13.0	12.7	12.7	12.7	12.8
Cond at 25°C (mS/cm)	0.561	0.571	0.573	0.592	0.646	0.651	0.654
DO (mg/l)	5.24	2.84	2.74	2.39	2.05	2.01	1.98
pH (Units)	6.71	6.67	6.68	6.71	6.84	6.85	6.89
ORP (mV)	36.0	8.5	6.2	-3.5	-22.9	-24.2	-26.6
Turb (NTU)	44.4	51.0	51.1	52.5	51.2	50.3	49.3
Volume Purged (gal)		0.8					

Water Appearance (describe color, clarity odor): clear, no odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear, no odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print): Bryan Allen

SIGNATURE: Bryan Allen

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-120C 10 28 20

Sample Date: 10 / 28 / 2020

Sample Time: 930

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN

Project No.: 1801906

Personnel Present: (Bryan Allen) / Chip Markovich / Thomas Bales

Activity Start: 830

Activity End: 1000

Weather: 35 Sunny

Well Type and Location: On-Site / (Off-Site) (Flush Mount) / Stick-up

WATER LEVEL/WELL DATA

Top of Casing 755.89 feet (from top of well casing)

Water Depth: [illegible] (from top of well casing) feet using Interface Probe (measuring device)

Shallow Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Depth to Water in feet: 755.9

- [ ] .041 gal/ft (1 in)
- [ ] .09 gal/ft (1.5 in)
- [X] .16 gal/ft (2 in)
- [ ] .65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic (Geosub)

FIELD PARAMETERS

Monitoring Equipment Used: YSI Pro DSS

Purge Vol. (gal)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
Time	904	907	910	913	916	919	922	925
Temperature (C°)	14.3	15.6	16.4	16.6	16.5	16.8	17.1	17.2
Cond at 25°C (mS/cm)	0.445	0.446	0.452	0.454	0.452	0.447	0.446	0.445
DO (mg/l)	6.21	4.67	4.22	3.67	3.50	3.15	3.09	3.06
pH (Units)	6.30	6.33	6.55	6.81	6.89	7.00	7.02	7.02
ORP (mV)	115.2	110.1	107	86.0	82.7	76.9	75.0	74.8
Turb (NTU)	4.9	2.6	2.4	2.8	2.6	5.2	5.4	5.5

Volume Purged (gal) 1.0

Water Appearance (describe color, clarity odor:) clear, No odor

SAMPLING PROCEDURES

Sampling Method same as purge method: (Yes) of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear, no odor

QA/QC Samples (circle): None (Duplicate) Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print): Bryan Allen

SIGNATURE: [signature]

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-114C 10 28 20

Sample Date: 10 / 28 / 2020

Sample Time: 1110

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1025 Activity End: 1125

Weather: 40 sunny

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Well Depth: _____ feet (from top of well casing) Water Depth: 16.09 (from top of well casing) feet using Interface Probe (measuring device)

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet: 0.0

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
X	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: YSI Pro DSS

Purge Vol. (gal)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1
Time	1046	1049	1052	1055	1058	1101	1104	1107
Temperature (C°)	10.3	11.4	11.5	11.8	11.9	11.9	12.0	12.0
Cond at 25°C (mS/cm)	0.520	0.549	0.557	0.561	0.562	0.565	0.561	0.566
DO (mg/l)	8.45	5.95	3.89	3.21	2.97	2.67	2.52	2.47
pH (Units)	6.81	6.69	6.70	6.73	6.75	6.79	6.82	6.84
ORP (mV)	126.3	105.8	80.5	65.4	57.3	46.7	42.1	41.6
Turb (NTU)	3.1	7.5	9.2	10.3	10.7	10.6	10.7	10.4
Volume Purged (gal)	0.1 16.09	1.0						

Water Appearance (describe color, clarity odor.): Clear, No odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes / of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): Clear, no odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print): Bryan Allen

SIGNATURE: By All

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-114A **10 28 20**

Sample Date: 10 / 28 / 2020

Sample Time: 1200

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1130 Activity End: 1215

Weather: 40 Sunny

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Well Depth: _____ feet (from top of well casing) Water Depth: 15.96 (from top of well casing) feet using Interface Probe (measuring device)

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet

0.0

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
Y	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: YSI ProDSS

Purge Vol. (gal)	0.2	0.3	0.4	0.5	0.6	0.7	
Time	1142	1145	1148	1151	1154	1157	
Temperature (C°)	14.8	15.8	16.0	16.0	16.0	16.1	
Cond at 25°C (mS/cm)	1.697	1.811	1.855	1.910	1.914	1.922	
DO (mg/l)	3.70	3.77	3.65	3.31	3.29	3.19	
pH (Units)	7.04	7.06	7.07	7.07	7.07	7.08	
ORP (mV)	33.3	23.9	19.4	15.4	15.2	14.9	
Turb (NTU)	13.2	4.8	2.8	1.2	1.3	1.1	

Volume Purged (gal) _____

Water Appearance (describe color, clarity odor:) Clear, no odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): Clear, no odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print) Bryan Allen

SIGNATURE: By All

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-114B 102820

Sample Date: 10/28/2020

Sample Time: 1250

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN

Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1220

Activity End: 1320

Weather: 45 Sunny

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Well Depth: _____ feet (from top of well casing)

Water Depth: 16.04 feet (from top of well casing) using Interface Probe (measuring device)

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Height of Water Column feet: 0.0

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
X	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: YSI ProDSS

Purge Vol. (gal)	0.2	0.3	0.4	0.5	0.6		
Time	1234	1237	1240	1243	1246		
Temperature (C°)	11.8	13.2	13.3	13.3	13.4		
Cond at 25°C (mS/cm)	0.619	0.616	0.615	0.615	0.614		
DO (mg/l)	5.54	2.86	2.78	2.72	2.60		
pH (Units)	7.21	7.18	7.18	7.19	7.19		
ORP (mV)	3.6	-10.6	-18.8	-22.8	-24.6		
Turb (NTU)	2.2	0.4	0.6	0.3	0.4		
Volume Purged (gal)		0.7					

Water Appearance (describe color, clarity odor:) Clear, no odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): Clear, no odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print) Bryan Allen

SIGNATURE: Bryan Allen

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-101C 10 28 20

Sample Date: 10/28/2020
Sample Time: 1515

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN
Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1420
Activity End: 1530

Weather: 50 sunny

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Top of Casing 755.99 feet (from top of well casing)
Water Depth: 15.68 (from top of well casing) feet using Interface Probe (measuring device)
Deep Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Depth to Water in feet: 756.0

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
✓	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: YSI ProDSS

Purge Vol. (gal)	0.3	0.5	0.7	0.9	1.1	1.3	1.5	1.7
Time	1449	1452	1455	1458	1501	1504	1507	1510
Temperature (C°)	14.0	14.0	14.3	14.1	13.8	13.7	13.7	13.8
Cond at 25°C (mS/cm)	0.471	0.468	0.468	0.468	0.467	0.467	0.469	0.468
DO (mg/l)	6.09	4.16	3.54	2.80	2.61	2.35	2.26	2.22
pH (Units)	7.60	7.56	7.58	7.62	7.63	7.64	7.65	7.66
ORP (mV)	6.1	1.9	-6.2	-38.3	-52.0	-73.2	-78.4	-82.4
Turb (NTU)	7.9	10.8	13.4	18.2	21.4	27.9	31.1	32.4

Volume Purged (gal) 1.7

Water Appearance (describe color, clarity odor:) clear, no odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear, no odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print): Bryan Allen
SIGNATURE: By All

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-101E 10 28 20

Sample Date: 10 / 28 / 2020
Sample Time: 1620

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN
Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1540
Activity End: 1630

Weather: 50 sunny

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Top of Casing 756.05 feet (from top of well casing)
Water Depth: 15.68 feet (from top of well casing) using Interface Probe (measuring device)
Intermediate Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Depth to Water in feet: 756.1

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
X	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: YSI Pro DSS

Purge Vol. (gal)	0.2	0.4	0.6	0.8	1.1	1.3	1.5
Time	1556	1559	1602	1605	1608	1611	1614
Temperature (C°)	13.7	13.9	14.0	14.0	13.9	13.9	13.9
Cond at 25°C (mS/cm)	0.606	0.623	0.623	0.627	0.628	0.632	0.632
DO (mg/l)	7.42	3.49	2.87	2.42	2.20	1.97	1.89
pH (Units)	7.01	6.97	6.96	6.95	6.95	6.94	6.94
ORP (mV)	-4.8	-112.4	-145.1	-187.2	-198.4	-202.9	-205.4
Turb (NTU)	13.6	8.5	9.7	9.2	8.7	8.4	8.4

Volume Purged (gal): 1.7

Water Appearance (describe color, clarity odor.): clear, no odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear no odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print): Bryan Allen
SIGNATURE: By [illegible]

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: **WT-101D** **1028 20**

Sample Date: 10/28/2020
Sample Time: 1740

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1700 Activity End: 1750

Weather: So Cloudy

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Top of Casing 756.02 feet (from top of well casing) Water Depth: 15.96 feet (from top of well casing) using Interface Probe (measuring device) Intermediate Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Depth to Water in feet: 756.0

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
8	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: YSI Pro DSS

Purge Vol. (gal)	0.2	0.3	0.4	0.6	0.8	1.0	
Time	1720	1723	1726	1729	1732	1735	
Temperature (C°)	13.0	13.8	14.1	14.4	14.4	14.4	
Cond at 25°C (mS/cm)	0.568	0.571	0.577	0.606	0.609	0.610	
DO (mg/l)	4.75	3.92	3.30	2.67	2.61	2.58	
pH (Units)	7.45	7.38	7.34	7.39	7.39	7.39	
ORP (mV)	-106.8	132.6	-149.0	-175.0	-179.4	182.	
Turb (NTU)	3.4	2.2	1.8	0.6	0.5	0.8	
Volume Purged (gal)		1.0					

Water Appearance (describe color, clarity odor:) Clear Oder

SAMPLING PROCEDURES

Sampling Method same as purge method: No. If No, Explain:

Sample Water Appearance (color, clarity

QA/QC Samples (circle): Dup Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETER

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print): Bryan Allen

SIGNATURE: By All

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: **WT-101A** **102820**

Sample Date: 10/28/2020

Sample Time: 1810

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1755 Activity End: 1820

Weather: 50 sunny

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Top of Casing 755.94 feet (from top of well casing) Water Depth: 15.93 (from top of well casing) feet using Interface Probe (measuring device) Shallow Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Depth to Water in feet: 755.9

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
X	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used:

Purge Vol. (gal)	0.2	0.3	0.4	0.5	0.7		
Time	1757	1800	1803	1806	1809		
Temperature (C°)	16.6	17.0	16.8	16.7	16.6		
Cond at 25°C (mS/cm)	1.157	1.212	1.195	1.196	1.195		
DO (mg/l)	4.31	3.14	2.61	2.40	2.32		
pH (Units)	6.13	6.34	6.39	6.39	6.40		
ORP (mV)	-39.2	-44.0	-52.9	-54.1	-57.6		
Turb (NTU)	5.4	1.0	1.3	1.1	1.4		
Volume Purged (gal)		0.7					

Water Appearance (describe color, clarity odor.) clear, odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes or No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print): Bryan Allen

SIGNATURE: Bryan Allen

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-115B 10 29 20

Sample Date: 10 / 29 / 2020

Sample Time: 945

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN

Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 840

Activity End: 950

Weather: 40 Cloudy

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Top of Casing 755.91 feet (from top of well casing)

Water Depth: 13.62 (from top of well casing) feet using Interface Probe (measuring device)

Shallow Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Depth to Water in feet: 755.9

- [ ] .041 gal/ft (1 in)
- [ ] .09 gal/ft (1.5 in)
- [x] .16 gal/ft (2 in)
- [ ] .65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: YSI ProDSS

Purge Vol. (gal)	0.2	0.4	0.6	0.8	1.0	1.2	
Time	927	930	933	936	939	942	
Temperature (C°)	12.6	13.6	14.2	14.2	14.2	14.2	
Cond at 25°C (mS/cm)	1.746	1.994	2.071	2.102	2.106	2.110	
DO (mg/l)	5.24	2.34	1.22	0.86	0.84	0.80	
pH (Units)	6.65	6.60	6.60	6.60	6.61	6.61	
ORP (mV)	-275.1	-300.1	-322.8	-329.7	-330.4	-331.8	
Turb (NTU)	1.3	3.2	3.4	3.5	3.2	3.4	
Volume Purged (gal)		1.2					

Water Appearance (describe color, clarity odor:) Clear, Odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print): Bryan Allen

SIGNATURE: Bryan Allen

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-115C 1029 20
Sample Date: 10 / 29 / 2020
Sample Time: 1020

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 955 Activity End: 1025

Weather: 40 Cloudy

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Top of Casing 756.06 feet (from top of well casing) Water Depth: 13.11 (from top of well casing) feet using Interface Probe (measuring device) Intermediate Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Depth to Water in feet: 756.1

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
X	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: YSI ProDSS

Purge Vol. (gal)	0.2	0.4	0.6	0.8	1.0		
Time	1004	1007	1010	1013	1016		
Temperature (C°)	11.9	13.3	13.3	13.4	13.5		
Cond at 25°C (mS/cm)	0.625	0.701	0.731	0.735	0.740		
DO (mg/l)	1.40	1.11	0.86	0.83	0.80		
pH (Units)	7.85	7.55	7.56	7.53	7.50		
ORP (mV)	-218.4	-215.6	-213.2	-207.9	-207.6		
Turb (NTU)	685	124	6.2	6.0	6.2		
Volume Purged (gal)		1.0					

Water Appearance (describe color, clarity odor.): cloudy, odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): cloudy, odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print): Bryan Allen

SIGNATURE: Bryan Allen

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-115A 102920

Sample Date: 10 / 29 / 2020

Sample Time: 1100

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN

Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1030

Activity End: 1115

Weather: 45 partly cloudy

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Top of Casing 755.99 feet (from top of well casing)

Water Depth: 13.62 feet (from top of well casing) using Interface Probe (measuring device)

Shallow Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Depth to Water in feet: 756.0

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
X	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: YSI ProDSS

Purge Vol. (gal)	0.2	0.4	0.6	0.8	1.0		
Time	1040	1043	1046	1049	1052		
Temperature (C°)	13.6	16.5	16.8	17.0	17.2		
Cond at 25°C (mS/cm)	0.524	0.594	0.601	0.606	0.614		
DO (mg/l)	1.95	0.98	0.94	0.86	0.84		
pH (Units)	7.30	6.84	6.73	6.69	6.67		
ORP (mV)	-76.2	-174.4	-171.2	-170.0	-171.7		
Turb (NTU)	1.2	2.6	2.3	2.2	2.5		
Volume Purged (gal)		1.0					

Water Appearance (describe color, clarity odor:) clear, odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear, odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print): Bryan Allen

SIGNATURE: B. Allen

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-E3 10 29 20

Sample Date: 10 / 29 / 2020

Sample Time: 1230

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN

Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1145

Activity End: 1250

Weather: 50 Sunny

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Top of Casing 756.01 feet (from top of well casing)

Water Depth: 12.45 (from top of well casing) feet using Interface Probe (measuring device) Deep Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Depth to Water in feet: 756.0

- [ ] .041 gal/ft (1 in)
- [ ] .09 gal/ft (1.5 in)
- [ ] .16 gal/ft (2 in)
- [ ] .65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: YSI Pro DSS

Purge Vol. (gal)	0.1	0.3	0.5	0.7	0.9		
Time	1216	1219	1222	1225	1228		
Temperature (C°)	11.9	12.0	12.0	11.9	12.1		
Cond at 25°C (mS/cm)	0.502	0.521	0.523	0.524	0.525		
DO (mg/l)	3.09	1.98	1.62	1.21	1.16		
pH (Units)	7.42	7.40	7.40	7.39	7.40		
ORP (mV)	-200.7	-202.9	-208.4	-215.7	-217.4		
Turb (NTU)	4.0	4.0	4.0	3.8	3.9		

Volume Purged (gal): 1.0

Water Appearance (describe color, clarity odor:) clear, no odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear, no odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print): Bryan Allen

SIGNATURE: Bry All

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-116A 10 29 20

Sample Date: 10 / 29 / 2020

Sample Time: 1335

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1300 Activity End: 1350

Weather: 50 sunny

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Top of Casing 756.64 feet (from top of well casing) Water Depth: 11.62 (from top of well casing) feet using Interface Probe (measuring device) Shallow Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Depth to Water in feet: 756.6

- [ ] .041 gal/ft (1 in)
- [ ] .09 gal/ft (1.5 in)
- [x] .16 gal/ft (2 in)
- [ ] .65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: YSI ProDSS

Purge Vol. (gal)	0.2	0.3	0.4	0.5	0.7		
Time	1320	1323	1326	1329	1332		
Temperature (C°)	16.2	16.6	16.8	16.7	16.7		
Cond at 25°C (mS/cm)	2.461	2.523	2.607	2.631	2.642		
DO (mg/l)	2.86	1.68	1.04	1.00	0.93		
pH (Units)	6.59	6.56	6.56	6.56	6.56		
ORP (mV)	-80.9	-96.5	-116.6	119.6	-122.5		
Turb (NTU)	14.3	8.8	7.5	6.4	4.7		
Volume Purged (gal)							

Water Appearance (describe color, clarity odor:) clear No odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear, no odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print) Bryan Allen

SIGNATURE: By All

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-111A 10 29 20

Sample Date: 10 / 29 / 2020

Sample Time: 1510

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN

Project No.: 1801906

Personnel Present: Bryan Allen / Chip Markovich / Thomas Bales

Activity Start: 1420

Activity End: 1530

Weather: So Cloudy

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Top of Casing 755.76 feet (from top of well casing)

Water Depth: 13.2 (from top of well casing) feet using Interface Probe (measuring device) Shallow Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Depth to Water in feet: 755.8

- [ ] .041 gal/ft (1 in)
- [ ] .09 gal/ft (1.5 in)
- [x] .16 gal/ft (2 in)
- [ ] .65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: YSI ProDSS

Purge Vol. (gal)	0.2	0.3	0.4	0.5	0.6	0.7	0.8
Time	1448	1451	1454	1457	1500	1503	1506
Temperature (C°)	12.6	13.5	14.1	14.2	14.3	14.4	14.4
Cond at 25°C (mS/cm)	0.895	0.795	0.795	0.788	0.782	0.778	0.768
DO (mg/l)	4.61	1.93	1.46	1.32	1.26	1.19	1.13
pH (Units)	7.46	6.85	6.72	6.68	6.66	6.64	6.63
ORP (mV)	-122.2	-137.5	-117.8	-109.8	-106.0	-102.4	-101.4
Turb (NTU)	43.4	60.3	31.2	22.0	14.6	13.2	11.7
Volume Purged (gal)		0.8					

Water Appearance (describe color, clarity odor:) Lt Brown, no odor

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): Clear no odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print): Bryan Allen

SIGNATURE: Bryan Allen

11/12/2020 Bayer HIMCO

Weather: cool, ~ 40*F, windy

Scope: Finding wells

7:15 loaded truck, left for rental company
7:45 at rental company, picked up metal detector, left to site
8:30 at site, held HSSE meeting, talked to Rolly Williams employee
8:45 searched for WT-121A and WT 121B
9:45 Found WT-121A and WT-121B

90 feet to north fence
95 feet to northeast powerpole
85 feet from power pole near gated entrance
115 feet from gas meter

10:15 left site
10:30 stopped by Rolly Williams store. Talked to owner, Mr Schwartz
Will get access agreement in place overnext few months
rschwartz@RWPC.com

11:30 Dropped off rental equipment

11/12/2020 Bayer HIMCO

Weather: cool, ~ 40*F, windy

Scope: Sampling wells

10:00 loaded truck, left for site
10:30 arrived at site, set up on WT-121A and WT-121B
Held HSSE meeting, set up, decon equipment
10:40 collected equipment blank from pump prior to sampling wells

10:50 set up on WT-121B
11:08 began to purge well
11:25 Sampled WT-121B, decon, moved to WT-121A

11:35 set up on WT-121B
11:45 began to purge well
12:05 sampled WT-121A, deconed
collected equipment

Took purge water to site, dumped.

1 drum on-site

12:45 left site
13:15 back at office

16:00 packed samples
16:30 dropped smaples off

All samples on ice after collection

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-121A 111920

Sample Date: 19-Nov-20
Sample Time: 12:05

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN
Project No.: 1801906

Personnel Present: Chip Markovich

Activity Start: 11:35
Activity End: 12:15

Weather: cool, ~50*F, sunny, windy

Well Type and Location: On-Site / Off-Site Flush Mount / Stick-up

WATER LEVEL/WELL DATA

Top of Casing 754.33 feet (from top of well casing)
Water Depth: 7.39 (from top of well casing) feet using Interface Probe (measuring device) Shallow Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Depth to Water in feet: 746.9

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
x	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: YSI Pro DSS

Purge Vol. (gal)	0.25	0.5	0.75	1	1.25	1.5	
Time	11:45	11:49	11:52	11:55	11:58	12:01	
Temperature (C°)	13.6	13.7	13.8	13.9	13.9	14	
Cond at 25°C (mS/cm)	0.795	0.808	0.82	0.831	0.837	0.84	
DO (mg/l)	3.69	2.37	1.91	1.64	1.52	1.39	
pH (Units)	7.5	7.51	7.52	7.53	7.53	7.54	
ORP (mV)	-227.1	-232.2	-234.2	-236.2	-235.9	-236.5	
Turb (NTU)	33.67	24.5	14.13	10.08	9.47	7.34	
Volume Purged (gal)		1.75					

Water Appearance (describe color, clarity odor:) Gray hue, cloudy

SAMPLING PROCEDURES

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): gray, no odor

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

NAME (Print)

SIGNATURE:

Groundwater & Environmental Services, Inc.
1965 East Main Street, Box 466, Danville, Indiana

Sample No.: WT-121B 111920

Sample Date: 19-Nov-20
Sample Time: 11:25

SITE/SAMPLE LOCATION

Site Name: HIMCO Landfill - CR 10 and John Weaver Parkway, Elkhart, IN
Project No.: 1801906

Personnel Present: Chip Markovich

Activity Start: 10:50
Activity End: 11:35

Weather: cool, ~50*F, sunny, windy

Well Type and Location: Off-Site Flush Mount

WATER LEVEL/WELL DATA

Top of Casing 755.12 feet (from top of well casing)
Water Depth: 6.59 (from top of well casing) feet using Interface Probe (measuring device)
Intermediate Well

Measuring Device Decontamination Procedure: Liquidnox & DI Rinse

PURGING PROCEDURES

Depth to Water in feet: 748.5

	.041 gal/ft (1 in)
	.09 gal/ft (1.5 in)
x	.16 gal/ft (2 in)
	.65 gal/ft (4 in)

Purge Method (circle): 1" Bailer 3" Bailer Peristaltic Geosub

FIELD PARAMETERS

Monitoring Equipment Used: YSI Pro DSS

Purge Vol. (gal)	0.25	0.5	0.75	1	1.25	1.5	
Time	11:08	11:11	11:14	11:17	11:20	11:23	
Temperature (C°)	12.8	13.2	13.2	13.3	13.3	123.3	
Cond at 25°C (mS/cm)	1.21	1.203	1.201	1.189	1.197	1.196	
DO (mg/l)	2.68	1.99	1.77	1.57	1.46	1.41	
pH (Units)	7.36	7.34	7.34	7.33	7.33	7.32	
ORP (mV)	-270	-279.3	-282.3	-287.3	-290.3	-292.7	
Turb (NTU)	2.6	2.88	2.37	2.63	2.22	1.57	
Volume Purged (gal)		1.75					

Water Appearance (describe color, clarity odor:) clear, slight odor

SAMPLING PROCEDURES

###

Sampling Method same as purge method: Yes of No. If No, Explain:

Sample Water Appearance (color, clarity, odor): clear, odor, black flakes in water

QA/QC Samples (circle): None Duplicate Ewuipment Blank MS/MSD ID (if collected):

ANALYTICAL PARAMETERS

Analysis	Method	No. of Bottles	Volume / Type		Preservative	Field Filtered?	Cool to 4°C?
VOCs	8260B	3	40ml	VOA	HCl	N	Y
Metals, Dissolved	6010B	1	500ml	Poly	HNO3	N	Y
Arsnic	6020	1	500ml	Poly	HNO3	N	Y
Chemistry	300	1	500ml	Poly	Unpres	N	Y

OTHER OBSERVATIONS

took EB from pump WT-121B 111920 @ 10:40

NAME (Print) Chip Markovich

SIGNATURE:

Appendix C – QA/QC Validation Report

Groundwater & Environmental Services, Inc.

Data Quality Summary Report for Himco Site
2019 and 2020 Sampling Events

Prepared for

HIMCO Site Trust

100 Bayer Road
Pittsburgh, PA 15205

Prepared by

Groundwater & Environmental Services, Inc.

1737 Georgetown Road, Unit E
Hudson, Ohio 44236

and

Groundwater & Environmental Services, Inc.
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Blacksburg, Virginia 24060

January 2021

The GES Advantage

Knowledge. Innovation. Results

1. Data Review Criteria

Groundwater & Environmental Services, Inc. (GES) reviewed the analytical data from the October 2019 and October and November 2020 **Semi-Annual Groundwater Monitoring Event, Himco Site, Elkhart, Indiana site** in order to determine accuracy and precision for each analysis as well as to determine overall data usability. Items reviewed for data quality included holding times, storage temperature, method and field blank results, field and laboratory duplicate precision, surrogate or system monitoring compound recoveries, matrix spike/matrix spike duplicate (MS/MSD) and laboratory control spike (LCS) recoveries. All data necessary to complete the data review were provided by the laboratory.

The samples were sent to Test America North Canton Division and analyzed for

- Volatile Organic Compounds by SW-846 Method 8260C
- 6010C Metals (ICP) SW846
- 6020A Metals (ICP/MS) SW846
- 300.0 Anions, Ion Chromatography

The analytical results were reviewed using laboratory acceptance criteria and procedures and guidelines contained in the following documents:

- "HIMCO RD/RA Quality Assurance Project Plan (QAPP) and Addendum No. 1", August 2010
- United States Environmental Protection Agency (USEPA) National Functional Guidelines for Inorganic Superfund Methods Data Review, revised January 2017;
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, revised January 2017.

2. Data Qualifiers Assigned

Table 1 – Data Qualifications

Sample ID	Analyte	Qualifier	Reason for qualification
GW-WT-106C 102319 GW-WT-111A 102319 GW-WT120A 102319 GW-WT-122C 102319	Arsenic	U at RL	Positive equipment blank
GW-WT115A-102419	Chloride	U at detection level	Positive equipment blank
GW-WT121A 102319	Chloride	J+	MS recovery high
GW-WT-106C 102319 GW-WT-122B 102319	Chloride Calcium	U at detection level	Positive equipment blank
GW-WT-111A 102319 GW-WT120A 102319 GW-WT120C 102319 GW-WT-120C 102319-DUP GW-WT-122C 102319 GW-WW-122A 102319 GW-WT-106C 102319	Chloride Sulfate Calcium	U at detection level	Positive equipment blank
GW-WT120B 102319 GW-WT121B 102319 GW-WT121A 102319	Chloride Sulfate Calcium Arsenic	U at detection level	Positive equipment blank
GW-WT-120B 102720 GW-WT-101C 102820 GW-WT-120C 102820 GW-WT-120C 102820D	Sodium	U at detected concentration	Positive method blank
GW-WT120C 102319	Sodium	U at RL	Positive blank
GW-WT-106C 102319	Sulfate	U at RL	Positive equipment blank
GW-WT116A 102920 GW-WT116A-102419	Volatiles	J-/UJ-	Insufficient preservation

3. Data Quality

Data was overall of good quality and usable. There were no reported analytical issues except those detailed below.

Some of the metal analyses practical quantitation limits fall below the laboratories verified quantitation limit, and calibration standards are not run at these levels.

3.1. Holding Times

Analyses were run within holding time for the volatile analyses. All analyses were run within the 14-day window allowed by the EPA guidance.

3.2. Storage Temperature and Preservation

Samples arrived at 2.5°C - 4.2°C and were subsequently stored below 6°C per EPA requirements. Two samples arrived with a pH above 2. The samples were analyzed within the 14 days for preserved samples, but not within the 7 days for unpreserved. Volatiles for these two samples are qualified as estimated with a possible low bias due to biological degradation. Qualifications are detailed in **Table 1.**

3.3. Method and Field Blank Result

Method blanks and equipment blanks had detections:

- Analysis Batch: 458984: sodium reported a detection of 1560 µg/L. All associated samples with concentrations less than 10x are qualified as non-detect.
- Analysis Batch: 407997: sodium reported a detection of 1070 µg/L. All associated samples with concentrations less than 10x are qualified as non-detect.
- Analysis Batch: 459250: calcium reported a detection of 361 µg/L. All associated samples with concentrations less than 10x are qualified as non-detect.
- GW-WT120B 102319-EB: Chloride reported 14 µg/L, sulfate reported 58 µg/L, calcium reported 93000 µg/L, sodium reported 4800 µg/L, and arsenic reported 2.1 µg/L. All associated samples with concentrations less than 10x are qualified as non-detect.

3.4. Field and Laboratory Duplicate Precision

All duplicate samples showed precision within criteria.

3.5. Surrogate Recoveries

All surrogates recovered within laboratory-established criteria. Dissolved gases did not have surrogates, but the LCS and MS samples indicated good recoveries.

3.6. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Recoveries and precision were within recommended limits for the matrix spikes, with the following exceptions:

- GW-WT121A 102319 reported a high recovery for chloride. The data in the sample is qualified as estimated with a possible high bias "J+"
- Sulfate recovered low in GW-WT115A-102419. The original concentration was greater than four times the spiking concentration, and, per EPA guidance, the calculation does not indicate an issue with the accuracy.

3.7. Laboratory Control Spike (LCS) Recoveries

Recoveries and precision were within recommended limits for the laboratory control spikes.