March 19, 2019 Reference No. 017302

Mr. Rob Marshall
Indiana Department of Environmental Management
Office of Land Quality, Permits Branch
100 North Senate Avenue Room IGCN 1154
Indianapolis, IN 46204

Dear Mr. Marshall:

Re: Bedrock Groundwater Investigation Report of Findings
2915 Dr. Martin Luther King Jr. Boulevard Facility
Anderson, Indiana

1. Introduction

GHD Services Inc. (GHD) has prepared this Bedrock Groundwater Investigation Report of Findings to summarize the activities conducted to delineate vertical and horizontal bedrock groundwater impacts at the Revitalizing Auto Communities Environmental Response (RACER) Trust's former Anderson Guide facility located at 2915 Dr. Martin Luther King Junior Blvd., Anderson, Indiana (Site).

2. Background

On behalf of the RACER Trust, GHD prepared and submitted the 2016 Annual Monitoring RCRA Corrective Action Report (Report) to the Indiana Department of Environmental Management (IDEM). On August 10, 2017, IDEM provided RACER Trust with comments on the Report, a copy of which is included as Attachment A. IDEM's August 10, 2017 Comment 2 is provided below.

RACER needs to delineate bedrock contamination horizontally and vertically. Bedrock monitoring well MW 81 has a statistically significant increasing trend of VC (with the maximum concentration of 66 µg/L on October 22, 2013, and the second highest concentration of 62 µg/L on October 8, 2015) and is the farthest downgradient monitoring well installed in bedrock. In addition, cis in MW 81 exhibits an increasing trend in concentrations considering the last six analytical results, starting in October 2011. The closest bedrock monitoring well to the west, MW 83, has an emerging increasing trend of VC even though it is not statistically significant. VC's maximum concentration in MW 83 is 5.3 µg/L on October 22, 2016. These increases in concentrations warrant horizontal and vertical delineation of volatile organic compounds in bedrock.

The objective of the Bedrock Groundwater Investigation was to delineate the vertical and horizontal extent of bedrock groundwater impacts on-Site, east of Dr. Martin Luther King Junior Blvd.

The Bedrock Groundwater Investigation Work Plan was submitted to IDEM on May 9, 2018 (Work Plan). On June 6, 2018, IDEM approved the Work Plan. Following IDEM's approval, GHD implemented the field

portion of the Work Plan between September 17 and December 13, 2018. An overview of the field activities conducted and the analytical data generated therefrom is provided in the following sections.

3. Monitoring Well Installation

7NT Engineering (7NT) was retained by GHD to provide drilling services for the advancement of boreholes and coreholes and installation of groundwater monitoring wells. Two monitoring wells (MW98-18 and MW99-18) were advanced and installed to vertically and horizontally delineate bedrock groundwater impacts on-Site, east of Dr. Martin Luther King Junior Blvd. The monitoring wells were installed to facilitate the collection of groundwater samples and static water level measurements. The monitoring well locations are shown on Figure 1.

Prior to initiating subsurface activities, all applicable utility companies (gas, telephone, water, and sewers) were contacted to demarcate the location of their respective underground utilities. GHD also arranged for a private utility locating contractor to demarcate any additional on-Site utilities within the proposed work areas.

Monitoring well MW 98-18 was installed as a deep bedrock monitoring well to vertically delineate groundwater impacts in the vicinity of MW 81. MW 81 is screened from approximately 25 to 35 feet below ground surface (bgs) where weathered bedrock was encountered at approximately 20.5 feet bgs. The borehole for MW 98-18 was advanced through the overburden soil using split spoons advanced by hollow stem auger drilling techniques to refusal at the top of competent bedrock. To reduce the potential for cross-contamination during well installation activities, MW98-18 was overcased with a 4 inch diameter permanent steel casing into competent bedrock at 27.3 feet bgs. Once the steel casing was installed, it was cemented into place and coring continued to the targeted depth (i.e., first encountered water bearing unit, deeper than 45 feet bgs). The bedrock corehole was advanced using standard HQ core drilling techniques. MW98-18 was installed with a well screen between 48 to 58 feet bgs.

Monitoring well MW 99-18 was installed as a shallow bedrock monitoring well to horizontally delineate groundwater impacts east of MW 81. The borehole for MW 99-18 was advanced through the overburden soil using split spoons advanced by hollow stem auger drilling techniques to refusal at the top of competent bedrock. Subsequently, a bedrock corehole was advanced using standard HQ core drilling techniques with a temporary casing. Monitoring well MW 99-18 was installed in the shallow bedrock unit, and was screened between 35 and 45 feet bgs.

The monitoring wells were constructed with 2-inch diameter polyvinyl chloride (PVC) riser pipe with a No. 10-slot PVC screen. A sand pack of No. 2 silica sand was placed to 2 feet above the top of the screened interval, and bentonite was used to achieve a seal above the sand. Three feet of concrete was placed below the ground surface to achieve a surface seal, and a flushmount protective casing was installed for protection of and access to the monitoring wells. The monitoring wells were completed with expandable locking caps to prevent tampering with the well. The monitoring wells were surveyed for vertical and horizontal control. The stratigraphic and instrumentation logs for MW 98-18 and MW 99-18 are provided in Attachment B.

MW98-18 and MW99-18 were developed by 7NT following installation using a submersible pump. Development consisted of the removal of 660 gallons of water from MW98-18 (i.e., approximate volume of water lost to the formation plus 20 well volumes) and 225 gallons of water from MW99-18 (i.e., approximate volume of water lost to the formation plus 5 well volumes). Monitoring well purging and sampling was conducted more than 24 hours following well development.

Soil cuttings were containerized at the Site in 55-gallon drums labeled with the date, the appropriate monitoring well identifier, and as "Awaiting Analytical". GHD collected one waste soil characterization sample from the drummed soil cuttings for chemical analyses to characterize the waste material for disposal purposes. The waste was appropriately profiled and disposed of off-Site on December 3, 2018.

The water generated during drilling activities and well development was temporarily containerized on-Site in a 21,000 gallon frac tank for future disposal. GHD collected one waste water sample for chemical analyses to characterize the waste material for disposal purposes. The waste was appropriately profiled and disposed of off-Site on December 3, 2018.

4. Hydraulic Monitoring

Water level measurements were collected from bedrock monitoring wells on October 10 and December 13, 2018. The static groundwater elevations measured are summarized in Table 1. Based on the groundwater elevations, GHD developed a potentiometric groundwater contour for the shallow bedrock unit as shown on Figure 2. The groundwater elevation contour map indicates that there is an easterly gradient across the west portion of the Site and a western gradient across the east portion of the Site into the meltwater valley.

5. Monitoring Well Sampling

Groundwater sampling activities were completed on October 9, 10 and December 13, 2018 concurrent to routine semi-annual groundwater sampling. Low flow groundwater samples were collected from previously existing monitoring wells MW 62, MW 74, MW 77, MW 81, MW 82 and MW 83 and newly installed monitoring wells MW 98-18 and MW 99-19 (Figure 1).

Prior to groundwater sampling, each monitoring well was purged, consisting of the removal of sufficient well volumes to allow for the stabilization of field parameters including conductivity, dissolved oxygen, oxygen reduction potential, pH, temperature, and turbidity. Well stabilization data is provided in Table 2. Once field parameters were stabilized, samples were collected using low flow sampling techniques and placed directly into pre-cleaned bottles provided by the laboratory for chemical analysis of the target compound list volatile organic compounds (VOCs). One field duplicate, trip blank and equipment blank samples were collected and submitted for quality assurance/quality control (QA/QC). Groundwater samples were submitted to TestAmerica laboratories in North Canton, Ohio and analyzed in accordance with SW-846-8260B. A sample key is provided in Table 3.

6. Analytical Results

The laboratory analytical data and validation memorandum for the bedrock groundwater sampling are provided in Attachment C. Through data validation, GHD determined that the analytical data is suitable for its intended use with the qualifications noted.

The results of the 2018 bedrock groundwater sampling event are summarized in Table 4 along with IDEM's Residential Tap Water and Industrial Vapor Exposure Screening Levels and the Site Specific Commercial/Industrial Tap Water Use Criteria for comparative reference. Consistent with previous sampling events, there were exceedances of cis-1,2-dichloroethene above IDEM's Residential Tap Water Criteria at MW 81 and vinyl chloride above IDEM's Residential Tap Water Criteria and the Site Specific Commercial/Industrial Tap Water Use Criteria at MW 81 and MW 83.

Monitoring wells MW98-18 and MW99-18 did not contain detectable concentrations of VOCs, with the exception of chloroform detected at MW98-18. Chloroform was detected at MW98-18 as an estimated concentration below the laboratory reporting limit.

7. Conclusion

The purpose of the Bedrock Groundwater Investigation was to delineate the vertical and horizontal extent of shallow bedrock groundwater impacts on-Site, east of Dr. Martin Luther King Junior Blvd. The results of the investigation indicate that shallow bedrock VOC impacts at MW 81 have not migrated deeper in the bedrock unit. The results also indicate that shallow bedrock VOC impacts have been delineated to the east at MW 99-18 and that there is a western gradient across the east portion of the Site that would not allow for shallow bedrock to migrate off-Site towards Madison Avenue.

Should you have questions regarding the above, please do not hesitate to contact the undersigned.

Sincerely,

GHD

Robert Catallo, B.Sc. Shannon Richardson, B.A.Sc.

TW/mma/54

Encl.

cc: Robert Hare (RACER Trust)

Figures

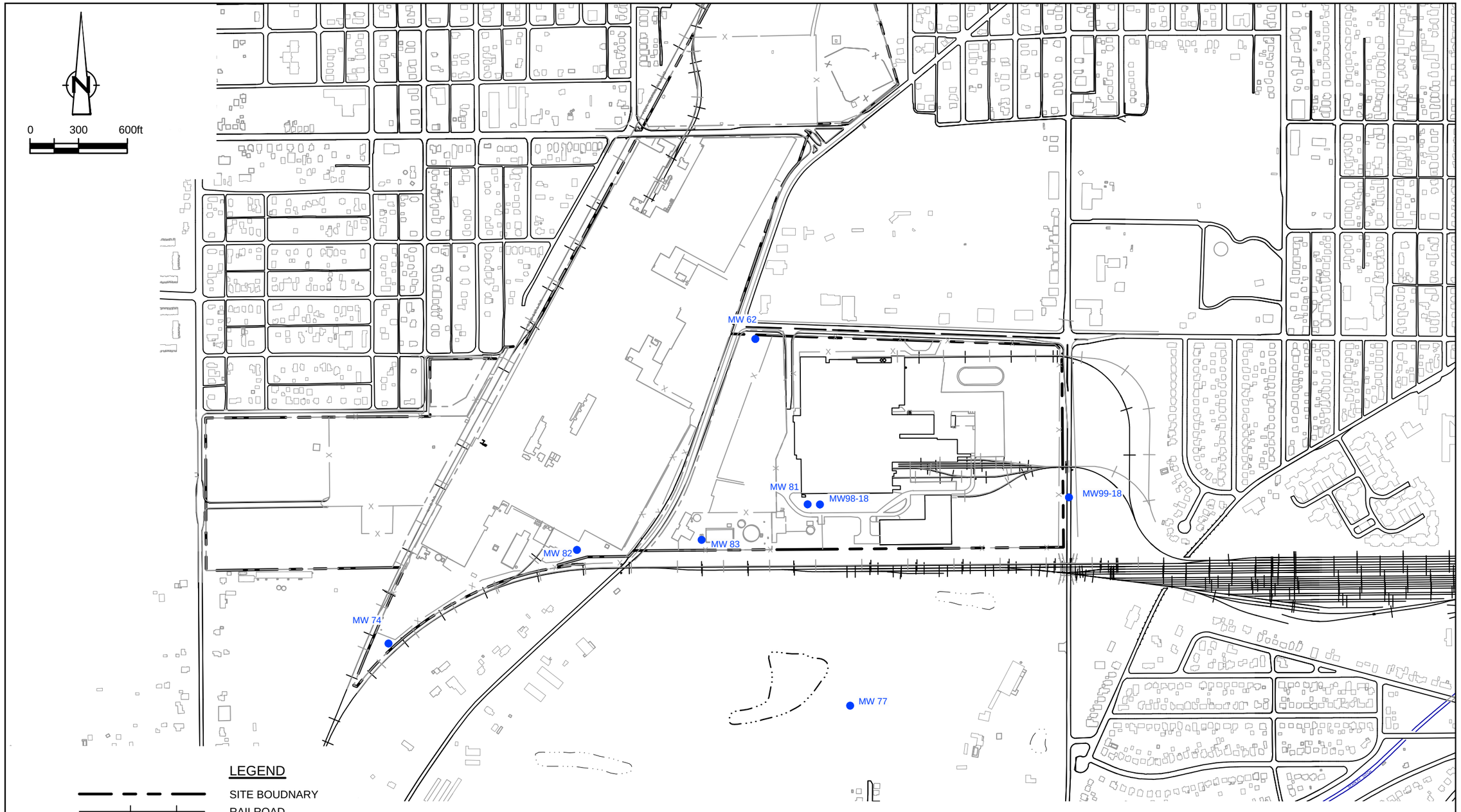
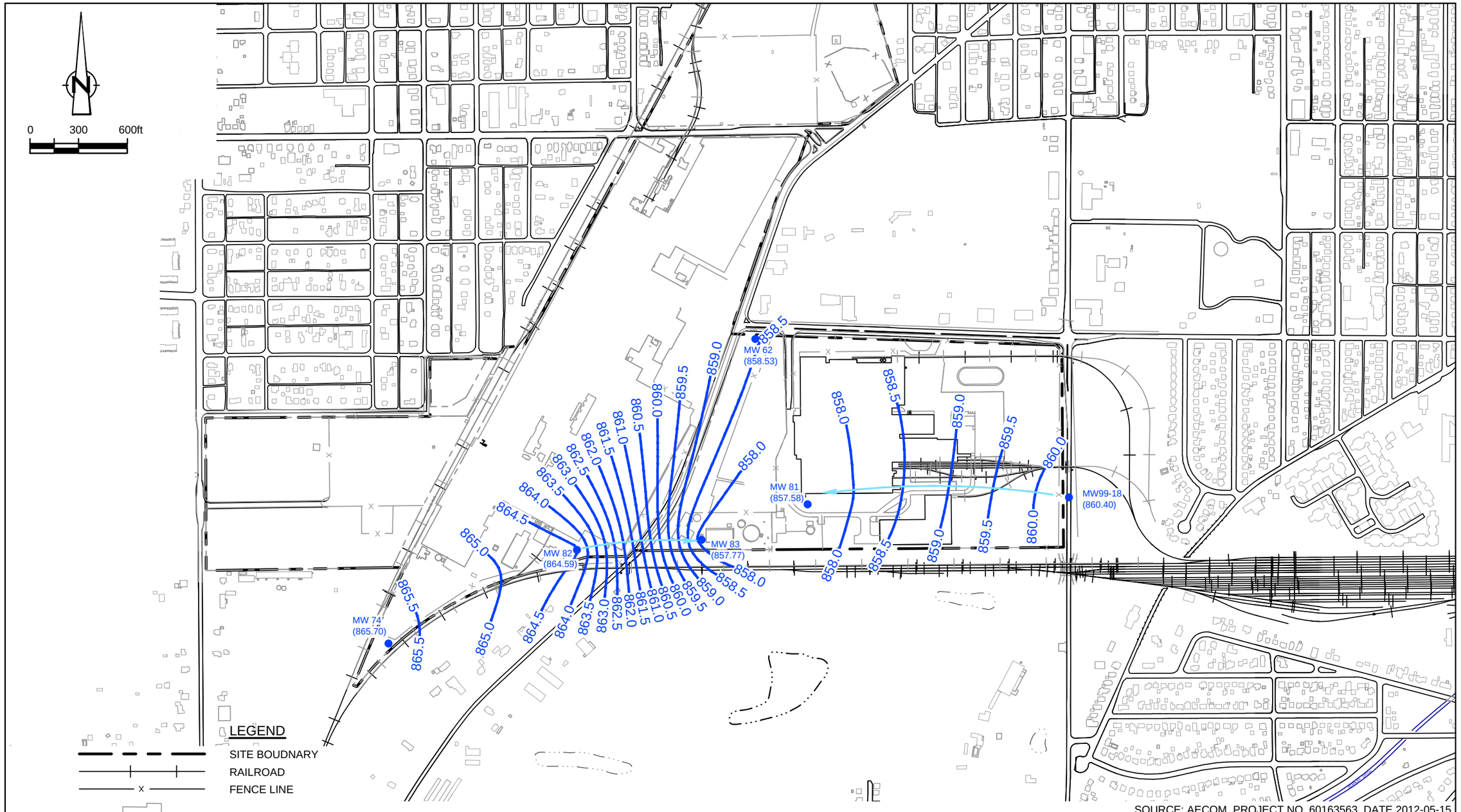


figure 1

SITE PLAN
BEDROCK GROUNDWATER INVESTIGATION REPORT OF FINDINGS
2915 DR. MARTIN LUTHER KING JR. BLVD., ANDERSON, INDIANA
Revitalizing Auto Communities Environmental Response Trust

I:\DRAWINGS\17000s\017302\017302-CORRES\017302-T11(MARS054)\017302-T11(MAR054)GN\017302-T11(MAR054)GN-SC001.DWG Plot Date: JAN 17, 2019



LEGEND

- SITE BOUDNARY
- RAILROAD
- FENCE LINE
- FORMER BUILDING
- BUILDING
- BEDROCK MONITORING WELL
- 862 GROUNDWATER CONTOUR (FEET NAVD 88)
- INFERRED DIRECTION OF GROUNDWATER FLOW

SOURCE: AECOM, PROJECT NO. 60163563, DATE 2012-05-15

figure 2

POTENTIOMETRIC GROUNDWATER ELEVATIONS - BEDROCK, DECEMBER 2018
BEDROCK GROUNDWATER INVESTIGATION REPORT OF FINDINGS
2915 DR. MARTIN LUTHER KING JR. BLVD., ANDERSON, INDIANA
Revitalizing Auto Communities Environmental Response Trust

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Tables

Table 1

Groundwater Elevation Data
Bedrock Groundwater Investigation
Report of Findings
2915 Dr. Martin Luther King Jr. Boulevard,
Anderson, Indiana

			10-Oct-18		*13-Dec-18*	
Monitoring Well Location	***Hydro-Geologic Unit***	***Riser Elevation (f NAVD 88)***	***Depth to Water (f btor)***	***Groundwater Elevation (f NAVD 88)***	***Depth to Water (f btor)***	***Groundwater Elevation (f NAVD 88)***
MW 62	B	876.70	18.31	858.39	18.17	858.53
MW74	B	881.10	16.02	865.08	15.40	865.70
MW 77	B	862.77	5.82	856.95	-	-
MW 81	B	864.38	6.97	857.41	6.80	857.58
MW 82	B	879.70	15.61	864.09	15.11	864.59
MW 83	B	876.23	-	-	18.46	857.77
MW 98-18	B	864.52	6.89	857.63	6.73	857.79
MW 99-18	B	864.84	4.67	860.17	4.44	860.40

Notes:
(1) f btor - feet below top of riser (i.e., reference elevation)
(2) Elevation based on level survey relative to USGS Monument PID LA1429 = 882.61 NAVD88.
(3) Datum for elevation and depth is marked on top of PVC riser pipe.

Table 2

Well Stabilization Parameters
Bedrock Groundwater Investigation
Report of Findings
2915 Dr. Martin Luther King Jr. Boulevard,
Anderson, Indiana

Location	*Date*	*Time (24 hr)*	*Temperature (^{O}C)*	*Conductivity (mS/cm)*	*DO mg/L*	*Turbidity (NTU)*	*pH*	*ORP (mV)*
MW 62	10/10/2018	9:50	17.86	0.88	0.38	9.6	7.08	-96.8
		9:55	18.34	0.88	0.4	55.7	7.08	-95.4
		10:00	17.31	0.85	0.26	229.0	7.09	-114.4
		10:10	17.36	0.82	0.06	169.0	7.13	-143.3
		10:20	17.72	0.82	0.05	57.5	7.13	-146.9
		10:25	17.70	0.81	0.05	28.3	7.13	-147.8
		10:30	17.69	0.81	0.06	26.3	7.13	-147.6
		10:35	17.63	0.81	0.05	22.2	7.14	-147.1
		10:40	17.49	0.81	0.04	15.0	7.14	-147
		10:45	17.47	0.81	0.04	10.3	7.14	-146.8
		10:55	17.54	0.81	0.04	9.04	7.14	-146.4
		10:55	17.62	0.81	0.05	9.36	7.14	-145.9
MW 74	10/10/2018	15:55	--	--	--	--	--	--
		16:10	14.49	0.89	0.75	110.0	7.22	-101.7
		16:20	15.23	0.89	0.83	95.4	7.20	-99.5
		16:30	15.31	0.89	0.52	61.8	7.19	-96.4
		16:35	15.18	0.89	0.38	43.6	7.19	-95.3
		16:40	15.23	0.89	0.35	27.1	7.18	-94.2
		16:45	15.30	0.89	0.28	26.4	7.18	-93.4
		16:50	15.46	0.89	0.23	23.8	7.17	-93.1
		16:55	15.57	0.89	0.2	19.9	7.17	-92.7
		17:00	15.36	0.89	0.17	19.8	7.17	-92.2
MW 77	10/10/2018	13:19	--	--	--	--	--	--
		13:34	16.65	1.11	0.1	23.9	7.08	-86.4
		13:39	16.65	1.11	0.11	20.8	7.08	-86.4
		13:44	16.78	1.11	0.1	15.7	7.07	-87.5
		13:49	16.88	1.11	0.12	18.4	7.07	-87.7
MW 81	10/10/2018	14:41	--	--	--	--	--	--
		14:56	17.94	0.88	0.05	24.5	7.42	-218.7
		15:01	17.83	0.91	0.07	14.2	7.38	-217.2
		15:06	18.12	0.91	0.06	14.4	7.35	-217.3
		15:11	17.59	0.90	0.04	7.6	7.35	-219.8
		15:16	17.81	0.91	0.04	7.9	7.32	-218.6

Table 2

Well Stabilization Parameters
Bedrock Groundwater Investigation
Report of Findings
2915 Dr. Martin Luther King Jr. Boulevard,
Anderson, Indiana

Location	*Date*	*Time (24 hr)*	*Temperature (^{O}C)*	*Conductivity (mS/cm)*	*DO mg/L*	*Turbidity (NTU)*	*pH*	*ORP (mV)*
MW 82	10/10/2018	15:00	--	--	--	--	--	--
		15:15	15.03	0.27	0.09	8.07	8.63	-224.2
		15:20	15.17	0.28	0.08	7.32	8.57	-228.9
		15:25	15.26	0.28	0.06	7.56	8.56	-238.5
MW 83	12/13/2018	12:25	--	--	--	--	--	--
		12:40	13.82	0.98	0.08	5.96	6.92	-134.4
		12:14	13.72	0.98	0.07	4.33	6.93	-131.2
		12:50	13.49	0.99	0.08	3.59	6.93	-125.6
MW 98-18	10/9/2018	15:37	--	--	--	--	--	--
		15:52	21.00	1.03	0.29	3.15	7.15	-91.1
		15:57	20.46	1.03	0.22	2.98	7.14	-84.8
		16:02	20.39	1.04	0.22	3.48	7.12	-81.8
MW 99-18	10/10/2018	17:42	--	--	--	--	--	--
		17:57	16.47	1.13	0.18	27.7	7.01	-63.7
		18:02	16.33	1.15	0.15	13.0	7.00	-62.7
		18:07	16.50	1.15	0.12	7.53	7.00	-63.1
		18:12	16.34	1.15	0.09	5.21	7.00	-62.5

Notes:

f BTOR	feet Below Top Of Riser
mg/L	milligram per litre
mS/cm	millisiemens per centimetre
mV	millivolts
s.u.	Scientific Units
^{o}C	degrees Celsius
NTU	Nephelometric Turbidity Units

Table 3

Sample Key
Bedrock Groundwater Investigation
Report of Findings
2915 Dr. Martin Luther King Jr. Boulevard,
Anderson, Indiana

Sample Location	*Sample Identification*	*Sample Date*	*Time*	*Matrix*	*Sample Type*	*Parent Sample*	*TCL VOCs*
MW 62	GW-101018-AF-045	10/10/18	10:57	GW	N	--	X
MW 74	MW-101018-AF-050	10/10/18	17:05	GW	N	--	X
MW 77	GW-101018-AF-047	10/10/18	13:51	GW	N	--	X
MW 81	GW-100918-AF-043	10/09/18	15:20	GW	N	--	X
MW 82	GW-101018-AF-048	10/10/18	15:27	GW	N	--	X
MW 82	GW-101018-AF-049	10/10/18	15:30	GW	FD	GW-101018-AF-048	X
MW 83	GW-121318-BE-001	12/13/18	12:53	GW	N	--	X
MW 98-18	GW-100918-AF-044	10/09/18	16:07	GW	N	--	X
MW 99-18	GW-101018-AF-051	10/10/18	18:15	GW	N	--	X
Equipment Blank	EB-101018-AF-005	10/10/18	12:33	EB	EB	--	X
Trip Blank	TB-101118-AF-006	10/11/18	15:30	TB	TB	--	X
Trip Blank	Trip Blank	12/13/18	--	TB	TB	--	X

Notes:

X - Sample collected and analyzed at the laboratory for the noted parameters
GW - Groundwater
TB - Trip Blank
EB - Equipment Blank
N - Normal
FD - Field Duplicate
TCL VOCs - Target Compound List Volatile Organic Compounds

Table 4

Groundwater Analytical Results
Bedrock Groundwater Investigation
Report of Findings
2915 Dr. Martin Luther King Jr. Boulevard,
Anderson, Indiana

Sample Location:					***MW 62***	***MW 74***	***MW 77***	***MW 81***	***MW 82***	***MW 82***	***MW 83***	***MW 98-18***	***MW 99-18***
Sample ID:					***GW-101018-AF-045***	***GW-101018-AF-050***	***GW-101018-AF-047***	***GW-100918-AF-043***	***GW-101018-AF-048***	***GW-101018-AF-049***	***GW-121318-BE-001***	***GW-100918-AF-044***	***GW-101018-AF-051***
Sample Date:					***10/10/2018***	***10/10/2018***	***10/10/2018***	***10/9/2018***	***10/10/2018***	***10/10/2018 (Duplicate)***	***12/13/2018***	***10/9/2018***	***10/10/2018***
Parameters	***Units***	***IDEM Groundwater Residential Tap Criteria***	***IDEM Industrial Vapor Exposure Criteria***	***Site-Specific Commercial/ Industrial Tap Water Closure Level***									
Volatile Organic Compounds		a	b	c									
Acetone	ug/L	14000	-	-	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U
Benzene	ug/L	5	120	-	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	80	-	-	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	80	-	-	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	7.5	-	-	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	5600	-	61000	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	ug/L	810	-	-	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	ug/L	5	28	-	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	100	-	-	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	21000	-	-	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	80	-	-	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	0.25 J	1.0 U
Chloromethane (Methyl chloride)	ug/L	190	-	-	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/L	80	-	-	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	28	550	10000	1.0 U	1.0 U	1.0 U	1.2 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	5	210	-	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	7	1300	5100	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	70	-	1000	1.0 U	1.0 U	1.0 U	**78[a]**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	100	-	2000	1.0 U	1.0 U	1.0 U	1.0 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	5	-	-	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	-	-	-	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	-	-	-	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	700	-	-	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Hexanone	ug/L	38	-	-	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	6300	-	-	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride	ug/L	5	-	-	5.0 U	5.0 U	5.0 U	20 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	100	-	-	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	0.76	310	-	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	5	470	-	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1000	-	-	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	ug/L	200	54000	20000	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	5	46	-	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	5	38	29000	1.0 U	1.0 U	1.0 U	4.0 U	0.12 J	0.14 J	1.0 U	1.0 U	1.0 U
Vinyl chloride	ug/L	2	35	3.8	1.0 U	1.0 U	1.0 U	**27[ac]**	1.0 U	1.0 U	**12[ac]**	1.0 U	1.0 U
Xylenes (total)	ug/L	10000	-	-	2.0 U	2.0 U	2.0 U	8.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U

Notes:
µg/L - micrograms per litre
J - Estimated concentration
U - Not present at or above the associated value
78[a] Detected concentration exceeds noted criteria

Attachments

Attachment A

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Bruno L. Pigott
Commissioner

August 10, 2017

Mr. Robert Hare
Cleanup Manager
RACER Trust
500 Woodward Avenue, Suite 2650
Detroit, MI 48226

Dear Mr. Hare:

Re: *2016 Annual Monitoring Report RCRA Corrective Action*
Dated January 31, 2017
VFC # 80414704
RACER Trust, MLK Boulevard (Motors Liquidation Co.)
Madison County
EPA ID # IND980700801

We received the *2016 Annual Monitoring Report RCRA Corrective Action* (report) dated January 31, 2017, from GHD Services, Inc. (GHD) on behalf of RACER Trust (RACER). The following comments are the result of our review.

We agree with the recommendations GHD presented in Section 9 of the report. We also appreciate the report's summary of the long-term (entire data sets) statistical trend results in Tables 9 and D-2. Due to the increase in number of observations, we recommend the facility report the short-term (last four to eight data points) statistical trends for compounds that already exhibit long-term increasing and decreasing trends, because short-term results may be different than the long-term ones.

We agree that, in general, compounds with less than 75% detection may not be suitable for statistical analysis (Section 4 of the August 15, 2010, *Site-Wide Groundwater Monitoring Plan* (GMP) (VFC # 57783785)); however, RACER should take into consideration the grouping and/or location of results below the laboratory method detection limit within the data set. For example, it makes a difference if all the non-detect values are at the start or at the end, chronologically, within the data set or if they are scattered throughout. RACER needs to evaluate whether compounds may become suitable for statistical analysis each year.

Based on our review of the annual report, we ask RACER to update the pairs of monitoring wells/compounds on which to perform statistical analysis as described above. For example, at a minimum, RACER needs to perform statistical analysis on trichloroethylene for MW-4 and MW 40; cis-1,2-dichloroethylene (cis) for MW 81 and MW 85; and cis and vinyl chloride (VC) for Pond Intake and Pond North.

Finally, RACER needs to delineate bedrock contamination horizontally and vertically. Bedrock monitoring well MW 81 has a statistically significant increasing trend of VC (with the maximum concentration of 66 µg/L on October 22, 2013, and the second highest concentration of 62 µg/L on October 8, 2015) and is the farthest downgradient monitoring well installed in bedrock. In addition, cis in MW 81 exhibits an increasing trend in concentrations considering the last six analytical results, starting in October 2011. The closest bedrock monitoring well to the west, MW 83, has an emerging increasing trend of VC even though it is not statistically significant. VC's maximum concentration in MW 83 is 5.3 µg/L on October 22, 2016. These increases in concentrations warrant horizontal and vertical delineation of volatile organic compounds in bedrock.

Thank you for your attention to these matters. If you have questions, please contact Mr. Thierry Liberge at tliberge@idem.IN.gov or call (317) 232 - 8712.

Sincerely,

John A. Guerrettaz, LPG
Chief, Geology Section
Permits Branch
Office of Land Quality

cc: Robert Catallo, GHD
Shannon Richardson, GHD
Madison County Health Department
Robert Marshall, IDEM, OLQ, Hazardous Waste Permits Section

Attachment B

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: MLK BLVD
PROJECT NUMBER: 17302
CLIENT: RACER TRUST
LOCATION: FORMER ANDERSON GUIDE FACILITY

HOLE DESIGNATION: MW98-18
DATE COMPLETED: 11 October 2018
DRILLING METHOD: HSA/HQ Core
FIELD PERSONNEL: T. Pranger

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
	GROUND SURFACE TOP OF RISER	864.85 864.52					
0	DIRECT DRILL (See log for MW81 for details)		CONCRETE				
2							
4							
6			▽				
8							
10							
12							
14			STEEL CASING				
16							
18							
20							
22			CEMENT GROUT				
23	END OF OVERBURDEN HOLE @ 23.0ft BGS						
24							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽

STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

PROJECT NAME: MLK BLVD
PROJECT NUMBER: 17302
CLIENT: RACER TRUST
LOCATION: FORMER ANDERSON GUIDE FACILITY

HOLE DESIGNATION: MW98-18
DATE COMPLETED: 11 October 2018
DRILLING METHOD: HSA/HQ Core
FIELD PERSONNEL: T. Pranger

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	MONITORING WELL	RUN NUMBER	CORE RECOVERY %	RQD %
	LIMESTONE, silt line/clay lines	841.85	STEEL CASING CEMENT GROUT HOLEPLUG			
24						
26						
28						
30						
32						
34						
36						
38						
40						
42	- horizontal weathered fracture at 42.5ft BGS					
44	- horizontal weathered fracture at 44.5ft BGS					
46						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽

STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

PROJECT NAME: MLK BLVD
PROJECT NUMBER: 17302
CLIENT: RACER TRUST
LOCATION: FORMER ANDERSON GUIDE FACILITY

HOLE DESIGNATION: MW98-18
DATE COMPLETED: 11 October 2018
DRILLING METHOD: HSA/HQ Core
FIELD PERSONNEL: T. Pranger

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	MONITORING WELL	RUN NUMBER	CORE RECOVERY %	RQD %
48						
50	- horizontal fractures, weathering from 50.0 to 57.0ft BGS					
52						
54			SAND			
56						
58						
60	END OF BOREHOLE @ 60.0ft BGS	804.85	WELL DETAILS Screened interval: 816.85 to 806.85ft 48.00 to 58.00ft BGS Length: 10ft Seal: 861.85 to 818.85ft 3.00 to 46.00ft BGS Sand Pack: 818.85 to 804.85ft 46.00 to 60.00ft BGS			
62						
64						
66						
68						
70						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: MLK BLVD
PROJECT NUMBER: 17302
CLIENT: RACER TRUST
LOCATION: FORMER ANDERSON GUIDE FACILITY

HOLE DESIGNATION: MW99-18
DATE COMPLETED: 2 October 2018
DRILLING METHOD: HSA/HQ Core
FIELD PERSONNEL: T. Pranger

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE TOP OF RISER	865.17 864.84						
0	TOPSOIL							
	ML-SILT, trace sand with clay, some topsoil, stiff, moist	864.17	CONCRETE	1		67	11	0.0
2								
				2		67	5	0.0
4			▽					
6	- tan, firm at 6.0ft BGS			3		100	6	0.0
	- wet at 7.0ft BGS							
8	- saturated at 8.5ft BGS			4		100	9	0.0
	- sand, fine grained, loose, saturated at 9.5ft BGS							
10								
	SP-SAND, fine grained, compact, tan to gray	854.17		5		67	13	0.0
12	- course grained, gray, saturated at 12.0ft BGS							
	SP-SAND, course grained, compact, gray, saturated	852.67		6		67	14	0.0
14								
16			CEMENT GROUT	7		0	14	0.0
18								
				8		100	15	0.0
20								
22								
24								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: MLK BLVD
PROJECT NUMBER: 17302
CLIENT: RACER TRUST
LOCATION: FORMER ANDERSON GUIDE FACILITY

HOLE DESIGNATION: MW99-18
DATE COMPLETED: 2 October 2018
DRILLING METHOD: HSA/HQ Core
FIELD PERSONNEL: T. Pranger

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
26								
28								
30								
	END OF OVERBURDEN HOLE @ 31.0ft BGS							
32								
34								
36								
38								
40								
42								
44								
46								
48								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽

STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

PROJECT NAME: MLK BLVD
PROJECT NUMBER: 17302
CLIENT: RACER TRUST
LOCATION: FORMER ANDERSON GUIDE FACILITY

HOLE DESIGNATION: MW99-18
DATE COMPLETED: 2 October 2018
DRILLING METHOD: HSA/HQ Core
FIELD PERSONNEL: T. Pranger

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	MONITORING WELL	RUN NUMBER	CORE RECOVERY %	RQD %
32	LIMESTONE,	834.17	HOLE PLUG			
	- rock at 33.0ft BGS					
34						
	- horizontal fracture at 35.0ft BGS					
36	- horizontal fracture at 36.0ft BGS					
38			SAND			
40						
	- horizontal fracture at 41.0ft BGS					
42						
44						
	END OF BOREHOLE @ 45.0ft BGS	820.17				
46			WELL DETAILS Screened interval: 830.17 to 820.17ft 35.00 to 45.00ft BGS Length: 10ft Seal: 862.17 to 832.17ft 3.00 to 33.00ft BGS Sand Pack: 832.17 to 820.17ft 33.00 to 45.00ft BGS			
48						
50						
52						
54						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽

Attachment C

Memorandum

Revised: January 17, 2019
November 13, 2018

To:	Rob Catallo	Ref. No.:	017302-T08
From:	Linda Waters/mkd/63-NF	Tel:	315-679-5792
cc:	Tyler Wittmaier		

Subject: **Analytical Results and Reduced Validation**
Bedrock Groundwater Investigation
RACER Trust - MLK Boulevard Facility
Anderson, Indiana
October – December 2018

1. Introduction

This document details a reduced validation of analytical results for groundwater samples collected in support of the Bedrock Groundwater Investigation at the MLK Boulevard Facility in Anderson, Indiana during October to December 2018. Samples were submitted to TestAmerica Laboratory, 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 QC samples.

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

i). "Quality Assurance Project Plan (QAPP) for the Resource Conservation and Recovery Act (RCRA) Facility Investigation at GM Anderson, Indiana Facility", IND 980 700 801, Revision 2, October 14, 1997

ii). "USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review", USEPA 540-R-08-01, June 2008

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

2. Sample Holding Time and Preservation

The sample holding time criteria and sample preservation requirements 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 (0-6°C).

3. Laboratory Method Blank Analyses

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

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 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 met laboratory criteria.

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.

The LCS contained all compounds of interest. All LCS recoveries were within laboratory control limits, demonstratingacceptable 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 relative percent difference (RPD) between the MS and MSD is used to assess analytical precision.

No MS/MSD analyses were performed on site-samples for this event.

7. Field QA/QC Samples

The field QA/QC consisted of 2 trip blank samples, 1 rinse blank sample, and 1 field duplicate sample set.

Trip Blank Sample Analysis

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

Rinse Blank Sample Analysis

To assess field decontamination procedures, ambient conditions at the site, and cleanliness of sample containers, 1 rinse blank was submitted for analysis, as identified in Table 1. All results were non-detect for the analytes of interest with the following exceptions:

i) A low level concentration of Carbon Disulfide was observed. Associated results were non-detect and considered not impacted by the potential contaminination and, therefore, reported without qualification.

ii) A low level concentration of cis-1,2-Dichloroethene was observed. Associated samples with similar concentrations were qualified as non-detect based on potential contamination (see Table 4).

Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, 1 field duplicate sample was collected and submitted "blind" to the laboratory, as specified in Table 1. The RPDs associated with these duplicate samples must be less than 50 percent 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.

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
Bedrock Groundwater Investigation
RACER Trust - MLK Boulevard Facility
Anderson, Indiana
October - December 2018

					Analysis	
Sample Identification	**Location**	**Matrix**	**Collection Date (mm/dd/yyyy)**	**Collection Time (hr:min)**	**TCL VOC**	**Comments**
EB-101018-AF-005	-	Water	10/10/2018	12:33	X	Equipment Blank
GW-101018-AF-045	MW 62	Groundwater	10/10/2018	10:57	X	
GW-101018-AF-050	MW 74	Groundwater	10/10/2018	17:05	X	
GW-101018-AF-047	MW 77	Groundwater	10/10/2018	13:51	X	
GW-100918-AF-043	MW 81	Groundwater	10/09/2018	15:20	X	
GW-101018-AF-048	MW 82	Groundwater	10/10/2018	15:27	X	
GW-101018-AF-049	MW 82	Groundwater	10/10/2018	15:30	X	FD (GW-101018-AF-048)
GW-100918-AF-044	MW 98-18	Groundwater	10/09/2018	16:07	X	
GW-101018-AF-051	MW 99-18	Groundwater	10/10/2018	18:15	X	
TB-101118-AF-006	-	Water	10/11/2018	-	X	Trip Blank
GW-121318-BE-001	MW 83	Groundwater	12/13/2018	12:53	X	
TRIP BLANK	-	Water	12/13/2018	-	X	Trip Blank

Notes:

FD - Field Duplicate sample of sample in parenthesis
MS/MSD - Matrix Spike/Matrix Spike Duplicate
TCL - Target Compound List
VOC - Volatile Organic Compounds

Table 2

Analytical Results Summary
Bedrock Groundwater Investigation
RACER Trust - MLK Boulevard Facility
Anderson, Indiana
October – December 2018

Location ID:		MW 62	MW 74	MW 77	MW 81	MW 82	MW 82	MW 83	MW 98-18	MW 99-18
Sample Name:		GW-101018-AF-045	GW-101018-AF-050	GW-101018-AF-047	GW-100918-AF-043	GW-101018-AF-048	GW-101018-AF-049	GW-121318-BE-001	GW-100918-AF-044	GW-101018-AF-051
Sample Date:		10/10/2018	10/10/2018	10/10/2018	10/09/2018	10/10/2018	10/10/2018 Duplicate	12/13/2018	10/09/2018	10/10/2018
Parameters	**Unit**									
Volatile Organic Compounds										
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.2 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	µg/L	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U
Acetone	µg/L	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	µg/L	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	µg/L	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	0.25 J	1.0 U
Chloromethane (Methyl chloride)	µg/L	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	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	78	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	µg/L	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	µg/L	5.0 U	5.0 U	5.0 U	20 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	µg/L	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	µg/L	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.0 U	4.0 U	0.12 J	0.14 J	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	1.0 U	27	1.0 U	1.0 U	12	1.0 U	1.0 U
Xylenes (total)	µg/L	2.0 U	2.0 U	2.0 U	8.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U

Notes:

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

Table 3

Analytical Methods
Bedrock Groundwater Investigation
RACER Trust - MLK Boulevard Facility
Anderson, Indiana
October - December 2018

Parameter	Method	Matrix	Preservation	Holding Time	
				Collection to Extraction (Days)	Collection or Extraction to Analysis (Days)
Volatile Organic Compounds (VOCs)	SW-846 8260B	Water	pH < 2 and Iced, 0-6° C	-	14

Notes:

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 Rinse Blanks
Bedrock Groundwater Investigation
RACER Trust - MLK Boulevard Facility
Anderson, Indiana
October - December 2018

Parameter	Rinse Blank ID	Blank Date (dd/mm/yyyy)	Analyte	Blank Result	Associated Sample ID	Original Result	Qualified Result	Units
VOC	EB-101018-AF-005	10/10/2018	cis-1,2-Dichloroethene	0.37 J	GW-100918-AF-044	0.21 J	1.0 U	ug/L
					GW-100918-AF-048	0.45 J	1.0 U	ug/L
					GW-100918-AF-049	0.38 J	1.0 U	ug/L

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration
VOC - Volatile Organic Compounds

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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

TestAmerica Job ID: 240-102783-2
Client Project/Site: 17302-T08, RACER Delphi Anderson

For:
GHD Services Inc.
2055 Niagara Falls Blvd., Suite 3
Niagara Falls, New York 14304

Attn: Ms. Deborah Andrasko

Authorized for release by:
10/25/2018 5:43:33 PM
Leslie Howell, Project Manager I
(330)966-9266
leslie.howell@testamericainc.com

Designee for

Denise Heckler, Project Manager II
(330)966-9477
denise.heckler@testamericainc.com

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

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

Table of Contents

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: 17302-T08, RACER Delphi Anderson

TestAmerica Job ID: 240-102783-2

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.

Glossary

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

Case Narrative

Client: GHD Services Inc.
Project/Site: 17302-T08, RACER Delphi Anderson

TestAmerica Job ID: 240-102783-2

Job ID: 240-102783-2

Laboratory: TestAmerica Canton

Narrative

Job Narrative
240-102783-2

Comments
No additional comments.

Receipt
The samples were received on 10/12/2018 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.7º C.

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

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

Method Summary

Client: GHD Services Inc.
Project/Site: 17302-T08, RACER Delphi Anderson

TestAmerica Job ID: 240-102783-2

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
5030B	Purge and Trap	SW846	TAL CAN

Protocol References:

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: 17302-T08, RACER Delphi Anderson

TestAmerica Job ID: 240-102783-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-102783-9	GW-100918-AF-043	Water	10/09/18 15:20	10/12/18 09:30
240-102783-10	GW-100918-AF-044	Water	10/09/18 16:07	10/12/18 09:30
240-102783-11	GW-101018-AF-045	Water	10/10/18 10:57	10/12/18 09:30
240-102783-12	GW-101018-AF-046	Water	10/10/18 12:17	10/12/18 09:30
240-102783-13	EB-101018-AF-005	Water	10/10/18 12:33	10/12/18 09:30
240-102783-14	GW-101018-AF-047	Water	10/10/18 13:51	10/12/18 09:30
240-102783-15	GW-101018-AF-048	Water	10/10/18 15:27	10/12/18 09:30
240-102783-16	GW-101018-AF-049	Water	10/10/18 15:30	10/12/18 09:30
240-102783-17	GW-101018-AF-050	Water	10/10/18 17:05	10/12/18 09:30
240-102783-18	GW-101018-AF-051	Water	10/10/18 18:15	10/12/18 09:30
240-102783-19	TB-101118-AF-006	Water	10/11/18 15:30	10/12/18 09:30

Detection Summary

Client: GHD Services Inc.
Project/Site: 17302-T08, RACER Delphi Anderson

TestAmerica Job ID: 240-102783-2

Client Sample ID: GW-100918-AF-043 — Lab Sample ID: 240-102783-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	1.2	J	4.0	0.68	ug/L	4		8260B	Total/NA
cis-1,2-Dichloroethene	78		4.0	0.64	ug/L	4		8260B	Total/NA
trans-1,2-Dichloroethene	1.0	J	4.0	0.76	ug/L	4		8260B	Total/NA
Vinyl chloride	27		4.0	0.80	ug/L	4		8260B	Total/NA

Client Sample ID: GW-100918-AF-044 — Lab Sample ID: 240-102783-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloroform	0.25	J	1.0	0.13	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	0.21	J	1.0	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: GW-101018-AF-045 — Lab Sample ID: 240-102783-11

No Detections.

Client Sample ID: GW-101018-AF-046 — Lab Sample ID: 240-102783-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	300		17	2.7	ug/L	16.67		8260B	Total/NA
Vinyl chloride	240		17	3.3	ug/L	16.67		8260B	Total/NA

Client Sample ID: EB-101018-AF-005 — Lab Sample ID: 240-102783-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Carbon disulfide	0.33	J	1.0	0.28	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	0.37	J	1.0	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: GW-101018-AF-047 — Lab Sample ID: 240-102783-14

No Detections.

Client Sample ID: GW-101018-AF-048 — Lab Sample ID: 240-102783-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.45	J	1.0	0.16	ug/L	1		8260B	Total/NA
Trichloroethene	0.12	J	1.0	0.10	ug/L	1		8260B	Total/NA

Client Sample ID: GW-101018-AF-049 — Lab Sample ID: 240-102783-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.38	J	1.0	0.16	ug/L	1		8260B	Total/NA
Trichloroethene	0.14	J	1.0	0.10	ug/L	1		8260B	Total/NA

Client Sample ID: GW-101018-AF-050 — Lab Sample ID: 240-102783-17

No Detections.

Client Sample ID: GW-101018-AF-051 — Lab Sample ID: 240-102783-18

No Detections.

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: GHD Services Inc.
Project/Site: 17302-T08, RACER Delphi Anderson

TestAmerica Job ID: 240-102783-2

Client Sample ID: TB-101118-AF-006 **Lab Sample ID: 240-102783-19**

No Detections.

This Detection Summary does not include radiochemical test results.

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

Client Sample ID: GW-100918-AF-043
Date Collected: 10/09/18 15:20
Date Received: 10/12/18 09:30

Lab Sample ID: 240-102783-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	4.0	U	4.0	0.96	ug/L			10/22/18 15:36	4
1,1,2,2-Tetrachloroethane	4.0	U	4.0	0.52	ug/L			10/22/18 15:36	4
1,1,2-Trichloroethane	4.0	U	4.0	0.36	ug/L			10/22/18 15:36	4
1,1-Dichloroethane	**1.2**	**J**	4.0	0.68	ug/L			10/22/18 15:36	4
1,1-Dichloroethene	4.0	U	4.0	0.76	ug/L			10/22/18 15:36	4
1,2-Dichloroethane	4.0	U	4.0	0.84	ug/L			10/22/18 15:36	4
1,2-Dichloropropane	4.0	U	4.0	0.60	ug/L			10/22/18 15:36	4
2-Hexanone	40	U	40	2.2	ug/L			10/22/18 15:36	4
Acetone	40	U	40	22	ug/L			10/22/18 15:36	4
Benzene	4.0	U	4.0	0.52	ug/L			10/22/18 15:36	4
Bromoform	4.0	U	4.0	3.0	ug/L			10/22/18 15:36	4
Bromomethane	4.0	U	4.0	1.7	ug/L			10/22/18 15:36	4
Carbon disulfide	4.0	U	4.0	1.1	ug/L			10/22/18 15:36	4
Carbon tetrachloride	4.0	U	4.0	1.0	ug/L			10/22/18 15:36	4
Chlorobenzene	4.0	U	4.0	0.56	ug/L			10/22/18 15:36	4
Chloroethane	4.0	U	4.0	3.3	ug/L			10/22/18 15:36	4
Chloroform	4.0	U	4.0	0.52	ug/L			10/22/18 15:36	4
Chloromethane	4.0	U	4.0	0.80	ug/L			10/22/18 15:36	4
cis-1,2-Dichloroethene	**78**		4.0	0.64	ug/L			10/22/18 15:36	4
cis-1,3-Dichloropropene	4.0	U	4.0	2.4	ug/L			10/22/18 15:36	4
Dichlorobromomethane	4.0	U	4.0	0.68	ug/L			10/22/18 15:36	4
Ethylbenzene	4.0	U	4.0	0.44	ug/L			10/22/18 15:36	4
2-Butanone (MEK)	40	U	40	4.6	ug/L			10/22/18 15:36	4
4-Methyl-2-pentanone (MIBK)	40	U	40	1.7	ug/L			10/22/18 15:36	4
Methylene Chloride	20	U	20	10	ug/L			10/22/18 15:36	4
Styrene	4.0	U	4.0	0.40	ug/L			10/22/18 15:36	4
Tetrachloroethene	4.0	U	4.0	0.60	ug/L			10/22/18 15:36	4
Toluene	4.0	U	4.0	0.56	ug/L			10/22/18 15:36	4
trans-1,2-Dichloroethene	**1.0**	**J**	4.0	0.76	ug/L			10/22/18 15:36	4
trans-1,3-Dichloropropene	4.0	U	4.0	2.7	ug/L			10/22/18 15:36	4
Trichloroethene	4.0	U	4.0	0.40	ug/L			10/22/18 15:36	4
Vinyl chloride	**27**		4.0	0.80	ug/L			10/22/18 15:36	4
Xylenes, Total	8.0	U	8.0	0.60	ug/L			10/22/18 15:36	4
Chlorodibromomethane	4.0	U	4.0	1.6	ug/L			10/22/18 15:36	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 121*		*10/22/18 15:36*	*4*
4-Bromofluorobenzene (Surr)	*92*		*59 - 120*		*10/22/18 15:36*	*4*
Toluene-d8 (Surr)	*95*		*70 - 123*		*10/22/18 15:36*	*4*
Dibromofluoromethane (Surr)	*121*		*75 - 128*		*10/22/18 15:36*	*4*

Client Sample ID: GW-100918-AF-044
Date Collected: 10/09/18 16:07
Date Received: 10/12/18 09:30

Lab Sample ID: 240-102783-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			10/22/18 15:58	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			10/22/18 15:58	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			10/22/18 15:58	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/22/18 15:58	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/22/18 15:58	1

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

Client Sample ID: GW-100918-AF-044
Date Collected: 10/09/18 16:07
Date Received: 10/12/18 09:30

Lab Sample ID: 240-102783-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			10/22/18 15:58	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			10/22/18 15:58	1
2-Hexanone	10	U	10	0.54	ug/L			10/22/18 15:58	1
Acetone	10	U	10	5.4	ug/L			10/22/18 15:58	1
Benzene	1.0	U	1.0	0.13	ug/L			10/22/18 15:58	1
Bromoform	1.0	U	1.0	0.76	ug/L			10/22/18 15:58	1
Bromomethane	1.0	U	1.0	0.42	ug/L			10/22/18 15:58	1
Carbon disulfide	1.0	U	1.0	0.28	ug/L			10/22/18 15:58	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			10/22/18 15:58	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			10/22/18 15:58	1
Chloroethane	1.0	U	1.0	0.83	ug/L			10/22/18 15:58	1
Chloroform	**0.25**	**J**	1.0	0.13	ug/L			10/22/18 15:58	1
Chloromethane	1.0	U	1.0	0.20	ug/L			10/22/18 15:58	1
cis-1,2-Dichloroethene	**0.21**	**J**	1.0	0.16	ug/L			10/22/18 15:58	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			10/22/18 15:58	1
Dichlorobromomethane	1.0	U	1.0	0.17	ug/L			10/22/18 15:58	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			10/22/18 15:58	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			10/22/18 15:58	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			10/22/18 15:58	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			10/22/18 15:58	1
Styrene	1.0	U	1.0	0.10	ug/L			10/22/18 15:58	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/22/18 15:58	1
Toluene	1.0	U	1.0	0.14	ug/L			10/22/18 15:58	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/22/18 15:58	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			10/22/18 15:58	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/22/18 15:58	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/22/18 15:58	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			10/22/18 15:58	1
Chlorodibromomethane	1.0	U	1.0	0.39	ug/L			10/22/18 15:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*70 - 121*		*10/22/18 15:58*	*1*
4-Bromofluorobenzene (Surr)	*72*		*59 - 120*		*10/22/18 15:58*	*1*
Toluene-d8 (Surr)	*74*		*70 - 123*		*10/22/18 15:58*	*1*
Dibromofluoromethane (Surr)	*99*		*75 - 128*		*10/22/18 15:58*	*1*

Client Sample ID: GW-101018-AF-045
Date Collected: 10/10/18 10:57
Date Received: 10/12/18 09:30

Lab Sample ID: 240-102783-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			10/22/18 16:19	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			10/22/18 16:19	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			10/22/18 16:19	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/22/18 16:19	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/22/18 16:19	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			10/22/18 16:19	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			10/22/18 16:19	1
2-Hexanone	10	U	10	0.54	ug/L			10/22/18 16:19	1
Acetone	10	U	10	5.4	ug/L			10/22/18 16:19	1
Benzene	1.0	U	1.0	0.13	ug/L			10/22/18 16:19	1

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

Client Sample ID: GW-101018-AF-045
Date Collected: 10/10/18 10:57
Date Received: 10/12/18 09:30

Lab Sample ID: 240-102783-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	1.0	U	1.0	0.76	ug/L			10/22/18 16:19	1
Bromomethane	1.0	U	1.0	0.42	ug/L			10/22/18 16:19	1
Carbon disulfide	1.0	U	1.0	0.28	ug/L			10/22/18 16:19	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			10/22/18 16:19	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			10/22/18 16:19	1
Chloroethane	1.0	U	1.0	0.83	ug/L			10/22/18 16:19	1
Chloroform	1.0	U	1.0	0.13	ug/L			10/22/18 16:19	1
Chloromethane	1.0	U	1.0	0.20	ug/L			10/22/18 16:19	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/22/18 16:19	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			10/22/18 16:19	1
Dichlorobromomethane	1.0	U	1.0	0.17	ug/L			10/22/18 16:19	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			10/22/18 16:19	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			10/22/18 16:19	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			10/22/18 16:19	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			10/22/18 16:19	1
Styrene	1.0	U	1.0	0.10	ug/L			10/22/18 16:19	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/22/18 16:19	1
Toluene	1.0	U	1.0	0.14	ug/L			10/22/18 16:19	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/22/18 16:19	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			10/22/18 16:19	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/22/18 16:19	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/22/18 16:19	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			10/22/18 16:19	1
Chlorodibromomethane	1.0	U	1.0	0.39	ug/L			10/22/18 16:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*70 - 121*		*10/22/18 16:19*	*1*
4-Bromofluorobenzene (Surr)	*87*		*59 - 120*		*10/22/18 16:19*	*1*
Toluene-d8 (Surr)	*92*		*70 - 123*		*10/22/18 16:19*	*1*
Dibromofluoromethane (Surr)	*120*		*75 - 128*		*10/22/18 16:19*	*1*

Client Sample ID: GW-101018-AF-046
Date Collected: 10/10/18 12:17
Date Received: 10/12/18 09:30

Lab Sample ID: 240-102783-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	17	U	17	4.0	ug/L			10/22/18 16:41	16.67
1,1,2,2-Tetrachloroethane	17	U	17	2.2	ug/L			10/22/18 16:41	16.67
1,1,2-Trichloroethane	17	U	17	1.5	ug/L			10/22/18 16:41	16.67
1,1-Dichloroethane	17	U	17	2.8	ug/L			10/22/18 16:41	16.67
1,1-Dichloroethene	17	U	17	3.2	ug/L			10/22/18 16:41	16.67
1,2-Dichloroethane	17	U	17	3.5	ug/L			10/22/18 16:41	16.67
1,2-Dichloropropane	17	U	17	2.5	ug/L			10/22/18 16:41	16.67
2-Hexanone	170	U	170	9.0	ug/L			10/22/18 16:41	16.67
Acetone	170	U	170	90	ug/L			10/22/18 16:41	16.67
Benzene	17	U	17	2.2	ug/L			10/22/18 16:41	16.67
Bromoform	17	U	17	13	ug/L			10/22/18 16:41	16.67
Bromomethane	17	U	17	7.0	ug/L			10/22/18 16:41	16.67
Carbon disulfide	17	U	17	4.7	ug/L			10/22/18 16:41	16.67
Carbon tetrachloride	17	U	17	4.3	ug/L			10/22/18 16:41	16.67
Chlorobenzene	17	U	17	2.3	ug/L			10/22/18 16:41	16.67

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

Client Sample ID: GW-101018-AF-046
Date Collected: 10/10/18 12:17
Date Received: 10/12/18 09:30

Lab Sample ID: 240-102783-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroethane	17	U	17	14	ug/L			10/22/18 16:41	16.67
Chloroform	17	U	17	2.2	ug/L			10/22/18 16:41	16.67
Chloromethane	17	U	17	3.3	ug/L			10/22/18 16:41	16.67
cis-1,2-Dichloroethene	**300**		17	2.7	ug/L			10/22/18 16:41	16.67
cis-1,3-Dichloropropene	17	U	17	10	ug/L			10/22/18 16:41	16.67
Dichlorobromomethane	17	U	17	2.8	ug/L			10/22/18 16:41	16.67
Ethylbenzene	17	U	17	1.8	ug/L			10/22/18 16:41	16.67
2-Butanone (MEK)	170	U	170	19	ug/L			10/22/18 16:41	16.67
4-Methyl-2-pentanone (MIBK)	170	U	170	7.0	ug/L			10/22/18 16:41	16.67
Methylene Chloride	83	U	83	44	ug/L			10/22/18 16:41	16.67
Styrene	17	U	17	1.7	ug/L			10/22/18 16:41	16.67
Tetrachloroethene	17	U	17	2.5	ug/L			10/22/18 16:41	16.67
Toluene	17	U	17	2.3	ug/L			10/22/18 16:41	16.67
trans-1,2-Dichloroethene	17	U	17	3.2	ug/L			10/22/18 16:41	16.67
trans-1,3-Dichloropropene	17	U	17	11	ug/L			10/22/18 16:41	16.67
Trichloroethene	17	U	17	1.7	ug/L			10/22/18 16:41	16.67
Vinyl chloride	**240**		17	3.3	ug/L			10/22/18 16:41	16.67
Xylenes, Total	33	U	33	2.5	ug/L			10/22/18 16:41	16.67
Chlorodibromomethane	17	U	17	6.5	ug/L			10/22/18 16:41	16.67

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*70 - 121*		*10/22/18 16:41*	*16.67*
4-Bromofluorobenzene (Surr)	*90*		*59 - 120*		*10/22/18 16:41*	*16.67*
Toluene-d8 (Surr)	*93*		*70 - 123*		*10/22/18 16:41*	*16.67*
Dibromofluoromethane (Surr)	*118*		*75 - 128*		*10/22/18 16:41*	*16.67*

Client Sample ID: EB-101018-AF-005
Date Collected: 10/10/18 12:33
Date Received: 10/12/18 09:30

Lab Sample ID: 240-102783-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			10/22/18 17:03	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			10/22/18 17:03	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			10/22/18 17:03	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/22/18 17:03	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/22/18 17:03	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			10/22/18 17:03	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			10/22/18 17:03	1
2-Hexanone	10	U	10	0.54	ug/L			10/22/18 17:03	1
Acetone	10	U	10	5.4	ug/L			10/22/18 17:03	1
Benzene	1.0	U	1.0	0.13	ug/L			10/22/18 17:03	1
Bromoform	1.0	U	1.0	0.76	ug/L			10/22/18 17:03	1
Bromomethane	1.0	U	1.0	0.42	ug/L			10/22/18 17:03	1
Carbon disulfide	**0.33**	**J**	1.0	0.28	ug/L			10/22/18 17:03	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			10/22/18 17:03	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			10/22/18 17:03	1
Chloroethane	1.0	U	1.0	0.83	ug/L			10/22/18 17:03	1
Chloroform	1.0	U	1.0	0.13	ug/L			10/22/18 17:03	1
Chloromethane	1.0	U	1.0	0.20	ug/L			10/22/18 17:03	1
cis-1,2-Dichloroethene	**0.37**	**J**	1.0	0.16	ug/L			10/22/18 17:03	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			10/22/18 17:03	1

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

Client Sample ID: EB-101018-AF-005
Date Collected: 10/10/18 12:33
Date Received: 10/12/18 09:30

Lab Sample ID: 240-102783-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	1.0	U	1.0	0.17	ug/L			10/22/18 17:03	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			10/22/18 17:03	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			10/22/18 17:03	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			10/22/18 17:03	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			10/22/18 17:03	1
Styrene	1.0	U	1.0	0.10	ug/L			10/22/18 17:03	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/22/18 17:03	1
Toluene	1.0	U	1.0	0.14	ug/L			10/22/18 17:03	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/22/18 17:03	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			10/22/18 17:03	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/22/18 17:03	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/22/18 17:03	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			10/22/18 17:03	1
Chlorodibromomethane	1.0	U	1.0	0.39	ug/L			10/22/18 17:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*70 - 121*		*10/22/18 17:03*	*1*
4-Bromofluorobenzene (Surr)	*85*		*59 - 120*		*10/22/18 17:03*	*1*
Toluene-d8 (Surr)	*91*		*70 - 123*		*10/22/18 17:03*	*1*
Dibromofluoromethane (Surr)	*115*		*75 - 128*		*10/22/18 17:03*	*1*

Client Sample ID: GW-101018-AF-047
Date Collected: 10/10/18 13:51
Date Received: 10/12/18 09:30

Lab Sample ID: 240-102783-14
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			10/22/18 17:25	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			10/22/18 17:25	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			10/22/18 17:25	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/22/18 17:25	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/22/18 17:25	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			10/22/18 17:25	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			10/22/18 17:25	1
2-Hexanone	10	U	10	0.54	ug/L			10/22/18 17:25	1
Acetone	10	U	10	5.4	ug/L			10/22/18 17:25	1
Benzene	1.0	U	1.0	0.13	ug/L			10/22/18 17:25	1
Bromoform	1.0	U	1.0	0.76	ug/L			10/22/18 17:25	1
Bromomethane	1.0	U	1.0	0.42	ug/L			10/22/18 17:25	1
Carbon disulfide	1.0	U	1.0	0.28	ug/L			10/22/18 17:25	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			10/22/18 17:25	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			10/22/18 17:25	1
Chloroethane	1.0	U	1.0	0.83	ug/L			10/22/18 17:25	1
Chloroform	1.0	U	1.0	0.13	ug/L			10/22/18 17:25	1
Chloromethane	1.0	U	1.0	0.20	ug/L			10/22/18 17:25	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/22/18 17:25	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			10/22/18 17:25	1
Dichlorobromomethane	1.0	U	1.0	0.17	ug/L			10/22/18 17:25	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			10/22/18 17:25	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			10/22/18 17:25	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			10/22/18 17:25	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			10/22/18 17:25	1

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

Client Sample ID: GW-101018-AF-047
Date Collected: 10/10/18 13:51
Date Received: 10/12/18 09:30

Lab Sample ID: 240-102783-14
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	1.0	U	1.0	0.10	ug/L			10/22/18 17:25	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/22/18 17:25	1
Toluene	1.0	U	1.0	0.14	ug/L			10/22/18 17:25	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/22/18 17:25	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			10/22/18 17:25	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/22/18 17:25	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/22/18 17:25	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			10/22/18 17:25	1
Chlorodibromomethane	1.0	U	1.0	0.39	ug/L			10/22/18 17:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*70 - 121*		*10/22/18 17:25*	*1*
4-Bromofluorobenzene (Surr)	*94*		*59 - 120*		*10/22/18 17:25*	*1*
Toluene-d8 (Surr)	*94*		*70 - 123*		*10/22/18 17:25*	*1*
Dibromofluoromethane (Surr)	*125*		*75 - 128*		*10/22/18 17:25*	*1*

Client Sample ID: GW-101018-AF-048
Date Collected: 10/10/18 15:27
Date Received: 10/12/18 09:30

Lab Sample ID: 240-102783-15
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			10/22/18 17:47	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			10/22/18 17:47	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			10/22/18 17:47	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/22/18 17:47	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/22/18 17:47	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			10/22/18 17:47	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			10/22/18 17:47	1
2-Hexanone	10	U	10	0.54	ug/L			10/22/18 17:47	1
Acetone	10	U	10	5.4	ug/L			10/22/18 17:47	1
Benzene	1.0	U	1.0	0.13	ug/L			10/22/18 17:47	1
Bromoform	1.0	U	1.0	0.76	ug/L			10/22/18 17:47	1
Bromomethane	1.0	U	1.0	0.42	ug/L			10/22/18 17:47	1
Carbon disulfide	1.0	U	1.0	0.28	ug/L			10/22/18 17:47	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			10/22/18 17:47	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			10/22/18 17:47	1
Chloroethane	1.0	U	1.0	0.83	ug/L			10/22/18 17:47	1
Chloroform	1.0	U	1.0	0.13	ug/L			10/22/18 17:47	1
Chloromethane	1.0	U	1.0	0.20	ug/L			10/22/18 17:47	1
cis-1,2-Dichloroethene	**0.45**	**J**	1.0	0.16	ug/L			10/22/18 17:47	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			10/22/18 17:47	1
Dichlorobromomethane	1.0	U	1.0	0.17	ug/L			10/22/18 17:47	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			10/22/18 17:47	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			10/22/18 17:47	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			10/22/18 17:47	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			10/22/18 17:47	1
Styrene	1.0	U	1.0	0.10	ug/L			10/22/18 17:47	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/22/18 17:47	1
Toluene	1.0	U	1.0	0.14	ug/L			10/22/18 17:47	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/22/18 17:47	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			10/22/18 17:47	1

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

Client Sample ID: GW-101018-AF-048
Date Collected: 10/10/18 15:27
Date Received: 10/12/18 09:30

Lab Sample ID: 240-102783-15
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	**0.12**	**J**	1.0	0.10	ug/L			10/22/18 17:47	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/22/18 17:47	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			10/22/18 17:47	1
Chlorodibromomethane	1.0	U	1.0	0.39	ug/L			10/22/18 17:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*70 - 121*		*10/22/18 17:47*	*1*
4-Bromofluorobenzene (Surr)	*94*		*59 - 120*		*10/22/18 17:47*	*1*
Toluene-d8 (Surr)	*103*		*70 - 123*		*10/22/18 17:47*	*1*
Dibromofluoromethane (Surr)	*124*		*75 - 128*		*10/22/18 17:47*	*1*

Client Sample ID: GW-101018-AF-049
Date Collected: 10/10/18 15:30
Date Received: 10/12/18 09:30

Lab Sample ID: 240-102783-16
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			10/22/18 18:08	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			10/22/18 18:08	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			10/22/18 18:08	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/22/18 18:08	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/22/18 18:08	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			10/22/18 18:08	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			10/22/18 18:08	1
2-Hexanone	10	U	10	0.54	ug/L			10/22/18 18:08	1
Acetone	10	U	10	5.4	ug/L			10/22/18 18:08	1
Benzene	1.0	U	1.0	0.13	ug/L			10/22/18 18:08	1
Bromoform	1.0	U	1.0	0.76	ug/L			10/22/18 18:08	1
Bromomethane	1.0	U	1.0	0.42	ug/L			10/22/18 18:08	1
Carbon disulfide	1.0	U	1.0	0.28	ug/L			10/22/18 18:08	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			10/22/18 18:08	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			10/22/18 18:08	1
Chloroethane	1.0	U	1.0	0.83	ug/L			10/22/18 18:08	1
Chloroform	1.0	U	1.0	0.13	ug/L			10/22/18 18:08	1
Chloromethane	1.0	U	1.0	0.20	ug/L			10/22/18 18:08	1
cis-1,2-Dichloroethene	**0.38**	**J**	1.0	0.16	ug/L			10/22/18 18:08	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			10/22/18 18:08	1
Dichlorobromomethane	1.0	U	1.0	0.17	ug/L			10/22/18 18:08	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			10/22/18 18:08	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			10/22/18 18:08	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			10/22/18 18:08	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			10/22/18 18:08	1
Styrene	1.0	U	1.0	0.10	ug/L			10/22/18 18:08	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/22/18 18:08	1
Toluene	1.0	U	1.0	0.14	ug/L			10/22/18 18:08	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/22/18 18:08	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			10/22/18 18:08	1
Trichloroethene	**0.14**	**J**	1.0	0.10	ug/L			10/22/18 18:08	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/22/18 18:08	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			10/22/18 18:08	1
Chlorodibromomethane	1.0	U	1.0	0.39	ug/L			10/22/18 18:08	1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 121*		*10/22/18 18:08*	*1*
4-Bromofluorobenzene (Surr)	*88*		*59 - 120*		*10/22/18 18:08*	*1*
Toluene-d8 (Surr)	*99*		*70 - 123*		*10/22/18 18:08*	*1*
Dibromofluoromethane (Surr)	*117*		*75 - 128*		*10/22/18 18:08*	*1*

Client Sample ID: GW-101018-AF-050
Date Collected: 10/10/18 17:05
Date Received: 10/12/18 09:30

Lab Sample ID: 240-102783-17
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			10/23/18 12:55	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			10/23/18 12:55	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			10/23/18 12:55	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/23/18 12:55	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/23/18 12:55	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			10/23/18 12:55	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			10/23/18 12:55	1
2-Hexanone	10	U	10	0.54	ug/L			10/23/18 12:55	1
Acetone	10	U	10	5.4	ug/L			10/23/18 12:55	1
Benzene	1.0	U	1.0	0.13	ug/L			10/23/18 12:55	1
Bromoform	1.0	U	1.0	0.76	ug/L			10/23/18 12:55	1
Bromomethane	1.0	U	1.0	0.42	ug/L			10/23/18 12:55	1
Carbon disulfide	1.0	U	1.0	0.28	ug/L			10/23/18 12:55	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			10/23/18 12:55	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			10/23/18 12:55	1
Chloroethane	1.0	U	1.0	0.83	ug/L			10/23/18 12:55	1
Chloroform	1.0	U	1.0	0.13	ug/L			10/23/18 12:55	1
Chloromethane	1.0	U	1.0	0.20	ug/L			10/23/18 12:55	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/23/18 12:55	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			10/23/18 12:55	1
Dichlorobromomethane	1.0	U	1.0	0.17	ug/L			10/23/18 12:55	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			10/23/18 12:55	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			10/23/18 12:55	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			10/23/18 12:55	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			10/23/18 12:55	1
Styrene	1.0	U	1.0	0.10	ug/L			10/23/18 12:55	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/23/18 12:55	1
Toluene	1.0	U	1.0	0.14	ug/L			10/23/18 12:55	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/23/18 12:55	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			10/23/18 12:55	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/23/18 12:55	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/23/18 12:55	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			10/23/18 12:55	1
Chlorodibromomethane	1.0	U	1.0	0.39	ug/L			10/23/18 12:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*100*		*70 - 121*		*10/23/18 12:55*	*1*
4-Bromofluorobenzene (Surr)	*84*		*59 - 120*		*10/23/18 12:55*	*1*
Toluene-d8 (Surr)	*89*		*70 - 123*		*10/23/18 12:55*	*1*
Dibromofluoromethane (Surr)	*112*		*75 - 128*		*10/23/18 12:55*	*1*

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

Client Sample ID: GW-101018-AF-051
Date Collected: 10/10/18 18:15
Date Received: 10/12/18 09:30

Lab Sample ID: 240-102783-18
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			10/23/18 13:17	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			10/23/18 13:17	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			10/23/18 13:17	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/23/18 13:17	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/23/18 13:17	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			10/23/18 13:17	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			10/23/18 13:17	1
2-Hexanone	10	U	10	0.54	ug/L			10/23/18 13:17	1
Acetone	10	U	10	5.4	ug/L			10/23/18 13:17	1
Benzene	1.0	U	1.0	0.13	ug/L			10/23/18 13:17	1
Bromoform	1.0	U	1.0	0.76	ug/L			10/23/18 13:17	1
Bromomethane	1.0	U	1.0	0.42	ug/L			10/23/18 13:17	1
Carbon disulfide	1.0	U	1.0	0.28	ug/L			10/23/18 13:17	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			10/23/18 13:17	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			10/23/18 13:17	1
Chloroethane	1.0	U	1.0	0.83	ug/L			10/23/18 13:17	1
Chloroform	1.0	U	1.0	0.13	ug/L			10/23/18 13:17	1
Chloromethane	1.0	U	1.0	0.20	ug/L			10/23/18 13:17	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/23/18 13:17	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			10/23/18 13:17	1
Dichlorobromomethane	1.0	U	1.0	0.17	ug/L			10/23/18 13:17	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			10/23/18 13:17	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			10/23/18 13:17	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			10/23/18 13:17	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			10/23/18 13:17	1
Styrene	1.0	U	1.0	0.10	ug/L			10/23/18 13:17	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/23/18 13:17	1
Toluene	1.0	U	1.0	0.14	ug/L			10/23/18 13:17	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/23/18 13:17	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			10/23/18 13:17	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/23/18 13:17	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/23/18 13:17	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			10/23/18 13:17	1
Chlorodibromomethane	1.0	U	1.0	0.39	ug/L			10/23/18 13:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*70 - 121*		*10/23/18 13:17*	*1*
4-Bromofluorobenzene (Surr)	*89*		*59 - 120*		*10/23/18 13:17*	*1*
Toluene-d8 (Surr)	*92*		*70 - 123*		*10/23/18 13:17*	*1*
Dibromofluoromethane (Surr)	*116*		*75 - 128*		*10/23/18 13:17*	*1*

Client Sample ID: TB-101118-AF-006
Date Collected: 10/11/18 15:30
Date Received: 10/12/18 09:30

Lab Sample ID: 240-102783-19
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			10/23/18 13:38	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			10/23/18 13:38	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			10/23/18 13:38	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/23/18 13:38	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/23/18 13:38	1

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

Client Sample ID: TB-101118-AF-006
Date Collected: 10/11/18 15:30
Date Received: 10/12/18 09:30

Lab Sample ID: 240-102783-19
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			10/23/18 13:38	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			10/23/18 13:38	1
2-Hexanone	10	U	10	0.54	ug/L			10/23/18 13:38	1
Acetone	10	U	10	5.4	ug/L			10/23/18 13:38	1
Benzene	1.0	U	1.0	0.13	ug/L			10/23/18 13:38	1
Bromoform	1.0	U	1.0	0.76	ug/L			10/23/18 13:38	1
Bromomethane	1.0	U	1.0	0.42	ug/L			10/23/18 13:38	1
Carbon disulfide	1.0	U	1.0	0.28	ug/L			10/23/18 13:38	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			10/23/18 13:38	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			10/23/18 13:38	1
Chloroethane	1.0	U	1.0	0.83	ug/L			10/23/18 13:38	1
Chloroform	1.0	U	1.0	0.13	ug/L			10/23/18 13:38	1
Chloromethane	1.0	U	1.0	0.20	ug/L			10/23/18 13:38	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/23/18 13:38	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			10/23/18 13:38	1
Dichlorobromomethane	1.0	U	1.0	0.17	ug/L			10/23/18 13:38	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			10/23/18 13:38	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			10/23/18 13:38	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			10/23/18 13:38	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			10/23/18 13:38	1
Styrene	1.0	U	1.0	0.10	ug/L			10/23/18 13:38	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/23/18 13:38	1
Toluene	1.0	U	1.0	0.14	ug/L			10/23/18 13:38	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/23/18 13:38	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			10/23/18 13:38	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/23/18 13:38	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/23/18 13:38	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			10/23/18 13:38	1
Chlorodibromomethane	1.0	U	1.0	0.39	ug/L			10/23/18 13:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*70 - 121*		*10/23/18 13:38*	*1*
4-Bromofluorobenzene (Surr)	*90*		*59 - 120*		*10/23/18 13:38*	*1*
Toluene-d8 (Surr)	*95*		*70 - 123*		*10/23/18 13:38*	*1*
Dibromofluoromethane (Surr)	*119*		*75 - 128*		*10/23/18 13:38*	*1*

Surrogate Summary

Client: GHD Services Inc.
Project/Site: 17302-T08, RACER Delphi Anderson

TestAmerica Job ID: 240-102783-2

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

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(70-121)	(59-120)	(70-123)	(75-128)
240-102783-9	GW-100918-AF-043	107	92	95	121
240-102783-10	GW-100918-AF-044	87	72	74	99
240-102783-11	GW-101018-AF-045	106	87	92	120
240-102783-12	GW-101018-AF-046	104	90	93	118
240-102783-12 MS	GW-101018-AF-046	90	110	109	108
240-102783-12 MSD	GW-101018-AF-046	89	107	105	103
240-102783-13	EB-101018-AF-005	102	85	91	115
240-102783-14	GW-101018-AF-047	111	94	94	125
240-102783-15	GW-101018-AF-048	109	94	103	124
240-102783-16	GW-101018-AF-049	103	88	99	117
240-102783-17	GW-101018-AF-050	100	84	89	112
240-102783-18	GW-101018-AF-051	100	89	92	116
240-102783-19	TB-101118-AF-006	105	90	95	119
LCS 240-351197/4	Lab Control Sample	88	103	103	101
LCS 240-351439/4	Lab Control Sample	91	110	107	105
MB 240-351197/6	Method Blank	95	90	96	109
MB 240-351439/6	Method Blank	101	92	95	115

Surrogate Legend

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

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

Lab Sample ID: MB 240-351197/6
Matrix: Water
Analysis Batch: 351197

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			10/22/18 10:29	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			10/22/18 10:29	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			10/22/18 10:29	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/22/18 10:29	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/22/18 10:29	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			10/22/18 10:29	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			10/22/18 10:29	1
2-Hexanone	10	U	10	0.54	ug/L			10/22/18 10:29	1
Acetone	10	U	10	5.4	ug/L			10/22/18 10:29	1
Benzene	1.0	U	1.0	0.13	ug/L			10/22/18 10:29	1
Bromoform	1.0	U	1.0	0.76	ug/L			10/22/18 10:29	1
Bromomethane	1.0	U	1.0	0.42	ug/L			10/22/18 10:29	1
Carbon disulfide	1.0	U	1.0	0.28	ug/L			10/22/18 10:29	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			10/22/18 10:29	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			10/22/18 10:29	1
Chloroethane	1.0	U	1.0	0.83	ug/L			10/22/18 10:29	1
Chloroform	1.0	U	1.0	0.13	ug/L			10/22/18 10:29	1
Chloromethane	1.0	U	1.0	0.20	ug/L			10/22/18 10:29	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/22/18 10:29	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			10/22/18 10:29	1
Dichlorobromomethane	1.0	U	1.0	0.17	ug/L			10/22/18 10:29	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			10/22/18 10:29	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			10/22/18 10:29	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			10/22/18 10:29	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			10/22/18 10:29	1
Styrene	1.0	U	1.0	0.10	ug/L			10/22/18 10:29	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/22/18 10:29	1
Toluene	1.0	U	1.0	0.14	ug/L			10/22/18 10:29	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/22/18 10:29	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			10/22/18 10:29	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/22/18 10:29	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/22/18 10:29	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			10/22/18 10:29	1
Chlorodibromomethane	1.0	U	1.0	0.39	ug/L			10/22/18 10:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 121*		*10/22/18 10:29*	*1*
4-Bromofluorobenzene (Surr)	*90*		*59 - 120*		*10/22/18 10:29*	*1*
Toluene-d8 (Surr)	*96*		*70 - 123*		*10/22/18 10:29*	*1*
Dibromofluoromethane (Surr)	*109*		*75 - 128*		*10/22/18 10:29*	*1*

Lab Sample ID: LCS 240-351197/4
Matrix: Water
Analysis Batch: 351197

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	10.0	10.1		ug/L		101	69 - 134
1,1,2,2-Tetrachloroethane	10.0	9.72		ug/L		97	65 - 139

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

Lab Sample ID: LCS 240-351197/4
Matrix: Water
Analysis Batch: 351197

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2-Trichloroethane	10.0	10.4		ug/L		104	78 - 133
1,1-Dichloroethane	10.0	9.86		ug/L		99	75 - 133
1,1-Dichloroethene	10.0	8.48		ug/L		85	65 - 139
1,2-Dichloroethane	10.0	8.58		ug/L		86	71 - 135
1,2-Dichloropropane	10.0	9.78		ug/L		98	78 - 133
2-Hexanone	20.0	18.4		ug/L		92	43 - 148
Acetone	20.0	18.1		ug/L		91	21 - 162
Benzene	10.0	9.94		ug/L		99	80 - 123
Bromoform	10.0	9.80		ug/L		98	49 - 141
Bromomethane	10.0	5.06		ug/L		51	41 - 175
Carbon disulfide	10.0	8.83		ug/L		88	60 - 138
Carbon tetrachloride	10.0	10.7		ug/L		107	63 - 140
Chlorobenzene	10.0	9.73		ug/L		97	80 - 121
Chloroethane	10.0	5.64		ug/L		56	33 - 173
Chloroform	10.0	9.97		ug/L		100	79 - 127
Chloromethane	10.0	9.07		ug/L		91	54 - 143
cis-1,2-Dichloroethene	10.0	9.83		ug/L		98	76 - 128
cis-1,3-Dichloropropene	10.0	8.04		ug/L		80	64 - 132
Dichlorobromomethane	10.0	9.26		ug/L		93	77 - 125
Ethylbenzene	10.0	9.31		ug/L		93	80 - 120
m-Xylene & p-Xylene	10.0	9.44		ug/L		94	80 - 120
2-Butanone (MEK)	20.0	16.9		ug/L		85	39 - 163
4-Methyl-2-pentanone (MIBK)	20.0	15.2		ug/L		76	49 - 143
Methylene Chloride	10.0	10.5		ug/L		105	70 - 134
o-Xylene	10.0	9.42		ug/L		94	80 - 120
Styrene	10.0	9.51		ug/L		95	79 - 120
Tetrachloroethene	10.0	10.3		ug/L		103	74 - 130
Toluene	10.0	10.2		ug/L		102	78 - 129
trans-1,2-Dichloroethene	10.0	10.2		ug/L		102	78 - 133
trans-1,3-Dichloropropene	10.0	8.20		ug/L		82	55 - 128
Trichloroethene	10.0	9.29		ug/L		93	76 - 125
Vinyl chloride	10.0	7.81		ug/L		78	58 - 143
Xylenes, Total	20.0	18.9		ug/L		94	80 - 120
Chlorodibromomethane	10.0	10.1		ug/L		101	70 - 132

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*88*		*70 - 121*
4-Bromofluorobenzene (Surr)	*103*		*59 - 120*
Toluene-d8 (Surr)	*103*		*70 - 123*
Dibromofluoromethane (Surr)	*101*		*75 - 128*

Lab Sample ID: 240-102783-12 MS
Matrix: Water
Analysis Batch: 351197

Client Sample ID: GW-101018-AF-046
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	17	U	167	167		ug/L		100	51 - 138
1,1,2,2-Tetrachloroethane	17	U	167	164		ug/L		98	60 - 137

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

Lab Sample ID: 240-102783-12 MS
Matrix: Water
Analysis Batch: 351197

Client Sample ID: GW-101018-AF-046
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2-Trichloroethane	17	U	167	178		ug/L		107	76 - 132
1,1-Dichloroethane	17	U	167	174		ug/L		104	63 - 136
1,1-Dichloroethene	17	U	167	138		ug/L		83	53 - 140
1,2-Dichloroethane	17	U	167	150		ug/L		90	65 - 135
1,2-Dichloropropane	17	U	167	162		ug/L		97	70 - 132
2-Hexanone	170	U	333	260		ug/L		78	42 - 150
Acetone	170	U	333	275		ug/L		82	10 - 168
Benzene	17	U	167	168		ug/L		101	71 - 122
Bromoform	17	U	167	159		ug/L		95	44 - 129
Bromomethane	17	U	167	75.2		ug/L		45	19 - 187
Carbon disulfide	17	U	167	145		ug/L		87	43 - 144
Carbon tetrachloride	17	U	167	168		ug/L		101	41 - 143
Chlorobenzene	17	U	167	165		ug/L		99	70 - 123
Chloroethane	17	U	167	91.5		ug/L		55	11 - 189
Chloroform	17	U	167	173		ug/L		104	68 - 130
Chloromethane	17	U	167	117		ug/L		70	31 - 154
cis-1,2-Dichloroethene	300		167	430		ug/L		79	64 - 130
cis-1,3-Dichloropropene	17	U	167	121		ug/L		73	48 - 127
Dichlorobromomethane	17	U	167	153		ug/L		92	64 - 125
Ethylbenzene	17	U	167	157		ug/L		94	66 - 120
m-Xylene & p-Xylene	33	U	167	158		ug/L		95	63 - 121
2-Butanone (MEK)	170	U	333	298		ug/L		89	37 - 156
4-Methyl-2-pentanone (MIBK)	170	U	333	237		ug/L		71	44 - 143
Methylene Chloride	83	U	167	182		ug/L		109	61 - 130
o-Xylene	17	U	167	158		ug/L		95	69 - 120
Styrene	17	U	167	161		ug/L		96	68 - 120
Tetrachloroethene	17	U	167	163		ug/L		98	51 - 136
Toluene	17	U	167	169		ug/L		102	62 - 132
trans-1,2-Dichloroethene	17	U	167	175		ug/L		105	68 - 133
trans-1,3-Dichloropropene	17	U	167	121		ug/L		73	40 - 125
Trichloroethene	17	U	167	151		ug/L		90	55 - 131
Vinyl chloride	240		167	339		ug/L		56	43 - 154
Xylenes, Total	33	U	333	316		ug/L		95	67 - 120
Chlorodibromomethane	17	U	167	170		ug/L		102	60 - 129

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*90*		*70 - 121*
4-Bromofluorobenzene (Surr)	*110*		*59 - 120*
Toluene-d8 (Surr)	*109*		*70 - 123*
Dibromofluoromethane (Surr)	*108*		*75 - 128*

Lab Sample ID: 240-102783-12 MSD
Matrix: Water
Analysis Batch: 351197

Client Sample ID: GW-101018-AF-046
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	17	U	167	167		ug/L		100	51 - 138	0	27
1,1,2,2-Tetrachloroethane	17	U	167	160		ug/L		96	60 - 137	2	31

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

Lab Sample ID: 240-102783-12 MSD
Matrix: Water
Analysis Batch: 351197

Client Sample ID: GW-101018-AF-046
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2-Trichloroethane	17	U	167	169		ug/L		101	76 - 132	5	25
1,1-Dichloroethane	17	U	167	168		ug/L		101	63 - 136	3	23
1,1-Dichloroethene	17	U	167	137		ug/L		82	53 - 140	1	35
1,2-Dichloroethane	17	U	167	144		ug/L		86	65 - 135	4	24
1,2-Dichloropropane	17	U	167	158		ug/L		95	70 - 132	2	26
2-Hexanone	170	U	333	256		ug/L		77	42 - 150	2	35
Acetone	170	U	333	282		ug/L		84	10 - 168	3	35
Benzene	17	U	167	165		ug/L		99	71 - 122	2	22
Bromoform	17	U	167	163		ug/L		98	44 - 129	3	28
Bromomethane	17	U	167	95.3		ug/L		57	19 - 187	24	35
Carbon disulfide	17	U	167	144		ug/L		86	43 - 144	1	33
Carbon tetrachloride	17	U	167	170		ug/L		102	41 - 143	1	30
Chlorobenzene	17	U	167	161		ug/L		97	70 - 123	2	23
Chloroethane	17	U	167	110		ug/L		66	11 - 189	19	35
Chloroform	17	U	167	167		ug/L		100	68 - 130	3	23
Chloromethane	17	U	167	143		ug/L		86	31 - 154	20	35
cis-1,2-Dichloroethene	300		167	425		ug/L		76	64 - 130	1	21
cis-1,3-Dichloropropene	17	U	167	123		ug/L		74	48 - 127	1	30
Dichlorobromomethane	17	U	167	151		ug/L		90	64 - 125	1	27
Ethylbenzene	17	U	167	153		ug/L		92	66 - 120	3	24
m-Xylene & p-Xylene	33	U	167	157		ug/L		94	63 - 121	1	25
2-Butanone (MEK)	170	U	333	298		ug/L		89	37 - 156	0	35
4-Methyl-2-pentanone (MIBK)	170	U	333	238		ug/L		71	44 - 143	0	35
Methylene Chloride	83	U	167	179		ug/L		107	61 - 130	2	29
o-Xylene	17	U	167	154		ug/L		93	69 - 120	2	25
Styrene	17	U	167	157		ug/L		94	68 - 120	2	26
Tetrachloroethene	17	U	167	164		ug/L		98	51 - 136	0	23
Toluene	17	U	167	165		ug/L		99	62 - 132	2	23
trans-1,2-Dichloroethene	17	U	167	170		ug/L		102	68 - 133	3	24
trans-1,3-Dichloropropene	17	U	167	123		ug/L		74	40 - 125	2	27
Trichloroethene	17	U	167	150		ug/L		90	55 - 131	1	23
Vinyl chloride	240		167	335		ug/L		54	43 - 154	1	29
Xylenes, Total	33	U	333	311		ug/L		93	67 - 120	2	25
Chlorodibromomethane	17	U	167	167		ug/L		100	60 - 129	2	26

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*89*		*70 - 121*
4-Bromofluorobenzene (Surr)	*107*		*59 - 120*
Toluene-d8 (Surr)	*105*		*70 - 123*
Dibromofluoromethane (Surr)	*103*		*75 - 128*

Lab Sample ID: MB 240-351439/6
Matrix: Water
Analysis Batch: 351439

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			10/23/18 12:11	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			10/23/18 12:11	1

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

Lab Sample ID: MB 240-351439/6
Matrix: Water
Analysis Batch: 351439

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			10/23/18 12:11	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			10/23/18 12:11	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/23/18 12:11	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			10/23/18 12:11	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			10/23/18 12:11	1
2-Hexanone	10	U	10	0.54	ug/L			10/23/18 12:11	1
Acetone	10	U	10	5.4	ug/L			10/23/18 12:11	1
Benzene	1.0	U	1.0	0.13	ug/L			10/23/18 12:11	1
Bromoform	1.0	U	1.0	0.76	ug/L			10/23/18 12:11	1
Bromomethane	1.0	U	1.0	0.42	ug/L			10/23/18 12:11	1
Carbon disulfide	1.0	U	1.0	0.28	ug/L			10/23/18 12:11	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			10/23/18 12:11	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			10/23/18 12:11	1
Chloroethane	1.0	U	1.0	0.83	ug/L			10/23/18 12:11	1
Chloroform	1.0	U	1.0	0.13	ug/L			10/23/18 12:11	1
Chloromethane	1.0	U	1.0	0.20	ug/L			10/23/18 12:11	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			10/23/18 12:11	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			10/23/18 12:11	1
Dichlorobromomethane	1.0	U	1.0	0.17	ug/L			10/23/18 12:11	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			10/23/18 12:11	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			10/23/18 12:11	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			10/23/18 12:11	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			10/23/18 12:11	1
Styrene	1.0	U	1.0	0.10	ug/L			10/23/18 12:11	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			10/23/18 12:11	1
Toluene	1.0	U	1.0	0.14	ug/L			10/23/18 12:11	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			10/23/18 12:11	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			10/23/18 12:11	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			10/23/18 12:11	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			10/23/18 12:11	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			10/23/18 12:11	1
Chlorodibromomethane	1.0	U	1.0	0.39	ug/L			10/23/18 12:11	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 121*		*10/23/18 12:11*	*1*
4-Bromofluorobenzene (Surr)	*92*		*59 - 120*		*10/23/18 12:11*	*1*
Toluene-d8 (Surr)	*95*		*70 - 123*		*10/23/18 12:11*	*1*
Dibromofluoromethane (Surr)	*115*		*75 - 128*		*10/23/18 12:11*	*1*

Lab Sample ID: LCS 240-351439/4
Matrix: Water
Analysis Batch: 351439

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	10.0	10.3		ug/L		103	69 - 134
1,1,2,2-Tetrachloroethane	10.0	9.84		ug/L		98	65 - 139
1,1,2-Trichloroethane	10.0	10.4		ug/L		104	78 - 133
1,1-Dichloroethane	10.0	10.2		ug/L		102	75 - 133

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

Lab Sample ID: LCS 240-351439/4
Matrix: Water
Analysis Batch: 351439

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	10.0	8.42		ug/L		84	65 - 139
1,2-Dichloroethane	10.0	8.84		ug/L		88	71 - 135
1,2-Dichloropropane	10.0	10.2		ug/L		102	78 - 133
2-Hexanone	20.0	16.9		ug/L		84	43 - 148
Acetone	20.0	21.9		ug/L		109	21 - 162
Benzene	10.0	10.3		ug/L		103	80 - 123
Bromoform	10.0	9.94		ug/L		99	49 - 141
Bromomethane	10.0	5.30		ug/L		53	41 - 175
Carbon disulfide	10.0	8.23		ug/L		82	60 - 138
Carbon tetrachloride	10.0	10.7		ug/L		107	63 - 140
Chlorobenzene	10.0	10.0		ug/L		100	80 - 121
Chloroethane	10.0	6.41		ug/L		64	33 - 173
Chloroform	10.0	10.2		ug/L		102	79 - 127
Chloromethane	10.0	9.17		ug/L		92	54 - 143
cis-1,2-Dichloroethene	10.0	10.2		ug/L		102	76 - 128
cis-1,3-Dichloropropene	10.0	8.25		ug/L		83	64 - 132
Dichlorobromomethane	10.0	9.52		ug/L		95	77 - 125
Ethylbenzene	10.0	9.56		ug/L		96	80 - 120
m-Xylene & p-Xylene	10.0	9.69		ug/L		97	80 - 120
2-Butanone (MEK)	20.0	17.8		ug/L		89	39 - 163
4-Methyl-2-pentanone (MIBK)	20.0	14.7		ug/L		73	49 - 143
Methylene Chloride	10.0	10.4		ug/L		104	70 - 134
o-Xylene	10.0	9.65		ug/L		97	80 - 120
Styrene	10.0	9.67		ug/L		97	79 - 120
Tetrachloroethene	10.0	10.5		ug/L		105	74 - 130
Toluene	10.0	10.4		ug/L		104	78 - 129
trans-1,2-Dichloroethene	10.0	10.3		ug/L		103	78 - 133
trans-1,3-Dichloropropene	10.0	8.22		ug/L		82	55 - 128
Trichloroethene	10.0	9.62		ug/L		96	76 - 125
Vinyl chloride	10.0	7.60		ug/L		76	58 - 143
Xylenes, Total	20.0	19.3		ug/L		97	80 - 120
Chlorodibromomethane	10.0	10.1		ug/L		101	70 - 132

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*91*		*70 - 121*
4-Bromofluorobenzene (Surr)	*110*		*59 - 120*
Toluene-d8 (Surr)	*107*		*70 - 123*
Dibromofluoromethane (Surr)	*105*		*75 - 128*

QC Association Summary

Client: GHD Services Inc.
Project/Site: 17302-T08, RACER Delphi Anderson

TestAmerica Job ID: 240-102783-2

GC/MS VOA

Analysis Batch: 351197

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-102783-9	GW-100918-AF-043	Total/NA	Water	8260B	
240-102783-10	GW-100918-AF-044	Total/NA	Water	8260B	
240-102783-11	GW-101018-AF-045	Total/NA	Water	8260B	
240-102783-12	GW-101018-AF-046	Total/NA	Water	8260B	
240-102783-13	EB-101018-AF-005	Total/NA	Water	8260B	
240-102783-14	GW-101018-AF-047	Total/NA	Water	8260B	
240-102783-15	GW-101018-AF-048	Total/NA	Water	8260B	
240-102783-16	GW-101018-AF-049	Total/NA	Water	8260B	
MB 240-351197/6	Method Blank	Total/NA	Water	8260B	
LCS 240-351197/4	Lab Control Sample	Total/NA	Water	8260B	
240-102783-12 MS	GW-101018-AF-046	Total/NA	Water	8260B	
240-102783-12 MSD	GW-101018-AF-046	Total/NA	Water	8260B	

Analysis Batch: 351439

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-102783-17	GW-101018-AF-050	Total/NA	Water	8260B	
240-102783-18	GW-101018-AF-051	Total/NA	Water	8260B	
240-102783-19	TB-101118-AF-006	Total/NA	Water	8260B	
MB 240-351439/6	Method Blank	Total/NA	Water	8260B	
LCS 240-351439/4	Lab Control Sample	Total/NA	Water	8260B	

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 17302-T08, RACER Delphi Anderson

TestAmerica Job ID: 240-102783-2

Client Sample ID: GW-100918-AF-043
Lab Sample ID: 240-102783-9
Date Collected: 10/09/18 15:20
Matrix: Water
Date Received: 10/12/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		4	351197	10/22/18 15:36	LEE	TAL CAN

Client Sample ID: GW-100918-AF-044
Lab Sample ID: 240-102783-10
Date Collected: 10/09/18 16:07
Matrix: Water
Date Received: 10/12/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	351197	10/22/18 15:58	LEE	TAL CAN

Client Sample ID: GW-101018-AF-045
Lab Sample ID: 240-102783-11
Date Collected: 10/10/18 10:57
Matrix: Water
Date Received: 10/12/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	351197	10/22/18 16:19	LEE	TAL CAN

Client Sample ID: GW-101018-AF-046
Lab Sample ID: 240-102783-12
Date Collected: 10/10/18 12:17
Matrix: Water
Date Received: 10/12/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		16.67	351197	10/22/18 16:41	LEE	TAL CAN

Client Sample ID: EB-101018-AF-005
Lab Sample ID: 240-102783-13
Date Collected: 10/10/18 12:33
Matrix: Water
Date Received: 10/12/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	351197	10/22/18 17:03	LEE	TAL CAN

Client Sample ID: GW-101018-AF-047
Lab Sample ID: 240-102783-14
Date Collected: 10/10/18 13:51
Matrix: Water
Date Received: 10/12/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	351197	10/22/18 17:25	LEE	TAL CAN

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 17302-T08, RACER Delphi Anderson

TestAmerica Job ID: 240-102783-2

Client Sample ID: GW-101018-AF-048
Date Collected: 10/10/18 15:27
Date Received: 10/12/18 09:30

Lab Sample ID: 240-102783-15
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	351197	10/22/18 17:47	LEE	TAL CAN

Client Sample ID: GW-101018-AF-049
Date Collected: 10/10/18 15:30
Date Received: 10/12/18 09:30

Lab Sample ID: 240-102783-16
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	351197	10/22/18 18:08	LEE	TAL CAN

Client Sample ID: GW-101018-AF-050
Date Collected: 10/10/18 17:05
Date Received: 10/12/18 09:30

Lab Sample ID: 240-102783-17
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	351439	10/23/18 12:55	LEE	TAL CAN

Client Sample ID: GW-101018-AF-051
Date Collected: 10/10/18 18:15
Date Received: 10/12/18 09:30

Lab Sample ID: 240-102783-18
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	351439	10/23/18 13:17	LEE	TAL CAN

Client Sample ID: TB-101118-AF-006
Date Collected: 10/11/18 15:30
Date Received: 10/12/18 09:30

Lab Sample ID: 240-102783-19
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	351439	10/23/18 13:38	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. TestAmerica Job ID: 240-102783-2
Project/Site: 17302-T08, RACER Delphi Anderson

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	02-23-19
Connecticut	State Program	1	PH-0590	12-31-19
Florida	NELAP	4	E87225	06-30-19
Illinois	NELAP	5	200004	07-31-19
Kansas	NELAP	7	E-10336	01-31-19
Kentucky (UST)	State Program	4	58	02-23-19
Kentucky (WW)	State Program	4	98016	12-31-18 *
Minnesota	NELAP	5	039-999-348	12-31-18 *
Minnesota (Petrofund)	State Program	1	3506	07-31-19
Nevada	State Program	9	OH00048	07-31-19
New Jersey	NELAP	2	OH001	06-30-19
New York	NELAP	2	10975	03-31-19
Ohio VAP	State Program	5	CL0024	09-06-19
Oregon	NELAP	10	4062	02-23-19
Pennsylvania	NELAP	3	68-00340	08-31-19 *
Texas	NELAP	6	T104704517-17-9	08-31-19
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-19
Washington	State Program	10	C971	01-12-19
West Virginia DEP	State Program	3	210	12-31-18 *

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

CHAIN OF CUSTODY RECORD

COC NO.: IN-14331
PAGE 2 OF 2
(See Reverse Side for Instructions)

0.8/1.7

CONESTOGA-ROVERS & ASSOCIATES
6520 Corporate Drive, Indianapolis, Indiana 46278
Phone: (317) 291-7007 Fax: (317) 328-2666

Project No/ Phase/Task Code: 017302-T08-2018	**Laboratory Name:** Test America NC	**Lab Location:** North Canton, OH	**SSOW ID:** 17302-T08
Project Name: MLK-Anderson, IN GW Sampling	**Lab Contact:** D. Aechler	**Lab Quote No:**	**Cooler No:** 1 of 1
Project Location: Anderson, IN			**Carrier:** Fedex
Chemistry Contact: D. Andrascho			**Airbill No:**
Sampler(s): A. Feldman			**Date Shipped:** 10/11/18

Item	Sample Identification (Containers for each sample may be combined on one line)	Date (mm/dd/yy)	Time (hh:mm)	Sample Type: Matrix Code (see back of COC)	Sample Type: Grab (G) or Comp (C)	Container Quantity & Preservation: Unpreserved	Hydrochloric Acid (HCl)	Nitric Acid (HNO_3)	Sulfuric Acid (H_2SO_4)	Sodium Hydroxide (NaOH)	Methanol/Water (Soil VOC)	EnCores 3x5-g, 1x25-g	Other:	Total Containers/Sample	Analysis Requested: VOC	MS/MSD Request	Comments/ Special Instructions:
1	GW-100918-AF-043	10/09/18	1520	WG	G		3							3	X		
2	GW-100918-AF-044	10/09/18	1607				3							3	X		
3	GW-100918-AF-045	10/10/18	1057				3							3	X		
4	GW-101018-AF-046		1217				9							9	X	X	
5	EB-101018-AF-005		1233	EB			3							3	X		
6	GW-101018-AF-047		1351	WG			3							3	X		
7	GW-101018-AF-048		1327				3							3	X		
8	GW-101018-AF-049		1330				3							3	X		
9	GW-101018-AF-050		1705				3							3	X		
10	GW-101018-AF-051		1815				3							3	X		
11	TB-101118-AF-006		1530				1							1	X		
12																	
13																	
14																	
15																	

37 ~~37~~

TAT Required in business days (use separate COCs for different TATs):
☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☒ 2 Week ☐ Other:

Total Number of Containers: ~~37~~ 37

Notes/ Special Requirements:
All Samples in Cooler must be on COC

	Relinquished By	Company	Date	Time	Received By	Company	Date	Time
1.	Ari Feldman	GHD	10/11/18	1700		TJC	10/12/18	930
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

CRA Form: COC-10A (20110804)

Page 90 of 91

10/26/2018

TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility

Login # : 102783

Client GHD Site Name

Cooler unpacked by: DD

Cooler Received on 10/12/18 Opened on 10/12/18

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

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

TestAmerica Cooler # TA Foam Box Client Cooler Box Other

Packing material used: Bubble Wrap Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# IR-8 (CF +0.9 °C) Observed Cooler Temp. 0.8 °C Corrected Cooler Temp. 1.7 °C
   IR GUN #36 (CF +0.6°C) Observed Cooler Temp. °C Corrected Cooler Temp. °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
   -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
   -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
   -Were tamper/custody seals intact and uncompromised? Yes No NA
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels be reconciled with the COC? Yes No
9. Were correct bottle(s) used for the test(s) indicated? Yes No
10. Sufficient quantity received to perform indicated analyses? Yes No
11. Are these work share samples? Yes No
    If yes, Questions 12-16 have been checked at the originating laboratory.
12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# **HC849161**
13. Were VOAs on the COC? Yes No
14. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this. Yes No NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # Covered Yes No
16. Was a LL Hg or Me Hg trip blank present? Yes No

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

Contacted PM Date by via Verbal Voice Mail Other

Concerning

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by: JK

18. SAMPLE CONDITION

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

19. SAMPLE PRESERVATION

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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

TestAmerica Job ID: 240-105817-1
Client Project/Site: 17302, RACER Delphi Anderson
Revision: 1

For:
GHD Services Inc.
2055 Niagara Falls Blvd., Suite 3
Niagara Falls, New York 14304

Attn: Ms. Deborah Andrasko

Leslie A Howell

Authorized for release by:
1/16/2019 11:30:49 AM
Leslie Howell, Project Manager I
(330)966-9266
leslie.howell@testamericainc.com

Designee for

Denise Heckler, Project Manager II
(330)966-9477
denise.heckler@testamericainc.com

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

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

Table of Contents

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: 17302, RACER Delphi Anderson

TestAmerica Job ID: 240-105817-1

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.

Glossary

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

Job ID: 240-105817-1

Laboratory: TestAmerica Canton

Narrative

Job Narrative
240-105817-1
REVISED

Comments
Revised report 1/16/2019: a revised report was provided to remove the MS/MSD that was reported with just surrogagtes. The MS/MSD should not have been includes as the parent sample required reanalysis.

No additional comments.

Receipt
The samples were received on 12/14/2018 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.4° C.

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

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

Method Summary

Client: GHD Services Inc.
Project/Site: 17302, RACER Delphi Anderson

TestAmerica Job ID: 240-105817-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
5030B	Purge and Trap	SW846	TAL CAN

Protocol References:

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: 17302, RACER Delphi Anderson

TestAmerica Job ID: 240-105817-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-105817-1	GW-121318-BE-001	Water	12/13/18 12:53	12/14/18 09:50
240-105817-2	TRIP BLANK	Water	12/13/18 00:00	12/14/18 09:50

Detection Summary

Client: GHD Services Inc.
Project/Site: 17302, RACER Delphi Anderson

TestAmerica Job ID: 240-105817-1

Client Sample ID: GW-121318-BE-001 — Lab Sample ID: 240-105817-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	12		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: TRIP BLANK — Lab Sample ID: 240-105817-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	28		10	5.4	ug/L	1		8260B	Total/NA
Methylene Chloride	6.1		5.0	2.6	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

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

Client Sample ID: GW-121318-BE-001
Date Collected: 12/13/18 12:53
Date Received: 12/14/18 09:50

Lab Sample ID: 240-105817-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			12/27/18 17:54	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			12/27/18 17:54	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			12/27/18 17:54	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			12/27/18 17:54	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			12/27/18 17:54	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			12/27/18 17:54	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			12/27/18 17:54	1
2-Hexanone	10	U	10	0.54	ug/L			12/27/18 17:54	1
Acetone	10	U	10	5.4	ug/L			12/27/18 17:54	1
Benzene	1.0	U	1.0	0.13	ug/L			12/27/18 17:54	1
Bromoform	1.0	U	1.0	0.76	ug/L			12/27/18 17:54	1
Bromomethane	1.0	U	1.0	0.42	ug/L			12/27/18 17:54	1
Carbon disulfide	1.0	U	1.0	0.28	ug/L			12/27/18 17:54	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			12/27/18 17:54	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			12/27/18 17:54	1
Chloroethane	1.0	U	1.0	0.83	ug/L			12/27/18 17:54	1
Chloroform	1.0	U	1.0	0.13	ug/L			12/27/18 17:54	1
Chloromethane	1.0	U	1.0	0.20	ug/L			12/27/18 17:54	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			12/27/18 17:54	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			12/27/18 17:54	1
Dichlorobromomethane	1.0	U	1.0	0.17	ug/L			12/27/18 17:54	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			12/27/18 17:54	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			12/27/18 17:54	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			12/27/18 17:54	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			12/27/18 17:54	1
Styrene	1.0	U	1.0	0.10	ug/L			12/27/18 17:54	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			12/27/18 17:54	1
Toluene	1.0	U	1.0	0.14	ug/L			12/27/18 17:54	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			12/27/18 17:54	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			12/27/18 17:54	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			12/27/18 17:54	1
Vinyl chloride	**12**		1.0	0.20	ug/L			12/27/18 17:54	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			12/27/18 17:54	1
Chlorodibromomethane	1.0	U	1.0	0.39	ug/L			12/27/18 17:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*70 - 121*		*12/27/18 17:54*	*1*
4-Bromofluorobenzene (Surr)	*99*		*59 - 120*		*12/27/18 17:54*	*1*
Toluene-d8 (Surr)	*97*		*70 - 123*		*12/27/18 17:54*	*1*
Dibromofluoromethane (Surr)	*96*		*75 - 128*		*12/27/18 17:54*	*1*

Client Sample ID: TRIP BLANK
Date Collected: 12/13/18 00:00
Date Received: 12/14/18 09:50

Lab Sample ID: 240-105817-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			12/26/18 14:23	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			12/26/18 14:23	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			12/26/18 14:23	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			12/26/18 14:23	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			12/26/18 14:23	1

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

Client Sample ID: TRIP BLANK
Date Collected: 12/13/18 00:00
Date Received: 12/14/18 09:50

Lab Sample ID: 240-105817-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			12/26/18 14:23	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			12/26/18 14:23	1
2-Hexanone	10	U	10	0.54	ug/L			12/26/18 14:23	1
Acetone	**28**		10	5.4	ug/L			12/26/18 14:23	1
Benzene	1.0	U	1.0	0.13	ug/L			12/26/18 14:23	1
Bromoform	1.0	U	1.0	0.76	ug/L			12/26/18 14:23	1
Bromomethane	1.0	U	1.0	0.42	ug/L			12/26/18 14:23	1
Carbon disulfide	1.0	U	1.0	0.28	ug/L			12/26/18 14:23	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			12/26/18 14:23	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			12/26/18 14:23	1
Chloroethane	1.0	U	1.0	0.83	ug/L			12/26/18 14:23	1
Chloroform	1.0	U	1.0	0.13	ug/L			12/26/18 14:23	1
Chloromethane	1.0	U	1.0	0.20	ug/L			12/26/18 14:23	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			12/26/18 14:23	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			12/26/18 14:23	1
Dichlorobromomethane	1.0	U	1.0	0.17	ug/L			12/26/18 14:23	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			12/26/18 14:23	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			12/26/18 14:23	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			12/26/18 14:23	1
Methylene Chloride	**6.1**		5.0	2.6	ug/L			12/26/18 14:23	1
Styrene	1.0	U	1.0	0.10	ug/L			12/26/18 14:23	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			12/26/18 14:23	1
Toluene	1.0	U	1.0	0.14	ug/L			12/26/18 14:23	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			12/26/18 14:23	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			12/26/18 14:23	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			12/26/18 14:23	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			12/26/18 14:23	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			12/26/18 14:23	1
Chlorodibromomethane	1.0	U	1.0	0.39	ug/L			12/26/18 14:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 121*		*12/26/18 14:23*	*1*
4-Bromofluorobenzene (Surr)	*67*		*59 - 120*		*12/26/18 14:23*	*1*
Toluene-d8 (Surr)	*82*		*70 - 123*		*12/26/18 14:23*	*1*
Dibromofluoromethane (Surr)	*124*		*75 - 128*		*12/26/18 14:23*	*1*

Surrogate Summary

Client: GHD Services Inc.
Project/Site: 17302, RACER Delphi Anderson

TestAmerica Job ID: 240-105817-1

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

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(70-121)	(59-120)	(70-123)	(75-128)
240-105817-1	GW-121318-BE-001	89	99	97	96
240-105817-2	TRIP BLANK	107	67	82	124
LCS 240-361663/4	Lab Control Sample	83	83	88	97
LCS 240-361928/4	Lab Control Sample	94	97	98	99
MB 240-361663/6	Method Blank	108	66	75	127
MB 240-361928/6	Method Blank	94	97	102	98

Surrogate Legend

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

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

Lab Sample ID: MB 240-361663/6
Matrix: Water
Analysis Batch: 361663

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			12/26/18 11:07	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			12/26/18 11:07	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			12/26/18 11:07	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			12/26/18 11:07	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			12/26/18 11:07	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			12/26/18 11:07	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			12/26/18 11:07	1
2-Hexanone	10	U	10	0.54	ug/L			12/26/18 11:07	1
Acetone	10	U	10	5.4	ug/L			12/26/18 11:07	1
Benzene	1.0	U	1.0	0.13	ug/L			12/26/18 11:07	1
Bromoform	1.0	U	1.0	0.76	ug/L			12/26/18 11:07	1
Bromomethane	1.0	U	1.0	0.42	ug/L			12/26/18 11:07	1
Carbon disulfide	1.0	U	1.0	0.28	ug/L			12/26/18 11:07	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			12/26/18 11:07	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			12/26/18 11:07	1
Chloroethane	1.0	U	1.0	0.83	ug/L			12/26/18 11:07	1
Chloroform	0.289	J	1.0	0.13	ug/L			12/26/18 11:07	1
Chloromethane	1.0	U	1.0	0.20	ug/L			12/26/18 11:07	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			12/26/18 11:07	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			12/26/18 11:07	1
Dichlorobromomethane	1.0	U	1.0	0.17	ug/L			12/26/18 11:07	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			12/26/18 11:07	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			12/26/18 11:07	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			12/26/18 11:07	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			12/26/18 11:07	1
Styrene	1.0	U	1.0	0.10	ug/L			12/26/18 11:07	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			12/26/18 11:07	1
Toluene	1.0	U	1.0	0.14	ug/L			12/26/18 11:07	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			12/26/18 11:07	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			12/26/18 11:07	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			12/26/18 11:07	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			12/26/18 11:07	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			12/26/18 11:07	1
Chlorodibromomethane	1.0	U	1.0	0.39	ug/L			12/26/18 11:07	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 121*		*12/26/18 11:07*	*1*
4-Bromofluorobenzene (Surr)	*66*		*59 - 120*		*12/26/18 11:07*	*1*
Toluene-d8 (Surr)	*75*		*70 - 123*		*12/26/18 11:07*	*1*
Dibromofluoromethane (Surr)	*127*		*75 - 128*		*12/26/18 11:07*	*1*

Lab Sample ID: LCS 240-361663/4
Matrix: Water
Analysis Batch: 361663

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	10.0	11.9		ug/L		119	69 - 134
1,1,2,2-Tetrachloroethane	10.0	9.54		ug/L		95	65 - 139

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

Lab Sample ID: LCS 240-361663/4
Matrix: Water
Analysis Batch: 361663

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2-Trichloroethane	10.0	10.9		ug/L		109	78 - 133
1,1-Dichloroethane	10.0	11.3		ug/L		113	75 - 133
1,1-Dichloroethene	10.0	10.6		ug/L		106	65 - 139
1,2-Dichloroethane	10.0	9.68		ug/L		97	71 - 135
1,2-Dichloropropane	10.0	10.2		ug/L		102	78 - 133
2-Hexanone	20.0	16.5		ug/L		83	43 - 148
Acetone	20.0	20.7		ug/L		103	21 - 162
Benzene	10.0	10.4		ug/L		104	80 - 123
Bromoform	10.0	10.3		ug/L		103	49 - 141
Bromomethane	10.0	7.25		ug/L		72	41 - 175
Carbon disulfide	10.0	11.2		ug/L		112	60 - 138
Carbon tetrachloride	10.0	12.9		ug/L		129	63 - 140
Chlorobenzene	10.0	10.4		ug/L		104	80 - 121
Chloroethane	10.0	8.63		ug/L		86	33 - 173
Chloroform	10.0	11.4		ug/L		114	79 - 127
Chloromethane	10.0	9.82		ug/L		98	54 - 143
cis-1,2-Dichloroethene	10.0	11.0		ug/L		110	76 - 128
cis-1,3-Dichloropropene	10.0	8.22		ug/L		82	64 - 132
Dichlorobromomethane	10.0	10.1		ug/L		101	77 - 125
Ethylbenzene	10.0	9.51		ug/L		95	80 - 120
m-Xylene & p-Xylene	10.0	9.31		ug/L		93	80 - 120
2-Butanone (MEK)	20.0	16.3		ug/L		82	39 - 163
4-Methyl-2-pentanone (MIBK)	20.0	14.8		ug/L		74	49 - 143
Methylene Chloride	10.0	12.2		ug/L		122	70 - 134
o-Xylene	10.0	8.73		ug/L		87	80 - 120
Styrene	10.0	8.96		ug/L		90	79 - 120
Tetrachloroethene	10.0	10.8		ug/L		108	74 - 130
Toluene	10.0	10.2		ug/L		102	78 - 129
trans-1,2-Dichloroethene	10.0	12.2		ug/L		122	78 - 133
trans-1,3-Dichloropropene	10.0	8.37		ug/L		84	55 - 128
Trichloroethene	10.0	9.58		ug/L		96	76 - 125
Vinyl chloride	10.0	9.26		ug/L		93	58 - 143
Xylenes, Total	20.0	18.0		ug/L		90	80 - 120
Chlorodibromomethane	10.0	11.0		ug/L		110	70 - 132

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*83*		*70 - 121*
4-Bromofluorobenzene (Surr)	*83*		*59 - 120*
Toluene-d8 (Surr)	*88*		*70 - 123*
Dibromofluoromethane (Surr)	*97*		*75 - 128*

Lab Sample ID: MB 240-361928/6
Matrix: Water
Analysis Batch: 361928

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			12/27/18 12:45	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			12/27/18 12:45	1

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

Lab Sample ID: MB 240-361928/6
Matrix: Water
Analysis Batch: 361928

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			12/27/18 12:45	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			12/27/18 12:45	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			12/27/18 12:45	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			12/27/18 12:45	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			12/27/18 12:45	1
2-Hexanone	10	U	10	0.54	ug/L			12/27/18 12:45	1
Acetone	10	U	10	5.4	ug/L			12/27/18 12:45	1
Benzene	1.0	U	1.0	0.13	ug/L			12/27/18 12:45	1
Bromoform	1.0	U	1.0	0.76	ug/L			12/27/18 12:45	1
Bromomethane	1.0	U	1.0	0.42	ug/L			12/27/18 12:45	1
Carbon disulfide	1.0	U	1.0	0.28	ug/L			12/27/18 12:45	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			12/27/18 12:45	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			12/27/18 12:45	1
Chloroethane	1.0	U	1.0	0.83	ug/L			12/27/18 12:45	1
Chloroform	1.0	U	1.0	0.13	ug/L			12/27/18 12:45	1
Chloromethane	1.0	U	1.0	0.20	ug/L			12/27/18 12:45	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			12/27/18 12:45	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			12/27/18 12:45	1
Dichlorobromomethane	1.0	U	1.0	0.17	ug/L			12/27/18 12:45	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			12/27/18 12:45	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			12/27/18 12:45	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			12/27/18 12:45	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			12/27/18 12:45	1
Styrene	1.0	U	1.0	0.10	ug/L			12/27/18 12:45	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			12/27/18 12:45	1
Toluene	1.0	U	1.0	0.14	ug/L			12/27/18 12:45	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			12/27/18 12:45	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			12/27/18 12:45	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			12/27/18 12:45	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			12/27/18 12:45	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			12/27/18 12:45	1
Chlorodibromomethane	1.0	U	1.0	0.39	ug/L			12/27/18 12:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*70 - 121*		*12/27/18 12:45*	*1*
4-Bromofluorobenzene (Surr)	*97*		*59 - 120*		*12/27/18 12:45*	*1*
Toluene-d8 (Surr)	*102*		*70 - 123*		*12/27/18 12:45*	*1*
Dibromofluoromethane (Surr)	*98*		*75 - 128*		*12/27/18 12:45*	*1*

Lab Sample ID: LCS 240-361928/4
Matrix: Water
Analysis Batch: 361928

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	10.0	9.64		ug/L		96	69 - 134
1,1,2,2-Tetrachloroethane	10.0	10.7		ug/L		107	65 - 139
1,1,2-Trichloroethane	10.0	9.52		ug/L		95	78 - 133
1,1-Dichloroethane	10.0	11.3		ug/L		113	75 - 133

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

Lab Sample ID: LCS 240-361928/4
Matrix: Water
Analysis Batch: 361928

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	10.0	9.99		ug/L		100	65 - 139
1,2-Dichloroethane	10.0	9.68		ug/L		97	71 - 135
1,2-Dichloropropane	10.0	10.2		ug/L		102	78 - 133
2-Hexanone	20.0	26.0		ug/L		130	43 - 148
Acetone	20.0	23.9		ug/L		120	21 - 162
Benzene	10.0	10.3		ug/L		103	80 - 123
Bromoform	10.0	8.94		ug/L		89	49 - 141
Bromomethane	10.0	11.0		ug/L		110	41 - 175
Carbon disulfide	10.0	9.88		ug/L		99	60 - 138
Carbon tetrachloride	10.0	8.74		ug/L		87	63 - 140
Chlorobenzene	10.0	9.73		ug/L		97	80 - 121
Chloroethane	10.0	11.9		ug/L		119	33 - 173
Chloroform	10.0	11.1		ug/L		111	79 - 127
Chloromethane	10.0	11.2		ug/L		112	54 - 143
cis-1,2-Dichloroethene	10.0	10.9		ug/L		109	76 - 128
cis-1,3-Dichloropropene	10.0	8.54		ug/L		85	64 - 132
Dichlorobromomethane	10.0	9.16		ug/L		92	77 - 125
Ethylbenzene	10.0	9.24		ug/L		92	80 - 120
m-Xylene & p-Xylene	10.0	9.08		ug/L		91	80 - 120
2-Butanone (MEK)	20.0	22.3		ug/L		112	39 - 163
4-Methyl-2-pentanone (MIBK)	20.0	22.0		ug/L		110	49 - 143
Methylene Chloride	10.0	10.5		ug/L		105	70 - 134
o-Xylene	10.0	9.47		ug/L		95	80 - 120
Styrene	10.0	9.05		ug/L		91	79 - 120
Tetrachloroethene	10.0	8.96		ug/L		90	74 - 130
Toluene	10.0	10.0		ug/L		100	78 - 129
trans-1,2-Dichloroethene	10.0	10.9		ug/L		109	78 - 133
trans-1,3-Dichloropropene	10.0	8.73		ug/L		87	55 - 128
Trichloroethene	10.0	9.51		ug/L		95	76 - 125
Vinyl chloride	10.0	11.8		ug/L		118	58 - 143
Xylenes, Total	20.0	18.6		ug/L		93	80 - 120
Chlorodibromomethane	10.0	9.31		ug/L		93	70 - 132

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*70 - 121*
4-Bromofluorobenzene (Surr)	*97*		*59 - 120*
Toluene-d8 (Surr)	*98*		*70 - 123*
Dibromofluoromethane (Surr)	*99*		*75 - 128*

QC Association Summary

Client: GHD Services Inc.
Project/Site: 17302, RACER Delphi Anderson

TestAmerica Job ID: 240-105817-1

GC/MS VOA

Analysis Batch: 361663

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-105817-2	TRIP BLANK	Total/NA	Water	8260B	
MB 240-361663/6	Method Blank	Total/NA	Water	8260B	
LCS 240-361663/4	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 361928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-105817-1	GW-121318-BE-001	Total/NA	Water	8260B	
MB 240-361928/6	Method Blank	Total/NA	Water	8260B	
LCS 240-361928/4	Lab Control Sample	Total/NA	Water	8260B	

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 17302, RACER Delphi Anderson

TestAmerica Job ID: 240-105817-1

Client Sample ID: GW-121318-BE-001

Lab Sample ID: 240-105817-1

Date Collected: 12/13/18 12:53

Matrix: Water

Date Received: 12/14/18 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	361928	12/27/18 17:54	LRW	TAL CAN

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-105817-2

Date Collected: 12/13/18 00:00

Matrix: Water

Date Received: 12/14/18 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	361663	12/26/18 14:23	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: 17302, RACER Delphi Anderson

TestAmerica Job ID: 240-105817-1

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	02-23-19 *
Connecticut	State Program	1	PH-0590	12-31-19
Florida	NELAP	4	E87225	06-30-19
Illinois	NELAP	5	200004	07-31-19
Kansas	NELAP	7	E-10336	04-30-19
Kentucky (UST)	State Program	4	58	02-23-19 *
Kentucky (WW)	State Program	4	98016	12-31-19
Minnesota	NELAP	5	039-999-348	12-31-19 *
Minnesota (Petrofund)	State Program	1	3506	07-31-19
Nevada	State Program	9	OH00048	07-31-19
New Jersey	NELAP	2	OH001	06-30-19
New York	NELAP	2	10975	03-31-19 *
Ohio VAP	State Program	5	CL0024	09-06-19
Oregon	NELAP	10	4062	02-23-19 *
Pennsylvania	NELAP	3	68-00340	08-31-19 *
Texas	NELAP	6	T104704517-18-10	08-31-19
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-19
Washington	State Program	10	C971	01-12-20 *
West Virginia DEP	State Program	3	210	12-31-19

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

CONESTOGA-ROVERS & ASSOCIATES 4.4|4.4

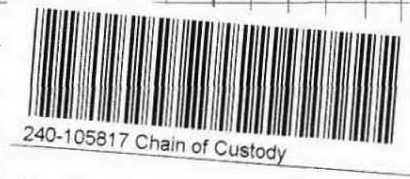
CHAIN OF CUSTODY RECORD

6520 Corporate Drive, Indianapolis, Indiana 46278
Phone: (317) 291-7007 Fax: (317) 328-2666

COC NO.: IN- 14358
PAGE 1 OF 1
(See Reverse Side for Instructions)

Project No/ Phase/Task Code: 017302A -T07	Laboratory Name: Test America	Lab Location: North Canton, OH	SSOW ID: 017302-T07
Project Name: MLK GW	Lab Contact: Denise Heckler	Lab Quote No:	Cooler No: 1 of 1
Project Location: Anderson IN			Carrier: Fedex
Chemistry Contact: Deborah Andrasko			Airbill No:
Sampler(s): Brynn Einecker			Date Shipped: 12/13/18

Item	Sample Identification (Containers for each sample may be combined on one line)	Date (mm/dd/yy)	Time (hh:mm)	Sample Type: Matrix Code (see back of COC)	Sample Type: Grab (G) or Comp (C)	Container Quantity & Preservation: Unpreserved	HCl	HNO_3	H_2SO_4	NaOH	Methanol/Water (Soil VOC)	EnCores 3x5-g, 1x25-g	Other:	Total Containers/Sample	Analysis Requested: VOC	MS/MSD Request	Comments/ Special Instructions:
1	GW-121318-BE-001	12/13/18	1253	GW	G		3							3	X		
2	TRIP BLANK	12/13/18		TB			1							1	X		
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	



TAT Required in business days (use separate COCs for different TATs):
☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☐ 2 Week ☐ Other:

Total Number of Containers: 4
All Samples in Cooler must be on COC

Notes/ Special Requirements:

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Brynn Einecker	GHD	12/13/18	1500	1. [illegible]	TA	12-14-18	0950
				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

CRA Form: COC-10A (20110804)

1/16/2019 (Rev. 1)

TestAmerica Canton Sample Receipt Form/Narrative **Login # : 105817**
Canton Facility

Client CRA Site Name _____ Cooler unpacked by: Ryan Cribley

Cooler Received on 12-14-18 Opened on 12-14-18

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

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

TestAmerica Cooler # TA Foam Box Client Cooler Box Other _____

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

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# IR-8 (CF **-0.2** °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C
   IR GUN #36 (CF **+0**°C) Observed Cooler Temp. 4.4 °C Corrected Cooler Temp. 4.4 °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 (Yes) No
   -Were the seals on the outside of the cooler(s) signed & dated? (Yes) No NA
   -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes (No)
   -Were tamper/custody seals intact and uncompromised? (Yes) No NA
3. Shippers' packing slip attached to the cooler(s)? (Yes) No
4. Did custody papers accompany the sample(s)? (Yes) No
5. Were the custody papers relinquished & signed in the appropriate place? (Yes) No
6. Was/were the person(s) who collected the samples clearly identified on the COC? (Yes) No
7. Did all bottles arrive in good condition (Unbroken)? (Yes) No
8. Could all bottle labels be reconciled with the COC? (Yes) No
9. Were correct bottle(s) used for the test(s) indicated? (Yes) No
10. Sufficient quantity received to perform indicated analyses? (Yes) No
11. Are these work share samples? Yes (No)
    If yes, Questions 12-16 have been checked at the originating laboratory.
12. Were all preserved sample(s) at the correct pH upon receipt? Yes No (NA) pH Strip Lot# **HC854592**
13. Were VOAs on the COC? (Yes) No
14. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this. Yes (No) NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #_____ (Yes) No
16. Was a LL Hg or Me Hg trip blank present? _____ Yes (No)

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

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

Concerning _____

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by:

18. SAMPLE CONDITION

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

19. SAMPLE PRESERVATION

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