November 30, 2017 Reference No. 039611

Mr. Rosauro del Rosario
EPA Project Manager/Coordinator
United States Environmental Protection Agency (USEPA) Region 5
77 West Jackson Boulevard
Chicago, Illinois
60604

Dear Mr. del Rosario:

Re: 2017 Annual Groundwater Monitoring Report
Himco Site, Elkhart, Indiana (Site)

Please find attached the 2017 Annual Groundwater Monitoring Report for the Himco Site. GHD has prepared this submittal on behalf of the Himco Site Trust for your review and approval. An electronic copy of the report is also provided for your use.

Should you have any questions, please contact me at (248) 893-3411.

Sincerely,

GHD

Douglas M. Gatrell, P.E.

AD/jh/69

Encl.

cc: Doug Petroff, IDEM (two copies)
Michelle Lordemann, USACE (three copies)
Scott Krall, Bayer (electronic)
Matthew Myers (electronic)
Alan Deal, GHD (electronic)

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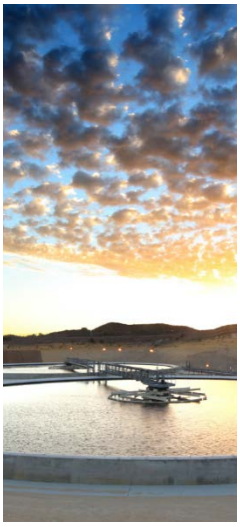
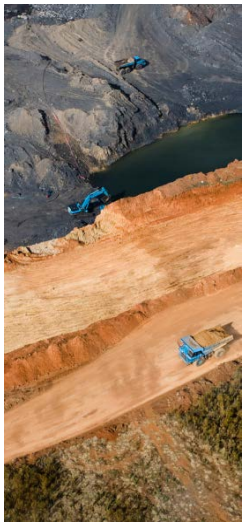

2017 Annual Groundwater Monitoring Report

Himco Site
Elkhart, Indiana

Himco Site Trust

GHD | 651 Colby Drive Waterloo Ontario N2V 1C2 Canada

039611 | Report No 41 | November 30 2017

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List of Acronyms

1,1-DCA	1,1-Dichloroethane
5YR	Five Year Review
AGMR	Annual Groundwater Monitoring Report
AMSL	Above Mean Sea Level
BV	Background Value
CD	Consent Decree
CDA	Construction Debris Area
CoC	Contaminants of Concern
CRA	Conestoga-Rovers & Associates
DO	Dissolved Oxygen
GMP	Groundwater Monitoring Program
GW RAO	Groundwater Remedial Action Objective
IDEM	Indiana Department of Environmental Management
mg/L	milligrams per litre
MCL	Maximum Contaminant Level
NPL	National Priority List
NTU	Nephelometric Turbidity Units
ORP	Oxidation Reduction Potential

List of Acronyms

PSDs	Performing Settling Defendants
QAPP	Quality Assurance Project Plan
RA	Remedial Action
Report	2017 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 Site
SOW	Statement of Work
µg/L	microgram per litre
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compounds

1. Introduction

1.1 Purpose

This 2017 Annual Groundwater Monitoring Report (AGMR) presents the results of routine groundwater monitoring completed in October 2016 and April 2017 at the Himco Site (Site), located in Elkhart, Indiana. GHD[1] has prepared this report on behalf of the Performing Settling Defendants (PSDs), collectively known as the Himco Site Trust.

The Himco 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 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 currently includes 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 in the parameters included in the GMP.

1.2 Background

The Site is a closed landfill located at the intersection of County Road 10 and John Weaver Parkway in Cleveland Township, Elkhart County, Indiana. The Site is approximately 60 acres in size, and accepted waste such as household refuse, construction rubble, medical waste, and calcium sulfate between 1960 and 1976. The landfill was closed 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) is being conducted pursuant to the CD, which became effective on November 27, 2007. The lead agency for the Site is the USEPA Region 5. IDEM is the support agency.

Figure 1.1 shows the Site location. Figure 1.2 shows the layout of the Site, including property boundaries. 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

[1] On July 1, 2015 Conestoga-Rovers & Associates became GHD. For convenience, the wording in this report reflects the new name.

the Construction Completion Report/Completion of Remedial Action Report (CRA, 2012) on October 31, 2012.

1.3 Previous Investigative Activities

1.3.1 Groundwater 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 water supply wells.

The Himco Site Trust initiated the phased groundwater investigation in 2008 and completed it in 2012. The groundwater investigation consisted of:

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

GHD submitted a series of groundwater investigation reports to the USEPA and USEPA provided comments on them. GHD responded to each set of comments in a series of letters. USEPA then approved each report before the subsequent phase of the groundwater investigation was initiated.

A detailed description of each report and the timing of USEPA's comments and approvals are provided in the 2014 AGMR.

1.3.2 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)

GHD completed the tenth and eleventh rounds of the semi-annual GMP (S10 and S11) from October 4 to 6, 2016 and April 11 to 13, 2017, respectively. The results of the S10 and S11 monitoring rounds are provided in this AGMR.

In response to a request from USEPA, GHD evaluated trends in the groundwater quality data and calculated background concentrations for metals and general chemistry parameters. This trend analysis was completed in conjunction with the USEPA's first Five Year review (5YR). GHD analyzed trends in the 2011 through 2015 data and provided the results of the trend analysis in a letter to the USEPA dated August 30, 2015. The results of the 2015 trend analysis were included in the 2015 Annual Groundwater Monitoring Report (GHD, November 2015). The trend tests performed considered the 18 analytes that were the parameter list for the GMP (USEPA, 2011)[2]. Of the total of 486 data sets (27 wells x 18 analytes) available for trend testing, 221 data sets had a high percentage of non-detects (more than 50 percent), and 42 data sets had only estimated (J-qualified) detects below the reporting detection limit, and were therefore not subjected to trend testing. Of the remaining 223 data sets, 158 did not have a statistically significant trend and 65 were found to have statistically significant trends (51 decreasing and 14 increasing). As noted by the USEPA in a letter to Bayer dated June 29, 2015, not all of these parameters are risk drivers at the Site. In a subsequent letter dated August 25, 2015, USEPA reduced the Groundwater Monitoring Program parameter list by no longer requiring groundwater samples to be analyzed for bis(2-ethylhexyl)phthalate, carbon disulfate, aluminum, barium, beryllium, and mercury

1.4 Report Organization

This report is organized as follows:

- Section 2 Describes the scope of the routine groundwater monitoring activities completed at the Site
- Section 3 Describes the Site conceptual hydrogeologic model, the groundwater flow regime, and presents hydraulic monitoring data
- Section 4 Discusses groundwater quality monitoring results
- Section 5 Presents conclusions, recommendations and outlines future routine groundwater monitoring activities

[2] Letter from United States Environmental Protection Agency (Ross del Rosario) to Bayer HealthCare (Gary Toczylowski), Re: Interim Groundwater Monitoring Program Report (May 2011), Himco Dump Site, Elkhart, IN, dated August 31, 2011.

2. Groundwater Monitoring Program Scope

2.1 Groundwater Elevation Monitoring

During this reporting period, GHD completed semi-annual groundwater elevation monitoring on October 3, 2016 (S10), and April 10, 2017 (S11). Data collected prior to October 2016 are discussed in previous reports. Section 3 provides the results of the groundwater elevation monitoring.

2.2 Groundwater Quality Monitoring

Table 2.1 summarizes the status and construction details of the monitoring wells installed in the vicinity of the Site since 1990. Table 2.2 lists the monitoring wells included in the Groundwater Monitoring Program and Figure 2.1 shows their locations.

During this reporting period, GHD sampled the wells listed in Table 2.2 in October 2016 (S10), and April 2017 (S11). Table 2.3 provides the groundwater monitoring parameter list for the Groundwater Monitoring Program. Stabilization parameters measured during groundwater sampling are summarized in Appendix A. TestAmerica Laboratories Inc. of North Canton, Ohio analyzed the groundwater samples. Analytical results are compiled in Appendix B. Laboratory reports and data validation memoranda are provided in Appendix C. GHD validated the groundwater analytical data in accordance with the Quality Assurance Project Plan (QAPP) included in the RD Work Plan (CRA, November 2008).

3. Hydrogeology

3.1 Site Hydrogeology

Figure 3.1 provides a schematic of the Site conceptual hydrogeological model. 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

GHD conceptualizes the Upper and Intermediate Aquifers beneath the Site 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. It 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.

3.2 Groundwater Elevation Monitoring

GHD has completed two synoptic groundwater elevation monitoring rounds during this reporting period. The two monitoring rounds were completed on October 3, 2016 (S10), and April 10, 2017 (S11). Table 3.1 provides the depth to water and groundwater elevation measured at each monitoring well during the water level round and during any subsequent groundwater sampling.

Figure 3.2, Figure 3.3, and Figure 3.4 present groundwater elevation contours derived from groundwater elevation data collected on October 3, 2016 for the Upper Aquifer, Intermediate Aquifer and Lower Aquifer, respectively. Figure 3.5, Figure 3.6, and Figure 3.7 present groundwater elevation contours derived from groundwater elevation data collected on April 10, 2017 for the Upper Aquifer, Intermediate Aquifer and Lower Aquifer, respectively. The depth to groundwater near the Site is relatively shallow, ranging from less than 10 to 25 feet with typical depths ranging from 10 to 15 feet. The elevation of groundwater near the Site ranges from approximately 748.5 to 758.5 feet above mean sea level (AMSL).

Figures 3.2 and 3.5 shows that groundwater in the Upper Aquifer typically flows in a southerly direction. Overall groundwater flow is to the south, consistent with the regional groundwater flow pattern. Superimposed on the regional flow are local features, such as groundwater discharge to the Quarry Pond. The horizontal hydraulic gradient ranged from 0.0007 feet/feet to 0.003 feet/feet in the Upper Aquifer in October 2016 and April 2017.

As shown on Figures 3.3 and 3.6, groundwater in the Intermediate Aquifer typically flowed in a southerly direction in October 2016 and April 2017, 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 ranged from 0.0017 feet/feet to 0.007 feet/feet in October 2016 and April 2017.

Figures 3.4 and 3.7 indicate a south-southeasterly groundwater flow direction in the Lower Aquifer in October 2016 and April 2017. These data are consistent with the regional groundwater flow pattern. The horizontal hydraulic gradient in the Lower Aquifer ranged from 0.0007 feet/feet to 0.008 feet/feet in October 2016 and April 2017. There is a sharp increase in the horizontal hydraulic gradient in the Lower Aquifer between the wells in the southeast corner of the Site and WT106C, located south of the southeast corner of the Site. WT101C and WTE3 were installed near the top of the Lower Aquifer (approximately 590 feet AMSL) in a sequence of silt and sand interbeds. This sequence of interbedded sands and silts is absent at WT106C and instead there is a 40-foot thick layer of silt. The top of the Lower Aquifer is much lower at WT106C (approximately 570 feet AMSL) and WT106C was also installed deeper, at approximately 550 feet AMSL.

Figures 3.8 and 3.9 present the vertical gradients between the hydrostratigraphic units as measured in October 2016 and April 2017, respectively. Upward and downward gradients are present across all units on the Site, ranging from approximately -0.054 feet/feet to 0.0204 feet/feet.

4. Groundwater Quality Monitoring

4.1 Introduction

This section of the 2017 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 2017 AGMR presents groundwater quality monitoring data for two semi-annual monitoring events, the S10 and the S11 rounds of the GMP that were completed in October 2016 and April 2017, respectively. Table 4.1 provides the final readings of the stabilization parameters measured in the field during the S10 and S11 monitoring rounds.

In accordance with recommendations provided in the 2015 Annual Groundwater Monitoring Report (GHD, November 2015) and approved in a letter from USEPA dated August 25, 2016, USEPA approved the following analytes for routine groundwater quality monitoring 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 S10 and S11 Groundwater Monitoring Program rounds.

4.2 Field Parameters

GHD collected groundwater samples after consistent pH, temperature, conductivity, dissolved oxygen (DO), oxidation reduction potential (ORP) and turbidity 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.

Table 4.1 provides the final stabilization parameters measured in the field during the S10 and S11 monitoring rounds. Where appropriate, GHD has referenced the field parameters when they are a significant factor in the interpretation of the laboratory analyzed monitoring parameters.

4.3 Volatile Organic Compounds (VOCs)

GHD collected 58 groundwater samples from 27 monitoring wells in October 2016 and April 2017, and analyzed them for VOCs. Table 4.2 summarizes the VOCs detected in groundwater samples collected in October 2016 and April 2017.

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 = 15.5 percent
- 1,1-DCA = 43.1 percent
- cis-1,2-DCE = 34.5 percent
- Vinyl chloride = 13.8 percent

GHD has provided iso-concentration contour maps (contour maps) for groundwater quality data. GHD created the contours using SURFER version 10 software. SURFER interpolates the groundwater quality data into a uniform grid and then draws contours. Where a compound was not detected, GHD used 10 percent of the detection limit as the value for drawing the contours. Where estimated concentrations (qualified with "J") were reported at concentrations less than the reporting detection limit, GHD used the estimated value for constructing the contours. GHD converted the concentrations to logarithmic values prior to constructing the contours to better reflect the logarithmic distribution of these data. The rationale for this approach was described in detail in a letter from GHD to USEPA dated May 30, 2013, responding to USEPA comments on the contouring methodology.

The following is a summary of the frequency of detection of the VOCs in each aquifer for the October 2016 and April 2017 groundwater quality monitoring results:

Parameter	Number of Detections/Number of Samples		
	Upper Aquifer	Intermediate Aquifer	Lower Aquifer
1,1-DCA	14/26	11/25	0/7
Benzene	9/26	0/25	0/7
cis-1,2-DCE	11/26	9/25	0/7
Vinyl chloride	5/26	3/25	0/7

When a VOC was not detected in a given aquifer, GHD did not prepare a contour map. For example, benzene was not detected in groundwater samples from the Lower Aquifer monitoring

wells, and as such, GHD did not prepare a Lower Aquifer benzene contour map. When a VOC was detected in a given aquifer, GHD set the lowest contour value equal to the GW RAOs. Most VOCs were not detected in any samples at concentrations greater than their GW RAOs. In these cases, such as vinyl chloride in the Upper Aquifer, GHD posted the results on the drawing but did not generate contour lines. At the request of the USEPA, GHD has provided contours for both the October 2016 (S10) and April 2017 (S11) monitoring round results. The September-October 2011 monitoring data are also shown on the figures as they represent "baseline" groundwater conditions and the onset of the GMP.

4.3.1 Benzene

As shown in Table 4.2, benzene was detected in nine of 58 groundwater samples collected from the monitoring well network during this reporting period, or 15.5 percent of the groundwater samples. The detected concentrations of benzene ranged from 0.59 J[3] µg/L to 19 µg/L. Figure 4.1 shows routine groundwater quality monitoring results for benzene in S10 and S11 in the Upper Aquifer.

The concentration of benzene was greater than the Primary MCL of 5 µg/L in all three of the groundwater samples collected from Upper Aquifer monitoring well WT115B during the monitoring period. 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:

WT115A/B/C Benzene Concentrations (µg/L)			
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

[3] J = the concentration is estimated.

WT115A/B/C Benzene Concentrations (μg/L)			
Date	WT115A	WT115B	WT115C
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

Notes:
5.7/9.3 Duplicate sample result
J Estimated concentration
U Non-detect at the associated value

Monitoring wells WT115B and WT115C were installed in the Upper and Intermediate Aquifers, respectively, to delineate benzene detected in samples from WT115A in the Upper Aquifer. The detections of benzene in samples from WT115B represent the maximum concentrations of benzene in the Upper Aquifer while the data from Upper Aquifer monitoring well WT115A and Intermediate Aquifer monitoring well WT115C provide vertical delineation of the Upper Aquifer benzene plume.

Benzene was also detected in routine groundwater monitoring samples collected from three other monitoring wells during S8 and S9 groundwater quality monitoring rounds, as follows:

Well	Number of Detections/Number of Samples	Range of Benzene Concentrations (μg/L)
WT101A	2/2	0.95 J – 1.2
WT111A	1/2	0.59 J – 0.85 J
WT116A	2/2	1.4 – 3.5

Note:
J Estimated concentration

All four 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. Therefore, the Upper Aquifer benzene plume does not extend off Site.

Benzene was not detected (RDL=1.0 μg/L) in any groundwater samples collected from Intermediate or Lower Aquifer monitoring wells during S10 and S11.

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 2013 fluctuated between less than 1 μg/L to 16 μg/L. Since 2013 benzene has only been detected in two of ten groundwater samples, at concentrations of 1.0 μg/L and 7.0 μg/L.

4.3.2 1,1-Dichloroethane (1,1-DCA)

As summarized in Table 4.2, 1,1-DCA was detected in 25 of 58 routine groundwater samples collected from the monitoring well network during this reporting period, or 43.1 percent of the samples. The concentrations of 1,1-DCA ranged from 0.77 J µg/L to 9.4 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 1×10^{-5}. The maximum 1,1-DCA concentration is less than 4 percent of the GW RAO.

Figures 4.2 and 4.3 show the distribution of 1,1-DCA in the Upper and Intermediate Aquifers, respectively. 1,1-DCA was detected in groundwater samples collected from the following monitoring wells during S10 and S11:

Well	Number of Detections/Number of Samples	Range of 1,1-DCA Concentrations (µg/L)
WT101A	2/2	2.7 – 3.0
WT101D	2/2	3.4 – 4.0
WT101E	2/2	1.7 - 2.2
WT106A	2/2	1.5 – 2.0
WT111A	2/2	5.1 – 9.4
WT114B	2/2	0.95 J – 0.92 J
WT114C	3/3	0.77 J – 0.82 J
WT115B	3/3	4.1 - 4.9
WT115C	2/2	2.3 – 2.6
WT116A	3/3	1.5 – 3.1
WT121A	2/2	1.4 – 1.5
WT122A	2/2	2.8 – 4.7

Note:
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 than the calculated Tapwater RSL of 240 µg/L.

1,1-DCA was also detected 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 (RDL=1.0 µg/L) 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. The S10 and S11 1,1-DCA results are similar to the baseline monitoring round (September-October 2011).

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

cis-1,2-DCE was detected in 20 of 58 routine groundwater samples collected during this reporting period, or 34.5 percent of the samples (Table 4.2). The range of detected concentrations was from 0.31 J µg/L to 3.6 µg/L. None of these concentrations were greater than the Primary MCL of 70 µg/L for cis-1,2-DCE. The maximum cis-1,2-DCE concentration of 3.6 µg/L is 5.1 percent of the GW RAO.

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 wells:

Well	Number of Detections/Number of Samples	Range of cis-1,2-DCE Concentrations (µg/L)
WT101A	1/2	0.47 J - 1.0 U
WT101D	2/2	0.58 J - 0.60 J
WT101E	2/2	0.34 J - 0.36 J
WT106A	2/2	0.31 J - 0.33 J
WT114B	1/2	0.32 J - 0.33 J
WT115B	3/3	1.2 – 2.0
WT115C	2/2	0.36 J - 0.42 J
WT116A	3/3	1.5 - 3.6
WT121A	1/2	1.0 U - 1.3
WT122A	2/2	0.74 J – 0.78 J

Notes:
J Estimated concentration
U Non-detect at the associated value

As shown on Figure 4.4 and Figure 4.5, 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 1.3 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 S10 and S11 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.

4.3.4 Vinyl Chloride

Vinyl chloride was detected in 8 of 58 groundwater samples collected from the monitoring well network during this reporting period, or 13.8 percent of the samples (Table 4.2). When vinyl chloride was detected, its concentration ranged from 0.80 J µg/L to 6.3 µg/L, as follows:

Well	Number of Detections/Number of Samples	Range of Vinyl Chloride Concentrations (µg/L)
WT106B	2/2	0.80 J – 0.89 J
WT115B	1/2	1.0 U – 6.3
WT116A	1/2	1.0 U – 0.94 J
WT121A	1/2	1.0 U – 1.2
WT121B	1/2	1.0 U – 1.1
WT122A	2/2	0.83 J – 0.90 J

Notes:
J Estimated concentration
U Non-detect at the associated value

The April 2017 vinyl chloride concentration of 6.3 µg/L was the only S10 and S11 concentration greater than the Primary MCL of 2 µg/L for vinyl chloride. This is the only exceedance of the vinyl chloride in groundwater samples collected from WT115B and only the fourth detection out of 17 samples collected since 2011. As shown on Figure 4.6, vinyl chloride was detected in groundwater samples collected from Upper Aquifer monitoring wells located along the southern limit of waste, the southern Site boundary and south and east of the Site. The concentrations of vinyl chloride detected in Upper Aquifer groundwater samples were typically less than the RDL of 1 µg/L.

Figure 4.7 shows vinyl chloride results for the Intermediate Aquifer for S10 and S11. Vinyl chloride was present in groundwater samples collected from the monitoring wells south of the Site, but at concentrations less than the GWRAO.

The concentrations of vinyl chloride detected in Lower Aquifer groundwater samples were less than the RDL of 1 µg/L.

Vinyl chloride is produced in reducing environments by the degradation of chlorinated organic compounds such as trichloroethylene. The distribution of vinyl chloride in groundwater in the vicinity of the Site during the S10 and S11 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.

4.4 Metals and General Chemistry Analytes

4.4.1 Introduction

GHD collected 58 groundwater samples from 27 monitoring wells during S10 and S11 for select metals and general chemistry analyses. Tables 4.3, 4.4, and 4.5 summarize the metals and general chemistry results for the groundwater samples collected from the Upper, Intermediate, and Lower Aquifers, respectively, during the reporting period.

GHD's approach to screening metals and general chemistry parameters is different than the approach to screening VOCs because VOCs are typically the result of waste disposal activities while metals and general chemistry parameters also occur naturally in groundwater. Additionally, two of the contaminants of concern (CoCs), iron and calcium, are mineral nutrients, and drinking water can provide a viable fraction of the total recommended daily intake of these nutrients.

GHD analyzed groundwater samples collected 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 4.2 through 4.4 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.*

Initially, GHD screened the metals data against the Primary MCLs; however, there are no Primary MCLs for sodium, calcium and iron. 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, GHD 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 concentrations of the following GMP parameters exceeded the metals and general chemistry GW RAOs in at least one of the aquifer units:

Number of Exceedances of GW RAOs/Number of Samples			
Parameter	Upper Aquifer	Intermediate Aquifer	Lower Aquifer
Arsenic	1/26	6/25	3/7
Calcium	6/26	0/25	0/7
Iron	0/26	0/25	0/7
Lead	1/26	0/25	0/7

Number of Exceedances of GW RAOs/Number of Samples			
Parameter	Upper Aquifer	Intermediate Aquifer	Lower Aquifer
Manganese	4/26	0/25	0/7
Sodium	2/26	0/25	0/7
Chloride	2/26	0/25	0/7

GHD selected arsenic, calcium, lead, manganese, sodium, and chloride for discussion purposes as these analytes are the only metals and general chemistry parameters included in the GMP that were detected at concentrations greater than their respective GW RAOs.

4.4.2 Arsenic

Arsenic was detected in 54 of the 58 routine groundwater quality monitoring samples collected during the reporting period. Arsenic concentrations ranged from less than the RDL (1.0 µg/L) to 19 µg/L. The GW RAO for arsenic is 10 µg/L, which is equal to its Primary MCL. Arsenic and lead are the only metal parameters detected during the S10 and S11 monitoring rounds at concentrations greater than a GW RAO that is based on a Primary MCL.

Figure 4.8 shows the arsenic concentrations in groundwater samples collected from Upper Aquifer monitoring wells. The arsenic concentration (18 µg/L) was greater than the GW RAO in the April 2017 groundwater sample but not the October 2016 groundwater sample collected from monitoring well WT121A. The following are the arsenic results for groundwater samples collected from WT121A since March 2011:

Sample Date	Arsenic Concentration (µg/L)
3/15/2011	8.2
6/14/2011	8.9
9/19/2011	9.1
12/13/2011	8.3
4/24/2012	13
9/19/2012	8.6
4/23/2013	7
9/25/2013	8.6
4/22/2014	8.2
9/23/2014	6.8
9/23/2014	6.9
5/5/2015	6.9
9/22/2015	6.7
4/26/2016	6.5
10/4/2016	6.2
4/11/2017	18

Therefore, the April 2017 sample result is the second time the arsenic concentration has been greater than the GWRAO since routine groundwater quality monitoring began.

The arsenic concentration (15 μg/L) was greater than the GW RAO in the April 2016 groundwater sample collected from monitoring well WT102A. The following are the arsenic results for groundwater samples collected from WT102A since October 2008:

Sample Date	Arsenic Concentration (μg/L)
10/30/2008	0.46
2/17/2009	0.5/0.54
4/29/2009	0.71
8/18/2009	0.78
11/4/2009	0.55
2/24/2010	0.79
3/16/2011	0.4
9/13/2011	0.65
4/25/2012	1
9/19/2012	0.43
4/23/2013	1.0 U
9/26/2013	1.0 U
4/22/2014	1.0 U
9/23/2014	1.0 U
5/5/2015	1.0 U
9/22/2015	1.0 U
4/27/2016	15
10/5/2016	0.47 J
4/12/2017	0.53 J

Therefore, the April 2016 sample result is the first time the arsenic concentration has been greater than the GWRAO since routine groundwater quality monitoring began. Metals concentrations may be affected by the turbidity of the groundwater sample. The turbidity of the April 2016 sample was greater than 1,000 nephelometric turbidity units (NTU), as opposed to the turbidity of 3.46 NTU measured in the September 2015 sample. The turbidity measured on October 5, 2016 and April 12, 2017 were 4.45 and 4.87 NTU, respectively. With the return to low turbidity samples, arsenic in the groundwater samples returned to concentrations consistent with previous results.

Figure 4.9 shows the arsenic concentrations in groundwater samples collected from Intermediate Aquifer monitoring wells. The concentrations of arsenic exceeded the GW RAO in S10 and S11 samples from the following Intermediate Aquifer monitoring wells:

Well	Date	Arsenic Concentration (μg/L)
WT106B	10/5/2016	11
WT106B	4/12/2017	11
WT114C	10/5/2016	19
WT114C	4/11/2017	17
WT121B	10/4/2016	12
WT121B	4/11/2017	12

Intermediate Aquifer monitoring well WT114C is located immediately east of the Site and WT121B is located southeast of the Site (east of WT106B). The S10 and S11 arsenic results for these wells are typical of previous results.

Figure 4.10 shows the arsenic concentrations in groundwater samples collected from Lower Aquifer monitoring wells. The arsenic concentrations in groundwater samples collected from WT106C during this reporting period were 12 μg/L and 11/11 μg/L (duplicate sample) in the October 2016 and April 2017 groundwater samples, respectively, which is greater than the GW RAO of 10 μg/L.

4.4.3 Calcium

Calcium was detected in all of the 58 routine groundwater quality monitoring samples collected during this reporting period. Calcium concentrations in groundwater samples ranged from 47,000 μg/L to 510,000 μg/L. The GW RAO for calcium is 250,000 μg/L, and is equal to its RDA.

Figure 4.11 shows calcium concentration contours for the Upper Aquifer for this reporting period. There is a plume of calcium in the Upper Aquifer defined by 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:

Well	Date	Calcium Concentration (μg/L)
WT115B	10/5/2016	290,000/300,000
WT115B	4/12/2017	280,000
WT116A	10/4/2016	510,000
WT116A	4/12/2017	470,000
WT122A	4/12/2017	280,000

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 typically exceeded the GW RAO in groundwater samples collected from monitoring well WT115B, located in the southeast portion of the Site. The April 2017 calcium result from the groundwater sample collected from WT122A, located south of the Site, is the only exceedance of the calcium GW RAO in the groundwater samples collected from this well.

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 S10 and S11 routine groundwater quality monitoring rounds are generally consistent with the baseline groundwater monitoring results from September 2011.

4.4.4 Lead

Lead was detected at concentrations greater than its GW RAO in one of the 26 routine groundwater quality monitoring samples collected from Upper Aquifer monitoring wells during this reporting period. Lead concentrations ranged from less than the RDL (3.0 μg/L) to 19 μg/L. The GW RAO for lead is 15 μg/L, which is equal to its Primary MCL. Lead and arsenic are the only metal analytes detected during the S10 and S11 monitoring rounds at concentrations greater than a GW RAO that is based on a Primary MCL.

Figure 4.12 shows the lead concentrations in groundwater samples collected from Upper Aquifer monitoring wells. The lead concentration (19 μg/L) was greater than the GW RAO in the April 2017 groundwater sample collected from monitoring well WT121A. This is only the second time lead has been detected in a groundwater sample from WT121A and it is the first time the concentration is greater than the GWRAO. In the past, lead has been detected in samples with elevated turbidity. The April 2017 sample from WT121A groundwater had a turbidity of 1.7 nephelometric turbidity units (NTU). Continued monitoring will determine if the April 2017 result from the WT121A groundwater sample is persistent or is an anomalous result.

Lead was not detected in any of the Intermediate or Lower Aquifer groundwater samples collected during the S10 and S11 routine groundwater quality monitoring rounds.

The lead concentrations in groundwater samples collected during S10 and S11 concentrations are generally consistent with previous results, usually less than the RDL with occasional exceedances of the GW RAO.

4.4.5 Manganese

Manganese was detected in 53 of the 58 routine groundwater quality monitoring samples collected during the reporting period. The concentrations of manganese in groundwater samples ranged from 7 μg/L to 3,200 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 4.13 shows the concentration of manganese in routine groundwater quality monitoring samples collected from the Upper Aquifer during the reporting period. There is a plume of manganese in the Upper Aquifer defined by the 1,070 μg/L contour. The samples that contained manganese at concentrations that were greater than the GW RAO were as follows:

Well	Date	Manganese Concentration (μg/L)
WT101A	10/6/2016	3,200
WT101A	4/13/2017	1,800
WT116A	10/4/2016	1,900
WT116A	4/12/2017	2,600

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

The maximum manganese concentrations in the Intermediate and Lower Aquifer well samples were 210 μg/L and 56 μg/L, respectively, which are less than the GW RAO.

The manganese data for the S10 and S11 routine groundwater quality monitoring rounds are generally consistent with previous monitoring rounds including baseline groundwater monitoring results from September 2011.

4.4.6 Sodium and Chloride

Sodium was detected in all of the 58 of the routine groundwater quality monitoring samples collected during the reporting period. Sodium concentrations in groundwater samples ranged from 12,000 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 all 58 groundwater samples collected from the monitoring well network during this reporting period. The detected concentrations of chloride ranged from 2 mg/L to 400 mg/L. The GW RAO for chloride is 250 mg/L, which is equal to its Secondary MCL.

Figures and 4.14 and 4.15 show sodium and chloride concentration contours, respectively, for the Upper Aquifer. The sodium and chloride concentration in the groundwater samples collected from WT114A in October 2015 and April 2017 were greater than the GW RAOs. 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 road salt applied to the adjacent roadway.

Sodium and chloride concentrations in the S10 and S11 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 baseline groundwater monitoring results from September 2011 and are not the result of former landfill activities.

5. Conclusions and Recommendations

5.1 Groundwater Elevation Monitoring

Data collected during S10 and S11 indicate that groundwater in the Upper, Intermediate, and Lower Aquifers typically flows south, consistent with the regional groundwater flow direction and previous monitoring data.

5.2 Groundwater Quality Monitoring

5.2.1 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 Upper Aquifer monitoring well WT115B, located in the southeast corner of the landfill. The maximum benzene concentration of 19/18 μg/L (duplicate sample) was detected in a groundwater sample collected from monitoring well WT115B. Benzene was not detected in the groundwater sample collected from Intermediate Aquifer monitoring well WT115C, which provides vertical delineation of the WT115 benzene plume. The September 2015 and April 2016 benzene results for groundwater samples from the WT115 monitoring wells are consistent with the results of previous monitoring rounds. These stable, low-level concentrations are consistent with a local source of benzene near WT115B.

1,1-DCA, cis-1,2-DCE, vinyl chloride, and carbon disulfide were detected in 13.8 percent to 43.1 percent of routine groundwater quality monitoring samples collected during the reporting period. Unlike the distinct benzene plume in the vicinity of WT115B, 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. Although the exact mechanisms is not known, 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. The maximum concentration of 1,1-DCA and cis-1,2-DCE are equal to or less than 5 percent of the GW RAO.

Routine groundwater quality monitoring results for this reporting period (S10 and S11) are similar to each other, and consistent with baseline (September 2011) monitoring data for VOCs.

5.2.2 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. Arsenic and lead are the only metal analytes detected during the S10 and S11 monitoring rounds at concentrations that were greater than a Primary MCL.

The GW RAO for arsenic is 10 μg/L, which is equal to its Primary MCL. The arsenic concentration in the sample collected in April 2017 from Upper Aquifer monitoring well WT121A was 18 μg/L, which is greater than the GW RAO. The April 2017 sample result is only the second arsenic concentration

that was greater than the GWRAO in WT121A groundwater samples since routine groundwater quality monitoring began.

The concentrations of arsenic exceeded the GW RAO in six S10 and S11 samples from Intermediate Aquifer monitoring well WT114C, located immediately east of the Site, and WT106B and WT121B, located southeast of the Site. This is consistent with previous results.

The maximum arsenic concentrations in groundwater samples collected during this reporting period from the Lower Aquifer monitoring wells was 12 μg/L, which is greater than the GW RAO of 10 μg/L, in a groundwater sample collected from monitoring well WT106C in October 2017.

There is a plume of calcium in the Upper Aquifer defined by the GW RAO of 250,000 μg/L, which is 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 and WT122A, located south of the Site. Calcium concentrations in groundwater samples from the Intermediate and Lower Aquifers were less than their GW RAOs.

The lead concentration (19 μg/L) was greater than the GW RAO (15 μg/L) in the April 2017 groundwater sample collected from monitoring well WT121A. This is only the second time lead has been detected in a groundwater sample from WT121A and it is the first time the concentration is greater than the GWRAO. Lead was not detected in any of the Intermediate or Lower Aquifer groundwater samples collected during the S10 and S11 routine groundwater quality monitoring rounds. The lead concentrations in groundwater samples collected during S10 and S11 concentrations are generally consistent with previous results, usually less than the RDL with occasional exceedances of the GW RAO.

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 210 μg/L and 56 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 is likely road salt applied to the adjacent roadway. Sodium and chloride are not Site-related CoCs.

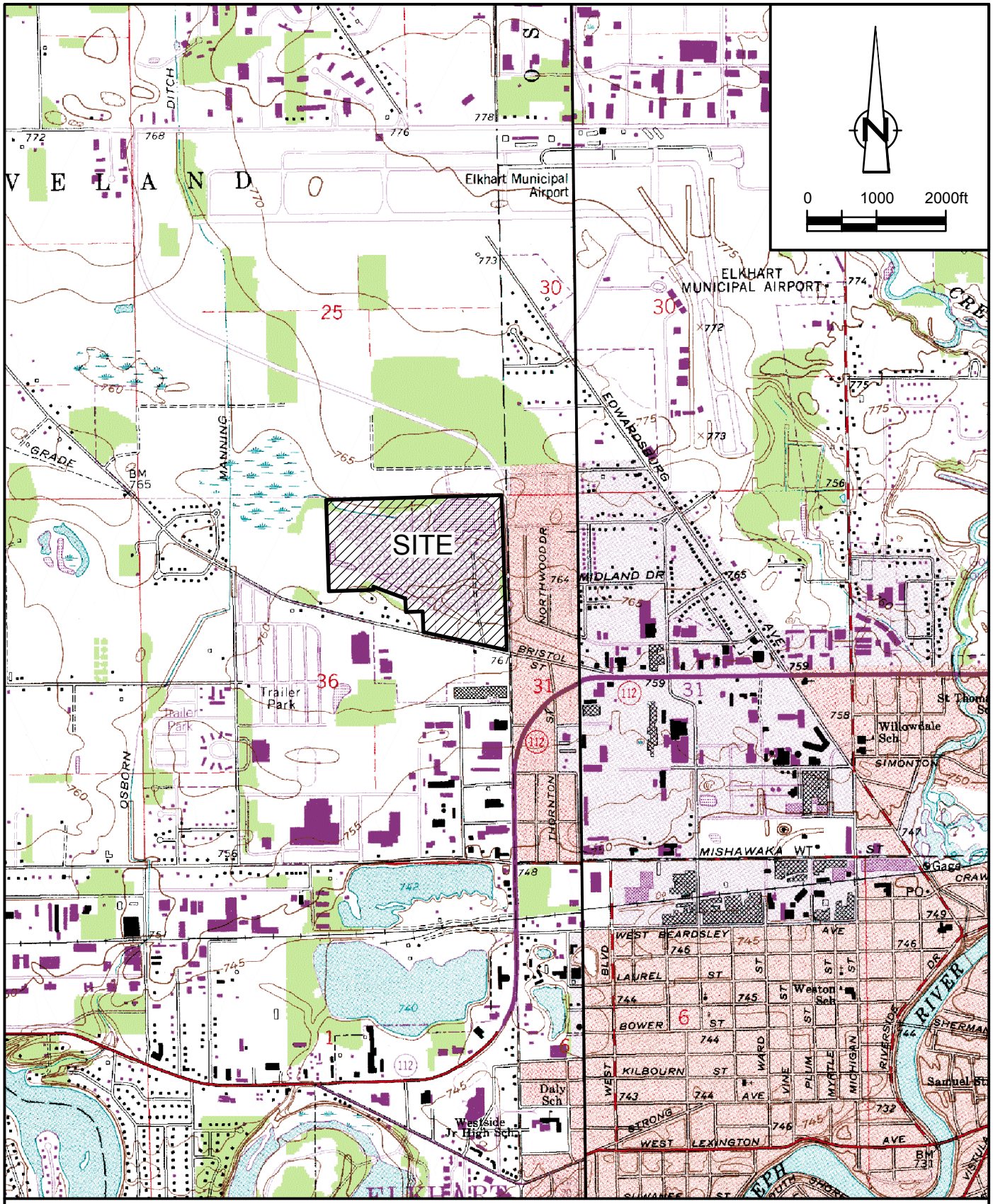
With a few exceptions, the metals and general chemistry data for S10 and S11 routine groundwater quality monitoring are consistent with baseline groundwater monitoring results from September 2011 and other previous monitoring data.

5.3 Future Monitoring and Reporting

GHD will continue to measure groundwater elevations at all monitoring wells located at the Site.

The monitoring wells included in the GMP are listed in Table 2.2 and shown on Figure 2.1. The GMP analytical parameters are listed in Table 2.3.Groundwater samples are collected on a semi-annual basis.

The PSDs will submit routine annual reports of groundwater quality monitoring at the Himco Site. The next AGMP will be submitted to USEPA in November 2018 and will include monitoring data collected from September 2017 through June 2018.



SOURCE: USGS QUADRANGLE MAPS;
ELKHART AND OSCEOLA, INDIANA

figure 1.1

SITE LOCATION MAP
HIMCO SITE
Elkhart, Indiana

39611-00(041)GN-WA012 MAY 4, 2017

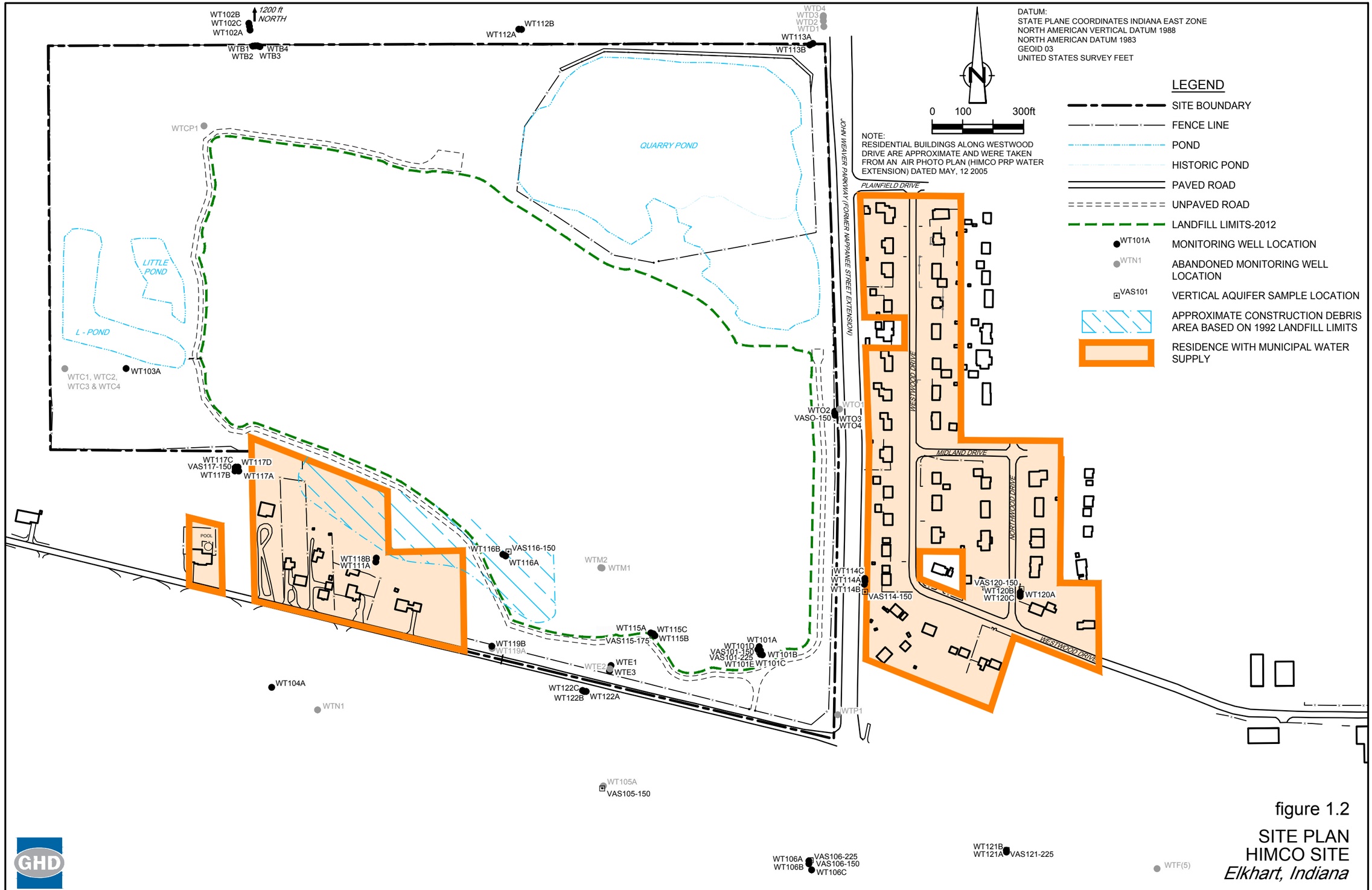


figure 1.2

SITE PLAN
HIMCO SITE
Elkhart, Indiana

39611-00(041)GN-WA010 NOV 1, 2017

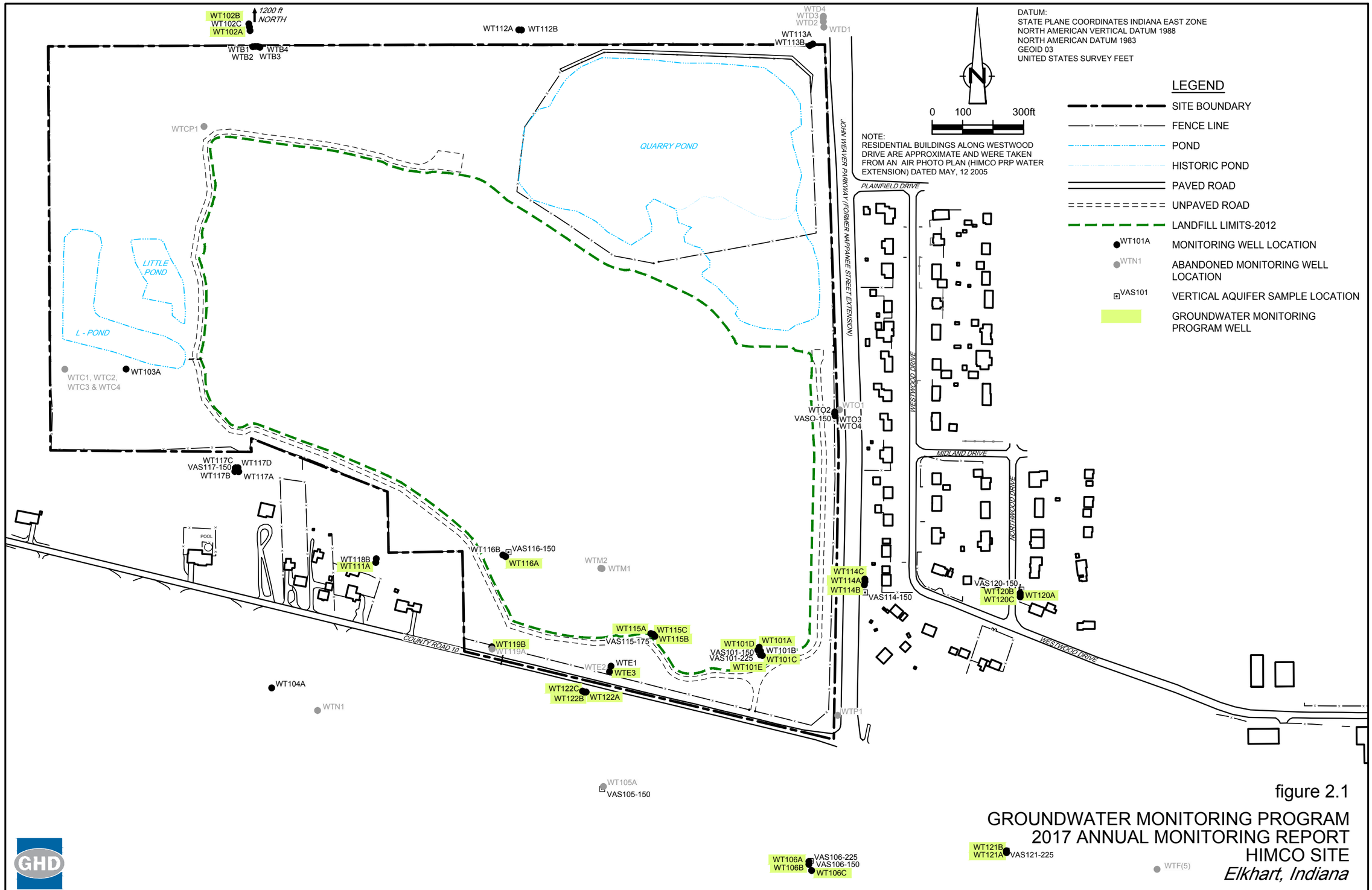


figure 2.1

GROUNDWATER MONITORING PROGRAM
2017 ANNUAL MONITORING REPORT
HIMCO SITE
Elkhart, Indiana

39611-00(041)GN-WA011 NOV 1, 2017

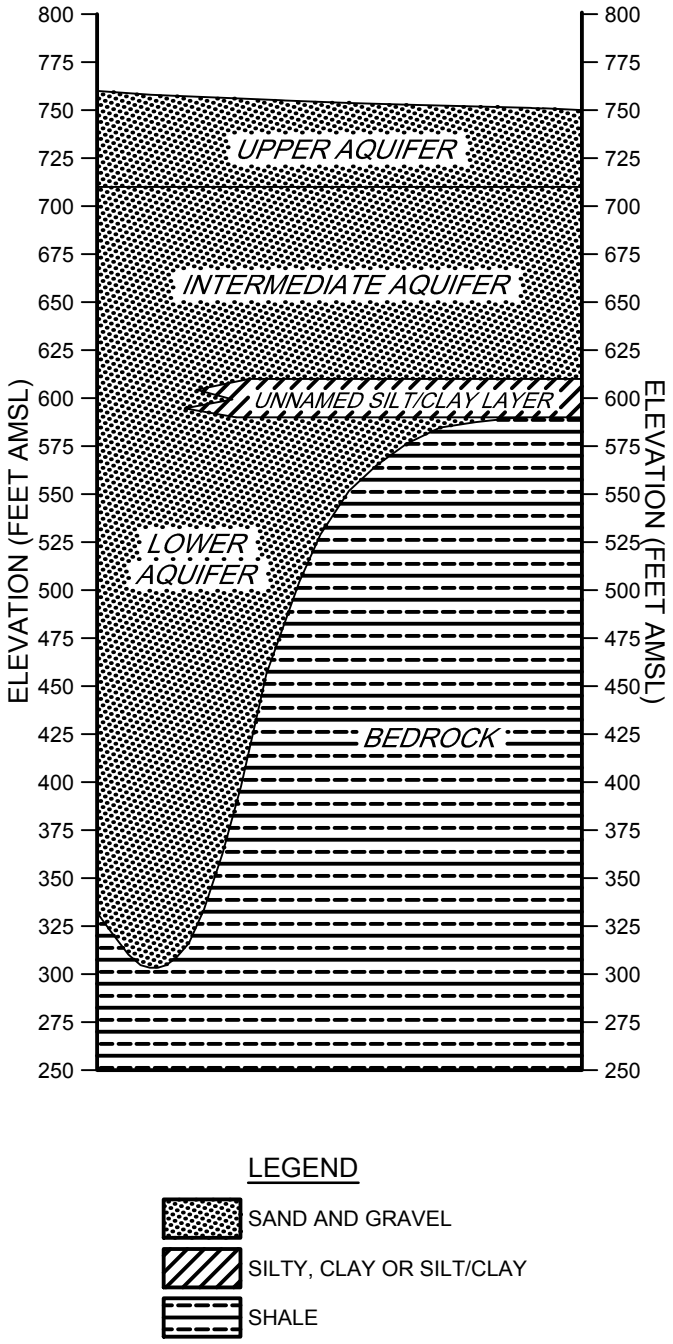


figure 3.1

SCHEMATIC CROSS-SECTION
HIMCO SITE
Elkhart, Indiana

39611-00(041)GN-WA001 MAY 2, 2017

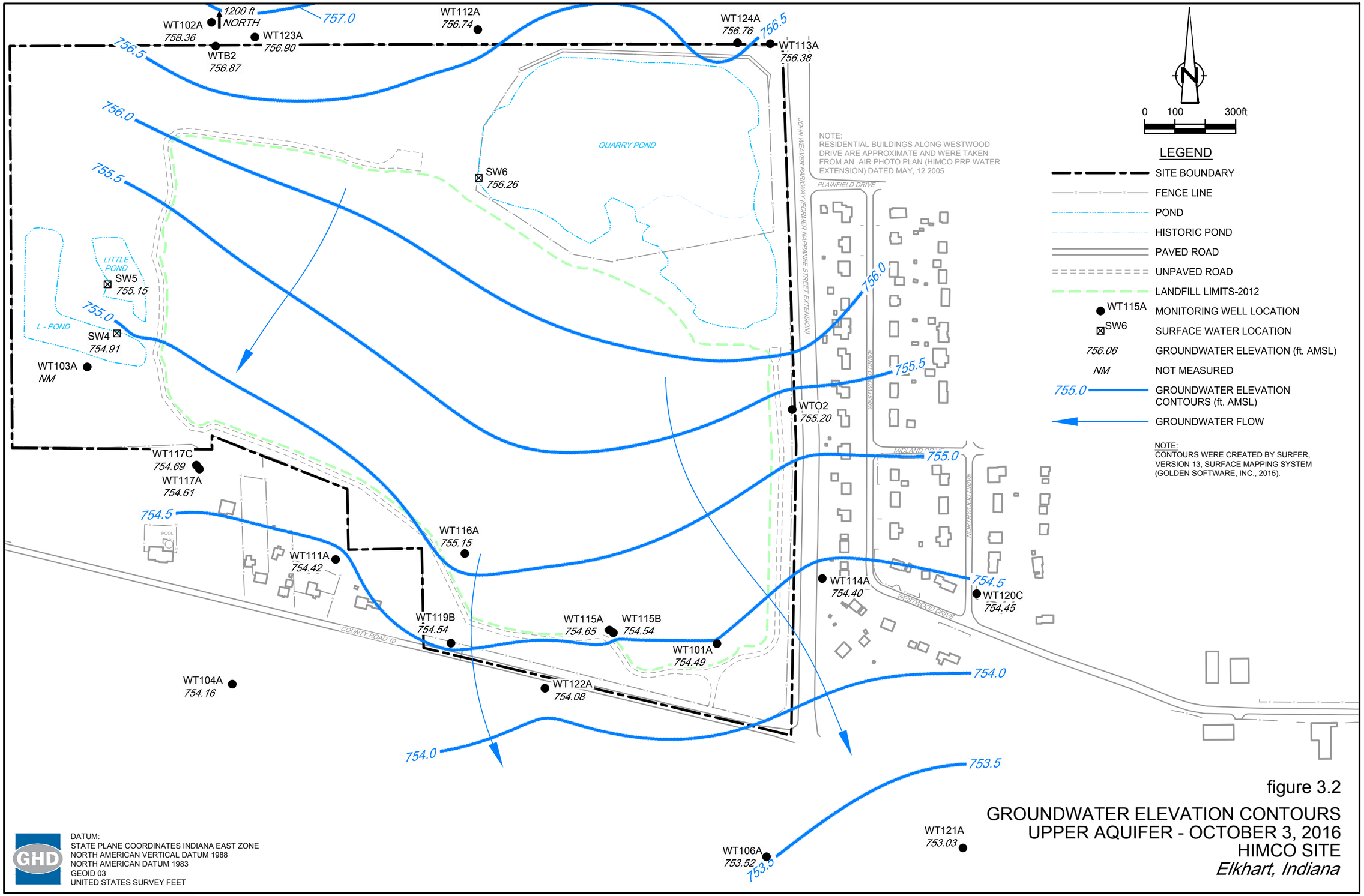


figure 3.2

GROUNDWATER ELEVATION CONTOURS
UPPER AQUIFER - OCTOBER 3, 2016
HIMCO SITE
Elkhart, Indiana

39611-00(041)GN-WA002 MAY 2, 2017

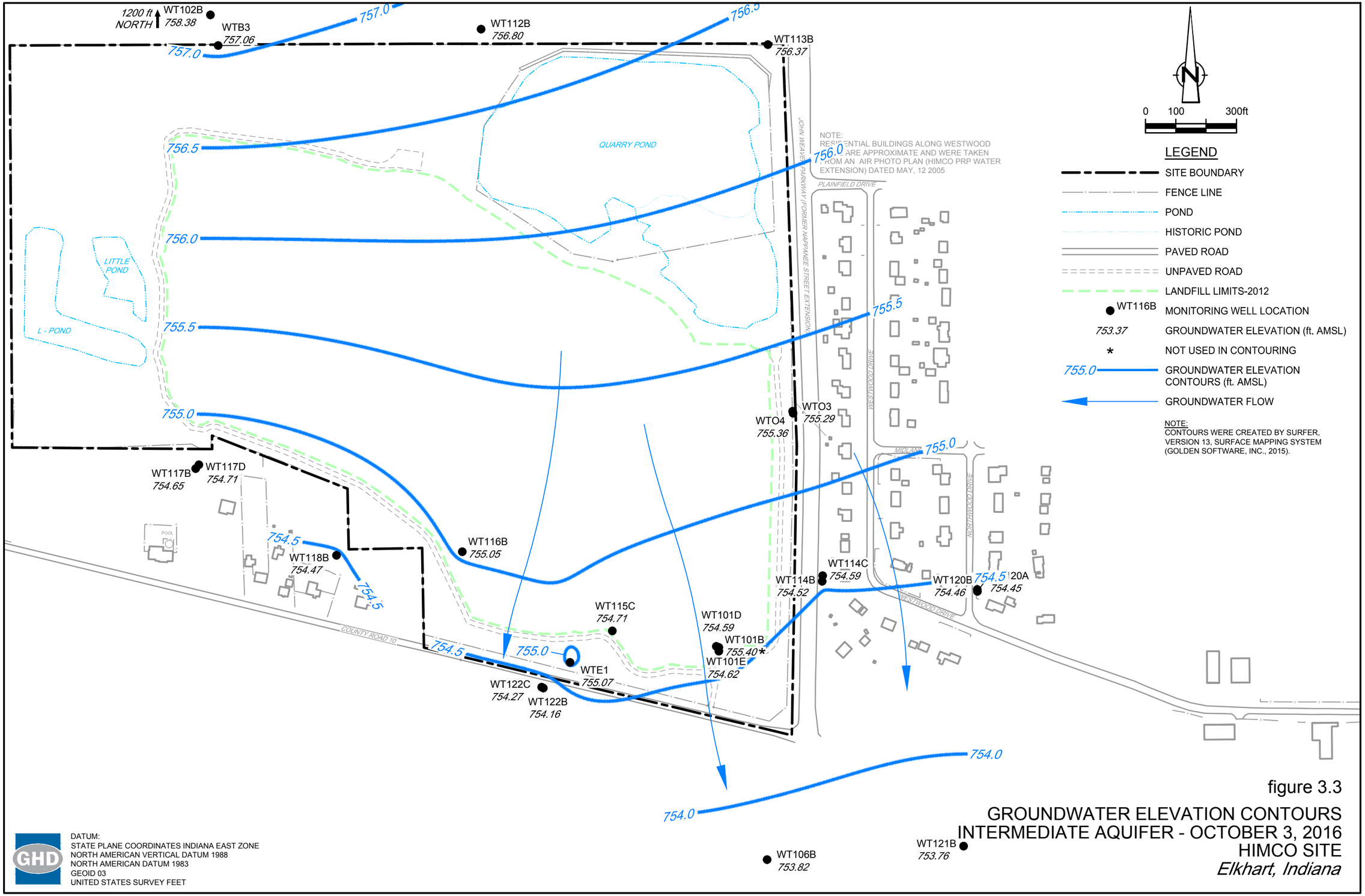


figure 3.3

GROUNDWATER ELEVATION CONTOURS
INTERMEDIATE AQUIFER - OCTOBER 3, 2016
HIMCO SITE
Elkhart, Indiana

39611-00(041)GN-WA003 MAY 2, 2017

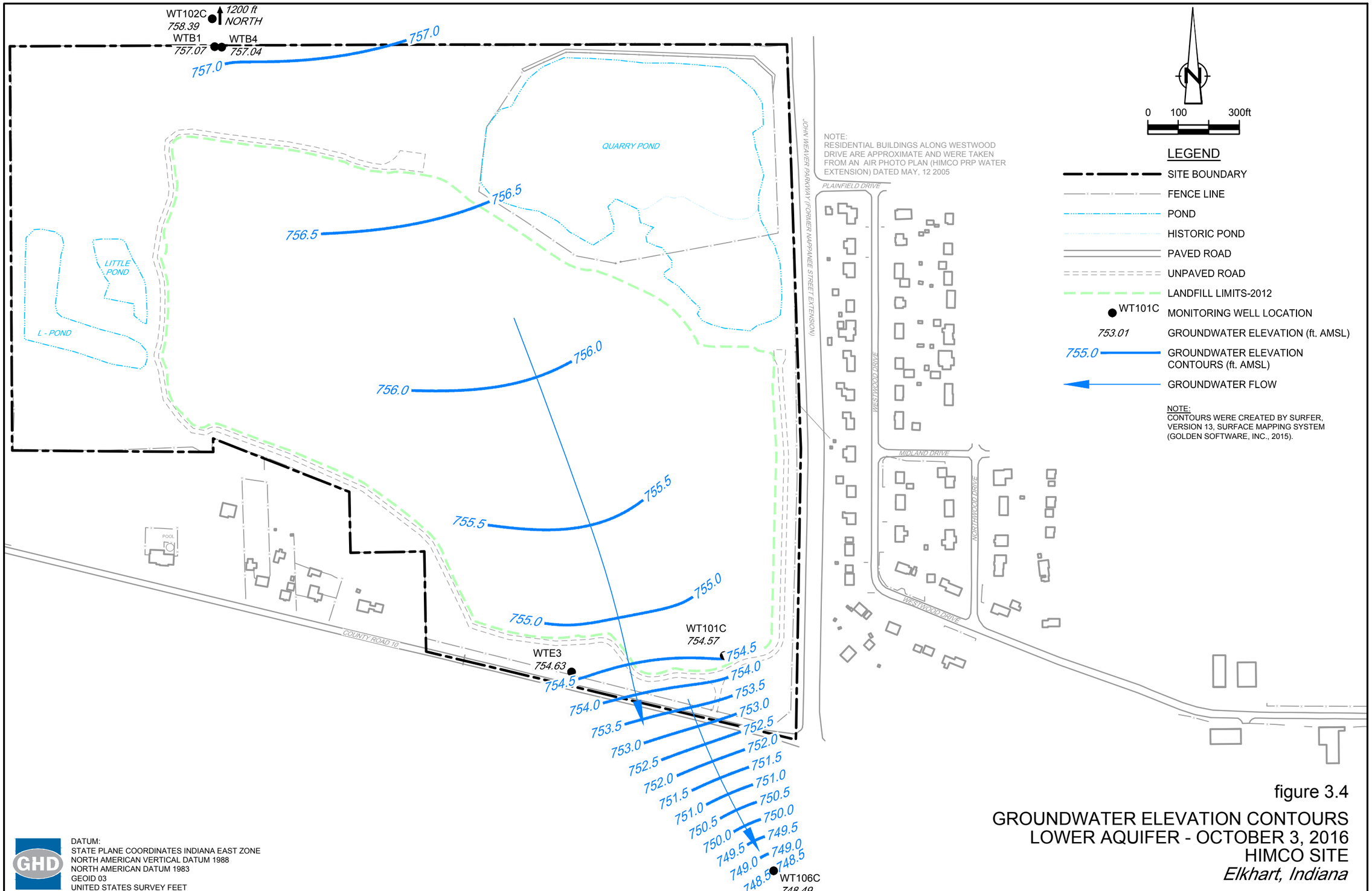


figure 3.4

GROUNDWATER ELEVATION CONTOURS
LOWER AQUIFER - OCTOBER 3, 2016
HIMCO SITE
Elkhart, Indiana

39611-00(041)GN-WA004 MAY 2, 2017

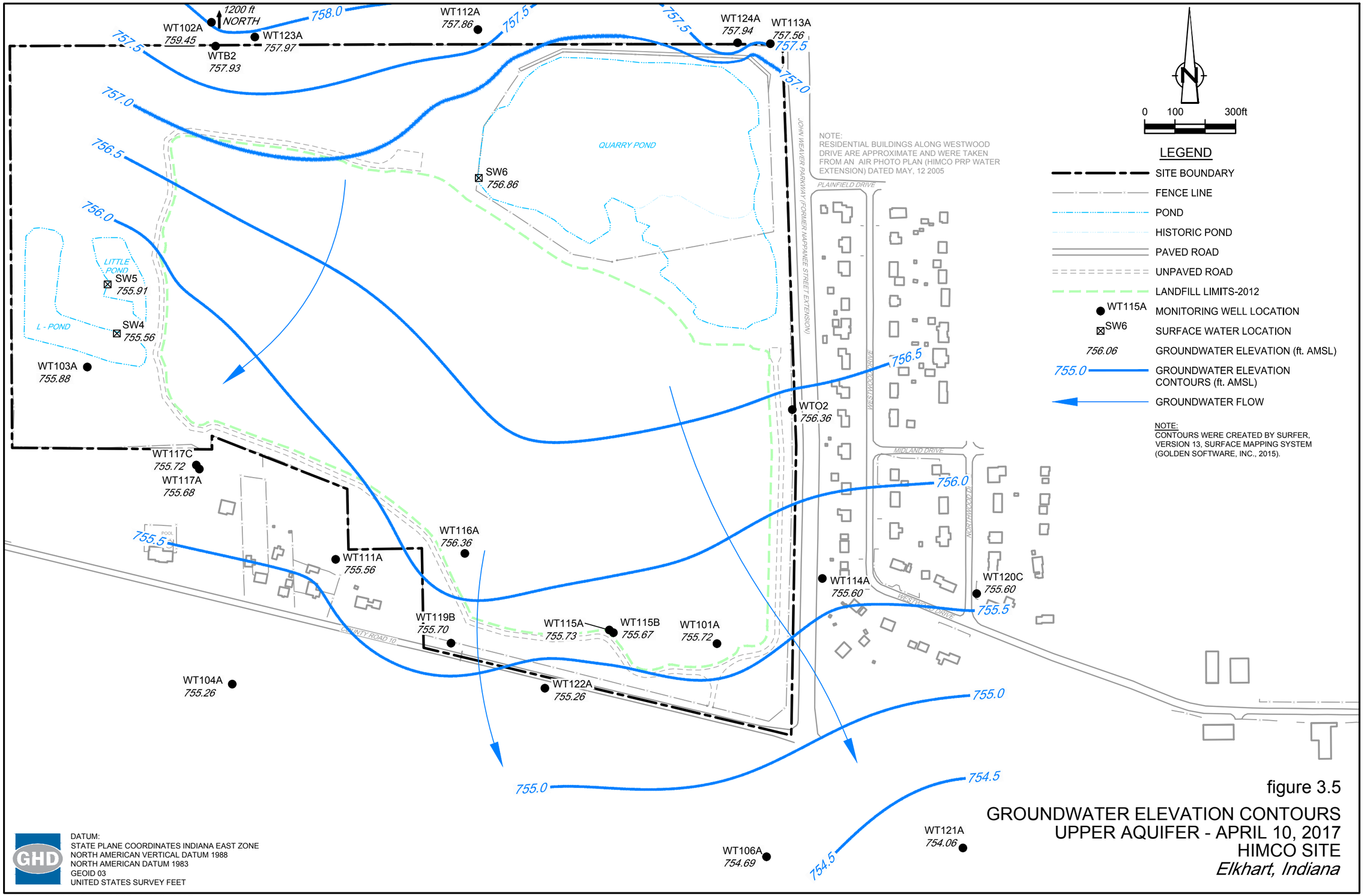


figure 3.5

GROUNDWATER ELEVATION CONTOURS
UPPER AQUIFER - APRIL 10, 2017
HIMCO SITE
Elkhart, Indiana

39611-00(041)GN-WA005 MAY 2, 2017

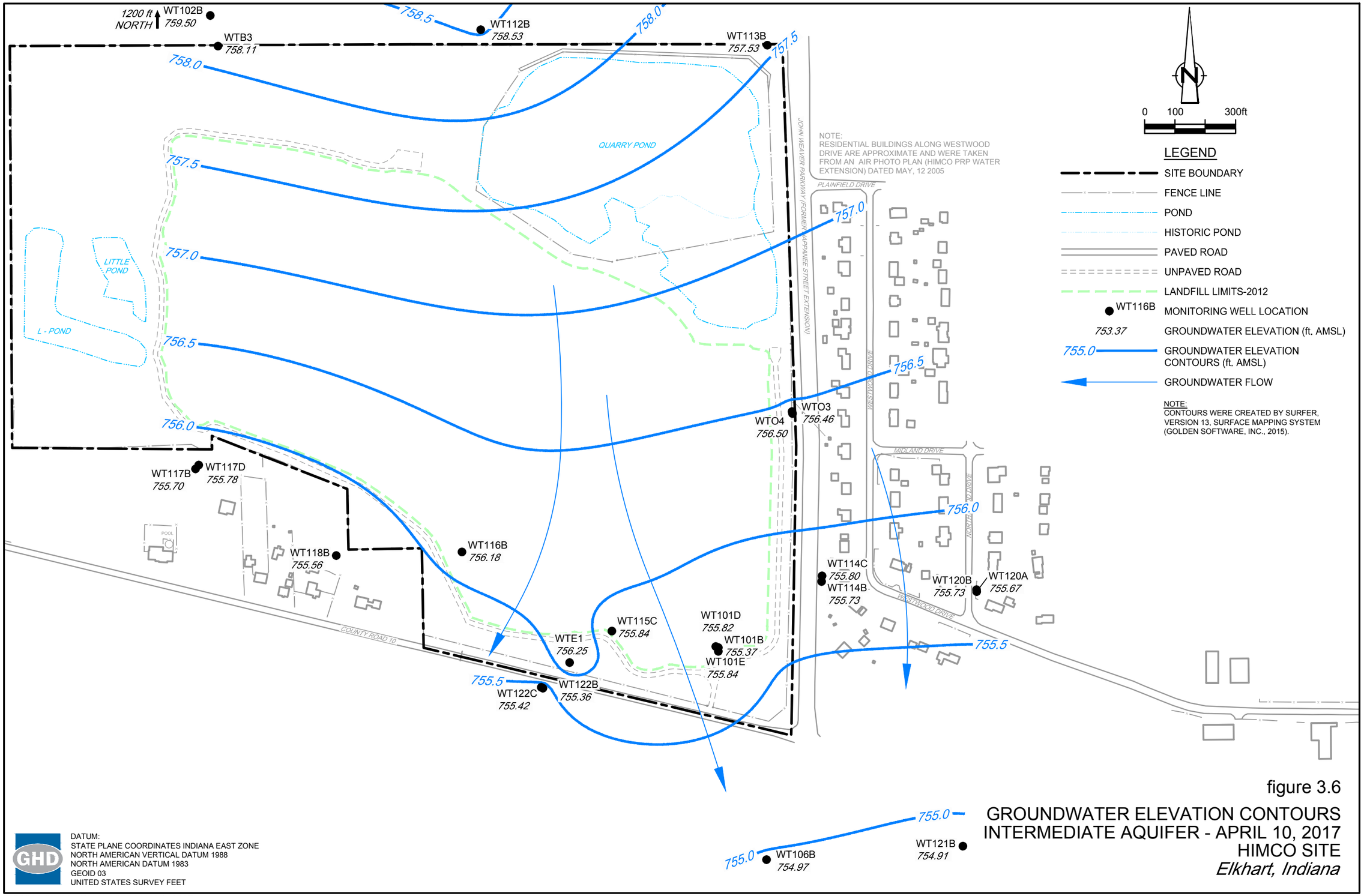


figure 3.6

GROUNDWATER ELEVATION CONTOURS
INTERMEDIATE AQUIFER - APRIL 10, 2017
HIMCO SITE
Elkhart, Indiana

39611-00(041)GN-WA006 MAY 2, 2017

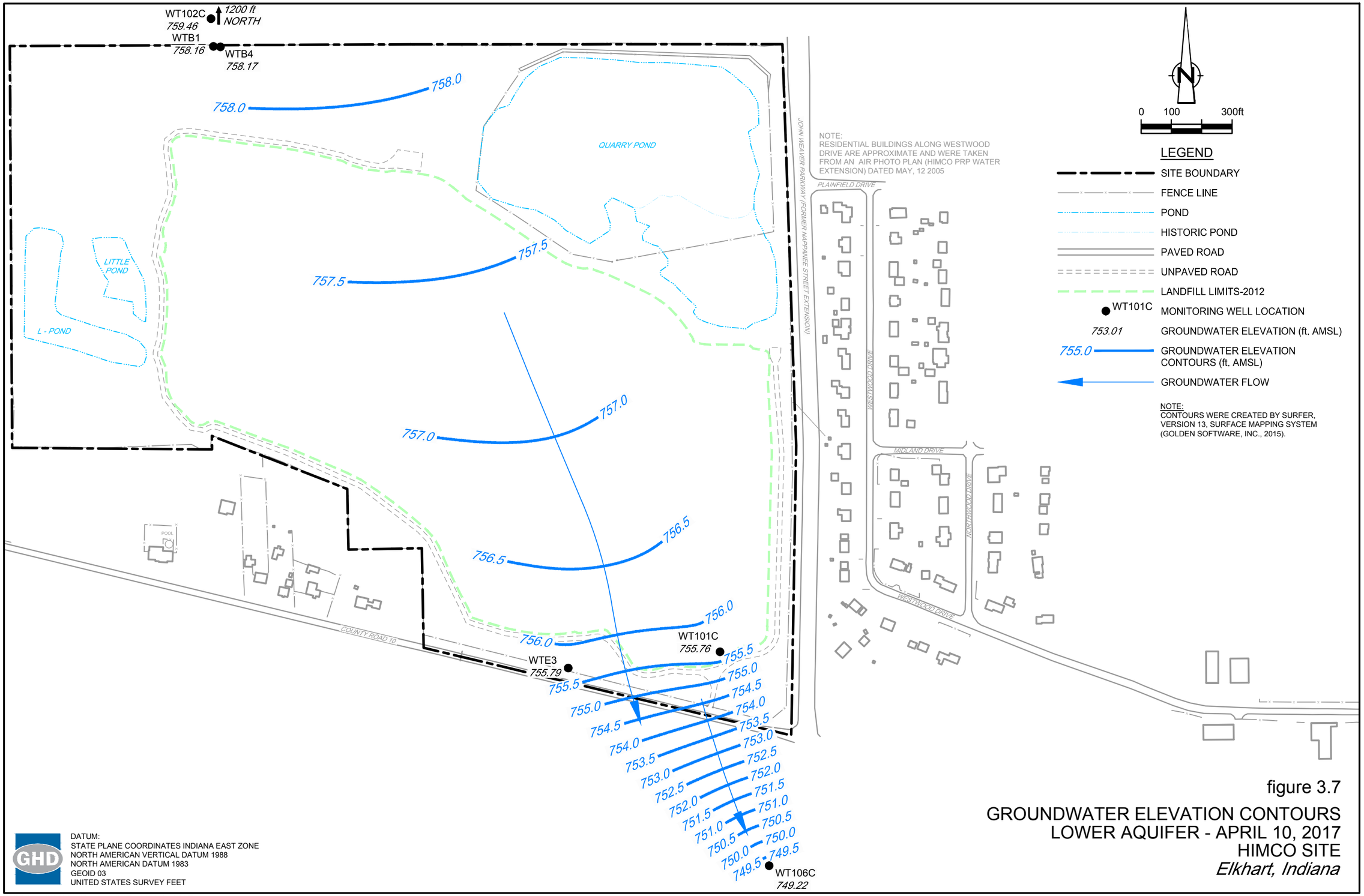
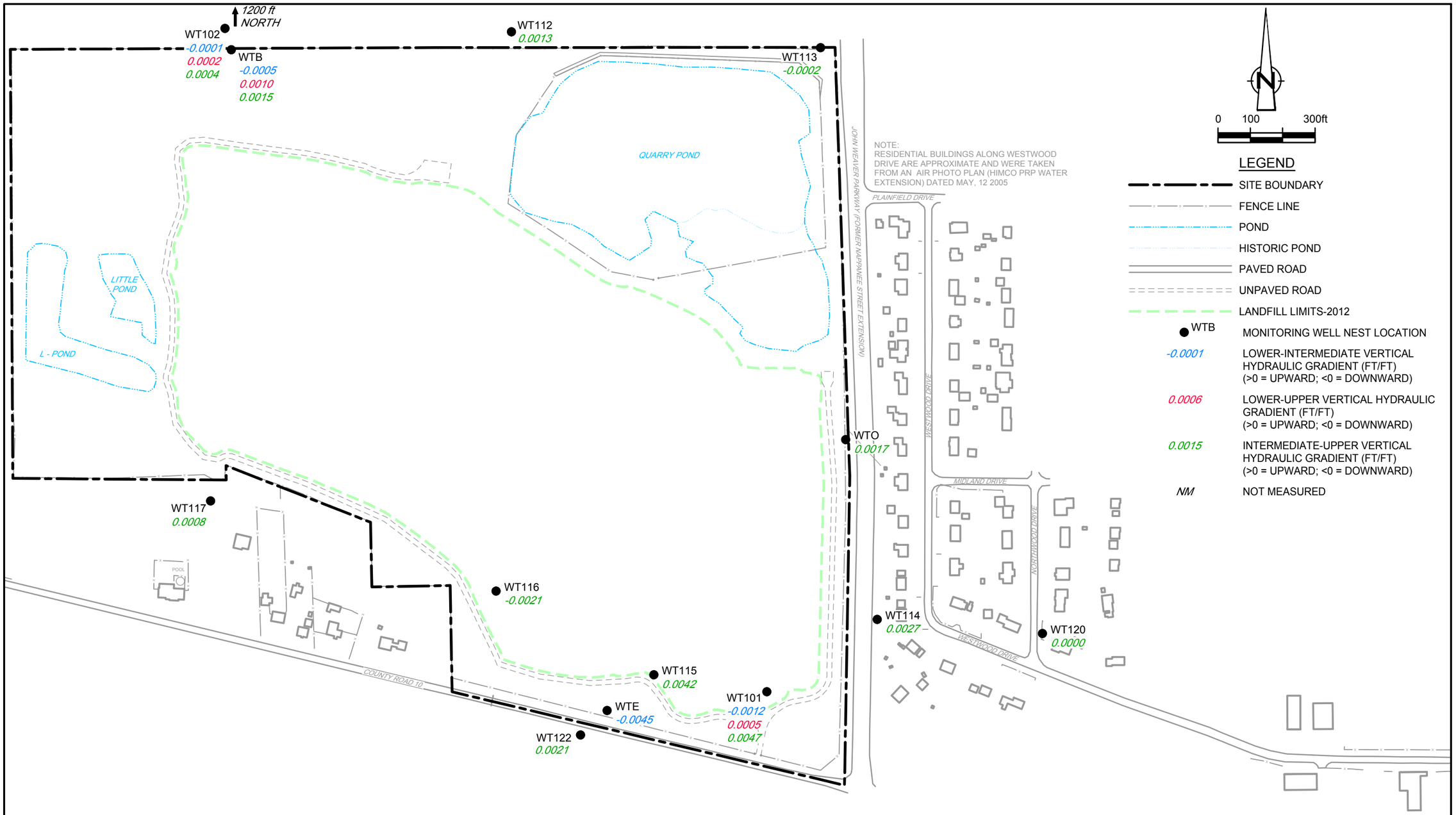


figure 3.7

GROUNDWATER ELEVATION CONTOURS
LOWER AQUIFER - APRIL 10, 2017
HIMCO SITE
Elkhart, Indiana

39611-00(041)GN-WA007 MAY 2, 2017

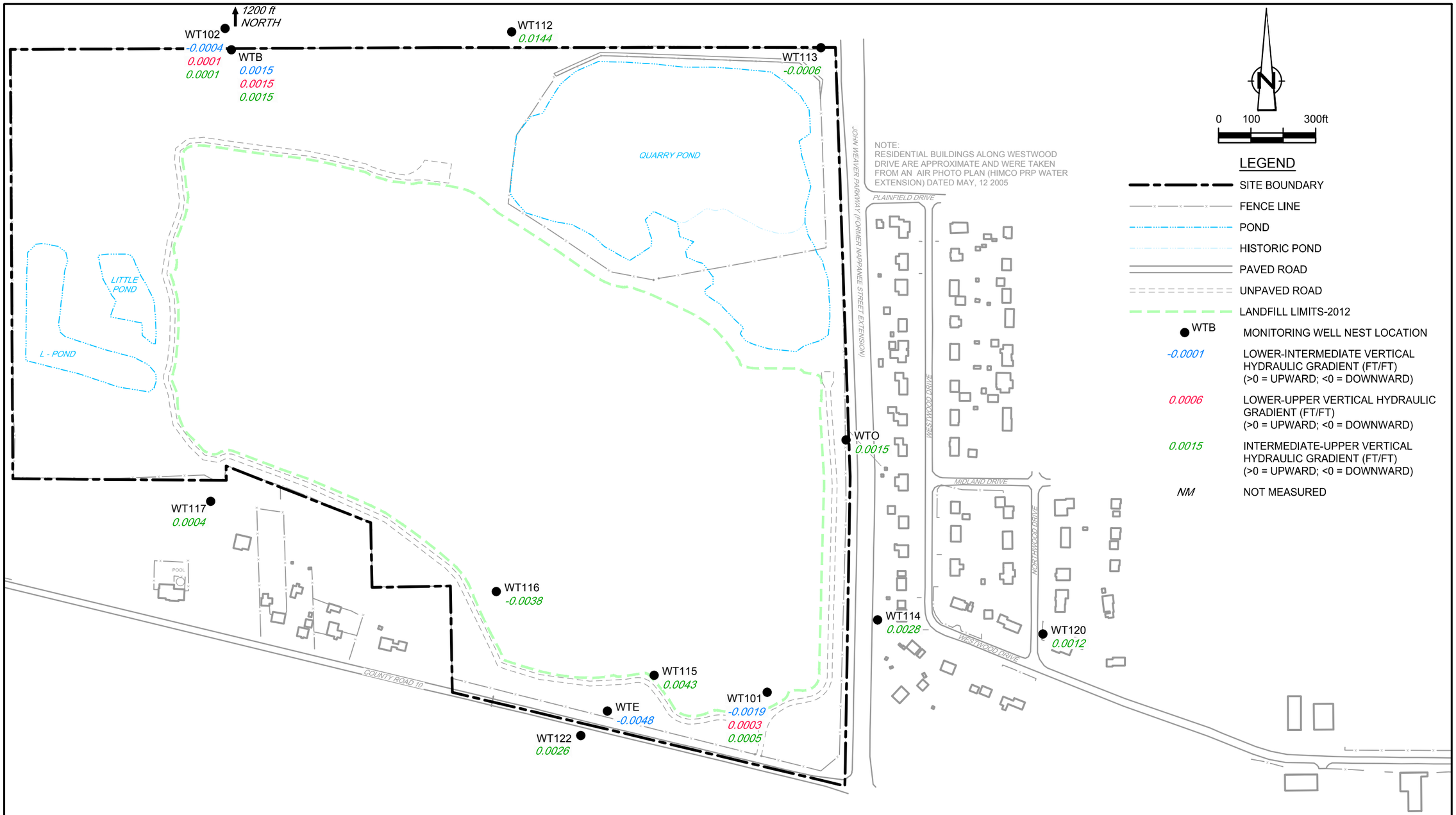


DATUM:
STATE PLANE COORDINATES INDIANA EAST ZONE
NORTH AMERICAN VERTICAL DATUM 1988
NORTH AMERICAN DATUM 1983
GEOID 03
UNITED STATES SURVEY FEET

figure 3.8

VERTICAL HYDRAULIC GRADIENTS
OCTOBER 3, 2016
HIMCO SITE
Elkhart, Indiana

39611-00(041)GN-WA008 NOV 14, 2017



DATUM:
STATE PLANE COORDINATES INDIANA EAST ZONE
NORTH AMERICAN VERTICAL DATUM 1988
NORTH AMERICAN DATUM 1983
GEOID 03
UNITED STATES SURVEY FEET

figure 3.9

VERTICAL HYDRAULIC GRADIENTS
APRIL 10, 2017
HIMCO SITE
Elkhart, Indiana

39611-00(041)GN-WA009 MAY 2, 2017

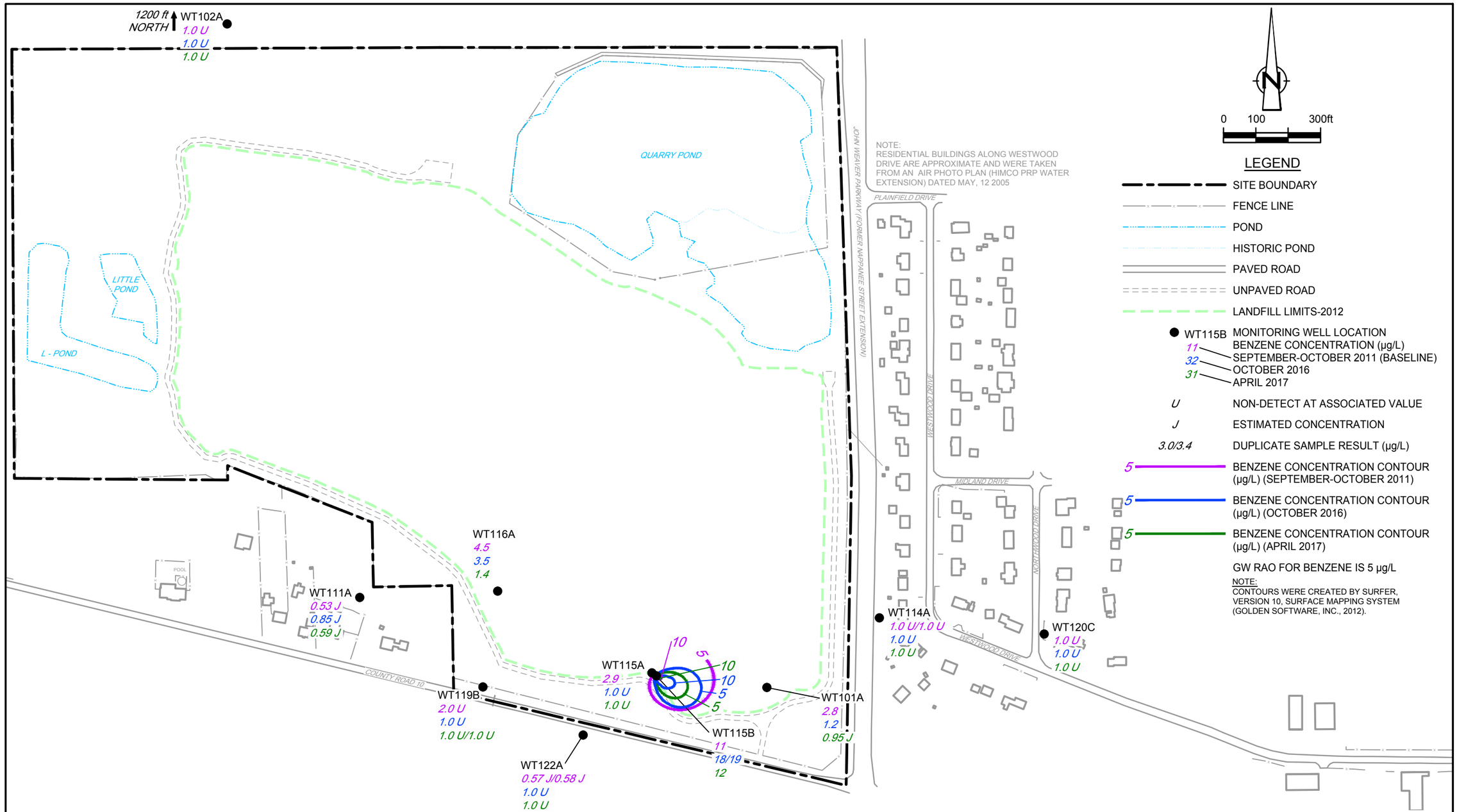


figure 4.1

BENZENE CONCENTRATION CONTOURS
OCTOBER 2016 TO APRIL 2017
UPPER AQUIFER
HIMCO SITE
Elkhart, Indiana

DATUM:
STATE PLANE COORDINATES INDIANA EAST ZONE
NORTH AMERICAN VERTICAL DATUM 1988
NORTH AMERICAN DATUM 1983
GEOID 03
UNITED STATES SURVEY FEET

39611-00(041)GN-WA016 OCT 26, 2017

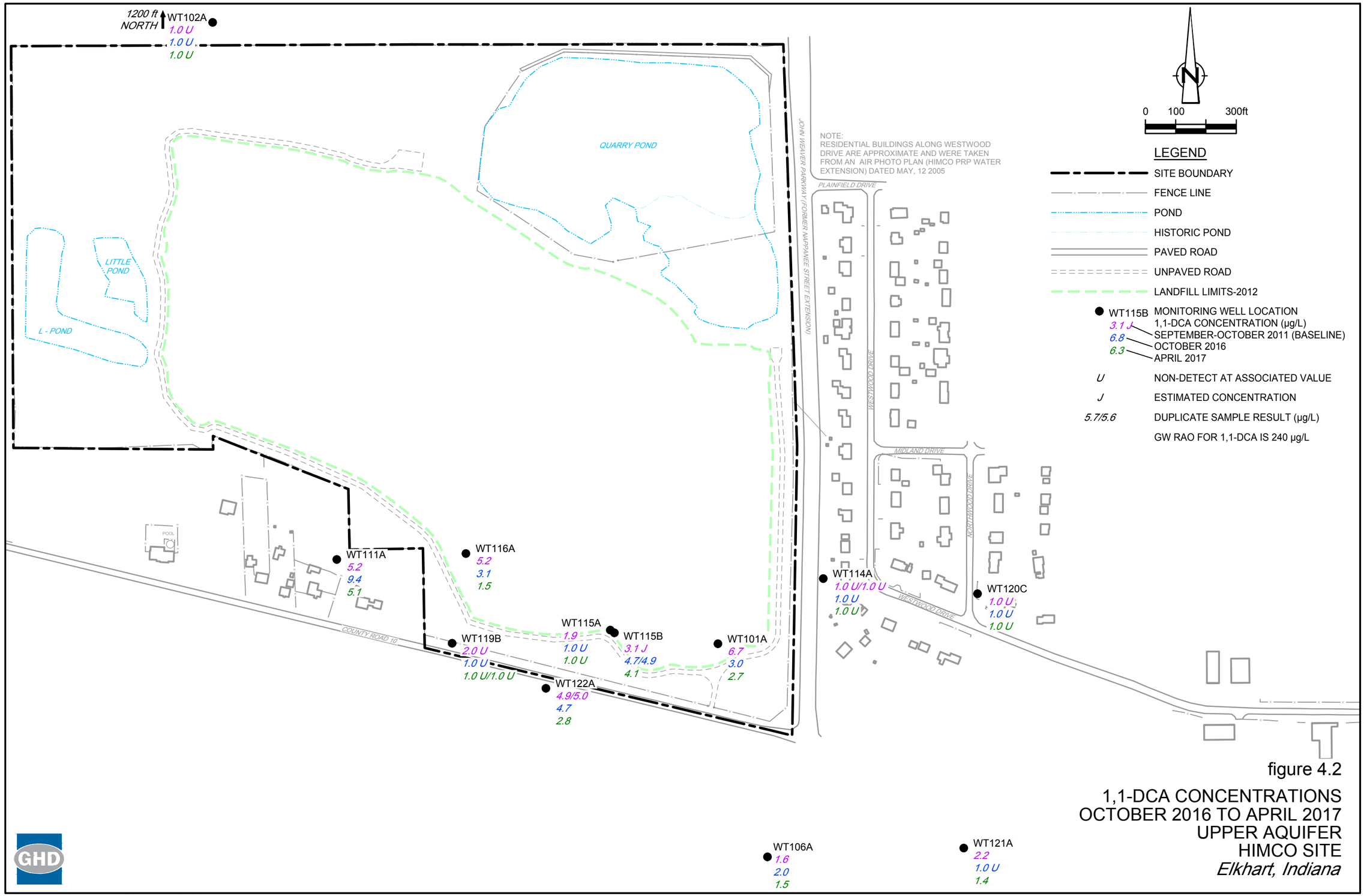


figure 4.2

1,1-DCA CONCENTRATIONS
OCTOBER 2016 TO APRIL 2017
UPPER AQUIFER
HIMCO SITE
Elkhart, Indiana

39611-00(041)GN-WA017 OCT 26, 2017

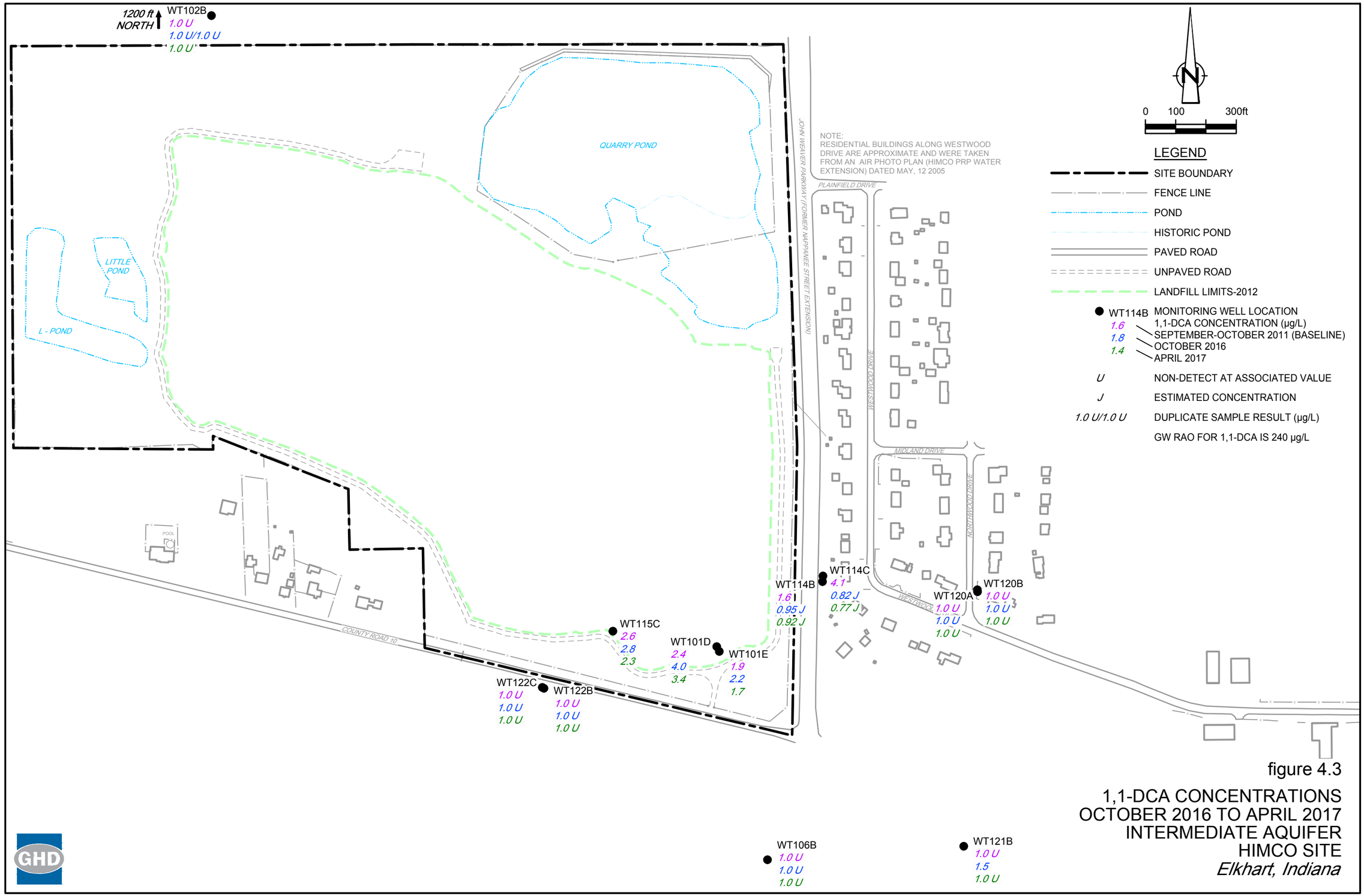


figure 4.3

1,1-DCA CONCENTRATIONS
OCTOBER 2016 TO APRIL 2017
INTERMEDIATE AQUIFER
HIMCO SITE
Elkhart, Indiana

39611-00(041)GN-WA018 OCT 26, 2017

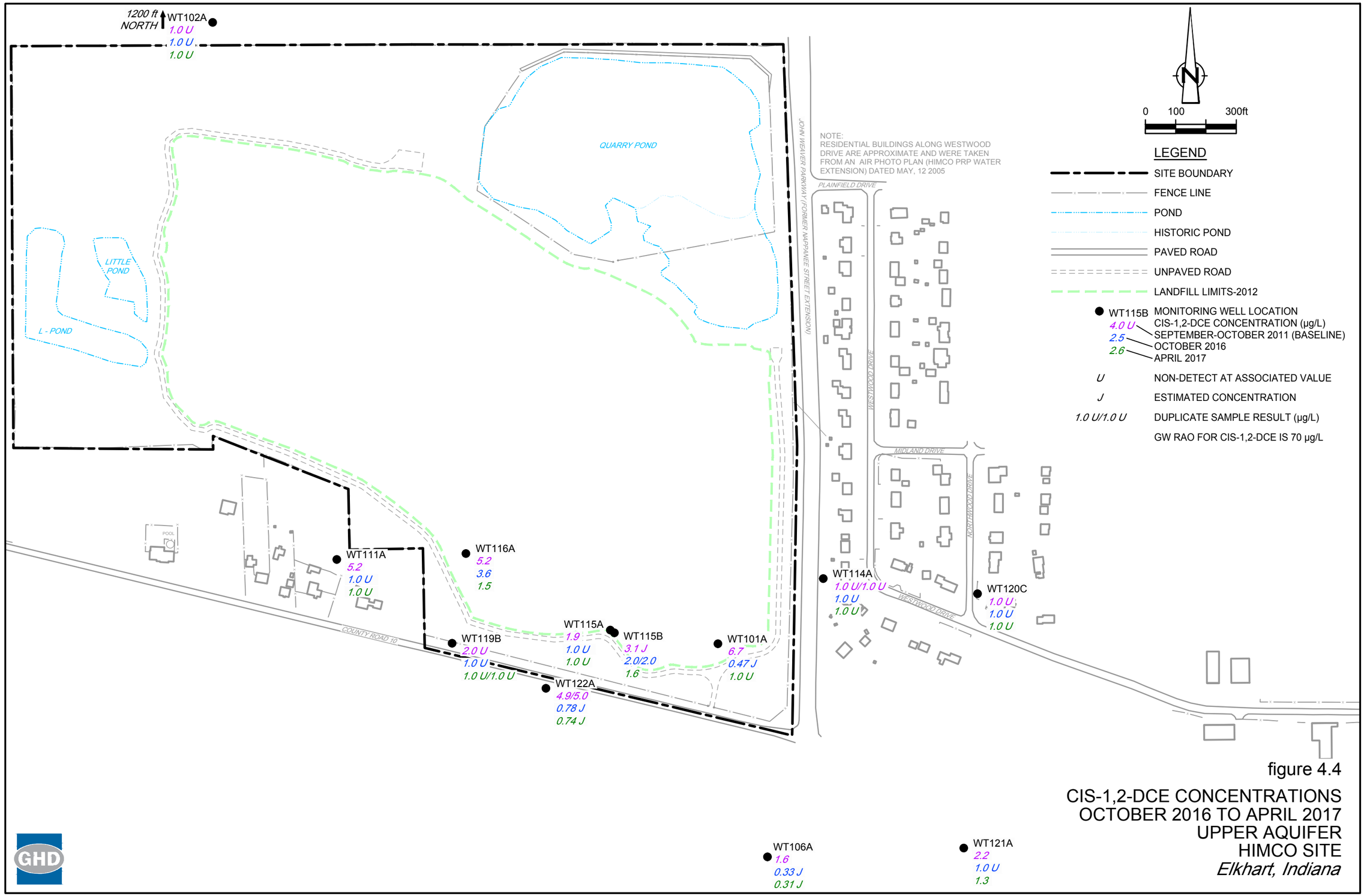


figure 4.4

CIS-1,2-DCE CONCENTRATIONS
OCTOBER 2016 TO APRIL 2017
UPPER AQUIFER
HIMCO SITE
Elkhart, Indiana

39611-00(041)GN-WA019 OCT 26, 2017

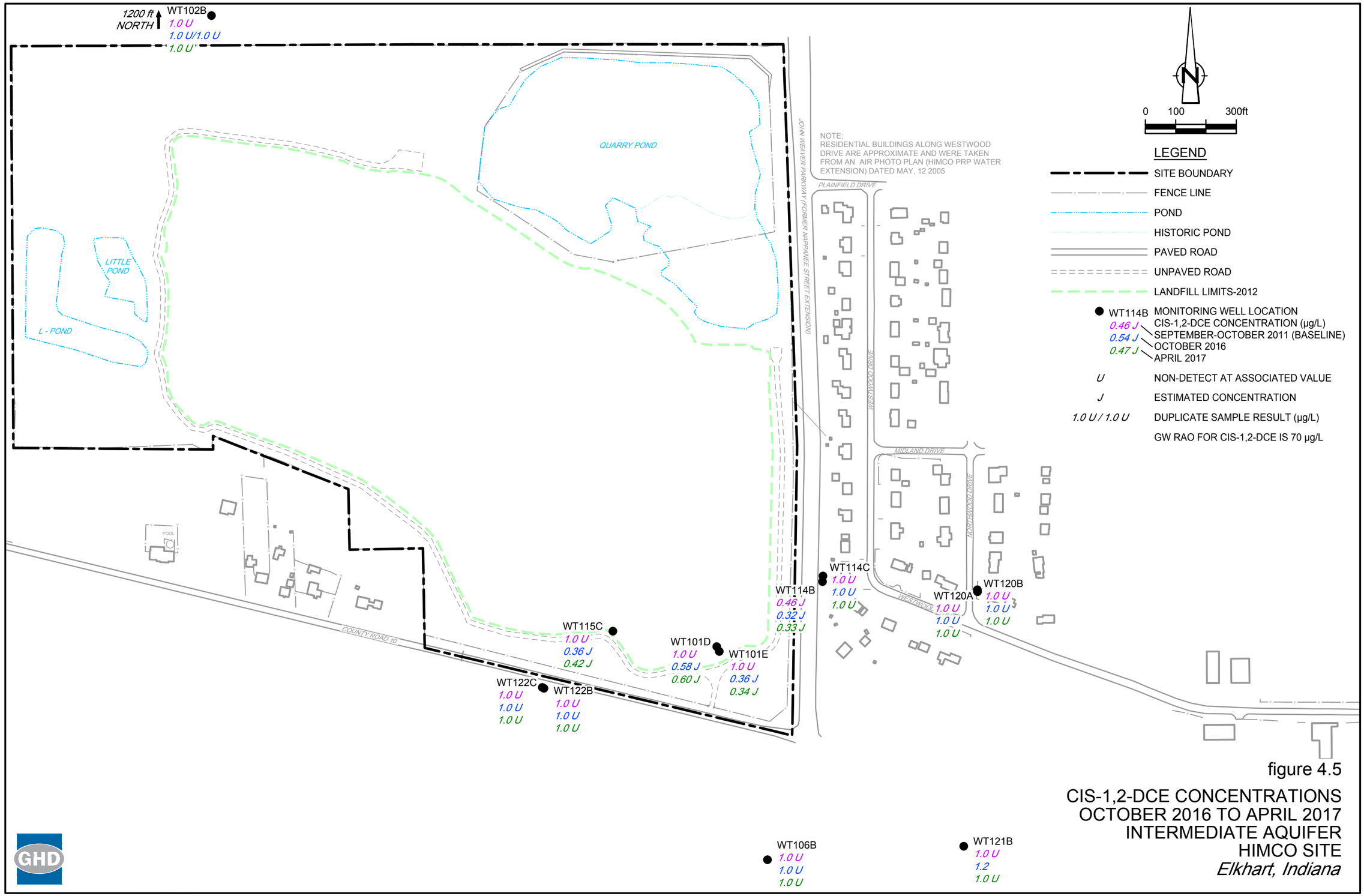


figure 4.5

CIS-1,2-DCE CONCENTRATIONS
OCTOBER 2016 TO APRIL 2017
INTERMEDIATE AQUIFER
HIMCO SITE
Elkhart, Indiana

39611-00(041)GN-WA020 OCT 26, 2017

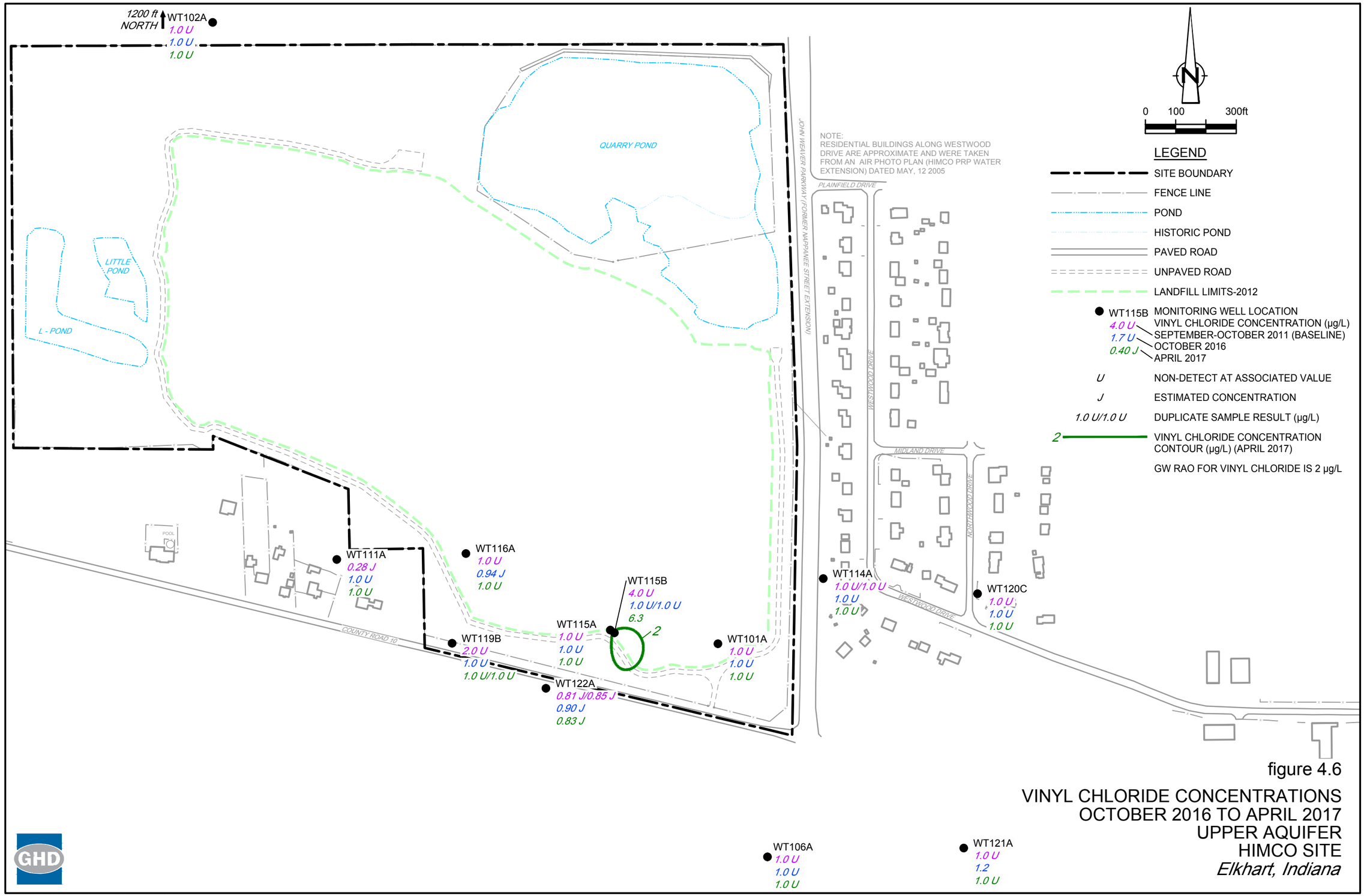


figure 4.6

VINYL CHLORIDE CONCENTRATIONS
OCTOBER 2016 TO APRIL 2017
UPPER AQUIFER
HIMCO SITE
Elkhart, Indiana

GHD

39611-00(041)GN-WA021 NOV 6, 2017

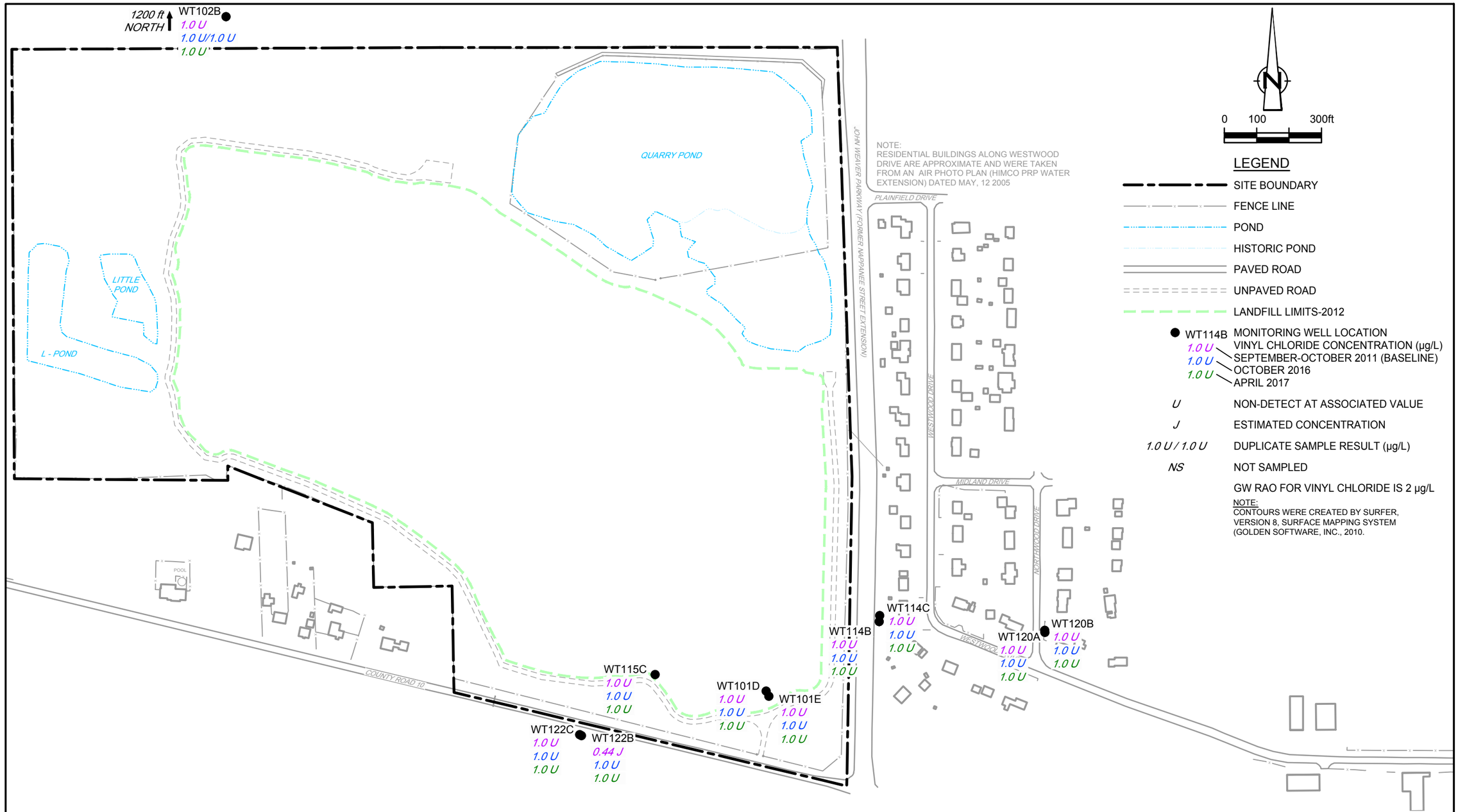


figure 4.7

VINYL CHLORIDE CONCENTRATIONS
OCTOBER 2016 TO APRIL 2017
INTERMEDIATE AQUIFER
HIMCO SITE
Elkhart, Indiana

DATUM:
STATE PLANE COORDINATES INDIANA EAST ZONE
NORTH AMERICAN VERTICAL DATUM 1988
NORTH AMERICAN DATUM 1983
GEOID 03
UNITED STATES SURVEY FEET

39611-00(041)GN-WA022 OCT 26, 2017

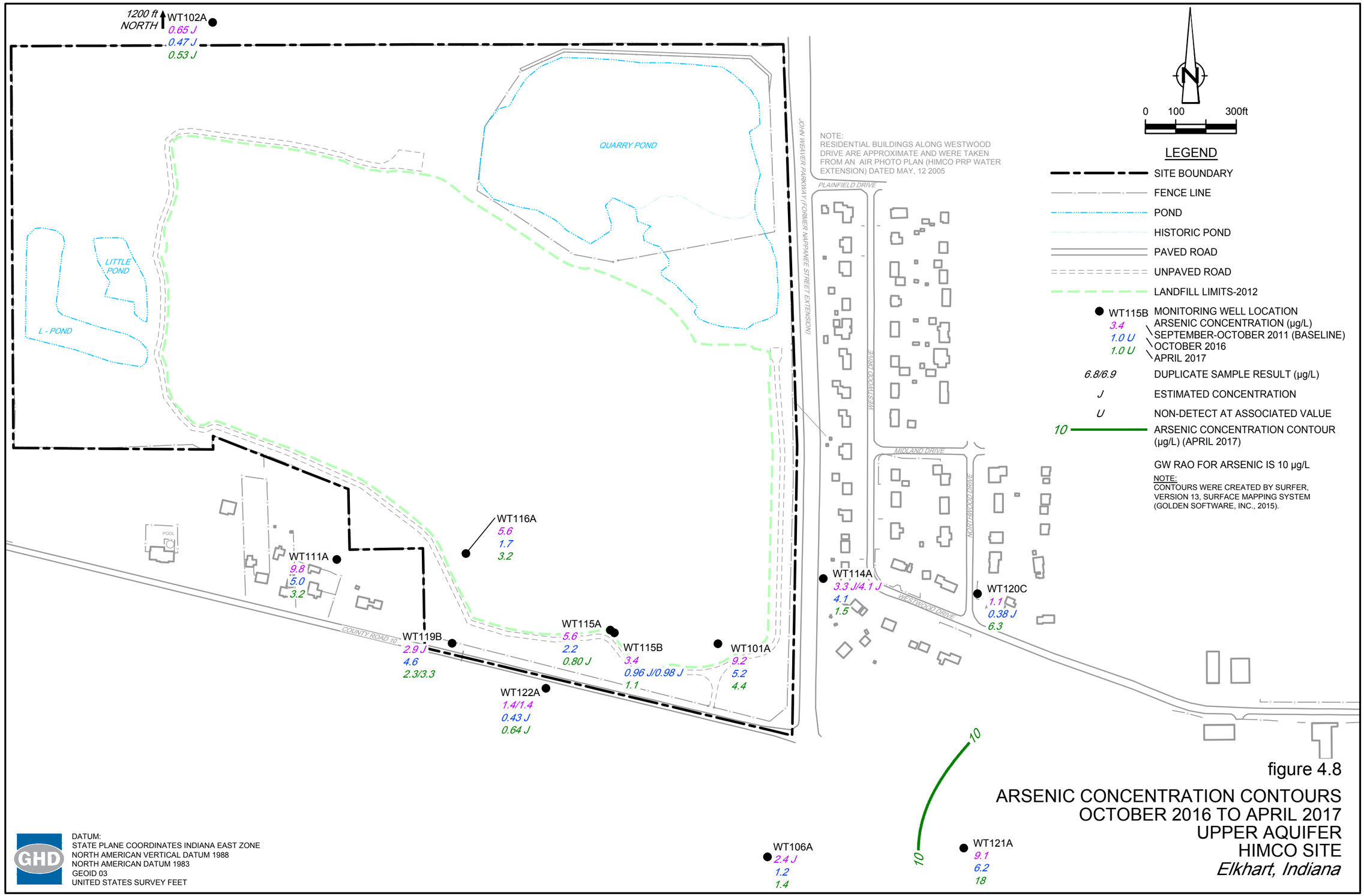
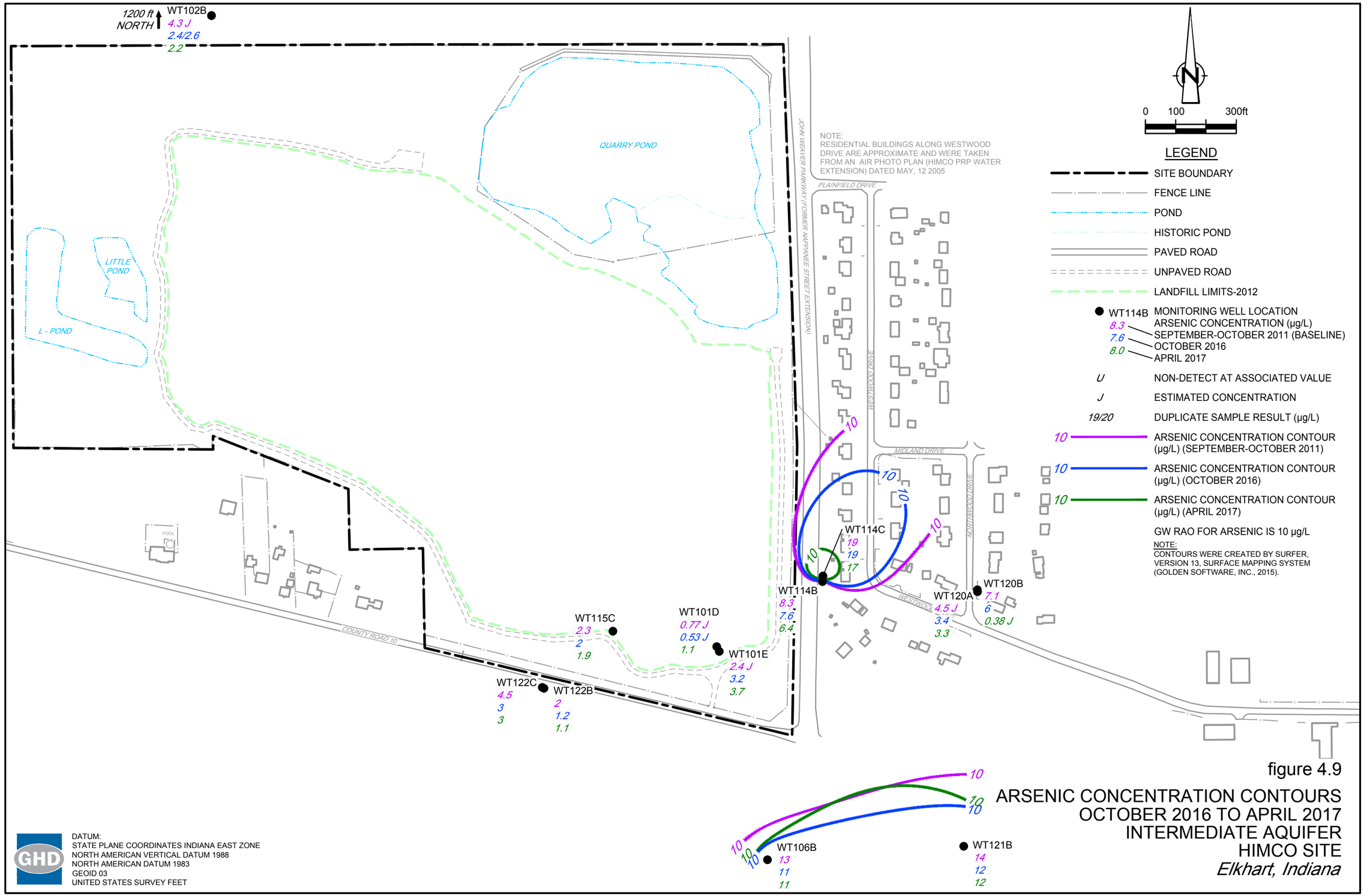


figure 4.8

ARSENIC CONCENTRATION CONTOURS
OCTOBER 2016 TO APRIL 2017
UPPER AQUIFER
HIMCO SITE
Elkhart, Indiana

39611-00(041)GN-WA014 OCT 25, 2017



DATUM:
STATE PLANE COORDINATES INDIANA EAST ZONE
NORTH AMERICAN VERTICAL DATUM 1988
NORTH AMERICAN DATUM 1983
GEOID 03
UNITED STATES SURVEY FEET

figure 4.9

ARSENIC CONCENTRATION CONTOURS
OCTOBER 2016 TO APRIL 2017
INTERMEDIATE AQUIFER
HIMCO SITE
Elkhart, Indiana

39611-00(041)GN-WA013 OCT 25, 2017

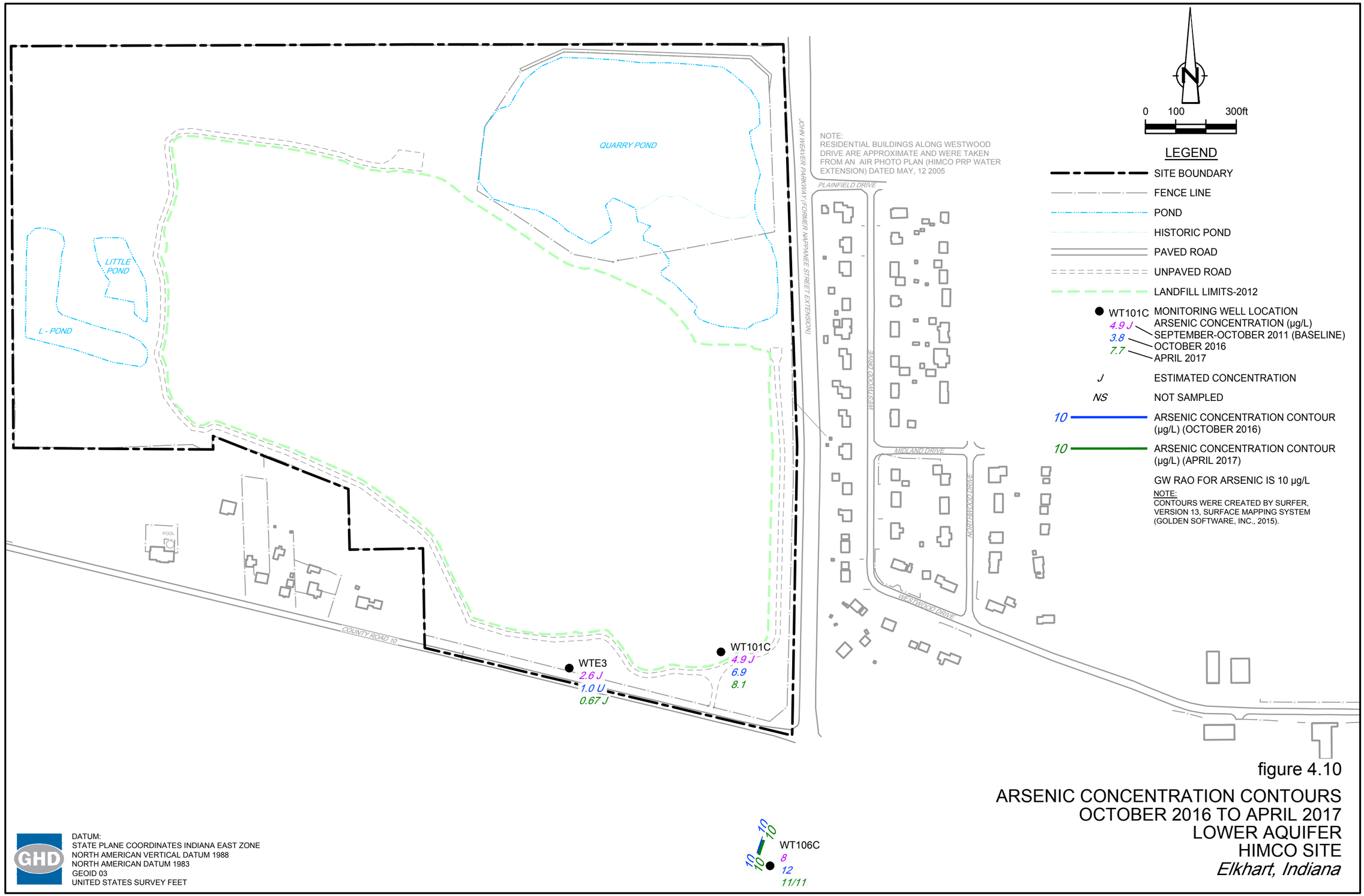


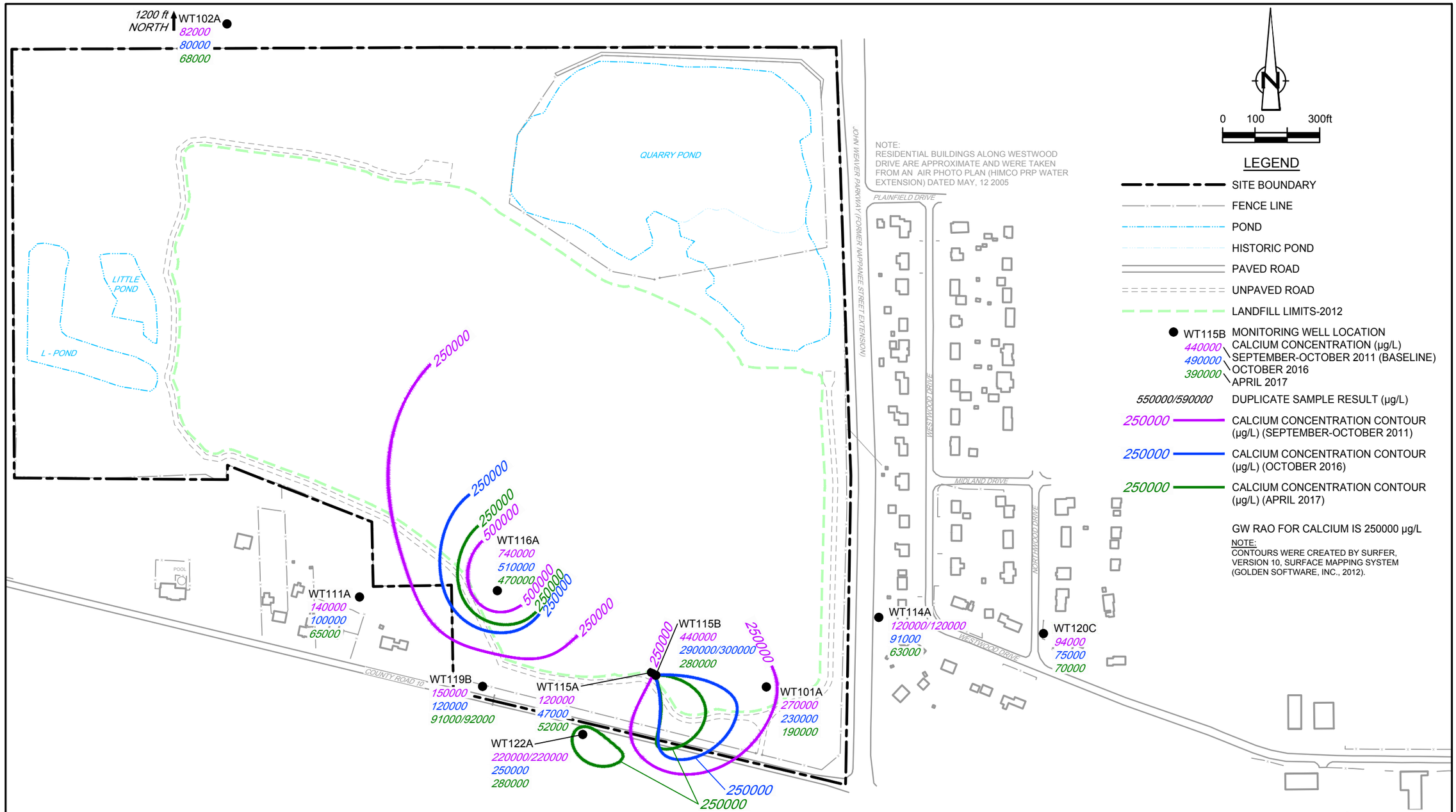
figure 4.10

ARSENIC CONCENTRATION CONTOURS
OCTOBER 2016 TO APRIL 2017
LOWER AQUIFER
HIMCO SITE
Elkhart, Indiana

GHD

DATUM:
STATE PLANE COORDINATES INDIANA EAST ZONE
NORTH AMERICAN VERTICAL DATUM 1988
NORTH AMERICAN DATUM 1983
GEOID 03
UNITED STATES SURVEY FEET

39611-00(041)GN-WA015 OCT 25, 2017



DATUM:
STATE PLANE COORDINATES INDIANA EAST ZONE
NORTH AMERICAN VERTICAL DATUM 1988
NORTH AMERICAN DATUM 1983
GEOID 03
UNITED STATES SURVEY FEET

figure 4.11

CALCIUM CONCENTRATION CONTOURS
OCTOBER 2016 TO APRIL 2017
UPPER AQUIFER
HIMCO SITE
Elkhart, Indiana

39611-00(041)GN-WA023 OCT 26, 2017

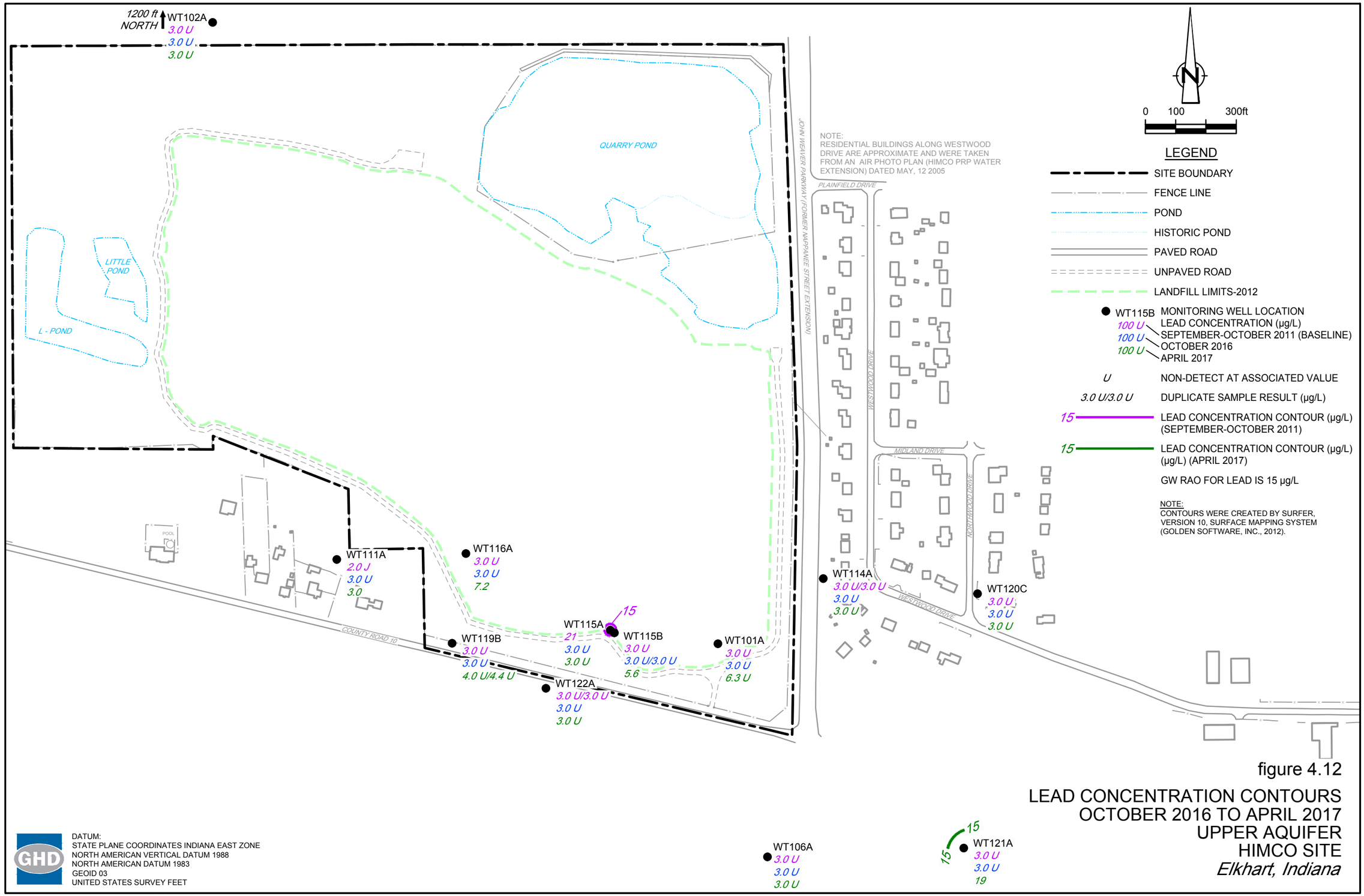


figure 4.12

LEAD CONCENTRATION CONTOURS
OCTOBER 2016 TO APRIL 2017
UPPER AQUIFER
HIMCO SITE
Elkhart, Indiana

39611-00(041)GN-WA024 OCT 26, 2017

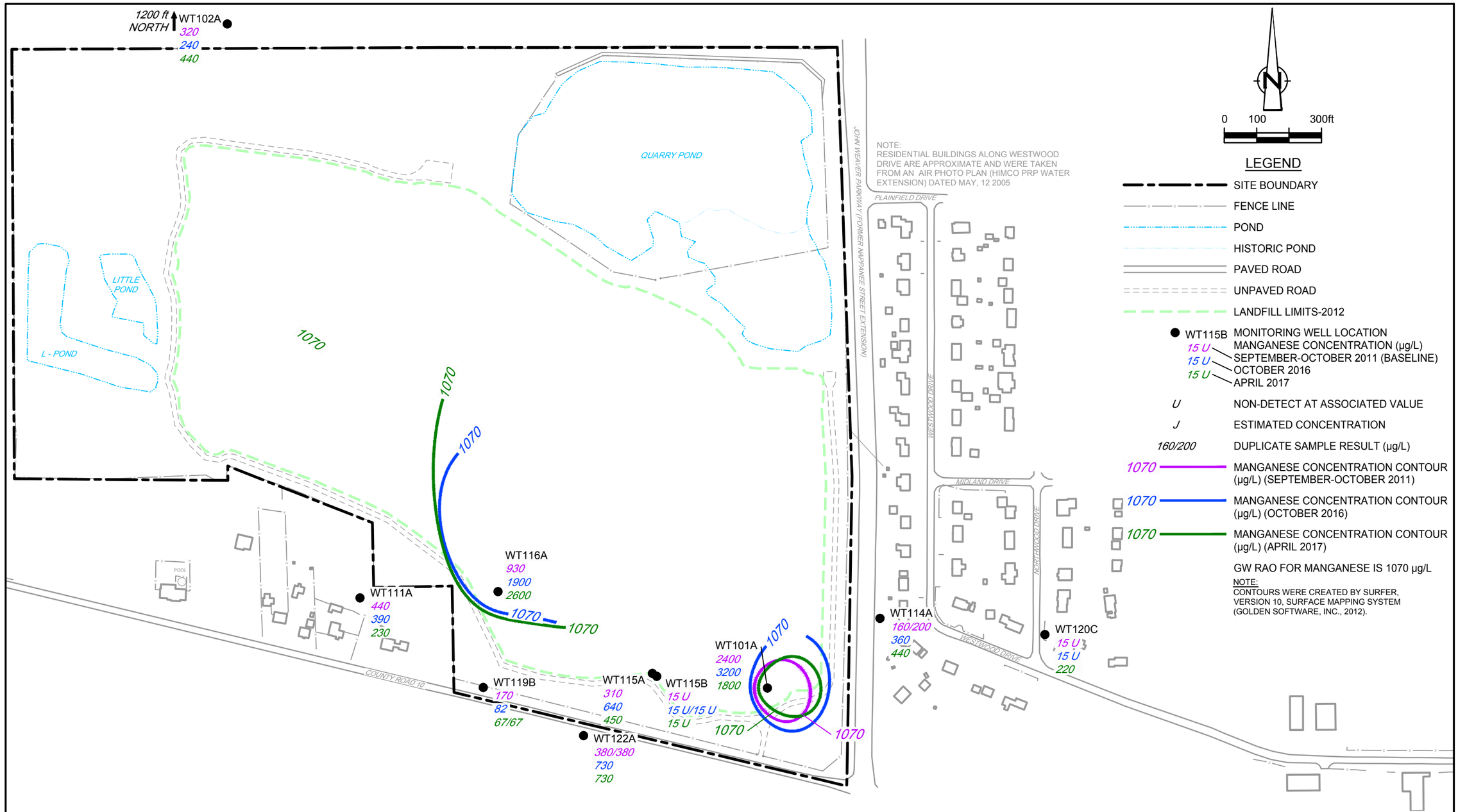


figure 4.13

MANGANESE CONCENTRATION CONTOURS
OCTOBER 2016 TO APRIL 2017
UPPER AQUIFER
HIMCO SITE
Elkhart, Indiana

GHD

DATUM:
STATE PLANE COORDINATES INDIANA EAST ZONE
NORTH AMERICAN VERTICAL DATUM 1988
NORTH AMERICAN DATUM 1983
GEOID 03
UNITED STATES SURVEY FEET

39611-00(041)GN-WA025 NOV 6, 2017

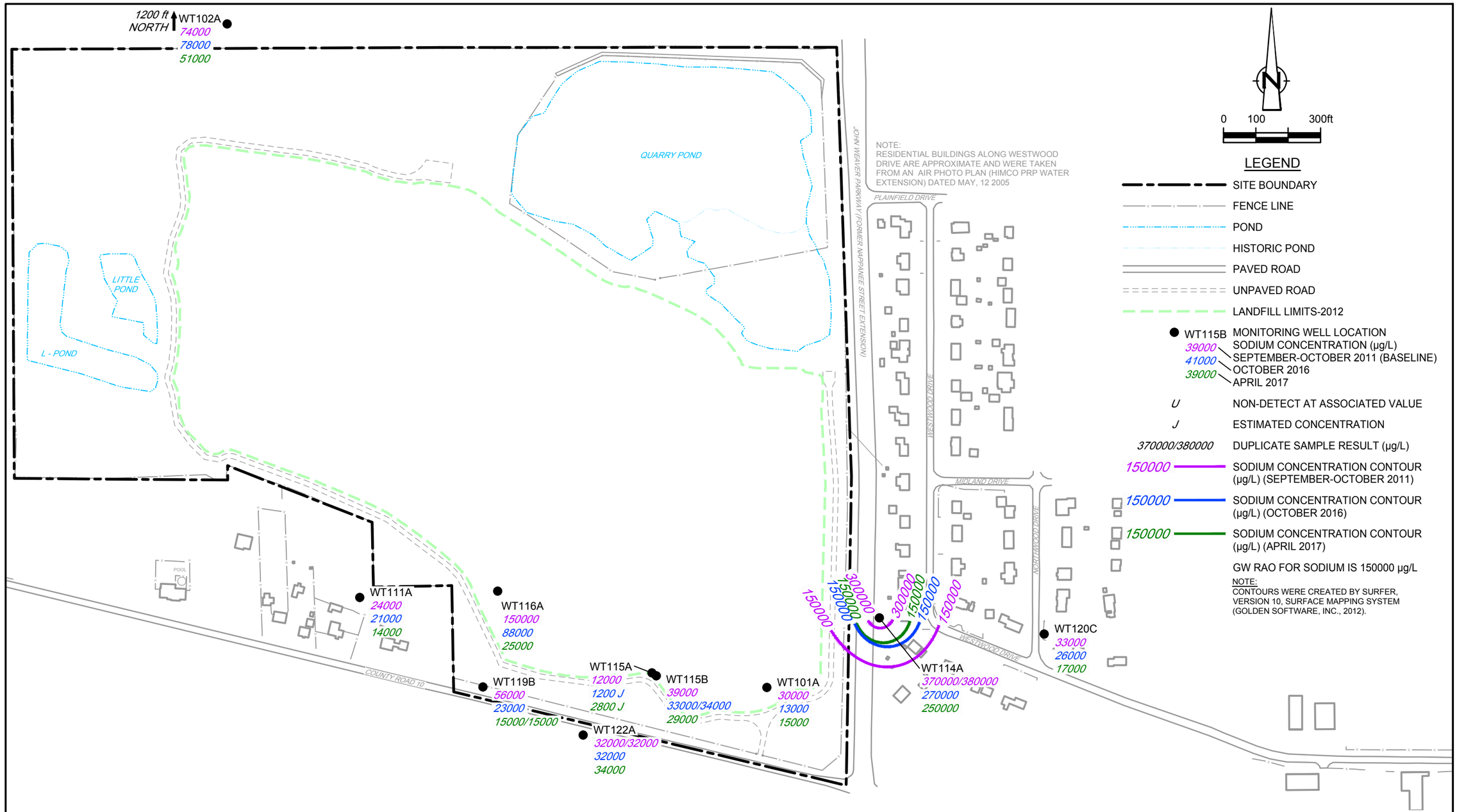


figure 4.14

SODIUM CONCENTRATION CONTOURS
OCTOBER 2016 TO APRIL 2017
UPPER AQUIFER
HIMCO SITE
Elkhart, Indiana

DATUM:
STATE PLANE COORDINATES INDIANA EAST ZONE
NORTH AMERICAN VERTICAL DATUM 1988
NORTH AMERICAN DATUM 1983
GEOID 03
UNITED STATES SURVEY FEET

39611-00(041)GN-WA026 OCT 26, 2017

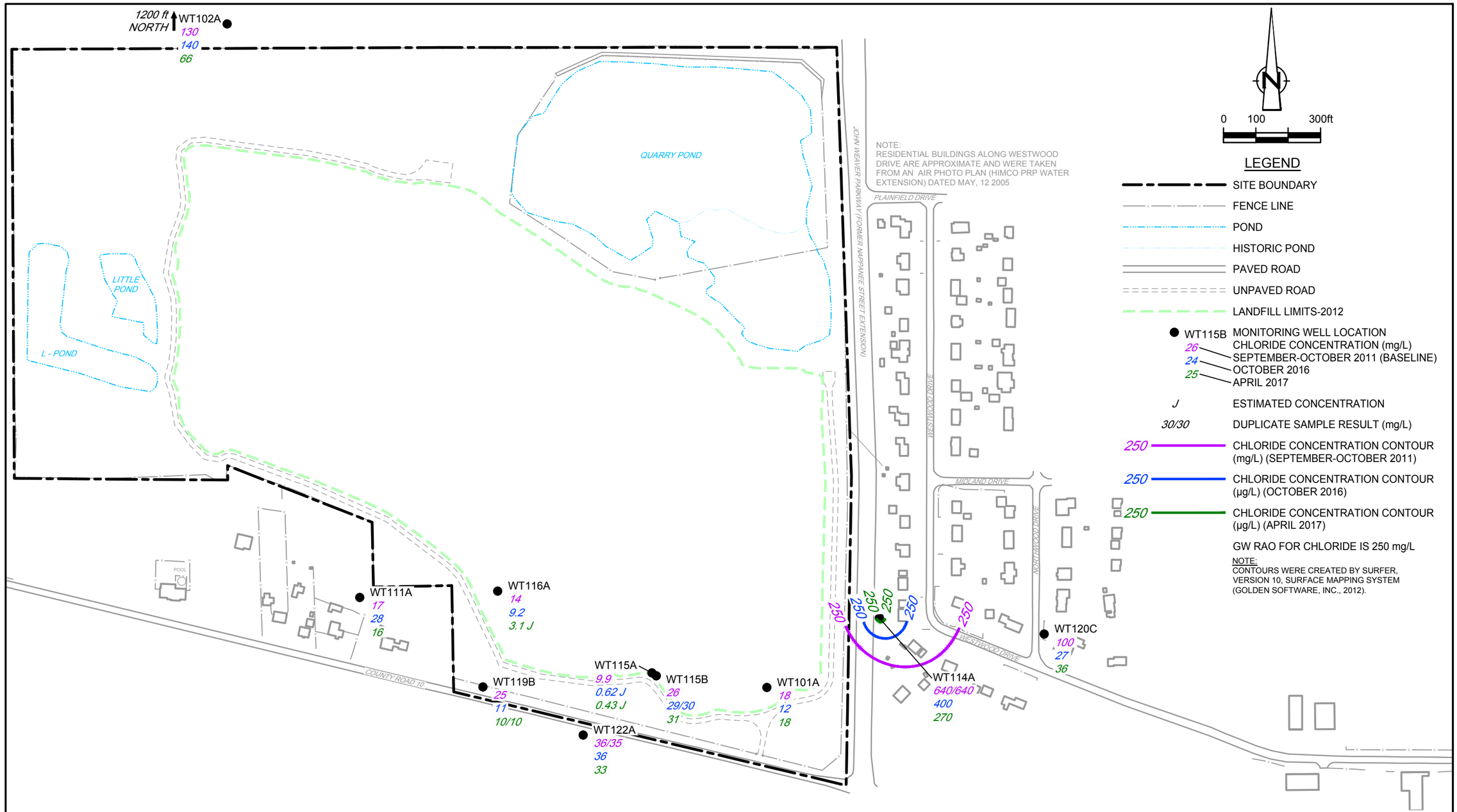


figure 4.15

CHLORIDE CONCENTRATION CONTOURS
OCTOBER 2016 TO APRIL 2017
UPPER AQUIFER
HIMCO SITE
Elkhart, Indiana

GHD

DATUM:
STATE PLANE COORDINATES INDIANA EAST ZONE
NORTH AMERICAN VERTICAL DATUM 1988
NORTH AMERICAN DATUM 1983
GEOID 03
UNITED STATES SURVEY FEET

39611-00(041)GN-WA027 OCT 26, 2017

Table 2.1

Monitoring Well Status
Himco Site
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 Steel	2	16.3	768.69	765.67	759.37	749.37	Upper	2351887.31	235722.28
WT102A	Functional	11/10/1990	10.00	Stainless Steel	2	16.0	768.50	766.19	760.19	750.19	Upper	2355111.73	234055.37
WT103A	Functional	11/11/1990	10.00	Stainless Steel	2	16.0	760.11	757.60	751.60	741.60	Upper	2352799.65	233645.99
WT104A	Functional	11/12/1990	10.00	Stainless Steel	2	16.3	765.50	761.75	755.45	745.45	Upper	2351753.96	234123.98
WT105A	Functional	11/10/1990	10.00	Stainless Steel	2	16.0	762.37	760.07	754.07	744.07	Upper	2351430.59	235211.48
WT106A	Functional	11/9/1990	10.00	Stainless Steel	2	16.3	760.98	758.46	752.16	742.16	Upper	2351184.52	235885.61
WT111A	Functional	9/10/1991	10.00	Stainless Steel	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 Site
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 Steel	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 Steel	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	765.65	763.00	676.00	671.00	Intermediate	2352652.85	235969.84
WTO4	Functional	5/4/2010	5.00	PVC	2	132.0	765.29	762.77	635.77	630.77	Intermediate	2352646.28	235971.31

Table 2.1

Monitoring Well Status
Himco Site
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 Steel	2	165.0	768.53	764.25	604.25	599.25	Lower	2351860.52	235732.51
WT102C	Functional	12/1/1990	5.00	Stainless Steel	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

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

Table 2.3

Groundwater Monitoring Program Parameter List - S10 and S11
Himco Site
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 Site
Elkhart, Indiana

	10/3/2016		10/4/2016		10/5/2016		10/6/2016		10/7/2016	
Location	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)	Depth to Water (ft BTOR)	Groundwater Elevation (ft AMSL)	Depth to Water (ft BTOR)	Groundwater Elevation (ft AMSL)
SW4	2.95	754.905	--	--	--	--	--	--		
SW5	1.96	755.145	--	--	--	--	--	--		
SW6	2	756.255	--	--	--	--	--	--		
WT101A	14.2	754.487	--	--	--	--	14.2	754.487		
WT101B	13.55	755.404	--	--	--	--	--	--		
WT101C	13.96	754.568	--	--	--	--	13.96	754.568		
WT101D	14.22	754.59	--	--	--	--	14.22	754.59		
WT101E	14.06	754.62	--	--	--	--	14.06	754.62		
WT102A	10.14	758.36	10.14	758.36	--	--	--	--		
WT102B	9.84	758.38	9.84	758.38	--	--	--	--		
WT102C	10.26	758.39	--	--	--	--	--	--		
WT103A	--	--	--	--	--	--	--	--		
WT104A	11.34	754.156	--	--	--	--	--	--		
WT106A	7.46	753.52	--	--	7.46	753.52	--	--		
WT106B	7.68	753.82	--	--	7.68	753.82	--	--		
WT106C	9.31	748.49	--	--	9.31	748.49	--	--		
WT111A	11.58	754.42	11.58	754.42	--	--	--	--		
WT112A	8.54	756.74	--	--	--	--	--	--		
WT112B	8.74	756.8	--	--	--	--	--	--		
WT113A	14.89	756.38	--	--	--	--	--	--		
WT113B	15.1	756.37	--	--	--	--	--	--		
WT114A	14.22	754.4	--	--	14.22	754.4	--	--		
WT114B	14.25	754.52	--	--	14.25	754.52	--	--		
WT114C	14.28	754.59	--	--	14.28	754.59	--	--		
WT115A	12	754.653	--	--	12	754.653	--	--		
WT115B	11.73	754.539	--	--	11.73	754.539	--	--		
WT115C	11.32	754.708	--	--	11.32	754.708	--	--		
WT116A	12.06	755.148	12.06	755.148	--	--	--	--		
WT116B	11.8	755.05	--	--	--	--	--	--		
WT117A	12.09	754.61	--	--	--	--	--	--		
WT117B	11.48	754.65	--	--	--	--	--	--		
WT117C	11.84	754.69	--	--	--	--	--	--		
WT117D	11.87	754.71	--	--	--	--	--	--		
WT118B	11.52	754.47	--	--	--	--	--	--		
WT119B	10.33	754.544	10.33	754.544	--	--	--	--		
WT120A	7.74	754.45	7.74	754.45	--	--	--	--		
WT120B	7.72	754.46	7.72	754.46	--	--	--	--		
WT120C	7.66	754.45	7.66	754.45	--	--	--	--		
WT121A	5.45	753.03	5.45	753.03	--	--	--	--		
WT121B	4.7	753.76	4.7	753.76	--	--	--	--		
WT122A	8.5	754.08	--	--	8.5	754.08	--	--		
WT122B	8.59	754.16	--	--	8.56	754.19	--	--		
WT122C	8.36	754.27	--	--	8.36	754.27	--	--		
WT123A	7.04	756.898	--	--	--	--	--	--		
WT124A	14.94	756.755	--	--	--	--	--	--		
WTB1	5.99	757.07	--	--	--	--	--	--		
WTB2	5.83	756.87	--	--	--	--	--	--		
WTB3	5.68	757.06	--	--	--	--	--	--		
WTB4	4.73	757.04	--	--	--	--	--	--		
WTE1	11.04	755.074	--	--	--	--	--	--		
WTE3	10.66	754.634	10.66	754.634	--	--	--	--		
WTO2	10.75	755.2	--	--	--	--	--	--		
WTO3	10.36	755.29	--	--	--	--	--	--		
WTO4	9.93	755.36	--	--	--	--	--	--		

Table 3.1

Summary of Groundwater Elevation Data
Himco Site
Elkhart, Indiana

	4/10/2017		4/11/2017		4/12/2017		4/13/2017		4/14/2017	
Location	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)	Depth to Water (ft BTOR)	Groundwater Elevation (ft AMSL)	Depth to Water (ft BTOR)	Groundwater Elevation (ft AMSL)
SW4	2.3	755.555	--	--	--	--	--	--		
SW5	1.2	755.905	--	--	--	--	--	--		
SW6	1.4	756.855	--	--	--	--	--	--		
WT101A	12.97	755.717	--	--	--	--	12.97	755.717		
WT101B	13.58	755.374	--	--	--	--	--	--		
WT101C	12.77	755.758	--	--	--	--	12.77	755.758		
WT101D	12.99	755.82	--	--	--	--	12.99	755.82		
WT101E	12.84	755.84	--	--	--	--	12.84	755.84		
WT102A	9.05	759.45	9.05	759.45	--	--	--	--		
WT102B	8.72	759.5	8.72	759.5	--	--	--	--		
WT102C	9.19	759.46	--	--	--	--	--	--		
WT103A	4.23	755.88	--	--	--	--	--	--		
WT104A	10.24	755.256	--	--	--	--	--	--		
WT106A	6.29	754.69	--	--	6.29	754.69	--	--		
WT106B	6.53	754.97	--	--	6.53	754.97	--	--		
WT106C	8.58	749.22	--	--	8.58	749.22	--	--		
WT111A	10.44	755.56	--	--	10.44	755.56	--	--		
WT112A	7.42	757.86	--	--	--	--	--	--		
WT112B	7.01	758.53	--	--	--	--	--	--		
WT113A	13.71	757.56	--	--	--	--	--	--		
WT113B	13.94	757.53	--	--	--	--	--	--		
WT114A	13.02	755.6	13.02	755.6	--	--	--	--		
WT114B	13.04	755.73	13.04	755.73	--	--	--	--		
WT114C	13.07	755.8	13.07	755.8	--	--	--	--		
WT115A	10.92	755.733	--	--	10.92	755.733	--	--		
WT115B	10.6	755.669	--	--	10.6	755.669	--	--		
WT115C	10.19	755.838	--	--	10.19	755.838	--	--		
WT116A	10.85	756.358	--	--	10.85	756.358	--	--		
WT116B	10.67	756.18	--	--	--	--	--	--		
WT117A	11.02	755.68	--	--	--	--	--	--		
WT117B	10.43	755.7	--	--	--	--	--	--		
WT117C	10.81	755.72	--	--	--	--	--	--		
WT117D	10.8	755.78	--	--	--	--	--	--		
WT118B	10.43	755.56	--	--	--	--	--	--		
WT119B	9.17	755.704	--	--	--	--	9.17	755.704		
WT120A	6.52	755.67	6.52	755.67	--	--	--	--		
WT120B	6.45	755.73	6.45	755.73	--	--	--	--		
WT120C	6.51	755.6	6.51	755.6	--	--	--	--		
WT121A	4.42	754.06	--	--	--	--	--	--		
WT121B	3.55	754.91	3.55	754.93	--	--	--	--		
WT122A	7.32	755.26	--	--	7.32	755.26	--	--		
WT122B	7.39	755.36	--	--	7.39	755.36	--	--		
WT122C	7.21	755.42	--	--	7.21	755.42	--	--		
WT123A	5.97	757.968	--	--	--	--	--	--		
WT124A	13.76	757.935	--	--	--	--	--	--		
WTB1	4.9	758.16	--	--	--	--	--	--		
WTB2	4.77	757.93	--	--	--	--	--	--		
WTB3	4.63	758.11	--	--	--	--	--	--		
WTB4	3.6	758.17	--	--	--	--	--	--		
WTE1	9.86	756.254	--	--	--	--	--	--		
WTE3	9.5	755.794	--	--	--	--	9.5	755.794		
WTO2	9.59	756.36	--	--	--	--	--	--		
WTO3	9.19	756.46	--	--	--	--	--	--		
WTO4	8.79	756.5	--	--	--	--	--	--		

Table 4.1

Stabilization Parameters
Himco Site
Elkhart, Indiana

Well	Date	Conductivity (µS/cm)	Dissolved oxygen (DO), Field (µg/L)	Oxidation Reduction Potential (ORP), Field (millivolts)	pH (s.u.)	Temperature Sample (Deg C)	Turbidity (NTU)
WT101A	**10/6/2016**	1.145	2.53	-62.5	6.14	16.24	2.89
WT101A	**4/13/2017**	1.095	2.55	-97.6	6.61	11.2	1.43
WT101C	**10/6/2016**	0.326	0.8	-118.2	6.5	14.46	3.37
WT101C	**4/13/2017**	0.581	0.78	-208.9	7.27	11.8	2.14
WT101D	**10/6/2016**	0.47	2.21	-278.6	7.36	14.77	3.05
WT101D	**4/13/2017**	0.54	1.43	-246.5	7.61	13.18	1.28
WT101E	**4/13/2017**	0.425	0.83	-197.1	6.81	12.39	1.33
WT101E	**10/6/2016**	0.474	0.60	-172.2	6.55	14.58	0.36
WT102A	**10/4/2016**	0.69	5.97	-12.9	7.03	15	4.45
WT102A	**4/11/2017**	0.595	2.82	-1.9	6.92	9.6	4.87
WT102B	**10/4/2016**	0.487	3.27	-264.2	7.4	13.99	2.46
WT102B	**4/11/2017**	0.591	1.8	-143.4	7.37	11.35	2.26
WT106A	**10/5/2016**	0.516	0.79	8.1	7.55	15.62	3.89
WT106A	**4/12/2017**	0.576	1.13	0.8	7.42	9.11	2.69
WT106B	**10/5/2016**	0.776	2.32	-253.7	7.04	12.93	1.45
WT106B	**4/12/2017**	0.954	2.26	-231.2	7.19	11.53	2.24
WT106C	**10/5/2016**	0.343	2.8	-101.2	7.38	13	1.5
WT106C	**4/12/2017**	0.438	2.14	-158.7	7.65	12.23	2.49
WT111A	**10/4/2016**	0.568	3.2	23.9	6.4	14.9	4.26
WT111A	**4/12/2017**	0.405	2.45	18.4	6.53	9.84	4.38
WT114A	**10/5/2016**	1.478	2.11	-97.3	6.96	16.64	3.76
WT114A	**4/11/2017**	1.342	2	-41.9	7.25	11.46	3.41
WT114B	**10/5/2016**	0.392	1.46	-189.3	7.75	14.57	1.77
WT114B	**4/11/2017**	0.535	0.75	-202.4	7.34	13.26	1.21
WT114C	**10/5/2016**	0.47	1.95	-253.7	7.31	13.58	1.57
WT114C	**4/11/2017**	0.612	0.8	-118.6	7.44	12.7	1.21
WT115A	**10/5/2016**	0.289	0.71	-47.8	6.45	19.36	2.91
WT115A	**4/12/2017**	0.338	2.14	-149.6	6.37	10.53	4.25
WT115B	**10/5/2016**	1.434	1.95	-347.4	6.82	14.97	1.14
WT115B	**4/12/2017**	1.636	0.71	-296.8	7.22	12.47	1.43

Table 4.1

Stabilization Parameters
Himco Site
Elkhart, Indiana

Well	Date	Conductivity (µS/cm)	Dissolved oxygen (DO), Field (µg/L)	Oxidation Reduction Potential (ORP), Field (millivolts)	pH (s.u.)	Temperature Sample (Deg C)	Turbidity (NTU)
WT115C	**10/5/2016**	0.493	2.21	-215.3	7.27	14.43	3.65
WT115C	**4/12/2017**	0.573	0.7	-245.3	7.45	13.64	4.31
WT116A	**10/4/2016**	2.59	2.37	-11.1	6.45	19.2	4.52
WT116A	**4/12/2017**	2.085	1.1	-32.6	6.32	10.82	2.46
WT119B	**10/4/2016**	0.769	2.52	42.9	6.57	16.42	3.72
WT119B	**4/13/2017**	0.638	1	8.5	6.99	8.89	3.79
WT120A	**10/4/2016**	0.52	2.24	-192.9	7.36	14.21	3.28
WT120A	**4/11/2017**	0.637	0.73	-156.4	7.58	12.65	2.49
WT120B	**10/4/2016**	0.437	0.67	-124.5	6.45	15.39	3.29
WT120B	**4/11/2017**	0.495	1.51	-0.3	7.46	10.84	2.13
WT120C	**10/4/2016**	0.508	3.1	-8.1	7.16	17.99	1.25
WT120C	**4/11/2017**	0.544	0.9	-154.1	7.43	12.64	2.38
WT121A	**10/4/2016**	0.647	2.9	-63.7	7.2	14.2	2.62
WT121A	**4/11/2017**	0.575	0.4	-84.6	7.3	11.56	1.7
WT121B	**10/4/2016**	0.873	0.88	-122.7	6.55	12.88	1.31
WT121B	**4/11/2017**	0.881	0.74	-212	7.2	11.75	4.03
WT122A	**10/5/2016**	1.217	2.42	-106.2	6.68	14.47	2.79
WT122A	**4/12/2017**	1.492	-0.6	-29.1	6.88	12.73	2.64
WT122B	**10/5/2016**	0.471	0.89	-225.4	7.37	14.03	1.53
WT122B	**4/12/2017**	0.616	1.97	-242.3	7.41	13.9	2.31
WT122C	**10/5/2016**	0.57	2.44	-254.1	7.32	13.91	3.56
WT122C	**4/12/2017**	0.68	1.91	-299.1	7.32	13.54	1.92
WTE3	**10/4/2016**	0.601	3.7	-264.8	7.22	14.82	1.44
WTE3	**4/13/2017**	0.471	1.4	-153.5	7.5	11.42	1.63

Notes:

µS/cm	MicroSiemens per cm
mg/L	Milligrams per liter
s.u.	Standard units
NTU	Nephelometric Turbidity Units

Table 4.2

Groundwater Analytical Results Summary - VOCS
Himco Site
Elkhart, Indiana

Parameters	Units	GWRAOs	Number of Samples	Number of Detections	Percentage of Detections	Number Of Exceedences	Percentage of Exceedences	Maximum Detection	Minimum Detection
Volatile Organic Compounds									
1,1-Dichloroethane	µg/L	240	58	25	43.1%	0	0.0%	9.4	0.77
Benzene	µg/L	5	58	9	15.5%	3	5.2%	19	0.59
cis-1,2-Dichloroethene	µg/L	70	58	20	34.5%	0	0.0%	3.6	0.31
Vinyl chloride	µg/L	2	58	8	13.8%	1	1.7%	6.3	0.8

Notes:

µg/L Micrograms per liter
GW RAOs Groundwater Remedial Action Objectives

Table 4.3

Groundwater Analytical Results Summary- Metals- Upper Aquifer
Himco Site
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	Maximum Detection	Minimum Detection
Metals														
Arsenic	µg/L	10	-	-	0.045	2 U	10	26	25	96.15%	1	3.85%	18	0.38
Calcium	µg/L	-	-	250000	-	242000	250000	26	26	100.00%	6	23.08%	510000	47000
Iron	µg/L	-	300	1000	26000	7100	26000	26	22	84.62%	0	0.00%	22000	380
Lead	µg/L	15	-	-	-	3.0 U	15	26	4	15.38%	1	3.85%	19	3
Manganese	µg/L	-	50	-	880	1070	1070	26	22	84.62%	4	15.38%	3200	43
Sodium	µg/L	-	-	150000	-	102000	150000	26	26	100.00%	2	7.69%	270000	1200
General Chemistry														
Chloride	mg/L	-	250	-	-	228	250	26	26	100.00%	2	7.69%	400	0.43
Sulfate	mg/L	-	250	-	-	637	637	26	25	96.15%	0	0.00%	330	2.1

Notes:

mg/L	Milligram per liter.
µg/L	Micrograms per liter.
U	Not detected. The associated numerical value is the reporting detection limit.
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 Site
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	Maximum Detection	Minimum Detection
Metals														
Arsenic	µg/L	10	-	-	0.045	7.05	10	25	24	96.00%	6	24.00%	19	0.38
Calcium	µg/L	-	-	250000	-	85800	250000	25	25	100.00%	0	0.00%	110000	64000
Iron	µg/L	-	300	1000	26000	2170	26000	25	24	96.00%	0	0.00%	5600	480
Lead	µg/L	15	-	-	-	3.0 U	15	25	0	0.00%	0	0	N/A	N/A
Manganese	µg/L	-	50	-	880	170	880	25	24	96.00%	0	0.00%	210	25
Sodium	µg/L	-	-	150000	-	31600	150000	25	25	100.00%	0	0.00%	55000	16000
General Chemistry														
Chloride	mg/L	-	250	-	-	54.5	250	25	25	100.00%	0	0.00%	69	18
Sulfate	mg/L	-	250	-	-	370	370	25	25	100.00%	0	0.00%	130	16

Notes:

mg/L	Milligram per liter.
µg/L	Micrograms per liter.
U	Not detected. The associated numerical value is the reporting detection limit.
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 Site
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	Maximum Detection	Minimum Detection
Metals														
Arsenic	µg/L	10	-	-	0.045	5.58	10	7	5	71.43%	3	42.86%	12	6.9
Calcium	µg/L	-	-	250000	-	239000	250000	7	7	100.00%	0	0.00%	110000	47000
Iron	µg/L	-	300	1000	26000	15300	26000	7	7	100.00%	0	0.00%	1100	77
Lead	µg/L	15	-	-	-	3.9	15	7	0	0.00%	0	0.00%	N/A	N/A
Manganese	µg/L	-	50	-	880	1140	1140	7	7	100.00%	0	0.00%	56	7
Sodium	µg/L	-	-	150000	-	80600	150000	7	7	100.00%	0	0.00%	19000	12000
General Chemistry														
Chloride	mg/L	-	250	-	-	77.7	250	7	7	100.00%	0	0.00%	18	2
Sulfate	mg/L	-	250	-	-	73.2	250	7	4	57.14%	0	0.00%	24	4.9

Notes:

mg/L	Milligram per liter.
µg/L	Micrograms per liter.
U	Not detected. The associated numerical value is the reporting detection limit.
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.

Appendices

Appendix A
Field Notes and Stabilization Parameters

Table A.1

Analytical Results Summary
Sampling

Sample Location:		**WT101A**	**WT101A**	**WT101C**	**WT101C**	**WT101D**	**WT101D**	**WT101E**	**WT101E**
Sample ID:		**GW-WT101A-100616**	**GW-WT101A-041317**	**GW-WT101C-100616**	**GW-WT101C-041317**	**GW-WT101D-100616**	**GW-WT101D-041317**	**GW-WT101E-041317**	**GW-WT101E-041317**
Sample Date:		**10/6/2016**	**4/13/2017**	**10/6/2016**	**4/13/2017**	**10/6/2016**	**4/13/2017**	**10/6/2016**	**4/13/2017**
Field Parameters	**Units**								
Conductivity, field	mS/cm	1.145	1.095	0.326	0.581	0.47	0.54	0.474	0.425
Dissolved oxygen (DO), field	mg/L	2.53	2.55	0.8	0.78	2.21	1.43	0.60	0.83
Oxidation reduction potential (ORP), field	millivolts	-62.5	-97.6	-118.2	-208.9	-278.6	-246.5	-172.2	-197.1
pH, field	s.u.	6.14	6.61	6.5	7.27	7.36	7.61	6.55	6.81
Temperature, sample	Deg C	16.24	11.2	14.46	11.8	14.77	13.18	14.58	12.39
Turbidity, field	NTU	2.89	1.43	3.37	2.14	3.05	1.28	0.36	1.33

Sample Location:		**WT102A**	**WT102A**	**WT102B**	**WT102B**	**WT106A**	**WT106A**	**WT106B**	**WT106B**
Sample ID:		**GW-WT102A-100416**	**GW-WT102A-041117**	**GW-WT102B-100416**	**GW-WT102B-041117**	**GW-WT106A-100516**	**GW-WT106A-041217**	**GW-WT106B-100516**	**GW-WT106B-041217**
Sample Date:		**10/4/2016**	**4/11/2017**	**10/4/2016**	**4/11/2017**	**10/5/2016**	**4/12/2017**	**10/5/2016**	**4/12/2017**
Field Parameters	**Units**								
Conductivity, field	mS/cm	0.69	0.595	0.487	0.591	0.516	0.576	0.776	0.954
Dissolved oxygen (DO), field	mg/L	5.97	2.82	3.27	1.8	0.79	1.13	2.32	2.26
Oxidation reduction potential (ORP), field	millivolts	-12.9	-1.9	-264.2	-143.4	8.1	0.8	-253.7	-231.2
pH, field	s.u.	7.03	6.92	7.4	7.37	7.55	7.42	7.04	7.19
Temperature, sample	Deg C	15	9.6	13.99	11.35	15.62	9.11	12.93	11.53
Turbidity, field	NTU	4.45	4.87	2.46	2.26	3.89	2.69	1.45	2.24

Sample Location:		**WT106C**	**WT106C**	**WT111A**	**WT111A**	**WT114A**	**WT114A**	**WT114B**	**WT114B**
Sample ID:		**GW-WT106C-100516**	**GW-WT106C-041217**	**GW-WT111A-100416**	**GW-WT111A-041217**	**GW-WT114A-100516**	**GW-WT114A-041117**	**GW-WT114B-100516**	**GW-WT114B-041117**
Sample Date:		**10/5/2016**	**4/12/2017**	**10/4/2016**	**4/12/2017**	**10/5/2016**	**4/11/2017**	**10/5/2016**	**4/11/2017**
Field Parameters	**Units**								
Conductivity, field	mS/cm	0.343	0.438	0.568	0.405	1.478	1.342	0.392	0.535
Dissolved oxygen (DO), field	mg/L	2.8	2.14	3.2	2.45	2.11	2	1.46	0.75
Oxidation reduction potential (ORP), field	millivolts	-101.2	-158.7	23.9	18.4	-97.3	-41.9	-189.3	-202.4
pH, field	s.u.	7.38	7.65	6.4	6.53	6.96	7.25	7.75	7.34
Temperature, sample	Deg C	13	12.23	14.9	9.84	16.64	11.46	14.57	13.26
Turbidity, field	NTU	1.5	2.49	4.26	4.38	3.76	3.41	1.77	1.21

Sample Location:		**WT114C**	**WT114C**	**WT115A**	**WT115A**	**WT115B**	**WT115B**	**WT115C**	**WT115C**
Sample ID:		**GW-WT114C-100516**	**GW-WT114C-041117**	**GW-WT115A-100516**	**GW-WT115A-041217**	**GW-WT115B-100516**	**GW-WT115B-041217**	**GW-WT115C-100516**	**GW-WT115C-041217**
Sample Date:		**10/5/2016**	**4/11/2017**	**10/5/2016**	**4/12/2017**	**10/5/2016**	**4/12/2017**	**10/5/2016**	**4/12/2017**
Field Parameters	**Units**								
Conductivity, field	mS/cm	0.47	0.612	0.289	0.338	1.434	1.636	0.493	0.573
Dissolved oxygen (DO), field	mg/L	1.95	0.8	0.71	2.14	1.95	0.71	2.21	0.7
Oxidation reduction potential (ORP), field	millivolts	-253.7	-118.6	-47.8	-149.6	-347.4	-296.8	-215.3	-245.3
pH, field	s.u.	7.31	7.44	6.45	6.37	6.82	7.22	7.27	7.45
Temperature, sample	Deg C	13.58	12.7	19.36	10.53	14.97	12.47	14.43	13.64
Turbidity, field	NTU	1.57	1.21	2.91	4.25	1.14	1.43	3.65	4.31

Sample Location:		**WT116A**	**WT116A**	**WT119B**	**WT119B**	**WT120A**	**WT120A**	**WT120B**	**WT120B**
Sample ID:		**GW-WT116A-100416**	**GW-WT116A-041217**	**GW-WT119B-100416**	**GW-WT119B-041317**	**GW-WT120A-100416**	**GW-WT120A-041117**	**GW-WT120B-100416**	**GW-WT120B-041117**
Sample Date:		**10/4/2016**	**4/12/2017**	**10/4/2016**	**4/13/2017**	**10/4/2016**	**4/11/2017**	**10/4/2016**	**4/11/2017**
Field Parameters	**Units**								
Conductivity, field	mS/cm	2.59	2.085	0.769	0.638	0.52	0.637	0.437	0.495
Dissolved oxygen (DO), field	mg/L	2.37	1.1	2.52	1	2.24	0.73	0.67	1.51
Oxidation reduction potential (ORP), field	millivolts	-11.1	-32.6	42.9	8.5	-192.9	-156.4	-124.5	-0.3
pH, field	s.u.	6.45	6.32	6.57	6.99	7.36	7.58	6.45	7.46
Temperature, sample	Deg C	19.2	10.82	16.42	8.89	14.21	12.65	15.39	10.84
Turbidity, field	NTU	4.52	2.46	3.72	3.79	3.28	2.49	3.29	2.13

Table A.1

Analytical Results Summary
Sampling

Sample Location:		**WT120C**	**WT120C**	**WT121A**	**WT121A**
Sample ID:		**GW-WT120C-100416**	**GW-WT120C-041117**	**GW-WT121A-100416**	**GW-WT121A-041117**
Sample Date:		**10/4/2016**	**4/11/2017**	**10/4/2016**	**4/11/2017**
Field Parameters	**Units**				
Conductivity, field	mS/cm	0.508	0.544	0.647	0.575
Dissolved oxygen (DO), field	mg/L	3.1	0.9	2.9	0.4
Oxidation reduction potential (ORP), field	millivolts	-8.1	-154.1	-63.7	-84.6
pH, field	s.u.	7.16	7.43	7.2	7.3
Temperature, sample	Deg C	17.99	12.64	14.2	11.56
Turbidity, field	NTU	1.25	2.38	2.62	1.7

Sample Location:		**WT121B**	**WT121B**	**WT122A**	**WT122A**
Sample ID:		**GW-WT121B-100416**	**GW-WT121B-041117**	**GW-WT122A-100516**	**GW-WT122A-041217**
Sample Date:		**10/4/2016**	**4/11/2017**	**10/5/2016**	**4/12/2017**
Field Parameters	**Units**				
Conductivity, field	mS/cm	0.873	0.881	1.217	1.492
Dissolved oxygen (DO), field	mg/L	0.88	0.74	2.42	-0.6
Oxidation reduction potential (ORP), field	millivolts	-122.7	-212	-106.2	-29.1
pH, field	s.u.	6.55	7.2	6.68	6.88
Temperature, sample	Deg C	12.88	11.75	14.47	12.73
Turbidity, field	NTU	1.31	4.03	2.79	2.64

Sample Location:		**WT122B**	**WT122B**	**WT122C**	**WT122C**
Sample ID:		**GW-WT122B-100516**	**GW-WT122B-041217**	**GW-WT122C-100516**	**GW-WT122C-041217**
Sample Date:		**10/5/2016**	**4/12/2017**	**10/5/2016**	**4/12/2017**
Field Parameters	**Units**				
Conductivity, field	mS/cm	0.471	0.616	0.57	0.68
Dissolved oxygen (DO), field	mg/L	0.89	1.97	2.44	1.91
Oxidation reduction potential (ORP), field	millivolts	-225.4	-242.3	-254.1	-299.1
pH, field	s.u.	7.37	7.41	7.32	7.32
Temperature, sample	Deg C	14.03	13.9	13.91	13.54
Turbidity, field	NTU	1.53	2.31	3.56	1.92

Sample Location:		**WTE3**	**WTE3**
Sample ID:		**GW-WTE3-100416**	**GW-WTE3-041317**
Sample Date:		**10/4/2016**	**4/13/2017**
Field Parameters	**Units**		
Conductivity, field	mS/cm	0.601	0.471
Dissolved oxygen (DO), field	mg/L	3.7	1.4
Oxidation reduction potential (ORP), field	millivolts	-264.8	-153.5
pH, field	s.u.	7.22	7.5
Temperature, sample	Deg C	14.82	11.42
Turbidity, field	NTU	1.44	1.63

039611 10/3/16

0950 SEAN ARMBRUST & JOHN HARGENS ON-SITE (GHD)

WEATHER: 60°F, PARTLY CLOUDY

EQUIPMENT: CHI-WL-23 OK

EVENT: GW LEVELS

1000: H&S MEETING
* SEE TAILGATE FORM

WELL ID	WL
WT 101A	14.20
101B	13.55
101C	13.96
101D	14.22
101E	14.06
102A	10.14
102B	9.84
102C	10.26
103A	can't find
104A	11.34
106A	7.46
106B	7.68
106C	9.31
02	10.75
03	10.36
04	9.93
B1	5.99
B2	5.83
B3	5.68
B4	4.73
111A	11.58
111B	11.52
112A	8.54

WELL ID	WL
WT 112B	8.74
113A	14.89
113B	15.10
114A	14.22
114B	14.25
114C	14.28
115A	12.00
115B	11.73
115C	11.32
116A	12.06
116B	11.80
117A	12.09
117B	11.48
117C	11.84
117D	11.87
119B	10.33
120A	7.74
120B	7.72
120C	7.66
121A	5.45
121B	4.70
122A	8.50
122B	8.59

039611 10-3-16

WELL ID	WL
122C	8.36
123A	7.04
124A	14.94
L POND	2.95
SMALL POND	1.96
Q POND	2.06

B nest

Left	Left center	Right center	Right
5.99	5.83	5.68	4.73

WTE1	11.04
WT E3	10.66

Left	center	Right
10.75	10.36	9.93

039611 10-4-16

735 John Hargens + Sean Armbrust on site for GHD
Weather – 65° cloudy
EVENT - GW SAMPLING

745 Tailgate meeting
x SEE FORM

cal chi-Tur-07
1.0 = 1.0
10.0 = 9.9
chi-wL-23 = OK

chi-ph-17
PH-7 = 7.01
PH 10 = 9.98
cond 1413 = 14.17
orp 237 = 235
DO 100% = 98%

CHI-wL-10
CHI-TUR-01
1.0 = 1.0
10.0 = 9.9
CHI-pH-16

pH-7 = 7.0
pH-4 = 4.0
COND 1413 = 1412
ORP 237 = 237.1
DO 100% = 98.6%

x SEE CHL SHEET FOR LOT #'s

039611 10-4-16

WT121-A WL=5.45

Flow Rate 250 mL/min

Time	WL	pH	Temp	cond	DO	orp	Turb	other
0800	START PURGING w/ S.S. PUMP							
0815	5.50	7.20	14.30	0.641	3.06	-52.2	2.78	CLEAR
0820	5.50	7.19	14.31	0.648	2.78	-58.1	2.75	A/A
0825	5.50	7.20	14.21	0.650	2.98	-62.4	2.54	A/A
0830	5.50	7.20	14.20	0.647	2.80	-63.7	2.62	A/A

0832 Collect VOC, metals, chloride, sulfate
5 bottles

GW-WT121A-100416

DECON PUMP & CONTAINERIZE WATER

WT121B W.L. 4.70

FLOW RATE 250 mL/min

TIME	WL	pH	TEMP	COND	DO	ORP	TURB	OTHER
0820	START PURGING W/ S.S. PUMP							
0835	4.91	6.80	12.91	0.873	1.16	-128.4	2.52	CLEAR
0840	4.91	6.58	12.89	0.873	0.94	-124.6	2.63	A/A
0845	4.91	6.53	12.92	0.874	0.89	-123.7	1.96	A/A
0850	4.91	6.55	12.88	0.873	0.88	-122.7	1.31	A/A

0855 COLLECT GW-WT121B-160416
FOR VOCs, METALS, CHLORIDE, SULFATE (5-BOTTLES)

DECON PUMP & CONTAINERIZE WATER

039611 10/4/16

0907 COLLECT EQUIPMENT BLANK
GW-WT121B-100416-E
FOR VOCs, METALS, CHLORIDE, SULFATE (5-BOTTLES)

WT111A W.L. 11.58

FLOW RATE 250 mL/min

TIME	WL	pH	TEMP	COND	DO	ORP	TURB	OTHER
0925	BEGIN PURGING w/ S.S. PUMP							
0940	11.62	6.39	14.77	0.564	3.46	21.4	7.16	CLEAR
0945	11.63	6.38	14.98	0.572	3.18	22.6	8.44	A/A
0950	11.63	6.42	14.98	0.560	3.24	21.1	8.28	A/A
0955	11.63	6.40	14.90	0.568	3.20	23.9	4.26	A/A

1000 COLLECT GW-WT111A-100416
FOR VOCs, METALS, CHLORIDE, SULFATE (5-BOTTLES)

DECON PUMP & CONTAINERIZE WATER

→

039611 10/4/16

WT 119B W.L. = 10.33

FLOW RATE = 250 mL/min

TIME	WL	pH	TEMP	COND	DO	ORP	TURB	OTHER
1030	BEGIN PURGING w/ ~~PERISTALTIC~~ S.S. PUMP							
1045	10.38	6.66	16.45	0.768	2.89	45.6	6.04	CLEAR
1050	10.38	6.66	16.43	0.769	2.57	44.1	4.93	A/A
1055	10.38	6.67	16.43	0.768	2.53	43.3	4.41	A/A
1100	10.38	6.67	16.42	0.769	2.52	42.9	3.72	A/A

1105 COLLECT GW - WT119B - 100416
FOR VOCs, METALS, CHLORIDE, SULFATE (5-BOTTLES)

DECON PUMP & CONTAINERIZE WATER

WT 116A W.L. 12.06

FLOW RATE = 250 mL/min

TIME	WL	pH	TEMP	COND	DO	ORP	TURB	OTHER
1120	BEGIN PURGING w/ S.S. PUMP							
1135	12.09	6.44	19.22	2.599	2.42	-8.3	5.18	CLEAR
1140	12.10	6.44	19.22	2.596	2.39	-10.2	4.83	A/A
1145	12.10	6.45	19.20	2.590	2.37	-11.1	4.52	A/A

1150 COLLECT GW-WT116A - 100416
FOR VOCs, METALS, CHLORIDE, SULFATE (5-BOTTLES)

DECON PUMP & CONTAINERIZE WATER

039611 10/4/16

WT E3 W.L. 10.66

FLOW RATE 250 mL/min

TIME	WL	pH	TEMP	COND	DO	ORP	TURB	OTHER
1255	BEGIN PURGING w/ S.S. PUMP							
1310	10.66	7.19	14.75	0.593	3.76	-260.7	2.84	CLEAR
1315	10.66	7.21	14.80	0.602	3.72	-263.3	1.76	A/A
1320	10.66	7.22	14.82	0.601	3.70	-264.8	1.44	

1325 COLLECT GW-WT E3
FOR VOCs, METALS, CHLORIDE, SULFATE (5-BOTTLES)
DECON PUMP & CONTAINERIZE WATER

WT120B W.L. 7.72

FLOW RATE 300 mL/min

TIME	WL	pH	TEMP	COND	DO	ORP	TURB	OTHER
1400	BEGIN PURGING w/ S.S. PUMP							
1415	7.81	6.95	16.25	0.443	0.83	-130.7	12.9	CLEAR
1420	7.81	6.94	16.21	0.436	0.78	-136.7	8.38	A/A
1425	7.81	6.39	15.24	0.434	0.72	-126.4	5.07	A/A
1430	7.81	6.43	15.37	0.434	0.69	-128.9	3.20	A/A
1435	7.81	6.45	15.39	0.437	0.67	-124.5	3.29	A/A

1440 COLLECT GW-WT120B - 100416
FOR VOCs, METALS, CHLORIDE, SULFATE (5-BOTTLES)

DECON PUMP & CONTAINERIZE WATER

039611 10/4/16

WT120 C W.L. 7.66

FLOW RATE 250 mL/min

TIME	WL	pH	TEMP	COND	DO	ORP	TURB	OTHER
1407	BEGIN PURGING w/ S.S. PUMP							
1422	7.74	7.05	18.02	0.516	3.93	-10.9	0.66	CLEAR
1427	7.75	7.08	17.96	0.513	3.68	-10.9	0.54	A/A
1432	7.76	7.10	17.85	0.509	3.44	-10.0	0.62	A/A
1437	7.76	7.12	17.86	0.509	3.30	-9.2	1.05	A/A
1442	7.76	7.13	17.97	0.509	3.18	-8.8	1.33	A/A
1447	7.76	7.15	17.92	0.508	3.14	-8.6	1.45	A/A
1452	7.76	7.16	17.99	0.508	3.10	-8.1	1.25	A/A

1455 COLLECT GW-WT120C-100416
FOR VOCs, METALS, CHLORIDE, SULFATE (5-BOTTLES)
* DECON PUMP & CONTAINERIZE WATER

@ WT 120A W.L. 7.74

FLOW RATE 250 mL/min

TIME	WL	pH	TEMP	COND	DO	ORP	TURB	OTHER
1500	BEGIN PURGING w/ S.S. PUMP							
1515	7.79	7.33	14.59	0.525	3.10	-203.6	4.62	CLEAR
1520	7.81	7.31	14.11	0.517	2.50	-200.0	5.05	A/A
1525	7.81	7.33	14.21	0.524	2.20	-194.1	5.58	A/A
1530	7.81	7.35	14.26	0.523	2.20	-192.4	4.28	A/A
1535	7.81	7.36	14.21	0.520	2.24	-192.9	3.28	A/A

1540 COLLECT GW-WT120A-100416
FOR VOCs, METALS, CHLORIDE, SULFATE (5-BOTTLES)
* DECON PUMP & CONTAINERIZE WATER

1547 COLLECT TRIP BLANK-100416-001
FOR VOCs (1-VOA)

@ WT 102 A W.L. 10.14

FLOW RATE 250 mL/min

TIME	WL	pH	TEMP	COND	DO	ORP	TURB	OTHER
1600	BEGIN PURGING w/ S.S. PUMP							
1615	10.15	7.02	15.03	0.695	6.01	-10.6	18.1	CLEAR
1620	10.15	7.02	15.03	0.691	6.00	-12.2	10.1	A/A
1625	10.15	7.03	15.00	0.690	5.97	-12.9	4.45	A/A

1630 COLLECT GW-WT102A-100416
FOR VOCs, METALS, CHLORIDE, SULFATE (5-BOTTLES)

DECON PUMP & CONTAINERIZE WATER

→

039611 10/4/16

@ WT 102B W.L. 9.84
FLOW RATE 250 ML/MIN

TIME	WL	pH	TEMP	COND	DO	ORP	TURB	OTHER
1630	BEGIN PURGING w/ S.S. PUMP							
1645	9.87	7.36	13.59	0.490	3.32	-259.3	2.62	CLEAR
1650	9.87	7.39	13.60	0.486	3.30	-263.4	3.06	A/A
1655	9.87	7.40	13.59	0.487	3.27	-264.2	2.46	A/A

1700 COLLECT GW-WT102B-100416

1705 COLLECT DUPLICATE GW-WT102B-100416-D
FOR VOCs, METALS, CHLORIDE, SULFATE (5-BOTTLES EACH)

DECON PUMP & CONTAINERIZE WATER

1820 GHD OFFSITE TO GET ICE & SHIP SAMPLES

SS

039611 10/5/16

0735 SEAN ARMBRUST AND JOHN HARGENS ON-SITE FOR GHD

WEATHER: 63 °F, CLOUDY

EVENT: GW SAMPLING

0745 TAILGATE MEETING
* SEE TAILGATE MEETING FORM

CALIBRATE EQUIPMENT

CHI-WL-23 → OK CHI-WL-10 → OK

CHI-TUR-03 1.0 = 1.1
10.0 = 10.0
CHI-TUR-01 1.0 = 1.0
10.0 = 10.0

CHI-pH-17 pH-7 = 7.01
pH-4 = 4.0
COND 1.413 = 1.413
ORP 237 = 237.1
DO 100 = 94.6%

CHI-pH-16 pH-7 = 7.0
pH-4 = 4.0
COND 1.413 = 1.412
ORP 237 = 237.1
DO 100 = 98.9%

* SEE CAL FORM FOR LOT #'S

039611 10/5/16

@ WT106C W.L. 9.31

FLOW RATE = 300 mL/MIN

TIME	WL	pH	TEMP	COND	DO	ORP	TURB	OTHER
0750	BEGIN PURGING w/ S.S. PUMP							
0805	10.04	7.31	12.96	0.343	3.48	-71.1	1.84	CLEAR
0810	9.84	7.33	13.15	0.344	3.16	-82.9	1.64	A/A
0815	10.00	7.36	13.08	0.343	2.89	-96.3	1.75	A/A
0820	9.97	7.37	13.01	0.343	2.83	-99.5	1.49	A/A
0825	10.01	7.38	13.06	0.343	2.80	-101.2	1.50	A/A

0830 COLLECT GW-WT106C-100516 MS/MSD
FOR VOCs, METALS, CHLORIDE, SULFATE (13-BOTTLES)

DECON PUMP & CONTAINERIZE WATER

@ WT106B W.L. 7.68

FLOW RATE = 300 mL/MIN

TIME	WL	pH	TEMP	COND	DO	ORP	TURB	OTHER
0830	BEGIN PURGING w/ S.S. PUMP							
0845	7.94	7.07	12.96	0.758	2.56	-268.4	1.96	CLEAR
0850	7.94	7.05	13.01	0.765	2.45	-262.6	1.88	A/A
0855	7.94	7.05	12.93	0.772	2.40	-256.5	1.48	A/A
0900	7.94	7.04	12.93	0.776	2.36	-254.1	1.83	A/A
0905	7.94	7.04	12.93	0.776	2.32	-253.7	1.45	A/A

0907 COLLECT GW-WT106B-100516
FOR VOCs, METALS, CHLORIDE, SULFATE
(5-BOTTLES)

@ WT106A W.L. 7.46

FLOW RATE = 250 mL/MIN

TIME	WL	pH	TEMP	COND	DO	ORP	TURB	OTHER
0853	BEGIN PURGING w/ S.S PUMP							
0908	7.50	7.67	15.82	0.511	0.82	19.0	10.57	CLEAR
0913	7.54	7.66	15.88	0.514	0.78	11.5	8.18	A/A
0918	7.55	7.63	15.73	0.516	0.82	9.7	5.81	A/A
0923	7.55	7.64	15.62	0.516	0.79	8.1	3.89	A/A

0928 COLLECT GW-WT106A-100516
FOR VOCs, METALS, CHLORIDE, SULFATE (5-BOTTLES)

DECON PUMP & CONTAINERIZE WATER

0940 GO TO STORE TO GET MORE
ICE & DI WATER

039611 10/5/16

@ WT 122 B W.L. 8.59

FLOW RATE = 300 mL/min

TIME	WL	pH	TEMP	COND	DO	ORP	TURB	OTHER
1005	BEGIN PURGING w/ S.S. PUMP							
1020	8.71	7.38	13.79	0.467	0.98	-229.5	2.13	CLEAR
1025	8.72	7.37	14.01	0.470	0.92	-229.2	1.72	A/A
1030	8.72	7.37	14.03	0.471	0.89	-225.4	1.53	A/A

1035 COLLECT GW-WT122B-100516
FOR VOCs, METALS, CHLORIDE, SULFATE
(5-BOTTLES)

DECON PUMP & CONTAINERIZE WATER

@ WT 122 A W.L. 8.50

FLOW RATE = 250 mL/min

TIME	WL	pH	TEMP	COND	DO	ORP	TURB	OTHER
1018	BEGIN PURGING w/ S.S. PUMP							
1028	8.80	6.64	14.62	1.219	3.01	-104.4	2.82	CLEAR
1033	8.80	6.68	14.57	1.220	2.50	-105.6	2.48	A/A
1038	8.80	6.69	14.40	1.215	2.47	-106.0	2.11	A/A
1043	8.80	6.68	14.47	1.217	2.42	-106.2	2.79	A/A

1050 COLLECT GW-WT122A-100516
FOR VOCs, METALS, CHLORIDE, SULFATE (5-BOTTLES)

DECON PUMP & CONTAINERIZE WATER

039611 10/5/16

@ WT 122 C W.L. 8.36

FLOW RATE = 300 mL/min

TIME	WL	pH	TEMP	COND	DO	ORP	TURB	OTHER
1100	BEGIN PURGING w/ S.S. PUMP							
1115	8.53	7.36	14.06	0.577	2.62	-2[illegible].4	3.18	CLEAR
1120	8.53	7.32	13.96	0.573	2.54	-257.6	3.69	A/A
1125	8.53	7.33	13.94	0.573	2.45	-255.8	4.80	A/A
1130	8.53	7.32	13.91	0.570	2.44	-254.1	3.56	A/A

1135 COLLECT GW-WT122C-100516
FOR VOCs, METALS, CHLORIDE, SULFATE (5-BOTTLES)

DECON PUMP & CONTAINERIZE WATER

@ WT 114B W.L. 14.25

FLOW RATE = 300 mL/min

TIME	~~WL~~	pH	TEMP	COND	DO	ORP	TURB	OTHER
1230	BEGIN PURGING w/ S.S. PUMP							
1245	14.39	7.74	15.14	0.401	1.77	-211.6	3.63	CLEAR
1250	14.39	7.75	14.92	0.398	1.87	-199.9	2.69	A/A
1255	14.39	7.76	14.61	0.394	1.55	-190.3	2.45	A/A
1300	14.39	7.76	14.59	0.392	1.48	-189.0	1.85	A/A
1305	14.39	7.75	14.57	0.392	1.46	-188.3	1.77	A/A

1310 COLLECT GW-WT114B-100516
FOR VOCs, METALS, CHLORIDE, SULFATE (5-BOTTLES)

DECON & CONTAINERIZE WATER

039611 10/05/16

@ WT114A W.L. 14.22

FLOW RATE = 250 mL/MIN

TIME	WL	pH	TEMP	COND	DO	ORP	TURB	OTHER
1242	BEGIN PURGING w/ S.S. PUMP							
1257	14.29	6.94	16.77	1.458	2.51	-87.9	18.5	CLEAR
1302	14.29	6.96	16.47	1.457	2.33	-90.1	11.7	A/A
1307	14.30	6.95	16.28	1.460	2.19	-92.8	8.02	A/A
1312	14.29	6.95	16.54	1.474	2.07	-93.9	9.74	A/A
1317	14.29	6.95	16.71	1.488	2.21	-94.1	8.61	A/A
1323	14.29	6.96	16.69	1.479	2.16	-96.0	5.29	A/A
1328	14.29	6.96	16.64	1.478	2.11	-97.3	3.76	A/A

1330 COLLECT GW-WT114A-100516
FOR VOCs, METALS, CHLORIDE, SULFATE (5-BOTTLES)

DECON PUMP & CONTAINERIZE WATER

@ WT114C W.L. 14.28

FLOW RATE = 300 mL/MIN

TIME	WL	pH	TEMP	COND	DO	ORP	TURB	OTHER
1330	BEGIN PURGING w/ S.S. PUMP							
1345	14.43	7.29	13.60	0.470	1.99	-257.6	1.80	CLEAR
1350	14.43	7.31	13.60	0.470	1.97	-254.3	1.52	A/A
1355	14.43	7.31	13.58	0.476	1.95	-253.7	1.57	A/A

→

1358 COLLECT GW-WT114C-100516
FOR VOCs, METALS, CHLORIDE, SULFATE (5-BOTTLES)

DECON & CONTAINERIZE WATER

1415 COLLECT EQUIPMENT BLANK
GW-WT114C-100516-E
FOR VOCs, METALS, CHLORIDE, SULFATE (5-BOTTLES)

@ WT115A W.L. 12.00

FLOW RATE = 250 mL/MIN

TIME	WL	pH	TEMP	COND	DO	ORP	TURB	OTHER
1435	BEGIN PURGING w/ S.S. PUMP							
1450	12.54	6.42	18.27	0.292	1.08	-39.0	3.82	CLEAR
1455	12.56	6.43	18.28	0.287	0.91	-45.0	2.91	A/A
1500	12.58	6.44	19.29	0.292	0.78	-47.1	3.19	A/A
1505	12.60	6.44	19.33	0.289	0.75	-44.9	2.76	A/A
1510	12.59	6.45	19.36	0.289	0.71	-47.8	2.91	A/A

1515 COLLECT GW-WT115A-100516
FOR VOCs, METALS, SULFATE, CHLORIDE
(5-BOTTLES)

DECON PUMP & CONTAINERIZE WATER

039611 10/5/16

@ WT 115C W.L. = 11.32
FLOW RATE = 300 ml/min

TIME	WL	pH	TEMP	COND	DO	ORP	TURB	OTHER
1438	11.44	7.23	13.39	0.480	2.70	-207.2	2.68	CLEAR
1443	11.44	7.21	14.41	0.492	2.45	-204.5	3.92	A/A
1458	11.44	7.26	14.44	0.493	2.27	-211.1	4.96	A/A
1503	11.44	7.27	14.39	0.492	2.23	-213.6	3.77	A/A
1508	11.44	7.27	14.43	0.493	2.21	-215.3	3.65	A/A

1510 COLLECT GW-WT115C-100516
FOR VOCs, METALS, CHLORIDE, SULFATE
(5-BOTTLES)

DECON PUMP & CONTAINERIZE WATER

@ WT 115B W.L. = 11.73
FLOW RATE = 300 ml/min

TIME	WL	pH	TEMP	COND	DO	ORP	TURB	OTHER
1530	BEGIN PURGING W/ S.S. PUMP							
1545	11.84	6.86	16.59	1.492	1.87	-338.4	3.60	CLEAR
1550	11.84	6.82	14.94	1.436	1.98	-345.0	2.11	A/A
1555	11.84	6.82	15.01	1.437	1.97	-345.3	1.49	A/A
1606	11.84	6.82	14.97	1.434	1.95	-347.4	1.14	A/A

→

039611 10/5/16

1610 COLLECT GW-WT115B-100516

1620 COLLECT DUPLICATE GW-WT115B-100516-D
FOR VOCs, METALS, CHLORIDE, SULFATE
(5-BOTTLES EACH)

DECON PUMP & CONTAINERIZE WATER

1630 COLLECT TRIP BLANK-100416-002
FOR VOCs (1-VOA)

1640 GHD OFFSITE TO GET ICE & SHIP COOLER

S-A

039611 10/6/16

0730 SEAN ARMBRUST & JOHN HARGENS ONSITE (GHD)

WEATHER: 59°F, CLOUDY

EVENT: GW SAMPLING

0735 TAILGATE MEETING

* SEE TAILGATE MEETING FORM

CALIBRATE EQUIPMENT

CHI-WL-23 → OK CHI-WL-10 → OK

CHI-TUR-07 NTU 1 = 1 NTU 10 = 9.9

CHI-TUR-01 NTU 1 = 0.98 NTU 10 = 10

CHI-pH-17 pH 7 = 7.0
pH 4 = 4.1
COND 1.413 = 1.413
ORP 237 = 237.1
DO 100 = 99.3%

CHI-pH-16 pH 7 = 7.0
pH 4 = 4.0
COND 1.413 = 1.413
ORP 237 = 237
DO 100 = 98.9%

* SEE CAL FORM FOR LOT #'S

@ WT 101 C W.L. 13.96

FLOW RATE = 300 mL/min

TIME	WL	pH	TEMP	COND	DO	ORP	TURB	OTHER
0755	BEGIN PURGING W/ S.S. PUMP							
0810	14.46	6.48	13.85	0.321	1.15	-97.8	3.29	CLEAR
0815	14.47	6.49	14.11	0.323	0.88	-106.8	3.33	A/A
0820	14.47	6.50	14.37	0.325	0.87	-113.7	3.33	A/A
0825	14.47	6.50	14.43	0.325	0.81	-116.4	2.97	A/A
0830	14.47	6.50	14.46	0.326	0.80	-118.2	3.37	A/A

0835 COLLECT GW-WT 101C-100616 MS/MSD
FOR VOCs, METALS, CHLORIDE, SULFATE (1L-BOTTLES)

DECON PUMP & CONTAINERIZE WATER

@ WT 101A W.L. 14.20

FLOW RATE = 250 mL/min

TIME	WL	pH	TEMP	COND	DO	ORP	TURB	OTHER
0758	BEGIN PURGING W/ S.S. PUMP							
0813	14.31	6.08	16.15	1.148	3.61	-55.7	12.35	CLEAR
0818	14.32	6.09	16.09	1.149	3.25	-57.2	5.39	A/A
0823	14.32	6.11	16.17	1.150	2.89	-59.0	4.85	A/A
0828	14.32	6.12	16.14	1.143	2.63	-60.9	5.65	A/A
0833	14.35	6.12	16.23	1.147	2.55	-60.9	3.03	A/A
0838	14.35	6.14	16.24	1.145	2.53	-62.6	2.87	A/A

→

039611 10/6/16

0840 COLLECT GW-WT101A-100616
FOR VOCs, METALS, CHLORIDE, SULFATE (5-BOTTLES)

- DECON PUMP & CONTAINERIZE WATER

@ WT 101 E W.L. = 14.06
FLOW RATE = 300 mL/min

TIME	WL	pH	TEMP	COND	DO	ORP	TURB	OTHER
0910	BEGIN PURGING w/ S.S. PUMP							
0925	14.28	6.55	14.55	0.471	6.85	-206.3	1.87	CLEAR
0930	14.28	6.54	14.61	0.473	0.97	-197.6	1.29	A/A
0935	14.28	6.55	14.60	0.474	0.84	-186.5	1.25	A/A
0940	14.28	6.55	14.49	0.473	0.67	-180.0	0.96	A/A
0945	14.28	6.55	14.54	0.474	0.62	-178.3	0.21	A/A
0950	14.28	6.55	14.58	0.474	0.60	-172.2	0.36	A/A

0955 COLLECT GW-WT101E-100616
FOR VOCs, METALS, CHLORIDE, SULFATE
(5-BOTTLES)

DECON & CONTAINERIZE WATER

@ WT 101 D W.L. = 14.22
FLOW RATE = 250 mL/min

TIME	WL	pH	TEMP	COND	DO	ORP	TURB	OTHER
0912	BEGIN PURGING w/ S.S. PUMP							
0927	14.40	7.09	15.13	0.467	2.22	-297.1	4.31	CLEAR
0932	14.40	7.23	14.83	0.471	2.28	-291.5	3.21	A/A
0937	14.40	7.31	14.72	0.472	2.30	-283.1	3.08	A/A
0942	14.40	7.35	14.81	0.473	2.25	-279.0	2.85	A/A
0947	14.40	7.36	14.77	0.470	2.21	-278.6	3.05	A/A

0950
~~0955~~ COLLECT GW-WT101D-100616
S.A. 10/6
FOR VOCs, METALS, CHLORIDE, SULFATE
(5-BOTTLES)

DECON & CONTAINERIZE WATER

1000 COLLECT TRIP BLANK-100616-003
FOR VOCs (1-VOA)

1015 PACK EQUIPMENT

1130 GHD OFFSITE TO GET ICE, DROP
COOLERS @ FEDEX & UNPACK EQUIPMENT

S-TM

039611

HIMCO

Elkhart, IN

Rite in the Rain®

ALL-WEATHER

FIELD BOOK

№ 350NF

39611 4-10-17

1030 John Hargens & Julie Luzwick on site for GHD
weather- Rain, Lightning 70°
1035
on site to do water levels & start GW sampling event.
1040 Tailgate meeting
52 calibrate chi-WL -19 = OK

well ID	WL
101A	12.97
101B	13.58
101C	12.77
101D	12.99
101E	12.94
102A	9.05
102B	8.72
102C	9.19
103A	4.23
104A	10.24
106A	6.29
106B	6.53
106C	8.58
~~02~~	
~~03~~	
~~04~~	

well ID	WL
~~B1~~	
~~B2~~	
~~B3~~	
~~B4~~	
~~111A~~	
~~111B~~	
112A	7.42
112B	7.01
113A	13.71
113B	13.94
114A	13.02
114B	13.04
114C	13.07
115A	10.92
115B	10.60
115C	10.19

4-10-17 39611

well ID	WL	TD
121B	3.55	62.51
121A	4.42	
117A	11.02	
117B	10.43	
117C	10.81	
117D	10.80	
~~150~~		
111A	10.44	
118B	10.43	
122A	7.32	
122B	7.39	
122C	7.21	
120A	6.52	
120B	6.45	
120C	6.51	
124A	13.76	
123A	5.97	
02	9.59	
03	9.19	
04	8.79	
~~WETB~~		
WTE3	9.50	
WTE1	9.86	
119B	9.17	

well ID	WL
116A	10.85
116B	10.67
B1	4.90
B2	4.77
B3	4.63
B4	3.60
L pond	2.3
Small pond	1.8
Q pond	1.2

1800 leave site

39611 4-11-17

730 John Hargens + Julie Iuzwick
on site to sample wells.
weather 45° light Rain

735 Tailgate meeting
Equipment
calibrate chi-ph-17
~~chi-ph-4~~
~~Phat 4 = 4.1~~
~~at 7~~
chi-ph-16
chi-WL-01
chi-WL-19
chi-Tur-07
see calbration Records

will purge all wells with
a S.S. pump + will containerize
all purge water

39611 4-11-17 JL

WT-121B Flow rate 200 mL/min
WL= 3.55

Time	WL	ph	Temp °C	cond mS	D.O. mg/L	ORP mV	Turb NTU	other
935	3.55		start pump					
945	3.61	7.12	11.59	.864	1.01	-200	18.55	clr
955	3.62	7.18	11.69	.876	.78	-215	5.55	
1000	3.63	7.19	11.72	.879	.75	-214	4.77	
1005	3.62	7.20	11.75	.881	.74	-212	4.03	

1010 collect 3 voc, 1 metals, 1 chloride/sulfate
GW-WT121B-041117

WT-121A Flowrate= 250 mL/min

Time	WL	ph	temp	cond	~~temp~~ DO	ORP	Turb	other
930	4.42		start pump					
940	4.49	7.13	11.31	.570	.8	-42	78.53	clr
950	4.50	7.24	11.43	.574	.5	-67.5	3.98	
1000	4.50	7.29	11.53	.574	.4	-83.8	3.29	
1005	4.50	7.30	11.56	.575	.4	-84.6	1.70	
1010								

1015 collect 3 voc, 1 metal, 1 chloride/sulfate
GW-WT121A-041117

39611

JH
JL

4-11-17

WT 102 A flow = 175 ml/min

WL = 9.05

Time	WL	ph	mS/cm cond	°C temp	mg/L DO	mV orp	NTU Turb	other
1105	start pump							
1120	9.11	6.73	.563	9.60	2.94	-24	37.6	sl. cldy
1130	9.12	6.86	.590	9.58	2.88	-21	13.48	clR
1140	9.12	6.89	.593	9.59	2.86	-20	8.53	AA
1145	9.13	6.91	.594	9.59	2.84	-1.8	5.02	AA
1150	9.13	6.92	.595	9.60	2.82	-1.9	4.87	AA

1200 collect 3voc, 1 metals, 1 chloride sulfate

GW-WT102A-041117

WT 102 B

WL = 8.72 flow = 225 ml/min

Time	WL	ph	cond	temp	DO	orp	Turb	other
1110	start pump							
1115	8.79	7.33	.592	11.42	2.6	-153	6.48	clm
1125	8.81	7.33	.589	11.40	2.2	-157.4	6.09	AA
1130	8.80	7.34	.590	11.38	1.8	-145.3	3.25	AA
1135	8.80	7.36	.590	11.37	1.7	-144.2	2.51	AA
1140	8.81	7.37	.591	11.35	1.8	-143.4	2.26	AA

1145 collect 3voc, 1 metals, 1-chloride sulfate

GW-WT102B-041117

S

JH
JL

4-11-17 39611

WT 114C flow = 250 ml/min

WL = 13.07

Time	WL	ph	mS cond	°C temp	mg/L DO	mV orp	NTU Turb	other
1345	start pump							
1355	13.14	7.29	.602	12.60	1.41	-184.6	1.94	clR
1405	13.15	7.41	.609	12.70	.86	-116.7	1.72	
1410	13.16	7.44	.611	12.73	.83	-117.4	1.53	
1415	13.16	7.44	.612	12.70	.80	-118.6	1.21	

1420 collect 3voc, 1 metals, 1 chloride/sulfate

GW-WT114C-041117

WT-114A flow 210 ml/min WL = 13.02

Time	WL	ph	cond	temp	DO	orp	Turb	other
1350	start Pump							
1400	13.11	7.22	1.189	11.37	2.1	-45.7	8.32	clR
1410	13.11	7.24	1.333	11.41	2.0	-43.3	4.40	
1415	13.12	7.25	1.339	11.43	1.9	-42.2	3.71	
1420	13.12	7.25	1.342	11.46	2.0	-41.9	3.41	

1425 collect 3voc, 1 metals, 1-chloride sulfate

GW-WT114A-041117

39611 JH JL

4-11-17

WT-114B WL= 13.04 flow= 300 ml/min

Time	WL ph	ms cond	°C Temp	mg/L DO	mV Orp	NTU Turb	other
1444	start pump						
1454	13.12	7.11	.513	12.73	1.12	-201.7	3.62 clR
1504	13.14	7.16	.513	13.14	0.92	-211.4	2.87
1509	13.14	7.17	.517	13.19	.84	-208.1	2.39
1514	13.14	7.29	.531	13.25	.79	-203.5	1.92
1519	13.15	7.31	.533	13.28	.75	-203.1	1.49
1524	13.15	7.34	.535	13.26	.75	-202.4	1.21

1530 collect 3VOC, 1 metals, 1 chloride sulfate
GW-WT-114B-041117

WT-120B WL=6.45 flow= 175 ml/min

Time	WL	ph	cond	temp	DO	orp	Turb	other
1625	start pump							
1635	6.56	7.38	.506	11.56	1.98	-20.8	3.37	clR
1645	6.57	7.42	.494	10.80	1.42	-9.3	2.42	clR
1650	6.57	7.42	.496	10.84	1.46	-4.0	2.19	
1655	6.56	7.44	.495	10.82	1.50	-0.9	2.56	
1700	6.56	7.45	.497	10.85	1.53	-0.1	2.21	
1705	6.56	7.46	.495	10.84	1.51	-0.3	2.13	

1710 collect 3VOC, 1 metals, 1 chloride + sulfate
GW-WT-120B-041117

4-11-17 39611 JH JL

WT 120C WL= 6.51 flow 225 ml/min

Time	WL	pH	ms cond	°C Temp	mg/L DO	mV orp	NTU Turb	other
1630	start pump							
1640	6.54	6.66	.542	12.25	1.28	-182.1	13.89	clR
1650	6.56	7.13	.543	12.63	1.00	-172.3	4.71	
1655	6.56	7.39	.543	12.55	.93	-150.3	4.19	
1700	6.57	7.44	.545	12.64	.94	-153.5	3.17	
1705	6.57	7.41	.544	12.61	.93	-152.7	2.98	
1710	6.58	7.43	.544	12.64	.90	-154.1	2.38	

1715 Collect 3VOC, 1 metals, 1 chloride + sulfate
GW-WT120C-041117

WT 120A WL=6.52 flow 250 ml/min

Time	WL	pH	cond	temp	DO	ORP	Turb	other
1730	start pump							
1740	6.68	7.38	.639	12.67	.76	-198	0.59	clR
1750	6.69	7.56	.638	12.69	.75	-157.7	2.77	clR
1755	6.69	7.58	.638	12.67	.73	-155.8	2.55	
1600	6.70	7.58	.637	12.65	.73	-156.4	2.49	

1805 collect VOC-3, 1-metal, 1 chloride/sulfate
GW-WT120A-041117

730 John Hangens + Julie Luzwick on site for GHD to sample wells, weather 40° Sunny

745 Tailgate meeting

Equipment
chi-ph-17
chi-ph-16
chi-Tur-07
chi-WL-01
chi-WL-19

See calibration records

4-12-17

WT-106A WL= 6.29 Flow = 250 ml/min

Time	WL	PH	cond (ms)	Temp (oc)	DO (mg/L)	orp (mv)	Turb (NTU)	other
805	start pump							
815	6.38	7.45	.571	8.99	1.07	22.1	4.98	clR
825	6.40	7.43	.577	9.05	1.14	7.5	3.26	
830	6.40	7.42	.573	9.07	1.18	1.8	2.98	
835	6.40	7.42	.577	9.08	1.14	1.1	2.75	
840	6.40	7.42	.576	9.11	1.13	0.8	2.69	

845 collect 3 voc, 1 metals, 1 chloride sulfate
GW-WT106A-041217

WT-106B WL= 6.53 Flow = 220 ml/min

Time	WL	ph	cond	temp	DO	orp	turb	other
810	start pump							
820	6.79	7.18	.942	11.46	2.41	-257.8	2.87	clR
830	6.80	7.18	.949	11.42	2.36	-240.2	2.41	
835	6.80	7.19	.949	11.47	2.33	-238.8	2.19	
840	6.81	7.19	.952	11.50	2.27	-235.7	2.17	
845	6.81	7.19	.954	11.53	2.26	-231.2	2.24	

850 collect 3 voc, 1 metals, 1 chloride sulfate
GW-WT106B-041217

39611 JH, JL
4-12-17

WT106C WL = 8.58 Flow rate 280 ml/min

Time	WL	pH	cond (mS)	temp (°C)	DO (mg/L)	orp (mV)	Turb (NTU)	other
920	9.02	start pump						
930	9.04	7.67	.438	11.99	2.31	-146.2	2.99	clR
940	9.04	7.66	.436	12.22	2.17	-157.6	2.46	AA
945	9.05	7.67	.437	12.24	2.09	-159.2	2.41	AA
950	9.05	7.68	.436	12.26	2.12	-160.6	2.63	AA
955	9.05	7.65	.438	12.23	2.14	-158.7	2.49	AA

1010 Dup
1000 collect 6 VOC, 2 metals, 2 chloride sulfate
GW-WT106C-041217 + GW-WT06C-041217-D

WT-122 B WL = 7.39 Flow 250 ml/min

Time	WL	pH	cond	temp	DO	orp	Turb	other
1045	start pump							
1055	7.49	7.12	.587	13.58	2.27	-264.3	4.43	clR
1105	7.50	7.28	.608	13.80	2.11	-255.8	2.90	
1110	7.50	7.35	.614	13.88	2.05	-249.3	2.61	
1115	7.50	7.38	.615	13.86	2.03	-247.2	2.44	
1120	7.50	7.40	.615	13.89	1.99	-244.1	2.39	
1125	7.51	7.41	.616	13.90	1.97	-242.3	2.31	

1130 collect 3 VOC, 1 metal, 1 chloride sulfate
GW-WT122B-041217

S

4-12-17 39611 JH JL

WT-122A WL = 7.32 flow 300 ml/min

Time	WL	pH	cond (mS)	temp (°C)	DO (mg/L)	ORP (mV)	Turb (NTU)	other
1040	start pump							
1050	7.61	6.90	1.422	12.41	2.6	-30.9	10.13	clR
1100	7.61	6.87	1.438	12.57	0.8	-25.8	5.34	
1105	7.62	6.88	1.437	12.69	.8	-27.4	5.01	
1110	7.62	6.88	1.440	12.73	.7	-28.7	4.72	
1115	7.62	6.88	1.442	12.73	.6	-29.1	2.64	

1120 Collect 3 VOC, 1 metals, 1 chloride sulfate
GW-WT-122A-041217

WT-122C WL = 7.21 flow = 300 ml/min

Time	WL	pH	cond	temp	DO	orp	Turb	other
1145	start pump							
1155	7.40	7.20	.684	13.51	2.02	-311.5	4.35	clR
1200	7.40	7.35	.682	13.59	1.93	-304.6	2.58	AA
1205	7.41	7.32	.680	13.57	1.93	-304.1	2.32	
1210	7.40	7.32	.680	13.54	1.91	-299.6	1.92	

1215 collect 9 VOC, 2 metals, 2 chloride/sulfate
GW-WT122C-041217 MS/MSD
1400 Collect Eq Blank 3 VOC, 1 metals, 1 chloride sulfate
GW-WT122C-041217-E

39611 JH JL

4-12-17

WT 115A WL = 10.92 Flow = 250 ml/min

Time	WL	pH	cond (mS)	temp (°C)	DO (mg/L)	orp (mV)	Turb (NTU)	other
1405	11.37	start pump						
1415	11.38	6.89	.337	10.69	3.44	-146.6	13.77	clR
1425	11.38	6.33	.338	10.31	3.29	-154.8	5.24	clR
1435	11.38	6.38	.339	10.53	2.19	-146.0	5.28	
1440	11.38	6.37	.338	10.54	2.16	-148.3	4.83	
1445	11.38	6.37	.338	10.53	2.14	-149.6	4.25	

1450 collect 3VOC, 1 metals, 1 chloride sulfate
GW-WT115A-041217

WT 115C WL = 10.19 Flow = 280 ml/min

Time	WL	pH	cond	temp	DO	orp	Turb	other
1410	10.33	start pump						
1420	10.33	7.32	.573	13.98	.9	-268.0	5.21	clR
1430	10.33	7.39	.574	13.44	.8	-259.1	4.35	AA
1435	10.33	7.42	.574	13.69	.8	-251.8	4.19	AA
1440	10.33	7.44	.573	13.68	.8	-248.9	4.45	AA
1445	10.33	7.45	.573	13.64	.7	-245.3	4.31	AA

1455 collect 3VOC, 1 metals, 1 chloride sulfate
GW-WT115C-041217

39611 JH JL

4-12-17

WT 115B WL = 10.60 flow = 250 ml/min

Time	WL	pH	cond (mS)	temp (°C)	DO (mg/L)	orp (mV)	Turb (NTU)	other
1510	start pump							
1525	10.73	7.17	1.650	12.50	1.10	-278.1	2.37	clR
1530	10.73	7.17	1.644	12.45	0.87	-293.3	1.99	sulfer odor
1535	10.73	7.20	1.640	12.46	0.76	-294.8	1.60	
1540	10.73	7.21	1.638	12.49	0.72	-295.7	1.49	
1545	10.73	7.22	1.636	12.47	0.71	-296.8	1.43	

1550 collect 3VOC, 1 metals, 1 chloride sulfate
GW-~~041217~~ WT115B-41217

WT-111A WL = 10.44 flow 200 mL/min

Time	WL	pH	cond	temp	DO	orp	Turb	other
1635	start pump							
1650	10.54	6.43	.375	9.87	3.06	23.2	8.81	clR
1655	10.54	6.45	.397	9.87	2.59	20.3	6.43	
1700	10.55	6.50	.399	9.86	2.52	19.3	4.55	
1705	10.55	6.52	.403	9.83	2.46	18.9	4.68	
1710	10.55	6.53	.405	9.84	2.45	18.4	4.38	

1715 Collect 3VOC, 1 metals, 1 chloride/sulfate
GW-WT111A-041217

39611

JH
SL

4-12-17

WT 116A WL = 10.85 Flow-

Time	WL	pH	cond (mS)	temp (°C)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
1740	start pump						
1755	11.00	6.50	2.082	10.76	2.9	-24.6	3.59 clr
1800	11.00	6.52	2.099	10.68	2.1	-29.0	3.53
1805	11.00	6.51	2.085	10.83	1.4	-31.1	2.51
1810	11.00	6.51	2.080	10.86	1.2	-32.0	2.33
1815	11.00	6.52	2.085	10.82	1.1	-32.6	2.46

1820 Collect 3VOC, 1 metals, 1 chloride sulfate
GW-WT 116A -041217

1845 leave site

39611

4-13-17

735 John Hargens & Julie Lazwick
on site for GHD to finish
well sampling
weather 45° cloudy rain

745 Tailgate meeting

Equipment on site
chi-ph-17
chi-ph-16
chi-Tur-07
chi-WL-01
chi-WL-19

See calibration Records

39611 JH JL

4-13-17

WT 119B WL = 9.17 flow = 200 ml/min

Time	WL	ph	cond (mS)	Temp (°C)	DO (mg/L)	orp (mV)	Turb (NTU)	other
8:00	start pump							
8:15	9.29	7.00	.618	8.85	1.4	10.1	6.90	clR
8:20	9.29	6.99	.632	8.86	1.2	9.4	5.51	AA
8:25	9.29	6.99	.636	8.88	1.1	8.9	3.99	AA
8:30	9.29	6.99	.638	8.89	1.0	8.5	3.79	AA

Collect 6VOC, 2 metals, 2 chloride sulfate

835 GW-WT119B-041317

845 GW-WT119B-041317-D

WT-E3 W.L. = 9.50 Flow = 400 ml/min

Time	WL	ph	cond	Temp	DO	orp	Turb	other
9:00	start pump							
9:15	9.50	7.48	.471	11.11	1.1	-129.9	2.44	clR
9:20	9.50	7.49	.471	11.49	1.0	-138.8	2.08	AA
9:25	9.50	7.52	.473	11.46	1.5	-152.4	1.92	AA
9:30	9.50	7.50	.471	11.43	1.5	-153.3	1.87	AA
9:35	9.50	7.50	.471	11.42	1.4	-153.5	1.63	AA

940 Collect 9VOC, 2 metals, 2 chloride/sulfate

GW-WTE3-041317 MS MSD

WT 101E WL = 12.84 flow = 200 ml/min

Time	WL	ph	cond (mS)	temp (°C)	DO (mg/L)	orp (mV)	Turb (NTU)	other
1015	start pump							
1030	13.00	7.50	.414	11.91	1.09	-314.5	3.46	
1035	13.00	7.35	.411	12.30	1.06	-246.6	1.62	
1040	13.01	6.93	.421	12.33	.97	-219.3	1.57	
1045	13.01	6.85	.422	12.38	.86	-201.4	1.89	
1050	13.02	6.82	.423	12.38	.84	-199.3	1.52	
1055	13.02	6.81	.425	12.39	.83	-197.1	1.33	

1100 collect 3VOC, 1 metals, 1 chloride/sulfate

GW-WT101E-041317

WT 101C WL = 12.77 flow = 250 ml/min

Time	WL	ph	cond	temp	DO	orp	Turb	other
1010	start pump							
1025	12.95	7.56	.606	12.24	.64	-202.2	2.51	clR
1030	12.95	7.42	.612	11.90	.70	-245.0	2.52	
1035	12.95	7.31	.587	11.85	.73	-212.1	2.31	
1040	12.95	7.28	.584	11.82	.77	-207.6	2.22	
1045	12.95	7.27	.581	11.80	.78	-208.9	2.14	

1050 collect 3VOC, 1 metals, 1 chloride/sulfate

 39611 | 4-13-17 | JH/JL

WT 101A # WL = 12.97 flow =

Time	WL	ph	mS cond	°C Temp	mg/L DO	mV orp	NTU Turb	other
1135	13.09	start pump						
1150	13.10	6.53	1.106	11.16	2.65	-103.9	3.73	clR
1155	13.11	6.60	1.100	11.19	2.60	-101.9	2.39	AA
1200	13.11	6.61	1.099	11.19	2.58	-98.2	1.61	AA
1205	13.11	6.61	1.095	11.20	2.55	-97.6	1.43	AA

1210 collect 3voc, 1 metal, 1 chloride sulfate
GW-WT101A-041317

WT 101D WL = 12.99 flow = 200 ml/min

Time	WL	ph	cond	temp	DO	orp	Turb	other
1135	13.15	start pump						
1150	13.16	7.51	.538	13.13	2.18	-260.6	2.60	clR
1155	13.16	7.56	.539	13.18	1.51	-259.6	1.45	AA
1200	13.16	7.59	.539	13.17	1.48	-249.3	1.57	AA
1205	13.16	7.60	.539	13.19	1.45	-245.1	1.39	AA
1210	13.17	7.61	.540	13.18	1.43	-246.5	1.28	

1215 collect 3VOC, 1 metals, 1 chloride sulfate
GW-WT101D-041317

1230 Collect Equipment Blank
GW-WT101D-041317-D
(3VOC, 1 metals, 1 Chloride, 1 Sulfate)

1235 Collect Trip Blank
TB-041317-001

Appendix B
Table of Analytical Results

Table B.1

Groundwater Sampling Results - VOCs
Himco Site
Elkhart, Indiana

Sample Location:			**WT101A**	**WT101A**	**WT101C**	**WT101C**	**WT101D**	**WT101D**	**WT101E**	**WT101E**	**WT102A**	**WT102A**
Sample ID:			**GW-WT101A-100616**	**GW-WT101A-041317**	**GW-WT101C-100616**	**GW-WT101C-041317**	**GW-WT101D-100616**	**GW-WT101D-041317**	**GW-WT101E-100616**	**GW-WT101E-041317**	**GW-WT-102A-100416**	**GW-WT102A-041117**
Sample Date:			**10/6/2016**	**4/13/2017**	**10/6/2016**	**4/13/2017**	**10/6/2016**	**4/13/2017**	**10/6/2016**	**4/13/2017**	**10/4/2016**	**4/11/2017**
Parameters	**Units**	**GWRAOs**										
Volatile Organic Compounds												
1,1-Dichloroethane	µg/L	240	3.0	2.7	1.0 U	1.0 U	4.0	3.4	2.2	1.7	1.0 U	1.0 U
Benzene	µg/L	5	1.2	0.95 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	70	0.47 J	1.0 U	1.0 U	1.0 U	0.58 J	0.60 J	0.36 J	0.34 J	1.0 U	1.0 U
Vinyl chloride	µg/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

Notes:

U Not detected at the associated reporting limit.
J Estimated concentration.
19 Concentration is greater than GWRAO.

Table B.1

Groundwater Sampling Results - VOCs
Himco Site
Elkhart, Indiana

Sample Location:			**WT102B**	**WT102B**	**WT102B**	**WT106A**	**WT106A**	**WT106B**	**WT106B**	**WT106C**	**WT106C**
Sample ID:			**GW-WT-102B-100416**	**GW-WT-102B-100416-D**	**GW-WT102B-041117**	**GW-WT-106A-100516**	**GW-WT106A-041217**	**GW-WT-106B-100516**	**GW-WT106B-041217**	**GW-WT-106C-100516**	**GW-WT106C-041217**
Sample Date:			**10/4/2016**	**10/4/2016**	**4/11/2017**	**10/5/2016**	**4/12/2017**	**10/5/2016**	**4/12/2017**	**10/5/2016**	**4/12/2017**
				Duplicate							
Parameters	**Units**	**GWRAOs**									
Volatile Organic Compounds											
1,1-Dichloroethane	µg/L	240	1.0 U	1.0 U	1.0 U	2.0	1.5	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	µg/L	5	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
cis-1,2-Dichloroethene	µg/L	70	1.0 U	1.0 U	1.0 U	0.33 J	0.31 J	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.80 J	0.89 J	1.0 U	1.0 U

Notes:

U Not detected at the associated reporting limit
J Estimated concentration.
19 Concentration is greater than GWRAO.

Table B.1

Groundwater Sampling Results - VOCs
Himco Site
Elkhart, Indiana

Sample Location:			**WT106C**	**WT111A**	**WT111A**	**WT114A**	**WT114A**	**WT114B**	**WT114B**	**WT114C**	**WT114C**	**WT115A**
Sample ID:			**GW-WT106C-041217-D**	**GW-WT111A-100416**	**GW-WT111A-041217**	**GW-WT114A-100516**	**GW-WT114A-041117**	**GW-WT114B-100516**	**GW-WT114B-041117**	**GW-WT114C-100516**	**GW-WT114C-041117**	**GW-WT115A-100516**
Sample Date:			**4/12/2017**	**10/4/2016**	**4/12/2017**	**10/5/2016**	**4/11/2017**	**10/5/2016**	**4/11/2017**	**10/5/2016**	**4/11/2017**	**10/5/2016**
			Duplicate									
Parameters	**Units**	**GWRAOs**										
Volatile Organic Compounds												
1,1-Dichloroethane	µg/L	240	1.0 U	9.4	5.1	1.0 U	1.0 U	0.95 J	0.92 J	0.82 J	0.77 J	1.0 U
Benzene	µg/L	5	1.0 U	0.85 J	0.59 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.32 J	0.33 J	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/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

Notes:

U Not detected at the associated reporting limit
J Estimated concentration.
19 Concentration is greater than GWRAO.

Table B.1

Groundwater Sampling Results - VOCs
Himco Site
Elkhart, Indiana

Sample Location:			**WT115A**	**WT115B**	**WT115B**	**WT115B**	**WT115C**	**WT115C**	**WT116A**	**WT116A**	**WT119B**	**WT119B**
Sample ID:			**GW-WT115A-041217**	**GW-WT115B-100516**	**GW-WT115B-100516-D**	**GW-WT115B-041217**	**GW-WT115C-100516**	**GW-WT115C-041217**	**GW-WT116A-100416**	**GW-WT116A-041217**	**GW-WT119B-100416**	**GW-WT119B-041317**
Sample Date:			**4/12/2017**	**10/5/2016**	**10/5/2016**	**4/12/2017**	**10/5/2016**	**4/12/2017**	**10/4/2016**	**4/12/2017**	**10/4/2016**	**4/13/2017**
					Duplicate							
Parameters	**Units**	**GWRAOs**										
Volatile Organic Compounds												
1,1-Dichloroethane	µg/L	240	1.0 U	4.9	4.7	4.1	2.8	2.3	3.1	1.5	1.0 U	1.0 U
Benzene	µg/L	5	1.0 U	**19**	**18**	**12**	1.0 U	1.0 U	3.5	1.4	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	70	1.0 U	2.0	2.0	1.6	0.36 J	0.42 J	3.6	1.5	1.0 U	1.0 U
Vinyl chloride	µg/L	2	1.0 U	1.0 U	1.0 U	**6.3**	1.0 U	1.0 U	0.94 J	1.0 U	1.0 U	1.0 U

Notes:

U Not detected at the associated reporting limit
J Estimated concentration.
19 Concentration is greater than GWRAO.

Table B.1

Groundwater Sampling Results - VOCs
Himco Site
Elkhart, Indiana

Sample Location:			**WT119B**	**WT120A**	**WT120A**	**WT120B**	**WT120B**	**WT120C**	**WT120C**	**WT121A**	**WT121A**
Sample ID:			**GW-WT119B-041317-D**	**GW-WT120A-100416**	**GW-WT120A-041117**	**GW-WT120B-100416**	**GW-WT120B-041117**	**GW-WT120C-100416**	**GW-WT120C-041117**	**GW-WT121A-100416**	**GW-WT121A-041117**
Sample Date:			**4/13/2017**	**10/4/2016**	**4/11/2017**	**10/4/2016**	**4/11/2017**	**10/4/2016**	**4/11/2017**	**10/4/2016**	**4/11/2017**
			Duplicate								
Parameters	**Units**	**GWRAOs**									
Volatile Organic Compounds											
1,1-Dichloroethane	µg/L	240	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
Benzene	µg/L	5	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
cis-1,2-Dichloroethene	µg/L	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.3
Vinyl chloride	µg/L	2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.2	1.0 U

Notes:

U Not detected at the associated reporting limit
J Estimated concentration.
19 Concentration is greater than GWRAO.

Table B.1

Groundwater Sampling Results - VOCs
Himco Site
Elkhart, Indiana

Sample Location:			**WT121B**	**WT121B**	**WT122A**	**WT122A**	**WT122B**	**WT122B**	**WT122C**	**WT122C**	**WTE3**	**WTE3**
Sample ID:			**GW-WT121B-100416**	**GW-WT121B-041117**	**GW-WT-122A-100516**	**GW-WT122A-041217**	**GW-WT-122B-100516**	**GW-WT122B-041217**	**GW-WT-122C-100516**	**GW-WT122C-041217**	**GW-WTE3-100416**	**GW-WTE3-041317**
Sample Date:			**10/4/2016**	**4/11/2017**	**10/5/2016**	**4/12/2017**	**10/5/2016**	**4/12/2017**	**10/5/2016**	**4/12/2017**	**10/4/2016**	**4/13/2017**
Parameters	**Units**	**GWRAOs**										
Volatile Organic Compounds												
1,1-Dichloroethane	µg/L	240	1.5	1.0 U	4.7	2.8	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	µg/L	5	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
cis-1,2-Dichloroethene	µg/L	70	1.2	1.0 U	0.78 J	0.74 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	2	1.0 U	1.1	0.90 J	0.83 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Notes:

U Not detected at the associated reporting limit
J Estimated concentration.
19 Concentration is greater than GWRAO.

Table B.2

Groundwater Sampling Results - Metals and General Chemistry - Upper Aquifer
Himco Site
Elkhart, Indiana

Sample Location:								WT101A	WT101A	WT102A	WT102A	WT106A	WT106A	WT111A	WT111A	WT114A
Sample ID:								GW-WT101A-100616	GW-WT101A-041317	GW-WT-102A-100416	GW-WT102A-041117	GW-WT-106A-100516	GW-WT106A-041217	GW-WT111A-100416	GW-WT111A-041217	GW-WT114A-100516
Sample Date:								10/6/2016	4/13/2017	10/4/2016	4/11/2017	10/5/2016	4/12/2017	10/4/2016	4/12/2017	10/5/2016
Parameters	**Units**	**Primary MCL**	**Secondary MCL**	**RDA**	**RSL Tapwater**	**BV**	**GWRAO a**									
Metals																
Arsenic	µg/L	10	-	-	0.045	2 U	10	5.2	4.4	0.47 J	0.53 J	1.2	1.4	5.0	3.2	4.1
Calcium	µg/L	-	-	250000	-	242000	250000	230000	190000	80000	68000	99000	89000	100000	65000	91000
Iron	µg/L	-	300	1000	26000	7100	26000	22000	19000	630	1100	380	870	1500	780	3700
Lead	µg/L	15	-	-	-	3.0 U	15	3.0 U	6.3 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0	3.0 U
Manganese	µg/L	-	50	-	880	1070	1070	**3200[a]**	**1800[a]**	240	440	420	750	390	230	360
Sodium	µg/L	-	-	150000	-	102000	150000	13000	15000	78000	51000	29000	22000	21000	14000	**270000[a]**
General Chemistry																
Chloride	mg/L	-	250	-	-	228	250	12	18	140	66	39	28	28	16	**400[a]**
Sulfate	mg/L	-	250	-	-	637	637	150	140	33	35	65	45	160 J	60	47

Notes:

U Not detected at the associated reporting limit.
J Estimated concentration.
3200[a] Concentration is greater than GWRAO.

Table B.2

Groundwater Sampling Results - Metals and General Chemistry - Upper Aquifer
Himco Site
Elkhart, Indiana

Sample Location:								WT114A	WT115A	WT115A	WT115B	WT115B	WT115B	WT116A	WT116A	WT119B
Sample ID:								GW-WT114A-041117	GW-WT115A-100516	GW-WT115A-041217	GW-WT115B-100516	GW-WT115B-100516-D	GW-WT115B-041217	GW-WT116A-100416	GW-WT116A-041217	GW-WT119B-100416
Sample Date:								4/11/2017	10/5/2016	4/12/2017	10/5/2016	10/5/2016	4/12/2017	10/4/2016	4/12/2017	10/4/2016
												Duplicate				
Parameters	**Units**	**Primary MCL**	**Secondary MCL**	**RDA**	**RSL Tapwater**	**BV**	**GWRAO a**									
Metals																
Arsenic	µg/L	10	-	-	0.045	2 U	10	1.5	2.2	0.80 J	0.96 J	0.98 J	1.1	1.7	3.2	4.6
Calcium	µg/L	-	-	250000	-	242000	250000	63000	47000	52000	290000[a]	300000[a]	280000[a]	510000[a]	470000[a]	120000
Iron	µg/L	-	300	1000	26000	7100	26000	1400	7400	2000	100 U	100 U	100 U	14000	14000	760
Lead	µg/L	15	-	-	-	3.0 U	15	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	5.6	3.0 U	7.2	3.0 U
Manganese	µg/L	-	50	-	880	1070	1070	440	640	450	15 U	15 U	15 U	1900[a]	2600[a]	82
Sodium	µg/L	-	-	150000	-	102000	150000	250000[a]	1200 J	2800 J	33000	34000	29000	88000	25000	23000
General Chemistry																
Chloride	mg/L	-	250	-	-	228	250	270[a]	0.62 J	0.43 J	30	29	31	9.2	3.1 J	11
Sulfate	mg/L	-	250	-	-	637	637	37	1.0 U	2.1	160	180	70	180 J	330	80 J

Notes:

U Not detected at the associated reporting limit.
J Estimated concentration.
3200[a] Concentration is greater than GWRAO.

Table B.2

Groundwater Sampling Results - Metals and General Chemistry - Upper Aquifer
Himco Site
Elkhart, Indiana

Sample Location:								WT119B	WT119B	WT120C	WT120C	WT121A	WT121A	WT122A	WT122A
Sample ID:								GW-WT119B-041317	GW-WT119B-041317-D	GW-WT120C-100416	GW-WT120C-041117	GW-WT121A-100416	GW-WT121A-041117	GW-WT-122A-100516	GW-WT122A-041217
Sample Date:								4/13/2017	4/13/2017	10/4/2016	4/11/2017	10/4/2016	4/11/2017	10/5/2016	4/12/2017
									Duplicate						
Parameters	**Units**	**Primary MCL**	**Secondary MCL**	**RDA**	**RSL Tapwater**	**BV**	**GWRAO a**								
Metals															
Arsenic	µg/L	10	-	-	0.045	2 U	10	2.3 U	3.3	0.38 J	6.3	6.2	18[a]	0.43 J	0.64 J
Calcium	µg/L	-	-	250000	-	242000	250000	92000	91000	75000	70000	87000	95000	250000	280000[a]
Iron	µg/L	-	300	1000	26000	7100	26000	600	600	100 U	1000	2600	11000	7300	8800
Lead	µg/L	15	-	-	-	3.0 U	15	4.0 U	4.4 U	3.0 U	3.0 U	3.0 U	19[a]	3.0 U	3.0 U
Manganese	µg/L	-	50	-	880	1070	1070	67	67	15 U	220	43	68	730	730
Sodium	µg/L	-	-	150000	-	102000	150000	15000	15000	26000	17000	40000	46000	32000	34000
General Chemistry															
Chloride	mg/L	-	250	-	-	228	250	10	10	27	36	79	96	36	33
Sulfate	mg/L	-	250	-	-	637	637	42	42	26 J	31	73 J	72	270	260

Notes:

U Not detected at the associated reporting limit.
J Estimated concentration.
3200[a] Concentration is greater than GWRAO.

Table B.3

Groundwater Sampling Results - Metals and General Chemistry - Intermediate Aquifer
Himco Site
Elkhart, Indiana

Sample Location:								**WT101D**	**WT101D**	**WT101E**	**WT101E**	**WT102B**	**WT102B**	**WT102B**	**WT106B**
Sample ID:								**GW-WT101D-100616**	**GW-WT101D-041317**	**GW-WT101E-100616**	**GW-WT101E-041317**	**GW-WT-102B-100416**	**GW-WT-102B-100416-D**	**GW-WT102B-041117**	**GW-WT-106B-100516**
Sample Date:								**10/6/2016**	**4/13/2017**	**10/6/2016**	**4/13/2017**	**10/4/2016**	**10/4/2016**	**4/11/2017**	**10/5/2016**
													Duplicate		
Parameters	**Units**	**Primary MCL**	**Secondary MCL**	**RDA**	**RSL Tapwater**	**BV**	**GWRAO a**								
Metals															
Arsenic	µg/L	10	-	-	0.045	7.05	10	0.53 J	1.1 U	3.2	3.7	2.4	2.6	2.2	11[a]
Calcium	µg/L	-	-	250000	-	85800	250000	78000	72000	83000	85000	66000	68000	67000	110000
Iron	µg/L	-	300	1000	26000	2170	26000	1400	1300	3200	3300	480	480	520	4300
Lead	µg/L	15	-	-	-	3.0 U	15	3.0 U	3.0 U	3.0 U	4.2 U	3.0 U	3.0 U	3.0 U	3.0 U
Manganese	µg/L	-	50	-	880	170	880	40	39	39	42	41	44	48	42
Sodium	µg/L	-	-	150000	-	31600	150000	21000	19000	18000	18000	31000	31000	31000	25000
General Chemistry															
Chloride	mg/L	-	250	-	-	54.5	250	38	37	39	39	59	59	52	26
Sulfate	mg/L	-	250	-	-	370	370	79	58	85	82	26	22	19	130

Notes:

U Not detected at the associated reporting limit.
J Estimated concentration.
11[a] Concentration is greater than GWRAO.

Table B.3

Groundwater Sampling Results - Metals and General Chemistry - Intermediate Aquifer
Himco Site
Elkhart, Indiana

Sample Location:								**WT106B**	**WT114B**	**WT114B**	**WT114C**	**WT114C**	**WT115C**	**WT115C**	**WT120A**	**WT120A**
Sample ID:								**GW-WT106B-041217**	**GW-WT114B-100516**	**GW-WT114B-041117**	**GW-WT114C-100516**	**GW-WT114C-041117**	**GW-WT115C-100516**	**GW-WT115C-041217**	**GW-WT120A-100416**	**GW-WT120A-041117**
Sample Date:								**4/12/2017**	**10/5/2016**	**4/11/2017**	**10/5/2016**	**4/11/2017**	**10/5/2016**	**4/12/2017**	**10/4/2016**	**4/11/2017**
Parameters	**Units**	**Primary MCL**	**Secondary MCL**	**RDA**	**RSL Tapwater**	**BV**	**GWRAO a**									
Metals																
Arsenic	µg/L	10	-	-	0.045	7.05	10	11[a]	7.6	6.4	19[a]	17[a]	2.0	1.9	3.4	3.3
Calcium	µg/L	-	-	250000	-	85800	250000	110000	64000	70000	72000	79000	84000	83000	76000	74000
Iron	µg/L	-	300	1000	26000	2170	26000	3700	2000	2000	2500	2900	2300	2100	930	860
Lead	µg/L	15	-	-	-	3.0 U	15	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Manganese	µg/L	-	50	-	880	170	880	49	39	45	25	27	51	52	75	78
Sodium	µg/L	-	-	150000	-	31600	150000	25000	20000	21000	16000	19000	21000	22000	35000	38000
General Chemistry																
Chloride	mg/L	-	250	-	-	54.5	250	26	31	39	34	37	40	40	69	61
Sulfate	mg/L	-	250	-	-	370	370	120	54	54	86	95	77	73	36	36

Notes:

U Not detected at the associated reporting limit.
J Estimated concentration.
11[a] Concentration is greater than GWRAO.

Table B.3

Groundwater Sampling Results - Metals and General Chemistry - Intermediate Aquifer
Himco Site
Elkhart, Indiana

Sample Location:								**WT120B**	**WT120B**	**WT121B**	**WT121B**	**WT122B**	**WT122B**	**WT122C**	**WT122C**
Sample ID:								**GW-WT120B-100416**	**GW-WT120B-041117**	**GW-WT121B-100416**	**GW-WT121B-041117**	**GW-WT-122B-100516**	**GW-WT122B-041217**	**GW-WT-122C-100516**	**GW-WT122C-041217**
Sample Date:								**10/4/2016**	**4/11/2017**	**10/4/2016**	**4/11/2017**	**10/5/2016**	**4/12/2017**	**10/5/2016**	**4/12/2017**
Parameters	**Units**	**Primary MCL**	**Secondary MCL**	**RDA**	**RSL Tapwater**	**BV**	**GWRAO a**								
Metals															
Arsenic	µg/L	10	-	-	0.045	7.05	10	6.0	0.38 J	12[a]	12[a]	1.2	1.1	3.0	3.0
Calcium	µg/L	-	-	250000	-	85800	250000	71000	70000	95000	91000	88000	88000	100000	98000
Iron	µg/L	-	300	1000	26000	2170	26000	1100	100 U	5600	5100	2200	2200	2100	1900
Lead	µg/L	15	-	-	-	3.0 U	15	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Manganese	µg/L	-	50	-	880	170	880	210	15 U	28	37	79	81	140	140
Sodium	µg/L	-	-	150000	-	31600	150000	17000	22000	55000	51000	21000	21000	19000	19000
General Chemistry															
Chloride	mg/L	-	250	-	-	54.5	250	39	18	27	26	42	40	38	37
Sulfate	mg/L	-	250	-	-	370	370	33 J	16	38 J	45	88	78	120	94

Notes:

U Not detected at the associated reporting limit.
J Estimated concentration.
11[a] Concentration is greater than GWRAO.

Table B.4

Groundwater Sampling Results - Metals and General Chemistry - Lower Aquifer
Himco Site
Elkhart, Indiana

Sample Location:								WT101C	WT101C	WT106C	WT106C	WT106C	WTE3	WTE3
Sample ID:								GW-WT101C-100616	GW-WT101C-041317	GW-WT-106C-100516	GW-WT106C-041217	GW-WT106C-041217-D	GW-WTE3-100416	GW-WTE3-041317
Sample Date:								10/6/2016	4/13/2017	10/5/2016	4/12/2017	4/12/2017	10/4/2016	4/13/2017
												Duplicate		
Parameters	**Units**	**Primary MCL**	**Secondary MCL**	**RDA**	**RSL Tapwater**	**BV**	**GWRAO a**							
Metals														
Arsenic	µg/L	10	-	-	0.045	5.58	10	6.9	8.1	12[a]	11[a]	11[a]	1.0 U	1.0 U
Calcium	µg/L	-	-	250000	-	239000	250000	49000	48000	47000	48000	49000	110000	64000
Iron	µg/L	-	300	1000	26000	15300	26000	220	500	1100	1000	1100	190	77 J
Lead	µg/L	15	-	-	-	3.9	15	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Manganese	µg/L	-	50	-	880	1140	1140	7.0 J	8.2 J	14 J	17	17	27	56
Sodium	µg/L	-	-	150000	-	80600	150000	16000	13000	18000	18000	19000	17000	12000
General Chemistry														
Chloride	mg/L	-	250	-	-	77.7	250	2.0	2.5	10	11	11	18	9.2
Sulfate	mg/L	-	250	-	-	73.2	250	5.5	4.9	1.0 U	1.0 U	1.0 U	24 J	6.8

Notes:

U Not detected at the associated reporting limit.
J Estimated concentration.
12[a] Concentration is greater than GWRAO.

Appendix C
Laboratory Reports and Data Validation Memoranda

Memorandum

November 2, 2016

To:	Alan Van Norman	Ref. No.:	039611
From:	Nancy Bergstrom/tl/7/Det	Tel:	734-453-5123
cc:	Alan Dean; Rawa Fleisher		

Subject: **Analytical Results and Reduced Validation**
Semi-Annual Groundwater Monitoring Event
HIMCO Site
Elkhart, Indiana
October 2016

1. Introduction

This document details a reduced validation of analytical results for groundwater samples collected in support of the Semi-Annual Groundwater Monitoring Event at the Himco Site during October 2016. Samples were submitted to TestAmerica Laboratories, Inc., located in North Canton, Ohio. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Table 2. A summary of the analytical methodology is presented in Table 3.

Standard GHD report deliverables were submitted by the laboratory. The final results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody forms, finished report forms, method blank data, recovery data from surrogate spikes/laboratory control samples (LCS)/matrix spikes (MS) and field QA/QC samples.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 3 and applicable guidance from the documents entitled:

i) "HIMCO RD/RA Quality Assurance Project Plan (QAPP) and Addendum No. 1", August 2010

ii) "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", United States Environmental Protection Agency (USEPA) 540/R-99-008, October 1999

iii) "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review", USEPA 540/R-94-013, February 1994

Items ii) and iii) will subsequently be referred to as the "Guidelines" in this Memorandum.

2. Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in Table 3. Sample chain of custody documents and analytical reports were used to determine sample holding times. All samples were analyzed within the required holding times.

All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (4 +/- 2°C).

3. Laboratory Method Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

All method blank results were non-detect, indicating that laboratory contamination was not a factor for this investigation.

4. Surrogate Spike Recoveries - Organic Analyses

In accordance with the methods employed, all samples, blanks, and QC samples analyzed for organics are spiked with surrogate compounds prior to sample or analysis. Surrogate recoveries provide a means to evaluate the effects of laboratory performance on individual sample matrices.

All samples submitted for volatile organic compounds (VOC) determinations were spiked with the appropriate number of surrogate compounds prior to sample analysis.

Surrogate recoveries were assessed against laboratory control limits. All surrogate recoveries were within the laboratory control limits.

5. Laboratory Control Sample Analyses

LCS are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects.

For this study, LCS were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

Organic Analyses

The LCS contained all compounds of interest. All LCS were within the laboratory control limits, demonstrating acceptable analytical accuracy.

Inorganic Analyses

The LCS contained all analytes of interest. LCS recoveries were assessed per the "Guidelines". All LCS recoveries were within the control limits, demonstrating acceptable analytical accuracy.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

To evaluate the effects of sample matrices on the preparation process, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS/MSD samples. The RPD between the MS and MSD is used to assess analytical precision.

MS/MSD analyses were performed as specified in Table 1.

Organic Analyses

The MS/MSD samples were spiked with all compounds of interest. All percent recoveries and RPD values were within the laboratory (method) control limits, demonstrating acceptable analytical accuracy and precision.

Inorganic Analyses

The MS/MSD samples were spiked with the analytes of interest, and the results were evaluated using the "Guidelines". Table 4 presents the qualified sulfate results due to outlying MS/MSD results. All remaining percent recoveries and RPD values were within the control limits, demonstrating acceptable analytical accuracy and precision.

7. Field QA/QC Samples

The field QA/QC consisted of three trip blank samples, two equipment blank samples, and two field duplicate sample sets.

Trip Blank Sample Analysis

To evaluate contamination from sample collection, transportation, storage, and analytical activities, three trip blanks were submitted to the laboratory for VOC analysis. All results were non-detect for the compounds of interest.

Equipment Blank Sample Analysis

To assess field decontamination procedures, ambient conditions at the site, and cleanliness of sample containers, two equipment blanks were submitted for analysis, as identified in Table 1.Table 5 presents the

qualified sulfate data due to sulfate concentrations in an equipment blank sample. All remaining results were non-detect for the analytes of interest or the equipment blank detection was associated with investigative samples that reported concentrations significantly greater than the associated equipment blank concentration for the analytes of interest.

Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, two field duplicate samples were collected and submitted "blind" to the laboratory, as specified in Table 1. The RPDs associated with these duplicate samples must be less than 50 percent for water samples. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criteria is one times the RL value for water samples.

All field duplicate results were within acceptable agreement, demonstrating acceptable sampling and analytical precision.

8. Analyte Reporting

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each analyte. Positive analyte detections less than the RL but greater than the MDL were reported as estimated (J) in Table 2 unless qualified otherwise in this memorandum. Non-detect results were presented as non-detect at the RL in Table 2.

9. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 2 are acceptable with the specific qualifications noted herein.

Table 1

Sample Collection and Analysis Summary
Semi-Annual Groundwater Monitoring Event
HIMCO Site
Elkhart, Indiana
October 2016

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters: Select VOC	Select Metals	Chloride	Sulfate	Comments
TA-NC SDG No.: 240-70375-1									
GW-WT121B-100416-E	--	Water	10/04/2016	09:07	X	X	X	X	EB
GW-WT111A-100416	WT111A	Water	10/04/2016	10:00	X	X	X	X	
GW-WT116A-100416	WT116A	Water	10/04/2016	11:50	X	X	X	X	
GW-WT119B-100416	WT119B	Water	10/04/2016	11:05	X	X	X	X	
GW-WT120A-100416	WT120A	Water	10/04/2016	15:40	X	X	X	X	
GW-WT120B-100416	WT120B	Water	10/04/2016	14:40	X	X	X	X	
GW-WT120C-100416	WT120C	Water	10/04/2016	14:55	X	X	X	X	MS/MSD-P
GW-WT121A-100416	WT121A	Water	10/04/2016	08:32	X	X	X	X	MS/MSD-P
GW-WT121B-100416	WT121B	Water	10/04/2016	08:55	X	X	X	X	
GW-WTE3-100416	WTE3	Water	10/04/2016	13:25	X	X	X	X	
TRIP BLANK-10-4-16-001	--	Water	10/04/2016	15:47	X	X	X	X	TB
					X				
TA-NC SDG No.: 240-70486-1									
GW-WT-102A-100416	WT102A	Water	10/04/2016	16:30	X	X	X	X	
GW-WT-102B-100416	WT102B	Water	10/04/2016	17:00	X	X	X	X	
GW-WT-102B-100416-D	WT102B	Water	10/04/2016	17:05	X	X	X	X	FD (WT102B)
GW-WT-106A-100516	WT106A	Water	10/05/2016	09:28	X	X	X	X	
GW-WT-106B-100516	WT106B	Water	10/05/2016	09:07	X	X	X	X	
GW-WT-106C-100516	WT106C	Water	10/05/2016	08:30	X	X	X	X	MS/MSD
GW-WT-122A-100516	WT122A	Water	10/05/2016	10:50	X	X	X	X	
GW-WT-122B-100516	WT122B	Water	10/05/2016	10:35	X	X	X	X	
GW-WT-122C-100516	WT122C	Water	10/05/2016	11:35	X	X	X	X	
TRIP BLANK-100516-002	--	Water	10/05/2016	16:30	X				TB
TA-NC SDG No.: 240-70584-1									
GW-WT114C-100516-E	--	Water	10/05/2016	14:15	X	X	X	X	EB
GW-WT101A-100616	WT101A	Water	10/06/2016	08:40	X	X	X	X	
GW-WT101C-100616	WT101C	Water	10/06/2016	08:35	X	X	X	X	MS/MSD
GW-WT101D-100616	WT101D	Water	10/06/2016	09:50	X	X	X	X	
GW-WT101E-100616	WT101E	Water	10/06/2016	09:55	X	X	X	X	
GW-WT114A-100516	WT114A	Water	10/05/2016	13:30	X	X	X	X	

Table 1

Sample Collection and Analysis Summary
Semi-Annual Groundwater Monitoring Event
HIMCO Site
Elkhart, Indiana
October 2016

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters				Comments
					Select VOC	Select Metals	Chloride	Sulfate	
TA-NC SDG No.: 240-70584-1									
GW-WT114B-100516	WT114B	Water	10/05/2016	13:10	X	X	X	X	
GW-WT114C-100516	WT114C	Water	10/05/2016	13:58	X	X	X	X	
GW-WT115A-100516	WT115A	Water	10/05/2016	15:15	X	X	X	X	
GW-WT115B-100516	WT115B	Water	10/05/2016	16:10	X	X	X	X	
GW-WT115B-100516-D	WT115B	Water	10/05/2016	16:20	X	X	X	X	FD (WT115B)
GW-WT115C-100516	WT115C	Water	10/05/2016	15:10	X	X	X	X	
TRIP BLANK-100616-003	--	Water	10/06/2016	10:00	X				TB

Notes:

VOC	- Volatile Organic Compounds
Select VOC	- 1,1-Dichloroethane; Benzene; cis-1,2-Dichloroethene; Vinyl chloride
Select Metals	- Arsenic, Calcium, Iron, Lead, Manganese, Sodium
TA-NC	- TestAmerica Labortories, Inc. - North Canton, Ohio
SDG	- Sample Delivery Group
EB	- Equipment Blank
MS/MSD	- Matrix Spike/Matrix Spike Duplicate
MS/MSD-P	- Matrix Spike/Matrix Spike Duplicate (Partial parameters)
TB	- Trip Blank
FD	- Field Duplicate sample of sample in parenthesis

Table 2

Validated Analytical Summary Result
Semi-Annual Groundwater Monitoring Event
HIMCO Site
Elkhart, Indiana
October, 2016

Location ID:		WT101A	WT101C	WT101D	WT101E
Sample Name:		GW-WT101A-100616	GW-WT101C-100616	GW-WT101D-100616	GW-WT101E-100616
Sample Date:		10/06/2016	10/06/2016	10/06/2016	10/06/2016
Depth:		--	--	--	--
Parameters	**Unit**				
Volatile Organic Compounds					
1,1-Dichloroethane	µg/L	3.0	1.0 U	4.0	2.2
Benzene	µg/L	1.2	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	0.47 J	1.0 U	0.58 J	0.36 J
Vinyl chloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Metals					
Arsenic	µg/L	5.2	6.9	0.53 J	3.2
Calcium	µg/L	230000	49000	78000	83000
Iron	µg/L	22000	220	1400	3200
Lead	µg/L	3.0 U	3.0 U	3.0 U	3.0 U
Manganese	µg/L	3200	7.0 J	40	39
Sodium	µg/L	13000	16000	21000	18000
Wet Chemistry					
Chloride	mg/L	12	2.0	38	39
Sulfate	mg/L	150	5.5	79	85

Table 2

Validated Analytical Summary Result
Semi-Annual Groundwater Monitoring Event
HIMCO Site
Elkhart, Indiana
October, 2016

Location ID:		WT102A	WT102B	WT102B	WT106A
Sample Name:		GW-WT-102A-100416	GW-WT-102B-100416	GW-WT-102B-100416-D	GW-WT-106A-100516
Sample Date:		10/04/2016	10/04/2016	10/04/2016	10/05/2016
Depth:		--	--	--	--
				Duplicate	
Parameters	**Unit**				
Volatile Organic Compounds					
1,1-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	2.0
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	0.33 J
Vinyl chloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Metals					
Arsenic	µg/L	0.47 J	2.4	2.6	1.2
Calcium	µg/L	80000	66000	68000	99000
Iron	µg/L	630	480	480	380
Lead	µg/L	3.0 U	3.0 U	3.0 U	3.0 U
Manganese	µg/L	240	41	44	420
Sodium	µg/L	78000	31000	31000	29000
Wet Chemistry					
Chloride	mg/L	140	59	59	39
Sulfate	mg/L	33	26	22	65

Table 2

Validated Analytical Summary Result
Semi-Annual Groundwater Monitoring Event
HIMCO Site
Elkhart, Indiana
October, 2016

Location ID:		WT106B	WT106C	WT111A	WT114A
Sample Name:		GW-WT-106B-100516	GW-WT-106C-100516	GW-WT111A-100416	GW-WT114A-100516
Sample Date:		10/05/2016	10/05/2016	10/04/2016	10/05/2016
Depth:		--	--	--	--
Parameters	**Unit**				
Volatile Organic Compounds					
1,1-Dichloroethane	µg/L	1.0 U	1.0 U	9.4	1.0 U
Benzene	µg/L	1.0 U	1.0 U	0.85 J	1.0 U
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	0.80 J	1.0 U	1.0 U	1.0 U
Metals					
Arsenic	µg/L	11	12	5.0	4.1
Calcium	µg/L	110000	47000	100000	91000
Iron	µg/L	4300	1100	1500	3700
Lead	µg/L	3.0 U	3.0 U	3.0 U	3.0 U
Manganese	µg/L	42	14 J	390	360
Sodium	µg/L	25000	18000	21000	270000
Wet Chemistry					
Chloride	mg/L	26	10	28	400
Sulfate	mg/L	130	1.0 U	160 J	47

Table 2

Validated Analytical Summary Result
Semi-Annual Groundwater Monitoring Event
HIMCO Site
Elkhart, Indiana
October, 2016

Location ID:		WT114B	WT114C	WT115A	WT115B
Sample Name:		GW-WT114B-100516	GW-WT114C-100516	GW-WT115A-100516	GW-WT115B-100516
Sample Date:		10/05/2016	10/05/2016	10/05/2016	10/05/2016
Depth:		--	--	--	--
Parameters	**Unit**				
Volatile Organic Compounds					
1,1-Dichloroethane	µg/L	0.95 J	0.82 J	1.0 U	4.9
Benzene	µg/L	1.0 U	1.0 U	1.0 U	19
cis-1,2-Dichloroethene	µg/L	0.32 J	1.0 U	1.0 U	2.0
Vinyl chloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Metals					
Arsenic	µg/L	7.6	19	2.2	0.96 J
Calcium	µg/L	64000	72000	47000	290000
Iron	µg/L	2000	2500	7400	100 U
Lead	µg/L	3.0 U	3.0 U	3.0 U	3.0 U
Manganese	µg/L	39	25	640	15 U
Sodium	µg/L	20000	16000	1200 J	33000
Wet Chemistry					
Chloride	mg/L	31	34	0.62 J	30
Sulfate	mg/L	54	86	1.0 U	160

Table 2

Validated Analytical Summary Result
Semi-Annual Groundwater Monitoring Event
HIMCO Site
Elkhart, Indiana
October, 2016

Location ID:		WT115B	WT115C	WT116A	WT119B
Sample Name:		GW-WT115B-100516-D	GW-WT115C-100516	GW-WT116A-100416	GW-WT119B-100416
Sample Date:		10/05/2016	10/05/2016	10/04/2016	10/04/2016
Depth:		--	--	--	--
		Duplicate			
Parameters	**Unit**				
Volatile Organic Compounds					
1,1-Dichloroethane	µg/L	4.7	2.8	3.1	1.0 U
Benzene	µg/L	18	1.0 U	3.5	1.0 U
cis-1,2-Dichloroethene	µg/L	2.0	0.36 J	3.6	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	0.94 J	1.0 U
Metals					
Arsenic	µg/L	0.98 J	2.0	1.7	4.6
Calcium	µg/L	300000	84000	510000	120000
Iron	µg/L	100 U	2300	14000	760
Lead	µg/L	3.0 U	3.0 U	3.0 U	3.0 U
Manganese	µg/L	15 U	51	1900	82
Sodium	µg/L	34000	21000	88000	23000
Wet Chemistry					
Chloride	mg/L	29	40	9.2	11
Sulfate	mg/L	180	77	180 J	80 J

Table 2

Validated Analytical Summary Result
Semi-Annual Groundwater Monitoring Event
HIMCO Site
Elkhart, Indiana
October, 2016

Location ID:		WT120A	WT120B	WT120C	WT121A
Sample Name:		GW-WT120A-100416	GW-WT120B-100416	GW-WT120C-100416	GW-WT121A-100416
Sample Date:		10/04/2016	10/04/2016	10/04/2016	10/04/2016
Depth:		--	--	--	--
Parameters	**Unit**				
Volatile Organic Compounds					
1,1-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	1.0 U	1.2
Metals					
Arsenic	µg/L	3.4	6.0	0.38 J	6.2
Calcium	µg/L	76000	71000	75000	87000
Iron	µg/L	930	1100	100 U	2600
Lead	µg/L	3.0 U	3.0 U	3.0 U	3.0 U
Manganese	µg/L	75	210	15 U	43
Sodium	µg/L	35000	17000	26000	40000
Wet Chemistry					
Chloride	mg/L	69	39	27	79
Sulfate	mg/L	36	33 J	26 J	73 J

Table 2

Validated Analytical Summary Result
Semi-Annual Groundwater Monitoring Event
HIMCO Site
Elkhart, Indiana
October, 2016

Location ID:		WT121B	WT122A	WT122B	WT122C
Sample Name:		GW-WT121B-100416	GW-WT-122A-100516	GW-WT-122B-100516	GW-WT-122C-100516
Sample Date:		10/04/2016	10/05/2016	10/05/2016	10/05/2016
Depth:		--	--	--	--
Parameters	**Unit**				
Volatile Organic Compounds					
1,1-Dichloroethane	µg/L	1.5	4.7	1.0 U	1.0 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	1.2	0.78 J	1.0 U	1.0 U
Vinyl chloride	µg/L	1.0 U	0.90 J	1.0 U	1.0 U
Metals					
Arsenic	µg/L	12	0.43 J	1.2	3.0
Calcium	µg/L	95000	250000	88000	100000
Iron	µg/L	5600	7300	2200	2100
Lead	µg/L	3.0 U	3.0 U	3.0 U	3.0 U
Manganese	µg/L	28	730	79	140
Sodium	µg/L	55000	32000	21000	19000
Wet Chemistry					
Chloride	mg/L	27	36	42	38
Sulfate	mg/L	38 J	270	88	120

Table 2

Validated Analytical Summary Result
Semi-Annual Groundwater Monitoring Event
HIMCO Site
Elkhart, Indiana
October, 2016

Location ID:	**WTE3**
Sample Name:	**GW-WTE3-100416**
Sample Date:	**10/04/2016**
Depth:	**--**

Parameters	**Unit**	
Volatile Organic Compounds		
1,1-Dichloroethane	µg/L	1.0 U
Benzene	µg/L	1.0 U
cis-1,2-Dichloroethene	µg/L	1.0 U
Vinyl chloride	µg/L	1.0 U
Metals		
Arsenic	µg/L	1.0 U
Calcium	µg/L	110000
Iron	µg/L	190
Lead	µg/L	3.0 U
Manganese	µg/L	27
Sodium	µg/L	17000
Wet Chemistry		
Chloride	mg/L	18
Sulfate	mg/L	24 J

Notes

U - Not detected at the associated reporting limit
J - Estimated concentration

Table 3

Analytical Methods
Semi-Annual Groundwater Monitoring Event
HIMCO Site
Elkhart, Indiana
October 2016

Parameter	Method	Matrix	Holding Time	
			Collection to Extraction (Days)	Collection or Extraction to Analysis (Days)
Select VOC	SW-846 8260B	Water	-	14
Select Metals	SW-846 6020/6010B	Water	-	180
Chloride	EPA 300.0	Water	-	28
Sulfate	EPA 300.0	Water	-	28

Notes:

VOC - Volatile Organic Compounds
Select VOC - 1,1-Dichloroethane; Benzene; cis-1,2-Dichloroethene; Vinyl chloride
Select Metals - Arsenic, Calcium, Iron, Lead, Manganese, Sodium

Method References:

SW-846 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, 1986, with subsequent revisions

Table 4

Qualified Sample Results Due to Outlying MS/MSD Results
Semi-Annual Groundwater Monitoring Event
HIMCO Site
Elkhart, Indiana
October 2016

Parameter	Sample ID	Analyte	MS % Recovery	MSD % Recovery	RPD (percent)	Control Limits % Recovery	Control Limits RPD	Qualified Result	Units
Inorganics	GW-WT121A-100416	Sulfate	125	122	1	80-120	15	73 J	mg/L
	GW-WT121B-100416							38 J	mg/L
	GW-WT111A-100416							160 J	mg/L
	GW-WT119B-100416							80 J	mg/L
	GW-WT116A-100416							180 J	mg/L
	GW-WTE3-100416							24 J	mg/L
	GW-WT120B-100416							33 J	mg/L
	GW-WT120C-100416							26 J	mg/L

Notes:

MS - Matrix Spike
MSD - Matrix Spike Duplicate
RPD - Relative Percent Difference
J - Estimated concentration

Table 5

Qualified Sample Data Due to Analyte Concentrations in the Equipment Blanks
Semi-Annual Groundwater Monitoring Event
HIMCO Site
Elkhart, Indiana
October 2016

Parameter	Rinse Blank ID	Blank Date (dd/mm/yyyy)	Analyte	Blank Result	Associated Sample ID	Original Result	Qualified Result	Units
Inorganics	GW-WT114C-100516-E	10/05/2016	Sulfate	0.32 J	GW-WT-106C-100516	0.14 J	1.0 U	mg/L
					GW-WT115A-100516	0.83 J	1.0 U	mg/L

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration

Memorandum

May 12, 2017

To:	Alan Van Norman	Ref. No.:	039611
From:	Nancy Bergstrom/ma/8/Det	Tel:	773-380-9933
cc:	Alan Deal		

Subject: **Analytical Results and Reduced Validation**
Semi-Annual Groundwater Monitoring Event
HIMCO Site
Elkhart, Indiana
April 2017

1. Introduction

This document details a reduced validation of analytical results for groundwater samples collected in support of the Semi-Annual Groundwater Monitoring Event at the Himco Site during April 2017. Samples were submitted to TestAmerica Laboratories, Inc. located in North Canton, Ohio . A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Table 2. A summary of the analytical methodology is presented in Table 3.

Standard GHD report deliverables were submitted by the laboratory. The final results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody forms, finished report forms, method blank data, recovery data from surrogate spikes/laboratory control samples (LCS)/matrix spikes (MS) and field QA/QC samples.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 3 and applicable guidance from the documents entitled:

i) “HIMCO RD/RA Quality Assurance Project Plan (QAPP) and Addendum No. 1”, August 2010

ii) "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", United States Environmental Protection Agency (USEPA) 540/R-99-008, October 1999

iii) "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review", USEPA 540/R-94-013, February 1994

Items ii) and iii) will subsequently be referred to as the "Guidelines" in this Memorandum.

2. Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in Table 3. Sample chain of custody documents and analytical reports were used to determine sample holding times. All samples were prepared and analyzed within the required holding times.

All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (4 +/- 2°C).

3. Laboratory Method Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

All method blank results were non-detect, indicating that laboratory contamination was not a factor for this investigation.

4. Surrogate Spike Recoveries - Organic Analyses

In accordance with the methods employed, all samples, blanks, and QC samples analyzed for organics are spiked with surrogate compounds prior to sample or analysis. Surrogate recoveries provide a means to evaluate the effects of laboratory performance on individual sample matrices.

All samples submitted for volatile organic compound (VOC) determinations were spiked with the appropriate number of surrogate compounds prior to sample analysis.

Surrogate recoveries were assessed against laboratory control limits. All surrogate recoveries were within the laboratory control limits.

5. Laboratory Control Sample (LCS) Analyses

LCS are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects.

For this study, LCS were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

Organic Analyses

The LCS contained all compounds of interest. All LCS recoveries were within the laboratory control limits, demonstrating acceptable analytical accuracy.

Inorganic Analyses

The LCS contained all analytes of interest. LCS recoveries were assessed per the "Guidelines". All LCS recoveries were within the control limits, demonstrating acceptable analytical accuracy.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

To evaluate the effects of sample matrices on the preparation process, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS/MSD samples. The RPD between the MS and MSD is used to assess analytical precision.

MS/MSD analyses were performed as specified in Table 1.

Organic Analyses

The MS/MSD samples were spiked with all compounds of interest. All percent recoveries and RPD values were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision.

Inorganic Analyses

The MS/MSD samples were spiked with the analytes of interest, and the results were evaluated using the "Guidelines". All percent recoveries and RPD values were within the control limits, demonstrating acceptable analytical accuracy and precision.

7. Field QA/QC Samples

The field QA/QC consisted of one trip blank sample, two equipment blank samples, and two field duplicate sample sets.

Trip Blank Sample Analysis

To evaluate contamination from sample collection, transportation, storage, and analytical activities, one trip blank was submitted to the laboratory for VOC analysis. All results were non-detect for the compounds of interest.

Equipment Blank Sample Analysis

To assess field decontamination procedures, ambient conditions at the site, and cleanliness of sample containers, two equipment blanks were submitted for analysis, as identified in Table 1. Table 4 presents the qualified sample data due to analyte concentrations in an equipment blank sample. All remaining results were non-detect for the analytes of interest.

Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, two field duplicate samples were collected and submitted "blind" to the laboratory, as specified in Table 1. The RPDs associated with these duplicate

samples must be less than 50 percent for water samples. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criteria is one times the RL value for water samples.

All field duplicate results were within acceptable agreement, demonstrating acceptable sampling and analytical precision.

8. Analyte Reporting

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each analyte. Positive analyte detections less than the RL but greater than the MDL were reported as estimated (J) in Table 2 unless qualified otherwise in this memorandum. Non-detect results were presented as non-detect at the RL in Table 2.

9. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 2 are acceptable with the specific qualifications noted herein.

Table 1

Sample Collection and Analysis Summary
Semi-Annual Groundwater Monitoring Event
HIMCO Site
Elkhart, Indiana
April 2017

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters: Select VOC	Select Metals	Chloride	Sulfate	Comments
TA-NC SDG No.: 240-78107-1									
GW-WT101A-041317	WT101A	Water	04/13/2017	12:10	X	X	X	X	
GW-WT101C-041317	WT101C	Water	04/13/2017	10:50	X	X	X	X	
GW-WT101D-041317	WT101D	Water	04/13/2017	12:15	X	X	X	X	
GW-WT101D-041317-E	--	Water	04/13/2017	12:30	X	X	X	X	EB
GW-WT101E-041317	WT101E	Water	04/13/2017	11:00	X	X	X	X	
GW-WT102A-041117	WT102A	Water	04/11/2017	12:00	X	X	X	X	
GW-WT102B-041117	WT102B	Water	04/11/2017	11:45	X	X	X	X	
GW-WT106A-041217	WT106A	Water	04/12/2017	08:45	X	X	X	X	
GW-WT106B-041217	WT106B	Water	04/12/2017	08:50	X	X	X	X	MS/MSD-P
GW-WT106C-041217	WT106C	Water	04/12/2017	10:00	X	X	X	X	
GW-WT106C-041217-D	WT106C	Water	04/12/2017	10:10	X	X	X	X	FD (WT106C)
GW-WT111A-041217	WT111A	Water	04/12/2017	17:15	X	X	X	X	
GW-WT114A-041117	WT114A	Water	04/11/2017	14:25	X	X	X	X	
GW-WT114B-041117	WT114B	Water	04/11/2017	15:30	X	X	X	X	
GW-WT114C-041117	WT114C	Water	04/11/2017	14:20	X	X	X	X	
GW-WT115A-041217	WT115A	Water	04/12/2017	14:50	X	X	X	X	
GW-WT115B-041217	WT115B	Water	04/12/2017	15:50	X	X	X	X	
GW-WT115C-041217	WT115C	Water	04/12/2017	14:55	X	X	X	X	
GW-WT116A-041217	WT116A	Water	04/12/2017	18:20	X	X	X	X	
GW-WT119B-041317	WT119B	Water	04/13/2017	08:35	X	X	X	X	
GW-WT119B-041317-D	WT119B	Water	04/13/2017	08:45	X	X	X	X	FD (WT119B)
GW-WT120A-041117	WT120A	Water	04/11/2017	18:05	X	X	X	X	
GW-WT120B-041117	WT120B	Water	04/11/2017	17:10	X	X	X	X	
GW-WT120C-041117	WT120C	Water	04/11/2017	17:15	X	X	X	X	
GW-WT121A-041117	WT121A	Water	04/11/2017	10:15	X	X	X	X	

Table 1

Sample Collection and Analysis Summary
Semi-Annual Groundwater Monitoring Event
HIMCO Site
Elkhart, Indiana
April 2017

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters: Select VOC	Select Metals	Chloride	Sulfate	Comments
GW-WT121B-041117	WT121B	Water	04/11/2017	10:10	X	X	X	X	
GW-WT122A-041217	WT122A	Water	04/12/2017	11:20	X	X	X	X	
GW-WT122B-041217	WT122B	Water	04/12/2017	11:30	X	X	X	X	
GW-WT122C-041217	WT122C	Water	04/12/2017	12:15	X	X	X	X	MS/MSD
GW-WT122C-041217-E	--	Water	04/12/2017	14:00	X	X	X	X	EB
GW-WTE3-041317	WTE3	Water	04/13/2017	09:40	X	X	X	X	MS/MSD
TB-041317-001	--	Water	04/13/2017	12:35	X				TB

Notes:

VOC - Volatile Organic Compounds
Select VOC - 1,1-Dichloroethane; Benzene; cis-1,2-Dichloroethene; Vinyl chloride
Select Metals - Arsenic, Calcium, Iron, Lead, Manganese, Sodium
TA-NC - TestAmerica Laboratories, Inc. - North Canton, Ohio
SDG - Sample Delivery Group
EB - Equipment Blank
MS/MSD - Matrix Spike/Matrix Spike Duplicate
MS/MSD-P - Matrix Spike/Matrix Spike Duplicate (Partial parameters)
TB - Trip Blank
FD - Field Duplicate sample of sample in parenthesis

Table 2

Validated Analytical Summary Results
Semi-Annual Groundwater Monitoring Event
HIMCO Site
Elkhart, Indiana
April 2017

Location ID:		Equipment Blank	Equipment Blank	Trip Blank	WT101A
Sample Name:		GW-WT122C-041217-E	GW-WT101D-041317-E	TB-041317-001	GW-WT101A-041317
Sample Date:		04/12/2017	04/13/2017	04/13/2017	04/13/2017
Depth:		--	--	--	--
Parameters	**Unit**				
Volatile Organic Compounds					
1,1-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	2.7
Benzene	µg/L	1.0 U	1.0 U	1.0 U	0.95 J
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Metals					
Arsenic	µg/L	1.0 U	0.52 J	--	4.4
Calcium	µg/L	5000 U	5000 U	--	190000
Iron	µg/L	100 U	100 U	--	19000
Lead	µg/L	3.0 U	2.5 J	--	6.3 U
Manganese	µg/L	15 U	15 U	--	1800
Sodium	µg/L	5000 U	5000 U	--	15000
General Chemistry					
Chloride	mg/L	1.0 U	1.0 U	--	18
Sulfate	mg/L	1.0 U	1.0 U	--	140

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration

Table 2

Validated Analytical Summary Results
Semi-Annual Groundwater Monitoring Event
HIMCO Site
Elkhart, Indiana
April 2017

Location ID:		WT101C	WT101D	WT101E	WT102A
Sample Name:		GW-WT101C-041317	GW-WT101D-041317	GW-WT101E-041317	GW-WT102A-041117
Sample Date:		04/13/2017	04/13/2017	04/13/2017	04/11/2017
Depth:		--	--	--	--
Parameters	**Unit**				
Volatile Organic Compounds					
1,1-Dichloroethane	µg/L	1.0 U	3.4	1.7	1.0 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	1.0 U	0.60 J	0.34 J	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Metals					
Arsenic	µg/L	8.1	1.1 U	3.7	0.53 J
Calcium	µg/L	48000	72000	85000	68000
Iron	µg/L	500	1300	3300	1100
Lead	µg/L	3.0 U	3.0 U	4.2 U	3.0 U
Manganese	µg/L	8.2 J	39	42	440
Sodium	µg/L	13000	19000	18000	51000
General Chemistry					
Chloride	mg/L	2.5	37	39	66
Sulfate	mg/L	4.9	58	82	35

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration

Table 2

Validated Analytical Summary Results
Semi-Annual Groundwater Monitoring Event
HIMCO Site
Elkhart, Indiana
April 2017

Location ID:		WT102B	WT106A	WT106B	WT106C
Sample Name:		GW-WT102B-041117	GW-WT106A-041217	GW-WT106B-041217	GW-WT106C-041217
Sample Date:		04/11/2017	04/12/2017	04/12/2017	04/12/2017
Depth:		--	--	--	--
Parameters	**Unit**				
Volatile Organic Compounds					
1,1-Dichloroethane	µg/L	1.0 U	1.5	1.0 U	1.0 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	1.0 U	0.31 J	1.0 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	0.89 J	1.0 U
Metals					
Arsenic	µg/L	2.2	1.4	11	11
Calcium	µg/L	67000	89000	110000	48000
Iron	µg/L	520	870	3700	1000
Lead	µg/L	3.0 U	3.0 U	3.0 U	3.0 U
Manganese	µg/L	48	750	49	17
Sodium	µg/L	31000	22000	25000	18000
General Chemistry					
Chloride	mg/L	52	28	26	11
Sulfate	mg/L	19	45	120	1.0 U

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration

Table 2

Validated Analytical Summary Results
Semi-Annual Groundwater Monitoring Event
HIMCO Site
Elkhart, Indiana
April 2017

Location ID:		**WT106C**	**WT111A**	**WT114A**	**WT114B**
Sample Name:		**GW-WT106C-041217-D**	**GW-WT111A-041217**	**GW-WT114A-041117**	**GW-WT114B-041117**
Sample Date:		**04/12/2017**	**04/12/2017**	**04/11/2017**	**04/11/2017**
Depth:		**--**	**--**	**--**	**--**
		Duplicate			
Parameters	**Unit**				
Volatile Organic Compounds					
1,1-Dichloroethane	µg/L	1.0 U	5.1	1.0 U	0.92 J
Benzene	µg/L	1.0 U	0.59 J	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	0.33 J
Vinyl chloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Metals					
Arsenic	µg/L	11	3.2	1.5	6.4
Calcium	µg/L	49000	65000	63000	70000
Iron	µg/L	1100	780	1400	2000
Lead	µg/L	3.0 U	3.0	3.0 U	3.0 U
Manganese	µg/L	17	230	440	45
Sodium	µg/L	19000	14000	250000	21000
General Chemistry					
Chloride	mg/L	11	16	270	39
Sulfate	mg/L	1.0 U	60	37	54

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration

Table 2

Validated Analytical Summary Results
Semi-Annual Groundwater Monitoring Event
HIMCO Site
Elkhart, Indiana
April 2017

Location ID:		**WT114C**	**WT115A**	**WT115B**	**WT115C**
Sample Name:		**GW-WT114C-041117**	**GW-WT115A-041217**	**GW-WT115B-041217**	**GW-WT115C-041217**
Sample Date:		**04/11/2017**	**04/12/2017**	**04/12/2017**	**04/12/2017**
Depth:		**--**	**--**	**--**	**--**
Parameters	**Unit**				
Volatile Organic Compounds					
1,1-Dichloroethane	µg/L	0.77 J	1.0 U	4.1	2.3
Benzene	µg/L	1.0 U	1.0 U	12	1.0 U
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.6	0.42 J
Vinyl chloride	µg/L	1.0 U	1.0 U	6.3	1.0 U
Metals					
Arsenic	µg/L	17	0.80 J	1.1	1.9
Calcium	µg/L	79000	52000	280000	83000
Iron	µg/L	2900	2000	100 U	2100
Lead	µg/L	3.0 U	3.0 U	5.6	3.0 U
Manganese	µg/L	27	450	15 U	52
Sodium	µg/L	19000	2800 J	29000	22000
General Chemistry					
Chloride	mg/L	37	0.43 J	31	40
Sulfate	mg/L	95	2.1	70	73

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration

Table 2

Validated Analytical Summary Results
Semi-Annual Groundwater Monitoring Event
HIMCO Site
Elkhart, Indiana
April 2017

Location ID:		WT116A	WT119B	WT119B	WT120A
Sample Name:		GW-WT116A-041217	GW-WT119B-041317	GW-WT119B-041317-D	GW-WT120A-041117
Sample Date:		04/12/2017	04/13/2017	04/13/2017	04/11/2017
Depth:		--	--	--	--
				Duplicate	
Parameters	**Unit**				
Volatile Organic Compounds					
1,1-Dichloroethane	µg/L	1.5	1.0 U	1.0 U	1.0 U
Benzene	µg/L	1.4	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	1.5	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Metals					
Arsenic	µg/L	3.2	2.3 U	3.3	3.3
Calcium	µg/L	470000	92000	91000	74000
Iron	µg/L	14000	600	600	860
Lead	µg/L	7.2	4.0 U	4.4 U	3.0 U
Manganese	µg/L	2600	67	67	78
Sodium	µg/L	25000	15000	15000	38000
General Chemistry					
Chloride	mg/L	3.1 J	10	10	61
Sulfate	mg/L	330	42	42	36

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration

Table 2

Validated Analytical Summary Results
Semi-Annual Groundwater Monitoring Event
HIMCO Site
Elkhart, Indiana
April 2017

Location ID:		WT120B	WT120C	WT121A	WT121B
Sample Name:		GW-WT120B-041117	GW-WT120C-041117	GW-WT121A-041117	GW-WT121B-041117
Sample Date:		04/11/2017	04/11/2017	04/11/2017	04/11/2017
Depth:		--	--	--	--
Parameters	**Unit**				
Volatile Organic Compounds					
1,1-Dichloroethane	µg/L	1.0 U	1.0 U	1.4	1.0 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.3	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	1.0 U	1.1
Metals					
Arsenic	µg/L	0.38 J	6.3	18	12
Calcium	µg/L	70000	70000	95000	91000
Iron	µg/L	100 U	1000	11000	5100
Lead	µg/L	3.0 U	3.0 U	19	3.0 U
Manganese	µg/L	15 U	220	68	37
Sodium	µg/L	22000	17000	46000	51000
General Chemistry					
Chloride	mg/L	18	36	96	26
Sulfate	mg/L	16	31	72	45

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration

Table 2

Validated Analytical Summary Results
Semi-Annual Groundwater Monitoring Event
HIMCO Site
Elkhart, Indiana
April 2017

Location ID:		WT122A	WT122B	WT122C	WTE3
Sample Name:		GW-WT122A-041217	GW-WT122B-041217	GW-WT122C-041217	GW-WTE3-041317
Sample Date:		04/12/2017	04/12/2017	04/12/2017	04/13/2017
Depth:		--	--	--	--
Parameters	**Unit**				
Volatile Organic Compounds					
1,1-Dichloroethane	µg/L	2.8	1.0 U	1.0 U	1.0 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	0.74 J	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	0.83 J	1.0 U	1.0 U	1.0 U
Metals					
Arsenic	µg/L	0.64 J	1.1	3.0	1.0 U
Calcium	µg/L	280000	88000	98000	64000
Iron	µg/L	8800	2200	1900	77 J
Lead	µg/L	3.0 U	3.0 U	3.0 U	3.0 U
Manganese	µg/L	730	81	140	56
Sodium	µg/L	34000	21000	19000	12000
General Chemistry					
Chloride	mg/L	33	40	37	9.2
Sulfate	mg/L	260	78	94	6.8

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration

Table 3

Analytical Methods
Semi-Annual Groundwater Monitoring Event
HIMCO Site
Elkhart, Indiana
April 2017

Parameter	Method	Matrix	Holding Time: Collection to Extraction (Days)	Holding Time: Collection or Extraction to Analysis (Days)
Select VOC	SW-846 8260B	Water	-	14
Select Metals	SW-846 6020/6010B	Water	-	180
Chloride	EPA 300.0	Water	-	28
Sulfate	EPA 300.0	Water	-	28

Notes:

VOC - Volatile Organic Compounds
Select VOC - 1,1-Dichloroethane; Benzene; cis-1,2-Dichloroethene; Vinyl chloride
Select Metals - Arsenic, Calcium, Iron, Lead, Manganese, Sodium

Method References:

SW-846 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, 1986, with subsequent revisions

Table 4

Qualified Sample Data Due to Analyte Concentrations in the Equipment Blanks
Semi-Annual Groundwater Monitoring Event
HIMCO Site
Elkhart, Indiana
April 2017

Parameter	Equipment Blank ID	Blank Date (dd/mm/yyyy)	Analyte	Blank Result	Associated Sample ID	Original Result	Qualified Result	Units
Metals	GW-WT101D-041317-E	04/13/2017	Arsenic	0.52 J	GW-WT119B-041317	2.3	2.3 U	µg/L
					GW-WTE3-041317	0.67 J	1.0 U	µg/L
					GW-WT101D-041317	1.1	1.1 U	µg/L
Metals	GW-WT101D-041317-E	04/13/2017	Lead	2.5 J	GW-WT119B-041317	4.0	4.0 U	µg/L
					GW-WT119B-041317-D	4.4	4.4 U	µg/L
					GW-WTE3-041317	2.4 J	3.0 U	µg/L
					GW-WT101C-041317	3.0	3.0 U	µg/L
					GW-WT101E-041317	4.2	4.2 U	µg/L
					GW-WT101A-041317	6.3	6.3 U	µg/L
					GW-WT101D-041317	2.4 J	2.4 U	µg/L

Notes:

U - Not detected at the associated reporting limit

J - Estimated concentration

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
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TestAmerica Job ID: 240-78107-1
Client Project/Site: 039611-40, HIMCO

For:
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Attn: Nancy Bergstrom

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

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

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Qualifiers

GC/MS VOA

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

Metals

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

General Chemistry

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

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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: 240-78107-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: GHD Services Inc.

Project: 039611-40, HIMCO

Report Number: 240-78107-1

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.

TestAmerica Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. 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 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 TestAmerica and its client.

RECEIPT

The samples were received on 4/14/2017 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 1.3º C, 2.3º C, 2.5º C and 3.5º C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples GW-WT121A-041117 (240-78107-1), GW-WT121B-041117 (240-78107-2), GW-WT102A-041117 (240-78107-3), GW-WT102B-041117 (240-78107-4), GW-WT114C-041117 (240-78107-5), GW-WT114A-041117 (240-78107-6), GW-WT114B-041117 (240-78107-7), GW-WT120C-041117 (240-78107-8), GW-WT120B-041117 (240-78107-9), GW-WT120A-041117 (240-78107-10), GW-WT106A-041217 (240-78107-11), GW-WT106B-041217 (240-78107-12), GW-WT106C-041217 (240-78107-13), GW-WT106C-041217-D (240-78107-14), GW-WT122A-041217 (240-78107-15), GW-WT122B-041217 (240-78107-16), GW-WT122C-041217 (240-78107-17), GW-WT122C-041217-E (240-78107-18), GW-WT115A-041217 (240-78107-19), GW-WT115C-041217 (240-78107-20), GW-WT115B-041217 (240-78107-21), GW-WT111A-041217 (240-78107-22), GW-WT116A-041217 (240-78107-23), GW-WT119B-041317 (240-78107-24), GW-WT119B-041317-D (240-78107-25), GW-WTE3-041317 (240-78107-26), GW-WT101C-041317 (240-78107-27), GW-WT101E-041317 (240-78107-28), GW-WT101A-041317 (240-78107-29), GW-WT101D-041317 (240-78107-30), GW-WT101D-041317-E (240-78107-31) and TB-041317-001 (240-78107-32) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 04/19/2017 and 04/21/2017.

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

TOTAL RECOVERABLE METALS (ICP)

Job ID: 240-78107-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

Samples GW-WT121A-041117 (240-78107-1), GW-WT121B-041117 (240-78107-2), GW-WT102A-041117 (240-78107-3), GW-WT102B-041117 (240-78107-4), GW-WT114C-041117 (240-78107-5), GW-WT114A-041117 (240-78107-6), GW-WT114B-041117 (240-78107-7), GW-WT120C-041117 (240-78107-8), GW-WT120B-041117 (240-78107-9), GW-WT120A-041117 (240-78107-10), GW-WT106A-041217 (240-78107-11), GW-WT106B-041217 (240-78107-12), GW-WT106C-041217 (240-78107-13), GW-WT106C-041217-D (240-78107-14), GW-WT122A-041217 (240-78107-15), GW-WT122B-041217 (240-78107-16), GW-WT122C-041217 (240-78107-17), GW-WT122C-041217-E (240-78107-18), GW-WT115A-041217 (240-78107-19), GW-WT115C-041217 (240-78107-20), GW-WT115B-041217 (240-78107-21), GW-WT111A-041217 (240-78107-22), GW-WT116A-041217 (240-78107-23), GW-WT119B-041317 (240-78107-24), GW-WT119B-041317-D (240-78107-25), GW-WTE3-041317 (240-78107-26), GW-WT101C-041317 (240-78107-27), GW-WT101E-041317 (240-78107-28), GW-WT101A-041317 (240-78107-29), GW-WT101D-041317 (240-78107-30) and GW-WT101D-041317-E (240-78107-31) were analyzed for total recoverable metals (ICP) in accordance with EPA SW-846 Method 6010B. The samples were prepared on 04/17/2017 and 04/18/2017 and analyzed on 04/19/2017.

Some requested practical quantitation limits (PQLs) for samples GW-WT121A-041117, GW-WT121B-041117, GW-WT102A-041117, GW-WT102B-041117, GW-WT114C-041117, GW-WT114A-041117, GW-WT114B-041117, GW-WT120C-041117, GW-WT120B-041117, GW-WT120A-041117, GW-WT106A-041217, GW-WT106B-041217, GW-WT106C-041217, GW-WT106C-041217-D, GW-WT122A-041217, GW-WT122B-041217, GW-WT122C-041217, GW-WT122C-041217-E, GW-WT115A-041217, GW-WT115C-041217, GW-WT115B-041217, GW-WT111A-041217, GW-WT116A-041217, GW-WT119B-041317, GW-WT119B-041317-D, GW-WTE3-041317, GW-WT101C-041317, GW-WT101E-041317, GW-WT101A-041317, GW-WT101D-041317 and GW-WT101D-041317-E fall below the laboratory's verified standard quantitation limit. The continuing calibration blanks and method blanks may not support the lower PQL.

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-041117 (240-78107-1), GW-WT121B-041117 (240-78107-2), GW-WT102A-041117 (240-78107-3), GW-WT102B-041117 (240-78107-4), GW-WT114C-041117 (240-78107-5), GW-WT114A-041117 (240-78107-6), GW-WT114B-041117 (240-78107-7), GW-WT120C-041117 (240-78107-8), GW-WT120B-041117 (240-78107-9), GW-WT120A-041117 (240-78107-10), GW-WT106A-041217 (240-78107-11), GW-WT106B-041217 (240-78107-12), GW-WT106C-041217 (240-78107-13), GW-WT106C-041217-D (240-78107-14), GW-WT122A-041217 (240-78107-15), GW-WT122B-041217 (240-78107-16), GW-WT122C-041217 (240-78107-17), GW-WT122C-041217-E (240-78107-18), GW-WT115A-041217 (240-78107-19), GW-WT115C-041217 (240-78107-20), GW-WT115B-041217 (240-78107-21), GW-WT111A-041217 (240-78107-22), GW-WT116A-041217 (240-78107-23), GW-WT119B-041317 (240-78107-24), GW-WT119B-041317-D (240-78107-25), GW-WTE3-041317 (240-78107-26), GW-WT101C-041317 (240-78107-27), GW-WT101E-041317 (240-78107-28), GW-WT101A-041317 (240-78107-29), GW-WT101D-041317 (240-78107-30) and GW-WT101D-041317-E (240-78107-31) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020. The samples were prepared on 04/17/2017 and 04/18/2017 and analyzed on 04/18/2017 and 04/19/2017.

Some requested practical quantitation limits (PQLs) for samples GW-WT115B-041217, GW-WT111A-041217, GW-WT116A-041217, GW-WT119B-041317, GW-WT119B-041317-D, GW-WTE3-041317, GW-WT101C-041317, GW-WT101E-041317, GW-WT101A-041317, GW-WT101D-041317, GW-WT101D-041317-E, GW-WT121A-041117, GW-WT121B-041117, GW-WT102A-041117, GW-WT102B-041117, GW-WT114C-041117, GW-WT114A-041117, GW-WT114B-041117, GW-WT120C-041117, GW-WT120B-041117, GW-WT120A-041117, GW-WT106A-041217, GW-WT106B-041217, GW-WT106C-041217, GW-WT106C-041217-D, GW-WT122A-041217, GW-WT122B-041217, GW-WT122C-041217, GW-WT122C-041217-E, GW-WT115A-041217 and GW-WT115C-041217 fall below the laboratory's verified standard quantitation limit. The continuing calibration blanks and method blanks may not support the lower PQL.

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

ANIONS

Samples GW-WT121A-041117 (240-78107-1), GW-WT121B-041117 (240-78107-2), GW-WT102A-041117 (240-78107-3), GW-WT102B-041117 (240-78107-4), GW-WT114C-041117 (240-78107-5), GW-WT114A-041117 (240-78107-6), GW-WT114B-041117 (240-78107-7), GW-WT120C-041117 (240-78107-8), GW-WT120B-041117 (240-78107-9), GW-WT120A-041117 (240-78107-10), GW-WT106A-041217 (240-78107-11), GW-WT106B-041217 (240-78107-12), GW-WT106C-041217 (240-78107-13), GW-WT106C-041217-D (240-78107-14), GW-WT122A-041217 (240-78107-15), GW-WT122B-041217 (240-78107-16), GW-WT122C-041217 (240-78107-17), GW-WT122C-041217-E (240-78107-18), GW-WT115A-041217 (240-78107-19), GW-WT115C-041217 (240-78107-20), GW-WT115B-041217 (240-78107-21), GW-WT111A-041217 (240-78107-22), GW-WT116A-041217 (240-78107-23), GW-WT119B-041317 (240-78107-24), GW-WT119B-041317-D (240-78107-25), GW-WTE3-041317 (240-78107-26),

Job ID: 240-78107-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

GW-WT101C-041317 (240-78107-27), GW-WT101E-041317 (240-78107-28), GW-WT101A-041317 (240-78107-29), GW-WT101D-041317 (240-78107-30) and GW-WT101D-041317-E (240-78107-31) were analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 04/17/2017, 04/18/2017 and 04/20/2017.

Samples GW-WT114A-041117 (240-78107-6)[5X], GW-WT122A-041217 (240-78107-15)[5X], GW-WT115B-041217 (240-78107-21)[5X] and GW-WT116A-041217 (240-78107-23)[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: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
6010B	Metals (ICP)	SW846	TAL CAN
6020	Metals (ICP/MS)	SW846	TAL CAN
300.0	Anions, Ion Chromatography	MCAWW	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 = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Sample Summary

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-78107-1	GW-WT121A-041117	Water	04/11/17 10:15	04/14/17 09:20
240-78107-2	GW-WT121B-041117	Water	04/11/17 10:10	04/14/17 09:20
240-78107-3	GW-WT102A-041117	Water	04/11/17 12:00	04/14/17 09:20
240-78107-4	GW-WT102B-041117	Water	04/11/17 11:45	04/14/17 09:20
240-78107-5	GW-WT114C-041117	Water	04/11/17 14:20	04/14/17 09:20
240-78107-6	GW-WT114A-041117	Water	04/11/17 14:25	04/14/17 09:20
240-78107-7	GW-WT114B-041117	Water	04/11/17 15:30	04/14/17 09:20
240-78107-8	GW-WT120C-041117	Water	04/11/17 17:15	04/14/17 09:20
240-78107-9	GW-WT120B-041117	Water	04/11/17 17:10	04/14/17 09:20
240-78107-10	GW-WT120A-041117	Water	04/11/17 18:05	04/14/17 09:20
240-78107-11	GW-WT106A-041217	Water	04/12/17 08:45	04/14/17 09:20
240-78107-12	GW-WT106B-041217	Water	04/12/17 08:50	04/14/17 09:20
240-78107-13	GW-WT106C-041217	Water	04/12/17 10:00	04/14/17 09:20
240-78107-14	GW-WT106C-041217-D	Water	04/12/17 10:10	04/14/17 09:20
240-78107-15	GW-WT122A-041217	Water	04/12/17 11:20	04/14/17 09:20
240-78107-16	GW-WT122B-041217	Water	04/12/17 11:30	04/14/17 09:20
240-78107-17	GW-WT122C-041217	Water	04/12/17 12:15	04/14/17 09:20
240-78107-18	GW-WT122C-041217-E	Water	04/12/17 14:00	04/14/17 09:20
240-78107-19	GW-WT115A-041217	Water	04/12/17 14:50	04/14/17 09:20
240-78107-20	GW-WT115C-041217	Water	04/12/17 14:55	04/14/17 09:20
240-78107-21	GW-WT115B-041217	Water	04/12/17 15:50	04/14/17 09:20
240-78107-22	GW-WT111A-041217	Water	04/12/17 17:15	04/14/17 09:20
240-78107-23	GW-WT116A-041217	Water	04/12/17 18:20	04/14/17 09:20
240-78107-24	GW-WT119B-041317	Water	04/13/17 08:35	04/14/17 09:20
240-78107-25	GW-WT119B-041317-D	Water	04/13/17 08:45	04/14/17 09:20
240-78107-26	GW-WTE3-041317	Water	04/13/17 09:40	04/14/17 09:20
240-78107-27	GW-WT101C-041317	Water	04/13/17 10:50	04/14/17 09:20
240-78107-28	GW-WT101E-041317	Water	04/13/17 11:00	04/14/17 09:20
240-78107-29	GW-WT101A-041317	Water	04/13/17 12:10	04/14/17 09:20
240-78107-30	GW-WT101D-041317	Water	04/13/17 12:15	04/14/17 09:20
240-78107-31	GW-WT101D-041317-E	Water	04/13/17 12:30	04/14/17 09:20
240-78107-32	TB-041317-001	Water	04/13/17 12:35	04/14/17 09:20

Detection Summary

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT121A-041117 — Lab Sample ID: 240-78107-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.3		1.0	0.30	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	1.4		1.0	0.25	ug/L	1		8260B	Total/NA
Calcium	95000		5000	710	ug/L	1		6010B	Total Recoverable
Iron	11000		100	25	ug/L	1		6010B	Total Recoverable
Lead	19		3.0	1.9	ug/L	1		6010B	Total Recoverable
Manganese	68		15	5.1	ug/L	1		6010B	Total Recoverable
Sodium	46000		5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	18		1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	96	F1	1.0	0.41	mg/L	1		300.0	Total/NA
Sulfate	72	F1	1.0	0.13	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT121B-041117 — Lab Sample ID: 240-78107-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	1.1		1.0	0.45	ug/L	1		8260B	Total/NA
Calcium	91000		5000	710	ug/L	1		6010B	Total Recoverable
Iron	5100		100	25	ug/L	1		6010B	Total Recoverable
Manganese	37		15	5.1	ug/L	1		6010B	Total Recoverable
Sodium	51000		5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	12		1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	26		1.0	0.41	mg/L	1		300.0	Total/NA
Sulfate	45		1.0	0.13	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT102A-041117 — Lab Sample ID: 240-78107-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	68000		5000	710	ug/L	1		6010B	Total Recoverable
Iron	1100		100	25	ug/L	1		6010B	Total Recoverable
Manganese	440		15	5.1	ug/L	1		6010B	Total Recoverable
Sodium	51000		5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	0.53	J	1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	66		1.0	0.41	mg/L	1		300.0	Total/NA
Sulfate	35		1.0	0.13	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT102B-041117 — Lab Sample ID: 240-78107-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	67000		5000	710	ug/L	1		6010B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: GW-WT102B-041117 (Continued) — Lab Sample ID: 240-78107-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	520		100	25	ug/L	1		6010B	Total Recoverable
Manganese	48		15	5.1	ug/L	1		6010B	Total Recoverable
Sodium	31000		5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	2.2		1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	52		1.0	0.41	mg/L	1		300.0	Total/NA
Sulfate	19		1.0	0.13	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT114C-041117 — Lab Sample ID: 240-78107-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.77	J	1.0	0.25	ug/L	1		8260B	Total/NA
Calcium	79000		5000	710	ug/L	1		6010B	Total Recoverable
Iron	2900		100	25	ug/L	1		6010B	Total Recoverable
Manganese	27		15	5.1	ug/L	1		6010B	Total Recoverable
Sodium	19000		5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	17		1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	37		1.0	0.41	mg/L	1		300.0	Total/NA
Sulfate	95		1.0	0.13	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT114A-041117 — Lab Sample ID: 240-78107-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	63000		5000	710	ug/L	1		6010B	Total Recoverable
Iron	1400		100	25	ug/L	1		6010B	Total Recoverable
Manganese	440		15	5.1	ug/L	1		6010B	Total Recoverable
Sodium	250000		5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	1.5		1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	270		5.0	2.0	mg/L	5		300.0	Total/NA
Sulfate	37		5.0	0.65	mg/L	5		300.0	Total/NA

Client Sample ID: GW-WT114B-041117 — Lab Sample ID: 240-78107-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.33	J	1.0	0.30	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	0.92	J	1.0	0.25	ug/L	1		8260B	Total/NA
Calcium	70000		5000	710	ug/L	1		6010B	Total Recoverable
Iron	2000		100	25	ug/L	1		6010B	Total Recoverable
Manganese	45		15	5.1	ug/L	1		6010B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT114B-041117 (Continued) — Lab Sample ID: 240-78107-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	21000		5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	6.4		1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	39		1.0	0.41	mg/L	1		300.0	Total/NA
Sulfate	54		1.0	0.13	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT120C-041117 — Lab Sample ID: 240-78107-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	70000		5000	710	ug/L	1		6010B	Total Recoverable
Iron	1000		100	25	ug/L	1		6010B	Total Recoverable
Manganese	220		15	5.1	ug/L	1		6010B	Total Recoverable
Sodium	17000		5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	6.3		1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	36		1.0	0.41	mg/L	1		300.0	Total/NA
Sulfate	31		1.0	0.13	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT120B-041117 — Lab Sample ID: 240-78107-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	70000		5000	710	ug/L	1		6010B	Total Recoverable
Sodium	22000		5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	0.38	J	1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	18		1.0	0.41	mg/L	1		300.0	Total/NA
Sulfate	16		1.0	0.13	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT120A-041117 — Lab Sample ID: 240-78107-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	74000		5000	710	ug/L	1		6010B	Total Recoverable
Iron	860		100	25	ug/L	1		6010B	Total Recoverable
Manganese	78		15	5.1	ug/L	1		6010B	Total Recoverable
Sodium	38000		5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	3.3		1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	61		1.0	0.41	mg/L	1		300.0	Total/NA
Sulfate	36		1.0	0.13	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT106A-041217 — Lab Sample ID: 240-78107-11

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT106A-041217 (Continued) — Lab Sample ID: 240-78107-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.31	J	1.0	0.30	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	1.5		1.0	0.25	ug/L	1		8260B	Total/NA
Calcium	89000		5000	710	ug/L	1		6010B	Total Recoverable
Iron	870		100	25	ug/L	1		6010B	Total Recoverable
Manganese	750		15	5.1	ug/L	1		6010B	Total Recoverable
Sodium	22000		5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	1.4		1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	28		1.0	0.41	mg/L	1		300.0	Total/NA
Sulfate	45		1.0	0.13	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT106B-041217 — Lab Sample ID: 240-78107-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.89	J	1.0	0.45	ug/L	1		8260B	Total/NA
Calcium	110000		5000	710	ug/L	1		6010B	Total Recoverable
Iron	3700		100	25	ug/L	1		6010B	Total Recoverable
Manganese	49		15	5.1	ug/L	1		6010B	Total Recoverable
Sodium	25000		5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	11		1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	26		1.0	0.41	mg/L	1		300.0	Total/NA
Sulfate	120		1.0	0.13	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT106C-041217 — Lab Sample ID: 240-78107-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	48000		5000	710	ug/L	1		6010B	Total Recoverable
Iron	1000		100	25	ug/L	1		6010B	Total Recoverable
Manganese	17		15	5.1	ug/L	1		6010B	Total Recoverable
Sodium	18000		5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	11		1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	11		1.0	0.41	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT106C-041217-D — Lab Sample ID: 240-78107-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	49000		5000	710	ug/L	1		6010B	Total Recoverable
Iron	1100		100	25	ug/L	1		6010B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: GW-WT106C-041217-D (Continued) — Lab Sample ID: 240-78107-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	17		15	5.1	ug/L	1		6010B	Total Recoverable
Sodium	19000		5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	11		1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	11		1.0	0.41	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT122A-041217 — Lab Sample ID: 240-78107-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.74	J	1.0	0.30	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	2.8		1.0	0.25	ug/L	1		8260B	Total/NA
Vinyl chloride	0.83	J	1.0	0.45	ug/L	1		8260B	Total/NA
Calcium	280000		5000	710	ug/L	1		6010B	Total Recoverable
Iron	8800		100	25	ug/L	1		6010B	Total Recoverable
Manganese	730		15	5.1	ug/L	1		6010B	Total Recoverable
Sodium	34000		5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	0.64	J	1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	33		5.0	2.0	mg/L	5		300.0	Total/NA
Sulfate	260		5.0	0.65	mg/L	5		300.0	Total/NA

Client Sample ID: GW-WT122B-041217 — Lab Sample ID: 240-78107-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	88000		5000	710	ug/L	1		6010B	Total Recoverable
Iron	2200		100	25	ug/L	1		6010B	Total Recoverable
Manganese	81		15	5.1	ug/L	1		6010B	Total Recoverable
Sodium	21000		5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	1.1		1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	40		1.0	0.41	mg/L	1		300.0	Total/NA
Sulfate	78		1.0	0.13	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT122C-041217 — Lab Sample ID: 240-78107-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	98000		5000	710	ug/L	1		6010B	Total Recoverable
Iron	1900		100	25	ug/L	1		6010B	Total Recoverable
Manganese	140		15	5.1	ug/L	1		6010B	Total Recoverable
Sodium	19000		5000	330	ug/L	1		6010B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: GW-WT122C-041217 (Continued) — Lab Sample ID: 240-78107-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	3.0		1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	37		1.0	0.41	mg/L	1		300.0	Total/NA
Sulfate	94		1.0	0.13	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT122C-041217-E — Lab Sample ID: 240-78107-18

No Detections.

Client Sample ID: GW-WT115A-041217 — Lab Sample ID: 240-78107-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	52000		5000	710	ug/L	1		6010B	Total Recoverable
Iron	2000		100	25	ug/L	1		6010B	Total Recoverable
Manganese	450		15	5.1	ug/L	1		6010B	Total Recoverable
Sodium	2800	J	5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	0.80	J	1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	0.43	J	1.0	0.41	mg/L	1		300.0	Total/NA
Sulfate	2.1		1.0	0.13	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT115C-041217 — Lab Sample ID: 240-78107-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.42	J	1.0	0.30	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	2.3		1.0	0.25	ug/L	1		8260B	Total/NA
Calcium	83000		5000	710	ug/L	1		6010B	Total Recoverable
Iron	2100		100	25	ug/L	1		6010B	Total Recoverable
Manganese	52		15	5.1	ug/L	1		6010B	Total Recoverable
Sodium	22000		5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	1.9		1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	40		1.0	0.41	mg/L	1		300.0	Total/NA
Sulfate	73		1.0	0.13	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT115B-041217 — Lab Sample ID: 240-78107-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	12		1.0	0.28	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	1.6		1.0	0.30	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	4.1		1.0	0.25	ug/L	1		8260B	Total/NA
Vinyl chloride	6.3		1.0	0.45	ug/L	1		8260B	Total/NA
Calcium	280000		5000	710	ug/L	1		6010B	Total Recoverable
Lead	5.6		3.0	1.9	ug/L	1		6010B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT115B-041217 (Continued) — Lab Sample ID: 240-78107-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	29000		5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	1.1		1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	31		5.0	2.0	mg/L	5		300.0	Total/NA
Sulfate	70		5.0	0.65	mg/L	5		300.0	Total/NA

Client Sample ID: GW-WT111A-041217 — Lab Sample ID: 240-78107-22

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.59	J	1.0	0.28	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	5.1		1.0	0.25	ug/L	1		8260B	Total/NA
Calcium	65000		5000	710	ug/L	1		6010B	Total Recoverable
Iron	780		100	25	ug/L	1		6010B	Total Recoverable
Lead	3.0		3.0	1.9	ug/L	1		6010B	Total Recoverable
Manganese	230		15	5.1	ug/L	1		6010B	Total Recoverable
Sodium	14000		5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	3.2		1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	16		1.0	0.41	mg/L	1		300.0	Total/NA
Sulfate	60		1.0	0.13	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT116A-041217 — Lab Sample ID: 240-78107-23

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.4		1.0	0.28	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	1.5		1.0	0.30	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	1.5		1.0	0.25	ug/L	1		8260B	Total/NA
Calcium	470000		5000	710	ug/L	1		6010B	Total Recoverable
Iron	14000		100	25	ug/L	1		6010B	Total Recoverable
Lead	7.2		3.0	1.9	ug/L	1		6010B	Total Recoverable
Manganese	2600		15	5.1	ug/L	1		6010B	Total Recoverable
Sodium	25000		5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	3.2		1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	3.1	J	5.0	2.0	mg/L	5		300.0	Total/NA
Sulfate	330		5.0	0.65	mg/L	5		300.0	Total/NA

Client Sample ID: GW-WT119B-041317 — Lab Sample ID: 240-78107-24

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	92000		5000	710	ug/L	1		6010B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT119B-041317 (Continued) — Lab Sample ID: 240-78107-24

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	600		100	25	ug/L	1		6010B	Total Recoverable
Lead	4.0		3.0	1.9	ug/L	1		6010B	Total Recoverable
Manganese	67		15	5.1	ug/L	1		6010B	Total Recoverable
Sodium	15000		5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	2.3		1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	10		1.0	0.41	mg/L	1		300.0	Total/NA
Sulfate	42		1.0	0.13	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT119B-041317-D — Lab Sample ID: 240-78107-25

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	91000		5000	710	ug/L	1		6010B	Total Recoverable
Iron	600		100	25	ug/L	1		6010B	Total Recoverable
Lead	4.4		3.0	1.9	ug/L	1		6010B	Total Recoverable
Manganese	67		15	5.1	ug/L	1		6010B	Total Recoverable
Sodium	15000		5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	3.3		1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	10		1.0	0.41	mg/L	1		300.0	Total/NA
Sulfate	42		1.0	0.13	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WTE3-041317 — Lab Sample ID: 240-78107-26

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	64000		5000	710	ug/L	1		6010B	Total Recoverable
Iron	77	J	100	25	ug/L	1		6010B	Total Recoverable
Lead	2.4	J	3.0	1.9	ug/L	1		6010B	Total Recoverable
Manganese	56		15	5.1	ug/L	1		6010B	Total Recoverable
Sodium	12000		5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	0.67	J	1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	9.2		1.0	0.41	mg/L	1		300.0	Total/NA
Sulfate	6.8		1.0	0.13	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT101C-041317 — Lab Sample ID: 240-78107-27

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	48000		5000	710	ug/L	1		6010B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: GW-WT101C-041317 (Continued) — Lab Sample ID: 240-78107-27

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	500		100	25	ug/L	1		6010B	Total Recoverable
Lead	3.0		3.0	1.9	ug/L	1		6010B	Total Recoverable
Manganese	8.2	J	15	5.1	ug/L	1		6010B	Total Recoverable
Sodium	13000		5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	8.1		1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	2.5		1.0	0.41	mg/L	1		300.0	Total/NA
Sulfate	4.9		1.0	0.13	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT101E-041317 — Lab Sample ID: 240-78107-28

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.34	J	1.0	0.30	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	1.7		1.0	0.25	ug/L	1		8260B	Total/NA
Calcium	85000		5000	710	ug/L	1		6010B	Total Recoverable
Iron	3300		100	25	ug/L	1		6010B	Total Recoverable
Lead	4.2		3.0	1.9	ug/L	1		6010B	Total Recoverable
Manganese	42		15	5.1	ug/L	1		6010B	Total Recoverable
Sodium	18000		5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	3.7		1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	39		1.0	0.41	mg/L	1		300.0	Total/NA
Sulfate	82		1.0	0.13	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT101A-041317 — Lab Sample ID: 240-78107-29

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.95	J	1.0	0.28	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	2.7		1.0	0.25	ug/L	1		8260B	Total/NA
Calcium	190000		5000	710	ug/L	1		6010B	Total Recoverable
Iron	19000		100	25	ug/L	1		6010B	Total Recoverable
Lead	6.3		3.0	1.9	ug/L	1		6010B	Total Recoverable
Manganese	1800		15	5.1	ug/L	1		6010B	Total Recoverable
Sodium	15000		5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	4.4		1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	18		1.0	0.41	mg/L	1		300.0	Total/NA
Sulfate	140		1.0	0.13	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT101D-041317 — Lab Sample ID: 240-78107-30

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT101D-041317 (Continued) — Lab Sample ID: 240-78107-30

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.60	J	1.0	0.30	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	3.4		1.0	0.25	ug/L	1		8260B	Total/NA
Calcium	72000		5000	710	ug/L	1		6010B	Total Recoverable
Iron	1300		100	25	ug/L	1		6010B	Total Recoverable
Lead	2.4	J	3.0	1.9	ug/L	1		6010B	Total Recoverable
Manganese	39		15	5.1	ug/L	1		6010B	Total Recoverable
Sodium	19000		5000	330	ug/L	1		6010B	Total Recoverable
Arsenic	1.1		1.0	0.35	ug/L	1		6020	Total Recoverable
Chloride	37		1.0	0.41	mg/L	1		300.0	Total/NA
Sulfate	58		1.0	0.13	mg/L	1		300.0	Total/NA

Client Sample ID: GW-WT101D-041317-E — Lab Sample ID: 240-78107-31

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	2.5	J	3.0	1.9	ug/L	1		6010B	Total Recoverable
Arsenic	0.52	J	1.0	0.35	ug/L	1		6020	Total Recoverable

Client Sample ID: TB-041317-001 — Lab Sample ID: 240-78107-32

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT121A-041117

Lab Sample ID: 240-78107-1

Date Collected: 04/11/17 10:15
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 13:41	1
cis-1,2-Dichloroethene	**1.3**		1.0	0.30	ug/L			04/21/17 13:41	1
1,1-Dichloroethane	**1.4**		1.0	0.25	ug/L			04/21/17 13:41	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 13:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*69 - 120*		*04/21/17 13:41*	*1*
Dibromofluoromethane (Surr)	*112*		*69 - 124*		*04/21/17 13:41*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*61 - 138*		*04/21/17 13:41*	*1*
Toluene-d8 (Surr)	*95*		*73 - 120*		*04/21/17 13:41*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**95000**		5000	710	ug/L		04/18/17 14:00	04/19/17 20:07	1
Iron	**11000**		100	25	ug/L		04/18/17 14:00	04/19/17 20:07	1
Lead	**19**		3.0	1.9	ug/L		04/18/17 14:00	04/19/17 20:07	1
Manganese	**68**		15	5.1	ug/L		04/18/17 14:00	04/19/17 20:07	1
Sodium	**46000**		5000	330	ug/L		04/18/17 14:00	04/19/17 20:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**18**		1.0	0.35	ug/L		04/18/17 14:00	04/19/17 19:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**96**	**F1**	1.0	0.41	mg/L			04/17/17 23:16	1
Sulfate	**72**	**F1**	1.0	0.13	mg/L			04/17/17 23:16	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT121B-041117

Lab Sample ID: 240-78107-2

Date Collected: 04/11/17 10:10
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 14:04	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			04/21/17 14:04	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			04/21/17 14:04	1
Vinyl chloride	**1.1**		1.0	0.45	ug/L			04/21/17 14:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*69 - 120*		*04/21/17 14:04*	*1*
Dibromofluoromethane (Surr)	*112*		*69 - 124*		*04/21/17 14:04*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*61 - 138*		*04/21/17 14:04*	*1*
Toluene-d8 (Surr)	*94*		*73 - 120*		*04/21/17 14:04*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**91000**		5000	710	ug/L		04/18/17 14:00	04/19/17 20:12	1
Iron	**5100**		100	25	ug/L		04/18/17 14:00	04/19/17 20:12	1
Lead	3.0	U	3.0	1.9	ug/L		04/18/17 14:00	04/19/17 20:12	1
Manganese	**37**		15	5.1	ug/L		04/18/17 14:00	04/19/17 20:12	1
Sodium	**51000**		5000	330	ug/L		04/18/17 14:00	04/19/17 20:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**12**		1.0	0.35	ug/L		04/18/17 14:00	04/19/17 19:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**26**		1.0	0.41	mg/L			04/18/17 00:17	1
Sulfate	**45**		1.0	0.13	mg/L			04/18/17 00:17	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT102A-041117

Lab Sample ID: 240-78107-3

Date Collected: 04/11/17 12:00
Date Received: 04/14/17 09:20

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 14:26	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			04/21/17 14:26	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			04/21/17 14:26	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 14:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*69 - 120*		*04/21/17 14:26*	*1*
Dibromofluoromethane (Surr)	*114*		*69 - 124*		*04/21/17 14:26*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*61 - 138*		*04/21/17 14:26*	*1*
Toluene-d8 (Surr)	*94*		*73 - 120*		*04/21/17 14:26*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**68000**		5000	710	ug/L		04/18/17 14:00	04/19/17 20:25	1
Iron	**1100**		100	25	ug/L		04/18/17 14:00	04/19/17 20:25	1
Lead	3.0	U	3.0	1.9	ug/L		04/18/17 14:00	04/19/17 20:25	1
Manganese	**440**		15	5.1	ug/L		04/18/17 14:00	04/19/17 20:25	1
Sodium	**51000**		5000	330	ug/L		04/18/17 14:00	04/19/17 20:25	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.53**	**J**	1.0	0.35	ug/L		04/18/17 14:00	04/19/17 19:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**66**		1.0	0.41	mg/L			04/18/17 00:37	1
Sulfate	**35**		1.0	0.13	mg/L			04/18/17 00:37	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT102B-041117

Lab Sample ID: 240-78107-4

Date Collected: 04/11/17 11:45
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 14:49	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			04/21/17 14:49	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			04/21/17 14:49	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 14:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*69 - 120*		*04/21/17 14:49*	*1*
Dibromofluoromethane (Surr)	*113*		*69 - 124*		*04/21/17 14:49*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*61 - 138*		*04/21/17 14:49*	*1*
Toluene-d8 (Surr)	*95*		*73 - 120*		*04/21/17 14:49*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**67000**		5000	710	ug/L		04/18/17 14:00	04/19/17 20:30	1
Iron	**520**		100	25	ug/L		04/18/17 14:00	04/19/17 20:30	1
Lead	3.0	U	3.0	1.9	ug/L		04/18/17 14:00	04/19/17 20:30	1
Manganese	**48**		15	5.1	ug/L		04/18/17 14:00	04/19/17 20:30	1
Sodium	**31000**		5000	330	ug/L		04/18/17 14:00	04/19/17 20:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**2.2**		1.0	0.35	ug/L		04/18/17 14:00	04/19/17 19:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**52**		1.0	0.41	mg/L			04/18/17 00:57	1
Sulfate	**19**		1.0	0.13	mg/L			04/18/17 00:57	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT114C-041117

Lab Sample ID: 240-78107-5

Date Collected: 04/11/17 14:20
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 15:11	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			04/21/17 15:11	1
1,1-Dichloroethane	**0.77**	**J**	1.0	0.25	ug/L			04/21/17 15:11	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 15:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*69 - 120*		*04/21/17 15:11*	*1*
Dibromofluoromethane (Surr)	*113*		*69 - 124*		*04/21/17 15:11*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*61 - 138*		*04/21/17 15:11*	*1*
Toluene-d8 (Surr)	*94*		*73 - 120*		*04/21/17 15:11*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**79000**		5000	710	ug/L		04/18/17 14:00	04/19/17 20:34	1
Iron	**2900**		100	25	ug/L		04/18/17 14:00	04/19/17 20:34	1
Lead	3.0	U	3.0	1.9	ug/L		04/18/17 14:00	04/19/17 20:34	1
Manganese	**27**		15	5.1	ug/L		04/18/17 14:00	04/19/17 20:34	1
Sodium	**19000**		5000	330	ug/L		04/18/17 14:00	04/19/17 20:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**17**		1.0	0.35	ug/L		04/18/17 14:00	04/19/17 19:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**37**		1.0	0.41	mg/L			04/18/17 01:17	1
Sulfate	**95**		1.0	0.13	mg/L			04/18/17 01:17	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT114A-041117

Lab Sample ID: 240-78107-6

Date Collected: 04/11/17 14:25
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 15:34	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			04/21/17 15:34	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			04/21/17 15:34	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 15:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*69 - 120*		*04/21/17 15:34*	*1*
Dibromofluoromethane (Surr)	*111*		*69 - 124*		*04/21/17 15:34*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*61 - 138*		*04/21/17 15:34*	*1*
Toluene-d8 (Surr)	*94*		*73 - 120*		*04/21/17 15:34*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**63000**		5000	710	ug/L		04/18/17 14:00	04/19/17 20:39	1
Iron	**1400**		100	25	ug/L		04/18/17 14:00	04/19/17 20:39	1
Lead	3.0	U	3.0	1.9	ug/L		04/18/17 14:00	04/19/17 20:39	1
Manganese	**440**		15	5.1	ug/L		04/18/17 14:00	04/19/17 20:39	1
Sodium	**250000**		5000	330	ug/L		04/18/17 14:00	04/19/17 20:39	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.5**		1.0	0.35	ug/L		04/18/17 14:00	04/19/17 19:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**270**		5.0	2.0	mg/L			04/18/17 01:37	5
Sulfate	**37**		5.0	0.65	mg/L			04/18/17 01:37	5

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT114B-041117

Lab Sample ID: 240-78107-7

Date Collected: 04/11/17 15:30
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 15:56	1
cis-1,2-Dichloroethene	**0.33**	**J**	1.0	0.30	ug/L			04/21/17 15:56	1
1,1-Dichloroethane	**0.92**	**J**	1.0	0.25	ug/L			04/21/17 15:56	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 15:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*69 - 120*		*04/21/17 15:56*	*1*
Dibromofluoromethane (Surr)	*112*		*69 - 124*		*04/21/17 15:56*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*61 - 138*		*04/21/17 15:56*	*1*
Toluene-d8 (Surr)	*94*		*73 - 120*		*04/21/17 15:56*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**70000**		5000	710	ug/L		04/18/17 14:00	04/19/17 20:43	1
Iron	**2000**		100	25	ug/L		04/18/17 14:00	04/19/17 20:43	1
Lead	3.0	U	3.0	1.9	ug/L		04/18/17 14:00	04/19/17 20:43	1
Manganese	**45**		15	5.1	ug/L		04/18/17 14:00	04/19/17 20:43	1
Sodium	**21000**		5000	330	ug/L		04/18/17 14:00	04/19/17 20:43	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**6.4**		1.0	0.35	ug/L		04/18/17 14:00	04/19/17 19:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**39**		1.0	0.41	mg/L			04/18/17 02:37	1
Sulfate	**54**		1.0	0.13	mg/L			04/18/17 02:37	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT120C-041117

Lab Sample ID: 240-78107-8

Date Collected: 04/11/17 17:15
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 16:19	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			04/21/17 16:19	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			04/21/17 16:19	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 16:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*69 - 120*		*04/21/17 16:19*	*1*
Dibromofluoromethane (Surr)	*118*		*69 - 124*		*04/21/17 16:19*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*61 - 138*		*04/21/17 16:19*	*1*
Toluene-d8 (Surr)	*93*		*73 - 120*		*04/21/17 16:19*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**70000**		5000	710	ug/L		04/18/17 14:00	04/19/17 20:48	1
Iron	**1000**		100	25	ug/L		04/18/17 14:00	04/19/17 20:48	1
Lead	3.0	U	3.0	1.9	ug/L		04/18/17 14:00	04/19/17 20:48	1
Manganese	**220**		15	5.1	ug/L		04/18/17 14:00	04/19/17 20:48	1
Sodium	**17000**		5000	330	ug/L		04/18/17 14:00	04/19/17 20:48	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**6.3**		1.0	0.35	ug/L		04/18/17 14:00	04/19/17 19:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**36**		1.0	0.41	mg/L			04/18/17 02:57	1
Sulfate	**31**		1.0	0.13	mg/L			04/18/17 02:57	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT120B-041117

Lab Sample ID: 240-78107-9

Date Collected: 04/11/17 17:10
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 16:41	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			04/21/17 16:41	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			04/21/17 16:41	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 16:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*69 - 120*		*04/21/17 16:41*	*1*
Dibromofluoromethane (Surr)	*114*		*69 - 124*		*04/21/17 16:41*	*1*
1,2-Dichloroethane-d4 (Surr)	*106*		*61 - 138*		*04/21/17 16:41*	*1*
Toluene-d8 (Surr)	*95*		*73 - 120*		*04/21/17 16:41*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**70000**		5000	710	ug/L		04/18/17 14:00	04/19/17 20:52	1
Iron	100	U	100	25	ug/L		04/18/17 14:00	04/19/17 20:52	1
Lead	3.0	U	3.0	1.9	ug/L		04/18/17 14:00	04/19/17 20:52	1
Manganese	15	U	15	5.1	ug/L		04/18/17 14:00	04/19/17 20:52	1
Sodium	**22000**		5000	330	ug/L		04/18/17 14:00	04/19/17 20:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.38**	**J**	1.0	0.35	ug/L		04/18/17 14:00	04/19/17 19:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**18**		1.0	0.41	mg/L			04/18/17 03:17	1
Sulfate	**16**		1.0	0.13	mg/L			04/18/17 03:17	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT120A-041117

Lab Sample ID: 240-78107-10

Date Collected: 04/11/17 18:05
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 17:04	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			04/21/17 17:04	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			04/21/17 17:04	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 17:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*69 - 120*		*04/21/17 17:04*	*1*
Dibromofluoromethane (Surr)	*114*		*69 - 124*		*04/21/17 17:04*	*1*
1,2-Dichloroethane-d4 (Surr)	*106*		*61 - 138*		*04/21/17 17:04*	*1*
Toluene-d8 (Surr)	*92*		*73 - 120*		*04/21/17 17:04*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**74000**		5000	710	ug/L		04/18/17 14:00	04/19/17 20:57	1
Iron	**860**		100	25	ug/L		04/18/17 14:00	04/19/17 20:57	1
Lead	3.0	U	3.0	1.9	ug/L		04/18/17 14:00	04/19/17 20:57	1
Manganese	**78**		15	5.1	ug/L		04/18/17 14:00	04/19/17 20:57	1
Sodium	**38000**		5000	330	ug/L		04/18/17 14:00	04/19/17 20:57	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**3.3**		1.0	0.35	ug/L		04/18/17 14:00	04/19/17 19:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**61**		1.0	0.41	mg/L			04/18/17 03:37	1
Sulfate	**36**		1.0	0.13	mg/L			04/18/17 03:37	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT106A-041217

Lab Sample ID: 240-78107-11

Date Collected: 04/12/17 08:45
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 17:26	1
cis-1,2-Dichloroethene	**0.31**	**J**	1.0	0.30	ug/L			04/21/17 17:26	1
1,1-Dichloroethane	**1.5**		1.0	0.25	ug/L			04/21/17 17:26	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 17:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*69 - 120*		*04/21/17 17:26*	*1*
Dibromofluoromethane (Surr)	*115*		*69 - 124*		*04/21/17 17:26*	*1*
1,2-Dichloroethane-d4 (Surr)	*108*		*61 - 138*		*04/21/17 17:26*	*1*
Toluene-d8 (Surr)	*94*		*73 - 120*		*04/21/17 17:26*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**89000**		5000	710	ug/L		04/18/17 14:00	04/19/17 21:01	1
Iron	**870**		100	25	ug/L		04/18/17 14:00	04/19/17 21:01	1
Lead	3.0	U	3.0	1.9	ug/L		04/18/17 14:00	04/19/17 21:01	1
Manganese	**750**		15	5.1	ug/L		04/18/17 14:00	04/19/17 21:01	1
Sodium	**22000**		5000	330	ug/L		04/18/17 14:00	04/19/17 21:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.4**		1.0	0.35	ug/L		04/18/17 14:00	04/19/17 19:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**28**		1.0	0.41	mg/L			04/18/17 03:58	1
Sulfate	**45**		1.0	0.13	mg/L			04/18/17 03:58	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT106B-041217

Lab Sample ID: 240-78107-12

Date Collected: 04/12/17 08:50
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 17:49	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			04/21/17 17:49	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			04/21/17 17:49	1
Vinyl chloride	**0.89**	**J**	1.0	0.45	ug/L			04/21/17 17:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*69 - 120*		*04/21/17 17:49*	*1*
Dibromofluoromethane (Surr)	*114*		*69 - 124*		*04/21/17 17:49*	*1*
1,2-Dichloroethane-d4 (Surr)	*106*		*61 - 138*		*04/21/17 17:49*	*1*
Toluene-d8 (Surr)	*96*		*73 - 120*		*04/21/17 17:49*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**110000**		5000	710	ug/L		04/18/17 14:00	04/19/17 21:06	1
Iron	**3700**		100	25	ug/L		04/18/17 14:00	04/19/17 21:06	1
Lead	3.0	U	3.0	1.9	ug/L		04/18/17 14:00	04/19/17 21:06	1
Manganese	**49**		15	5.1	ug/L		04/18/17 14:00	04/19/17 21:06	1
Sodium	**25000**		5000	330	ug/L		04/18/17 14:00	04/19/17 21:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**11**		1.0	0.35	ug/L		04/18/17 14:00	04/19/17 19:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**26**		1.0	0.41	mg/L			04/18/17 04:18	1
Sulfate	**120**		1.0	0.13	mg/L			04/18/17 04:18	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT106C-041217

Lab Sample ID: 240-78107-13

Date Collected: 04/12/17 10:00
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 09:59	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			04/21/17 09:59	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			04/21/17 09:59	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 09:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*69 - 120*		*04/21/17 09:59*	*1*
Dibromofluoromethane (Surr)	*93*		*69 - 124*		*04/21/17 09:59*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*61 - 138*		*04/21/17 09:59*	*1*
Toluene-d8 (Surr)	*100*		*73 - 120*		*04/21/17 09:59*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**48000**		5000	710	ug/L		04/18/17 14:00	04/19/17 21:19	1
Iron	**1000**		100	25	ug/L		04/18/17 14:00	04/19/17 21:19	1
Lead	3.0	U	3.0	1.9	ug/L		04/18/17 14:00	04/19/17 21:19	1
Manganese	**17**		15	5.1	ug/L		04/18/17 14:00	04/19/17 21:19	1
Sodium	**18000**		5000	330	ug/L		04/18/17 14:00	04/19/17 21:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**11**		1.0	0.35	ug/L		04/18/17 14:00	04/19/17 20:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**11**		1.0	0.41	mg/L			04/18/17 04:38	1
Sulfate	1.0	U	1.0	0.13	mg/L			04/18/17 04:38	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT106C-041217-D

Lab Sample ID: 240-78107-14

Date Collected: 04/12/17 10:10
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 10:22	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			04/21/17 10:22	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			04/21/17 10:22	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 10:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*69 - 120*		*04/21/17 10:22*	*1*
Dibromofluoromethane (Surr)	*99*		*69 - 124*		*04/21/17 10:22*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*61 - 138*		*04/21/17 10:22*	*1*
Toluene-d8 (Surr)	*105*		*73 - 120*		*04/21/17 10:22*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**49000**		5000	710	ug/L		04/18/17 14:00	04/19/17 21:24	1
Iron	**1100**		100	25	ug/L		04/18/17 14:00	04/19/17 21:24	1
Lead	3.0	U	3.0	1.9	ug/L		04/18/17 14:00	04/19/17 21:24	1
Manganese	**17**		15	5.1	ug/L		04/18/17 14:00	04/19/17 21:24	1
Sodium	**19000**		5000	330	ug/L		04/18/17 14:00	04/19/17 21:24	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**11**		1.0	0.35	ug/L		04/18/17 14:00	04/19/17 20:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**11**		1.0	0.41	mg/L			04/18/17 04:58	1
Sulfate	1.0	U	1.0	0.13	mg/L			04/18/17 04:58	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT122A-041217

Lab Sample ID: 240-78107-15

Date Collected: 04/12/17 11:20
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 10:44	1
cis-1,2-Dichloroethene	**0.74**	**J**	1.0	0.30	ug/L			04/21/17 10:44	1
1,1-Dichloroethane	**2.8**		1.0	0.25	ug/L			04/21/17 10:44	1
Vinyl chloride	**0.83**	**J**	1.0	0.45	ug/L			04/21/17 10:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*69 - 120*		*04/21/17 10:44*	*1*
Dibromofluoromethane (Surr)	*96*		*69 - 124*		*04/21/17 10:44*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*61 - 138*		*04/21/17 10:44*	*1*
Toluene-d8 (Surr)	*101*		*73 - 120*		*04/21/17 10:44*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**280000**		5000	710	ug/L		04/18/17 14:00	04/19/17 21:28	1
Iron	**8800**		100	25	ug/L		04/18/17 14:00	04/19/17 21:28	1
Lead	3.0	U	3.0	1.9	ug/L		04/18/17 14:00	04/19/17 21:28	1
Manganese	**730**		15	5.1	ug/L		04/18/17 14:00	04/19/17 21:28	1
Sodium	**34000**		5000	330	ug/L		04/18/17 14:00	04/19/17 21:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.64**	**J**	1.0	0.35	ug/L		04/18/17 14:00	04/19/17 20:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**33**		5.0	2.0	mg/L			04/18/17 05:18	5
Sulfate	**260**		5.0	0.65	mg/L			04/18/17 05:18	5

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT122B-041217

Lab Sample ID: 240-78107-16

Date Collected: 04/12/17 11:30
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 11:07	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			04/21/17 11:07	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			04/21/17 11:07	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 11:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*69 - 120*		*04/21/17 11:07*	*1*
Dibromofluoromethane (Surr)	*101*		*69 - 124*		*04/21/17 11:07*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*61 - 138*		*04/21/17 11:07*	*1*
Toluene-d8 (Surr)	*104*		*73 - 120*		*04/21/17 11:07*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**88000**		5000	710	ug/L		04/18/17 14:00	04/19/17 21:33	1
Iron	**2200**		100	25	ug/L		04/18/17 14:00	04/19/17 21:33	1
Lead	3.0	U	3.0	1.9	ug/L		04/18/17 14:00	04/19/17 21:33	1
Manganese	**81**		15	5.1	ug/L		04/18/17 14:00	04/19/17 21:33	1
Sodium	**21000**		5000	330	ug/L		04/18/17 14:00	04/19/17 21:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.1**		1.0	0.35	ug/L		04/18/17 14:00	04/19/17 20:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**40**		1.0	0.41	mg/L			04/18/17 05:38	1
Sulfate	**78**		1.0	0.13	mg/L			04/18/17 05:38	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT122C-041217

Lab Sample ID: 240-78107-17

Date Collected: 04/12/17 12:15
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 11:30	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			04/21/17 11:30	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			04/21/17 11:30	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 11:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*69 - 120*		*04/21/17 11:30*	*1*
Dibromofluoromethane (Surr)	*99*		*69 - 124*		*04/21/17 11:30*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*61 - 138*		*04/21/17 11:30*	*1*
Toluene-d8 (Surr)	*105*		*73 - 120*		*04/21/17 11:30*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**98000**		5000	710	ug/L		04/18/17 14:00	04/19/17 19:46	1
Iron	**1900**		100	25	ug/L		04/18/17 14:00	04/19/17 19:46	1
Lead	3.0	U	3.0	1.9	ug/L		04/18/17 14:00	04/19/17 19:46	1
Manganese	**140**		15	5.1	ug/L		04/18/17 14:00	04/19/17 19:46	1
Sodium	**19000**		5000	330	ug/L		04/18/17 14:00	04/19/17 19:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**3.0**		1.0	0.35	ug/L		04/18/17 14:00	04/19/17 18:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**37**		1.0	0.41	mg/L			04/20/17 07:07	1
Sulfate	**94**		1.0	0.13	mg/L			04/20/17 07:07	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT122C-041217-E

Lab Sample ID: 240-78107-18

Date Collected: 04/12/17 14:00
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 11:53	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			04/21/17 11:53	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			04/21/17 11:53	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 11:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*69 - 120*		*04/21/17 11:53*	*1*
Dibromofluoromethane (Surr)	*98*		*69 - 124*		*04/21/17 11:53*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*61 - 138*		*04/21/17 11:53*	*1*
Toluene-d8 (Surr)	*104*		*73 - 120*		*04/21/17 11:53*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	5000	U	5000	710	ug/L		04/18/17 14:00	04/19/17 21:37	1
Iron	100	U	100	25	ug/L		04/18/17 14:00	04/19/17 21:37	1
Lead	3.0	U	3.0	1.9	ug/L		04/18/17 14:00	04/19/17 21:37	1
Manganese	15	U	15	5.1	ug/L		04/18/17 14:00	04/19/17 21:37	1
Sodium	5000	U	5000	330	ug/L		04/18/17 14:00	04/19/17 21:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.0	U	1.0	0.35	ug/L		04/18/17 14:00	04/19/17 20:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	0.41	mg/L			04/18/17 08:19	1
Sulfate	1.0	U	1.0	0.13	mg/L			04/18/17 08:19	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT115A-041217

Lab Sample ID: 240-78107-19

Date Collected: 04/12/17 14:50
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 12:16	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			04/21/17 12:16	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			04/21/17 12:16	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 12:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*69 - 120*		*04/21/17 12:16*	*1*
Dibromofluoromethane (Surr)	*101*		*69 - 124*		*04/21/17 12:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*61 - 138*		*04/21/17 12:16*	*1*
Toluene-d8 (Surr)	*107*		*73 - 120*		*04/21/17 12:16*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**52000**		5000	710	ug/L		04/18/17 14:00	04/19/17 21:42	1
Iron	**2000**		100	25	ug/L		04/18/17 14:00	04/19/17 21:42	1
Lead	3.0	U	3.0	1.9	ug/L		04/18/17 14:00	04/19/17 21:42	1
Manganese	**450**		15	5.1	ug/L		04/18/17 14:00	04/19/17 21:42	1
Sodium	**2800**	**J**	5000	330	ug/L		04/18/17 14:00	04/19/17 21:42	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.80**	**J**	1.0	0.35	ug/L		04/18/17 14:00	04/19/17 20:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**0.43**	**J**	1.0	0.41	mg/L			04/18/17 08:39	1
Sulfate	**2.1**		1.0	0.13	mg/L			04/18/17 08:39	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT115C-041217

Lab Sample ID: 240-78107-20

Date Collected: 04/12/17 14:55
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 12:38	1
cis-1,2-Dichloroethene	**0.42**	**J**	1.0	0.30	ug/L			04/21/17 12:38	1
1,1-Dichloroethane	**2.3**		1.0	0.25	ug/L			04/21/17 12:38	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 12:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*69 - 120*		*04/21/17 12:38*	*1*
Dibromofluoromethane (Surr)	*100*		*69 - 124*		*04/21/17 12:38*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*61 - 138*		*04/21/17 12:38*	*1*
Toluene-d8 (Surr)	*106*		*73 - 120*		*04/21/17 12:38*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**83000**		5000	710	ug/L		04/18/17 14:00	04/19/17 21:46	1
Iron	**2100**		100	25	ug/L		04/18/17 14:00	04/19/17 21:46	1
Lead	3.0	U	3.0	1.9	ug/L		04/18/17 14:00	04/19/17 21:46	1
Manganese	**52**		15	5.1	ug/L		04/18/17 14:00	04/19/17 21:46	1
Sodium	**22000**		5000	330	ug/L		04/18/17 14:00	04/19/17 21:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.9**		1.0	0.35	ug/L		04/18/17 14:00	04/19/17 20:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**40**		1.0	0.41	mg/L			04/18/17 08:59	1
Sulfate	**73**		1.0	0.13	mg/L			04/18/17 08:59	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT115B-041217

Lab Sample ID: 240-78107-21

Date Collected: 04/12/17 15:50
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**12**		1.0	0.28	ug/L			04/21/17 13:01	1
cis-1,2-Dichloroethene	**1.6**		1.0	0.30	ug/L			04/21/17 13:01	1
1,1-Dichloroethane	**4.1**		1.0	0.25	ug/L			04/21/17 13:01	1
Vinyl chloride	**6.3**		1.0	0.45	ug/L			04/21/17 13:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*69 - 120*		*04/21/17 13:01*	*1*
Dibromofluoromethane (Surr)	*101*		*69 - 124*		*04/21/17 13:01*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*61 - 138*		*04/21/17 13:01*	*1*
Toluene-d8 (Surr)	*105*		*73 - 120*		*04/21/17 13:01*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**280000**		5000	710	ug/L		04/17/17 14:00	04/19/17 22:40	1
Iron	100	U	100	25	ug/L		04/17/17 14:00	04/19/17 22:40	1
Lead	**5.6**		3.0	1.9	ug/L		04/17/17 14:00	04/19/17 22:40	1
Manganese	15	U	15	5.1	ug/L		04/17/17 14:00	04/19/17 22:40	1
Sodium	**29000**		5000	330	ug/L		04/17/17 14:00	04/19/17 22:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.1**		1.0	0.35	ug/L		04/17/17 14:00	04/18/17 20:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**31**		5.0	2.0	mg/L			04/18/17 09:19	5
Sulfate	**70**		5.0	0.65	mg/L			04/18/17 09:19	5

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT111A-041217

Lab Sample ID: 240-78107-22

Date Collected: 04/12/17 17:15
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.59**	**J**	1.0	0.28	ug/L			04/21/17 13:24	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			04/21/17 13:24	1
1,1-Dichloroethane	**5.1**		1.0	0.25	ug/L			04/21/17 13:24	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 13:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*69 - 120*		*04/21/17 13:24*	*1*
Dibromofluoromethane (Surr)	*100*		*69 - 124*		*04/21/17 13:24*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*61 - 138*		*04/21/17 13:24*	*1*
Toluene-d8 (Surr)	*103*		*73 - 120*		*04/21/17 13:24*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**65000**		5000	710	ug/L		04/17/17 14:00	04/19/17 22:44	1
Iron	**780**		100	25	ug/L		04/17/17 14:00	04/19/17 22:44	1
Lead	**3.0**		3.0	1.9	ug/L		04/17/17 14:00	04/19/17 22:44	1
Manganese	**230**		15	5.1	ug/L		04/17/17 14:00	04/19/17 22:44	1
Sodium	**14000**		5000	330	ug/L		04/17/17 14:00	04/19/17 22:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**3.2**		1.0	0.35	ug/L		04/17/17 14:00	04/18/17 20:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**16**		1.0	0.41	mg/L			04/18/17 10:40	1
Sulfate	**60**		1.0	0.13	mg/L			04/18/17 10:40	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT116A-041217

Lab Sample ID: 240-78107-23

Date Collected: 04/12/17 18:20
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**1.4**		1.0	0.28	ug/L			04/21/17 13:46	1
cis-1,2-Dichloroethene	**1.5**		1.0	0.30	ug/L			04/21/17 13:46	1
1,1-Dichloroethane	**1.5**		1.0	0.25	ug/L			04/21/17 13:46	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 13:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*69 - 120*		*04/21/17 13:46*	*1*
Dibromofluoromethane (Surr)	*100*		*69 - 124*		*04/21/17 13:46*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*61 - 138*		*04/21/17 13:46*	*1*
Toluene-d8 (Surr)	*103*		*73 - 120*		*04/21/17 13:46*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**470000**		5000	710	ug/L		04/17/17 14:00	04/19/17 22:49	1
Iron	**14000**		100	25	ug/L		04/17/17 14:00	04/19/17 22:49	1
Lead	**7.2**		3.0	1.9	ug/L		04/17/17 14:00	04/19/17 22:49	1
Manganese	**2600**		15	5.1	ug/L		04/17/17 14:00	04/19/17 22:49	1
Sodium	**25000**		5000	330	ug/L		04/17/17 14:00	04/19/17 22:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**3.2**		1.0	0.35	ug/L		04/17/17 14:00	04/18/17 20:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3.1**	**J**	5.0	2.0	mg/L			04/20/17 08:07	5
Sulfate	**330**		5.0	0.65	mg/L			04/18/17 11:00	5

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT119B-041317

Lab Sample ID: 240-78107-24

Date Collected: 04/13/17 08:35
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 14:09	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			04/21/17 14:09	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			04/21/17 14:09	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 14:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*69 - 120*		*04/21/17 14:09*	*1*
Dibromofluoromethane (Surr)	*99*		*69 - 124*		*04/21/17 14:09*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*61 - 138*		*04/21/17 14:09*	*1*
Toluene-d8 (Surr)	*105*		*73 - 120*		*04/21/17 14:09*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**92000**		5000	710	ug/L		04/17/17 14:00	04/19/17 23:01	1
Iron	**600**		100	25	ug/L		04/17/17 14:00	04/19/17 23:01	1
Lead	**4.0**		3.0	1.9	ug/L		04/17/17 14:00	04/19/17 23:01	1
Manganese	**67**		15	5.1	ug/L		04/17/17 14:00	04/19/17 23:01	1
Sodium	**15000**		5000	330	ug/L		04/17/17 14:00	04/19/17 23:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**2.3**		1.0	0.35	ug/L		04/17/17 14:00	04/18/17 20:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**10**		1.0	0.41	mg/L			04/18/17 11:20	1
Sulfate	**42**		1.0	0.13	mg/L			04/18/17 11:20	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT119B-041317-D

Lab Sample ID: 240-78107-25

Date Collected: 04/13/17 08:45
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 14:32	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			04/21/17 14:32	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			04/21/17 14:32	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 14:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*69 - 120*		*04/21/17 14:32*	*1*
Dibromofluoromethane (Surr)	*102*		*69 - 124*		*04/21/17 14:32*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*61 - 138*		*04/21/17 14:32*	*1*
Toluene-d8 (Surr)	*105*		*73 - 120*		*04/21/17 14:32*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**91000**		5000	710	ug/L		04/17/17 14:00	04/19/17 23:06	1
Iron	**600**		100	25	ug/L		04/17/17 14:00	04/19/17 23:06	1
Lead	**4.4**		3.0	1.9	ug/L		04/17/17 14:00	04/19/17 23:06	1
Manganese	**67**		15	5.1	ug/L		04/17/17 14:00	04/19/17 23:06	1
Sodium	**15000**		5000	330	ug/L		04/17/17 14:00	04/19/17 23:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**3.3**		1.0	0.35	ug/L		04/17/17 14:00	04/18/17 20:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**10**		1.0	0.41	mg/L			04/18/17 11:40	1
Sulfate	**42**		1.0	0.13	mg/L			04/18/17 11:40	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WTE3-041317

Lab Sample ID: 240-78107-26

Date Collected: 04/13/17 09:40
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 14:55	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			04/21/17 14:55	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			04/21/17 14:55	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 14:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*69 - 120*		*04/21/17 14:55*	*1*
Dibromofluoromethane (Surr)	*99*		*69 - 124*		*04/21/17 14:55*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*61 - 138*		*04/21/17 14:55*	*1*
Toluene-d8 (Surr)	*105*		*73 - 120*		*04/21/17 14:55*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**64000**		5000	710	ug/L		04/17/17 14:00	04/19/17 22:28	1
Iron	**77**	**J**	100	25	ug/L		04/17/17 14:00	04/19/17 22:28	1
Lead	**2.4**	**J**	3.0	1.9	ug/L		04/17/17 14:00	04/19/17 22:28	1
Manganese	**56**		15	5.1	ug/L		04/17/17 14:00	04/19/17 22:28	1
Sodium	**12000**		5000	330	ug/L		04/17/17 14:00	04/19/17 22:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.67**	**J**	1.0	0.35	ug/L		04/17/17 14:00	04/18/17 19:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**9.2**		1.0	0.41	mg/L			04/18/17 12:00	1
Sulfate	**6.8**		1.0	0.13	mg/L			04/18/17 12:00	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT101C-041317

Lab Sample ID: 240-78107-27

Date Collected: 04/13/17 10:50
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 15:17	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			04/21/17 15:17	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			04/21/17 15:17	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 15:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*69 - 120*		*04/21/17 15:17*	*1*
Dibromofluoromethane (Surr)	*102*		*69 - 124*		*04/21/17 15:17*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*61 - 138*		*04/21/17 15:17*	*1*
Toluene-d8 (Surr)	*107*		*73 - 120*		*04/21/17 15:17*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**48000**		5000	710	ug/L		04/17/17 14:00	04/19/17 23:10	1
Iron	**500**		100	25	ug/L		04/17/17 14:00	04/19/17 23:10	1
Lead	**3.0**		3.0	1.9	ug/L		04/17/17 14:00	04/19/17 23:10	1
Manganese	**8.2**	**J**	15	5.1	ug/L		04/17/17 14:00	04/19/17 23:10	1
Sodium	**13000**		5000	330	ug/L		04/17/17 14:00	04/19/17 23:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**8.1**		1.0	0.35	ug/L		04/17/17 14:00	04/18/17 20:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2.5**		1.0	0.41	mg/L			04/18/17 13:00	1
Sulfate	**4.9**		1.0	0.13	mg/L			04/18/17 13:00	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT101E-041317

Lab Sample ID: 240-78107-28

Date Collected: 04/13/17 11:00
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 15:40	1
cis-1,2-Dichloroethene	**0.34**	**J**	1.0	0.30	ug/L			04/21/17 15:40	1
1,1-Dichloroethane	**1.7**		1.0	0.25	ug/L			04/21/17 15:40	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 15:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*69 - 120*		*04/21/17 15:40*	*1*
Dibromofluoromethane (Surr)	*101*		*69 - 124*		*04/21/17 15:40*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*61 - 138*		*04/21/17 15:40*	*1*
Toluene-d8 (Surr)	*104*		*73 - 120*		*04/21/17 15:40*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**85000**		5000	710	ug/L		04/17/17 14:00	04/19/17 23:14	1
Iron	**3300**		100	25	ug/L		04/17/17 14:00	04/19/17 23:14	1
Lead	**4.2**		3.0	1.9	ug/L		04/17/17 14:00	04/19/17 23:14	1
Manganese	**42**		15	5.1	ug/L		04/17/17 14:00	04/19/17 23:14	1
Sodium	**18000**		5000	330	ug/L		04/17/17 14:00	04/19/17 23:14	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**3.7**		1.0	0.35	ug/L		04/17/17 14:00	04/18/17 20:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**39**		1.0	0.41	mg/L			04/18/17 13:20	1
Sulfate	**82**		1.0	0.13	mg/L			04/18/17 13:20	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT101A-041317

Lab Sample ID: 240-78107-29

Date Collected: 04/13/17 12:10
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.95**	**J**	1.0	0.28	ug/L			04/21/17 16:03	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			04/21/17 16:03	1
1,1-Dichloroethane	**2.7**		1.0	0.25	ug/L			04/21/17 16:03	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 16:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*69 - 120*		*04/21/17 16:03*	*1*
Dibromofluoromethane (Surr)	*99*		*69 - 124*		*04/21/17 16:03*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*61 - 138*		*04/21/17 16:03*	*1*
Toluene-d8 (Surr)	*104*		*73 - 120*		*04/21/17 16:03*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**190000**		5000	710	ug/L		04/17/17 14:00	04/19/17 23:19	1
Iron	**19000**		100	25	ug/L		04/17/17 14:00	04/19/17 23:19	1
Lead	**6.3**		3.0	1.9	ug/L		04/17/17 14:00	04/19/17 23:19	1
Manganese	**1800**		15	5.1	ug/L		04/17/17 14:00	04/19/17 23:19	1
Sodium	**15000**		5000	330	ug/L		04/17/17 14:00	04/19/17 23:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**4.4**		1.0	0.35	ug/L		04/17/17 14:00	04/18/17 20:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**18**		1.0	0.41	mg/L			04/18/17 13:40	1
Sulfate	**140**		1.0	0.13	mg/L			04/18/17 13:40	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT101D-041317

Lab Sample ID: 240-78107-30

Date Collected: 04/13/17 12:15
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 16:25	1
cis-1,2-Dichloroethene	**0.60**	**J**	1.0	0.30	ug/L			04/21/17 16:25	1
1,1-Dichloroethane	**3.4**		1.0	0.25	ug/L			04/21/17 16:25	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 16:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*69 - 120*		*04/21/17 16:25*	*1*
Dibromofluoromethane (Surr)	*100*		*69 - 124*		*04/21/17 16:25*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*61 - 138*		*04/21/17 16:25*	*1*
Toluene-d8 (Surr)	*104*		*73 - 120*		*04/21/17 16:25*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**72000**		5000	710	ug/L		04/17/17 14:00	04/19/17 23:23	1
Iron	**1300**		100	25	ug/L		04/17/17 14:00	04/19/17 23:23	1
Lead	**2.4**	**J**	3.0	1.9	ug/L		04/17/17 14:00	04/19/17 23:23	1
Manganese	**39**		15	5.1	ug/L		04/17/17 14:00	04/19/17 23:23	1
Sodium	**19000**		5000	330	ug/L		04/17/17 14:00	04/19/17 23:23	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.1**		1.0	0.35	ug/L		04/17/17 14:00	04/18/17 20:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**37**		1.0	0.41	mg/L			04/18/17 14:41	1
Sulfate	**58**		1.0	0.13	mg/L			04/18/17 14:41	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT101D-041317-E

Lab Sample ID: 240-78107-31

Date Collected: 04/13/17 12:30
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 16:48	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			04/21/17 16:48	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			04/21/17 16:48	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 16:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*69 - 120*		*04/21/17 16:48*	*1*
Dibromofluoromethane (Surr)	*101*		*69 - 124*		*04/21/17 16:48*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*61 - 138*		*04/21/17 16:48*	*1*
Toluene-d8 (Surr)	*107*		*73 - 120*		*04/21/17 16:48*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	5000	U	5000	710	ug/L		04/17/17 14:00	04/19/17 23:27	1
Iron	100	U	100	25	ug/L		04/17/17 14:00	04/19/17 23:27	1
Lead	**2.5**	**J**	3.0	1.9	ug/L		04/17/17 14:00	04/19/17 23:27	1
Manganese	15	U	15	5.1	ug/L		04/17/17 14:00	04/19/17 23:27	1
Sodium	5000	U	5000	330	ug/L		04/17/17 14:00	04/19/17 23:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.52**	**J**	1.0	0.35	ug/L		04/17/17 14:00	04/18/17 20:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	0.41	mg/L			04/17/17 16:54	1
Sulfate	1.0	U	1.0	0.13	mg/L			04/17/17 16:54	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: TB-041317-001

Lab Sample ID: 240-78107-32

Date Collected: 04/13/17 12:35
Matrix: Water
Date Received: 04/14/17 09:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/19/17 11:39	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			04/19/17 11:39	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			04/19/17 11:39	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/19/17 11:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*69 - 120*		*04/19/17 11:39*	*1*
Dibromofluoromethane (Surr)	*94*		*69 - 124*		*04/19/17 11:39*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*61 - 138*		*04/19/17 11:39*	*1*
Toluene-d8 (Surr)	*96*		*73 - 120*		*04/19/17 11:39*	*1*

Surrogate Summary

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

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

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

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(69-120)	(69-124)	(61-138)	(73-120)
240-78107-1	GW-WT121A-041117	95	112	104	95
240-78107-2	GW-WT121B-041117	98	112	102	94
240-78107-3	GW-WT102A-041117	95	114	107	94
240-78107-4	GW-WT102B-041117	96	113	105	95
240-78107-5	GW-WT114C-041117	96	113	104	94
240-78107-6	GW-WT114A-041117	94	111	105	94
240-78107-7	GW-WT114B-041117	94	112	107	94
240-78107-8	GW-WT120C-041117	96	118	105	93
240-78107-9	GW-WT120B-041117	94	114	106	95
240-78107-10	GW-WT120A-041117	94	114	106	92
240-78107-11	GW-WT106A-041217	95	115	108	94
240-78107-12	GW-WT106B-041217	93	114	106	96
240-78107-12 MS	GW-WT106B-041217	110	107	97	100
240-78107-12 MSD	GW-WT106B-041217	109	110	95	102
240-78107-13	GW-WT106C-041217	87	93	92	100
240-78107-14	GW-WT106C-041217-D	94	99	98	105
240-78107-15	GW-WT122A-041217	91	96	94	101
240-78107-16	GW-WT122B-041217	93	101	99	104
240-78107-17	GW-WT122C-041217	94	99	100	105
240-78107-17 MS	GW-WT122C-041217	99	101	105	108
240-78107-17 MSD	GW-WT122C-041217	95	99	103	105
240-78107-18	GW-WT122C-041217-E	94	98	95	104
240-78107-19	GW-WT115A-041217	94	101	101	107
240-78107-20	GW-WT115C-041217	97	100	100	106
240-78107-21	GW-WT115B-041217	94	101	96	105
240-78107-22	GW-WT111A-041217	93	100	97	103
240-78107-23	GW-WT116A-041217	94	100	99	103
240-78107-24	GW-WT119B-041317	94	99	100	105
240-78107-25	GW-WT119B-041317-D	96	102	102	105
240-78107-26	GW-WTE3-041317	95	99	100	105
240-78107-26 MS	GW-WTE3-041317	99	103	105	107
240-78107-26 MSD	GW-WTE3-041317	94	99	101	104
240-78107-27	GW-WT101C-041317	95	102	98	107
240-78107-28	GW-WT101E-041317	93	101	100	104
240-78107-29	GW-WT101A-041317	93	99	96	104
240-78107-30	GW-WT101D-041317	92	100	99	104
240-78107-31	GW-WT101D-041317-E	97	101	101	107
240-78107-32	TB-041317-001	87	94	92	96
LCS 240-275299/4	Lab Control Sample	96	103	105	105
LCS 240-275661/4	Lab Control Sample	96	102	103	108
LCS 240-275670/4	Lab Control Sample	109	105	97	102
MB 240-275299/6	Method Blank	96	103	104	106
MB 240-275661/6	Method Blank	94	101	100	106
MB 240-275670/33	Method Blank	96	109	105	95

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
12DCE = 1,2-Dichloroethane-d4 (Surr)

Surrogate Summary

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

TOL = Toluene-d8 (Surr)

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

Lab Sample ID: MB 240-275299/6
Matrix: Water
Analysis Batch: 275299

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	0.28	ug/L			04/19/17 10:31	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			04/19/17 10:31	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			04/19/17 10:31	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/19/17 10:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*69 - 120*		*04/19/17 10:31*	*1*
Dibromofluoromethane (Surr)	*103*		*69 - 124*		*04/19/17 10:31*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*61 - 138*		*04/19/17 10:31*	*1*
Toluene-d8 (Surr)	*106*		*73 - 120*		*04/19/17 10:31*	*1*

Lab Sample ID: LCS 240-275299/4
Matrix: Water
Analysis Batch: 275299

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	9.37		ug/L		94	79 - 120
cis-1,2-Dichloroethene	10.0	9.64		ug/L		96	77 - 120
1,1-Dichloroethane	10.0	9.33		ug/L		93	74 - 120
Vinyl chloride	10.0	9.25		ug/L		93	65 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*69 - 120*
Dibromofluoromethane (Surr)	*103*		*69 - 124*
1,2-Dichloroethane-d4 (Surr)	*105*		*61 - 138*
Toluene-d8 (Surr)	*105*		*73 - 120*

Lab Sample ID: MB 240-275661/6
Matrix: Water
Analysis Batch: 275661

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	0.28	ug/L			04/21/17 09:10	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			04/21/17 09:10	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			04/21/17 09:10	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 09:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*69 - 120*		*04/21/17 09:10*	*1*
Dibromofluoromethane (Surr)	*101*		*69 - 124*		*04/21/17 09:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*61 - 138*		*04/21/17 09:10*	*1*
Toluene-d8 (Surr)	*106*		*73 - 120*		*04/21/17 09:10*	*1*

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

Lab Sample ID: LCS 240-275661/4
Matrix: Water
Analysis Batch: 275661

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	10.1		ug/L		101	79 - 120
cis-1,2-Dichloroethene	10.0	10.2		ug/L		102	77 - 120
1,1-Dichloroethane	10.0	9.95		ug/L		99	74 - 120
Vinyl chloride	10.0	10.4		ug/L		104	65 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*69 - 120*
Dibromofluoromethane (Surr)	*102*		*69 - 124*
1,2-Dichloroethane-d4 (Surr)	*103*		*61 - 138*
Toluene-d8 (Surr)	*108*		*73 - 120*

Lab Sample ID: 240-78107-17 MS
Matrix: Water
Analysis Batch: 275661

Client Sample ID: GW-WT122C-041217
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	1.0	U	10.0	9.33		ug/L		93	69 - 127
cis-1,2-Dichloroethene	1.0	U	10.0	9.61		ug/L		96	69 - 127
1,1-Dichloroethane	1.0	U	10.0	9.22		ug/L		92	69 - 122
Vinyl chloride	1.0	U	10.0	9.96		ug/L		100	55 - 123

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*69 - 120*
Dibromofluoromethane (Surr)	*101*		*69 - 124*
1,2-Dichloroethane-d4 (Surr)	*105*		*61 - 138*
Toluene-d8 (Surr)	*108*		*73 - 120*

Lab Sample ID: 240-78107-17 MSD
Matrix: Water
Analysis Batch: 275661

Client Sample ID: GW-WT122C-041217
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	1.0	U	10.0	9.44		ug/L		94	69 - 127	1	10
cis-1,2-Dichloroethene	1.0	U	10.0	9.75		ug/L		98	69 - 127	1	11
1,1-Dichloroethane	1.0	U	10.0	9.49		ug/L		95	69 - 122	3	11
Vinyl chloride	1.0	U	10.0	10.6		ug/L		106	55 - 123	6	12

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*69 - 120*
Dibromofluoromethane (Surr)	*99*		*69 - 124*
1,2-Dichloroethane-d4 (Surr)	*103*		*61 - 138*
Toluene-d8 (Surr)	*105*		*73 - 120*

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

Lab Sample ID: 240-78107-26 MS — **Client Sample ID: GW-WTE3-041317**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 275661

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	1.0	U	10.0	8.87		ug/L		89	69 - 127
cis-1,2-Dichloroethene	1.0	U	10.0	8.94		ug/L		89	69 - 127
1,1-Dichloroethane	1.0	U	10.0	8.77		ug/L		88	69 - 122
Vinyl chloride	1.0	U	10.0	10.3		ug/L		103	55 - 123

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*69 - 120*
Dibromofluoromethane (Surr)	*103*		*69 - 124*
1,2-Dichloroethane-d4 (Surr)	*105*		*61 - 138*
Toluene-d8 (Surr)	*107*		*73 - 120*

Lab Sample ID: 240-78107-26 MSD — **Client Sample ID: GW-WTE3-041317**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 275661

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	1.0	U	10.0	9.21		ug/L		92	69 - 127	4	10
cis-1,2-Dichloroethene	1.0	U	10.0	9.36		ug/L		94	69 - 127	5	11
1,1-Dichloroethane	1.0	U	10.0	9.19		ug/L		92	69 - 122	5	11
Vinyl chloride	1.0	U	10.0	9.80		ug/L		98	55 - 123	5	12

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*69 - 120*
Dibromofluoromethane (Surr)	*99*		*69 - 124*
1,2-Dichloroethane-d4 (Surr)	*101*		*61 - 138*
Toluene-d8 (Surr)	*104*		*73 - 120*

Lab Sample ID: MB 240-275670/33 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 275670

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.28	ug/L			04/21/17 10:16	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.30	ug/L			04/21/17 10:16	1
1,1-Dichloroethane	1.0	U	1.0	0.25	ug/L			04/21/17 10:16	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			04/21/17 10:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*69 - 120*		*04/21/17 10:16*	*1*
Dibromofluoromethane (Surr)	*109*		*69 - 124*		*04/21/17 10:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*61 - 138*		*04/21/17 10:16*	*1*
Toluene-d8 (Surr)	*95*		*73 - 120*		*04/21/17 10:16*	*1*

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

Lab Sample ID: LCS 240-275670/4
Matrix: Water
Analysis Batch: 275670

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	9.93		ug/L		99	79 - 120
cis-1,2-Dichloroethene	10.0	9.83		ug/L		98	77 - 120
1,1-Dichloroethane	10.0	9.68		ug/L		97	74 - 120
Vinyl chloride	10.0	10.3		ug/L		103	65 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*109*		*69 - 120*
Dibromofluoromethane (Surr)	*105*		*69 - 124*
1,2-Dichloroethane-d4 (Surr)	*97*		*61 - 138*
Toluene-d8 (Surr)	*102*		*73 - 120*

Lab Sample ID: 240-78107-12 MS
Matrix: Water
Analysis Batch: 275670

Client Sample ID: GW-WT106B-041217
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	1.0	U	10.0	9.87		ug/L		99	69 - 127
cis-1,2-Dichloroethene	1.0	U	10.0	10.3		ug/L		103	69 - 127
1,1-Dichloroethane	1.0	U	10.0	10.1		ug/L		101	69 - 122
Vinyl chloride	0.89	J	10.0	11.2		ug/L		103	55 - 123

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*110*		*69 - 120*
Dibromofluoromethane (Surr)	*107*		*69 - 124*
1,2-Dichloroethane-d4 (Surr)	*97*		*61 - 138*
Toluene-d8 (Surr)	*100*		*73 - 120*

Lab Sample ID: 240-78107-12 MSD
Matrix: Water
Analysis Batch: 275670

Client Sample ID: GW-WT106B-041217
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	1.0	U	10.0	10.2		ug/L		102	69 - 127	4	10
cis-1,2-Dichloroethene	1.0	U	10.0	10.8		ug/L		108	69 - 127	4	11
1,1-Dichloroethane	1.0	U	10.0	10.7		ug/L		107	69 - 122	6	11
Vinyl chloride	0.89	J	10.0	11.8		ug/L		109	55 - 123	5	12

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*109*		*69 - 120*
Dibromofluoromethane (Surr)	*110*		*69 - 124*
1,2-Dichloroethane-d4 (Surr)	*95*		*61 - 138*
Toluene-d8 (Surr)	*102*		*73 - 120*

QC Sample Results

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 240-274993/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 275478 — **Prep Batch: 274993**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	5000	U	5000	710	ug/L		04/17/17 14:00	04/19/17 21:50	1
Iron	100	U	100	25	ug/L		04/17/17 14:00	04/19/17 21:50	1
Lead	3.0	U	3.0	1.9	ug/L		04/17/17 14:00	04/19/17 21:50	1
Manganese	15	U	15	5.1	ug/L		04/17/17 14:00	04/19/17 21:50	1
Sodium	5000	U	5000	330	ug/L		04/17/17 14:00	04/19/17 21:50	1

Lab Sample ID: LCS 240-274993/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 275478 — **Prep Batch: 274993**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	50000	52100		ug/L		104	80 - 120
Iron	1000	1040		ug/L		104	80 - 120
Lead	500	518		ug/L		104	80 - 120
Manganese	500	530		ug/L		106	80 - 120
Sodium	50000	50700		ug/L		101	80 - 120

Lab Sample ID: 240-78107-26 MS — **Client Sample ID: GW-WTE3-041317**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 275478 — **Prep Batch: 274993**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	64000		50000	114000		ug/L		100	75 - 125
Iron	77	J	1000	1110		ug/L		103	75 - 125
Lead	2.4	J	500	504		ug/L		100	75 - 125
Manganese	56		500	564		ug/L		102	75 - 125
Sodium	12000		50000	62500		ug/L		100	75 - 125

Lab Sample ID: 240-78107-26 MSD — **Client Sample ID: GW-WTE3-041317**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 275478 — **Prep Batch: 274993**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Calcium	64000		50000	112000		ug/L		97	75 - 125	2	20
Iron	77	J	1000	1100		ug/L		102	75 - 125	0	20
Lead	2.4	J	500	500		ug/L		99	75 - 125	1	20
Manganese	56		500	560		ug/L		101	75 - 125	1	20
Sodium	12000		50000	62000		ug/L		99	75 - 125	1	20

Lab Sample ID: MB 240-275186/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 275382 — **Prep Batch: 275186**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	5000	U	5000	710	ug/L		04/18/17 14:00	04/19/17 19:37	1
Iron	100	U	100	25	ug/L		04/18/17 14:00	04/19/17 19:37	1
Lead	3.0	U	3.0	1.9	ug/L		04/18/17 14:00	04/19/17 19:37	1
Manganese	15	U	15	5.1	ug/L		04/18/17 14:00	04/19/17 19:37	1
Sodium	5000	U	5000	330	ug/L		04/18/17 14:00	04/19/17 19:37	1

Lab Sample ID: LCS 240-275186/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 275382 — **Prep Batch: 275186**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Calcium			50000	52700		ug/L		105	80 - 120		
Iron			1000	980		ug/L		98	80 - 120		
Lead			500	494		ug/L		99	80 - 120		
Manganese			500	539		ug/L		108	80 - 120		
Sodium			50000	53400		ug/L		107	80 - 120		

Lab Sample ID: 240-78107-17 MS — **Client Sample ID: GW-WT122C-041217**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 275382 — **Prep Batch: 275186**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Calcium	98000		50000	147000		ug/L		98	75 - 125		
Iron	1900		1000	2810		ug/L		94	75 - 125		
Lead	3.0	U	500	493		ug/L		99	75 - 125		
Manganese	140		500	668		ug/L		105	75 - 125		
Sodium	19000		50000	72000		ug/L		106	75 - 125		

Lab Sample ID: 240-78107-17 MSD — **Client Sample ID: GW-WT122C-041217**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 275382 — **Prep Batch: 275186**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Calcium	98000		50000	151000		ug/L		106	75 - 125	3	20
Iron	1900		1000	2860		ug/L		99	75 - 125	2	20
Lead	3.0	U	500	490		ug/L		98	75 - 125	0	20
Manganese	140		500	673		ug/L		106	75 - 125	1	20
Sodium	19000		50000	72800		ug/L		108	75 - 125	1	20

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-274993/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 275346 — **Prep Batch: 274993**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.0	U	1.0	0.35	ug/L		04/17/17 14:00	04/18/17 19:17	1

Lab Sample ID: LCS 240-274993/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 275346 — **Prep Batch: 274993**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Arsenic			1000	1090		ug/L		109	80 - 120		

Lab Sample ID: 240-78107-26 MS — **Client Sample ID: GW-WTE3-041317**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 275346 — **Prep Batch: 274993**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Arsenic	0.67	J	1000	1040		ug/L		104	75 - 125		

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

Lab Sample ID: 240-78107-26 MSD — **Client Sample ID: GW-WTE3-041317**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 275346 — **Prep Batch: 274993**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.67	J	1000	1060		ug/L		106	75 - 125	1	20

Lab Sample ID: MB 240-275186/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 275481 — **Prep Batch: 275186**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.0	U	1.0	0.35	ug/L		04/18/17 14:00	04/19/17 18:24	1

Lab Sample ID: LCS 240-275186/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 275481 — **Prep Batch: 275186**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1000	939		ug/L		94	80 - 120

Lab Sample ID: 240-78107-17 MS — **Client Sample ID: GW-WT122C-041217**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 275481 — **Prep Batch: 275186**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	3.0		1000	958		ug/L		96	75 - 125

Lab Sample ID: 240-78107-17 MSD — **Client Sample ID: GW-WT122C-041217**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 275481 — **Prep Batch: 275186**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	3.0		1000	937		ug/L		93	75 - 125	2	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 240-275015/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 275015

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	0.41	mg/L			04/17/17 14:13	1
Sulfate	1.0	U	1.0	0.13	mg/L			04/17/17 14:13	1

Lab Sample ID: LCS 240-275015/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 275015

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	50.7		mg/L		101	90 - 110
Sulfate	50.0	51.0		mg/L		102	90 - 110

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 240-275031/27 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 275031

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	0.41	mg/L			04/18/17 06:38	1
Sulfate	1.0	U	1.0	0.13	mg/L			04/18/17 06:38	1

Lab Sample ID: MB 240-275031/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 275031

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	0.41	mg/L			04/17/17 22:36	1
Sulfate	1.0	U	1.0	0.13	mg/L			04/17/17 22:36	1

Lab Sample ID: LCS 240-275031/28 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 275031

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	51.0		mg/L		102	90 - 110
Sulfate	50.0	51.1		mg/L		102	90 - 110

Lab Sample ID: LCS 240-275031/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 275031

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	50.8		mg/L		102	90 - 110
Sulfate	50.0	51.1		mg/L		102	90 - 110

Lab Sample ID: 240-78107-26 MS — **Client Sample ID: GW-WTE3-041317**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 275031

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	9.2		50.0	59.8		mg/L		101	80 - 120
Sulfate	6.8		50.0	58.9		mg/L		104	80 - 120

Lab Sample ID: 240-78107-26 MSD — **Client Sample ID: GW-WTE3-041317**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 275031

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	9.2		50.0	61.1		mg/L		104	80 - 120	2	15
Sulfate	6.8		50.0	60.4		mg/L		107	80 - 120	2	15

Lab Sample ID: MB 240-275354/27 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 275354

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	0.41	mg/L			04/20/17 02:05	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 240-275354/27
Matrix: Water
Analysis Batch: 275354

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.0	U	1.0	0.13	mg/L			04/20/17 02:05	1

Lab Sample ID: LCS 240-275354/28
Matrix: Water
Analysis Batch: 275354

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	51.0		mg/L		102	90 - 110
Sulfate	50.0	51.0		mg/L		102	90 - 110

Lab Sample ID: 240-78107-17 MS
Matrix: Water
Analysis Batch: 275354

Client Sample ID: GW-WT122C-041217
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	37		50.0	88.5		mg/L		102	80 - 120
Sulfate	94		50.0	144		mg/L		100	80 - 120

Lab Sample ID: 240-78107-17 MSD
Matrix: Water
Analysis Batch: 275354

Client Sample ID: GW-WT122C-041217
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	37		50.0	88.8		mg/L		103	80 - 120	0	15
Sulfate	94		50.0	144		mg/L		101	80 - 120	0	15

QC Association Summary

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

GC/MS VOA

Analysis Batch: 275299

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-78107-32	TB-041317-001	Total/NA	Water	8260B	
MB 240-275299/6	Method Blank	Total/NA	Water	8260B	
LCS 240-275299/4	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 275661

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-78107-13	GW-WT106C-041217	Total/NA	Water	8260B	
240-78107-14	GW-WT106C-041217-D	Total/NA	Water	8260B	
240-78107-15	GW-WT122A-041217	Total/NA	Water	8260B	
240-78107-16	GW-WT122B-041217	Total/NA	Water	8260B	
240-78107-17	GW-WT122C-041217	Total/NA	Water	8260B	
240-78107-18	GW-WT122C-041217-E	Total/NA	Water	8260B	
240-78107-19	GW-WT115A-041217	Total/NA	Water	8260B	
240-78107-20	GW-WT115C-041217	Total/NA	Water	8260B	
240-78107-21	GW-WT115B-041217	Total/NA	Water	8260B	
240-78107-22	GW-WT111A-041217	Total/NA	Water	8260B	
240-78107-23	GW-WT116A-041217	Total/NA	Water	8260B	
240-78107-24	GW-WT119B-041317	Total/NA	Water	8260B	
240-78107-25	GW-WT119B-041317-D	Total/NA	Water	8260B	
240-78107-26	GW-WTE3-041317	Total/NA	Water	8260B	
240-78107-27	GW-WT101C-041317	Total/NA	Water	8260B	
240-78107-28	GW-WT101E-041317	Total/NA	Water	8260B	
240-78107-29	GW-WT101A-041317	Total/NA	Water	8260B	
240-78107-30	GW-WT101D-041317	Total/NA	Water	8260B	
240-78107-31	GW-WT101D-041317-E	Total/NA	Water	8260B	
MB 240-275661/6	Method Blank	Total/NA	Water	8260B	
LCS 240-275661/4	Lab Control Sample	Total/NA	Water	8260B	
240-78107-17 MS	GW-WT122C-041217	Total/NA	Water	8260B	
240-78107-17 MSD	GW-WT122C-041217	Total/NA	Water	8260B	
240-78107-26 MS	GW-WTE3-041317	Total/NA	Water	8260B	
240-78107-26 MSD	GW-WTE3-041317	Total/NA	Water	8260B	

Analysis Batch: 275670

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-78107-1	GW-WT121A-041117	Total/NA	Water	8260B	
240-78107-2	GW-WT121B-041117	Total/NA	Water	8260B	
240-78107-3	GW-WT102A-041117	Total/NA	Water	8260B	
240-78107-4	GW-WT102B-041117	Total/NA	Water	8260B	
240-78107-5	GW-WT114C-041117	Total/NA	Water	8260B	
240-78107-6	GW-WT114A-041117	Total/NA	Water	8260B	
240-78107-7	GW-WT114B-041117	Total/NA	Water	8260B	
240-78107-8	GW-WT120C-041117	Total/NA	Water	8260B	
240-78107-9	GW-WT120B-041117	Total/NA	Water	8260B	
240-78107-10	GW-WT120A-041117	Total/NA	Water	8260B	
240-78107-11	GW-WT106A-041217	Total/NA	Water	8260B	
240-78107-12	GW-WT106B-041217	Total/NA	Water	8260B	
MB 240-275670/33	Method Blank	Total/NA	Water	8260B	
LCS 240-275670/4	Lab Control Sample	Total/NA	Water	8260B	
240-78107-12 MS	GW-WT106B-041217	Total/NA	Water	8260B	
240-78107-12 MSD	GW-WT106B-041217	Total/NA	Water	8260B	

QC Association Summary

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Metals

Prep Batch: 274993

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-78107-21	GW-WT115B-041217	Total Recoverable	Water	3005A	
240-78107-22	GW-WT111A-041217	Total Recoverable	Water	3005A	
240-78107-23	GW-WT116A-041217	Total Recoverable	Water	3005A	
240-78107-24	GW-WT119B-041317	Total Recoverable	Water	3005A	
240-78107-25	GW-WT119B-041317-D	Total Recoverable	Water	3005A	
240-78107-26	GW-WTE3-041317	Total Recoverable	Water	3005A	
240-78107-27	GW-WT101C-041317	Total Recoverable	Water	3005A	
240-78107-28	GW-WT101E-041317	Total Recoverable	Water	3005A	
240-78107-29	GW-WT101A-041317	Total Recoverable	Water	3005A	
240-78107-30	GW-WT101D-041317	Total Recoverable	Water	3005A	
240-78107-31	GW-WT101D-041317-E	Total Recoverable	Water	3005A	
MB 240-274993/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-274993/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-274993/3-A	Lab Control Sample	Total Recoverable	Water	3005A	
240-78107-26 MS	GW-WTE3-041317	Total Recoverable	Water	3005A	
240-78107-26 MS	GW-WTE3-041317	Total Recoverable	Water	3005A	
240-78107-26 MSD	GW-WTE3-041317	Total Recoverable	Water	3005A	
240-78107-26 MSD	GW-WTE3-041317	Total Recoverable	Water	3005A	

Prep Batch: 275186

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-78107-1	GW-WT121A-041117	Total Recoverable	Water	3005A	
240-78107-2	GW-WT121B-041117	Total Recoverable	Water	3005A	
240-78107-3	GW-WT102A-041117	Total Recoverable	Water	3005A	
240-78107-4	GW-WT102B-041117	Total Recoverable	Water	3005A	
240-78107-5	GW-WT114C-041117	Total Recoverable	Water	3005A	
240-78107-6	GW-WT114A-041117	Total Recoverable	Water	3005A	
240-78107-7	GW-WT114B-041117	Total Recoverable	Water	3005A	
240-78107-8	GW-WT120C-041117	Total Recoverable	Water	3005A	
240-78107-9	GW-WT120B-041117	Total Recoverable	Water	3005A	
240-78107-10	GW-WT120A-041117	Total Recoverable	Water	3005A	
240-78107-11	GW-WT106A-041217	Total Recoverable	Water	3005A	
240-78107-12	GW-WT106B-041217	Total Recoverable	Water	3005A	
240-78107-13	GW-WT106C-041217	Total Recoverable	Water	3005A	
240-78107-14	GW-WT106C-041217-D	Total Recoverable	Water	3005A	
240-78107-15	GW-WT122A-041217	Total Recoverable	Water	3005A	
240-78107-16	GW-WT122B-041217	Total Recoverable	Water	3005A	
240-78107-17	GW-WT122C-041217	Total Recoverable	Water	3005A	
240-78107-18	GW-WT122C-041217-E	Total Recoverable	Water	3005A	
240-78107-19	GW-WT115A-041217	Total Recoverable	Water	3005A	
240-78107-20	GW-WT115C-041217	Total Recoverable	Water	3005A	
MB 240-275186/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-275186/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 240-275186/3-A	Lab Control Sample	Total Recoverable	Water	3005A	
240-78107-17 MS	GW-WT122C-041217	Total Recoverable	Water	3005A	
240-78107-17 MS	GW-WT122C-041217	Total Recoverable	Water	3005A	
240-78107-17 MSD	GW-WT122C-041217	Total Recoverable	Water	3005A	
240-78107-17 MSD	GW-WT122C-041217	Total Recoverable	Water	3005A	

Metals (Continued)

Analysis Batch: 275346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-78107-21	GW-WT115B-041217	Total Recoverable	Water	6020	274993
240-78107-22	GW-WT111A-041217	Total Recoverable	Water	6020	274993
240-78107-23	GW-WT116A-041217	Total Recoverable	Water	6020	274993
240-78107-24	GW-WT119B-041317	Total Recoverable	Water	6020	274993
240-78107-25	GW-WT119B-041317-D	Total Recoverable	Water	6020	274993
240-78107-26	GW-WTE3-041317	Total Recoverable	Water	6020	274993
240-78107-27	GW-WT101C-041317	Total Recoverable	Water	6020	274993
240-78107-28	GW-WT101E-041317	Total Recoverable	Water	6020	274993
240-78107-29	GW-WT101A-041317	Total Recoverable	Water	6020	274993
240-78107-30	GW-WT101D-041317	Total Recoverable	Water	6020	274993
240-78107-31	GW-WT101D-041317-E	Total Recoverable	Water	6020	274993
MB 240-274993/1-A	Method Blank	Total Recoverable	Water	6020	274993
LCS 240-274993/3-A	Lab Control Sample	Total Recoverable	Water	6020	274993
240-78107-26 MS	GW-WTE3-041317	Total Recoverable	Water	6020	274993
240-78107-26 MSD	GW-WTE3-041317	Total Recoverable	Water	6020	274993

Analysis Batch: 275382

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-78107-1	GW-WT121A-041117	Total Recoverable	Water	6010B	275186
240-78107-2	GW-WT121B-041117	Total Recoverable	Water	6010B	275186
240-78107-3	GW-WT102A-041117	Total Recoverable	Water	6010B	275186
240-78107-4	GW-WT102B-041117	Total Recoverable	Water	6010B	275186
240-78107-5	GW-WT114C-041117	Total Recoverable	Water	6010B	275186
240-78107-6	GW-WT114A-041117	Total Recoverable	Water	6010B	275186
240-78107-7	GW-WT114B-041117	Total Recoverable	Water	6010B	275186
240-78107-8	GW-WT120C-041117	Total Recoverable	Water	6010B	275186
240-78107-9	GW-WT120B-041117	Total Recoverable	Water	6010B	275186
240-78107-10	GW-WT120A-041117	Total Recoverable	Water	6010B	275186
240-78107-11	GW-WT106A-041217	Total Recoverable	Water	6010B	275186
240-78107-12	GW-WT106B-041217	Total Recoverable	Water	6010B	275186
240-78107-13	GW-WT106C-041217	Total Recoverable	Water	6010B	275186
240-78107-14	GW-WT106C-041217-D	Total Recoverable	Water	6010B	275186
240-78107-15	GW-WT122A-041217	Total Recoverable	Water	6010B	275186
240-78107-16	GW-WT122B-041217	Total Recoverable	Water	6010B	275186
240-78107-17	GW-WT122C-041217	Total Recoverable	Water	6010B	275186
240-78107-18	GW-WT122C-041217-E	Total Recoverable	Water	6010B	275186
240-78107-19	GW-WT115A-041217	Total Recoverable	Water	6010B	275186
240-78107-20	GW-WT115C-041217	Total Recoverable	Water	6010B	275186
MB 240-275186/1-A	Method Blank	Total Recoverable	Water	6010B	275186
LCS 240-275186/2-A	Lab Control Sample	Total Recoverable	Water	6010B	275186
240-78107-17 MS	GW-WT122C-041217	Total Recoverable	Water	6010B	275186
240-78107-17 MSD	GW-WT122C-041217	Total Recoverable	Water	6010B	275186

Analysis Batch: 275478

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-78107-21	GW-WT115B-041217	Total Recoverable	Water	6010B	274993
240-78107-22	GW-WT111A-041217	Total Recoverable	Water	6010B	274993
240-78107-23	GW-WT116A-041217	Total Recoverable	Water	6010B	274993
240-78107-24	GW-WT119B-041317	Total Recoverable	Water	6010B	274993
240-78107-25	GW-WT119B-041317-D	Total Recoverable	Water	6010B	274993
240-78107-26	GW-WTE3-041317	Total Recoverable	Water	6010B	274993

Metals (Continued)

Analysis Batch: 275478 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-78107-27	GW-WT101C-041317	Total Recoverable	Water	6010B	274993
240-78107-28	GW-WT101E-041317	Total Recoverable	Water	6010B	274993
240-78107-29	GW-WT101A-041317	Total Recoverable	Water	6010B	274993
240-78107-30	GW-WT101D-041317	Total Recoverable	Water	6010B	274993
240-78107-31	GW-WT101D-041317-E	Total Recoverable	Water	6010B	274993
MB 240-274993/1-A	Method Blank	Total Recoverable	Water	6010B	274993
LCS 240-274993/2-A	Lab Control Sample	Total Recoverable	Water	6010B	274993
240-78107-26 MS	GW-WTE3-041317	Total Recoverable	Water	6010B	274993
240-78107-26 MSD	GW-WTE3-041317	Total Recoverable	Water	6010B	274993

Analysis Batch: 275481

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-78107-1	GW-WT121A-041117	Total Recoverable	Water	6020	275186
240-78107-2	GW-WT121B-041117	Total Recoverable	Water	6020	275186
240-78107-3	GW-WT102A-041117	Total Recoverable	Water	6020	275186
240-78107-4	GW-WT102B-041117	Total Recoverable	Water	6020	275186
240-78107-5	GW-WT114C-041117	Total Recoverable	Water	6020	275186
240-78107-6	GW-WT114A-041117	Total Recoverable	Water	6020	275186
240-78107-7	GW-WT114B-041117	Total Recoverable	Water	6020	275186
240-78107-8	GW-WT120C-041117	Total Recoverable	Water	6020	275186
240-78107-9	GW-WT120B-041117	Total Recoverable	Water	6020	275186
240-78107-10	GW-WT120A-041117	Total Recoverable	Water	6020	275186
240-78107-11	GW-WT106A-041217	Total Recoverable	Water	6020	275186
240-78107-12	GW-WT106B-041217	Total Recoverable	Water	6020	275186
240-78107-13	GW-WT106C-041217	Total Recoverable	Water	6020	275186
240-78107-14	GW-WT106C-041217-D	Total Recoverable	Water	6020	275186
240-78107-15	GW-WT122A-041217	Total Recoverable	Water	6020	275186
240-78107-16	GW-WT122B-041217	Total Recoverable	Water	6020	275186
240-78107-17	GW-WT122C-041217	Total Recoverable	Water	6020	275186
240-78107-18	GW-WT122C-041217-E	Total Recoverable	Water	6020	275186
240-78107-19	GW-WT115A-041217	Total Recoverable	Water	6020	275186
240-78107-20	GW-WT115C-041217	Total Recoverable	Water	6020	275186
MB 240-275186/1-A	Method Blank	Total Recoverable	Water	6020	275186
LCS 240-275186/3-A	Lab Control Sample	Total Recoverable	Water	6020	275186
240-78107-17 MS	GW-WT122C-041217	Total Recoverable	Water	6020	275186
240-78107-17 MSD	GW-WT122C-041217	Total Recoverable	Water	6020	275186

General Chemistry

Analysis Batch: 275015

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-78107-31	GW-WT101D-041317-E	Total/NA	Water	300.0	
MB 240-275015/3	Method Blank	Total/NA	Water	300.0	
LCS 240-275015/4	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 275031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-78107-1	GW-WT121A-041117	Total/NA	Water	300.0	
240-78107-2	GW-WT121B-041117	Total/NA	Water	300.0	
240-78107-3	GW-WT102A-041117	Total/NA	Water	300.0	

General Chemistry (Continued)

Analysis Batch: 275031 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-78107-4	GW-WT102B-041117	Total/NA	Water	300.0	
240-78107-5	GW-WT114C-041117	Total/NA	Water	300.0	
240-78107-6	GW-WT114A-041117	Total/NA	Water	300.0	
240-78107-7	GW-WT114B-041117	Total/NA	Water	300.0	
240-78107-8	GW-WT120C-041117	Total/NA	Water	300.0	
240-78107-9	GW-WT120B-041117	Total/NA	Water	300.0	
240-78107-10	GW-WT120A-041117	Total/NA	Water	300.0	
240-78107-11	GW-WT106A-041217	Total/NA	Water	300.0	
240-78107-12	GW-WT106B-041217	Total/NA	Water	300.0	
240-78107-13	GW-WT106C-041217	Total/NA	Water	300.0	
240-78107-14	GW-WT106C-041217-D	Total/NA	Water	300.0	
240-78107-15	GW-WT122A-041217	Total/NA	Water	300.0	
240-78107-16	GW-WT122B-041217	Total/NA	Water	300.0	
240-78107-18	GW-WT122C-041217-E	Total/NA	Water	300.0	
240-78107-19	GW-WT115A-041217	Total/NA	Water	300.0	
240-78107-20	GW-WT115C-041217	Total/NA	Water	300.0	
240-78107-21	GW-WT115B-041217	Total/NA	Water	300.0	
240-78107-22	GW-WT111A-041217	Total/NA	Water	300.0	
240-78107-23	GW-WT116A-041217	Total/NA	Water	300.0	
240-78107-24	GW-WT119B-041317	Total/NA	Water	300.0	
240-78107-25	GW-WT119B-041317-D	Total/NA	Water	300.0	
240-78107-26	GW-WTE3-041317	Total/NA	Water	300.0	
240-78107-27	GW-WT101C-041317	Total/NA	Water	300.0	
240-78107-28	GW-WT101E-041317	Total/NA	Water	300.0	
240-78107-29	GW-WT101A-041317	Total/NA	Water	300.0	
240-78107-30	GW-WT101D-041317	Total/NA	Water	300.0	
MB 240-275031/27	Method Blank	Total/NA	Water	300.0	
MB 240-275031/3	Method Blank	Total/NA	Water	300.0	
LCS 240-275031/28	Lab Control Sample	Total/NA	Water	300.0	
LCS 240-275031/4	Lab Control Sample	Total/NA	Water	300.0	
240-78107-26 MS	GW-WTE3-041317	Total/NA	Water	300.0	
240-78107-26 MSD	GW-WTE3-041317	Total/NA	Water	300.0	

Analysis Batch: 275354

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-78107-17	GW-WT122C-041217	Total/NA	Water	300.0	
240-78107-23	GW-WT116A-041217	Total/NA	Water	300.0	
MB 240-275354/27	Method Blank	Total/NA	Water	300.0	
LCS 240-275354/28	Lab Control Sample	Total/NA	Water	300.0	
240-78107-17 MS	GW-WT122C-041217	Total/NA	Water	300.0	
240-78107-17 MSD	GW-WT122C-041217	Total/NA	Water	300.0	

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT121A-041117 — Lab Sample ID: 240-78107-1

Date Collected: 04/11/17 10:15 — **Matrix: Water**
Date Received: 04/14/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275670	04/21/17 13:41	LEE	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275382	04/19/17 20:07	KLC	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275481	04/19/17 19:01	AS1	TAL CAN
Total/NA	Analysis	300.0		1	275031	04/17/17 23:16	LCN	TAL CAN

Client Sample ID: GW-WT121B-041117 — Lab Sample ID: 240-78107-2

Date Collected: 04/11/17 10:10 — **Matrix: Water**
Date Received: 04/14/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275670	04/21/17 14:04	LEE	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275382	04/19/17 20:12	KLC	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275481	04/19/17 19:05	AS1	TAL CAN
Total/NA	Analysis	300.0		1	275031	04/18/17 00:17	LCN	TAL CAN

Client Sample ID: GW-WT102A-041117 — Lab Sample ID: 240-78107-3

Date Collected: 04/11/17 12:00 — **Matrix: Water**
Date Received: 04/14/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275670	04/21/17 14:26	LEE	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275382	04/19/17 20:25	KLC	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275481	04/19/17 19:09	AS1	TAL CAN
Total/NA	Analysis	300.0		1	275031	04/18/17 00:37	LCN	TAL CAN

Client Sample ID: GW-WT102B-041117 — Lab Sample ID: 240-78107-4

Date Collected: 04/11/17 11:45 — **Matrix: Water**
Date Received: 04/14/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275670	04/21/17 14:49	LEE	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275382	04/19/17 20:30	KLC	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275481	04/19/17 19:14	AS1	TAL CAN
Total/NA	Analysis	300.0		1	275031	04/18/17 00:57	LCN	TAL CAN

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT114C-041117 — Lab Sample ID: 240-78107-5

Date Collected: 04/11/17 14:20
Date Received: 04/14/17 09:20
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275670	04/21/17 15:11	LEE	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275382	04/19/17 20:34	KLC	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275481	04/19/17 19:18	AS1	TAL CAN
Total/NA	Analysis	300.0		1	275031	04/18/17 01:17	LCN	TAL CAN

Client Sample ID: GW-WT114A-041117 — Lab Sample ID: 240-78107-6

Date Collected: 04/11/17 14:25
Date Received: 04/14/17 09:20
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275670	04/21/17 15:34	LEE	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275382	04/19/17 20:39	KLC	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275481	04/19/17 19:22	AS1	TAL CAN
Total/NA	Analysis	300.0		5	275031	04/18/17 01:37	LCN	TAL CAN

Client Sample ID: GW-WT114B-041117 — Lab Sample ID: 240-78107-7

Date Collected: 04/11/17 15:30
Date Received: 04/14/17 09:20
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275670	04/21/17 15:56	LEE	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275382	04/19/17 20:43	KLC	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275481	04/19/17 19:26	AS1	TAL CAN
Total/NA	Analysis	300.0		1	275031	04/18/17 02:37	LCN	TAL CAN

Client Sample ID: GW-WT120C-041117 — Lab Sample ID: 240-78107-8

Date Collected: 04/11/17 17:15
Date Received: 04/14/17 09:20
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275670	04/21/17 16:19	LEE	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275382	04/19/17 20:48	KLC	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275481	04/19/17 19:31	AS1	TAL CAN
Total/NA	Analysis	300.0		1	275031	04/18/17 02:57	LCN	TAL CAN

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT120B-041117 — Lab Sample ID: 240-78107-9

Date Collected: 04/11/17 17:10
Date Received: 04/14/17 09:20
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275670	04/21/17 16:41	LEE	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275382	04/19/17 20:52	KLC	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275481	04/19/17 19:43	AS1	TAL CAN
Total/NA	Analysis	300.0		1	275031	04/18/17 03:17	LCN	TAL CAN

Client Sample ID: GW-WT120A-041117 — Lab Sample ID: 240-78107-10

Date Collected: 04/11/17 18:05
Date Received: 04/14/17 09:20
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275670	04/21/17 17:04	LEE	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275382	04/19/17 20:57	KLC	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275481	04/19/17 19:47	AS1	TAL CAN
Total/NA	Analysis	300.0		1	275031	04/18/17 03:37	LCN	TAL CAN

Client Sample ID: GW-WT106A-041217 — Lab Sample ID: 240-78107-11

Date Collected: 04/12/17 08:45
Date Received: 04/14/17 09:20
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275670	04/21/17 17:26	LEE	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275382	04/19/17 21:01	KLC	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275481	04/19/17 19:52	AS1	TAL CAN
Total/NA	Analysis	300.0		1	275031	04/18/17 03:58	LCN	TAL CAN

Client Sample ID: GW-WT106B-041217 — Lab Sample ID: 240-78107-12

Date Collected: 04/12/17 08:50
Date Received: 04/14/17 09:20
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275670	04/21/17 17:49	LEE	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275382	04/19/17 21:06	KLC	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275481	04/19/17 19:56	AS1	TAL CAN
Total/NA	Analysis	300.0		1	275031	04/18/17 04:18	LCN	TAL CAN

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT106C-041217 — Lab Sample ID: 240-78107-13

Date Collected: 04/12/17 10:00 — **Matrix: Water**
Date Received: 04/14/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275661	04/21/17 09:59	LEE	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275382	04/19/17 21:19	KLC	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275481	04/19/17 20:00	AS1	TAL CAN
Total/NA	Analysis	300.0		1	275031	04/18/17 04:38	LCN	TAL CAN

Client Sample ID: GW-WT106C-041217-D — Lab Sample ID: 240-78107-14

Date Collected: 04/12/17 10:10 — **Matrix: Water**
Date Received: 04/14/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275661	04/21/17 10:22	LEE	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275382	04/19/17 21:24	KLC	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275481	04/19/17 20:04	AS1	TAL CAN
Total/NA	Analysis	300.0		1	275031	04/18/17 04:58	LCN	TAL CAN

Client Sample ID: GW-WT122A-041217 — Lab Sample ID: 240-78107-15

Date Collected: 04/12/17 11:20 — **Matrix: Water**
Date Received: 04/14/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275661	04/21/17 10:44	LEE	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275382	04/19/17 21:28	KLC	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275481	04/19/17 20:09	AS1	TAL CAN
Total/NA	Analysis	300.0		5	275031	04/18/17 05:18	LCN	TAL CAN

Client Sample ID: GW-WT122B-041217 — Lab Sample ID: 240-78107-16

Date Collected: 04/12/17 11:30 — **Matrix: Water**
Date Received: 04/14/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275661	04/21/17 11:07	LEE	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275382	04/19/17 21:33	KLC	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275481	04/19/17 20:13	AS1	TAL CAN
Total/NA	Analysis	300.0		1	275031	04/18/17 05:38	LCN	TAL CAN

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT122C-041217 — Lab Sample ID: 240-78107-17

Date Collected: 04/12/17 12:15 — **Matrix: Water**
Date Received: 04/14/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275661	04/21/17 11:30	LEE	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275382	04/19/17 19:46	KLC	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275481	04/19/17 18:32	AS1	TAL CAN
Total/NA	Analysis	300.0		1	275354	04/20/17 07:07	LCN	TAL CAN

Client Sample ID: GW-WT122C-041217-E — Lab Sample ID: 240-78107-18

Date Collected: 04/12/17 14:00 — **Matrix: Water**
Date Received: 04/14/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275661	04/21/17 11:53	LEE	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275382	04/19/17 21:37	KLC	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275481	04/19/17 20:17	AS1	TAL CAN
Total/NA	Analysis	300.0		1	275031	04/18/17 08:19	LCN	TAL CAN

Client Sample ID: GW-WT115A-041217 — Lab Sample ID: 240-78107-19

Date Collected: 04/12/17 14:50 — **Matrix: Water**
Date Received: 04/14/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275661	04/21/17 12:16	LEE	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275382	04/19/17 21:42	KLC	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275481	04/19/17 20:21	AS1	TAL CAN
Total/NA	Analysis	300.0		1	275031	04/18/17 08:39	LCN	TAL CAN

Client Sample ID: GW-WT115C-041217 — Lab Sample ID: 240-78107-20

Date Collected: 04/12/17 14:55 — **Matrix: Water**
Date Received: 04/14/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275661	04/21/17 12:38	LEE	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275382	04/19/17 21:46	KLC	TAL CAN
Total Recoverable	Prep	3005A			275186	04/18/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275481	04/19/17 20:34	AS1	TAL CAN
Total/NA	Analysis	300.0		1	275031	04/18/17 08:59	LCN	TAL CAN

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT115B-041217 — Lab Sample ID: 240-78107-21

Date Collected: 04/12/17 15:50 — **Matrix: Water**
Date Received: 04/14/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275661	04/21/17 13:01	LEE	TAL CAN
Total Recoverable	Prep	3005A			274993	04/17/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275478	04/19/17 22:40	RKT	TAL CAN
Total Recoverable	Prep	3005A			274993	04/17/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275346	04/18/17 20:08	AS1	TAL CAN
Total/NA	Analysis	300.0		5	275031	04/18/17 09:19	LCN	TAL CAN

Client Sample ID: GW-WT111A-041217 — Lab Sample ID: 240-78107-22

Date Collected: 04/12/17 17:15 — **Matrix: Water**
Date Received: 04/14/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275661	04/21/17 13:24	LEE	TAL CAN
Total Recoverable	Prep	3005A			274993	04/17/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275478	04/19/17 22:44	RKT	TAL CAN
Total Recoverable	Prep	3005A			274993	04/17/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275346	04/18/17 20:12	AS1	TAL CAN
Total/NA	Analysis	300.0		1	275031	04/18/17 10:40	LCN	TAL CAN

Client Sample ID: GW-WT116A-041217 — Lab Sample ID: 240-78107-23

Date Collected: 04/12/17 18:20 — **Matrix: Water**
Date Received: 04/14/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275661	04/21/17 13:46	LEE	TAL CAN
Total Recoverable	Prep	3005A			274993	04/17/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275478	04/19/17 22:49	RKT	TAL CAN
Total Recoverable	Prep	3005A			274993	04/17/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275346	04/18/17 20:17	AS1	TAL CAN
Total/NA	Analysis	300.0		5	275031	04/18/17 11:00	LCN	TAL CAN
Total/NA	Analysis	300.0		5	275354	04/20/17 08:07	LCN	TAL CAN

Client Sample ID: GW-WT119B-041317 — Lab Sample ID: 240-78107-24

Date Collected: 04/13/17 08:35 — **Matrix: Water**
Date Received: 04/14/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275661	04/21/17 14:09	LEE	TAL CAN
Total Recoverable	Prep	3005A			274993	04/17/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275478	04/19/17 23:01	RKT	TAL CAN
Total Recoverable	Prep	3005A			274993	04/17/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275346	04/18/17 20:21	AS1	TAL CAN

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: GW-WT119B-041317 — Lab Sample ID: 240-78107-24

Date Collected: 04/13/17 08:35
Date Received: 04/14/17 09:20
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	275031	04/18/17 11:20	LCN	TAL CAN

Client Sample ID: GW-WT119B-041317-D — Lab Sample ID: 240-78107-25

Date Collected: 04/13/17 08:45
Date Received: 04/14/17 09:20
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275661	04/21/17 14:32	LEE	TAL CAN
Total Recoverable	Prep	3005A			274993	04/17/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275478	04/19/17 23:06	RKT	TAL CAN
Total Recoverable	Prep	3005A			274993	04/17/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275346	04/18/17 20:25	AS1	TAL CAN
Total/NA	Analysis	300.0		1	275031	04/18/17 11:40	LCN	TAL CAN

Client Sample ID: GW-WTE3-041317 — Lab Sample ID: 240-78107-26

Date Collected: 04/13/17 09:40
Date Received: 04/14/17 09:20
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275661	04/21/17 14:55	LEE	TAL CAN
Total Recoverable	Prep	3005A			274993	04/17/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275478	04/19/17 22:28	RKT	TAL CAN
Total Recoverable	Prep	3005A			274993	04/17/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275346	04/18/17 19:55	AS1	TAL CAN
Total/NA	Analysis	300.0		1	275031	04/18/17 12:00	LCN	TAL CAN

Client Sample ID: GW-WT101C-041317 — Lab Sample ID: 240-78107-27

Date Collected: 04/13/17 10:50
Date Received: 04/14/17 09:20
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275661	04/21/17 15:17	LEE	TAL CAN
Total Recoverable	Prep	3005A			274993	04/17/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275478	04/19/17 23:10	RKT	TAL CAN
Total Recoverable	Prep	3005A			274993	04/17/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275346	04/18/17 20:30	AS1	TAL CAN
Total/NA	Analysis	300.0		1	275031	04/18/17 13:00	LCN	TAL CAN

Client Sample ID: GW-WT101E-041317 — Lab Sample ID: 240-78107-28

Date Collected: 04/13/17 11:00 — **Matrix: Water**
Date Received: 04/14/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275661	04/21/17 15:40	LEE	TAL CAN
Total Recoverable	Prep	3005A			274993	04/17/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275478	04/19/17 23:14	RKT	TAL CAN
Total Recoverable	Prep	3005A			274993	04/17/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275346	04/18/17 20:34	AS1	TAL CAN
Total/NA	Analysis	300.0		1	275031	04/18/17 13:20	LCN	TAL CAN

Client Sample ID: GW-WT101A-041317 — Lab Sample ID: 240-78107-29

Date Collected: 04/13/17 12:10 — **Matrix: Water**
Date Received: 04/14/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275661	04/21/17 16:03	LEE	TAL CAN
Total Recoverable	Prep	3005A			274993	04/17/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275478	04/19/17 23:19	RKT	TAL CAN
Total Recoverable	Prep	3005A			274993	04/17/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275346	04/18/17 20:47	AS1	TAL CAN
Total/NA	Analysis	300.0		1	275031	04/18/17 13:40	LCN	TAL CAN

Client Sample ID: GW-WT101D-041317 — Lab Sample ID: 240-78107-30

Date Collected: 04/13/17 12:15 — **Matrix: Water**
Date Received: 04/14/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275661	04/21/17 16:25	LEE	TAL CAN
Total Recoverable	Prep	3005A			274993	04/17/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275478	04/19/17 23:23	RKT	TAL CAN
Total Recoverable	Prep	3005A			274993	04/17/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275346	04/18/17 20:51	AS1	TAL CAN
Total/NA	Analysis	300.0		1	275031	04/18/17 14:41	LCN	TAL CAN

Client Sample ID: GW-WT101D-041317-E — Lab Sample ID: 240-78107-31

Date Collected: 04/13/17 12:30 — **Matrix: Water**
Date Received: 04/14/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275661	04/21/17 16:48	LEE	TAL CAN
Total Recoverable	Prep	3005A			274993	04/17/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6010B		1	275478	04/19/17 23:27	RKT	TAL CAN
Total Recoverable	Prep	3005A			274993	04/17/17 14:00	AJC	TAL CAN
Total Recoverable	Analysis	6020		1	275346	04/18/17 20:55	AS1	TAL CAN
Total/NA	Analysis	300.0		1	275015	04/17/17 16:54	LCN	TAL CAN

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Client Sample ID: TB-041317-001

Date Collected: 04/13/17 12:35
Date Received: 04/14/17 09:20

Lab Sample ID: 240-78107-32

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	275299	04/19/17 11:39	LEE	TAL CAN

Laboratory References:

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

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: 039611-40, HIMCO

TestAmerica Job ID: 240-78107-1

Laboratory: TestAmerica Canton

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

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2927	04-30-17 *
Connecticut	State Program	1	PH-0590	12-31-17
Florida	NELAP	4	E87225	06-30-17 *
Illinois	NELAP	5	200004	07-31-17 *
Kansas	NELAP	7	E-10336	01-31-18
Kentucky (UST)	State Program	4	58	02-23-18
Kentucky (WW)	State Program	4	98016	12-31-17
Minnesota	NELAP	5	039-999-348	12-31-17
Minnesota (Petrofund)	State Program	1	3506	07-31-17 *
Nevada	State Program	9	OH-000482008A	07-31-17 *
New Jersey	NELAP	2	OH001	06-30-17 *
New York	NELAP	2	10975	03-31-18
Ohio VAP	State Program	5	CL0024	09-14-17
Oregon	NELAP	10	4062	02-23-18
Pennsylvania	NELAP	3	68-00340	08-31-17
Texas	NELAP	6	T104704517-15-5	08-31-17
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-17
Washington	State Program	10	C971	01-12-18
West Virginia DEP	State Program	3	210	12-31-16 *
Wisconsin	State Program	5	999518190	08-31-17

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

3.8/C3.5 2.8/C2.5
2.6/C2.3
1.6/C1.3

CHAIN OF CUSTODY RECORD

COC NO.: 53427

Address: _____ PAGE ___ OF ___

Phone: _____ Fax: _____

Project No/ Phase/Task Code: 039611 - 40	Laboratory Name: Test America	Lab Location: North Canton	SSOW ID: 039611-00-008
Project Name: HimCO	Lab Contact:		Cooler No: 4-Coolers Total
Project Location: Elkhart, Indiana			Carrier:
GHD Chemistry Contact: Nancy Bergstrom			Airbill No:
Sampler(s): J. Hargens, J. Luzwick			Total # of Containers: 60

240-78107 Chain of Custody

Item	Sample Identification (Containers for each sample may be combined on one line)	Date (mm/dd/yy)	Time (hh:mm)	Matrix Code (see back of COC)	Grab (G) or Comp (C)	Filtered (Y/N)	Select VOC	Select Metals	Chloride	Sulfate							Total Containers/sample	MS/MSD Request	Comments/ Special Instructions:
	PRESERVATION - (SEE BACK OF COC FOR ABBREVIATIONS)																		
1	GW-WT121A-041117	4/11/17	1015	WG	G	N	X	X	X	X							5		
2	GW-WT121B-041117	4/11/17	1010	WG	G	N	X	X	X	X							5		
3	GW-WT102A-041117	4/11/17	1200	WG	G	N	X	X	X	X							5		
4	GW-WT102B-041117	4/11/17	1145	WG	G	N	X	X	X	X							5		
5	GW-WT114C-041117	4/11/17	1420	WG	G	N	X	X	X	X							5		
6	GW-WT114A-041117	4/11/17	1425	WG	G	N	X	X	X	X							5		
7	GW-WT114B-041117	4/11/17	1530	WG	G	N	X	X	X	X							5		
8	GW-WT120C-041117	4/11/17	1715	WG	G	N	X	X	X	X							5		
9	GW-WT120B-041117	4/11/17	1710	WG	G	N	X	X	X	X							5		
10	GW-WT120A-041117	4/11/17	1805	WG	G	N	X	X	X	X							5		
11	GW-WT106A-041217	4/12/17	845	WG	G	N	X	X	X	X							5		
12	GW-WT106B-041217	4/12/17	850	WG	G	N	X	X	X	X							5		

TAT Required in business days (use separate COCs for different TATs):

☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☑ 2 Week ☐ Other:

Notes/ Special Requirements:

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
1.				1.	TAL	04/14/17	920
2.				2.			
3.				3.			

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT – ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE – Fully Executed Copy (CRA) YELLOW – Receiving Laboratory Copy PINK – Shipper GOLDENROD – Sampling Crew

GHD Form: COC-10B (20110804)

CHAIN OF CUSTODY RECORD

COC NO.: 53421

Address: _____ PAGE ___ OF ___

Phone: _____ Fax: _____

Project No/ Phase/Task Code: 039611-40	Laboratory Name: Test America	Lab Location: North Canton	SSOW ID: 039611-00-008
Project Name: HIMCO	Lab Contact:		Cooler No: 4-Coolers Total
Project Location: Elkhart, Indiana			Carrier:
GHD Chemistry Contact: Nancy Bergstrom			Airbill No:
Sampler(s): J. Hargens, J. Luzwick			Total # of Containers: 68

Item	Sample Identification (Containers for each sample may be combined on one line)	Date (mm/dd/yy)	Time (hh:mm)	Matrix Code (see back of COC)	Grab (G) or Comp (C)	Filtered (Y/N)	Select VOC	Select Metals	Chloride	Sulfate	Total Containers/sample	MS/MSD Request	Comments/ Special Instructions:
	PRESERVATION - (SEE BACK OF COC FOR ABBREVIATIONS)												
1	GW-WT100C-041217	4/12/17	1000	WG	G	N	X	X	X	X	5		
2	GW-WT101C-041217-D	4/12/17	1010	WG	G	N	X	X	X	X	5		
3	GW-WT122A-041217	4/12/17	1120	WG	G	N	X	X	X	X	5		
4	GW-WT122B-041217	4/12/17	1130	WG	G	N	X	X	X	X	5		
5	GW-WT122C-041217	4/12/17	1215	WG	G	N	X	X	X	X	13	X	
6	GW-WT122C-041217-E	4/12/17	1400	WG	G	N	X	X	X	X	5		
7	GW-WT115A-041217	4/12/17	1450	WG	G	N	X	X	X	X	5		
8	GW-WT115C-041217	4/12/17	1455	WG	G	N	X	X	X	X	5		
9	GW-WT115B-041217	4/12/17	1550	WG	G	N	X	X	X	X	5		
10	GW-WT111A-041217	4/12/17	1715	WG	G	N	X	X	X	X	5		
11	GW-WT110A-041217	4/12/17	1820	WG	G	N	X	X	X	X	5		
12	GW-WT119B-041317	4/13/17	8335	WG	G	N	X	X	X	X	5		

TAT Required in business days (use separate COCs for different TATs):

☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☑ 2 Week ☐ Other:

Notes/ Special Requirements:

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
1.				1. [signature]	TAE	04/14/17	920
2.				2.			
3.				3.			

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT – ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE – Fully Executed Copy (CRA) YELLOW – Receiving Laboratory Copy PINK – Shipper GOLDENROD – Sampling Crew

GHD Form: COC-10B (20110604)

CHAIN OF CUSTODY RECORD

COC NO.: 53423

Address: _____ PAGE ___ OF ___

Phone: _____ Fax: _____

Project No/ Phase/Task Code: 039611-40	Laboratory Name: Test America	Lab Location: North Canton	SSOW ID: 039611-00-008
Project Name: Himco	Lab Contact:		Cooler No: 4-coolers Total
Project Location: Elkhart, Indiana			Carrier:
GHD Chemistry Contact: Nancy Bergstrom			Airbill No:
Sampler(s): J. Hargens, J. Luzwick			Total # of Containers: 44

Item	Sample Identification (Containers for each sample may be combined on one line)	Date (mm/dd/yy)	Time (hh:mm)	Matrix Code (see back of COC)	Grab (G) or Comp (C)	Filtered (Y/N)	Select VOCs	Select Metals	Chloride	Sulfate	Total Containers/sample	MS/MSD Request	Comments/ Special Instructions:
	PRESERVATION - (SEE BACK OF COC FOR ABBREVIATIONS)												
1	GW-WT119B-041317-D	4/13/17	845	WG	G	N	X	X	X	X	5		
2	GW-WTE3-041317	4/13/17	940	WG	G	N	X	X	X	X	13	X	
3	GW-WT101C-041317	4/13/17	1050	WG	G	N	X	X	X	X	5		
4	GW-WT101E-041317	4/13/17	1100	WG	G	N	X	X	X	X	5		
5	GW-WT101A-041317	4/13/17	1210	WG	G	N	X	X	X	X	5		
6	GW-WT101D-041317	4/13/17	1215	WG	G	N	X	X	X	X	5		
7	GW-WT101D-041317-E	4/13/17	1230	WG	G	N	X	X	X	X	5		
8	TB-041317-001	4/13/17	1235	WG	G	N	X				1		
9													
10													
11													
12													

TAT Required in business days (use separate COCs for different TATs):

☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☑ 2 Week ☐ Other:

Notes/ Special Requirements:

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
1.				1. [signature]	TAL	04/14/17	920
				2.			
				3.			

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT – ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE – Fully Executed Copy (CRA) YELLOW – Receiving Laboratory Copy PINK – Shipper GOLDENROD – Sampling Crew

GHD Form: COC-10B (20110804)

TestAmerica Canton Sample Receipt Form/Narrative **Login # :** 78107
Canton Facility

Client GHD Site Name Elkhart Cooler unpacked by: DSD
Cooler Received on 04/14/17 Opened on 04/14/17
FedEx: 1st Grd Exp UPS FAS Stetson Client Drop Off TestAmerica Courier Other
Receipt After-hours: Drop-off Date/Time Storage Location
TestAmerica Cooler # 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-8 (CF **-0.3** °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C
   IR GUN #36 (CF **+0.8**°C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C
2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 1 each Yes No
   -Were custody seals on the outside of the cooler(s) signed & dated? Yes No NA
   -Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
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 11-15 have been checked at the originating laboratory.
11. Were sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# **HC682547**
12. Were VOAs on the COC? Yes No
13. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this. Yes No NA
14. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #_____ Yes No
15. Was a LL Hg or Me Hg trip blank present? _____ Yes No

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

Concerning _____

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by:

Received Sample, GW-WT-112C, not on COC. will log at end.
Did not receive Sample, GW-WT122C-041217-E.
Correction! Received Sample 112C was actually WT122C-041217-E
but was labeled wrong.

15. 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)

16. SAMPLE PRESERVATION

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

Ref: SOP NC-SC-0005, Sample Receiving
\\tacorp\corp\QA\QA_Facilities\Canton-QA\Document-Management\Work-Instruction\In Revision\WI-NC-099-040717 Cooler Receipt Form.doc djl

TestAmerica Multiple Cooler Receipt Form/Narrative
Canton Facility

Login # : 78107

Cooler #	IR Gun #	Observed Temp °C	Corrected Temp °C	Coolant
Client	8	3.8	3.5	Ice
↓	↓	2.6	2.3	↓
		1.6	1.3	
		2.8	2.5	

X:\X-Drive Document Control\SOPs\Work Instructions\Word Version Work Instructions\WI-NC-099H-071615 Cooler Receipt Form_page 2 - Multiple Coolers.doc rls

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
GW-WT121A-041117	240-78107-E-1	Plastic 500ml - with Nitric Acid	<2		
GW-WT121B-041117	240-78107-E-2	Plastic 500ml - with Nitric Acid	<2		
GW-WT102A-041117	240-78107-E-3	Plastic 500ml - with Nitric Acid	<2		
GW-WT102B-041117	240-78107-E-4	Plastic 500ml - with Nitric Acid	<2		
GW-WT114C-041117	240-78107-E-5	Plastic 500ml - with Nitric Acid	<2		
GW-WT114A-041117	240-78107-E-6	Plastic 500ml - with Nitric Acid	<2		
GW-WT114B-041117	240-78107-E-7	Plastic 500ml - with Nitric Acid	<2		
GW-WT120C-041117	240-78107-E-8	Plastic 500ml - with Nitric Acid	<2		
GW-WT120B-041117	240-78107-E-9	Plastic 500ml - with Nitric Acid	<2		
GW-WT120A-041117	240-78107-E-10	Plastic 500ml - with Nitric Acid	<2		
GW-WT106A-041217	240-78107-E-11	Plastic 500ml - with Nitric Acid	<2		
GW-WT106B-041217	240-78107-E-12	Plastic 500ml - with Nitric Acid	<2		
GW-WT106C-041217	240-78107-E-13	Plastic 500ml - with Nitric Acid	<2		
GW-WT106C-041217-D	240-78107-E-14	Plastic 500ml - with Nitric Acid	<2		
GW-WT122A-041217	240-78107-E-15	Plastic 500ml - with Nitric Acid	<2		
GW-WT122B-041217	240-78107-E-16	Plastic 500ml - with Nitric Acid	<2		
GW-WT122C-041217	240-78107-L-17	Plastic 500ml - with Nitric Acid	<2		
GW-WT122C-041217	240-78107-M-17	Plastic 500ml - with Nitric Acid	<2		
GW-WT122C-041217-E	240-78107-E-18	Plastic 500ml - with Nitric Acid	<2		
GW-WT115A-041217	240-78107-E-19	Plastic 500ml - with Nitric Acid	<2		
GW-WT115C-041217	240-78107-E-20	Plastic 500ml - with Nitric Acid	<2		
GW-WT115B-041217	240-78107-E-21	Plastic 500ml - with Nitric Acid	<2		
GW-WT111A-041217	240-78107-E-22	Plastic 500ml - with Nitric Acid	<2		
GW-WT116A-041217	240-78107-E-23	Plastic 500ml - with Nitric Acid	<2		
GW-WT119B-041317	240-78107-E-24	Plastic 500ml - with Nitric Acid	<2		
GW-WT119B-041317	240-78107-E-25	Plastic 500ml - with Nitric Acid	<2		
GW-WTE3-041317	240-78107-L-26	Plastic 500ml - with Nitric Acid	<2		
GW-WTE3-041317	240-78107-M-26	Plastic 500ml - with Nitric Acid	<2		
GW-WT101C-041317	240-78107-E-27	Plastic 500ml - with Nitric Acid	<2		
GW-WT101E-041317	240-78107-E-28	Plastic 500ml - with Nitric Acid	<2		
GW-WT101A-041317	240-78107-E-29	Plastic 500ml - with Nitric Acid	<2		
GW-WT101D-041317	240-78107-E-30	Plastic 500ml - with Nitric Acid	<2		
GW-WT101D-041317-E	240-78107-E-31	Plastic 500ml - with Nitric Acid	<2		

ANALYTICAL REPORT

Job Number: 240-70375-1

Job Description: 39611, HIMCO

For:
GHD Services Inc.
6400 Shafer Court
Suite 400
Rosemont, IL 60018

Attention: Nancy Bergstrom

Approved for release.
Amy L McCormick
Project Manager II
10/22/2016 3:24 PM

Amy L McCormick, Project Manager II
4101 Shuffel Street NW, North Canton, OH, 44720
(330)966-9787
amy.mccormick@testamericainc.com
10/22/2016

cc: EDD CRA
CRA Tracking CRA Tracking
Mr. Steve Day

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the 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. This report is confidential and is intended for the sole use of TestAmerica and its client. All questions regarding this report should be directed to the TestAmerica Project Manager who has signed this report.

CASE NARRATIVE

Client: GHD Services Inc.

Project: 39611, HIMCO

Report Number: 240-70375-1

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.

TestAmerica Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. 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 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 TestAmerica and its client.

RECEIPT
The samples were received on 10/5/2016 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.6º C.

VOLATILE ORGANIC COMPOUNDS (GCMS)
Samples GW-WT121A-100416 (240-70375-1), GW-WT121B-100416 (240-70375-2), GW-WT121B-100416-E (240-70375-3), GW-WT111A-100416 (240-70375-4), GW-WT119B-100416 (240-70375-5), GW-WT116A-100416 (240-70375-6), GW-WTE3-100416 (240-70375-7), GW-WT120B-100416 (240-70375-8), GW-WT120C-100416 (240-70375-9), GW-WT120A-100416 (240-70375-10) and TRIP BLANK-10-4-16-001 (240-70375-11) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 10/11/2016 and 10/12/2016.

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-100416 (240-70375-1), GW-WT121B-100416 (240-70375-2), GW-WT121B-100416-E (240-70375-3), GW-WT111A-100416 (240-70375-4), GW-WT119B-100416 (240-70375-5), GW-WT116A-100416 (240-70375-6), GW-WTE3-100416 (240-70375-7), GW-WT120B-100416 (240-70375-8), GW-WT120C-100416 (240-70375-9) and GW-WT120A-100416 (240-70375-10) were analyzed for total recoverable metals (ICP) in accordance with EPA SW-846 Method 6010B. The samples were prepared on 10/06/2016 and analyzed on 10/11/2016.

Some requested practical quantitation limits (PQLs) for samples GW-WT121A-100416 (240-70375-1), GW-WT121B-100416 (240-70375-2), GW-WT121B-100416-E (240-70375-3), GW-WT111A-100416 (240-70375-4), GW-WT119B-100416 (240-70375-5), GW-WT116A-100416 (240-70375-6), GW-WTE3-100416 (240-70375-7), GW-WT120B-100416 (240-70375-8), GW-WT120C-100416 (240-70375-9) and GW-WT120A-100416 (240-70375-10) fall below the laboratory's verified standard quantitation limit. The continuing calibration blanks and method blanks may not support the lower PQL.

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-100416 (240-70375-1), GW-WT121B-100416 (240-70375-2), GW-WT121B-100416-E (240-70375-3), GW-WT111A-100416 (240-70375-4), GW-WT119B-100416 (240-70375-5), GW-WT116A-100416 (240-70375-6), GW-WTE3-100416 (240-70375-7), GW-WT120B-100416 (240-70375-8), GW-WT120C-100416 (240-70375-9) and GW-WT120A-100416 (240-70375-10) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020. The samples were prepared on 10/06/2016 and analyzed on 10/15/2016.

Some requested practical quantitation limits (PQLs) for samples GW-WT121A-100416 (240-70375-1), GW-WT121B-100416 (240-70375-2), GW-WT121B-100416-E (240-70375-3), GW-WT111A-100416 (240-70375-4), GW-WT119B-100416 (240-70375-5), GW-WT116A-100416 (240-70375-6), GW-WTE3-100416 (240-70375-7), GW-WT120B-100416 (240-70375-8), GW-WT120C-100416 (240-70375-9) and GW-WT120A-100416 (240-70375-10) fall below the laboratory's verified standard quantitation limit. The continuing calibration blanks and method blanks may not support the lower PQL.

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

ANIONS

Samples GW-WT121A-100416 (240-70375-1), GW-WT121B-100416 (240-70375-2), GW-WT121B-100416-E (240-70375-3), GW-WT111A-100416 (240-70375-4), GW-WT119B-100416 (240-70375-5), GW-WT116A-100416 (240-70375-6), GW-WTE3-100416 (240-70375-7), GW-WT120B-100416 (240-70375-8), GW-WT120C-100416 (240-70375-9) and GW-WT120A-100416 (240-70375-10) were analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 10/06/2016 and 10/08/2016.

Sample GW-WT116A-100416 (240-70375-6)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Sulfate failed the recovery criteria high for the MS/MSD of sample GW-WT121A-100416MS/MSD (240-70375-1) in batch 240-250178.

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

EXECUTIVE SUMMARY - Detections

Client: GHD Services Inc. Job Number: 240-70375-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
240-70375-1	**GW-WT121A-100416**					
Vinyl chloride		1.2		1.0	ug/L	8260B
Chloride		79		1.0	mg/L	300.0
Sulfate		73	F1	1.0	mg/L	300.0
Total Recoverable						
Calcium		87000		5000	ug/L	6010B
Iron		2600		100	ug/L	6010B
Manganese		43		15	ug/L	6010B
Sodium		40000		5000	ug/L	6010B
Arsenic		6.2		1.0	ug/L	6020
240-70375-2	**GW-WT121B-100416**					
1,1-Dichloroethane		1.5		1.0	ug/L	8260B
cis-1,2-Dichloroethene		1.2		1.0	ug/L	8260B
Chloride		27		1.0	mg/L	300.0
Sulfate		38		1.0	mg/L	300.0
Total Recoverable						
Calcium		95000		5000	ug/L	6010B
Iron		5600		100	ug/L	6010B
Manganese		28		15	ug/L	6010B
Sodium		55000		5000	ug/L	6010B
Arsenic		12		1.0	ug/L	6020
240-70375-4	**GW-WT111A-100416**					
1,1-Dichloroethane		9.4		1.0	ug/L	8260B
Benzene		0.85	J	1.0	ug/L	8260B
Chloride		28		1.0	mg/L	300.0
Sulfate		160		1.0	mg/L	300.0
Total Recoverable						
Calcium		100000		5000	ug/L	6010B
Iron		1500		100	ug/L	6010B
Manganese		390		15	ug/L	6010B
Sodium		21000		5000	ug/L	6010B
Arsenic		5.0		1.0	ug/L	6020

EXECUTIVE SUMMARY - Detections

Client: GHD Services Inc. Job Number: 240-70375-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
240-70375-5	**GW-WT119B-100416**					
Chloride		11		1.0	mg/L	300.0
Sulfate		80		1.0	mg/L	300.0
Total Recoverable						
Calcium		120000		5000	ug/L	6010B
Iron		760		100	ug/L	6010B
Manganese		82		15	ug/L	6010B
Sodium		23000		5000	ug/L	6010B
Arsenic		4.6		1.0	ug/L	6020
240-70375-6	**GW-WT116A-100416**					
1,1-Dichloroethane		3.1		1.0	ug/L	8260B
Benzene		3.5		1.0	ug/L	8260B
cis-1,2-Dichloroethene		3.6		1.0	ug/L	8260B
Vinyl chloride		0.94	J	1.0	ug/L	8260B
Chloride		9.2		5.0	mg/L	300.0
Sulfate		180		5.0	mg/L	300.0
Total Recoverable						
Calcium		510000		5000	ug/L	6010B
Iron		14000		100	ug/L	6010B
Manganese		1900		15	ug/L	6010B
Sodium		88000		5000	ug/L	6010B
Arsenic		1.7		1.0	ug/L	6020
240-70375-7	**GW-WTE3-100416**					
Chloride		18		1.0	mg/L	300.0
Sulfate		24		1.0	mg/L	300.0
Total Recoverable						
Calcium		110000		5000	ug/L	6010B
Iron		190		100	ug/L	6010B
Manganese		27		15	ug/L	6010B
Sodium		17000		5000	ug/L	6010B

EXECUTIVE SUMMARY - Detections

Client: GHD Services Inc. Job Number: 240-70375-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
240-70375-8	**GW-WT120B-100416**					
Chloride		39		1.0	mg/L	300.0
Sulfate		33		1.0	mg/L	300.0
Total Recoverable						
Calcium		71000		5000	ug/L	6010B
Iron		1100		100	ug/L	6010B
Manganese		210		15	ug/L	6010B
Sodium		17000		5000	ug/L	6010B
Arsenic		6.0		1.0	ug/L	6020
240-70375-9	**GW-WT120C-100416**					
Chloride		27		1.0	mg/L	300.0
Sulfate		26		1.0	mg/L	300.0
Total Recoverable						
Calcium		75000		5000	ug/L	6010B
Sodium		26000		5000	ug/L	6010B
Arsenic		0.38	J	1.0	ug/L	6020
240-70375-10	**GW-WT120A-100416**					
Chloride		69		1.0	mg/L	300.0
Sulfate		36		1.0	mg/L	300.0
Total Recoverable						
Calcium		76000		5000	ug/L	6010B
Iron		930		100	ug/L	6010B
Manganese		75		15	ug/L	6010B
Sodium		35000		5000	ug/L	6010B
Arsenic		3.4		1.0	ug/L	6020

METHOD SUMMARY

Client: GHD Services Inc. Job Number: 240-70375-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Volatile Organic Compounds (GC/MS)	TAL CAN	SW846 8260B	
Purge and Trap	TAL CAN		SW846 5030B
Metals (ICP)	TAL CAN	SW846 6010B	
Preparation, Total Recoverable or Dissolved Metals	TAL CAN		SW846 3005A
Metals (ICP/MS)	TAL CAN	SW846 6020	
Preparation, Total Recoverable or Dissolved Metals	TAL CAN		SW846 3005A
Anions, Ion Chromatography	TAL CAN	MCAWW 300.0	

Lab References:

TAL CAN = TestAmerica Canton

Method 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.

METHOD / ANALYST SUMMARY

Client: GHD Services Inc. Job Number: 240-70375-1

Method	Analyst	Analyst ID
SW846 8260B	Evans, Laura	LEE
SW846 8260B	Lavey, Tim	TJL1
SW846 6010B	Toth, Roger	RKT
SW846 6020	Toth, Roger	RKT
MCAWW 300.0	Nolle, Laura C	LCN

SAMPLE SUMMARY

Client: GHD Services Inc. Job Number: 240-70375-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
240-70375-1	GW-WT121A-100416	Water	10/04/2016 0832	10/05/2016 0915
240-70375-2	GW-WT121B-100416	Water	10/04/2016 0855	10/05/2016 0915
240-70375-3	GW-WT121B-100416-E	Water	10/04/2016 0907	10/05/2016 0915
240-70375-4	GW-WT111A-100416	Water	10/04/2016 1000	10/05/2016 0915
240-70375-5	GW-WT119B-100416	Water	10/04/2016 1105	10/05/2016 0915
240-70375-6	GW-WT116A-100416	Water	10/04/2016 1150	10/05/2016 0915
240-70375-7	GW-WTE3-100416	Water	10/04/2016 1325	10/05/2016 0915
240-70375-8	GW-WT120B-100416	Water	10/04/2016 1440	10/05/2016 0915
240-70375-9	GW-WT120C-100416	Water	10/04/2016 1455	10/05/2016 0915
240-70375-10	GW-WT120A-100416	Water	10/04/2016 1540	10/05/2016 0915
240-70375-11TB	TRIP BLANK-10-4-16-001	Water	10/04/2016 1547	10/05/2016 0915

SAMPLE RESULTS

Client: GHD Services Inc. Job Number: 240-70375-1

Client Sample ID: **GW-WT121A-100416**

Lab Sample ID: 240-70375-1 Date Sampled: 10/04/2016 0832
Client Matrix: Water Date Received: 10/05/2016 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-250902	Instrument ID:	A3UX16
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXM8598.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/11/2016 2120			Final Weight/Volume:	5 mL
Prep Date:	10/11/2016 2120				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	ND		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	1.2		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	106		63 - 132
4-Bromofluorobenzene (Surr)	94		73 - 120
Toluene-d8 (Surr)	89		73 - 124
Dibromofluoromethane (Surr)	97		80 - 120

Client: GHD Services Inc. Job Number: 240-70375-1

Client Sample ID: **GW-WT121B-100416**

Lab Sample ID: 240-70375-2 Date Sampled: 10/04/2016 0855
Client Matrix: Water Date Received: 10/05/2016 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-250902	Instrument ID:	A3UX16
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXM8599.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/11/2016 2143			Final Weight/Volume:	5 mL
Prep Date:	10/11/2016 2143				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	1.5		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	1.2		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104		63 - 132
4-Bromofluorobenzene (Surr)	93		73 - 120
Toluene-d8 (Surr)	89		73 - 124
Dibromofluoromethane (Surr)	94		80 - 120

Client: GHD Services Inc. Job Number: 240-70375-1

Client Sample ID: **GW-WT121B-100416-E**

Lab Sample ID: 240-70375-3 Date Sampled: 10/04/2016 0907
Client Matrix: Water Date Received: 10/05/2016 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-250902	Instrument ID:	A3UX16
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXM8600.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/11/2016 2206			Final Weight/Volume:	5 mL
Prep Date:	10/11/2016 2206				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	ND		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	106		63 - 132
4-Bromofluorobenzene (Surr)	93		73 - 120
Toluene-d8 (Surr)	90		73 - 124
Dibromofluoromethane (Surr)	96		80 - 120

Client: GHD Services Inc. Job Number: 240-70375-1

Client Sample ID: **GW-WT111A-100416**

Lab Sample ID: 240-70375-4 Date Sampled: 10/04/2016 1000
Client Matrix: Water Date Received: 10/05/2016 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-250902	Instrument ID:	A3UX16
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXM8601.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/11/2016 2228			Final Weight/Volume:	5 mL
Prep Date:	10/11/2016 2228				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	9.4		0.25	1.0
Benzene	0.85	J	0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	105		63 - 132
4-Bromofluorobenzene (Surr)	94		73 - 120
Toluene-d8 (Surr)	90		73 - 124
Dibromofluoromethane (Surr)	96		80 - 120

Client: GHD Services Inc. Job Number: 240-70375-1

Client Sample ID: **GW-WT119B-100416**

Lab Sample ID: 240-70375-5 Date Sampled: 10/04/2016 1105
Client Matrix: Water Date Received: 10/05/2016 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-250902	Instrument ID:	A3UX16
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXM8602.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/11/2016 2252			Final Weight/Volume:	5 mL
Prep Date:	10/11/2016 2252				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	ND		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	107		63 - 132
4-Bromofluorobenzene (Surr)	92		73 - 120
Toluene-d8 (Surr)	89		73 - 124
Dibromofluoromethane (Surr)	97		80 - 120

Client: GHD Services Inc. Job Number: 240-70375-1

Client Sample ID: **GW-WT116A-100416**

Lab Sample ID: 240-70375-6 Date Sampled: 10/04/2016 1150
Client Matrix: Water Date Received: 10/05/2016 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-250763	Instrument ID:	A3UX15
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXC8822.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/11/2016 1311			Final Weight/Volume:	5 mL
Prep Date:	10/11/2016 1311				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	3.1		0.25	1.0
Benzene	3.5		0.28	1.0
cis-1,2-Dichloroethene	3.6		0.30	1.0
Vinyl chloride	0.94	J	0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	95		63 - 132
4-Bromofluorobenzene (Surr)	109		73 - 120
Toluene-d8 (Surr)	102		73 - 124
Dibromofluoromethane (Surr)	101		80 - 120

Client: GHD Services Inc. Job Number: 240-70375-1

Client Sample ID: **GW-WTE3-100416**

Lab Sample ID: 240-70375-7 Date Sampled: 10/04/2016 1325
Client Matrix: Water Date Received: 10/05/2016 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-250902	Instrument ID:	A3UX16
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXM8603.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/11/2016 2315			Final Weight/Volume:	5 mL
Prep Date:	10/11/2016 2315				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	ND		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104		63 - 132
4-Bromofluorobenzene (Surr)	94		73 - 120
Toluene-d8 (Surr)	90		73 - 124
Dibromofluoromethane (Surr)	96		80 - 120

Client: GHD Services Inc. Job Number: 240-70375-1

Client Sample ID: **GW-WT120B-100416**

Lab Sample ID: 240-70375-8 Date Sampled: 10/04/2016 1440
Client Matrix: Water Date Received: 10/05/2016 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-250902	Instrument ID:	A3UX16
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXM8604.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/11/2016 2338			Final Weight/Volume:	5 mL
Prep Date:	10/11/2016 2338				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	ND		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104		63 - 132
4-Bromofluorobenzene (Surr)	92		73 - 120
Toluene-d8 (Surr)	90		73 - 124
Dibromofluoromethane (Surr)	94		80 - 120

Client: GHD Services Inc. Job Number: 240-70375-1

Client Sample ID: **GW-WT120C-100416**

Lab Sample ID: 240-70375-9 Date Sampled: 10/04/2016 1455
Client Matrix: Water Date Received: 10/05/2016 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-250902	Instrument ID:	A3UX16
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXM8605.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2016 0001			Final Weight/Volume:	5 mL
Prep Date:	10/12/2016 0001				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	ND		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104		63 - 132
4-Bromofluorobenzene (Surr)	92		73 - 120
Toluene-d8 (Surr)	90		73 - 124
Dibromofluoromethane (Surr)	93		80 - 120

Client: GHD Services Inc. Job Number: 240-70375-1

Client Sample ID: **GW-WT120A-100416**

Lab Sample ID: 240-70375-10 Date Sampled: 10/04/2016 1540
Client Matrix: Water Date Received: 10/05/2016 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-250902	Instrument ID:	A3UX16
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXM8606.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2016 0024			Final Weight/Volume:	5 mL
Prep Date:	10/12/2016 0024				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	ND		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104		63 - 132
4-Bromofluorobenzene (Surr)	92		73 - 120
Toluene-d8 (Surr)	89		73 - 124
Dibromofluoromethane (Surr)	95		80 - 120

Client: GHD Services Inc. Job Number: 240-70375-1

Client Sample ID: **TRIP BLANK-10-4-16-001**

Lab Sample ID: 240-70375-11TB Date Sampled: 10/04/2016 1547
Client Matrix: Water Date Received: 10/05/2016 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-250902	Instrument ID:	A3UX16
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXM8607.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2016 0047			Final Weight/Volume:	5 mL
Prep Date:	10/12/2016 0047				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	ND		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102		63 - 132
4-Bromofluorobenzene (Surr)	91		73 - 120
Toluene-d8 (Surr)	87		73 - 124
Dibromofluoromethane (Surr)	93		80 - 120

Client: GHD Services Inc. Job Number: 240-70375-1

Client Sample ID: **GW-WT121A-100416**

Lab Sample ID: 240-70375-1 Date Sampled: 10/04/2016 0832
Client Matrix: Water Date Received: 10/05/2016 0915

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250144	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 1933			Final Weight/Volume:	50 mL
Prep Date:	10/06/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	87000		710	5000
Iron	2600		25	100
Manganese	43		5.1	15
Sodium	40000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-251644	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250144	Lab File ID:	163SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/15/2016 2249			Final Weight/Volume:	50 mL
Prep Date:	10/06/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	6.2		0.35	1.0

Client: GHD Services Inc. Job Number: 240-70375-1

Client Sample ID: **GW-WT121B-100416**

Lab Sample ID: 240-70375-2 Date Sampled: 10/04/2016 0855
Client Matrix: Water Date Received: 10/05/2016 0915

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250144	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 1938			Final Weight/Volume:	50 mL
Prep Date:	10/06/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	95000		710	5000
Iron	5600		25	100
Manganese	28		5.1	15
Sodium	55000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-251644	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250144	Lab File ID:	164SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/15/2016 2253			Final Weight/Volume:	50 mL
Prep Date:	10/06/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	12		0.35	1.0

Client: GHD Services Inc. Job Number: 240-70375-1

Client Sample ID: **GW-WT121B-100416-E**

Lab Sample ID: 240-70375-3 Date Sampled: 10/04/2016 0907
Client Matrix: Water Date Received: 10/05/2016 0915

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250144	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 1951			Final Weight/Volume:	50 mL
Prep Date:	10/06/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	ND		710	5000
Iron	ND		25	100
Manganese	ND		5.1	15
Sodium	ND		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-251644	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250144	Lab File ID:	165SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/15/2016 2257			Final Weight/Volume:	50 mL
Prep Date:	10/06/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	ND		0.35	1.0

Client: GHD Services Inc. Job Number: 240-70375-1

Client Sample ID: **GW-WT111A-100416**

Lab Sample ID: 240-70375-4 Date Sampled: 10/04/2016 1000
Client Matrix: Water Date Received: 10/05/2016 0915

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250144	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 1956			Final Weight/Volume:	50 mL
Prep Date:	10/06/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	100000		710	5000
Iron	1500		25	100
Manganese	390		5.1	15
Sodium	21000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-251644	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250144	Lab File ID:	166SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/15/2016 2302			Final Weight/Volume:	50 mL
Prep Date:	10/06/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	5.0		0.35	1.0

Client: GHD Services Inc. Job Number: 240-70375-1

Client Sample ID: **GW-WT119B-100416**

Lab Sample ID: 240-70375-5 Date Sampled: 10/04/2016 1105
Client Matrix: Water Date Received: 10/05/2016 0915

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250144	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 2000			Final Weight/Volume:	50 mL
Prep Date:	10/06/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	120000		710	5000
Iron	760		25	100
Manganese	82		5.1	15
Sodium	23000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-251644	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250144	Lab File ID:	167SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/15/2016 2306			Final Weight/Volume:	50 mL
Prep Date:	10/06/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	4.6		0.35	1.0

Client: GHD Services Inc. Job Number: 240-70375-1

Client Sample ID: **GW-WT116A-100416**

Lab Sample ID: 240-70375-6 Date Sampled: 10/04/2016 1150
Client Matrix: Water Date Received: 10/05/2016 0915

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250144	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 2004			Final Weight/Volume:	50 mL
Prep Date:	10/06/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	510000		710	5000
Iron	14000		25	100
Manganese	1900		5.1	15
Sodium	88000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-251644	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250144	Lab File ID:	170SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/15/2016 2319			Final Weight/Volume:	50 mL
Prep Date:	10/06/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	1.7		0.35	1.0

Client: GHD Services Inc. Job Number: 240-70375-1

Client Sample ID: **GW-WTE3-100416**

Lab Sample ID: 240-70375-7 Date Sampled: 10/04/2016 1325
Client Matrix: Water Date Received: 10/05/2016 0915

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250144	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 2009			Final Weight/Volume:	50 mL
Prep Date:	10/06/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	110000		710	5000
Iron	190		25	100
Manganese	27		5.1	15
Sodium	17000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-251644	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250144	Lab File ID:	171SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/15/2016 2323			Final Weight/Volume:	50 mL
Prep Date:	10/06/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	ND		0.35	1.0

Client: GHD Services Inc. Job Number: 240-70375-1

Client Sample ID: **GW-WT120B-100416**

Lab Sample ID: 240-70375-8 Date Sampled: 10/04/2016 1440
Client Matrix: Water Date Received: 10/05/2016 0915

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250144	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 2013			Final Weight/Volume:	50 mL
Prep Date:	10/06/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	71000		710	5000
Iron	1100		25	100
Manganese	210		5.1	15
Sodium	17000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-251644	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250144	Lab File ID:	175SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/15/2016 2341			Final Weight/Volume:	50 mL
Prep Date:	10/06/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	6.0		0.35	1.0

Client: GHD Services Inc. Job Number: 240-70375-1

Client Sample ID: **GW-WT120C-100416**

Lab Sample ID: 240-70375-9 Date Sampled: 10/04/2016 1455
Client Matrix: Water Date Received: 10/05/2016 0915

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250144	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 2018			Final Weight/Volume:	50 mL
Prep Date:	10/06/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	75000		710	5000
Iron	ND		25	100
Manganese	ND		5.1	15
Sodium	26000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-251644	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250144	Lab File ID:	172SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/15/2016 2328			Final Weight/Volume:	50 mL
Prep Date:	10/06/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	0.38	J	0.35	1.0

Client: GHD Services Inc. Job Number: 240-70375-1

Client Sample ID: **GW-WT120A-100416**

Lab Sample ID: 240-70375-10 Date Sampled: 10/04/2016 1540
Client Matrix: Water Date Received: 10/05/2016 0915

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250144	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 2022			Final Weight/Volume:	50 mL
Prep Date:	10/06/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	76000		710	5000
Iron	930		25	100
Manganese	75		5.1	15
Sodium	35000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-251644	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250144	Lab File ID:	173SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/15/2016 2332			Final Weight/Volume:	50 mL
Prep Date:	10/06/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	3.4		0.35	1.0

General Chemistry

Client Sample ID: **GW-WT121A-100416**

Lab Sample ID: 240-70375-1 Date Sampled: 10/04/2016 0832
Client Matrix: Water Date Received: 10/05/2016 0915

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	79		mg/L	0.41	1.0	1.0	300.0
Analysis Batch: 240-250337	Analysis Date: 10/08/2016 0509						
Sulfate	73	F1	mg/L	0.13	1.0	1.0	300.0
Analysis Batch: 240-250178	Analysis Date: 10/06/2016 1605						

General Chemistry

Client Sample ID: GW-WT121B-100416

Lab Sample ID: 240-70375-2 Date Sampled: 10/04/2016 0855
Client Matrix: Water Date Received: 10/05/2016 0915

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	27		mg/L	0.41	1.0	1.0	300.0
Analysis Batch: 240-250337	Analysis Date: 10/08/2016 0610						
Sulfate	38		mg/L	0.13	1.0	1.0	300.0
Analysis Batch: 240-250178	Analysis Date: 10/06/2016 1654						

General Chemistry

Client Sample ID: **GW-WT121B-100416-E**

Lab Sample ID: 240-70375-3 Date Sampled: 10/04/2016 0907
Client Matrix: Water Date Received: 10/05/2016 0915

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	ND		mg/L	0.41	1.0	1.0	300.0
Analysis Batch: 240-250337	Analysis Date: 10/08/2016 0630						
Sulfate	ND		mg/L	0.13	1.0	1.0	300.0
Analysis Batch: 240-250178	Analysis Date: 10/06/2016 1710						

General Chemistry

Client Sample ID: **GW-WT111A-100416**

Lab Sample ID: 240-70375-4 Date Sampled: 10/04/2016 1000
Client Matrix: Water Date Received: 10/05/2016 0915

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	28		mg/L	0.41	1.0	1.0	300.0
Analysis Batch: 240-250337	Analysis Date: 10/08/2016 0650						
Sulfate	160		mg/L	0.13	1.0	1.0	300.0
Analysis Batch: 240-250178	Analysis Date: 10/06/2016 1727						

General Chemistry

Client Sample ID: **GW-WT119B-100416**

Lab Sample ID: 240-70375-5 Date Sampled: 10/04/2016 1105
Client Matrix: Water Date Received: 10/05/2016 0915

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	11		mg/L	0.41	1.0	1.0	300.0
Analysis Batch: 240-250337	Analysis Date: 10/08/2016 0710						
Sulfate	80		mg/L	0.13	1.0	1.0	300.0
Analysis Batch: 240-250178	Analysis Date: 10/06/2016 1743						

General Chemistry

Client Sample ID: GW-WT116A-100416

Lab Sample ID: 240-70375-6 Date Sampled: 10/04/2016 1150
Client Matrix: Water Date Received: 10/05/2016 0915

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	9.2		mg/L	2.0	5.0	5.0	300.0
Analysis Batch: 240-250337	Analysis Date: 10/08/2016 0730						
Sulfate	180		mg/L	0.65	5.0	5.0	300.0
Analysis Batch: 240-250178	Analysis Date: 10/06/2016 1759						

General Chemistry

Client Sample ID: **GW-WTE3-100416**

Lab Sample ID: 240-70375-7 Date Sampled: 10/04/2016 1325
Client Matrix: Water Date Received: 10/05/2016 0915

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	18		mg/L	0.41	1.0	1.0	300.0
Analysis Batch: 240-250337	Analysis Date: 10/08/2016 0750						
Sulfate	24		mg/L	0.13	1.0	1.0	300.0
Analysis Batch: 240-250178	Analysis Date: 10/06/2016 1816						

General Chemistry

Client Sample ID: **GW-WT120B-100416**

Lab Sample ID: 240-70375-8 Date Sampled: 10/04/2016 1440
Client Matrix: Water Date Received: 10/05/2016 0915

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	39		mg/L	0.41	1.0	1.0	300.0
Analysis Batch: 240-250337	Analysis Date: 10/08/2016 0811						
Sulfate	33		mg/L	0.13	1.0	1.0	300.0
Analysis Batch: 240-250178	Analysis Date: 10/06/2016 1938						

General Chemistry

Client Sample ID: GW-WT120C-100416

Lab Sample ID: 240-70375-9 Date Sampled: 10/04/2016 1455
Client Matrix: Water Date Received: 10/05/2016 0915

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	27		mg/L	0.41	1.0	1.0	300.0
Analysis Batch: 240-250337	Analysis Date: 10/08/2016 0951						
Sulfate	26		mg/L	0.13	1.0	1.0	300.0
Analysis Batch: 240-250178	Analysis Date: 10/06/2016 2027						

General Chemistry

Client Sample ID: **GW-WT120A-100416**

Lab Sample ID: 240-70375-10 Date Sampled: 10/04/2016 1540
Client Matrix: Water Date Received: 10/05/2016 0915

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	69		mg/L	0.41	1.0	1.0	300.0
Analysis Batch: 240-250337	Analysis Date: 10/08/2016 1052						
Sulfate	36		mg/L	0.13	1.0	1.0	300.0
Analysis Batch: 240-250337	Analysis Date: 10/08/2016 1052						

DATA REPORTING QUALIFIERS

Client: GHD Services Inc. Job Number: 240-70375-1

Lab Section	Qualifier	Description
GC/MS VOA		
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
Metals		
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
General Chemistry		
	F1	MS and/or MSD Recovery is outside acceptance limits.

QUALITY CONTROL RESULTS

Client: GHD Services Inc. Job Number: 240-70375-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:240-250763					
LCS 240-250763/4	Lab Control Sample	T	Water	8260B	
MB 240-250763/7	Method Blank	T	Water	8260B	
240-70375-6	GW-WT116A-100416	T	Water	8260B	
Analysis Batch:240-250902					
LCS 240-250902/4	Lab Control Sample	T	Water	8260B	
MB 240-250902/7	Method Blank	T	Water	8260B	
240-70375-1	GW-WT121A-100416	T	Water	8260B	
240-70375-2	GW-WT121B-100416	T	Water	8260B	
240-70375-3	GW-WT121B-100416-E	T	Water	8260B	
240-70375-4	GW-WT111A-100416	T	Water	8260B	
240-70375-5	GW-WT119B-100416	T	Water	8260B	
240-70375-7	GW-WTE3-100416	T	Water	8260B	
240-70375-8	GW-WT120B-100416	T	Water	8260B	
240-70375-9	GW-WT120C-100416	T	Water	8260B	
240-70375-10	GW-WT120A-100416	T	Water	8260B	
240-70375-11TB	TRIP BLANK-10-4-16-001	T	Water	8260B	

Report Basis
T = Total

Client: GHD Services Inc. Job Number: 240-70375-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 240-250144					
LCS 240-250144/2-A	Lab Control Sample	R	Water	3005A	
LCS 240-250144/3-A	Lab Control Sample	R	Water	3005A	
MB 240-250144/1-A	Method Blank	R	Water	3005A	
240-70375-1	GW-WT121A-100416	R	Water	3005A	
240-70375-2	GW-WT121B-100416	R	Water	3005A	
240-70375-3	GW-WT121B-100416-E	R	Water	3005A	
240-70375-4	GW-WT111A-100416	R	Water	3005A	
240-70375-5	GW-WT119B-100416	R	Water	3005A	
240-70375-6	GW-WT116A-100416	R	Water	3005A	
240-70375-7	GW-WTE3-100416	R	Water	3005A	
240-70375-8	GW-WT120B-100416	R	Water	3005A	
240-70375-9	GW-WT120C-100416	R	Water	3005A	
240-70375-10	GW-WT120A-100416	R	Water	3005A	
Analysis Batch:240-250951					
LCS 240-250144/2-A	Lab Control Sample	R	Water	6010B	240-250144
MB 240-250144/1-A	Method Blank	R	Water	6010B	240-250144
240-70375-1	GW-WT121A-100416	R	Water	6010B	240-250144
240-70375-2	GW-WT121B-100416	R	Water	6010B	240-250144
240-70375-3	GW-WT121B-100416-E	R	Water	6010B	240-250144
240-70375-4	GW-WT111A-100416	R	Water	6010B	240-250144
240-70375-5	GW-WT119B-100416	R	Water	6010B	240-250144
240-70375-6	GW-WT116A-100416	R	Water	6010B	240-250144
240-70375-7	GW-WTE3-100416	R	Water	6010B	240-250144
240-70375-8	GW-WT120B-100416	R	Water	6010B	240-250144
240-70375-9	GW-WT120C-100416	R	Water	6010B	240-250144
240-70375-10	GW-WT120A-100416	R	Water	6010B	240-250144
Analysis Batch:240-251644					
LCS 240-250144/3-A	Lab Control Sample	R	Water	6020	240-250144
MB 240-250144/1-A	Method Blank	R	Water	6020	240-250144
240-70375-1	GW-WT121A-100416	R	Water	6020	240-250144
240-70375-2	GW-WT121B-100416	R	Water	6020	240-250144
240-70375-3	GW-WT121B-100416-E	R	Water	6020	240-250144
240-70375-4	GW-WT111A-100416	R	Water	6020	240-250144
240-70375-5	GW-WT119B-100416	R	Water	6020	240-250144
240-70375-6	GW-WT116A-100416	R	Water	6020	240-250144
240-70375-7	GW-WTE3-100416	R	Water	6020	240-250144
240-70375-8	GW-WT120B-100416	R	Water	6020	240-250144
240-70375-9	GW-WT120C-100416	R	Water	6020	240-250144
240-70375-10	GW-WT120A-100416	R	Water	6020	240-250144

Report Basis
R = Total Recoverable

Client: GHD Services Inc. Job Number: 240-70375-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:240-250178					
LCS 240-250178/28	Lab Control Sample	T	Water	300.0	
LCS 240-250178/4	Lab Control Sample	T	Water	300.0	
MB 240-250178/27	Method Blank	T	Water	300.0	
MB 240-250178/3	Method Blank	T	Water	300.0	
240-70375-1	GW-WT121A-100416	T	Water	300.0	
240-70375-1MS	Matrix Spike	T	Water	300.0	
240-70375-1MSD	Matrix Spike Duplicate	T	Water	300.0	
240-70375-2	GW-WT121B-100416	T	Water	300.0	
240-70375-3	GW-WT121B-100416-E	T	Water	300.0	
240-70375-4	GW-WT111A-100416	T	Water	300.0	
240-70375-5	GW-WT119B-100416	T	Water	300.0	
240-70375-6	GW-WT116A-100416	T	Water	300.0	
240-70375-7	GW-WTE3-100416	T	Water	300.0	
240-70375-8	GW-WT120B-100416	T	Water	300.0	
240-70375-8MS	Matrix Spike	T	Water	300.0	
240-70375-8MSD	Matrix Spike Duplicate	T	Water	300.0	
240-70375-9	GW-WT120C-100416	T	Water	300.0	
Analysis Batch:240-250337					
LCS 240-250337/28	Lab Control Sample	T	Water	300.0	
LCS 240-250337/4	Lab Control Sample	T	Water	300.0	
MB 240-250337/27	Method Blank	T	Water	300.0	
MB 240-250337/3	Method Blank	T	Water	300.0	
240-70375-1	GW-WT121A-100416	T	Water	300.0	
240-70375-1MS	Matrix Spike	T	Water	300.0	
240-70375-1MSD	Matrix Spike Duplicate	T	Water	300.0	
240-70375-2	GW-WT121B-100416	T	Water	300.0	
240-70375-3	GW-WT121B-100416-E	T	Water	300.0	
240-70375-4	GW-WT111A-100416	T	Water	300.0	
240-70375-5	GW-WT119B-100416	T	Water	300.0	
240-70375-6	GW-WT116A-100416	T	Water	300.0	
240-70375-7	GW-WTE3-100416	T	Water	300.0	
240-70375-8	GW-WT120B-100416	T	Water	300.0	
240-70375-9	GW-WT120C-100416	T	Water	300.0	
240-70375-9MS	Matrix Spike	T	Water	300.0	
240-70375-9MSD	Matrix Spike Duplicate	T	Water	300.0	
240-70375-10	GW-WT120A-100416	T	Water	300.0	

Report Basis
T = Total

Client: GHD Services Inc.

Job Number: 240-70375-1

Surrogate Recovery Report

8260B Volatile Organic Compounds (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	DCA %Rec	BFB %Rec	TOL %Rec	DBFM %Rec
240-70375-1	GW-WT121A-100416	106	94	89	97
240-70375-2	GW-WT121B-100416	104	93	89	94
240-70375-3	GW-WT121B-100416 -E	106	93	90	96
240-70375-4	GW-WT111A-100416	105	94	90	96
240-70375-5	GW-WT119B-100416	107	92	89	97
240-70375-6	GW-WT116A-100416	95	109	102	101
240-70375-7	GW-WTE3-100416	104	94	90	96
240-70375-8	GW-WT120B-100416	104	92	90	94
240-70375-9	GW-WT120C-100416	104	92	90	93
240-70375-10	GW-WT120A-100416	104	92	89	95
240-70375-11	TRIP BLANK-10-4-16-001	102	91	87	93
MB 240-250763/7		98	114	103	101
MB 240-250902/7		103	91	89	93
LCS 240-250763/4		98	116	107	110
LCS 240-250902/4		104	94	90	94

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	63-132
BFB = 4-Bromofluorobenzene (Surr)	73-120
TOL = Toluene-d8 (Surr)	73-124
DBFM = Dibromofluoromethane (Surr)	80-120

Client: GHD Services Inc. Job Number: 240-70375-1

Method Blank - Batch: 240-250763 **Method: 8260B**
Preparation: 5030B

Lab Sample ID:	MB 240-250763/7	Analysis Batch:	240-250763	Instrument ID:	A3UX15
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	UXC8816.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/11/2016 1057	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	10/11/2016 1057				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
1,1-Dichloroethane	ND		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	98	63 - 132
4-Bromofluorobenzene (Surr)	114	73 - 120
Toluene-d8 (Surr)	103	73 - 124
Dibromofluoromethane (Surr)	101	80 - 120

Lab Control Sample - Batch: 240-250763 **Method: 8260B**
Preparation: 5030B

Lab Sample ID:	LCS 240-250763/4	Analysis Batch:	240-250763	Instrument ID:	A3UX15
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	UXC8813.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/11/2016 0949	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	10/11/2016 0949				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1-Dichloroethane	10.0	9.87	99	77 - 121	
Benzene	10.0	10.0	100	80 - 120	
cis-1,2-Dichloroethene	10.0	10.0	100	80 - 120	
Vinyl chloride	10.0	8.89	89	60 - 129	

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	98	63 - 132
4-Bromofluorobenzene (Surr)	116	73 - 120
Toluene-d8 (Surr)	107	73 - 124
Dibromofluoromethane (Surr)	110	80 - 120

Client: GHD Services Inc. Job Number: 240-70375-1

Method Blank - Batch: 240-250902

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 240-250902/7	Analysis Batch:	240-250902	Instrument ID:	A3UX16
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	UXM8592.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/11/2016 1904	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	10/11/2016 1904				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
1,1-Dichloroethane	ND		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	103	63 - 132
4-Bromofluorobenzene (Surr)	91	73 - 120
Toluene-d8 (Surr)	89	73 - 124
Dibromofluoromethane (Surr)	93	80 - 120

Lab Control Sample - Batch: 240-250902

Method: 8260B
Preparation: 5030B

Lab Sample ID:	LCS 240-250902/4	Analysis Batch:	240-250902	Instrument ID:	A3UX16
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	UXM8589.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/11/2016 1755	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	10/11/2016 1755				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1-Dichloroethane	20.0	20.6	103	77 - 121	
Benzene	20.0	20.5	102	80 - 120	
cis-1,2-Dichloroethene	20.0	20.3	101	80 - 120	
Vinyl chloride	20.0	20.2	101	60 - 129	

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104	63 - 132
4-Bromofluorobenzene (Surr)	94	73 - 120
Toluene-d8 (Surr)	90	73 - 124
Dibromofluoromethane (Surr)	94	80 - 120

Client: GHD Services Inc. Job Number: 240-70375-1

Method Blank - Batch: 240-250144

Method: 6010B
Preparation: 3005A
Total Recoverable

Lab Sample ID:	MB 240-250144/1-A	Analysis Batch:	240-250951	Instrument ID:	I12
Client Matrix:	Water	Prep Batch:	240-250144	Lab File ID:	I12101116A.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 1502	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	10/06/2016 1400				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Calcium	ND		710	5000
Iron	ND		25	100
Manganese	ND		5.1	15
Sodium	ND		330	5000
Lead	ND		1.9	3.0

Lab Control Sample - Batch: 240-250144

Method: 6010B
Preparation: 3005A
Total Recoverable

Lab Sample ID:	LCS 240-250144/2-A	Analysis Batch:	240-250951	Instrument ID:	I12
Client Matrix:	Water	Prep Batch:	240-250144	Lab File ID:	I12101116A.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 1506	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	10/06/2016 1400				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Calcium	50000	54000	108	80 - 120	
Iron	1000	1070	107	80 - 120	
Manganese	500	524	105	80 - 120	
Sodium	50000	54800	110	80 - 120	
Lead	500	528	106	80 - 120	

Client: GHD Services Inc.

Job Number: 240-70375-1

Method Blank - Batch: 240-250144

Method: 6020
Preparation: 3005A
Total Recoverable

Lab Sample ID:	MB 240-250144/1-A	Analysis Batch:	240-251644	Instrument ID:	I10
Client Matrix:	Water	Prep Batch:	240-250144	Lab File ID:	143_Blk.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/15/2016 2123	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	10/06/2016 1400				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Arsenic	ND		0.35	1.0

Lab Control Sample - Batch: 240-250144

Method: 6020
Preparation: 3005A
Total Recoverable

Lab Sample ID:	LCS 240-250144/3-A	Analysis Batch:	240-251644	Instrument ID:	I10
Client Matrix:	Water	Prep Batch:	240-250144	Lab File ID:	146_LCS.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/15/2016 2136	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	10/06/2016 1400				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Arsenic	1000	987	99	80 - 120	

Client: GHD Services Inc.

Job Number: 240-70375-1

Method Blank - Batch: 240-250178

Method: 300.0
Preparation: N/A

Lab Sample ID:	MB 240-250178/3	Analysis Batch:	240-250178	Instrument ID:	SIMON
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	4240-0058713-003.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/06/2016 0944	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Sulfate	ND		0.13	1.0

Method Blank - Batch: 240-250178

Method: 300.0
Preparation: N/A

Lab Sample ID:	MB 240-250178/27	Analysis Batch:	240-250178	Instrument ID:	SIMON
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	28240-0058713-027.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/06/2016 1905	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Sulfate	ND		0.13	1.0

Client: GHD Services Inc. Job Number: 240-70375-1

Lab Control Sample - Batch: 240-250178 **Method: 300.0**
Preparation: N/A

Lab Sample ID:	LCS 240-250178/4	Analysis Batch:	240-250178	Instrument ID:	SIMON
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	5240-0058713-004.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/06/2016 1000	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	50.0	52.3	105	90 - 110	

Lab Control Sample - Batch: 240-250178 **Method: 300.0**
Preparation: N/A

Lab Sample ID:	LCS 240-250178/28	Analysis Batch:	240-250178	Instrument ID:	SIMON
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	29240-0058713-028.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/06/2016 1922	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	50.0	52.2	104	90 - 110	

Client: GHD Services Inc. Job Number: 240-70375-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 240-250178

Method: 300.0
Preparation: N/A

MS Lab Sample ID:	240-70375-1	Analysis Batch:	240-250178	Instrument ID:	SIMON
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	18240-0058713-017.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/06/2016 1621			Final Weight/Volume:	
Prep Date:	N/A				25 uL
Leach Date:	N/A				

MSD Lab Sample ID:	240-70375-1	Analysis Batch:	240-250178	Instrument ID:	SIMON
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	19240-0058713-018.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/06/2016 1637			Final Weight/Volume:	
Prep Date:	N/A				25 uL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Sulfate	125	122	80 - 120	1	15	F1	F1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 240-250178

Method: 300.0
Preparation: N/A

MS Lab Sample ID:	240-70375-8	Analysis Batch:	240-250178	Instrument ID:	SIMON
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	31240-0058713-030.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/06/2016 1954			Final Weight/Volume:	
Prep Date:	N/A				25 uL
Leach Date:	N/A				

MSD Lab Sample ID:	240-70375-8	Analysis Batch:	240-250178	Instrument ID:	SIMON
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	32240-0058713-031.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/06/2016 2011			Final Weight/Volume:	
Prep Date:	N/A				25 uL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Sulfate	117	115	80 - 120	1	15		

Client: GHD Services Inc.

Job Number: 240-70375-1

Method Blank - Batch: 240-250337

Method: 300.0
Preparation: N/A

Lab Sample ID:	MB 240-250337/3	Analysis Batch:	240-250337	Instrument ID:	VERONICA
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	255240-0058760-003.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/08/2016 0107	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Chloride	ND		0.41	1.0

Method Blank - Batch: 240-250337

Method: 300.0
Preparation: N/A

Lab Sample ID:	MB 240-250337/27	Analysis Batch:	240-250337	Instrument ID:	VERONICA
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	279240-0058760-027.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/08/2016 0911	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Chloride	ND		0.41	1.0
Sulfate	ND		0.13	1.0

Client: GHD Services Inc.

Job Number: 240-70375-1

Lab Control Sample - Batch: 240-250337

Method: 300.0
Preparation: N/A

Lab Sample ID:	LCS 240-250337/4	Analysis Batch:	240-250337	Instrument ID:	VERONICA
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	256240-0058760-004.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/08/2016 0128	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	50.0	52.1	104	90 - 110	

Lab Control Sample - Batch: 240-250337

Method: 300.0
Preparation: N/A

Lab Sample ID:	LCS 240-250337/28	Analysis Batch:	240-250337	Instrument ID:	VERONICA
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	280240-0058760-028.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/08/2016 0931	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	50.0	51.8	104	90 - 110	
Sulfate	50.0	53.2	106	90 - 110	

Client: GHD Services Inc. Job Number: 240-70375-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 240-250337

Method: 300.0
Preparation: N/A

MS Lab Sample ID:	240-70375-1	Analysis Batch:	240-250337	Instrument ID:	VERONICA
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	268240-0058760-016.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/08/2016 0529			Final Weight/Volume:	
Prep Date:	N/A				25 uL
Leach Date:	N/A				

MSD Lab Sample ID:	240-70375-1	Analysis Batch:	240-250337	Instrument ID:	VERONICA
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	269240-0058760-017.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/08/2016 0550			Final Weight/Volume:	
Prep Date:	N/A				25 uL
Leach Date:	N/A				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Chloride	101	99	80 - 120	1	15		

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 240-250337

Method: 300.0
Preparation: N/A

MS Lab Sample ID:	240-70375-9	Analysis Batch:	240-250337	Instrument ID:	VERONICA
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	282240-0058760-030.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/08/2016 1011			Final Weight/Volume:	
Prep Date:	N/A				25 uL
Leach Date:	N/A				

MSD Lab Sample ID:	240-70375-9	Analysis Batch:	240-250337	Instrument ID:	VERONICA
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	283240-0058760-031.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/08/2016 1032			Final Weight/Volume:	
Prep Date:	N/A				25 uL
Leach Date:	N/A				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Chloride	107	104	80 - 120	2	15		
Sulfate	113	110	80 - 120	2	15		

22/C2.6

GHD 6400 Shafer Court - Suite 400
Rosemont, Illinois, 60018
773 380 9933 phone
WWW.GHD.COM

CHAIN-OF-CUSTODY RECORD

SHIPPED TO (Laboratory Name): Test America

REFERENCE NUMBER: 39611

PROJECT NAME: Himco

SAMPLER'S SIGNATURE: John Hargens PRINTED NAME: John Hargens

SEQ. No.	DATE	TIME	SAMPLE IDENTIFICATION No.	SAMPLE MATRIX	No. OF CONTAINERS	Select VOC	Arsenic	Select Metals	Chloride	Sulfate	REMARKS
	10/4/16	832	GW-WT 121A-100416	Water	5	✓	✓	✓	✓	✓	
		855	GW-WT 121B-100416		5	✓	✓	✓	✓	✓	
		907	GW-WT 121B-100416-E		5	✓	✓	✓	✓	✓	
		1000	GW-WT 111A-100416		5	✓	✓	✓	✓	✓	
		1105	GW-WT 119B-100416		5	✓	✓	✓	✓	✓	
		1150	GW-WT 116A-100416		5	✓	✓	✓	✓	✓	
		1325	GW-WT E3-100416		5	✓	✓	✓	✓	✓	
		1440	GW-WT 120B-100416		5	✓	✓	✓	✓	✓	
		1455	GW-WT ~~[illegible]~~ 120C-100416		5	✓	✓	✓	✓	✓	
		1540	GW-WT 120A-100416		5	✓	✓	✓	✓	✓	
		1547	Trip Blank-10-4-16-001		1	✓					
			TOTAL NUMBER OF CONTAINERS		51						

240-70375 Chain of Custody

RELINQUISHED BY: ① John Hargens	DATE: 10-4-16 TIME: 1830	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fed-X TRACKING No. 8097 1232 1752

White -Fully Executed Copy
Yellow -Receiving Laboratory Copy
Pink -Shipper Copy
Goldenrod -Sampler Copy

SAMPLE TEAM: SEAN ARMBRUST, JOHN HARGENS

RECEIVED FOR LABORATORY BY: [signature] DATE: 10/05/16 TIME: 915

8392

11034001-00(PRES001)GN-CO001

TestAmerica Canton Sample Receipt Form/Narrative **Login # :** 70375
Canton Facility

Client GHD Site Name _____ Cooler unpacked by: DSO

Cooler Received on 10/05/16 Opened on 10/05/16

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

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

TestAmerica Cooler # _____ 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-8 (CF +0.4 °C) Observed Cooler Temp. 2.2 °C Corrected Cooler Temp. 2.6 °C
   IR GUN #36 (CF +1.3°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
   -Were custody seals on the outside of the cooler(s) signed & dated? Yes No NA
   -Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
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 11-15 have been checked at the originating laboratory.
11. Were sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# **HC574756**
12. Were VOAs on the COC? Yes No
13. Were air bubbles >6 mm in any VOA vials? Yes No NA
14. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # B615201VB Yes No
15. Was a LL Hg or Me Hg trip blank present? _____ Yes No

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

Concerning _____

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by:

15. 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)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____.

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
GW-WT121A-100416	240-70375-E-1	Plastic 500ml - with Nitric Acid	<2	_____	_____
GW-WT121B-100416	240-70375-E-2	Plastic 500ml - with Nitric Acid	<2	_____	_____
GW-WT121B-100416-E	240-70375-E-3	Plastic 500ml - with Nitric Acid	<2	_____	_____
GW-WT111A-100416	240-70375-E-4	Plastic 500ml - with Nitric Acid	<2	_____	_____
GW-WT119B-100416	240-70375-E-5	Plastic 500ml - with Nitric Acid	<2	_____	_____
GW-WT116A-100416	240-70375-E-6	Plastic 500ml - with Nitric Acid	<2	_____	_____
GW-WTE3-100416	240-70375-E-7	Plastic 500ml - with Nitric Acid	<2	_____	_____
GW-WT120B-100416	240-70375-E-8	Plastic 500ml - with Nitric Acid	<2	_____	_____
GW-WT120C-100416	240-70375-E-9	Plastic 500ml - with Nitric Acid	<2	_____	_____
GW-WT120A-100416	240-70375-E-10	Plastic 500ml - with Nitric Acid	<2	_____	_____

ANALYTICAL REPORT

Job Number: 240-70486-1

Job Description: 39611, HIMCO

For:
GHD Services Inc.
6400 Shafer Court
Suite 400
Rosemont, IL 60018

Attention: Nancy Bergstrom

Approved for release.
Amy L McCormick
Project Manager II
10/22/2016 3:39 PM

Amy L McCormick, Project Manager II
4101 Shuffel Street NW, North Canton, OH, 44720
(330)966-9787
amy.mccormick@testamericainc.com
10/22/2016

cc: EDD CRA
CRA Tracking CRA Tracking
Mr. Steve Day

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the 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. This report is confidential and is intended for the sole use of TestAmerica and its client. All questions regarding this report should be directed to the TestAmerica Project Manager who has signed this report.

CASE NARRATIVE

Client: GHD Services Inc.

Project: 39611, HIMCO

Report Number: 240-70486-1

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.

TestAmerica Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. 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 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 TestAmerica and its client.

RECEIPT
The samples were received on 10/6/2016 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.8º C.

VOLATILE ORGANIC COMPOUNDS (GCMS)
Samples GW-WT-102A-100416 (240-70486-1), GW-WT-102B-100416 (240-70486-2), GW-WT-102B-100416-D (240-70486-3), GW-WT-106C-100516 (240-70486-4), GW-WT-106B-100516 (240-70486-5), GW-WT-106A-100516 (240-70486-6), GW-WT-122B-100516 (240-70486-7), GW-WT-122A-100516 (240-70486-8), GW-WT-122C-100516 (240-70486-9) and TRIP BLANK-100516-002 (240-70486-10) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 10/14/2016 and 10/15/2016.

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-102A-100416 (240-70486-1), GW-WT-102B-100416 (240-70486-2), GW-WT-102B-100416-D (240-70486-3), GW-WT-106C-100516 (240-70486-4), GW-WT-106B-100516 (240-70486-5), GW-WT-106A-100516 (240-70486-6), GW-WT-122B-100516 (240-70486-7), GW-WT-122A-100516 (240-70486-8) and GW-WT-122C-100516 (240-70486-9) were analyzed for total recoverable metals (ICP) in accordance with EPA SW-846 Method 6010B. The samples were prepared on 10/07/2016 and analyzed on 10/11/2016.

Some requested practical quantitation limits (PQLs) for samples GW-WT-102A-100416 (240-70486-1), GW-WT-102B-100416 (240-70486-2), GW-WT-102B-100416-D (240-70486-3), GW-WT-106C-100516 (240-70486-4), GW-WT-106B-100516 (240-70486-5), GW-WT-106A-100516 (240-70486-6), GW-WT-122B-100516 (240-70486-7), GW-WT-122A-100516 (240-70486-8) and GW-WT-122C-100516 (240-70486-9) fall below the laboratory's verified standard quantitation limit. The continuing calibration blanks and method blanks may not support the lower PQL.

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-WT-102A-100416 (240-70486-1), GW-WT-102B-100416 (240-70486-2), GW-WT-102B-100416-D (240-70486-3), GW-WT-106C-100516 (240-70486-4), GW-WT-106B-100516 (240-70486-5), GW-WT-106A-100516 (240-70486-6), GW-WT-122B-100516 (240-70486-7), GW-WT-122A-100516 (240-70486-8) and GW-WT-122C-100516 (240-70486-9) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020. The samples were prepared on 10/07/2016 and analyzed on 10/18/2016 and 10/20/2016.

Some requested practical quantitation limits (PQLs) for samples GW-WT-102A-100416 (240-70486-1), GW-WT-102B-100416 (240-70486-2), GW-WT-102B-100416-D (240-70486-3), GW-WT-106C-100516 (240-70486-4), GW-WT-106B-100516 (240-70486-5), GW-WT-106A-100516 (240-70486-6), GW-WT-122B-100516 (240-70486-7), GW-WT-122A-100516 (240-70486-8) and GW-WT-122C-100516 (240-70486-9) fall below the laboratory's verified standard quantitation limit. The continuing calibration blanks and method blanks may not support the lower PQL.

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

ANIONS

Samples GW-WT-102A-100416 (240-70486-1), GW-WT-102B-100416 (240-70486-2), GW-WT-102B-100416-D (240-70486-3), GW-WT-106C-100516 (240-70486-4), GW-WT-106B-100516 (240-70486-5), GW-WT-106A-100516 (240-70486-6), GW-WT-122B-100516 (240-70486-7), GW-WT-122A-100516 (240-70486-8) and GW-WT-122C-100516 (240-70486-9) were analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 10/09/2016 and 10/11/2016.

Sample GW-WT-122A-100516 (240-70486-8)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

EXECUTIVE SUMMARY - Detections

Client: GHD Services Inc. Job Number: 240-70486-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
240-70486-1	**GW-WT-102A-100416**					
Chloride		140		1.0	mg/L	300.0
Sulfate		33		1.0	mg/L	300.0
Total Recoverable						
Calcium		80000		5000	ug/L	6010B
Iron		630		100	ug/L	6010B
Manganese		240		15	ug/L	6010B
Sodium		78000		5000	ug/L	6010B
Arsenic		0.47	J	1.0	ug/L	6020
240-70486-2	**GW-WT-102B-100416**					
Chloride		59		1.0	mg/L	300.0
Sulfate		26		1.0	mg/L	300.0
Total Recoverable						
Calcium		66000		5000	ug/L	6010B
Iron		480		100	ug/L	6010B
Manganese		41		15	ug/L	6010B
Sodium		31000		5000	ug/L	6010B
Arsenic		2.4		1.0	ug/L	6020
240-70486-3	**GW-WT-102B-100416-D**					
Chloride		59		1.0	mg/L	300.0
Sulfate		22		1.0	mg/L	300.0
Total Recoverable						
Calcium		68000		5000	ug/L	6010B
Iron		480		100	ug/L	6010B
Manganese		44		15	ug/L	6010B
Sodium		31000		5000	ug/L	6010B
Arsenic		2.6		1.0	ug/L	6020
240-70486-4	**GW-WT-106C-100516**					
Chloride		10		1.0	mg/L	300.0
Sulfate		0.14	J	1.0	mg/L	300.0
Total Recoverable						
Calcium		47000		5000	ug/L	6010B
Iron		1100		100	ug/L	6010B
Manganese		14	J	15	ug/L	6010B
Sodium		18000		5000	ug/L	6010B
Arsenic		12		1.0	ug/L	6020

EXECUTIVE SUMMARY - Detections

Client: GHD Services Inc. Job Number: 240-70486-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
240-70486-5	**GW-WT-106B-100516**					
Vinyl chloride		0.80	J	1.0	ug/L	8260B
Chloride		26		1.0	mg/L	300.0
Sulfate		130		1.0	mg/L	300.0
Total Recoverable						
Calcium		110000		5000	ug/L	6010B
Iron		4300		100	ug/L	6010B
Manganese		42		15	ug/L	6010B
Sodium		25000		5000	ug/L	6010B
Arsenic		11		1.0	ug/L	6020
240-70486-6	**GW-WT-106A-100516**					
1,1-Dichloroethane		2.0		1.0	ug/L	8260B
cis-1,2-Dichloroethene		0.33	J	1.0	ug/L	8260B
Chloride		39		1.0	mg/L	300.0
Sulfate		65		1.0	mg/L	300.0
Total Recoverable						
Calcium		99000		5000	ug/L	6010B
Iron		380		100	ug/L	6010B
Manganese		420		15	ug/L	6010B
Sodium		29000		5000	ug/L	6010B
Arsenic		1.2		1.0	ug/L	6020
240-70486-7	**GW-WT-122B-100516**					
Chloride		42		1.0	mg/L	300.0
Sulfate		88		1.0	mg/L	300.0
Total Recoverable						
Calcium		88000		5000	ug/L	6010B
Iron		2200		100	ug/L	6010B
Manganese		79		15	ug/L	6010B
Sodium		21000		5000	ug/L	6010B
Arsenic		1.2		1.0	ug/L	6020

EXECUTIVE SUMMARY - Detections

Client: GHD Services Inc. Job Number: 240-70486-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
240-70486-8	**GW-WT-122A-100516**					
1,1-Dichloroethane		4.7		1.0	ug/L	8260B
cis-1,2-Dichloroethene		0.78	J	1.0	ug/L	8260B
Vinyl chloride		0.90	J	1.0	ug/L	8260B
Chloride		36		1.0	mg/L	300.0
Sulfate		270		5.0	mg/L	300.0
Total Recoverable						
Calcium		250000		5000	ug/L	6010B
Iron		7300		100	ug/L	6010B
Manganese		730		15	ug/L	6010B
Sodium		32000		5000	ug/L	6010B
Arsenic		0.43	J	1.0	ug/L	6020
240-70486-9	**GW-WT-122C-100516**					
Chloride		38		1.0	mg/L	300.0
Sulfate		120		1.0	mg/L	300.0
Total Recoverable						
Calcium		100000		5000	ug/L	6010B
Iron		2100		100	ug/L	6010B
Manganese		140		15	ug/L	6010B
Sodium		19000		5000	ug/L	6010B
Arsenic		3.0		1.0	ug/L	6020

METHOD SUMMARY

Client: GHD Services Inc. Job Number: 240-70486-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Volatile Organic Compounds (GC/MS)	TAL CAN	SW846 8260B	
Purge and Trap	TAL CAN		SW846 5030B
Metals (ICP)	TAL CAN	SW846 6010B	
Preparation, Total Recoverable or Dissolved Metals	TAL CAN		SW846 3005A
Metals (ICP/MS)	TAL CAN	SW846 6020	
Preparation, Total Recoverable or Dissolved Metals	TAL CAN		SW846 3005A
Anions, Ion Chromatography	TAL CAN	MCAWW 300.0	

Lab References:

TAL CAN = TestAmerica Canton

Method 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.

METHOD / ANALYST SUMMARY

Client: GHD Services Inc. Job Number: 240-70486-1

Method	Analyst	Analyst ID
SW846 8260B	Williams, Larry	LRW
SW846 6010B	Toth, Roger	RKT
SW846 6020	Heakin, David	DSH
SW846 6020	Sharma, Anjali	AS1
MCAWW 300.0	Burns, Jill	JMB
MCAWW 300.0	Nolle, Laura C	LCN

SAMPLE SUMMARY

Client: GHD Services Inc. Job Number: 240-70486-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
240-70486-1	GW-WT-102A-100416	Water	10/04/2016 1630	10/06/2016 0915
240-70486-2	GW-WT-102B-100416	Water	10/04/2016 1700	10/06/2016 0915
240-70486-3	GW-WT-102B-100416-D	Water	10/04/2016 1705	10/06/2016 0915
240-70486-4	GW-WT-106C-100516	Water	10/05/2016 0830	10/06/2016 0915
240-70486-4MS	GW-WT-106C-100516	Water	10/05/2016 0830	10/06/2016 0915
240-70486-4MSD	GW-WT-106C-100516	Water	10/05/2016 0830	10/06/2016 0915
240-70486-5	GW-WT-106B-100516	Water	10/05/2016 0907	10/06/2016 0915
240-70486-6	GW-WT-106A-100516	Water	10/05/2016 0928	10/06/2016 0915
240-70486-7	GW-WT-122B-100516	Water	10/05/2016 1035	10/06/2016 0915
240-70486-8	GW-WT-122A-100516	Water	10/05/2016 1050	10/06/2016 0915
240-70486-9	GW-WT-122C-100516	Water	10/05/2016 1135	10/06/2016 0915
240-70486-10TB	TRIP BLANK-100516-002	Water	10/05/2016 1630	10/06/2016 0915

SAMPLE RESULTS

Client: GHD Services Inc. Job Number: 240-70486-1

Client Sample ID: **GW-WT-102A-100416**

Lab Sample ID: 240-70486-1 Date Sampled: 10/04/2016 1630
Client Matrix: Water Date Received: 10/06/2016 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-251532	Instrument ID:	A3UX10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXX8969.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/14/2016 1824			Final Weight/Volume:	5 mL
Prep Date:	10/14/2016 1824				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	ND		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	118		63 - 132
4-Bromofluorobenzene (Surr)	96		73 - 120
Toluene-d8 (Surr)	103		73 - 124
Dibromofluoromethane (Surr)	95		80 - 120

Client: GHD Services Inc. Job Number: 240-70486-1

Client Sample ID: **GW-WT-102B-100416**

Lab Sample ID: 240-70486-2 Date Sampled: 10/04/2016 1700
Client Matrix: Water Date Received: 10/06/2016 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-251532	Instrument ID:	A3UX10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXX8970.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/14/2016 1846			Final Weight/Volume:	5 mL
Prep Date:	10/14/2016 1846				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	ND		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	117		63 - 132
4-Bromofluorobenzene (Surr)	98		73 - 120
Toluene-d8 (Surr)	104		73 - 124
Dibromofluoromethane (Surr)	106		80 - 120

Client: GHD Services Inc. Job Number: 240-70486-1

Client Sample ID: **GW-WT-102B-100416-D**

Lab Sample ID: 240-70486-3 Date Sampled: 10/04/2016 1705
Client Matrix: Water Date Received: 10/06/2016 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-251532	Instrument ID:	A3UX10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXX8971.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/14/2016 1908			Final Weight/Volume:	5 mL
Prep Date:	10/14/2016 1908				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	ND		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	119		63 - 132
4-Bromofluorobenzene (Surr)	102		73 - 120
Toluene-d8 (Surr)	104		73 - 124
Dibromofluoromethane (Surr)	103		80 - 120

Client: GHD Services Inc. Job Number: 240-70486-1

Client Sample ID: **GW-WT-106C-100516**

Lab Sample ID: 240-70486-4 Date Sampled: 10/05/2016 0830
Client Matrix: Water Date Received: 10/06/2016 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-251532	Instrument ID:	A3UX10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXX8988.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/15/2016 0122			Final Weight/Volume:	5 mL
Prep Date:	10/15/2016 0122				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	ND		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	123		63 - 132
4-Bromofluorobenzene (Surr)	100		73 - 120
Toluene-d8 (Surr)	106		73 - 124
Dibromofluoromethane (Surr)	104		80 - 120

Client: GHD Services Inc. Job Number: 240-70486-1

Client Sample ID: **GW-WT-106B-100516**

Lab Sample ID: 240-70486-5 Date Sampled: 10/05/2016 0907
Client Matrix: Water Date Received: 10/06/2016 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-251532	Instrument ID:	A3UX10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXX8972.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/14/2016 1930			Final Weight/Volume:	5 mL
Prep Date:	10/14/2016 1930				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	ND		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	0.80	J	0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	115		63 - 132
4-Bromofluorobenzene (Surr)	98		73 - 120
Toluene-d8 (Surr)	102		73 - 124
Dibromofluoromethane (Surr)	101		80 - 120

Client: GHD Services Inc. Job Number: 240-70486-1

Client Sample ID: **GW-WT-106A-100516**

Lab Sample ID: 240-70486-6 Date Sampled: 10/05/2016 0928
Client Matrix: Water Date Received: 10/06/2016 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-251532	Instrument ID:	A3UX10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXX8973.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/14/2016 1952			Final Weight/Volume:	5 mL
Prep Date:	10/14/2016 1952				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	2.0		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	0.33	J	0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	120		63 - 132
4-Bromofluorobenzene (Surr)	103		73 - 120
Toluene-d8 (Surr)	107		73 - 124
Dibromofluoromethane (Surr)	99		80 - 120

Client: GHD Services Inc. Job Number: 240-70486-1

Client Sample ID: **GW-WT-122B-100516**

Lab Sample ID: 240-70486-7 Date Sampled: 10/05/2016 1035
Client Matrix: Water Date Received: 10/06/2016 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-251532	Instrument ID:	A3UX10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXX8974.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/14/2016 2014			Final Weight/Volume:	5 mL
Prep Date:	10/14/2016 2014				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	ND		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	116		63 - 132
4-Bromofluorobenzene (Surr)	98		73 - 120
Toluene-d8 (Surr)	102		73 - 124
Dibromofluoromethane (Surr)	99		80 - 120

Client: GHD Services Inc. Job Number: 240-70486-1

Client Sample ID: **GW-WT-122A-100516**

Lab Sample ID: 240-70486-8 Date Sampled: 10/05/2016 1050
Client Matrix: Water Date Received: 10/06/2016 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-251532	Instrument ID:	A3UX10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXX8975.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/14/2016 2035			Final Weight/Volume:	5 mL
Prep Date:	10/14/2016 2035				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	4.7		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	0.78	J	0.30	1.0
Vinyl chloride	0.90	J	0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	121		63 - 132
4-Bromofluorobenzene (Surr)	99		73 - 120
Toluene-d8 (Surr)	104		73 - 124
Dibromofluoromethane (Surr)	105		80 - 120

Client: GHD Services Inc. Job Number: 240-70486-1

Client Sample ID: **GW-WT-122C-100516**

Lab Sample ID: 240-70486-9 Date Sampled: 10/05/2016 1135
Client Matrix: Water Date Received: 10/06/2016 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-251532	Instrument ID:	A3UX10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXX8976.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/14/2016 2058			Final Weight/Volume:	5 mL
Prep Date:	10/14/2016 2058				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	ND		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	119		63 - 132
4-Bromofluorobenzene (Surr)	101		73 - 120
Toluene-d8 (Surr)	102		73 - 124
Dibromofluoromethane (Surr)	100		80 - 120

Client: GHD Services Inc. Job Number: 240-70486-1

Client Sample ID: **TRIP BLANK-100516-002**

Lab Sample ID: 240-70486-10TB Date Sampled: 10/05/2016 1630
Client Matrix: Water Date Received: 10/06/2016 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-251532	Instrument ID:	A3UX10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXX8977.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/14/2016 2120			Final Weight/Volume:	5 mL
Prep Date:	10/14/2016 2120				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	ND		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	118		63 - 132
4-Bromofluorobenzene (Surr)	98		73 - 120
Toluene-d8 (Surr)	104		73 - 124
Dibromofluoromethane (Surr)	97		80 - 120

Client: GHD Services Inc. Job Number: 240-70486-1

Client Sample ID: **GW-WT-102A-100416**

Lab Sample ID: 240-70486-1 Date Sampled: 10/04/2016 1630
Client Matrix: Water Date Received: 10/06/2016 0915

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250332	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 2048			Final Weight/Volume:	50 mL
Prep Date:	10/07/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	80000		710	5000
Iron	630		25	100
Manganese	240		5.1	15
Sodium	78000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-251858	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250332	Lab File ID:	191SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/18/2016 0408			Final Weight/Volume:	50 mL
Prep Date:	10/07/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	0.47	J	0.35	1.0

Client: GHD Services Inc. Job Number: 240-70486-1

Client Sample ID: **GW-WT-102B-100416**

Lab Sample ID: 240-70486-2 Date Sampled: 10/04/2016 1700
Client Matrix: Water Date Received: 10/06/2016 0915

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250332	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 2053			Final Weight/Volume:	50 mL
Prep Date:	10/07/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	66000		710	5000
Iron	480		25	100
Manganese	41		5.1	15
Sodium	31000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-251858	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250332	Lab File ID:	192SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/18/2016 0412			Final Weight/Volume:	50 mL
Prep Date:	10/07/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	2.4		0.35	1.0

Client: GHD Services Inc. Job Number: 240-70486-1

Client Sample ID: **GW-WT-102B-100416-D**

Lab Sample ID: 240-70486-3 Date Sampled: 10/04/2016 1705
Client Matrix: Water Date Received: 10/06/2016 0915

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250332	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 2057			Final Weight/Volume:	50 mL
Prep Date:	10/07/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	68000		710	5000
Iron	480		25	100
Manganese	44		5.1	15
Sodium	31000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-251858	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250332	Lab File ID:	195SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/18/2016 0425			Final Weight/Volume:	50 mL
Prep Date:	10/07/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	2.6		0.35	1.0

Client: GHD Services Inc. Job Number: 240-70486-1

Client Sample ID: **GW-WT-106C-100516**

Lab Sample ID: 240-70486-4 Date Sampled: 10/05/2016 0830
Client Matrix: Water Date Received: 10/06/2016 0915

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250332	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 1557			Final Weight/Volume:	50 mL
Prep Date:	10/07/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	47000		710	5000
Iron	1100		25	100
Manganese	14	J	5.1	15
Sodium	18000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-251858	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250332	Lab File ID:	174SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/18/2016 0255			Final Weight/Volume:	50 mL
Prep Date:	10/07/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	12		0.35	1.0

Client: GHD Services Inc. Job Number: 240-70486-1

Client Sample ID: **GW-WT-106B-100516**

Lab Sample ID: 240-70486-5 Date Sampled: 10/05/2016 0907
Client Matrix: Water Date Received: 10/06/2016 0915

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250332	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 2102			Final Weight/Volume:	50 mL
Prep Date:	10/07/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	110000		710	5000
Iron	4300		25	100
Manganese	42		5.1	15
Sodium	25000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-252428	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250332	Lab File ID:	108SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/20/2016 2105			Final Weight/Volume:	50 mL
Prep Date:	10/07/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	11		0.35	1.0

Client: GHD Services Inc. Job Number: 240-70486-1

Client Sample ID: **GW-WT-106A-100516**

Lab Sample ID: 240-70486-6 Date Sampled: 10/05/2016 0928
Client Matrix: Water Date Received: 10/06/2016 0915

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250332	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 2106			Final Weight/Volume:	50 mL
Prep Date:	10/07/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	99000		710	5000
Iron	380		25	100
Manganese	420		5.1	15
Sodium	29000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-252428	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250332	Lab File ID:	109SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/20/2016 2109			Final Weight/Volume:	50 mL
Prep Date:	10/07/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	1.2		0.35	1.0

Client: GHD Services Inc. Job Number: 240-70486-1

Client Sample ID: **GW-WT-122B-100516**

Lab Sample ID: 240-70486-7 Date Sampled: 10/05/2016 1035
Client Matrix: Water Date Received: 10/06/2016 0915

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250332	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 2110			Final Weight/Volume:	50 mL
Prep Date:	10/07/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	88000		710	5000
Iron	2200		25	100
Manganese	79		5.1	15
Sodium	21000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-252428	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250332	Lab File ID:	110SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/20/2016 2114			Final Weight/Volume:	50 mL
Prep Date:	10/07/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	1.2		0.35	1.0

Client: GHD Services Inc. Job Number: 240-70486-1

Client Sample ID: **GW-WT-122A-100516**

Lab Sample ID: 240-70486-8 Date Sampled: 10/05/2016 1050
Client Matrix: Water Date Received: 10/06/2016 0915

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250332	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 2115			Final Weight/Volume:	50 mL
Prep Date:	10/07/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	250000		710	5000
Iron	7300		25	100
Manganese	730		5.1	15
Sodium	32000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-252428	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250332	Lab File ID:	111SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/20/2016 2118			Final Weight/Volume:	50 mL
Prep Date:	10/07/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	0.43	J	0.35	1.0

Client: GHD Services Inc. Job Number: 240-70486-1

Client Sample ID: **GW-WT-122C-100516**

Lab Sample ID: 240-70486-9 Date Sampled: 10/05/2016 1135
Client Matrix: Water Date Received: 10/06/2016 0915

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250332	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 2119			Final Weight/Volume:	50 mL
Prep Date:	10/07/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	100000		710	5000
Iron	2100		25	100
Manganese	140		5.1	15
Sodium	19000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-252428	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250332	Lab File ID:	112SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/20/2016 2122			Final Weight/Volume:	50 mL
Prep Date:	10/07/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	3.0		0.35	1.0

General Chemistry

Client Sample ID: **GW-WT-102A-100416**

Lab Sample ID: 240-70486-1 Date Sampled: 10/04/2016 1630
Client Matrix: Water Date Received: 10/06/2016 0915

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	140		mg/L	0.41	1.0	1.0	300.0
Analysis Batch: 240-250513	Analysis Date: 10/09/2016 1716						
Sulfate	33		mg/L	0.13	1.0	1.0	300.0
Analysis Batch: 240-250513	Analysis Date: 10/09/2016 1716						

General Chemistry

Client Sample ID: **GW-WT-102B-100416**

Lab Sample ID: 240-70486-2 Date Sampled: 10/04/2016 1700
Client Matrix: Water Date Received: 10/06/2016 0915

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	59		mg/L	0.41	1.0	1.0	300.0
Analysis Batch: 240-250513	Analysis Date: 10/09/2016 1732						
Sulfate	26		mg/L	0.13	1.0	1.0	300.0
Analysis Batch: 240-250513	Analysis Date: 10/09/2016 1732						

General Chemistry

Client Sample ID: **GW-WT-102B-100416-D**

Lab Sample ID: 240-70486-3 Date Sampled: 10/04/2016 1705
Client Matrix: Water Date Received: 10/06/2016 0915

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	59		mg/L	0.41	1.0	1.0	300.0
Analysis Batch: 240-250513	Analysis Date: 10/09/2016 1749						
Sulfate	22		mg/L	0.13	1.0	1.0	300.0
Analysis Batch: 240-250513	Analysis Date: 10/09/2016 1749						

General Chemistry

Client Sample ID: **GW-WT-106C-100516**

Lab Sample ID: 240-70486-4 Date Sampled: 10/05/2016 0830
Client Matrix: Water Date Received: 10/06/2016 0915

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	10		mg/L	0.41	1.0	1.0	300.0
Analysis Batch: 240-250513	Analysis Date: 10/09/2016 1805						
Sulfate	0.14	J	mg/L	0.13	1.0	1.0	300.0
Analysis Batch: 240-250513	Analysis Date: 10/09/2016 1805						

General Chemistry

Client Sample ID: **GW-WT-106B-100516**

Lab Sample ID: 240-70486-5 Date Sampled: 10/05/2016 0907
Client Matrix: Water Date Received: 10/06/2016 0915

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	26		mg/L	0.41	1.0	1.0	300.0
Analysis Batch: 240-250513	Analysis Date: 10/09/2016 2000						
Sulfate	130		mg/L	0.13	1.0	1.0	300.0
Analysis Batch: 240-250513	Analysis Date: 10/09/2016 2000						

General Chemistry

Client Sample ID: **GW-WT-106A-100516**

Lab Sample ID: 240-70486-6 Date Sampled: 10/05/2016 0928
Client Matrix: Water Date Received: 10/06/2016 0915

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	39		mg/L	0.41	1.0	1.0	300.0
Analysis Batch: 240-250513	Analysis Date: 10/09/2016 2016						
Sulfate	65		mg/L	0.13	1.0	1.0	300.0
Analysis Batch: 240-250513	Analysis Date: 10/09/2016 2016						

General Chemistry

Client Sample ID: **GW-WT-122B-100516**

Lab Sample ID: 240-70486-7 Date Sampled: 10/05/2016 1035
Client Matrix: Water Date Received: 10/06/2016 0915

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	42		mg/L	0.41	1.0	1.0	300.0
Analysis Batch: 240-250513	Analysis Date: 10/09/2016 2033						
Sulfate	88		mg/L	0.13	1.0	1.0	300.0
Analysis Batch: 240-250513	Analysis Date: 10/09/2016 2033						

General Chemistry

Client Sample ID: **GW-WT-122A-100516**

Lab Sample ID: 240-70486-8 Date Sampled: 10/05/2016 1050
Client Matrix: Water Date Received: 10/06/2016 0915

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	36		mg/L	0.41	1.0	1.0	300.0
Analysis Batch: 240-250513	Analysis Date: 10/09/2016 2049						
Sulfate	270		mg/L	0.65	5.0	5.0	300.0
Analysis Batch: 240-250805	Analysis Date: 10/11/2016 2022						

General Chemistry

Client Sample ID: **GW-WT-122C-100516**

Lab Sample ID: 240-70486-9 Date Sampled: 10/05/2016 1135
Client Matrix: Water Date Received: 10/06/2016 0915

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	38		mg/L	0.41	1.0	1.0	300.0
Analysis Batch: 240-250513	Analysis Date: 10/09/2016 2105						
Sulfate	120		mg/L	0.13	1.0	1.0	300.0
Analysis Batch: 240-250513	Analysis Date: 10/09/2016 2105						

DATA REPORTING QUALIFIERS

Client: GHD Services Inc. Job Number: 240-70486-1

Lab Section	Qualifier	Description
GC/MS VOA		
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
Metals		
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
General Chemistry		
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

QUALITY CONTROL RESULTS

Client: GHD Services Inc. Job Number: 240-70486-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:240-251532					
LCS 240-251532/4	Lab Control Sample	T	Water	8260B	
MB 240-251532/6	Method Blank	T	Water	8260B	
240-70486-1	GW-WT-102A-100416	T	Water	8260B	
240-70486-2	GW-WT-102B-100416	T	Water	8260B	
240-70486-3	GW-WT-102B-100416-D	T	Water	8260B	
240-70486-4	GW-WT-106C-100516	T	Water	8260B	
240-70486-4MS	Matrix Spike	T	Water	8260B	
240-70486-4MSD	Matrix Spike Duplicate	T	Water	8260B	
240-70486-5	GW-WT-106B-100516	T	Water	8260B	
240-70486-6	GW-WT-106A-100516	T	Water	8260B	
240-70486-7	GW-WT-122B-100516	T	Water	8260B	
240-70486-8	GW-WT-122A-100516	T	Water	8260B	
240-70486-9	GW-WT-122C-100516	T	Water	8260B	
240-70486-10TB	TRIP BLANK-100516-002	T	Water	8260B	

Report Basis
T = Total

Client: GHD Services Inc. Job Number: 240-70486-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 240-250332					
LCS 240-250332/2-A	Lab Control Sample	R	Water	3005A	
LCS 240-250332/27-A	Lab Control Sample	R	Water	3005A	
MB 240-250332/1-A	Method Blank	R	Water	3005A	
240-70486-1	GW-WT-102A-100416	R	Water	3005A	
240-70486-2	GW-WT-102B-100416	R	Water	3005A	
240-70486-3	GW-WT-102B-100416-D	R	Water	3005A	
240-70486-4	GW-WT-106C-100516	R	Water	3005A	
240-70486-4MS	Matrix Spike	R	Water	3005A	
240-70486-4MSD	Matrix Spike Duplicate	R	Water	3005A	
240-70486-5	GW-WT-106B-100516	R	Water	3005A	
240-70486-6	GW-WT-106A-100516	R	Water	3005A	
240-70486-7	GW-WT-122B-100516	R	Water	3005A	
240-70486-8	GW-WT-122A-100516	R	Water	3005A	
240-70486-9	GW-WT-122C-100516	R	Water	3005A	
Analysis Batch:240-250951					
LCS 240-250332/2-A	Lab Control Sample	R	Water	6010B	240-250332
MB 240-250332/1-A	Method Blank	R	Water	6010B	240-250332
240-70486-1	GW-WT-102A-100416	R	Water	6010B	240-250332
240-70486-2	GW-WT-102B-100416	R	Water	6010B	240-250332
240-70486-3	GW-WT-102B-100416-D	R	Water	6010B	240-250332
240-70486-4	GW-WT-106C-100516	R	Water	6010B	240-250332
240-70486-4MS	Matrix Spike	R	Water	6010B	240-250332
240-70486-4MSD	Matrix Spike Duplicate	R	Water	6010B	240-250332
240-70486-5	GW-WT-106B-100516	R	Water	6010B	240-250332
240-70486-6	GW-WT-106A-100516	R	Water	6010B	240-250332
240-70486-7	GW-WT-122B-100516	R	Water	6010B	240-250332
240-70486-8	GW-WT-122A-100516	R	Water	6010B	240-250332
240-70486-9	GW-WT-122C-100516	R	Water	6010B	240-250332
Analysis Batch:240-251858					
LCS 240-250332/27-A	Lab Control Sample	R	Water	6020	240-250332
MB 240-250332/1-A	Method Blank	R	Water	6020	240-250332
240-70486-1	GW-WT-102A-100416	R	Water	6020	240-250332
240-70486-2	GW-WT-102B-100416	R	Water	6020	240-250332
240-70486-3	GW-WT-102B-100416-D	R	Water	6020	240-250332
240-70486-4	GW-WT-106C-100516	R	Water	6020	240-250332
240-70486-4MS	Matrix Spike	R	Water	6020	240-250332
240-70486-4MSD	Matrix Spike Duplicate	R	Water	6020	240-250332

Client: GHD Services Inc. Job Number: 240-70486-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Analysis Batch:240-252428					
240-70486-5	GW-WT-106B-100516	R	Water	6020	240-250332
240-70486-6	GW-WT-106A-100516	R	Water	6020	240-250332
240-70486-7	GW-WT-122B-100516	R	Water	6020	240-250332
240-70486-8	GW-WT-122A-100516	R	Water	6020	240-250332
240-70486-9	GW-WT-122C-100516	R	Water	6020	240-250332

Report Basis
R = Total Recoverable

General Chemistry				
Analysis Batch:240-250513				
LCS 240-250513/28	Lab Control Sample	T	Water	300.0
LCS 240-250513/4	Lab Control Sample	T	Water	300.0
MB 240-250513/27	Method Blank	T	Water	300.0
MB 240-250513/3	Method Blank	T	Water	300.0
240-70486-1	GW-WT-102A-100416	T	Water	300.0
240-70486-2	GW-WT-102B-100416	T	Water	300.0
240-70486-3	GW-WT-102B-100416-D	T	Water	300.0
240-70486-4	GW-WT-106C-100516	T	Water	300.0
240-70486-4MS	Matrix Spike	T	Water	300.0
240-70486-4MSD	Matrix Spike Duplicate	T	Water	300.0
240-70486-5	GW-WT-106B-100516	T	Water	300.0
240-70486-6	GW-WT-106A-100516	T	Water	300.0
240-70486-7	GW-WT-122B-100516	T	Water	300.0
240-70486-8	GW-WT-122A-100516	T	Water	300.0
240-70486-9	GW-WT-122C-100516	T	Water	300.0
Analysis Batch:240-250805				
LCS 240-250805/28	Lab Control Sample	T	Water	300.0
LCS 240-250805/4	Lab Control Sample	T	Water	300.0
MB 240-250805/27	Method Blank	T	Water	300.0
MB 240-250805/3	Method Blank	T	Water	300.0
240-70486-8	GW-WT-122A-100516	T	Water	300.0

Report Basis
T = Total

Client: GHD Services Inc. Job Number: 240-70486-1

Surrogate Recovery Report

8260B Volatile Organic Compounds (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	DCA %Rec	BFB %Rec	TOL %Rec	DBFM %Rec
240-70486-1	GW-WT-102A-100416	118	96	103	95
240-70486-2	GW-WT-102B-100416	117	98	104	106
240-70486-3	GW-WT-102B-100416-D	119	102	104	103
240-70486-4	GW-WT-106C-100516	123	100	106	104
240-70486-5	GW-WT-106B-100516	115	98	102	101
240-70486-6	GW-WT-106A-100516	120	103	107	99
240-70486-7	GW-WT-122B-100516	116	98	102	99
240-70486-8	GW-WT-122A-100516	121	99	104	105
240-70486-9	GW-WT-122C-100516	119	101	102	100
240-70486-10	TRIP BLANK-100516-002	118	98	104	97
MB 240-251532/6		121	99	106	100
LCS 240-251532/4		117	109	110	100
240-70486-4 MS	GW-WT-106C-100516 MS	118	112	106	102
240-70486-4 MSD	GW-WT-106C-100516 MSD	121	105	100	103

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	63-132
BFB = 4-Bromofluorobenzene (Surr)	73-120
TOL = Toluene-d8 (Surr)	73-124
DBFM = Dibromofluoromethane (Surr)	80-120

Client: GHD Services Inc. Job Number: 240-70486-1

Method Blank - Batch: 240-251532 **Method: 8260B**
Preparation: 5030B

Lab Sample ID:	MB 240-251532/6	Analysis Batch:	240-251532	Instrument ID:	A3UX10
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	UXX8968.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/14/2016 1802	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	10/14/2016 1802				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
1,1-Dichloroethane	ND		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	121	63 - 132
4-Bromofluorobenzene (Surr)	99	73 - 120
Toluene-d8 (Surr)	106	73 - 124
Dibromofluoromethane (Surr)	100	80 - 120

Lab Control Sample - Batch: 240-251532 **Method: 8260B**
Preparation: 5030B

Lab Sample ID:	LCS 240-251532/4	Analysis Batch:	240-251532	Instrument ID:	A3UX10
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	UXX8965.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/14/2016 1657	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	10/14/2016 1657				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1-Dichloroethane	10.0	10.7	107	77 - 121	
Benzene	10.0	10.4	104	80 - 120	
cis-1,2-Dichloroethene	10.0	9.82	98	80 - 120	
Vinyl chloride	10.0	7.99	80	60 - 129	

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	117	63 - 132
4-Bromofluorobenzene (Surr)	109	73 - 120
Toluene-d8 (Surr)	110	73 - 124
Dibromofluoromethane (Surr)	100	80 - 120

Client: GHD Services Inc.

Job Number: 240-70486-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 240-251532

Method: 8260B
Preparation: 5030B

MS Lab Sample ID:	240-70486-4	Analysis Batch:	240-251532	Instrument ID:	A3UX10
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	UXX8989.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/15/2016 0144			Final Weight/Volume:	5 mL
Prep Date:	10/15/2016 0144				5 mL
Leach Date:	N/A				

MSD Lab Sample ID:	240-70486-4	Analysis Batch:	240-251532	Instrument ID:	A3UX10
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	UXX8990.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/15/2016 0207			Final Weight/Volume:	5 mL
Prep Date:	10/15/2016 0207				5 mL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
1,1-Dichloroethane	102	110	57 - 135	7	35		
Benzene	94	99	67 - 126	5	31		
cis-1,2-Dichloroethene	93	97	64 - 134	4	35		
Vinyl chloride	79	79	38 - 147	1	35		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	118	121	63 - 132
4-Bromofluorobenzene (Surr)	112	105	73 - 120
Toluene-d8 (Surr)	106	100	73 - 124
Dibromofluoromethane (Surr)	102	103	80 - 120

Client: GHD Services Inc. Job Number: 240-70486-1

Method Blank - Batch: 240-250332

Method: 6010B
Preparation: 3005A
Total Recoverable

Lab Sample ID:	MB 240-250332/1-A	Analysis Batch:	240-250951	Instrument ID:	I12
Client Matrix:	Water	Prep Batch:	240-250332	Lab File ID:	I12101116A.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 1548	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	10/07/2016 1400				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Calcium	ND		710	5000
Iron	ND		25	100
Manganese	ND		5.1	15
Sodium	ND		330	5000
Lead	ND		1.9	3.0

Lab Control Sample - Batch: 240-250332

Method: 6010B
Preparation: 3005A
Total Recoverable

Lab Sample ID:	LCS 240-250332/2-A	Analysis Batch:	240-250951	Instrument ID:	I12
Client Matrix:	Water	Prep Batch:	240-250332	Lab File ID:	I12101116A.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 1553	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	10/07/2016 1400				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Calcium	50000	53500	107	80 - 120	
Iron	1000	1050	105	80 - 120	
Manganese	500	519	104	80 - 120	
Sodium	50000	54500	109	80 - 120	
Lead	500	523	105	80 - 120	

Client: GHD Services Inc.

Job Number: 240-70486-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 240-250332

Method: 6010B
Preparation: 3005A
Total Recoverable

MS Lab Sample ID:	240-70486-4	Analysis Batch:	240-250951	Instrument ID:	I12
Client Matrix:	Water	Prep Batch:	240-250332	Lab File ID:	I12101116A.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 1605			Final Weight/Volume:	50 mL
Prep Date:	10/07/2016 1400				
Leach Date:	N/A				

MSD Lab Sample ID:	240-70486-4	Analysis Batch:	240-250951	Instrument ID:	I12
Client Matrix:	Water	Prep Batch:	240-250332	Lab File ID:	I12101116A.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 1609			Final Weight/Volume:	50 mL
Prep Date:	10/07/2016 1400				
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Calcium	109	101	75 - 125	4	20		
Iron	108	99	75 - 125	4	20		
Manganese	103	100	75 - 125	3	20		
Sodium	112	106	75 - 125	4	20		
Lead	102	100	75 - 125	1	20		

Client: GHD Services Inc. Job Number: 240-70486-1

Method Blank - Batch: 240-250332

Method: 6020
Preparation: 3005A
Total Recoverable

Lab Sample ID:	MB 240-250332/1-A	Analysis Batch:	240-251858	Instrument ID:	I10
Client Matrix:	Water	Prep Batch:	240-250332	Lab File ID:	172_Blk.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/18/2016 0247	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	10/07/2016 1400				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Arsenic	ND		0.35	1.0

Lab Control Sample - Batch: 240-250332

Method: 6020
Preparation: 3005A
Total Recoverable

Lab Sample ID:	LCS 240-250332/27-A	Analysis Batch:	240-251858	Instrument ID:	I10
Client Matrix:	Water	Prep Batch:	240-250332	Lab File ID:	173_LCS.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/18/2016 0251	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	10/07/2016 1400				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Arsenic	1000	984	98	80 - 120	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 240-250332

Method: 6020
Preparation: 3005A
Total Recoverable

MS Lab Sample ID:	240-70486-4	Analysis Batch:	240-251858	Instrument ID:	I10
Client Matrix:	Water	Prep Batch:	240-250332	Lab File ID:	177SMPL.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/18/2016 0308			Final Weight/Volume:	50 mL
Prep Date:	10/07/2016 1400				
Leach Date:	N/A				

MSD Lab Sample ID:	240-70486-4	Analysis Batch:	240-251858	Instrument ID:	I10
Client Matrix:	Water	Prep Batch:	240-250332	Lab File ID:	178SMPL.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/18/2016 0312			Final Weight/Volume:	50 mL
Prep Date:	10/07/2016 1400				
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Arsenic	96	98	75 - 125	2	20		

Client: GHD Services Inc. Job Number: 240-70486-1

Method Blank - Batch: 240-250513 **Method: 300.0**
Preparation: N/A

Lab Sample ID:	MB 240-250513/3	Analysis Batch:	240-250513	Instrument ID:	SIMON
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	4240-0058803-003.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/09/2016 1220	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Chloride	ND		0.41	1.0
Sulfate	ND		0.13	1.0

Method Blank - Batch: 240-250513 **Method: 300.0**
Preparation: N/A

Lab Sample ID:	MB 240-250513/27	Analysis Batch:	240-250513	Instrument ID:	SIMON
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	28240-0058803-027.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/09/2016 1854	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Chloride	ND		0.41	1.0
Sulfate	ND		0.13	1.0

Client: GHD Services Inc. Job Number: 240-70486-1

Lab Control Sample - Batch: 240-250513 **Method: 300.0**
Preparation: N/A

Lab Sample ID:	LCS 240-250513/4	Analysis Batch:	240-250513	Instrument ID:	SIMON
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	5240-0058803-004.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/09/2016 1237	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	50.0	53.2	106	90 - 110	
Sulfate	50.0	50.1	100	90 - 110	

Lab Control Sample - Batch: 240-250513 **Method: 300.0**
Preparation: N/A

Lab Sample ID:	LCS 240-250513/28	Analysis Batch:	240-250513	Instrument ID:	SIMON
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	29240-0058803-028.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/09/2016 1911	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	50.0	54.7	109	90 - 110	
Sulfate	50.0	51.2	102	90 - 110	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 240-250513 **Method: 300.0**
Preparation: N/A

MS Lab Sample ID:	240-70486-4	Analysis Batch:	240-250513	Instrument ID:	SIMON
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	30240-0058803-029.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/09/2016 1927			Final Weight/Volume:	5 mL
Prep Date:	N/A				25 uL
Leach Date:	N/A				

MSD Lab Sample ID:	240-70486-4	Analysis Batch:	240-250513	Instrument ID:	SIMON
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	31240-0058803-030.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/09/2016 1943			Final Weight/Volume:	5 mL
Prep Date:	N/A				25 uL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Chloride	117	117	80 - 120	0	15		
Sulfate	106	104	80 - 120	2	15		

Client: GHD Services Inc. Job Number: 240-70486-1

Method Blank - Batch: 240-250805 **Method: 300.0**
Preparation: N/A

Lab Sample ID:	MB 240-250805/3	Analysis Batch:	240-250805	Instrument ID:	VERONICA
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	4240-0058875-003.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/11/2016 1058	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Chloride	ND		0.41	1.0
Sulfate	ND		0.13	1.0

Method Blank - Batch: 240-250805 **Method: 300.0**
Preparation: N/A

Lab Sample ID:	MB 240-250805/27	Analysis Batch:	240-250805	Instrument ID:	VERONICA
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	28240-0058875-027.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/11/2016 1901	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Sulfate	ND		0.13	1.0

Client: GHD Services Inc.

Job Number: 240-70486-1

Lab Control Sample - Batch: 240-250805

Method: 300.0
Preparation: N/A

Lab Sample ID:	LCS 240-250805/4	Analysis Batch:	240-250805	Instrument ID:	VERONICA
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	5240-0058875-004.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/11/2016 1118	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	50.0	50.9	102	90 - 110	
Sulfate	50.0	52.1	104	90 - 110	

Lab Control Sample - Batch: 240-250805

Method: 300.0
Preparation: N/A

Lab Sample ID:	LCS 240-250805/28	Analysis Batch:	240-250805	Instrument ID:	VERONICA
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	29240-0058875-028.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/11/2016 1921	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	50.0	51.2	102	90 - 110	

1.4 | C1.8

GHD
6400 Shafer Court - Suite 400
Rosemont, Illinois, 60018
773 380 9933 phone
WWW.GHD.COM

CHAIN-OF-CUSTODY RECORD

SHIPPED TO (Laboratory Name): Test America

REFERENCE NUMBER: 39611

PROJECT NAME: Himco

SAMPLER'S SIGNATURE: John Hargens PRINTED NAME: John Hargens

SEQ. No.	DATE	TIME	SAMPLE IDENTIFICATION No.	SAMPLE MATRIX	No. OF CONTAINERS	select VOC	Arsenic	select metals	chloride	sulfate					REMARKS
	10/4/16	1630	GW-WT 102 A-100416	Water	5	✓	✓	✓	✓	✓					
		1700	GW-WT 102B-100416		5	✓	✓	✓	✓	✓					
		1705	GW-WT 102 B-100416-D		5	✓	✓	✓	✓	✓					
	10/5/16	830	GW-WT 106 C-100516		13	✓	✓	✓	✓	✓					MS MSD
		907	GW-WT 106 B-100516		5	✓	✓	✓	✓	✓					
		928	GW-WT 106 A-100516		5	✓	✓	✓	✓	✓					
		1035	GW-WT 122B-100516		5	✓	✓	✓	✓	✓					
		1050	GW-WT 122A-100516		5	✓	✓	✓	✓	✓					
		1135	GW-WT 122C-100516		5	✓	✓	✓	✓	✓					
		1630	Trip Blank-100516-002		1	✓									

TOTAL NUMBER OF CONTAINERS 64

240-70486 Chain of Custody

RELINQUISHED BY: ① John Hargens	DATE: TIME:	RECEIVED BY: ②	DATE: 10/06/16 TIME: 915
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fed-X TRACKING No.

White -Fully Executed Copy
Yellow -Receiving Laboratory Copy
Pink -Shipper Copy
Goldenrod -Sampler Copy

SAMPLE TEAM:

RECEIVED FOR LABORATORY BY:

DATE: TIME:

8492

11034001-00(PRES001)GN-CO001

TestAmerica Canton Sample Receipt Form/Narrative **Login # :** 70486
Canton Facility

Client GHD Site Name _____ Cooler unpacked by: DSO
Cooler Received on 10/06/16 Opened on 10/06/16
FedEx: 1st Grd Exp UPS FAS Stetson Client Drop Off TestAmerica Courier Other _____

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

TestAmerica Cooler # _____ 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-8 (CF +0.4 °C) Observed Cooler Temp. 1.4 °C Corrected Cooler Temp. 1.8 °C
   IR GUN #36 (CF +1.3°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
2. Were custody seals on the outside of the cooler(s)? If Yes Quantity _____ Yes No
   -Were custody seals on the outside of the cooler(s) signed & dated? Yes No NA
   -Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
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 11-15 have been checked at the originating laboratory.
11. Were sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# **HC574756**
12. Were VOAs on the COC? Yes No
13. Were air bubbles >6 mm in any VOA vials? Yes No NA
14. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # BL152019B Yes No
15. Was a LL Hg or Me Hg trip blank present? _____ Yes No

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

Concerning _____

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by:

15. 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)

16. SAMPLE PRESERVATION

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

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
GW-WT-102A-100416	240-70486-E-1	Plastic 500ml - with Nitric Acid	<2	_____	_____
GW-WT-102B-100416	240-70486-E-2	Plastic 500ml - with Nitric Acid	<2	_____	_____
GW-WT-102B-100416-D	240-70486-E-3	Plastic 500ml - with Nitric Acid	<2	_____	_____
GW-WT-106C-100516	240-70486-L-4	Plastic 500ml - with Nitric Acid	<2	_____	_____
GW-WT-106C-100516	240-70486-M-4	Plastic 500ml - with Nitric Acid	<2	_____	_____
GW-WT-106B-100516	240-70486-E-5	Plastic 500ml - with Nitric Acid	<2	_____	_____
GW-WT-106A-100516	240-70486-E-6	Plastic 500ml - with Nitric Acid	<2	_____	_____
GW-WT-122B-100516	240-70486-E-7	Plastic 500ml - with Nitric Acid	<2	_____	_____
GW-WT-122A-100516	240-70486-E-8	Plastic 500ml - with Nitric Acid	<2	_____	_____
GW-WT-122C-100516	240-70486-E-9	Plastic 500ml - with Nitric Acid	<2	_____	_____

ANALYTICAL REPORT

Job Number: 240-70584-1

Job Description: 39611, HIMCO

For:
GHD Services Inc.
6400 Shafer Court
Suite 400
Rosemont, IL 60018

Attention: Nancy Bergstrom

Approved for release.
Amy L McCormick
Project Manager II
10/22/2016 3:06 PM

Amy L McCormick, Project Manager II
4101 Shuffel Street NW, North Canton, OH, 44720
(330)966-9787
amy.mccormick@testamericainc.com
10/22/2016

cc: EDD CRA
CRA Tracking CRA Tracking
Mr. Steve Day

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the 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. This report is confidential and is intended for the sole use of TestAmerica and its client. All questions regarding this report should be directed to the TestAmerica Project Manager who has signed this report.

CASE NARRATIVE

Client: GHD Services Inc.

Project: 39611, HIMCO

Report Number: 240-70584-1

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.

TestAmerica Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. 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 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 TestAmerica and its client.

RECEIPT
The samples were received on 10/7/2016 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 3.8º C and 4.0º C.

VOLATILE ORGANIC COMPOUNDS (GCMS)
Samples GW-WT114B-100516 (240-70584-1), GW-WT114A-100516 (240-70584-2), GW-WT114C-100516 (240-70584-3), GW-WT114C-100516-E (240-70584-4), GW-WT115A-100516 (240-70584-5), GW-WT115C-100516 (240-70584-6), GW-WT115B-100516 (240-70584-7), GW-WT115B-100516-D (240-70584-8), GW-WT101C-100616 (240-70584-9), GW-WT101A-100616 (240-70584-10), GW-WT101D-100616 (240-70584-11), GW-WT101E-100616 (240-70584-12) and TRIP BLANK-100616-003 (240-70584-13) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 10/14/2016 and 10/15/2016.

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

TOTAL RECOVERABLE METALS (ICP)
Samples GW-WT114B-100516 (240-70584-1), GW-WT114A-100516 (240-70584-2), GW-WT114C-100516 (240-70584-3), GW-WT114C-100516-E (240-70584-4), GW-WT115A-100516 (240-70584-5), GW-WT115C-100516 (240-70584-6), GW-WT115B-100516 (240-70584-7), GW-WT115B-100516-D (240-70584-8), GW-WT101C-100616 (240-70584-9), GW-WT101A-100616 (240-70584-10), GW-WT101D-100616 (240-70584-11) and GW-WT101E-100616 (240-70584-12) were analyzed for total recoverable metals (ICP) in accordance with EPA SW-846 Method 6010B. The samples were prepared on 10/10/2016 and analyzed on 10/11/2016.

Some requested practical quantitation limits (PQLs) for samples GW-WT114B-100516 (240-70584-1), GW-WT114A-100516 (240-70584-2), GW-WT114C-100516 (240-70584-3), GW-WT114C-100516-E (240-70584-4), GW-WT115A-100516 (240-70584-5), GW-WT115C-100516 (240-70584-6), GW-WT115B-100516 (240-70584-7), GW-WT115B-100516-D (240-70584-8), GW-WT101C-100616 (240-70584-9), GW-WT101A-100616 (240-70584-10), GW-WT101D-100616 (240-70584-11) and GW-WT101E-100616 (240-70584-12) fall below the laboratory's verified standard quantitation limit. The continuing calibration blanks and method blanks may not support the lower PQL.

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-WT114B-100516 (240-70584-1), GW-WT114A-100516 (240-70584-2), GW-WT114C-100516 (240-70584-3), GW-WT114C-100516-E (240-70584-4), GW-WT115A-100516 (240-70584-5), GW-WT115C-100516 (240-70584-6), GW-WT115B-100516 (240-70584-7), GW-WT115B-100516-D (240-70584-8), GW-WT101C-100616 (240-70584-9),

GW-WT101A-100616 (240-70584-10), GW-WT101D-100616 (240-70584-11) and GW-WT101E-100616 (240-70584-12) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020. The samples were prepared on 10/10/2016 and analyzed on 10/18/2016.

Some requested practical quantitation limits (PQLs) for samples GW-WT114B-100516 (240-70584-1), GW-WT114A-100516 (240-70584-2), GW-WT114C-100516 (240-70584-3), GW-WT114C-100516-E (240-70584-4), GW-WT115A-100516 (240-70584-5), GW-WT115C-100516 (240-70584-6), GW-WT115B-100516 (240-70584-7), GW-WT115B-100516-D (240-70584-8), GW-WT101C-100616 (240-70584-9), GW-WT101A-100616 (240-70584-10), GW-WT101D-100616 (240-70584-11) and GW-WT101E-100616 (240-70584-12) fall below the laboratory's verified standard quantitation limit. The continuing calibration blanks and method blanks may not support the lower PQL.

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

ANIONS

Samples GW-WT114B-100516 (240-70584-1), GW-WT114A-100516 (240-70584-2), GW-WT114C-100516 (240-70584-3), GW-WT114C-100516-E (240-70584-4), GW-WT115A-100516 (240-70584-5), GW-WT115C-100516 (240-70584-6), GW-WT115B-100516 (240-70584-7), GW-WT115B-100516-D (240-70584-8), GW-WT101C-100616 (240-70584-9), GW-WT101A-100616 (240-70584-10), GW-WT101D-100616 (240-70584-11) and GW-WT101E-100616 (240-70584-12) were analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 10/12/2016.

Samples GW-WT114B-100516 (240-70584-1)[20X], GW-WT114A-100516 (240-70584-2)[5X], GW-WT115B-100516 (240-70584-7)[5X] and GW-WT115B-100516-D (240-70584-8)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

EXECUTIVE SUMMARY - Detections

Client: GHD Services Inc. Job Number: 240-70584-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
240-70584-1	**GW-WT114B-100516**					
1,1-Dichloroethane		0.95	J	1.0	ug/L	8260B
cis-1,2-Dichloroethene		0.32	J	1.0	ug/L	8260B
Chloride		31		20	mg/L	300.0
Sulfate		54		20	mg/L	300.0
Total Recoverable						
Calcium		64000		5000	ug/L	6010B
Iron		2000		100	ug/L	6010B
Manganese		39		15	ug/L	6010B
Sodium		20000		5000	ug/L	6010B
Arsenic		7.6		1.0	ug/L	6020
240-70584-2	**GW-WT114A-100516**					
Chloride		400		5.0	mg/L	300.0
Sulfate		47		5.0	mg/L	300.0
Total Recoverable						
Calcium		91000		5000	ug/L	6010B
Iron		3700		100	ug/L	6010B
Manganese		360		15	ug/L	6010B
Sodium		270000		5000	ug/L	6010B
Arsenic		4.1		1.0	ug/L	6020
240-70584-3	**GW-WT114C-100516**					
1,1-Dichloroethane		0.82	J	1.0	ug/L	8260B
Chloride		34		1.0	mg/L	300.0
Sulfate		86		1.0	mg/L	300.0
Total Recoverable						
Calcium		72000		5000	ug/L	6010B
Iron		2500		100	ug/L	6010B
Manganese		25		15	ug/L	6010B
Sodium		16000		5000	ug/L	6010B
Arsenic		19		1.0	ug/L	6020
240-70584-4	**GW-WT114C-100516-E**					
Sulfate		0.32	J	1.0	mg/L	300.0

EXECUTIVE SUMMARY - Detections

Client: GHD Services Inc. Job Number: 240-70584-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
240-70584-5	**GW-WT115A-100516**					
Chloride		0.62	J	1.0	mg/L	300.0
Sulfate		0.83	J	1.0	mg/L	300.0
Total Recoverable						
Calcium		47000		5000	ug/L	6010B
Iron		7400		100	ug/L	6010B
Manganese		640		15	ug/L	6010B
Sodium		1200	J	5000	ug/L	6010B
Arsenic		2.2		1.0	ug/L	6020
240-70584-6	**GW-WT115C-100516**					
1,1-Dichloroethane		2.8		1.0	ug/L	8260B
cis-1,2-Dichloroethene		0.36	J	1.0	ug/L	8260B
Chloride		40		1.0	mg/L	300.0
Sulfate		77		1.0	mg/L	300.0
Total Recoverable						
Calcium		84000		5000	ug/L	6010B
Iron		2300		100	ug/L	6010B
Manganese		51		15	ug/L	6010B
Sodium		21000		5000	ug/L	6010B
Arsenic		2.0		1.0	ug/L	6020
240-70584-7	**GW-WT115B-100516**					
1,1-Dichloroethane		4.9		1.0	ug/L	8260B
Benzene		19		1.0	ug/L	8260B
cis-1,2-Dichloroethene		2.0		1.0	ug/L	8260B
Chloride		30		5.0	mg/L	300.0
Sulfate		160		5.0	mg/L	300.0
Total Recoverable						
Calcium		290000		5000	ug/L	6010B
Sodium		33000		5000	ug/L	6010B
Arsenic		0.96	J	1.0	ug/L	6020

EXECUTIVE SUMMARY - Detections

Client: GHD Services Inc. Job Number: 240-70584-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
240-70584-8FD	**GW-WT115B-100516-D**					
1,1-Dichloroethane		4.7		1.0	ug/L	8260B
Benzene		18		1.0	ug/L	8260B
cis-1,2-Dichloroethene		2.0		1.0	ug/L	8260B
Chloride		29		5.0	mg/L	300.0
Sulfate		180		5.0	mg/L	300.0
Total Recoverable						
Calcium		300000		5000	ug/L	6010B
Sodium		34000		5000	ug/L	6010B
Arsenic		0.98	J	1.0	ug/L	6020
240-70584-9	**GW-WT101C-100616**					
Chloride		2.0		1.0	mg/L	300.0
Sulfate		5.5		1.0	mg/L	300.0
Total Recoverable						
Calcium		49000		5000	ug/L	6010B
Iron		220		100	ug/L	6010B
Manganese		7.0	J	15	ug/L	6010B
Sodium		16000		5000	ug/L	6010B
Arsenic		6.9		1.0	ug/L	6020
240-70584-10	**GW-WT101A-100616**					
1,1-Dichloroethane		3.0		1.0	ug/L	8260B
Benzene		1.2		1.0	ug/L	8260B
cis-1,2-Dichloroethene		0.47	J	1.0	ug/L	8260B
Chloride		12		1.0	mg/L	300.0
Sulfate		150		1.0	mg/L	300.0
Total Recoverable						
Calcium		230000		5000	ug/L	6010B
Iron		22000		100	ug/L	6010B
Manganese		3200		15	ug/L	6010B
Sodium		13000		5000	ug/L	6010B
Arsenic		5.2		1.0	ug/L	6020

EXECUTIVE SUMMARY - Detections

Client: GHD Services Inc. Job Number: 240-70584-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
240-70584-11	**GW-WT101D-100616**					
1,1-Dichloroethane		4.0		1.0	ug/L	8260B
cis-1,2-Dichloroethene		0.58	J	1.0	ug/L	8260B
Chloride		38		1.0	mg/L	300.0
Sulfate		79		1.0	mg/L	300.0
Total Recoverable						
Calcium		78000		5000	ug/L	6010B
Iron		1400		100	ug/L	6010B
Manganese		40		15	ug/L	6010B
Sodium		21000		5000	ug/L	6010B
Arsenic		0.53	J	1.0	ug/L	6020
240-70584-12	**GW-WT101E-100616**					
1,1-Dichloroethane		2.2		1.0	ug/L	8260B
cis-1,2-Dichloroethene		0.36	J	1.0	ug/L	8260B
Chloride		39		1.0	mg/L	300.0
Sulfate		85		1.0	mg/L	300.0
Total Recoverable						
Calcium		83000		5000	ug/L	6010B
Iron		3200		100	ug/L	6010B
Manganese		39		15	ug/L	6010B
Sodium		18000		5000	ug/L	6010B
Arsenic		3.2		1.0	ug/L	6020

METHOD SUMMARY

Client: GHD Services Inc. Job Number: 240-70584-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Volatile Organic Compounds (GC/MS)	TAL CAN	SW846 8260B	
Purge and Trap	TAL CAN		SW846 5030B
Metals (ICP)	TAL CAN	SW846 6010B	
Preparation, Total Recoverable or Dissolved Metals	TAL CAN		SW846 3005A
Metals (ICP/MS)	TAL CAN	SW846 6020	
Preparation, Total Recoverable or Dissolved Metals	TAL CAN		SW846 3005A
Anions, Ion Chromatography	TAL CAN	MCAWW 300.0	

Lab References:

TAL CAN = TestAmerica Canton

Method 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.

METHOD / ANALYST SUMMARY

Client: GHD Services Inc. Job Number: 240-70584-1

Method	Analyst	Analyst ID
SW846 8260B	Williams, Larry	LRW
SW846 6010B	Toth, Roger	RKT
SW846 6020	Heakin, David	DSH
MCAWW 300.0	Nolle, Laura C	LCN

SAMPLE SUMMARY

Client: GHD Services Inc. Job Number: 240-70584-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
240-70584-1	GW-WT114B-100516	Water	10/05/2016 1310	10/07/2016 0920
240-70584-2	GW-WT114A-100516	Water	10/05/2016 1330	10/07/2016 0920
240-70584-3	GW-WT114C-100516	Water	10/05/2016 1358	10/07/2016 0920
240-70584-4	GW-WT114C-100516-E	Water	10/05/2016 1415	10/07/2016 0920
240-70584-5	GW-WT115A-100516	Water	10/05/2016 1515	10/07/2016 0920
240-70584-6	GW-WT115C-100516	Water	10/05/2016 1510	10/07/2016 0920
240-70584-7	GW-WT115B-100516	Water	10/05/2016 1610	10/07/2016 0920
240-70584-8FD	GW-WT115B-100516-D	Water	10/05/2016 1620	10/07/2016 0920
240-70584-9	GW-WT101C-100616	Water	10/06/2016 0835	10/07/2016 0920
240-70584-9MS	GW-WT101C-100616	Water	10/06/2016 0835	10/07/2016 0920
240-70584-9MSD	GW-WT101C-100616	Water	10/06/2016 0835	10/07/2016 0920
240-70584-10	GW-WT101A-100616	Water	10/06/2016 0840	10/07/2016 0920
240-70584-11	GW-WT101D-100616	Water	10/06/2016 0950	10/07/2016 0920
240-70584-12	GW-WT101E-100616	Water	10/06/2016 0955	10/07/2016 0920
240-70584-13TB	TRIP BLANK-100616-003	Water	10/06/2016 1000	10/07/2016 0920

SAMPLE RESULTS

Client: GHD Services Inc. Job Number: 240-70584-1

Client Sample ID: **GW-WT114B-100516**

Lab Sample ID: 240-70584-1 Date Sampled: 10/05/2016 1310
Client Matrix: Water Date Received: 10/07/2016 0920

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-251532	Instrument ID:	A3UX10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXX8982.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/14/2016 2310			Final Weight/Volume:	5 mL
Prep Date:	10/14/2016 2310				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	0.95	J	0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	0.32	J	0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	123		63 - 132
4-Bromofluorobenzene (Surr)	98		73 - 120
Toluene-d8 (Surr)	105		73 - 124
Dibromofluoromethane (Surr)	100		80 - 120

Client: GHD Services Inc. Job Number: 240-70584-1

Client Sample ID: **GW-WT114A-100516**

Lab Sample ID: 240-70584-2 Date Sampled: 10/05/2016 1330
Client Matrix: Water Date Received: 10/07/2016 0920

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-251532	Instrument ID:	A3UX10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXX8983.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/14/2016 2332			Final Weight/Volume:	5 mL
Prep Date:	10/14/2016 2332				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	ND		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	119		63 - 132
4-Bromofluorobenzene (Surr)	101		73 - 120
Toluene-d8 (Surr)	103		73 - 124
Dibromofluoromethane (Surr)	104		80 - 120

Client: GHD Services Inc. Job Number: 240-70584-1

Client Sample ID: **GW-WT114C-100516**

Lab Sample ID: 240-70584-3 Date Sampled: 10/05/2016 1358
Client Matrix: Water Date Received: 10/07/2016 0920

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-251532	Instrument ID:	A3UX10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXX8984.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/14/2016 2355			Final Weight/Volume:	5 mL
Prep Date:	10/14/2016 2355				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	0.82	J	0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	124		63 - 132
4-Bromofluorobenzene (Surr)	94		73 - 120
Toluene-d8 (Surr)	111		73 - 124
Dibromofluoromethane (Surr)	104		80 - 120

Client: GHD Services Inc. Job Number: 240-70584-1

Client Sample ID: **GW-WT114C-100516-E**

Lab Sample ID: 240-70584-4 Date Sampled: 10/05/2016 1415
Client Matrix: Water Date Received: 10/07/2016 0920

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-251532	Instrument ID:	A3UX10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXX8985.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/15/2016 0017			Final Weight/Volume:	5 mL
Prep Date:	10/15/2016 0017				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	ND		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	120		63 - 132
4-Bromofluorobenzene (Surr)	93		73 - 120
Toluene-d8 (Surr)	102		73 - 124
Dibromofluoromethane (Surr)	106		80 - 120

Client: GHD Services Inc. Job Number: 240-70584-1

Client Sample ID: **GW-WT115A-100516**

Lab Sample ID: 240-70584-5 Date Sampled: 10/05/2016 1515
Client Matrix: Water Date Received: 10/07/2016 0920

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-251532	Instrument ID:	A3UX10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXX8986.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/15/2016 0039			Final Weight/Volume:	5 mL
Prep Date:	10/15/2016 0039				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	ND		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	123		63 - 132
4-Bromofluorobenzene (Surr)	97		73 - 120
Toluene-d8 (Surr)	99		73 - 124
Dibromofluoromethane (Surr)	103		80 - 120

Client: GHD Services Inc. Job Number: 240-70584-1

Client Sample ID: **GW-WT115C-100516**

Lab Sample ID: 240-70584-6 Date Sampled: 10/05/2016 1510
Client Matrix: Water Date Received: 10/07/2016 0920

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-251532	Instrument ID:	A3UX10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXX8987.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/15/2016 0100			Final Weight/Volume:	5 mL
Prep Date:	10/15/2016 0100				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	2.8		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	0.36	J	0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	118		63 - 132
4-Bromofluorobenzene (Surr)	93		73 - 120
Toluene-d8 (Surr)	109		73 - 124
Dibromofluoromethane (Surr)	102		80 - 120

Client: GHD Services Inc. Job Number: 240-70584-1

Client Sample ID: **GW-WT115B-100516**

Lab Sample ID: 240-70584-7 Date Sampled: 10/05/2016 1610
Client Matrix: Water Date Received: 10/07/2016 0920

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-251577	Instrument ID:	A3UX10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXX8996.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/15/2016 1349			Final Weight/Volume:	5 mL
Prep Date:	10/15/2016 1349				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	4.9		0.25	1.0
Benzene	19		0.28	1.0
cis-1,2-Dichloroethene	2.0		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	114		63 - 132
4-Bromofluorobenzene (Surr)	105		73 - 120
Toluene-d8 (Surr)	103		73 - 124
Dibromofluoromethane (Surr)	101		80 - 120

Client: GHD Services Inc. Job Number: 240-70584-1

Client Sample ID: **GW-WT115B-100516-D**

Lab Sample ID: 240-70584-8FD Date Sampled: 10/05/2016 1620
Client Matrix: Water Date Received: 10/07/2016 0920

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-251577	Instrument ID:	A3UX10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXX8997.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/15/2016 1411			Final Weight/Volume:	5 mL
Prep Date:	10/15/2016 1411				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	4.7		0.25	1.0
Benzene	18		0.28	1.0
cis-1,2-Dichloroethene	2.0		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	113		63 - 132
4-Bromofluorobenzene (Surr)	102		73 - 120
Toluene-d8 (Surr)	110		73 - 124
Dibromofluoromethane (Surr)	96		80 - 120

Client: GHD Services Inc. Job Number: 240-70584-1

Client Sample ID: **GW-WT101C-100616**

Lab Sample ID: 240-70584-9 Date Sampled: 10/06/2016 0835
Client Matrix: Water Date Received: 10/07/2016 0920

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-251577	Instrument ID:	A3UX10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXX8998.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/15/2016 1433			Final Weight/Volume:	5 mL
Prep Date:	10/15/2016 1433				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	ND		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	115		63 - 132
4-Bromofluorobenzene (Surr)	96		73 - 120
Toluene-d8 (Surr)	108		73 - 124
Dibromofluoromethane (Surr)	106		80 - 120

Client: GHD Services Inc. Job Number: 240-70584-1

Client Sample ID: **GW-WT101A-100616**

Lab Sample ID: 240-70584-10 Date Sampled: 10/06/2016 0840
Client Matrix: Water Date Received: 10/07/2016 0920

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-251577	Instrument ID:	A3UX10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXX9001.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/15/2016 1539			Final Weight/Volume:	5 mL
Prep Date:	10/15/2016 1539				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	3.0		0.25	1.0
Benzene	1.2		0.28	1.0
cis-1,2-Dichloroethene	0.47	J	0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	114		63 - 132
4-Bromofluorobenzene (Surr)	93		73 - 120
Toluene-d8 (Surr)	110		73 - 124
Dibromofluoromethane (Surr)	101		80 - 120

Client: GHD Services Inc. Job Number: 240-70584-1

Client Sample ID: **GW-WT101D-100616**

Lab Sample ID: 240-70584-11 Date Sampled: 10/06/2016 0950
Client Matrix: Water Date Received: 10/07/2016 0920

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-251577	Instrument ID:	A3UX10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXX9002.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/15/2016 1601			Final Weight/Volume:	5 mL
Prep Date:	10/15/2016 1601				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	4.0		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	0.58	J	0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	120		63 - 132
4-Bromofluorobenzene (Surr)	93		73 - 120
Toluene-d8 (Surr)	110		73 - 124
Dibromofluoromethane (Surr)	103		80 - 120

Client: GHD Services Inc. Job Number: 240-70584-1

Client Sample ID: **GW-WT101E-100616**

Lab Sample ID: 240-70584-12 Date Sampled: 10/06/2016 0955
Client Matrix: Water Date Received: 10/07/2016 0920

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-251577	Instrument ID:	A3UX10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXX9003.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/15/2016 1623			Final Weight/Volume:	5 mL
Prep Date:	10/15/2016 1623				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	2.2		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	0.36	J	0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	119		63 - 132
4-Bromofluorobenzene (Surr)	97		73 - 120
Toluene-d8 (Surr)	105		73 - 124
Dibromofluoromethane (Surr)	101		80 - 120

Client: GHD Services Inc. Job Number: 240-70584-1

Client Sample ID: **TRIP BLANK-100616-003**

Lab Sample ID: 240-70584-13TB Date Sampled: 10/06/2016 1000
Client Matrix: Water Date Received: 10/07/2016 0920

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	240-251577	Instrument ID:	A3UX10
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	UXX9004.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/15/2016 1645			Final Weight/Volume:	5 mL
Prep Date:	10/15/2016 1645				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1-Dichloroethane	ND		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	120		63 - 132
4-Bromofluorobenzene (Surr)	94		73 - 120
Toluene-d8 (Surr)	108		73 - 124
Dibromofluoromethane (Surr)	104		80 - 120

Client: GHD Services Inc. Job Number: 240-70584-1

Client Sample ID: **GW-WT114B-100516**

Lab Sample ID: 240-70584-1 Date Sampled: 10/05/2016 1310
Client Matrix: Water Date Received: 10/07/2016 0920

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250605	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 1814			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	64000		710	5000
Iron	2000		25	100
Manganese	39		5.1	15
Sodium	20000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-252056	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250605	Lab File ID:	089SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/18/2016 2004			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	7.6		0.35	1.0

Client: GHD Services Inc. Job Number: 240-70584-1

Client Sample ID: **GW-WT114A-100516**

Lab Sample ID: 240-70584-2 Date Sampled: 10/05/2016 1330
Client Matrix: Water Date Received: 10/07/2016 0920

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250605	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 1818			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	91000		710	5000
Iron	3700		25	100
Manganese	360		5.1	15
Sodium	270000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-252056	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250605	Lab File ID:	090SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/18/2016 2008			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	4.1		0.35	1.0

Client: GHD Services Inc. Job Number: 240-70584-1

Client Sample ID: **GW-WT114C-100516**

Lab Sample ID: 240-70584-3 Date Sampled: 10/05/2016 1358
Client Matrix: Water Date Received: 10/07/2016 0920

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250605	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 1823			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	72000		710	5000
Iron	2500		25	100
Manganese	25		5.1	15
Sodium	16000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-252056	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250605	Lab File ID:	091SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/18/2016 2013			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	19		0.35	1.0

Client: GHD Services Inc. Job Number: 240-70584-1

Client Sample ID: **GW-WT114C-100516-E**

Lab Sample ID: 240-70584-4 Date Sampled: 10/05/2016 1415
Client Matrix: Water Date Received: 10/07/2016 0920

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250605	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 1827			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	ND		710	5000
Iron	ND		25	100
Manganese	ND		5.1	15
Sodium	ND		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-252056	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250605	Lab File ID:	092SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/18/2016 2017			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	ND		0.35	1.0

Client: GHD Services Inc. Job Number: 240-70584-1

Client Sample ID: **GW-WT115A-100516**

Lab Sample ID: 240-70584-5 Date Sampled: 10/05/2016 1515
Client Matrix: Water Date Received: 10/07/2016 0920

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250605	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 1832			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	47000		710	5000
Iron	7400		25	100
Manganese	640		5.1	15
Sodium	1200	J	330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-252056	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250605	Lab File ID:	093SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/18/2016 2021			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	2.2		0.35	1.0

Client: GHD Services Inc. Job Number: 240-70584-1

Client Sample ID: **GW-WT115C-100516**

Lab Sample ID: 240-70584-6 Date Sampled: 10/05/2016 1510
Client Matrix: Water Date Received: 10/07/2016 0920

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250605	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 1836			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	84000		710	5000
Iron	2300		25	100
Manganese	51		5.1	15
Sodium	21000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-252056	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250605	Lab File ID:	094SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/18/2016 2026			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	2.0		0.35	1.0

Client: GHD Services Inc. Job Number: 240-70584-1

Client Sample ID: **GW-WT115B-100516**

Lab Sample ID: 240-70584-7 Date Sampled: 10/05/2016 1610
Client Matrix: Water Date Received: 10/07/2016 0920

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250605	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 1840			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	290000		710	5000
Iron	ND		25	100
Manganese	ND		5.1	15
Sodium	33000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-252056	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250605	Lab File ID:	095SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/18/2016 2030			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	0.96	J	0.35	1.0

Client: GHD Services Inc. Job Number: 240-70584-1

Client Sample ID: **GW-WT115B-100516-D**

Lab Sample ID: 240-70584-8FD Date Sampled: 10/05/2016 1620
Client Matrix: Water Date Received: 10/07/2016 0920

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250605	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 1845			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	300000		710	5000
Iron	ND		25	100
Manganese	ND		5.1	15
Sodium	34000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-252056	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250605	Lab File ID:	096SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/18/2016 2034			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	0.98	J	0.35	1.0

Client: GHD Services Inc. Job Number: 240-70584-1

Client Sample ID: **GW-WT101C-100616**

Lab Sample ID: 240-70584-9 Date Sampled: 10/06/2016 0835
Client Matrix: Water Date Received: 10/07/2016 0920

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250605	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 1701			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	49000		710	5000
Iron	220		25	100
Manganese	7.0	J	5.1	15
Sodium	16000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-252056	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250605	Lab File ID:	082SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/18/2016 1934			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	6.9		0.35	1.0

Client: GHD Services Inc. Job Number: 240-70584-1

Client Sample ID: **GW-WT101A-100616**

Lab Sample ID: 240-70584-10 Date Sampled: 10/06/2016 0840
Client Matrix: Water Date Received: 10/07/2016 0920

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250605	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 1858			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	230000		710	5000
Iron	22000		25	100
Manganese	3200		5.1	15
Sodium	13000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-252056	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250605	Lab File ID:	099SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/18/2016 2047			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	5.2		0.35	1.0

Client: GHD Services Inc. Job Number: 240-70584-1

Client Sample ID: **GW-WT101D-100616**

Lab Sample ID: 240-70584-11 Date Sampled: 10/06/2016 0950
Client Matrix: Water Date Received: 10/07/2016 0920

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250605	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 1902			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	78000		710	5000
Iron	1400		25	100
Manganese	40		5.1	15
Sodium	21000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-252056	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250605	Lab File ID:	100SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/18/2016 2051			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	0.53	J	0.35	1.0

Client: GHD Services Inc. Job Number: 240-70584-1

Client Sample ID: **GW-WT101E-100616**

Lab Sample ID: 240-70584-12 Date Sampled: 10/06/2016 0955
Client Matrix: Water Date Received: 10/07/2016 0920

6010B Metals (ICP)-Total Recoverable

Analysis Method:	6010B	Analysis Batch:	240-250951	Instrument ID:	I12
Prep Method:	3005A	Prep Batch:	240-250605	Lab File ID:	I12101116A.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 1907			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Calcium	83000		710	5000
Iron	3200		25	100
Manganese	39		5.1	15
Sodium	18000		330	5000
Lead	ND		1.9	3.0

6020 Metals (ICP/MS)-Total Recoverable

Analysis Method:	6020	Analysis Batch:	240-252056	Instrument ID:	I10
Prep Method:	3005A	Prep Batch:	240-250605	Lab File ID:	101SMPL.d
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/18/2016 2056			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Arsenic	3.2		0.35	1.0

General Chemistry

Client Sample ID: **GW-WT114B-100516**

Lab Sample ID: 240-70584-1 Date Sampled: 10/05/2016 1310
Client Matrix: Water Date Received: 10/07/2016 0920

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	31		mg/L	8.1	20	20	300.0
Analysis Batch: 240-250846	Analysis Date: 10/12/2016 1843						
Sulfate	54		mg/L	2.6	20	20	300.0
Analysis Batch: 240-250846	Analysis Date: 10/12/2016 1843						

General Chemistry

Client Sample ID: **GW-WT114A-100516**

Lab Sample ID: 240-70584-2 Date Sampled: 10/05/2016 1330
Client Matrix: Water Date Received: 10/07/2016 0920

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	400		mg/L	2.0	5.0	5.0	300.0
Analysis Batch: 240-250846	Analysis Date: 10/12/2016 1903						
Sulfate	47		mg/L	0.65	5.0	5.0	300.0
Analysis Batch: 240-250846	Analysis Date: 10/12/2016 1903						

General Chemistry

Client Sample ID: GW-WT114C-100516

Lab Sample ID: 240-70584-3 Date Sampled: 10/05/2016 1358
Client Matrix: Water Date Received: 10/07/2016 0920

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	34		mg/L	0.41	1.0	1.0	300.0
Analysis Batch: 240-250846	Analysis Date: 10/12/2016 1923						
Sulfate	86		mg/L	0.13	1.0	1.0	300.0
Analysis Batch: 240-250846	Analysis Date: 10/12/2016 1923						

General Chemistry

Client Sample ID: **GW-WT114C-100516-E**

Lab Sample ID: 240-70584-4 Date Sampled: 10/05/2016 1415
Client Matrix: Water Date Received: 10/07/2016 0920

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	ND		mg/L	0.41	1.0	1.0	300.0
Analysis Batch: 240-250846	Analysis Date: 10/12/2016 1943						
Sulfate	0.32	J	mg/L	0.13	1.0	1.0	300.0
Analysis Batch: 240-250846	Analysis Date: 10/12/2016 1943						

General Chemistry

Client Sample ID: **GW-WT115A-100516**

Lab Sample ID: 240-70584-5 Date Sampled: 10/05/2016 1515
Client Matrix: Water Date Received: 10/07/2016 0920

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	0.62	J	mg/L	0.41	1.0	1.0	300.0
Analysis Batch: 240-250846	Analysis Date: 10/12/2016 2003						
Sulfate	0.83	J	mg/L	0.13	1.0	1.0	300.0
Analysis Batch: 240-250846	Analysis Date: 10/12/2016 2003						

General Chemistry

Client Sample ID: **GW-WT115C-100516**

Lab Sample ID: 240-70584-6 Date Sampled: 10/05/2016 1510
Client Matrix: Water Date Received: 10/07/2016 0920

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	40		mg/L	0.41	1.0	1.0	300.0
Analysis Batch: 240-250846	Analysis Date: 10/12/2016 2023						
Sulfate	77		mg/L	0.13	1.0	1.0	300.0
Analysis Batch: 240-250846	Analysis Date: 10/12/2016 2023						

General Chemistry

Client Sample ID: **GW-WT115B-100516**

Lab Sample ID: 240-70584-7 Date Sampled: 10/05/2016 1610
Client Matrix: Water Date Received: 10/07/2016 0920

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	30		mg/L	2.0	5.0	5.0	300.0
Analysis Batch: 240-250846	Analysis Date: 10/12/2016 2124						
Sulfate	160		mg/L	0.65	5.0	5.0	300.0
Analysis Batch: 240-250846	Analysis Date: 10/12/2016 2124						

General Chemistry

Client Sample ID: **GW-WT115B-100516-D**

Lab Sample ID: 240-70584-8FD Date Sampled: 10/05/2016 1620
Client Matrix: Water Date Received: 10/07/2016 0920

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	29		mg/L	2.0	5.0	5.0	300.0
Analysis Batch: 240-250846	Analysis Date: 10/12/2016 2144						
Sulfate	180		mg/L	0.65	5.0	5.0	300.0
Analysis Batch: 240-250846	Analysis Date: 10/12/2016 2144						

General Chemistry

Client Sample ID: **GW-WT101C-100616**

Lab Sample ID: 240-70584-9 Date Sampled: 10/06/2016 0835
Client Matrix: Water Date Received: 10/07/2016 0920

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	2.0		mg/L	0.41	1.0	1.0	300.0
Analysis Batch: 240-250846	Analysis Date: 10/12/2016 2204						
Sulfate	5.5		mg/L	0.13	1.0	1.0	300.0
Analysis Batch: 240-250846	Analysis Date: 10/12/2016 2204						

General Chemistry

Client Sample ID: **GW-WT101A-100616**

Lab Sample ID: 240-70584-10 Date Sampled: 10/06/2016 0840
Client Matrix: Water Date Received: 10/07/2016 0920

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	12		mg/L	0.41	1.0	1.0	300.0
Analysis Batch: 240-250846	Analysis Date: 10/12/2016 2305						
Sulfate	150		mg/L	0.13	1.0	1.0	300.0
Analysis Batch: 240-250846	Analysis Date: 10/12/2016 2305						

General Chemistry

Client Sample ID: **GW-WT101D-100616**

Lab Sample ID: 240-70584-11 Date Sampled: 10/06/2016 0950
Client Matrix: Water Date Received: 10/07/2016 0920

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	38		mg/L	0.41	1.0	1.0	300.0
Analysis Batch: 240-250846	Analysis Date: 10/12/2016 2325						
Sulfate	79		mg/L	0.13	1.0	1.0	300.0
Analysis Batch: 240-250846	Analysis Date: 10/12/2016 2325						

General Chemistry

Client Sample ID: **GW-WT101E-100616**

Lab Sample ID: 240-70584-12 Date Sampled: 10/06/2016 0955
Client Matrix: Water Date Received: 10/07/2016 0920

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	39		mg/L	0.41	1.0	1.0	300.0
Analysis Batch: 240-250846	Analysis Date: 10/12/2016 2345						
Sulfate	85		mg/L	0.13	1.0	1.0	300.0
Analysis Batch: 240-250846	Analysis Date: 10/12/2016 2345						

DATA REPORTING QUALIFIERS

Client: GHD Services Inc. Job Number: 240-70584-1

Lab Section	Qualifier	Description
GC/MS VOA		
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
Metals		
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
General Chemistry		
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

QUALITY CONTROL RESULTS

Client: GHD Services Inc. Job Number: 240-70584-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:240-251532					
LCS 240-251532/4	Lab Control Sample	T	Water	8260B	
MB 240-251532/6	Method Blank	T	Water	8260B	
240-70584-1	GW-WT114B-100516	T	Water	8260B	
240-70584-2	GW-WT114A-100516	T	Water	8260B	
240-70584-3	GW-WT114C-100516	T	Water	8260B	
240-70584-4	GW-WT114C-100516-E	T	Water	8260B	
240-70584-5	GW-WT115A-100516	T	Water	8260B	
240-70584-6	GW-WT115C-100516	T	Water	8260B	
Analysis Batch:240-251577					
LCS 240-251577/4	Lab Control Sample	T	Water	8260B	
MB 240-251577/6	Method Blank	T	Water	8260B	
240-70584-7	GW-WT115B-100516	T	Water	8260B	
240-70584-8FD	GW-WT115B-100516-D	T	Water	8260B	
240-70584-9	GW-WT101C-100616	T	Water	8260B	
240-70584-9MS	Matrix Spike	T	Water	8260B	
240-70584-9MSD	Matrix Spike Duplicate	T	Water	8260B	
240-70584-10	GW-WT101A-100616	T	Water	8260B	
240-70584-11	GW-WT101D-100616	T	Water	8260B	
240-70584-12	GW-WT101E-100616	T	Water	8260B	
240-70584-13TB	TRIP BLANK-100616-003	T	Water	8260B	

Report Basis
T = Total

Client: GHD Services Inc. Job Number: 240-70584-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 240-250605					
LCS 240-250605/2-A	Lab Control Sample	R	Water	3005A	
LCS 240-250605/3-A	Lab Control Sample	R	Water	3005A	
MB 240-250605/1-A	Method Blank	R	Water	3005A	
240-70584-1	GW-WT114B-100516	R	Water	3005A	
240-70584-2	GW-WT114A-100516	R	Water	3005A	
240-70584-3	GW-WT114C-100516	R	Water	3005A	
240-70584-4	GW-WT114C-100516-E	R	Water	3005A	
240-70584-5	GW-WT115A-100516	R	Water	3005A	
240-70584-6	GW-WT115C-100516	R	Water	3005A	
240-70584-7	GW-WT115B-100516	R	Water	3005A	
240-70584-8FD	GW-WT115B-100516-D	R	Water	3005A	
240-70584-9	GW-WT101C-100616	R	Water	3005A	
240-70584-9MS	Matrix Spike	R	Water	3005A	
240-70584-9MSD	Matrix Spike Duplicate	R	Water	3005A	
240-70584-10	GW-WT101A-100616	R	Water	3005A	
240-70584-11	GW-WT101D-100616	R	Water	3005A	
240-70584-12	GW-WT101E-100616	R	Water	3005A	
Analysis Batch:240-250951					
LCS 240-250605/2-A	Lab Control Sample	R	Water	6010B	240-250605
MB 240-250605/1-A	Method Blank	R	Water	6010B	240-250605
240-70584-1	GW-WT114B-100516	R	Water	6010B	240-250605
240-70584-2	GW-WT114A-100516	R	Water	6010B	240-250605
240-70584-3	GW-WT114C-100516	R	Water	6010B	240-250605
240-70584-4	GW-WT114C-100516-E	R	Water	6010B	240-250605
240-70584-5	GW-WT115A-100516	R	Water	6010B	240-250605
240-70584-6	GW-WT115C-100516	R	Water	6010B	240-250605
240-70584-7	GW-WT115B-100516	R	Water	6010B	240-250605
240-70584-8FD	GW-WT115B-100516-D	R	Water	6010B	240-250605
240-70584-9	GW-WT101C-100616	R	Water	6010B	240-250605
240-70584-9MS	Matrix Spike	R	Water	6010B	240-250605
240-70584-9MSD	Matrix Spike Duplicate	R	Water	6010B	240-250605
240-70584-10	GW-WT101A-100616	R	Water	6010B	240-250605
240-70584-11	GW-WT101D-100616	R	Water	6010B	240-250605
240-70584-12	GW-WT101E-100616	R	Water	6010B	240-250605

Client: GHD Services Inc. Job Number: 240-70584-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Analysis Batch:240-252056					
LCS 240-250605/3-A	Lab Control Sample	R	Water	6020	240-250605
MB 240-250605/1-A	Method Blank	R	Water	6020	240-250605
240-70584-1	GW-WT114B-100516	R	Water	6020	240-250605
240-70584-2	GW-WT114A-100516	R	Water	6020	240-250605
240-70584-3	GW-WT114C-100516	R	Water	6020	240-250605
240-70584-4	GW-WT114C-100516-E	R	Water	6020	240-250605
240-70584-5	GW-WT115A-100516	R	Water	6020	240-250605
240-70584-6	GW-WT115C-100516	R	Water	6020	240-250605
240-70584-7	GW-WT115B-100516	R	Water	6020	240-250605
240-70584-8FD	GW-WT115B-100516-D	R	Water	6020	240-250605
240-70584-9	GW-WT101C-100616	R	Water	6020	240-250605
240-70584-9MS	Matrix Spike	R	Water	6020	240-250605
240-70584-9MSD	Matrix Spike Duplicate	R	Water	6020	240-250605
240-70584-10	GW-WT101A-100616	R	Water	6020	240-250605
240-70584-11	GW-WT101D-100616	R	Water	6020	240-250605
240-70584-12	GW-WT101E-100616	R	Water	6020	240-250605

Report Basis
R = Total Recoverable

General Chemistry				
Analysis Batch:240-250846				
LCS 240-250846/28	Lab Control Sample	T	Water	300.0
LCS 240-250846/4	Lab Control Sample	T	Water	300.0
MB 240-250846/27	Method Blank	T	Water	300.0
MB 240-250846/3	Method Blank	T	Water	300.0
240-70584-1	GW-WT114B-100516	T	Water	300.0
240-70584-2	GW-WT114A-100516	T	Water	300.0
240-70584-3	GW-WT114C-100516	T	Water	300.0
240-70584-4	GW-WT114C-100516-E	T	Water	300.0
240-70584-5	GW-WT115A-100516	T	Water	300.0
240-70584-6	GW-WT115C-100516	T	Water	300.0
240-70584-7	GW-WT115B-100516	T	Water	300.0
240-70584-8FD	GW-WT115B-100516-D	T	Water	300.0
240-70584-9	GW-WT101C-100616	T	Water	300.0
240-70584-9MS	Matrix Spike	T	Water	300.0
240-70584-9MSD	Matrix Spike Duplicate	T	Water	300.0
240-70584-10	GW-WT101A-100616	T	Water	300.0
240-70584-11	GW-WT101D-100616	T	Water	300.0
240-70584-12	GW-WT101E-100616	T	Water	300.0

Report Basis
T = Total

Client: GHD Services Inc.

Job Number: 240-70584-1

Surrogate Recovery Report

8260B Volatile Organic Compounds (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	DCA %Rec	BFB %Rec	TOL %Rec	DBFM %Rec
240-70584-1	GW-WT114B-100516	123	98	105	100
240-70584-2	GW-WT114A-100516	119	101	103	104
240-70584-3	GW-WT114C-100516	124	94	111	104
240-70584-4	GW-WT114C-100516 -E	120	93	102	106
240-70584-5	GW-WT115A-100516	123	97	99	103
240-70584-6	GW-WT115C-100516	118	93	109	102
240-70584-7	GW-WT115B-100516	114	105	103	101
240-70584-8	GW-WT115B-100516 -D	113	102	110	96
240-70584-9	GW-WT101C-100616	115	96	108	106
240-70584-10	GW-WT101A-100616	114	93	110	101
240-70584-11	GW-WT101D-100616	120	93	110	103
240-70584-12	GW-WT101E-100616	119	97	105	101
240-70584-13	TRIP BLANK-100616-003	120	94	108	104
MB 240-251532/6		121	99	106	100
MB 240-251577/6		115	100	103	101
LCS 240-251532/4		117	109	110	100
LCS 240-251577/4		116	107	106	102
240-70584-9 MS	GW-WT101C-100616 MS	121	100	111	103
240-70584-9 MSD	GW-WT101C-100616 MSD	123	101	111	100

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	63-132
BFB = 4-Bromofluorobenzene (Surr)	73-120
TOL = Toluene-d8 (Surr)	73-124
DBFM = Dibromofluoromethane (Surr)	80-120

Client: GHD Services Inc. Job Number: 240-70584-1

Method Blank - Batch: 240-251532 **Method: 8260B**
Preparation: 5030B

Lab Sample ID:	MB 240-251532/6	Analysis Batch:	240-251532	Instrument ID:	A3UX10
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	UXX8968.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/14/2016 1802	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	10/14/2016 1802				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
1,1-Dichloroethane	ND		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	121	63 - 132
4-Bromofluorobenzene (Surr)	99	73 - 120
Toluene-d8 (Surr)	106	73 - 124
Dibromofluoromethane (Surr)	100	80 - 120

Lab Control Sample - Batch: 240-251532 **Method: 8260B**
Preparation: 5030B

Lab Sample ID:	LCS 240-251532/4	Analysis Batch:	240-251532	Instrument ID:	A3UX10
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	UXX8965.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/14/2016 1657	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	10/14/2016 1657				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1-Dichloroethane	10.0	10.7	107	77 - 121	
Benzene	10.0	10.4	104	80 - 120	
cis-1,2-Dichloroethene	10.0	9.82	98	80 - 120	
Vinyl chloride	10.0	7.99	80	60 - 129	

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	117	63 - 132
4-Bromofluorobenzene (Surr)	109	73 - 120
Toluene-d8 (Surr)	110	73 - 124
Dibromofluoromethane (Surr)	100	80 - 120

Client: GHD Services Inc. Job Number: 240-70584-1

Method Blank - Batch: 240-251577 **Method: 8260B**
Preparation: 5030B

Lab Sample ID:	MB 240-251577/6	Analysis Batch:	240-251577	Instrument ID:	A3UX10
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	UXX8995.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/15/2016 1327	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	10/15/2016 1327				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
1,1-Dichloroethane	ND		0.25	1.0
Benzene	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.30	1.0
Vinyl chloride	ND		0.45	1.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	115	63 - 132
4-Bromofluorobenzene (Surr)	100	73 - 120
Toluene-d8 (Surr)	103	73 - 124
Dibromofluoromethane (Surr)	101	80 - 120

Lab Control Sample - Batch: 240-251577 **Method: 8260B**
Preparation: 5030B

Lab Sample ID:	LCS 240-251577/4	Analysis Batch:	240-251577	Instrument ID:	A3UX10
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	UXX8993.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/15/2016 1243	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	10/15/2016 1243				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1-Dichloroethane	10.0	10.9	109	77 - 121	
Benzene	10.0	10.3	103	80 - 120	
cis-1,2-Dichloroethene	10.0	10.0	100	80 - 120	
Vinyl chloride	10.0	8.25	83	60 - 129	

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	116	63 - 132
4-Bromofluorobenzene (Surr)	107	73 - 120
Toluene-d8 (Surr)	106	73 - 124
Dibromofluoromethane (Surr)	102	80 - 120

Client: GHD Services Inc.

Job Number: 240-70584-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 240-251577

Method: 8260B
Preparation: 5030B

MS Lab Sample ID:	240-70584-9	Analysis Batch:	240-251577	Instrument ID:	A3UX10
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	UXX8999.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/15/2016 1454			Final Weight/Volume:	5 mL
Prep Date:	10/15/2016 1454				5 mL
Leach Date:	N/A				

MSD Lab Sample ID:	240-70584-9	Analysis Batch:	240-251577	Instrument ID:	A3UX10
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	UXX9000.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/15/2016 1517			Final Weight/Volume:	5 mL
Prep Date:	10/15/2016 1517				5 mL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
1,1-Dichloroethane	109	109	57 - 135	0	35		
Benzene	103	101	67 - 126	2	31		
cis-1,2-Dichloroethene	99	99	64 - 134	0	35		
Vinyl chloride	84	86	38 - 147	3	35		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	121	123	63 - 132
4-Bromofluorobenzene (Surr)	100	101	73 - 120
Toluene-d8 (Surr)	111	111	73 - 124
Dibromofluoromethane (Surr)	103	100	80 - 120

Client: GHD Services Inc. Job Number: 240-70584-1

Method Blank - Batch: 240-250605

Method: 6010B
Preparation: 3005A
Total Recoverable

Lab Sample ID:	MB 240-250605/1-A	Analysis Batch:	240-250951	Instrument ID:	I12
Client Matrix:	Water	Prep Batch:	240-250605	Lab File ID:	I12101116A.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 1652	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Calcium	ND		710	5000
Iron	ND		25	100
Manganese	ND		5.1	15
Sodium	ND		330	5000
Lead	ND		1.9	3.0

Lab Control Sample - Batch: 240-250605

Method: 6010B
Preparation: 3005A
Total Recoverable

Lab Sample ID:	LCS 240-250605/2-A	Analysis Batch:	240-250951	Instrument ID:	I12
Client Matrix:	Water	Prep Batch:	240-250605	Lab File ID:	I12101116A.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 1657	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Calcium	50000	53500	107	80 - 120	
Iron	1000	1060	106	80 - 120	
Manganese	500	523	105	80 - 120	
Sodium	50000	54800	110	80 - 120	
Lead	500	523	105	80 - 120	

Client: GHD Services Inc.

Job Number: 240-70584-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 240-250605

Method: 6010B
Preparation: 3005A
Total Recoverable

MS Lab Sample ID:	240-70584-9	Analysis Batch:	240-250951	Instrument ID:	I12
Client Matrix:	Water	Prep Batch:	240-250605	Lab File ID:	I12101116A.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 1718			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				
Leach Date:	N/A				

MSD Lab Sample ID:	240-70584-9	Analysis Batch:	240-250951	Instrument ID:	I12
Client Matrix:	Water	Prep Batch:	240-250605	Lab File ID:	I12101116A.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/11/2016 1722			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Calcium	101	101	75 - 125	0	20		
Iron	101	102	75 - 125	1	20		
Manganese	102	102	75 - 125	0	20		
Sodium	106	107	75 - 125	1	20		
Lead	101	101	75 - 125	0	20		

Client: GHD Services Inc. Job Number: 240-70584-1

Method Blank - Batch: 240-250605

Method: 6020
Preparation: 3005A
Total Recoverable

Lab Sample ID:	MB 240-250605/1-A	Analysis Batch:	240-252056	Instrument ID:	I10
Client Matrix:	Water	Prep Batch:	240-250605	Lab File ID:	075_Blk.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/18/2016 1904	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Arsenic	ND		0.35	1.0

Lab Control Sample - Batch: 240-250605

Method: 6020
Preparation: 3005A
Total Recoverable

Lab Sample ID:	LCS 240-250605/3-A	Analysis Batch:	240-252056	Instrument ID:	I10
Client Matrix:	Water	Prep Batch:	240-250605	Lab File ID:	076_LCS.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/18/2016 1909	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Arsenic	1000	1040	104	80 - 120	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 240-250605

Method: 6020
Preparation: 3005A
Total Recoverable

MS Lab Sample ID:	240-70584-9	Analysis Batch:	240-252056	Instrument ID:	I10
Client Matrix:	Water	Prep Batch:	240-250605	Lab File ID:	087SMPL.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/18/2016 1956			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				
Leach Date:	N/A				

MSD Lab Sample ID:	240-70584-9	Analysis Batch:	240-252056	Instrument ID:	I10
Client Matrix:	Water	Prep Batch:	240-250605	Lab File ID:	088SMPL.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	10/18/2016 2000			Final Weight/Volume:	50 mL
Prep Date:	10/10/2016 1400				
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Arsenic	104	105	75 - 125	1	20		

Client: GHD Services Inc. Job Number: 240-70584-1

Method Blank - Batch: 240-250846 **Method: 300.0**
Preparation: N/A

Lab Sample ID:	MB 240-250846/3	Analysis Batch:	240-250846	Instrument ID:	VERONICA
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	54240-0058884-003.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2016 0345	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Chloride	ND		0.41	1.0
Sulfate	ND		0.13	1.0

Method Blank - Batch: 240-250846 **Method: 300.0**
Preparation: N/A

Lab Sample ID:	MB 240-250846/27	Analysis Batch:	240-250846	Instrument ID:	VERONICA
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	78240-0058884-027.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2016 1148	Units:	mg/L	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Chloride	ND		0.41	1.0
Sulfate	ND		0.13	1.0

Client: GHD Services Inc. Job Number: 240-70584-1

Lab Control Sample - Batch: 240-250846 **Method: 300.0**
Preparation: N/A

Lab Sample ID:	LCS 240-250846/4	Analysis Batch:	240-250846	Instrument ID:	VERONICA
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	55240-0058884-004.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2016 0405	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	50.0	50.9	102	90 - 110	
Sulfate	50.0	52.0	104	90 - 110	

Lab Control Sample - Batch: 240-250846 **Method: 300.0**
Preparation: N/A

Lab Sample ID:	LCS 240-250846/28	Analysis Batch:	240-250846	Instrument ID:	VERONICA
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	79240-0058884-028.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2016 1209	Units:	mg/L	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	50.0	51.0	102	90 - 110	
Sulfate	50.0	52.2	104	90 - 110	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 240-250846 **Method: 300.0**
Preparation: N/A

MS Lab Sample ID:	240-70584-9	Analysis Batch:	240-250846	Instrument ID:	VERONICA
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	109240-0058884-042.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2016 2224			Final Weight/Volume:	
Prep Date:	N/A				25 uL
Leach Date:	N/A				

MSD Lab Sample ID:	240-70584-9	Analysis Batch:	240-250846	Instrument ID:	VERONICA
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	110240-0058884-043.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/12/2016 2244			Final Weight/Volume:	
Prep Date:	N/A				25 uL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Chloride	91	104	80 - 120	12	15		
Sulfate	89	103	80 - 120	13	15		

3.4 | C3.8

GHD 6400 Shafer Court - Suite 400
Rosemont, Illinois, 60018
773 380 9933 phone
WWW.GHD.COM

CHAIN-OF-CUSTODY RECORD

SHIPPED TO (Laboratory Name): Test America

REFERENCE NUMBER: 39611

PROJECT NAME: Himco

SAMPLER'S SIGNATURE: John Hargens PRINTED NAME: John Hargens

SEQ. No.	DATE	TIME	SAMPLE IDENTIFICATION No.	SAMPLE MATRIX	No. OF CONTAINERS	PARAMETERS: Select VOC	chloride	sulfate	Select metals	REMARKS
	10/5/16	1310	GW-WT114B-100516	Water	3	✓				
		1330	GW-WT114A-100516		3	✓				
		1358	GW-WT114C-100516		3	✓				
		1415	GW-WT114C-100516-E		3	✓				
		1515	GW-WT115A-100516		3	✓				
		1510	GW-WT115C-100516		3	✓				
		1610	GW-WT115B-100516		3	✓				
		1620	GW-WT115B-100516-D		3	✓				
	10/6/16	0835	GW-WT101C-100616		9	✓				MS/MSD
		0840	GW-WT101A-100616		3	✓				
		950	GW-WT101D-100616		3	✓				
		955	GW-WT101E 100616		5	✓	✓	✓	✓	
		1000	Trip Blank-100616-003		1	✓				
			TOTAL NUMBER OF CONTAINERS		45					

RELINQUISHED BY: ① John Hargens	DATE: 10-6-16 TIME:	RECEIVED BY: ② Gerry Burns	DATE: 10/7/16 TIME: 0920
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fed-X TRACKING No. 8097 1232 1774

White	-Fully Executed Copy
Yellow	-Receiving Laboratory Copy
Pink	-Shipper Copy
Goldenrod	-Sampler Copy

SAMPLE TEAM: SEAN ARMBRUST, JOHN HARGENS

RECEIVED FOR LABORATORY BY: DATE: TIME:

240-70584 Chain of Custody

8494

11034001-00(PRES001)GN-CO001

3.6|C4.0

GHD 6400 Shafer Court - Suite 400
Rosemont, Illinois, 60018
773 380 9933 phone
WWW.GHD.COM

CHAIN-OF-CUSTODY RECORD

SHIPPED TO (Laboratory Name): Test America

REFERENCE NUMBER: 39611

PROJECT NAME: Himco

SAMPLER'S SIGNATURE: John Hargens PRINTED NAME: John Hargens

SEQ. No.	DATE	TIME	SAMPLE IDENTIFICATION No.	SAMPLE MATRIX	No. OF CONTAINERS	Arsenic	chloride	sulfate	select Metals	~~SPECIES~~						REMARKS
	10/5/16	1310	GW-WT 114B-100516	water	2	✓	✓	✓	✓							
		1330	GW-WT 114A-100516		2	✓	✓	✓	✓							
		1350	GW-WT 114C-100516		2	✓	✓	✓	✓							
		1415	GW-WT 114C-100516-E		2	✓	✓	✓	✓							
		1515	GW-WT 115A-100516		2	✓	✓	✓	✓							
		1510	GW-WT 115C-100516		2	✓	✓	✓	✓							
		1610	GW-WT 115B-100516		2	✓	✓	✓	✓							
		1620	GW-WT 115B-100516-D		2	✓	✓	✓	✓							
	10/6/16	835	GW-WT 101C-100616		4	✓	✓	✓	✓							MS/MSD
		840	GW-WT 101A-100616		2	✓	✓	✓	✓							
		950	GW-WT 101D-100616		2	✓	✓	✓	✓							

TOTAL NUMBER OF CONTAINERS 24

RELINQUISHED BY: ① John Hargens	DATE: 10-6-16 TIME:	RECEIVED BY: ② Gerry Burns	DATE: 10/7/16 TIME: 0920
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fed-X TRACKING No. 8097 1232 1774

White	-Fully Executed Copy
Yellow	-Receiving Laboratory Copy
Pink	-Shipper Copy
Goldenrod	-Sampler Copy

SAMPLE TEAM: SEAN ARMBRUST, JOHN HARGENS

RECEIVED FOR LABORATORY BY: 8493

DATE: TIME:

11034001-00(PRES001)GN-CO001

TestAmerica Canton Sample Receipt Form/Narrative **Login # :** 70584
Canton Facility

Client GHD Site Name Himco Cooler unpacked by: Gerry Burns
Cooler Received on 10/7/16 Opened on 10/7/16
FedEx: 1st Grd (Exp) UPS FAS Stetson Client Drop Off TestAmerica Courier Other

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

TestAmerica Cooler # Foam Box Client Cooler Box Other Nu Hiple
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-8 (CF +0.4 °C) Observed Cooler Temp.____ °C Corrected Cooler Temp.____ °C
   IR GUN #36 (CF +1.3°C) Observed Cooler Temp.____ °C Corrected Cooler Temp.____ °C
2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 2 each (Yes) No
   -Were custody seals on the outside of the cooler(s) signed & dated? (Yes) No NA
   -Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes (No)
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 11-15 have been checked at the originating laboratory.
11. Were sample(s) at the correct pH upon receipt? (Yes) No NA pH Strip Lot# **HC574756**
12. Were VOAs on the COC? (Yes) No
13. Were air bubbles >6 mm in any VOA vials? Yes (No) NA
14. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # B615201UB (Yes) No
15. Was a LL Hg or Me Hg trip blank present? ____ Yes (No)

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

Concerning ____

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by:

Trip Blank - COC=1X40, Rec'd 10X40

15. 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)

16. SAMPLE PRESERVATION

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

TestAmerica Multiple Cooler Receipt Form/Narrative **Login # :** 70584
Canton Facility

Cooler #	IR Gun #	Observed Temp °C	Corrected Temp °C	Coolant
Columbus	8	3.4	3.8	ICE
Pleasanton	↓	3.6	4.0	↓

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
GW-WT114B-100516	240-70584-E-1	Plastic 500ml - with Nitric Acid	<2		
GW-WT114A-100516	240-70584-E-2	Plastic 500ml - with Nitric Acid	<2		
GW-WT114C-100516	240-70584-E-3	Plastic 500ml - with Nitric Acid	<2		
GW-WT114C-100516-E	240-70584-E-4	Plastic 500ml - with Nitric Acid	<2		
GW-WT115A-100516	240-70584-E-5	Plastic 500ml - with Nitric Acid	<2		
GW-WT115C-100516	240-70584-E-6	Plastic 500ml - with Nitric Acid	<2		
GW-WT115B-100516	240-70584-E-7	Plastic 500ml - with Nitric Acid	<2		
GW-WT115B-100516-D	240-70584-E-8	Plastic 500ml - with Nitric Acid	<2		
GW-WT101C-100616	240-70584-L-9	Plastic 500ml - with Nitric Acid	<2		
GW-WT101C-100616	240-70584-M-9	Plastic 500ml - with Nitric Acid	<2		
GW-WT101A-100616	240-70584-E-10	Plastic 500ml - with Nitric Acid	<2		
GW-WT101D-100616	240-70584-E-11	Plastic 500ml - with Nitric Acid	<2		
GW-WT101E-100616	240-70584-E-12	Plastic 500ml - with Nitric Acid	<2		

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