

February 6, 2020

**Mr. Paul Bucholtz**

Michigan Department of Environment, Great Lakes, and Energy  
Remediation and Redevelopment Division  
Constitution Hall  
525 West Allegan Street  
Lansing, MI 48909

RE: October 2019 Semiannual Groundwater Sampling Report  
RACER Trust Hemphill Road Industrial Land, Burton, Michigan  
FILE: 15388 / 72203

**Dear Mr. Bucholtz:**

This letter serves as a Summary Report for the second semiannual 2019 groundwater sampling event conducted in October 2019 at the Revitalizing Auto Communities Environmental Response (RACER) Trust Hemphill Road Industrial Land (HRIL) facility located in Burton, Michigan (Site). Semiannual groundwater sampling was conducted to document groundwater quality for the Site.

The results from this event support the conclusions and recommendations in the draft No Further Action (NFA) Report, which was submitted to EGLE on November 28, 2019.

### GROUNDWATER SAMPLING

The second semiannual 2019 groundwater sampling was performed utilizing the following sampling protocols.

Prior to sampling, water level measurements were collected from monitoring wells at the Site and the offsite wells. Monitoring well locations are shown on [Figure 1](#). Monitoring well construction details are listed on [Table 1](#) and groundwater elevation data is included on [Table 2](#). The groundwater elevations observed during the sampling events are within the historical range of static groundwater measurements for the Site.

The shallow and deep groundwater elevations are depicted on [Figure 2](#) (Shallow/October 2019) and [Figure 3](#) (Deep/October 2019). Groundwater in the shallow zone appears to flow predominantly toward the southwest as shown on [Figure 2](#). Groundwater in the drift (deep) unit appears to flow in a northerly direction as shown on [Figure 3](#).

Groundwater samples for the semiannual 2019 sampling event were collected between October 1 and 2, 2019. Samples were collected from nine on-site monitoring wells and five off-site monitoring wells. The nine on-site monitoring wells are: OBG MW-1S, OBG MW-2S, OBG MW-2D, OBG MW-3S, OBG MW-5S (screened in fill material), OBG MW-6S, OBG MW-6D, OBG MW-7S, and OBG MW-7D. The five off-site monitoring wells are: OBG OS-MW-1, OBG OS-MW-2, OBG OS-MW-3, OBG OS-MW-4, and OBG OS-MW-5 (all of which are screened in fill material).

Samples were not collected from wells MW-401 and MW-403 (installed by others) based on the screen lengths of these wells being over 10 ft in length. Also, groundwater samples were not collected from OBG MW-4S and OBG MW-10 based on the presence of Light Non-Aqueous Phase Liquid (LNAPL) in these



wells. Samples were not collected from wells OBG MW-8, OBG MW-9, and OBG MW-11 as these were installed in June 2016 for LNAPL assessment.

Due to the viscous LNAPL coating the interface probe of the measuring instrument, it was difficult to acquire an accurate measurement of the LNAPL thickness in monitoring wells MW-401, OBG MW-4S, OBG MW-10. LNAPL was observed on the water level probe at OBG MW-5S at the end of sampling. LNAPL was not detected in monitoring wells MW-403, OBG MW-8, OBG MW-9, and OBG MW-11, which, with the exception of OBG MW-8, are screened in waste fill. A summary of the LNAPL gauging results are presented in [Table 3](#).

Low flow groundwater sampling was performed in accordance with USEPA, *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures* (EPA/540/S-95/504) and the USEPA Region 1 (July 30, 1996, Revision 3) *Low Stress (Low-Flow) Purging and Sampling Procedure for the Collection of Ground Water Samples from Monitoring Wells*. Low-flow groundwater sampling was performed using polyethylene sample tubing lowered approximately to the midpoint of the well screen and connected to a peristaltic pump. The tubing was then attached to a flow-through cell attached to a physical parameter measurement instrument capable of measuring temperature, conductivity, pH, dissolved oxygen (DO), and oxidation-reduction potential (ORP). Turbidity was also measured with a Hach® colorimeter.

Once the pump was turned on, the well was purged at a rate that produced less than 0.3 ft of drawdown in the well, except for wells OBG MW-1S, OBG MW-2S/D, OBG MW-5S, OBG MW-6S/D, OBG MW-7S, OBG OS-MW-1, and OBG OS-MW-2. For these wells, the purge rate was maintained at a maximum of 100 milliliters per minute [ml/min]; however, a drawdown of more than 0.3 ft was observed. Groundwater sample logs are included in [Exhibit A](#).

Purging continued until the water quality parameters stabilized within the USEPA Low Stress Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells over a 5-minute period. Once stabilized, the pumping rate was reduced (when possible) and the flow-through cell was disconnected. Samples were collected directly into laboratory supplied containers. The sample container selection and preservation techniques followed EGLE Remediation and Redevelopment Division (RRD) Standard Operating Procedure for Sample Preservation, Sample Handling, and Holding Time (RRD-34).

The samples were labeled, packed on ice, and shipped via courier under routine chain-of-custody protocols to Merit Laboratories, Inc. (Merit) of East Lansing, Michigan. The groundwater samples were analyzed for volatile organic compounds (VOCs) by EPA Method 8260, and total and dissolved metals (arsenic, barium, lead, selenium, and zinc) by EPA Method 200.8.

Quality Assurance/Quality Control (QA/QC) samples for VOCs were collected and included a blind duplicate, collocated sample, field blank, and matrix spike/matrix spike duplicate (MS/MSD) set. One trip blank was submitted with each cooler shipment containing samples collected for VOC analyses.

The blind duplicate was collected from OBG MW-5S and the collocated sample was collected from OBG MW-2D. The duplicate and collocated sample results compared closely with the original sample results indicating good reproducibility. Furthermore, the various blank samples collected during sampling were non-detect indicating that cross-contamination was not an issue for this sampling event.

## GROUNDWATER SAMPLING RESULTS

Analytical results for this event indicate VOCs were not detected above method detection limits, except at offsite monitoring wells OBG OS-MW-4 and OBG OS-MW-5 (which are both screened in fill material).

Offsite monitoring well OBG OS-MW-4 had the following detections above method detection limits:

- Chlorobenzene (8 µg/l), isopropylbenzene (5 µg/l), n-propylbenzene (9 µg/l), n-butylbenzene (1 µg/l), sec-butylbenzene (2 µg/l), 1,2,4-trimethylbenzene (2 µg/l), 1,2,3-trimethylbenzene (3 µg/l), 1,4-dichlorobenzene (4 µg/l), naphthalene (22 µg/l), and 2-methylnaphthalene (35 µg/l).

Offsite monitoring well OBG OS-MW-5 had the following detection above method detection limit:

- Chlorobenzene (5 µg/l) and 1,4-Dichlorobenzene (3 µg/l).

These concentrations are below the EGLE Part 201 Generic Residential Drinking Water criteria. The concentrations for isopropylbenzene (5 µg/l) and naphthalene (22 µg/l) at OBG OS-MW-4 were above the EGLE Site Specific Residential Groundwater Not in Contact Criteria of (0.60 µg/l) isopropylbenzene and (4.2 µg/l) naphthalene. The analytical results for the second semiannual event are summarized on [Table 4](#) and the groundwater analytical data sheets are included in [Exhibit B](#).

The samples were analyzed for both total and dissolved metals. During the October sampling the dissolved sample results were within 20 percent of the total sample results except for the following:

- OBG MW-3 arsenic result had a difference of 33 percent
- OBG MW-5S zinc result had a difference of 66 percent
- OBG MW-6S arsenic result had a difference of 33 percent; lead result had a difference of 66 percent
- OBG MW-6D zinc result had a difference of 33 percent
- OBG OS-MW-2 lead result had a difference of 36 percent.

Groundwater analytical results for inorganic analysis indicate selenium and zinc were not detected above the method detection limits or detections were below the EGLE Part 201 Generic Residential Drinking Water criteria. Lead concentrations were below the method detection limit except at OBG MW-6S and OBG OS-MW-2. OBG OS-MW-2 had a total lead result of 6 µg/l and dissolved lead result of 13 µg/l. The dissolved lead concentration in OBG MW-6S was 6 µg/l for total lead and non-detect for the dissolved result.

Analytical results for arsenic levels at or above the EGLE Part 201 Generic Residential and Nonresidential Drinking Water criterion (10 µg/l) are as follows (results are total unless otherwise noted and only the highest of the total or dissolved sample results for each represented well is reported herein):

- Onsite monitoring wells: OBG MW-2S (27 µg/l), OBG MW-2D (dissolved - 42 µg/l), OBG MW- 6S (dissolved - 14 µg/l), OBG MW- 6D (dissolved - 14 µg/l), OBG MW-7S (22 µg/l), and OBG MW-7D (dissolved - 34 µg/l)
- Offsite monitoring wells: OBG OS-MW-1 (36 µg/l), OBG OS-MW-2 (38 µg/l), and OBG OS-MW-3 (28 µg/l).

Analytical results for barium levels above the EGLE Part 201 Generic Residential and Non-Residential Drinking Water criterion (2,000 µg/l) are as follows:

- Offsite monitoring well: OBG OS MW-5 (2,550 µg/l).

A figure depicting the October 2019 groundwater results above EGLE criteria is included as [Figure 4](#).

## SUMMARY

The results from this event support the conclusions and recommendations in the draft No Further Action (NFA) Report.

The results of the October 2019 semiannual groundwater sampling event are comparable to the previous results. Concentrations of arsenic were detected above the EGLE Part 201 Nonresidential Drinking Water criteria in samples collected from both onsite and offsite wells and both wells screened in fill material and

native soils. Therefore, the concentrations appear to be related to the reducing conditions that are not caused by the fill material. In addition, barium and lead concentrations were detected in offsite wells above the EGLE Part 201 Nonresidential Drinking Water criteria, which appear to be related to the fill material in these areas. On-site exceedances can be addressed with a resource use restriction for Site groundwater in the No Further Action (NFA) report.

Concentrations of VOCs were only detected above method detection limits at two offsite wells (OBG OS-MW-4 and OBG OS-MW-5) during the October 2019 event and these results appear to be related to the fill material in these areas. These detections are below their EGLE Part 201 Nonresidential Drinking Water criteria.

Review of the groundwater analytical data for this semiannual sampling event and historical data indicates groundwater constituents and concentrations at offsite wells (OBG OS-MW-4 and OBG OS-MW-5) are mostly different than those detected at the HRIL Site. Therefore, impacted groundwater and fill material at the HRIL Site does not appear to be the source for groundwater impacts offsite to the east or south.

As presented in **Table 3**, the LNAPL thickness was considered immeasurable in wells MW-401, OBG MW-4S, and OBG MW-10 due to either minimal thickness of LNAPL or LNAPL coating the probe not allowing for an accurate measurement.

If you have questions or would like additional information, please contact me at (313) 333-0211 or David Favero at (734) 879-9525.

Very truly yours,  
**O'BRIEN & GERE ENGINEERS, INC.**



Clifford S. Yantz  
Senior Hydrogeologist

cc: David Favero - RACER Trust  
Kevin Schneider - OBG

#### **ATTACHMENTS:**

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Table 1 – Monitoring Well Construction Details

Table 2 – Groundwater Elevation Data

Table 3 – LNAPL Observation/Removal Logs

Table 4 – Groundwater Analytical Results – October 2019

Figure 1 – Monitoring Well Locations

Figure 2 – Shallow Groundwater Elevation Contours – October 2019

Figure 3 – Deep Groundwater Elevation Contours – October 2019

Figure 4 – Groundwater Analytical Results – October 2019

Exhibit A – Groundwater Sampling Logs – October 2019

Exhibit B – Groundwater Analytical Data – October 2019



Tables

**Table 1**  
**Monitoring Well Construction Details**  
**Hemphill Road Industrial Land**  
**Burton, Michigan**

Well	Completion Date	Installed By: Consultant/ Driller	Total Well Depth *	Surface Elevation (ft amsl)	Top of Casing Elevation (ft amsl)	Casing Diameter (inches)	Screened Interval Elevations	Estimated Sand/Gravel Pack Elevations
<b>Onsite Wells</b>								
OBG MW-1S	29-Nov-10	O'Brien & Gere / Boart Longyear	27.20	774.9	777.64	2	755.44-750.44	757.44-749.44
OBG MW-2S	30-Nov-10	O'Brien & Gere / Boart Longyear	20.30	772.9	775.33	2	760.03-755.03	762.03-754.03
OBG MW-2D	30-Nov-10	O'Brien & Gere / Boart Longyear	38.50	772.8	775.19	2	741.69-736.69	743.69-735.69
OBG MW-3	30-Nov-10	O'Brien & Gere / Boart Longyear	27.70	774.3	777.31 <sup>+</sup>	2	754.54-749.54	756.54-748.54
OBG MW-4S	30-Nov-10	O'Brien & Gere / Boart Longyear	27.70	766.3	769.15	2	746.45-741.45	748.45-740.45
OBG MW-5S	1-Dec-10	O'Brien & Gere / Boart Longyear	20.30	768.5	771.00	2	755.7-750.7 **	757.7-749.7
OBG MW-6S	1-Dec-10	O'Brien & Gere / Boart Longyear	19.10	769.70	772.70	2	758.6-753.6	760.6-752.6
OBG MW-6D	1-Dec-10	O'Brien & Gere / Boart Longyear	44.40	769.65	772.69	2	733.29-728.29	735.29-727.29
OBG MW-7S	2-Dec-10	O'Brien & Gere / Boart Longyear	17.70	763.56	766.30	2	753.6-748.6	755.6-747.6
OBG MW-7D	2-Dec-10	O'Brien & Gere / Boart Longyear	47.80	763.55	766.36	2	723.56-718.56	725.56-717.56
OBG MW-8	9-Jun-16	O'Brien & Gere / Stock	22.46	768.14	771.21	2	759.23- 749.23	761.14-749.14
OBG MW-9	9-Jun-16	O'Brien & Gere / Stock	22.65	767.91	770.93	2	758.78-748.78	760.91-748.91
OBG MW-10	9-Jun-16	O'Brien & Gere / Stock	21.00	766.17	768.96	2	758.5-748.5	760.17- 748.17
OBG MW-11	9-Jun-16	O'Brien & Gere / Stock	20.00	772.60	775.64	2	762.6- 752.6	764.6-744.6

**Table 1**  
**Monitoring Well Construction Details**  
**Hemphill Road Industrial Land**  
**Burton, Michigan**

Well	Completion Date	Installed By: Consultant/ Driller	Total Well Depth *	Surface Elevation (ft amsl)	Top of Casing Elevation (ft amsl)	Casing Diameter (inches)	Screened Interval Elevations	Estimated Sand/Gravel Pack Elevations
<b>Offsite Wells</b>								
OBG OS MW-1	11-Nov-13	O'Brien & Gere / Cascade	30.15	774.09	776.57	2	756.42-746.42 **	754.42-745.42
OBG OS MW-2	11-Nov-13	O'Brien & Gere / Cascade	30.29	774.02	776.67	2	756.38-746.38 **	754.38-744.42
OBG OS MW-3	9-Jun-14	O'Brien & Gere / Cascade	30.29	779.78	782.89	2	762.59-752.59 **	764.59-751.59
OBG OS MW-4	9-Jun-14	O'Brien & Gere / Cascade	27.76	776.09	779.00	2	761.20-751.20 **	763.20-750.20
OBG OS MW-5	10-Jun-14	O'Brien & Gere / Cascade	28.15	776.45	779.38	2	761.18-751.18 **	763.18-750.18

## Notes:

- 1) ft amsl - feet above mean sea level (NGVD 1929)
- 2) ft TOC - feet below Top of Casing
- 3) Wells are polyvinylchloride (PVC), schedule 40, screen slot size 0.010 inch.
- 4) \* - Total well depth as measured from TOC  
Elevation referenced to NGVD 1929
- 5) + - OBG MW-3 was repaired, and the TOC resurveyed, on 9/2/2011.
- 6) \*\* - Monitoring well is screened in waste fill.

**Table 2**  
**Groundwater Elevation Data**  
**Hemphill Road Industrial Land**  
**Burton, Michigan**

Well	Top of Casing Elevation (ft amsl)	Depth To Water 12/20/2010 (ft btoc)	Static Water Elevation 12/20/2010 (ft amsl)	Depth To Water 2/25/2011 (ft btoc)	Static Water Elevation 2/25/2011 (ft amsl)	Depth To Water 3/22/2012 (ft btoc)	Static Water Elevation 3/22/2012 (ft amsl)	Depth To Water 6/13/2012 (ft btoc)	Static Water Elevation 6/13/2012 (ft amsl)	Depth To Water 9/20/2012 (ft btoc)	Static Water Elevation 9/20/2012 (ft amsl)	Depth To Water 12/18/2012 (ft btoc)	Static Water Elevation 12/18/2012 (ft amsl)	Depth To Water 4/16/2013 (ft btoc)	Static Water Elevation 4/16/2013 (ft amsl)
OBG MW-1S	777.64	13.80	763.84	13.50	764.14	12.47	765.17	12.70	764.94	13.03	764.61	13.18	764.46	12.28	765.36
OBG MW-2S	775.33	11.59	763.74	11.02	764.31	10.41	764.92	10.45	764.88	10.26	765.07	11.03	764.30	9.76	765.57
OBG MW-2D	775.19	22.02	753.17	21.80	753.39	20.16	755.03	20.45	754.74	22.34	752.85	21.26	753.93	20.57	754.62
OBG MW-3 **	777.31	23.00	754.24	22.95	754.29	22.72	754.59	22.69	754.62	22.69	754.62	22.87	754.44	22.77	754.54
OBG MW-4S	769.15	--	--	--	--	14.30	754.85	14.55	754.60	14.52	754.63	14.6	754.57	14.35	754.80
OBG MW-5S	771.00	15.97	755.03	15.80	755.20	15.48	755.52	15.75	755.25	15.80	755.20	15.93	755.07	15.47	755.53
OBG MW-6S	772.70	14.72	757.98	14.18	758.52	13.81	758.89	14.31	758.39	14.84	757.86	14.62	758.08	12.42	760.28
OBG MW-6D	772.69	19.61	753.08	19.46	753.23	17.99	754.70	18.51	754.18	20.11	752.58	18.96	753.73	18.04	754.65
OBG MW-7S	766.30	8.68	757.62	8.10	758.20	8.12	758.18	8.36	757.94	8.59	757.71	8.37	757.93	7.26	759.04
OBG MW-7D	766.36	14.40	751.96	14.23	752.13	12.55	753.81	13.09	753.27	14.70	751.66	13.73	752.63	12.95	753.41
OBG MW-8	771.21													--	--
OBG MW-9	770.93													--	--
OBG MW-10	768.96													--	--
OBG MW-11	775.64													--	--
OBG OS MW-1	776.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OBG OS MW-2	776.67	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OBG OS MW-3	782.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OBG OS MW-4	779.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OBG OS MW-5	779.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

- 1) ft amsl - feet above mean sea level (NGVD 1929).
- 2) ft btoc - feet below top of casing.
- 3) --' denotes depth to water not collected.
- 4) \*\* - OBG MW-3 was repaired, and the TOC resurveyed, on 9/2/2011.  
The previous TOC was 777.24.

**Table 2**  
**Groundwater Elevation Data**  
**Hemphill Road Industrial Land**  
**Burton, Michigan**

Well	Top of Casing Elevation (ft amsl)	Depth To Water 10/15/2013 (ft btoc)	Static Water Elevation 10/15/2013 (ft amsl)	Depth To Water 12/10/2013 (ft btoc)	Static Water Elevation 12/10/2013 (ft amsl)	Depth To Water 4/24/2014 (ft btoc)	Static Water Elevation 4/24/2014 (ft amsl)	Depth To Water 7/2/2014 (ft btoc)	Static Water Elevation 7/2/2014 (ft amsl)	Depth To Water 7/28/2014 (ft btoc)	Static Water Elevation 7/28/2014 (ft amsl)	Depth To Water 9/11/2014 (ft btoc)	Static Water Elevation 9/11/2014 (ft amsl)	Depth To Water 5/28/2015 (ft btoc)	Static Water Elevation 5/28/2015 (ft amsl)
OBG MW-1S	777.64	13.60	764.04	--	--	12.69	764.95	--	--	--	--	12.44	765.20	12.64	765.00
OBG MW-2S	775.33	11.48	763.85	--	--	10.32	765.01	--	--	--	--	10.29	765.04	10.59	764.74
OBG MW-2D	775.19	21.28	753.91	--	--	20.21	754.98	--	--	--	--	20.42	754.77	19.90	755.29
OBG MW-3 **	777.31	22.78	754.53	--	--	22.73	754.58	--	--	--	--	22.54	754.77	22.85	754.46
OBG MW-4S	769.15	--	--	--	--	--	--	--	--	--	--	14.6	754.58	--	--
OBG MW-5S	771.00	15.80	755.20	--	--	15.59	755.41	--	--	--	--	15.84	755.16	15.61	755.39
OBG MW-6S	772.70	14.94	757.76	--	--	13.79	758.91	--	--	--	--	14.49	758.21	14.22	758.48
OBG MW-6D	772.69	19.21	753.48	--	--	18.10	754.59	--	--	--	--	18.06	754.63	17.54	755.15
OBG MW-7S	766.30	8.85	757.45	--	--	7.81	758.49	--	--	--	--	8.37	757.93	8.25	758.05
OBG MW-7D	766.36	13.93	752.43	--	--	12.64	753.72	--	--	--	--	12.91	753.45	12.35	754.01
OBG MW-8	771.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OBG MW-9	770.93	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OBG MW-10	768.96	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OBG MW-11	775.64	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OBG OS MW-1	776.57	--	--	22.10	754.47	--	--	--	--	--	--	22.17	754.40	21.95	754.62
OBG OS MW-2	776.67	--	--	21.43	755.24	--	--	--	--	--	--	21.58	755.09	21.34	755.33
OBG OS MW-3	782.89	--	--	--	--	--	--	25.39	757.50	25.52	757.37	25.89	757.00	25.99	756.90
OBG OS MW-4	779.00	--	--	--	--	--	--	24.29	754.71	24.34	754.66	24.48	754.52	24.40	754.60
OBG OS MW-5	779.38	--	--	--	--	--	--	24.71	754.67	24.79	754.59	24.91	754.47	24.82	754.56

Notes:

- 1) ft amsl - feet above mean sea level (NGVD 1929).
- 2) ft btoc - feet below top of casing.
- 3) --' denotes depth to water not collected.
- 4) \*\* - OBG MW-3 was repaired, and the TOC resurveyed, on 9/2/2011.  
The previous TOC was 777.24.
- 5) Water levels from newly installed wells OBG MW-8/9/10/11 collected on 9/9/2016.

**Table 2**  
**Groundwater Elevation Data**  
**Hemphill Road Industrial Land**  
**Burton, Michigan**

Well	Top of Casing Elevation (ft amsl)	Depth To Water 10/29/2015 (ft btoc)	Static Water Elevation 10/29/2015 (ft amsl)	Depth To Water 4/14/2016 (ft btoc)	Static Water Elevation 4/14/2016 (ft amsl)	Depth To Water 9/9/2016 (ft btoc)	Static Water Elevation 9/9/2016 (ft amsl)	Depth To Water 10/21/2016 (ft btoc)	Static Water Elevation 10/21/2016 (ft amsl)	Depth To Water 4/10/2016 (ft btoc)	Static Water Elevation 4/10/2016 (ft amsl)	Depth To Water 10/17/2017 (ft btoc)	Static Water Elevation 10/17/2017 (ft amsl)	Depth To Water 4/17/2018 (ft btoc)	Static Water Elevation 4/17/2018 (ft amsl)
OBG MW-1S	777.64	12.75	764.89	11.45	766.19	--	--	12.89	764.75	11.28	766.36	13.05	764.59	11.08	766.56
OBG MW-2S	775.33	10.77	764.56	9.16	766.17	--	--	10.38	764.95	8.83	766.50	10.93	764.40	8.91	766.42
OBG MW-2D	775.19	19.94	755.25	18.83	756.36	--	--	21.02	754.17	18.83	756.36	20.65	754.54	18.94	756.25
OBG MW-3 **	777.31	22.77	754.54	22.47	754.84	--	--	23.05	754.26	23.00	754.31	23.15	754.16	22.93	754.38
OBG MW-4S	769.15	--	--	--	--	--	--	--	--	13.90	755.25	14.55	754.60	13.85	755.30
OBG MW-5S	771.00	15.40	755.60	15.17	755.83	--	--	15.80	755.20	14.90	756.10	15.91	755.09	15.20	755.80
OBG MW-6S	772.70	14.72	757.98	12.70	760.00	--	--	14.53	758.17	11.71	760.99	14.90	757.80	12.36	760.34
OBG MW-6D	772.69	17.70	754.99	16.99	755.70	--	--	17.96	754.73	16.60	756.09	18.30	754.39	16.70	755.99
OBG MW-7S	766.30	8.43	757.87	7.27	759.03	--	--	8.14	758.16	6.70	759.60	8.17	758.13	6.55	759.75
OBG MW-7D	766.36	12.44	753.92	11.35	755.01	--	--	13.47	752.89	11.34	755.02	13.51	752.85	11.43	754.93
OBG MW-8	771.21	--	--	--	--	16.30	754.91	--	--	15.08	756.13	16.40	754.81	15.16	756.05
OBG MW-9	770.93	--	--	--	--	16.42	754.51	--	--	14.45	756.48	16.19	754.74	14.44	756.49
OBG MW-10	768.96	--	--	--	--	--	--	--	--	12.99	755.97	14.30	754.66	12.99	755.97
OBG MW-11	775.64	--	--	--	--	18.30	757.34	--	--	15.79	759.85	17.90	757.74	16.29	759.35
OBG OS MW-1	776.57	22.24	754.33	21.40	755.17	--	--	21.71	754.86	21.25	755.32	22.10	754.47	21.29	755.28
OBG OS MW-2	776.67	21.73	754.94	20.49	756.18	--	--	21.18	755.49	20.34	756.33	21.48	755.19	20.30	756.37
OBG OS MW-3	782.89	26.06	756.83	25.10	757.79	--	--	26.33	756.56	24.76	758.13	26.35	756.54	25.05	757.84
OBG OS MW-4	779.00	24.25	754.75	23.91	755.09	--	--	24.52	754.48	23.85	755.15	24.70	754.30	23.99	755.01
OBG OS MW-5	779.38	24.67	754.71	24.33	755.05	--	--	24.94	754.44	24.25	755.13	25.06	754.32	24.36	755.02

Notes:

- 1) ft amsl - feet above mean sea level (NGVD 1929).
- 2) ft btoc - feet below top of casing.
- 3) --' denotes depth to water not collected.
- 4) \*\* - OBG MW-3 was repaired, and the TOC resurveyed, on 9/2/2011.  
The previous TOC was 777.24.
- 5) Water levels from newly installed wells OBG MW-8/9/10/11 collected on 9/9/2016.

**Table 2**  
**Groundwater Elevation Data**  
**Hemphill Road Industrial Land**  
**Burton, Michigan**

Well	Top of Casing Elevation (ft amsl)	Depth To Water 10/15/2018 (ft btoc)	Static Water Elevation 10/15/2018 (ft amsl)	Depth To Water 4/29/2019 (ft btoc)	Static Water Elevation 4/29/2019 (ft amsl)	Depth To Water 10/1/2019 (ft btoc)	Static Water Elevation 10/1/2019 (ft amsl)
OBG MW-1S	777.64	12.35	765.29	11.67	765.97	12.89	764.75
OBG MW-2S	775.33	10.19	765.14	9.19	766.14	10.95	764.38
OBG MW-2D	775.19	20.14	755.05	18.81	756.38	19.95	755.24
OBG MW-3 **	777.31	23.23	754.08	23.00	754.31	23.05	754.26
OBG MW-4S	769.15	14.29	754.86	14.30	754.85	--	--
OBG MW-5S	771.00	15.66	755.34	15.49	755.51	15.88	755.12
OBG MW-6S	772.70	14.38	758.32	12.86	759.84	14.55	758.15
OBG MW-6D	772.69	17.95	754.74	16.49	756.20	17.75	754.94
OBG MW-7S	766.30	8.13	758.17	7.18	759.12	7.80	758.50
OBG MW-7D	766.36	12.56	753.80	11.24	755.12	12.42	753.94
OBG MW-8	771.21	15.63	755.58	15.45	755.76	16.31	754.90
OBG MW-9	770.93	15.65	755.28	14.44	756.49	15.96	754.97
OBG MW-10	768.96	13.61	755.35	13.22	755.74	--	--
OBG MW-11	775.64	17.15	758.49	16.20	759.44	17.21	758.43
OBG OS MW-1	776.57	21.98	754.59	21.20	755.37	--	--
OBG OS MW-2	776.67	21.24	755.43	20.35	756.32	21.31	755.36
OBG OS MW-3	782.89	26.16	756.73	24.95	757.94	25.81	757.08
OBG OS MW-4	779.00	24.61	754.39	24.10	754.90	24.60	754.40
OBG OS MW-5	779.38	24.97	754.41	24.47	754.91	24.96	754.42

## Notes:

- 1) ft amsl - feet above mean sea level (NGVD 1929).
- 2) ft btoc - feet below top of casing.
- 3) --' denotes depth to water not collected.
- 4) \*\* - OBG MW-3 was repaired, and the TOC resurveyed, on 9/2/2011.  
The previous TOC was 777.24.
- 5) Water levels from newly installed wells OBG MW-8/9/10/11 collected on 9/9/2016.

**Table 3**  
**LNAPL Observation/Removal Logs**  
 Hemphill Road Industrial Land  
 Burton, Michigan

Date	Approximate Depth to LNAPL (ft)	Depth to Water (ft)	Approximate LNAPL Thickness (ft)	Approximate Volume of LNAPL Removed	Absorbent Sock Installed
<b>OBG MW-4S</b>					
<b>(Installed 11-2010)</b>					
12/20/2010	IM	--	4.00	--	yes
2/25/2011	14.4	18.4	4.00	--	yes
5/13/2011	14.5	18.63	4.13	3-4 gal.	yes
6/24/2011	14.19	15.18	0.99	1-2 gal.	yes
7/29/2011	14.3	14.62	0.32	0.3-0.5 gal	yes
9/2/2011	14.43	14.51	0.08	<0.2 gal	yes
3/22/2012	IM	14.3	--	--	yes
6/13/2012	IM	14.55	--	--	yes
9/21/2012	IM	14.52	--	--	yes
12/18/2012	IM	14.6	--	--	yes
4/16/2013	14.35	14.91	0.56	<0.2 gal	yes
10/15/2013	14.49	14.6	0.11	--	yes
4/24/2014	IM	--	--	--	yes
10/14/2014	IM	--	--	--	yes
5/28/2015	IM	--	--	--	
10/29/2015	IM	14.49	--	--	
4/13/2016	IM	--	--	--	
9/9/2016*	IM	14.61	--	--	
10/21/2016*	IM	14.6	--	--	
2/15/2017*	IM	14.29	--	--	
4/11/2017*	13.9	14.4	0.50	--	
10/18/2017	IM	14.55	--	--	
4/18/2018	IM	13.85	--	--	
10/17/2018	IM	14.51	--	--	
4/30/2019	IM	14.3	--	--	
10/1/2019	IM	--	--	--	
<b>OBG MW-10</b>					
<b>(Installed 6-2016)</b>					
6/10/2016	IM	13.85	--	--	
9/9/2016	14.28	14.47	0.19	<0.2 gal	
10/20/2016	13.95	14.5	0.55	<0.5 gal	
2/15/2017	IM	13.61	--	--	
4/11/2017	IM	12.99	--	--	
10/18/2017	IM	14.3	--	--	
4/18/2018	IM	12.99	--	--	
10/17/2018	IM	14.09	--	--	
4/30/2019	IM	13.22	--	--	
10/1/2019	IM	--	--	--	
<b>MW-401</b>					
<b>(Installed 5-1988)</b>					
5/18/1988	UNK	12	--	--	
1st quarter 1993	UNK	15.26	--	--	
2nd quarter 1993	UNK	15.53	--	--	
3rd quarter 1993	UNK	15.57	--	--	
4th quarter 1993	UNK	15.85	--	--	
1st quarter 1994	UNK	15.66	--	--	
2nd quarter 1994	UNK	15.57	--	--	
3rd quarter 1994	UNK	15.69	--	--	
4th quarter 1994	UNK	15.52	--	--	
1st quarter 1995	UNK	15.5	--	--	
2nd quarter 1995	UNK	15.6	--	--	
4th quarter 1995	UNK	16.1	--	--	

**Table 3**  
**LNAPL Observation/Removal Logs**  
**Hemphill Road Industrial Land**  
**Burton, Michigan**

Date	Approximate Depth to LNAPL (ft)	Depth to Water (ft)	Approximate LNAPL Thickness (ft)	Approximate Volume of LNAPL Removed	Absorbent Sock Installed
<b>MW-401 (Continued)</b>					
<b>(Installed 5-1988)</b>					
1st quarter 1996	UNK	13.72	--	--	
2nd quarter 1996	UNK	13.7	--	--	
3rd quarter 1996	UNK	13.77	--	--	
4th quarter 1996	UNK	13.65	--	--	
5/7/1998	IM	15	--	--	
12/13/1999	14.45	14.95	0.50	--	yes
2/22/2000	IM	14.65	--	--	yes
10/30/2000	IM	13.95	--	--	yes
3/28/2001	IM	14.64	--	--	yes
7/2/2001	IM	13.31	0.50	--	yes
9/31/2001	IM	13.3	--	--	yes
12/27/2001	IM	14.74	0.25	--	
4/4/2002	IM	14.64	--	--	
3/20/2003	IM	14.98	0.30	<0.5 gal	
6/20/2003	IM	13.6	--	<0.2 gal	
9/30/2003	IM	13.74	--	<0.2 gal	
12/16/2003	IM	13.6	--	<0.2 gal	
3/10/2004	IM	13.47	--	<0.2 gal	
6/10/2004	IM	17.3	--	<0.2 gal	
9/15/2004	IM	17.41	--	<0.2 gal	
12/21/2004	IM	13.51	--	<0.2 gal	
3/31/2005	IM	17.8	--	<0.2 gal	
6/8/2005	IM	14.65	--	<0.2 gal	
9/29/2005	IM	14.1	--	<0.2 gal	
12/29/2005	IM	13.81	--	<0.2 gal	
3/22/2012	IM	14.7	--	--	
6/13/2012	IM	13.3	--	<0.2 gal	
9/20/2012	IM	13.3	--	<0.2 gal	
12/18/2012	13.2	13.3	0.10	<0.2 gal	
4/16/2013	IM	12.99	--	<0.2 gal	
10/15/2013	IM	12.99	--	<0.2 gal	
4/24/2014	IM	14.7	--	--	
10/14/2014	IM	13.13	--	--	yes
5/28/2015	IM	--	--	--	
10/29/2015	IM	--	--	--	
4/13/2016	IM	--	--	--	
9/9/2016*	13.35	14.5	1.15	Approx. 0.5 gal	
10/20/2016*	13.2	13.9	0.60	<0.2 gal	
2/15/2017*	IM	--	0.60	<0.2 gal	
4/11/2017*	13.85	14.6	0.75	<0.2 gal	
10/18/2017	IM	13.35	0.60	--	
4/18/2018	IM	--	--	--	
10/17/2018	IM	--	--	--	
4/30/2019	IM	12.8	--	--	
10/1/2019	IM	--	--	--	

Notes:

- 1) LNAPL = denotes Light Non-Aqueous Phase Liquid.
- 2) Depth to LNAPL and water measured from Top-of-casing.
- 3) \* = absorbent sock placed in well, and denotes LNAPL measurement estimated from absorbent sock liner smear.
- 4) IM = denotes immeasurable amount of LNAPL, no measurement could be collected either due to minimal thickness of LNAPL or LNAPL coating the probe not allowing for accurate measurement.
- 5) UNK = denotes unknown.

**Table 4**  
**Groundwater Analytical Results - October 2019**  
**Hemphill Road Industrial Land**  
**Burton, Michigan**

Monitoring Well Sample Date	Onsite Wells										EGLE Part 201 Generic Criteria		EGLE Site Specific Criteria	
	OBG MW-1S 10/1/2019		OBG MW-2S 10/1/2019		OBG MW-2D 10/1/2019		OBG MW-3 10/2/2019		*OBG MW-5S 10/2/2019		Residential Drinking Water	Non-Residential Drinking Water	Residential GWNIC	Nonresidential GWNIC
	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved				
Arsenic	<2	<2	<b>27</b>	<b>27</b>	<b>40</b>	<b>42</b>	7	5	3	3	10 (A)	10 (A)	--	--
Barium	169	161	169	165	230	231	194	193	1,130	1,110	2,000 (A)	2,000 (A)	--	--
Lead	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	4.0 (L)	4.0 (L)	--	--
Selenium	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	50 (A)	50 (A)	--	--
Zinc	<5	<5	<5	<5	<5	<5	<5	<5	10	<5	2,400	5,000 (E)	--	--
Diethyl ether	<10		<10		<10		<10		<10		10 (E)	10 (E)	--	--
Acetone	<50		<50		<50		<50		<50		730	2,100	--	--
Methyl iodide	<1		<1		<1		<1		<1		NA	NA	--	--
Carbon disulfide	<5		<5		<5		<5		<5		800	2,300	--	--
tert-Methyl butyl ether (MTBE)	<5		<5		<5		<5		<5		40 (E)	40 €	250 ca	1.2E+05 ca
Acrylonitrile	<2		<2		<2		<2		<2		2.6	11	--	--
2-Butanone (MEK)	<25		<25		<25		<25		<25		13,000	38,000	--	--
Dichlorodifluoromethane	<5		<5		<5		<5		<5		1,700	4,800	--	--
Chloromethane	<5		<5		<5		<5		<5		260	1,100	--	--
Vinyl chloride	<1		<1		<1		<1		<1		2.0 (A)	2.0 (A)	0.12 (M) mut	100 ca
Bromomethane	<5		<5		<5		<5		<5		10	29	--	--
Chloroethane	<5		<5		<5		<5		<5		430	1,700	--	--
Trichlorofluoromethane	<1		<1		<1		<1		<1		2,600	7,300	--	--
1,1-Dichloroethene	<1		<1		<1		<1		<1		7 (A)	7 (A)	18 nc	3,200 nc
Methylene chloride	<5		<5		<5		<5		<5		5 (A)	5 (A)	--	--
trans-1,2-Dichloroethene	<1		<1		<1		<1		<1		100 (A)	100 (A)	13 nc	3,700 nc
1,1-Dichloroethane	<1		<1		<1		<1		<1		880	2,500	4.7 ca	2,000 ca
cis-1,2-Dichloroethene	<1		<1		<1		<1		<1		70 (A)	70 (A)	3.4 nc	900 nc
Tetrahydrofuran	<90		<90		<90		<90		<90		95	270	45,000 nc	9.9E+06 nc
Chloroform	<1		<1		<1		<1		<1		80 (A,W)	80 (A,W)	--	--
Bromochloromethane	<1		<1		<1		<1		<1		NA	NA	--	--
1,1,1-Trichloroethane	<1		<1		<1		<1		<1		200 (A)	200 (A)	--	--
4-Methyl-2-pentanone (MIBK)	<50		<50		<50		<50		<50		1,800	5,200	--	--
2-Hexanone	<50		<50		<50		<50		<50		1,000	2,900	--	--
Carbon tetrachloride	<1		<1		<1		<1		<1		5 (A)	5 (A)	--	--
Benzene	<1		<1		<1		<1		<1		5 (A)	5 (A)	1.0 ca	420 ca
1,2-Dichloroethane	<1		<1		<1		<1		<1		5 (A)	5 (A)	1.4 ca	620 ca
Trichloroethene	<1		<1		<1		<1		<1		5 (A)	5 (A)	7.3-02 (M)(SE) dev	78 (SE) dev
1,2-Dichloropropane	<1		<1		<1		<1		<1		5 (A)	5 (A)	--	--
Bromodichloromethane	<1		<1		<1		<1		<1		80 (A,W)	80 (A,W)	--	--
Dibromomethane	<5		<5		<5		<5		<5		80	230	--	--
cis-1,3-Dichloropropene <sup>3</sup>	<1		<1		<1		<1		<1		8.5	35	--	--
Toluene	<1		<1		<1		<1		<1		790 (E)	790 (E)	300 (SE) st	4.2E+05 (SE) st
trans-1,3-Dichloropropene <sup>3</sup>	<1		<1		<1		<1		<1		8.5	35	--	--
1,1,2-Trichloroethane	<1		<1		<1		<1		<1		5.0 (A)	5.0 (A)	--	--
Tetrachloroethene	<1		<1		<1		<1		<1		5.0 (A)	5.0 (A)	1.5 (SE) st	1,200 (SE) st
trans-1,4-Dichloro-2-butene	<1		<1		<1		<1		<1		na	na	--	--
Dibromochloromethane	<5		<5		<5		<5		<5		80 (A,W)	80 (A,W)	--	--
1,2-Dibromomethane	<1		<1		<1		<1		<1		0.05 (A)	0.05 (A)	--	--
Chlorobenzene	<1		<1		<1		<1		<1		100 (A)	100 (A)	--	--
1,1,1,2-Tetrachloroethane	<1		<1		<1		<1		<1		77	320	--	--
Ethylbenzene	<1		<1		<1		<1		<1		74 (E)	74 (E)	2.8 ca	1,400 ca
p,m-Xylene <sup>4</sup>	<2		<2		<2		<2		<2		280 (E)	280 (E)	75 nc	23,000 nc
o-Xylene <sup>4</sup>	<1		<1		<1		<1		<1		280 (E)	280 (E)	75 nc	23,000 nc
Styrene	<1		<1		<1		<1		<1		100 (A)	100 (A)	--	--
Isopropylbenzene	<5		<5		<5		<5		<5		800	2,300	0.60 (M) ca	300 ca
Bromoform	<1		<1		<1		<1		<1		80 (A,W)	80 (A,W)	--	--
1,1,2,2-Tetrachloroethane	<1		<1		<1		<1		<1		8.5	35	--	--
1,2,3-Trichloropropane	<1		<1		<1		<1		<1		42	120	--	--
n-Propylbenzene	<1		<1		<1		<1		<1		80	230	43 (SE) dev	52,000 (SE) dev
Bromobenzene	<1		<1		<1		<1		<1		18	50	--	--
1,3,5-Trimethylbenzene	<1		<1		<1		<1		<1		72 (E)	72 (E)	18 nc	5,900 nc
tert-Butylbenzene	<1		<1		<1		<1		<1		80	230	7.7E-02 (M) nc	25 nc
1,2,4-Trimethylbenzene	<1		<1		<1		<1		<1		63 (E)	63 (E)	--	--
sec-Butylbenzene	<1		<1		<1		<1		<1		80	230	270 nc	18,000 (S) sol
p-Isopropyltoluene	<5		<5		<5		<5		<5		NA	NA	--	--
1,3-Dichlorobenzene	<1		<1		<1		<1		<1		6.6	19	--	--
1,4-Dichlorobenzene	<1		<1		<1		<1		<1		75 (A)	75 (A)	--	--
1,2-Dichlorobenzene	<1		<1		<1		<1		<1		600 (A)	600 (A)	--	--
1,2,3-Trimethylbenzene	<1		<1		<1		<1		<1		NA	NA	--	--
n-Butylbenzene	<1		<1		<1		<1		<1		80	230	44 nc	12,000 (S) sol
Hexachloroethane	<5		<5		<5		<5		<5		7.3	21	--	--
1,2-Dibromo-3-chloropropane	<5		<5		<5		<5		<5		0.2 (A)	0.2 (A)	--	--
1,2,4-Trichlorobenzene	<5		<5		<5		<5		<5		70 (A)	70 (A)	25 nc	8,300 nc
1,2,3-Trichlorobenzene	<5		<5		<5		<5		<5		NA	NA	43 nc	15,000 nc
Naphthalene	<5		<5		<5		<5		<5		520	1500	4.2 (M) ca	2,200 ca
2-Methylnaphthalene	<5		<5		<5		<5		<5		260	750	66 nc	24,000 nc

Notes:

- Units are ug/L.
- \* - indicates monitoring well is screened in fill.
- Criteria are for total 1,3-Dichloropropene, values for cis and trans should be summed and compared against the appropriate criterion.
- Criteria are for total xylenes, values for p,m- and o- should be summed and compared against the appropriate criterion.
- Bolded and highlighted value denotes an analytical value that exceeds criteria or a criterion that has been exceeded.
- (A) - Criterion is the state of Michigan drinking water standard established pursuant to Section 5 of 1976 PA 399, MCL 325.1005.
- (E) - Criterion is the aesthetic drinking water value, as required by Section 20120a(5) of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA).
- (L) - Criteria for lead are derived using a biologically based model, as allowed for under Section 20120a(9) of the NREPA.
- (W) - Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 80 ug/L.
- 'na' - means a criterion or value is not available or, in the case of background and CAS numbers, not applicable.

**Table 4**  
**Groundwater Analytical Results - October 2019**  
**Hemphill Road Industrial Land**  
**Burton, Michigan**

Monitoring Well Sample Date	Onsite Wells (continued)								EGLE Part 201 Generic Criteria		EGLE Site Specific Criteria	
	OBG MW-6S 10/1/2019		OBG MW-6D 10/1/2019		OBG MW-7S 10/1/2019		OBG MW-7D 10/1/2019		Residential Drinking Water	Non-Residential Drinking Water	Residential GWNIC	Nonresidential GWNIC
	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved				
Arsenic	10	14	12	14	22	18	34	33	10 (A)	10 (A)	--	--
Barium	158	158	76	75	237	226	89	87	2,000 (A)	2,000 (A)	--	--
Lead	6	<3	<3	<3	<3	<3	<3	<3	4.0 (L)	4.0 (L)	--	--
Selenium	<5	<5	<5	<5	<5	<5	<5	<5	50 (A)	50 (A)	--	--
Zinc	<5	<5	<5	7	<5	<5	<5	<5	2,400	5,000 (E)	--	--
Diethyl ether	<10		<10		<10		<10		10 (E)	10 (E)	--	--
Acetone	<50		<50		<50		<50		730	2,100	--	--
Methyl iodide	<1		<1		<1		<1		NA	NA	--	--
Carbon disulfide	<5		<5		<5		<5		800	2,300	--	--
tert-Methyl butyl ether (MTBE)	<5		<5		<5		<5		40 (E)	40 (E)	250 ca	1.2E+05 ca
Acrylonitrile	<2		<2		<2		<2		2.6	11	--	--
2-Butanone (MEK)	<25		<25		<25		<25		13,000	38,000	--	--
Dichlorodifluoromethane	<5		<5		<5		<5		1,700	4,800	--	--
Chloromethane	<5		<5		<5		<5		260	1,100	--	--
Vinyl chloride	<1		<1		<1		<1		2.0 (A)	2.0 (A)	0.12 (M) mut	100 ca
Bromomethane	<5		<5		<5		<5		10	29	--	--
Chloroethane	<5		<5		<5		<5		430	1700	--	--
Trichlorofluoromethane	<1		<1		<1		<1		2,600	7,300	--	--
1,1-Dichloroethene	<1		<1		<1		<1		7 (A)	7 (A)	18 nc	3,200 nc
Methylene chloride	<5		<5		<5		<5		5 (A)	5 (A)	--	--
trans-1,2-Dichloroethene	<1		<1		<1		<1		100 (A)	100 (A)	13 nc	3,700 nc
1,1-Dichloroethane	<1		<1		<1		<1		880	2,500	4.7 ca	2,000 ca
cis-1,2-Dichloroethene	<1		<1		<1		<1		70 (A)	70 (A)	3.4 nc	900 nc
Tetrahydrofuran	<90		<90		<90		<90		95	270	45,000 nc	9.9E+06 nc
Chloroform	<1		<1		<1		<1		80 (A,W)	80 (A,W)	--	--
Bromochloromethane	<1		<1		<1		<1		NA	NA	--	--
1,1,1-Trichloroethane	<1		<1		<1		<1		200 (A)	200 (A)	--	--
4-Methyl-2-pentanone (MIBK)	<50		<50		<50		<50		1,800	5,200	--	--
2-Hexanone	<50		<50		<50		<50		1,000	2,900	--	--
Carbon tetrachloride	<1		<1		<1		<1		5 (A)	5 (A)	--	--
Benzene	<1		<1		<1		<1		5 (A)	5 (A)	1.0 ca	420 ca
1,2-Dichloroethane	<1		<1		<1		<1		5 (A)	5 (A)	1.4 ca	620 ca
Trichloroethene	<1		<1		<1		<1		5 (A)	5 (A)	7.3-02 (M)(SE) dev	78 (SE) dev
1,2-Dichloropropane	<1		<1		<1		<1		5 (A)	5 (A)	--	--
Bromodichloromethane	<1		<1		<1		<1		80 (A,W)	80 (A,W)	--	--
Dibromomethane	<5		<5		<5		<5		80	230	--	--
cis-1,3-Dichloropropene <sup>3</sup>	<1		<1		<1		<1		8.5	35	--	--
Toluene	<1		<1		<1		<1		790 (E)	790 (E)	300 (SE) st	4.2E+05 (SE) st
trans-1,3-Dichloropropene <sup>3</sup>	<1		<1		<1		<1		8.5	35	--	--
1,1,2-Trichloroethane	<1		<1		<1		<1		5.0 (A)	5.0 (A)	--	--
Tetrachloroethene	<1		<1		<1		<1		5.0 (A)	5.0 (A)	1.5 (SE) st	1,200 (SE) st
trans-1,4-Dichloro-2-butene	<1		<1		<1		<1		na	na	--	--
Dibromochloromethane	<5		<5		<5		<5		80 (A,W)	80 (A,W)	--	--
1,2-Dibromomethane	<1		<1		<1		<1		0.05 (A)	0.05 (A)	--	--
Chlorobenzene	<1		<1		<1		<1		100 (A)	100 (A)	--	--
1,1,1,2-Tetrachloroethane	<1		<1		<1		<1		77	320	--	--
Ethylbenzene	<1		<1		<1		<1		74 (E)	74 (E)	2.8 ca	1,400 ca
p,m-Xylene <sup>4</sup>	<2		<2		<2		<2		280 (E)	280 (E)	75 nc	23,000 nc
o-Xylene <sup>4</sup>	<1		<1		<1		<1		280 (E)	280 (E)	75 nc	23,000 nc
Styrene	<1		<1		<1		<1		100 (A)	100 (A)	--	--
Isopropylbenzene	<5		<5		<5		<5		800	2,300	0.60 (M) ca	300 ca
Bromoform	<1		<1		<1		<1		80 (A,W)	80 (A,W)	--	--
1,1,2,2-Tetrachloroethane	<1		<1		<1		<1		8.5	35	--	--
1,2,3-Trichloropropane	<1		<1		<1		<1		42	120	--	--
n-Propylbenzene	<1		<1		<1		<1		80	230	43 (SE) dev	52,000 (SE) dev
Bromobenzene	<1		<1		<1		<1		18	50	--	--
1,3,5-Trimethylbenzene	<1		<1		<1		<1		72 (E)	72 (E)	18 nc	5,900 nc
tert-Butylbenzene	<1		<1		<1		<1		80	230	7.7E-02 (M) nc	25 nc
1,2,4-Trimethylbenzene	<1		<1		<1		<1		63 (E)	63 (E)	25 nc	8,300 nc
sec-Butylbenzene	<1		<1		<1		<1		80	230	270 nc	18,000 (S) sol
p-Isopropyltoluene	<5		<5		<5		<5		NA	NA	--	--
1,3-Dichlorobenzene	<1		<1		<1		<1		6.6	19	--	--
1,4-Dichlorobenzene	<1		<1		<1		<1		75 (A)	75 (A)	--	--
1,2-Dichlorobenzene	<1		<1		<1		<1		600 (A)	600 (A)	--	--
1,2,3-Trimethylbenzene	<1		<1		<1		<1		NA	NA	43 nc	15,000 nc
n-Butylbenzene	<1		<1		<1		<1		80	230	44 nc	12,000 (S) sol
Hexachloroethane	<5		<5		<5		<5		7.3	21	--	--
1,2-Dibromo-3-chloropropane	<5		<5		<5		<5		0.2 (A)	0.2 (A)	--	--
1,2,4-Trichlorobenzene	<5		<5		<5		<5		70 (A)	70 (A)	25 nc	8,300 nc
1,2,3-Trichlorobenzene	<5		<5		<5		<5		NA	NA	43 nc	15,000 nc
Naphthalene	<5		<5		<5		<5		520	1500	4.2 (M) ca	2,200 ca
2-Methylnaphthalene	<5		<5		<5		<5		260	750	66 nc	24,000 nc

Notes:

- Units are ug/L.
- \* - indicates monitoring well is screened in fill.
- Criteria are for total 1,3-Dichloropropene, values for cis and trans should be summed and compared against the appropriate criterion.
- Criteria are for total xylenes, values for p,m- and o- should be summed and compared against the appropriate criterion.
- Bolded and highlighted value denotes an analytical value that exceeds criteria or a criterion that has been exceeded.
- (A) - Criterion is the state of Michigan drinking water standard established pursuant to Section 5 of 1976 PA 399, MCL 325.1005.
- (E) - Criterion is the aesthetic drinking water value, as required by Section 20120a(5) of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA).
- (L) - Criteria for lead are derived using a biologically based model, as allowed for under Section 20120a(9) of the NREPA.
- (W) - Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 80 ug/L.
- 'na' - means a criterion or value is not available or, in the case of background and CAS numbers, not applicable.

**Table 4**  
**Groundwater Analytical Results - October 2019**  
**Hemphill Road Industrial Land**  
**Burton, Michigan**

Monitoring Well Sample Date	Offsite Wells										EGLE Part 201 Generic Criteria		EGLE Site Specific Criteria	
	*OBG OS-MW-1 10/2/2019		*OBG OS-MW-2 10/2/2019		*OBG OS-MW-3 10/2/2019		*OBG OS-MW-4 10/2/2019		*OBG OS-MW-5 10/2/2019		Residential Drinking Water	Non-Residential Drinking Water	Residential GWNIC	Nonresidential GWNIC
	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved				
Arsenic	36	33	38	35	28	28	3	2	<2	<2	10 (A)	10 (A)	--	--
Barium	690	677	265	255	145	144	1,260	1,200	2,550	2,480	2,000 (A)	2,000 (A)	--	--
Lead	<3	<3	13	9	<3	<3	<3	<3	<3	<3	4.0 (L)	4.0 (L)	--	--
Selenium	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	50 (A)	50 (A)	--	--
Zinc	<5	<5	13	13	<5	<5	<5	<5	<5	<5	2,400	5,000 (E)	--	--
Diethyl ether	<10		<10		<10		<10		<10		10 (E)	10 (E)	--	--
Acetone	<50		<50		<50		<50		<50		730	2,100	--	--
Methyl iodide	<1		<1		<1		<1		<1		NA	NA	--	--
Carbon disulfide	<5		<5		<5		<5		<5		800	2,300	--	--
tert-Methyl butyl ether (MTBE)	<5		<5		<5		<5		<5		40 (E)	40 (E)	250 ca	1.2E+05 ca
Acrylonitrile	<2		<2		<2		<2		<2		2.6	11	--	--
2-Butanone (MEK)	<25		<25		<25		<25		<25		13,000	38,000	--	--
Dichlorodifluoromethane	<5		<5		<5		<5		<5		1,700	4,800	--	--
Chloromethane	<5		<5		<5		<5		<5		260	1,100	--	--
Vinyl chloride	<1		<1		<1		<1		<1		2.0 (A)	2.0 (A)	0.12 (M) mut	100 ca
Bromomethane	<5		<5		<5		<5		<5		10	29	--	--
Chloroethane	<5		<5		<5		<5		<5		430	1700	--	--
Trichlorofluoromethane	<1		<1		<1		<1		<1		2,600	7,300	--	--
1,1-Dichloroethene	<1		<1		<1		<1		<1		7 (A)	7 (A)	18 nc	3,200 nc
Methylene chloride	<5		<5		<5		<5		<5		5 (A)	5 (A)	--	--
trans-1,2-Dichloroethene	<1		<1		<1		<1		<1		100 (A)	100 (A)	13 nc	3,700 nc
1,1-Dichloroethane	<1		<1		<1		<1		<1		880	2,500	4.7 ca	2,000 ca
cis-1,2-Dichloroethene	<1		<1		<1		<1		<1		70 (A)	70 (A)	3.4 nc	900 nc
Tetrahydrofuran	<90		<90		<90		<90		<90		95	270	45,000 nc	9.9E+06 nc
Chloroform	<1		<1		<1		<1		<1		80 (A,W)	80 (A,W)	--	--
Bromochloromethane	<1		<1		<1		<1		<1		NA	NA	--	--
1,1,1-Trichloroethane	<1		<1		<1		<1		<1		200 (A)	200 (A)	--	--
4-Methyl-2-pentanone (MIBK)	<50		<50		<50		<50		<50		1,800	5,200	--	--
2-Hexanone	<50		<50		<50		<50		<50		1,000	2,900	--	--
Carbon tetrachloride	<1		<1		<1		<1		<1		5 (A)	5 (A)	--	--
Benzene	<1		<1		<1		<1		<1		5 (A)	5 (A)	1.0 ca	420 ca
1,2-Dichloroethane	<1		<1		<1		<1		<1		5 (A)	5 (A)	1.4 ca	620 ca
Trichloroethene	<1		<1		<1		<1		<1		5 (A)	5 (A)	7.3-02 (M)(SE) dev	78 (SE) dev
1,2-Dichloropropane	<1		<1		<1		<1		<1		5 (A)	5 (A)	--	--
Bromodichloromethane	<1		<1		<1		<1		<1		80 (A,W)	80 (A,W)	--	--
Dibromomethane	<5		<5		<5		<5		<5		80	230	--	--
cis-1,3-Dichloropropene <sup>3</sup>	<1		<1		<1		<1		<1		8.5	35	--	--
Toluene	<1		<1		<1		<1		<1		790 (E)	790 (E)	300 (SE) st	4.2E+05 (SE) st
trans-1,3-Dichloropropene <sup>3</sup>	<1		<1		<1		<1		<1		8.5	35	--	--
1,1,2-Trichloroethane	<1		<1		<1		<1		<1		5.0 (A)	5.0 (A)	--	--
Tetrachloroethene	<1		<1		<1		<1		<1		5.0 (A)	5.0 (A)	1.5 (SE) st	1,200 (SE) st
trans-1,4-Dichloro-2-butene	<1		<1		<1		<1		<1		na	na	--	--
Dibromochloromethane	<5		<5		<5		<5		<5		80 (A,W)	80 (A,W)	--	--
1,2-Dibromomethane	<1		<1		<1		<1		<1		0.05 (A)	0.05 (A)	--	--
Chlorobenzene	<1		<1		<1		8		5		100 (A)	100 (A)	--	--
1,1,1,2-Tetrachloroethane	<1		<1		<1		<1		<1		77	320	--	--
Ethylbenzene	<1		<1		<1		<1		<1		74 (E)	74 (E)	2.8 ca	1,400 ca
p,m-Xylene <sup>4</sup>	<2		<2		<2		<2		<2		280 (E)	280 (E)	75 nc	23,000 nc
o-Xylene <sup>4</sup>	<1		<1		<1		<1		<1		280 (E)	280 (E)	75 nc	23,000 nc
Styrene	<1		<1		<1		<1		<1		100 (A)	100 (A)	--	--
Isopropylbenzene	<5		<5		<5		5		<5		800	2,300	0.60 (M) ca	300 ca
Bromoform	<1		<1		<1		<1		<1		80 (A,W)	80 (A,W)	--	--
1,1,1,2-Tetrachloroethane	<1		<1		<1		<1		<1		8.5	35	--	--
1,2,3-Trichloropropane	<1		<1		<1		<1		<1		42	120	--	--
n-Propylbenzene	<1		<1		<1		9		<1		80	230	43 (SE) dev	52,000 (SE) dev
Bromobenzene	<1		<1		<1		<1		<1		18	50	--	--
1,3,5-Trimethylbenzene	<1		<1		<1		<1		<1		72 (E)	72 (E)	18 nc	5,900 nc
tert-Butylbenzene	<1		<1		<1		<1		<1		80	230	7.7E-02 (M) nc	25 nc
1,2,4-Trimethylbenzene	<1		<1		<1		2		<1		63 (E)	63 (E)	25 nc	8,300 nc
sec-Butylbenzene	<1		<1		<1		2		<1		80	230	270 nc	18,000 (S) sol
p-Isopropyltoluene	<5		<5		<5		<5		<5		NA	NA	--	--
1,3-Dichlorobenzene	<1		<1		<1		<1		<1		6.6	19	--	--
1,4-Dichlorobenzene	<1		<1		<1		4		3		75 (A)	75 (A)	--	--
1,2-Dichlorobenzene	<1		<1		<1		<1		<1		600 (A)	600 (A)	--	--
1,2,3-Trimethylbenzene	<1		<1		<1		3		<1		NA	NA	43 nc	15,000 nc
n-Butylbenzene	<1		<1		<1		1		<1		80	230	44 nc	12,000 (S) sol
Hexachloroethane	<5		<5		<5		<5		<5		7.3	21	--	--
1,2-Dibromo-3-chloropropane	<5		<5		<5		<5		<5		0.2 (A)	0.2 (A)	--	--
1,2,4-Trichlorobenzene	<5		<5		<5		<5		<5		70 (A)	70 (A)	25 nc	8,300 nc
1,2,3-Trichlorobenzene	<5		<5		<5		<5		<5		NA	NA	43 nc	15,000 nc
Naphthalene	<5		<5		<5		22		<5		520	1500	4.2 (M) ca	2,200 ca
2-Methylnaphthalene	<5		<5		<5		35		<5		260	750	66 nc	24,000 nc

Notes:

- Units are ug/L.
- \* - indicates monitoring well is screened in fill.
- Criteria are for total 1,3-Dichloropropene, values for cis and trans should be summed and compared against the appropriate criterion.
- Criteria are for total xylenes, values for p,m- and o- should be summed and compared against the appropriate criterion.
- Bolded and highlighted value denotes an analytical value that exceeds criteria or a criterion that has been exceeded.
- (A) - Criterion is the state of Michigan drinking water standard established pursuant to Section 5 of 1976 PA 399, MCL 325.1005.
- (E) - Criterion is the aesthetic drinking water value, as required by Section 20120a(5) of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA).
- (L) - Criteria for lead are derived using a biologically based model, as allowed for under Section 20120a(9) of the NREPA.
- (W) - Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 80 ug/L.
- 'na' - means a criterion or value is not available or, in the case of background and CAS numbers, not applicable.



## Figures

FIGURE 1





i:\Racer-Trust\153888\22003\Hemphill-2019-7\Docs\Reports\2nd Semi-Annual\2019 GWS Report\Figures\001 - Figure 1 - Well Locations.mxd



Notes:  
 1) Monitoring Wells OBG MW-8, OBG MW-9, OBG MW-10, and OBG MW-11 were installed on 6/9/2016.  
 2) This document was developed in color. Reproduction in B/W may not represent the data as intended.  
 3) Background image provided by ESRI.

PLOTDATE: 11/29/17 SCHNEIKB

**LEGEND**

-  MONITORING WELL LOCATION (SCREENED IN NATIVE SOIL)
-  MONITORING WELL LOCATION (SCREENED IN FILL)
-  FENCE LINE
-  HEMPHILL ROAD INDUSTRIAL LAND

RACER TRUST  
 HEMPHILL ROAD INDUSTRIAL LAND  
 BURTON, MICHIGAN

**MONITORING WELL LOCATIONS**

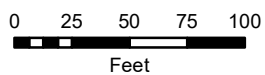
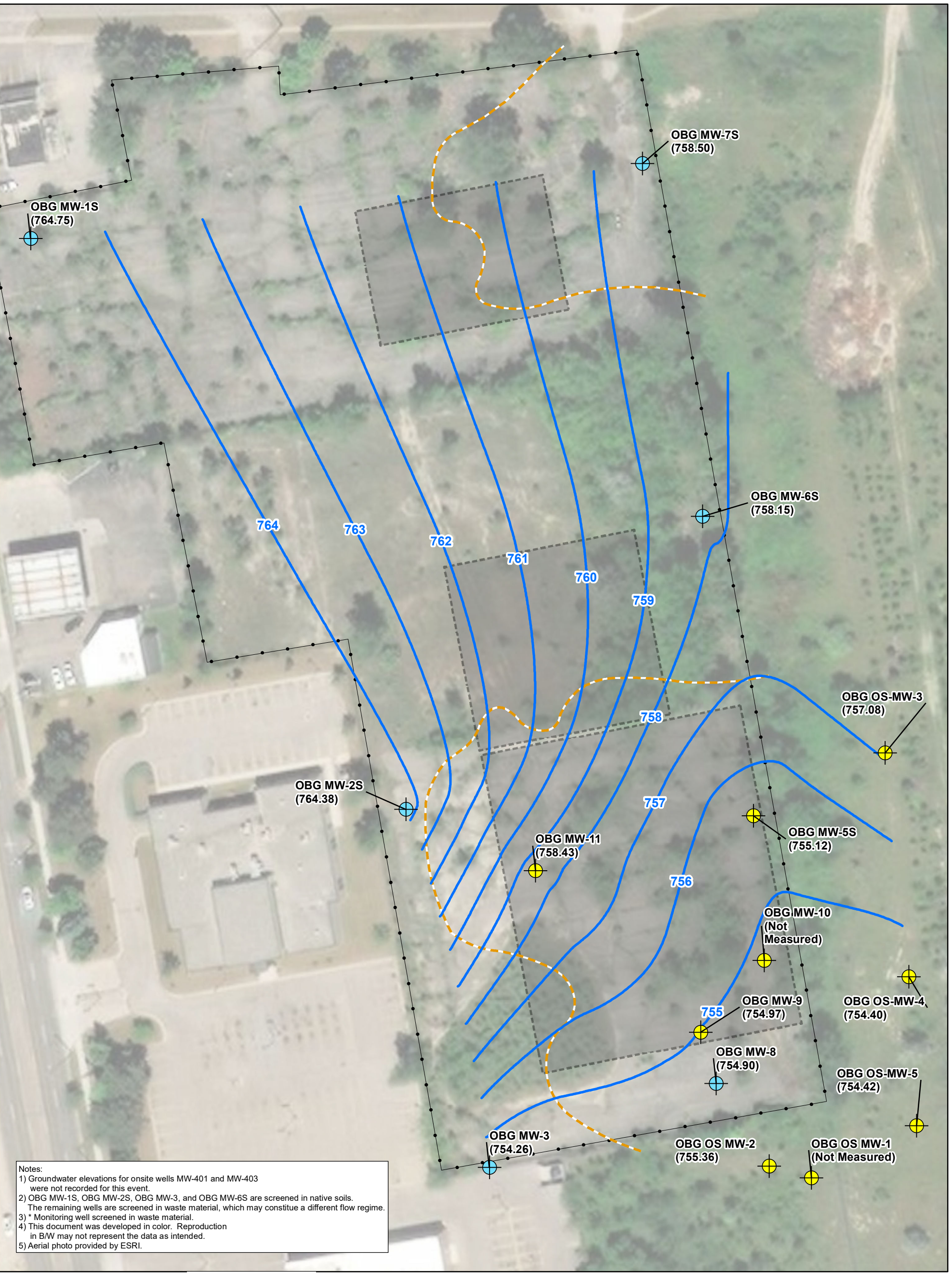


FIGURE 2

I:\Racer-Trust\_153388\72203\_Hemphill-2019-7\Docs\Reports\2nd Semi-Annual 2019 GWS Report\Figures\002 - Figure 2 - Shallow GW Elevation Contours (October 2019)-All Wells.mxd

PLOTDATE: 11/11/15 SCHNEIKB



Notes:  
 1) Groundwater elevations for onsite wells MW-401 and MW-403 were not recorded for this event.  
 2) OBG MW-1S, OBG MW-2S, OBG MW-3, and OBG MW-6S are screened in native soils. The remaining wells are screened in waste material, which may constitute a different flow regime.  
 3) \* Monitoring well screened in waste material.  
 4) This document was developed in color. Reproduction in B/W may not represent the data as intended.  
 5) Aerial photo provided by ESR.

- LEGEND**
- MONITORING WELL LOCATION (SCREENED IN NATIVE SOIL)
  - MONITORING WELL LOCATION (SCREENED IN FILL)
  - SHALLOW GROUNDWATER ELEVATION CONTOUR
  - FENCE LINE
  - FORMER BUILDING
  - APPROXIMATE EXTENT OF WASTE FILL ONSITE

RACER TRUST  
 HEMPHILL ROAD INDUSTRIAL LAND  
 BURTON, MICHIGAN  
**INTERPRETED SHALLOW GROUNDWATER  
 ELEVATION CONTOURS  
 OCTOBER 1, 2019**

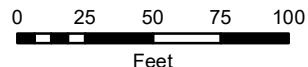
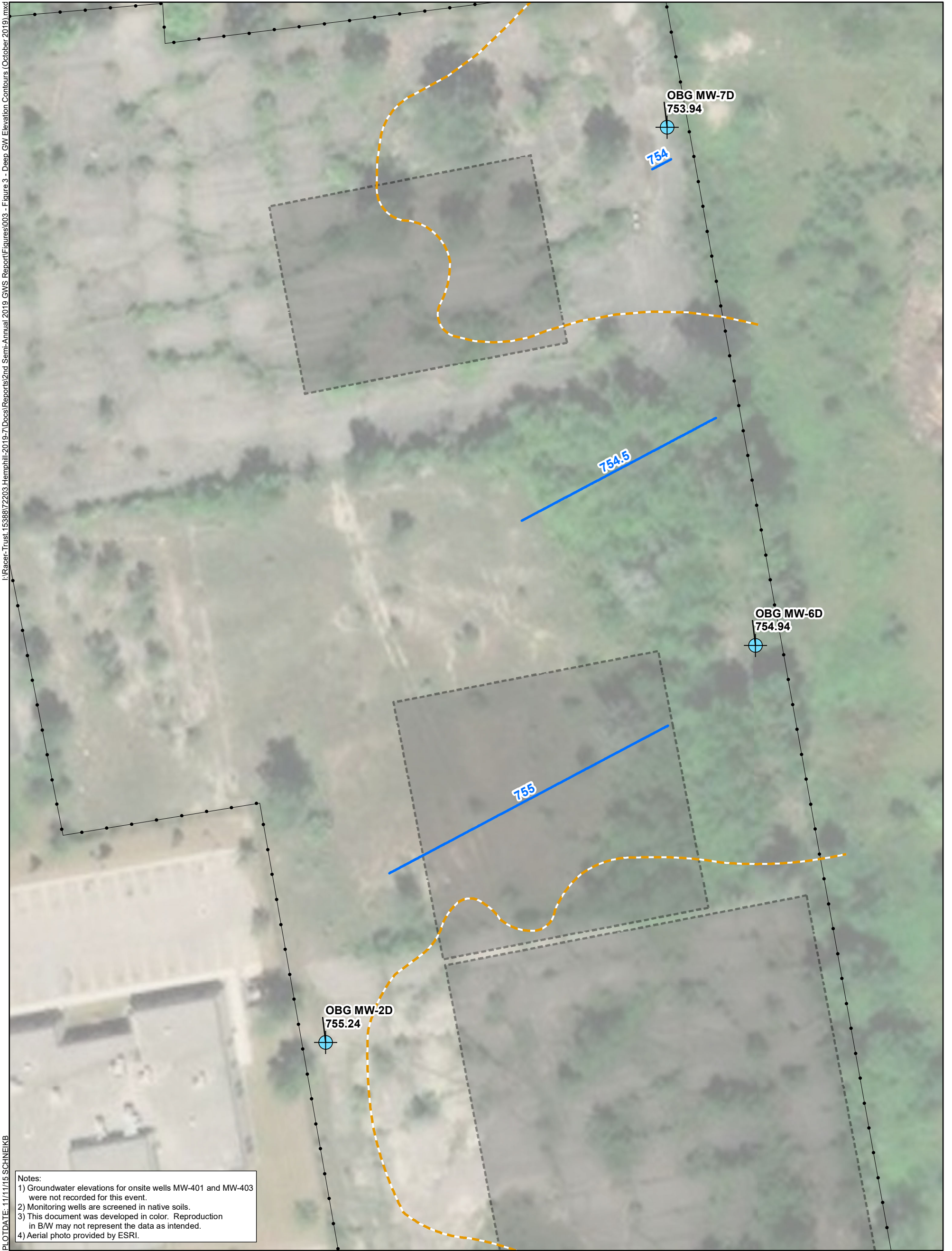


FIGURE 3



Notes:  
 1) Groundwater elevations for onsite wells MW-401 and MW-403 were not recorded for this event.  
 2) Monitoring wells are screened in native soils.  
 3) This document was developed in color. Reproduction in B/W may not represent the data as intended.  
 4) Aerial photo provided by ESRI.

PLOTDATE: 11/11/15 SCHNEIKB

- LEGEND**
- MONITORING WELL LOCATION (SCREENED IN NATIVE SOIL)
  - MONITORING WELL LOCATION (SCREENED IN FILL)
  - SHALLOW GROUNDWATER ELEVATION CONTOUR
  - FENCE LINE
  - FORMER BUILDING
  - APPROXIMATE EXTENT OF WASTE FILL ONSITE

RACER TRUST  
 HEMPHILL ROAD INDUSTRIAL LAND  
 BURTON, MICHIGAN

**DEEP GROUNDWATER ELEVATION CONTOURS  
 OCTOBER 1, 2019**

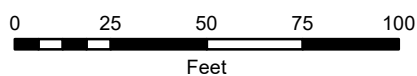
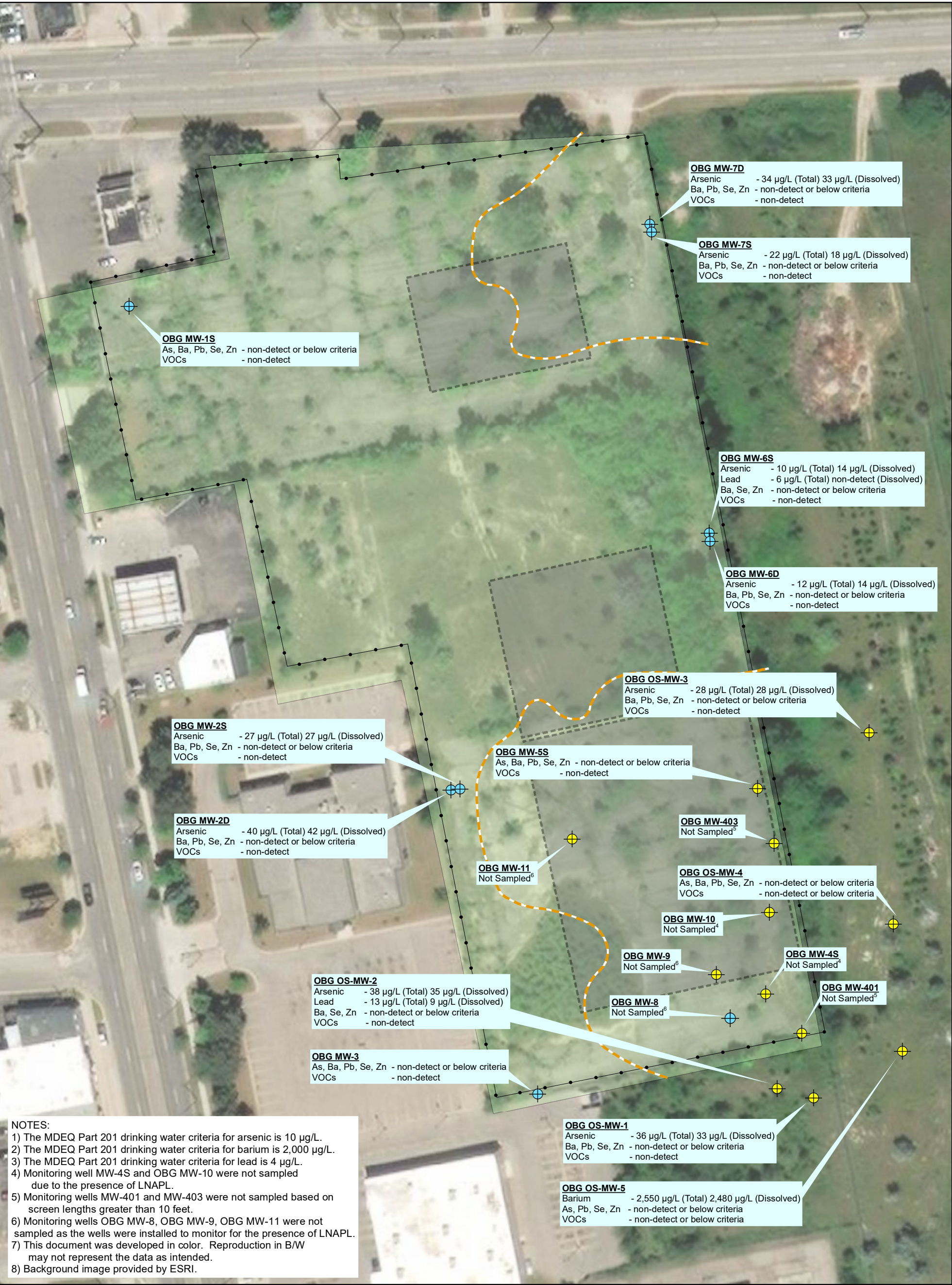


FIGURE 4

I:\Racer-Trust.15388\72203.Hemphill-2019.7\Docs\Reports\2nd Semi-Annual 2019 GWS Report\Figures\004 - Figure 4 - GW Analytical Results (April 2019).mxd



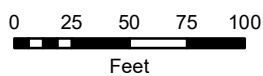
PLOTDATE: 11/29/17 SCHNEIKB


**LEGEND**

- MONITORING WELL (SCREENED IN NATIVE SOIL)
- MONITORING WELL (SCREENED IN FILL)
- FENCE LINE
- HEMPHILL ROAD INDUSTRIAL LAND
- FORMER BUILDING
- APPROXIMATE EXTENT OF WASTE FILL ONSITE

RACER TRUST  
HEMPHILL ROAD INDUSTRIAL LAND  
BURTON, MICHIGAN

**GROUNDWATER ANALYTICAL RESULTS  
OCTOBER 2019**





**Exhibit A**  
**Groundwater Sampling**  
**Logs – October 2019**

**O'Brien & Gere Engineers, Inc.**

**Standard Groundwater Sampling Log**

Date 10/1/2019  
 Site Name RACER Hemphill  
 Location Burton, MI  
 Project No. 72203  
 Personnel KBS

Weather Partly Sunny, 70's (°F)  
 Well # OBG MW-1  
 Evacuation Method Peristaltic  
 Sampling Method Low Flow

**Well Information:**

Depth of Well \* 27.20 ft.  
 Depth to Water \* 12.89 ft.  
 Length of Water Column 14.31 ft.  
 Volume of Water in Well 2.33 gal.(s)  
 3X Volume of Water in Well 6.99 gal.(s)

Water Volume /ft. for:  
 2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling 1½ gal.(s)  
 Did well go dry? No

\* Measurements taken from  Well Casing  Protective Casing  (Other, Specify) \_\_\_\_\_

**Instrument Calibration:**

Calibrated within range

pH Yes  
 ORP Yes  
 Conductivity Yes  
 DO Yes

**Water parameters:** 260 mL/min pumping rate

	Drawdown measured 0.3 feet or less	Temperature Celsius ±3 percent	Conductivity mS/cm ±3 percent	Dissolved Oxygen mg/L ±10 percent	pH ±0.1 pH units	ORP mV ±10 millivolts	Turbidity NTUs ±10 percent
initial	<u>13.45</u>	initial <u>18.0</u>	initial <u>1.33</u>	initial <u>0.29</u>	initial <u>7.18</u>	initial <u>120.1</u>	initial <u>8.5</u>
5 min	<u>13.79</u>	<u>18.5</u>	<u>1.32</u>	<u>0.27</u>	<u>7.16</u>	<u>90.9</u>	<u>5.52</u>
10 min	<u>14.25</u>	<u>18.1</u>	<u>1.3</u>	<u>0.19</u>	<u>7.19</u>	<u>44.4</u>	<u>6.81</u>
15 min	<u>14.30</u>	<u>18.0</u>	<u>1.29</u>	<u>0.19</u>	<u>7.17</u>	<u>35.9</u>	<u>3.85</u>
20 min	<u>14.56</u>	<u>17.8</u>	<u>1.28</u>	<u>0.20</u>	<u>7.18</u>	<u>19.7</u>	<u>3.53</u>
25 min	<u>14.71</u>	<u>18.0</u>	<u>1.25</u>	<u>0.27</u>	<u>7.22</u>	<u>9.7</u>	<u>2.08</u>
30 min	<u>14.71</u>	<u>18.0</u>	<u>1.24</u>	<u>0.26</u>	<u>7.23</u>	<u>6.2</u>	<u>1.59</u>
35 min	<u>14.71</u>	<u>18.5</u>	<u>1.24</u>	<u>0.29</u>	<u>7.26</u>	<u>1.0</u>	<u>2.08</u>
40 min	_____	_____	_____	_____	_____	_____	_____
45 min	_____	_____	_____	_____	_____	_____	_____
50 min	_____	_____	_____	_____	_____	_____	_____
55 min	_____	_____	_____	_____	_____	_____	_____
60 min	_____	_____	_____	_____	_____	_____	_____
65 min	_____	_____	_____	_____	_____	_____	_____
70 min	_____	_____	_____	_____	_____	_____	_____
75 min	_____	_____	_____	_____	_____	_____	_____
80 min	_____	_____	_____	_____	_____	_____	_____
85 min	_____	_____	_____	_____	_____	_____	_____
90 min	_____	_____	_____	_____	_____	_____	_____

**Water Sample:**

Time Collected 9:38

Physical Appearance at Start \_\_\_\_\_

Physical Appearance at Sampling \_\_\_\_\_

Color Clear  
 Odor None  
 Turbidity (> 100 NTU) 8.50  
 Sheen/Free Product None

Color Clear  
 Odor None  
 Turbidity (> 100 NTU) 2.08  
 Sheen/Free Product None

**Samples collected:**

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered
VOCs	3	40 ml Glass	HCL	
Total Metals	1	125 ml Plastic	HNO3	
Dissolved Metals	1	125 ml Plastic	HNO3	yes

Notes:

**O'Brien & Gere Engineers, Inc.**

**Standard Groundwater Sampling Log**

Date 10/1/2019  
 Site Name RACER Hemphill  
 Location Burton, MI  
 Project No. 72203  
 Personnel KBS

Weather Partly Sunny, 80's (°F)  
 Well # OBG MW-2S  
 Evacuation Method Peristaltic  
 Sampling Method Low Flow

**Well Information:**

Depth of Well \* 20.30 ft.  
 Depth to Water \* 10.95 ft.  
 Length of Water Column 9.35 ft.  
 Volume of Water in Well 1.52 gal.(s)  
 3X Volume of Water in Well 4.57 gal.(s)

Water Volume /ft. for:  
 2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling 1½ gal.(s)  
 Did well go dry? No

\* Measurements taken from  Well Casing  Protective Casing  (Other, Specify) \_\_\_\_\_

**Instrument Calibration:**

Calibrated within range  
 pH Yes  
 ORP Yes  
 Conductivity Yes  
 DO Yes

**Water parameters:** 200 mL/min pumping rate

	Drawdown measured 0.3 feet or less	Temperature Celsius ±3 percent	Conductivity mS/cm ±3 percent	Dissolved Oxygen mg/L ±10 percent	pH ±0.1 pH units	ORP mV ±10 millivolts	Turbidity NTUs ±10 percent
initial	<u>11.53</u>	initial <u>17.8</u>	initial <u>2.34</u>	initial <u>0.58</u>	initial <u>7.21</u>	initial <u>24.0</u>	initial _____
5 min	<u>11.71</u>	<u>18.0</u>	<u>2.33</u>	<u>0.35</u>	<u>7.21</u>	<u>10.0</u>	<u>5.12</u>
10 min	<u>12.20</u>	<u>18.2</u>	<u>2.34</u>	<u>0.16</u>	<u>7.21</u>	<u>-66.6</u>	<u>1.71</u>
15 min	<u>12.46</u>	<u>18.5</u>	<u>2.35</u>	<u>0.17</u>	<u>7.21</u>	<u>-67.0</u>	<u>1.67</u>
20 min	<u>12.74</u>	<u>18.3</u>	<u>2.34</u>	<u>0.17</u>	<u>7.20</u>	<u>-66.6</u>	<u>1.25</u>
25 min	<u>13.00</u>	<u>18.2</u>	<u>2.34</u>	<u>0.16</u>	<u>7.20</u>	<u>-67.3</u>	<u>1.19</u>
30 min	<u>13.21</u>	<u>18.0</u>	<u>2.34</u>	<u>0.15</u>	<u>7.20</u>	<u>-72.1</u>	<u>1.27</u>
35 min	_____	_____	_____	_____	_____	_____	_____
40 min	_____	_____	_____	_____	_____	_____	_____
45 min	_____	_____	_____	_____	_____	_____	_____
50 min	_____	_____	_____	_____	_____	_____	_____
55 min	_____	_____	_____	_____	_____	_____	_____
60 min	_____	_____	_____	_____	_____	_____	_____
65 min	_____	_____	_____	_____	_____	_____	_____
70 min	_____	_____	_____	_____	_____	_____	_____
75 min	_____	_____	_____	_____	_____	_____	_____
80 min	_____	_____	_____	_____	_____	_____	_____
85 min	_____	_____	_____	_____	_____	_____	_____
90 min	_____	_____	_____	_____	_____	_____	_____

**Water Sample:**

Time Collected 14:57

Physical Appearance at Start \_\_\_\_\_

Physical Appearance at Sampling \_\_\_\_\_

Color Clear  
 Odor None  
 Turbidity (> 100 NTU) 5.12  
 Sheen/Free Product None

Color Clear  
 Odor None  
 Turbidity (> 100 NTU) 1.27  
 Sheen/Free Product None

**Samples collected:**

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered
VOCs	3	40 ml Glass	HCL	
Total Metals	1	125 ml Plastic	HNO3	
Dissolved Metals	1	125 ml Plastic	HNO3	yes

Notes:

**O'Brien & Gere Engineers, Inc.**

**Standard Groundwater Sampling Log**

Date 10/1/2019  
 Site Name RACER Hemphill  
 Location Burton, MI  
 Project No. 72203  
 Personnel KBS

Weather Rain, 70's (°F)  
 Well # OBG MW-2D  
 Evacuation Method Peristaltic  
 Sampling Method Low Flow

**Well Information:**

Depth of Well \* 38.38 ft.  
 Depth to Water \* 19.95 ft.  
 Length of Water Column 18.43 ft.  
 Volume of Water in Well 3.00 gal.(s)  
 3X Volume of Water in Well 9.00 gal.(s)

Water Volume /ft. for:  
 2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling 1 gal.(s)  
 Did well go dry? No

\* Measurements taken from  Well Casing  Protective Casing  (Other, Specify) \_\_\_\_\_

**Instrument Calibration:**

Calibrated within range

pH Yes  
 ORP Yes  
 Conductivity Yes  
 DO Yes

**Water parameters:** 200 mL/min pumping rate

	Drawdown measured 0.3 feet or less	Temperature Celsius ±3 percent	Conductivity mS/cm ±3 percent	Dissolved Oxygen mg/L ±10 percent	pH ±0.1 pH units	ORP mV ±10 millivolts	Turbidity NTUs ±10 percent
initial	<u>20.16</u>	initial <u>16.7</u>	initial <u>1.62</u>	initial <u>1.51</u>	initial <u>7.48</u>	initial <u>-62.3</u>	initial _____
5 min	<u>20.26</u>	<u>17.1</u>	<u>1.53</u>	<u>0.40</u>	<u>7.46</u>	<u>-79.2</u>	<u>7.98</u>
10 min	<u>20.34</u>	<u>17.1</u>	<u>1.52</u>	<u>0.20</u>	<u>7.44</u>	<u>-94.2</u>	<u>7.69</u>
15 min	<u>20.39</u>	<u>16.7</u>	<u>1.52</u>	<u>0.19</u>	<u>7.44</u>	<u>-104.4</u>	<u>7.00</u>
20 min	<u>20.41</u>	<u>16.7</u>	<u>1.52</u>	<u>0.14</u>	<u>7.44</u>	<u>-113.7</u>	<u>2.33</u>
25 min	<u>20.42</u>	<u>17.0</u>	<u>1.53</u>	<u>0.14</u>	<u>7.46</u>	<u>-119.4</u>	<u>2.73</u>
30 min	<u>20.45</u>	<u>16.9</u>	<u>1.52</u>	<u>0.14</u>	<u>7.45</u>	<u>-121.1</u>	<u>2.69</u>
35 min	_____	_____	_____	_____	_____	_____	_____
40 min	_____	_____	_____	_____	_____	_____	_____
45 min	_____	_____	_____	_____	_____	_____	_____
50 min	_____	_____	_____	_____	_____	_____	_____
55 min	_____	_____	_____	_____	_____	_____	_____
60 min	_____	_____	_____	_____	_____	_____	_____
65 min	_____	_____	_____	_____	_____	_____	_____
70 min	_____	_____	_____	_____	_____	_____	_____
75 min	_____	_____	_____	_____	_____	_____	_____
80 min	_____	_____	_____	_____	_____	_____	_____
85 min	_____	_____	_____	_____	_____	_____	_____
90 min	_____	_____	_____	_____	_____	_____	_____

**Water Sample:**

Time Collected 16:06

Physical Appearance at Start \_\_\_\_\_

Physical Appearance at Sampling \_\_\_\_\_

Color Clear  
 Odor None  
 Turbidity (> 100 NTU) 7.98  
 Sheen/Free Product None

Color Clear  
 Odor None  
 Turbidity (> 100 NTU) 2.69  
 Sheen/Free Product None

**Samples collected:**

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered
VOCs	3	40 ml Glass	HCL	
Total Metals	1	125 ml Plastic	HNO3	
Dissolved Metals	1	125 ml Plastic	HNO3	yes

Notes:

**O'Brien & Gere Engineers, Inc.**

**Standard Groundwater Sampling Log**

Date 10/2/2019  
 Site Name RACER Hemphill  
 Location Burton, MI  
 Project No. 72203  
 Personnel KBS

Weather Light Rain, 60's (°F)  
 Well # OBG MW-3S  
 Evacuation Method Peristaltic  
 Sampling Method Low Flow

**Well Information:**

Depth of Well \* 27.60 ft.  
 Depth to Water \* 23.05 ft.  
 Length of Water Column 4.55 ft.  
 Volume of Water in Well 0.74 gal.(s)  
 3X Volume of Water in Well 2.22 gal.(s)

Water Volume /ft. for:  
 2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling 1 gal.(s)  
 Did well go dry? No

\* Measurements taken from  Well Casing  Protective Casing  (Other, Specify) \_\_\_\_\_

**Instrument Calibration:**

Calibrated within range

pH Yes  
 ORP Yes  
 Conductivity Yes  
 DO Yes

**Water parameters:** 200 mL/min pumping rate

	Drawdown measured 0.3 feet or less	Temperature Celsius ±3 percent	Conductivity mS/cm ±3 percent	Dissolved Oxygen mg/L ±10 percent	pH ±0.1 pH units	ORP mV ±10 millivolts	Turbidity NTUs ±10 percent
initial	<u>23.05</u>	initial <u>17.2</u>	initial <u>5.05</u>	initial <u>1.09</u>	initial <u>6.96</u>	initial <u>-2.1</u>	initial <u>22.10</u>
5 min	<u>23.05</u>	<u>16.6</u>	<u>5.12</u>	<u>0.34</u>	<u>7.02</u>	<u>-18.2</u>	<u>10.60</u>
10 min	<u>23.05</u>	<u>16.6</u>	<u>5.12</u>	<u>0.25</u>	<u>7.01</u>	<u>-31.9</u>	<u>7.32</u>
15 min	<u>23.05</u>	<u>16.6</u>	<u>5.10</u>	<u>0.22</u>	<u>7.01</u>	<u>-37.8</u>	<u>8.59</u>
20 min	<u>23.05</u>	<u>16.6</u>	<u>5.08</u>	<u>0.25</u>	<u>7.01</u>	<u>-39.9</u>	<u>5.27</u>
25 min	<u>23.05</u>	<u>16.6</u>	<u>5.08</u>	<u>0.23</u>	<u>7.01</u>	<u>-40.0</u>	<u>4.70</u>
30 min	<u>23.05</u>	<u>16.6</u>	<u>5.06</u>	<u>0.24</u>	<u>7.01</u>	<u>-38.6</u>	<u>3.32</u>
35 min							
40 min							
45 min							
50 min							
55 min							
60 min							
65 min							
70 min							
75 min							
80 min							
85 min							
90 min							

**Water Sample:**

Time Collected 11:07

Physical Appearance at Start

Physical Appearance at Sampling

Color Clear/Slight Rust Color Color Clear  
 Odor None Odor None  
 Turbidity (> 100 NTU) 22.1 Turbidity (> 100 NTU) 3.32  
 Sheen/Free Product None Sheen/Free Product None

**Samples collected:**

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered
VOCs	3	40 ml Glass	HCL	
Total Metals	1	125 ml Plastic	HNO3	
Dissolved Metals	1	125 ml Plastic	HNO3	yes

Notes:

**O'Brien & Gere Engineers, Inc.**

**Standard Groundwater Sampling Log**

Date 10/2/2019  
 Site Name RACER Hemphill  
 Location Burton, MI  
 Project No. 72203  
 Personnel KBS

Weather Light Rain, 56°F  
 Well # OBG MW-5S  
 Evacuation Method Peristaltic  
 Sampling Method Low Flow

**Well Information:**

Depth of Well \* 20.29 ft.  
 Depth to Water \* 15.88 ft.  
 Length of Water Column 4.41 ft.  
 Volume of Water in Well 0.71 gal.(s)  
 3X Volume of Water in Well 2.15 gal.(s)

Water Volume /ft. for:  
 2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling 2½ gal.(s)  
 Did well go dry? No

\* Measurements taken from  Well Casing  Protective Casing  (Other, Specify) \_\_\_\_\_

**Instrument Calibration:**

Calibrated within range

pH Yes  
 ORP Yes  
 Conductivity Yes  
 DO Yes

**Water parameters:** 200 mL/min pumping rate

	Drawdown measured 0.3 feet or less	Temperature Celsius ±3 percent	Conductivity mS/cm ±3 percent	Dissolved Oxygen mg/L ±10 percent	pH ±0.1 pH units	ORP mV ±10 millivolts	Turbidity NTUs ±10 percent
initial	<u>16.2</u>	initial <u>15.9</u>	initial <u>2.70</u>	initial <u>0.39</u>	initial <u>6.45</u>	initial <u>149.8</u>	initial <u>75.4</u>
5 min	<u>16.46</u>	<u>15.9</u>	<u>2.51</u>	<u>0.43</u>	<u>6.46</u>	<u>119.8</u>	<u>90.0</u>
10 min	<u>16.78</u>	<u>16.0</u>	<u>2.47</u>	<u>0.58</u>	<u>6.51</u>	<u>97</u>	<u>87</u>
15 min	<u>17.2</u>	<u>15.8</u>	<u>2.46</u>	<u>0.69</u>	<u>6.52</u>	<u>78.2</u>	<u>75.2</u>
20 min	<u>16.89</u>	<u>15.9</u>	<u>2.46</u>	<u>0.69</u>	<u>6.52</u>	<u>67.5</u>	<u>68.4</u>
25 min	<u>16.95</u>	<u>15.7</u>	<u>2.46</u>	<u>0.73</u>	<u>6.53</u>	<u>49.2</u>	<u>53.6</u>
30 min	<u>17.15</u>	<u>15.7</u>	<u>2.47</u>	<u>0.69</u>	<u>6.54</u>	<u>28.2</u>	<u>52.8</u>
35 min	<u>17.24</u>	<u>15.4</u>	<u>2.52</u>	<u>0.72</u>	<u>6.57</u>	<u>-11.2</u>	<u>45.5</u>
40 min	<u>17.32</u>	<u>15.3</u>	<u>2.61</u>	<u>0.76</u>	<u>6.58</u>	<u>-34.6</u>	<u>38.6</u>
45 min	<u>17.39</u>	<u>15.5</u>	<u>2.62</u>	<u>0.79</u>	<u>6.57</u>	<u>-41.5</u>	<u>30.6</u>
50 min	<u>17.44</u>	<u>15.3</u>	<u>2.69</u>	<u>0.83</u>	<u>6.58</u>	<u>-48.6</u>	<u>22.1</u>
55 min	<u>17.46</u>	<u>15.2</u>	<u>2.84</u>	<u>0.84</u>	<u>6.59</u>	<u>-57.4</u>	<u>14.1</u>
60 min	<u>17.46</u>	<u>15.0</u>	<u>2.98</u>	<u>0.92</u>	<u>6.61</u>	<u>-68.3</u>	<u>7.6</u>
65 min	<u>17.46</u>	<u>15.0</u>	<u>3.00</u>	<u>0.93</u>	<u>6.61</u>	<u>-69.9</u>	<u>6.54</u>
70 min	<u>17.46</u>	<u>15.0</u>	<u>3.02</u>	<u>0.96</u>	<u>6.60</u>	<u>-72.5</u>	<u>5.96</u>
75 min							
80 min							
85 min							
90 min							

**Water Sample:**

Time Collected 10:05

Physical Appearance at Start \_\_\_\_\_

Physical Appearance at Sampling \_\_\_\_\_

Color Yellowish  
 Odor Slight Chemical Odor  
 Turbidity (> 100 NTU) 75.40  
 Sheen/Free Product Slight Sheen

Color Yellowish  
 Odor Slight Chemical Odor  
 Turbidity (> 100 NTU) 5.96  
 Sheen/Free Product Slight Sheen / LNAPL glob on water level probe

**Samples collected:**

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered
VOCs	3	40 ml Glass	HCL	
Total Metals	1	125 ml Plastic	HNO3	
Dissolved Metals	1	125 ml Plastic	HNO3	yes

**Notes:**

DUP-1 Collected

**O'Brien & Gere Engineers, Inc.**

**Standard Groundwater Sampling Log**

Date 10/1/2019  
 Site Name RACER Hemphill  
 Location Burton, MI  
 Project No. 72203  
 Personnel KBS

Weather Light Rain, 70's (°F)  
 Well # OBG MW-6S  
 Evacuation Method Peristaltic  
 Sampling Method Low Flow

**Well Information:**

Depth of Well \* 19.15 ft.  
 Depth to Water \* 14.55 ft.  
 Length of Water Column 4.6 ft.  
 Volume of Water in Well 0.74 gal.(s)  
 3X Volume of Water in Well 2.24 gal.(s)

Water Volume /ft. for:  
 2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling 1 gal.(s)  
 Did well go dry? No

\* Measurements taken from  Well Casing  Protective Casing  (Other, Specify) \_\_\_\_\_

**Instrument Calibration:**

Calibrated within range

pH Yes  
 ORP Yes  
 Conductivity Yes  
 DO Yes

**Water parameters:** 200 mL/min pumping rate

	Drawdown measured 0.3 feet or less	Temperature Celsius ±3 percent	Conductivity mS/cm ±3 percent	Dissolved Oxygen mg/L ±10 percent	pH ±0.1 pH units	ORP mV ±10 millivolts	Turbidity NTUs ±10 percent
initial	14.89	initial 17.5	initial 1.36	initial 1.15	initial 6.97	initial 45.2	initial 8.03
5 min	15.02	17.2	1.36	1.02	6.95	43.4	7.88
10 min	15.27	17.2	1.36	1.12	6.94	41.3	4.95
15 min	15.53	17.1	1.36	1.36	6.95	40.3	3.65
20 min	15.85	17.4	1.38	1.07	6.95	40.5	2.21
25 min	16.07	17.4	1.38	1.05	6.95	36.8	2.14
30 min	16.26	17.4	1.38	0.99	6.95	34.4	2.07
35 min							
40 min							
45 min							
50 min							
55 min							
60 min							
65 min							
70 min							
75 min							
80 min							
85 min							
90 min							

**Water Sample:**

Time Collected 12:47

Physical Appearance at Start

Physical Appearance at Sampling

Color Clear Color Clear  
 Odor None Odor None  
 Turbidity (> 100 NTU) 8.03 Turbidity (> 100 NTU) 2.07  
 Sheen/Free Product None Sheen/Free Product None

**Samples collected:**

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered
VOCs	3	40 ml Glass	HCL	
Total Metals	1	125 ml Plastic	HNO3	
Dissolved Metals	1	125 ml Plastic	HNO3	yes

Notes:

**O'Brien & Gere Engineers, Inc.**

**Standard Groundwater Sampling Log**

Date 10/1/2019  
 Site Name RACER Hemphill  
 Location Burton, MI  
 Project No. 72203  
 Personnel KBS

Weather Rain, 70's (°F)  
 Well # OBG MW-6D  
 Evacuation Method Peristaltic  
 Sampling Method Low Flow

**Well Information:**

Depth of Well \* 44.42 ft.  
 Depth to Water \* 17.75 ft.  
 Length of Water Column 26.67 ft.  
 Volume of Water in Well 4.34 gal.(s)  
 3X Volume of Water in Well 13.04 gal.(s)

Water Volume /ft. for:  
 2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling 1 gal.(s)  
 Did well go dry? No

\* Measurements taken from  Well Casing  Protective Casing  (Other, Specify) \_\_\_\_\_

**Instrument Calibration:**

Calibrated within range

pH Yes  
 ORP Yes  
 Conductivity Yes  
 DO Yes

**Water parameters:** 200 mL/min pumping rate

	Drawdown measured 0.3 feet or less	Temperature Celsius ±3 percent	Conductivity mS/cm ±3 percent	Dissolved Oxygen mg/L ±10 percent	pH ±0.1 pH units	ORP mV ±10 millivolts	Turbidity NTUs ±10 percent
initial	18.18	initial 17.1	initial 0.88	initial 1.40	initial 7.7	initial 46.5	initial 36.30
5 min	18.44	16.2	0.88	0.36	7.63	11.9	13.20
10 min	18.75	16.4	0.88	0.3	7.59	38.4	6.99
15 min	18.85	15.7	0.88	0.26	7.59	34.2	4.68
20 min	18.99	15.4	0.89	0.22	7.63	30.9	4.04
25 min	19.15	15.3	0.88	0.19	7.59	31.7	3.84
30 min	19.30	15.1	0.89	0.19	7.60	28.3	4.36
35 min							
40 min							
45 min							
50 min							
55 min							
60 min							
65 min							
70 min							
75 min							
80 min							
85 min							
90 min							

**Water Sample:**

Time Collected 14:07

Physical Appearance at Start

Physical Appearance at Sampling

Color Clear Color Clear  
 Odor None Odor None  
 Turbidity (> 100 NTU) 36.3 Turbidity (> 100 NTU) 4.36  
 Sheen/Free Product None Sheen/Free Product None

**Samples collected:**

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered
VOCs	3	40 ml Glass	HCL	
Total Metals	1	125 ml Plastic	HNO3	
Dissolved Metals	1	125 ml Plastic	HNO3	yes

Notes:

**O'Brien & Gere Engineers, Inc.**

**Standard Groundwater Sampling Log**

Date 10/1/2019  
 Site Name RACER Hemphill  
 Location Burton, MI  
 Project No. 72203  
 Personnel KBS

Weather Cloudy, 70's (°F)  
 Well # OBG MW-7S  
 Evacuation Method Peristaltic  
 Sampling Method Low Flow

**Well Information:**

Depth of Well \* 17.73 ft.  
 Depth to Water \* 7.8 ft.  
 Length of Water Column 9.93 ft.  
 Volume of Water in Well 1.61 gal.(s)  
 3X Volume of Water in Well 4.85 gal.(s)

Water Volume /ft. for:  
 2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling 2 gal.(s)  
 Did well go dry? No

\* Measurements taken from  Well Casing  Protective Casing  (Other, Specify) \_\_\_\_\_

**Instrument Calibration:**

Calibrated within range

pH Yes  
 ORP Yes  
 Conductivity Yes  
 DO Yes

**Water parameters:** 200 mL/min pumping rate

	Drawdown measured 0.3 feet or less	Temperature Celsius ±3 percent	Conductivity mS/cm ±3 percent	Dissolved Oxygen mg/L ±10 percent	pH ±0.1 pH units	ORP mV ±10 millivolts	Turbidity NTUs ±10 percent
initial	<u>8.29</u>	initial <u>18.4</u>	initial <u>1.23</u>	initial <u>0.80</u>	initial <u>6.72</u>	initial <u>-51.0</u>	initial <u>42.5</u>
5 min	<u>8.69</u>	<u>18.4</u>	<u>1.23</u>	<u>0.72</u>	<u>6.64</u>	<u>-84.9</u>	<u>37.7</u>
10 min	<u>9.25</u>	<u>18.0</u>	<u>1.23</u>	<u>0.64</u>	<u>6.63</u>	<u>-94.2</u>	<u>48.5</u>
15 min	<u>9.85</u>	<u>18</u>	<u>1.22</u>	<u>0.61</u>	<u>6.62</u>	<u>-96.5</u>	<u>34.1</u>
20 min	<u>10.44</u>	<u>17.9</u>	<u>1.22</u>	<u>0.61</u>	<u>6.62</u>	<u>-98.1</u>	<u>14.1</u>
25 min	<u>10.79</u>	<u>17.6</u>	<u>1.22</u>	<u>0.64</u>	<u>6.63</u>	<u>-98.8</u>	<u>32.4</u>
30 min	<u>11.14</u>	<u>17.7</u>	<u>1.22</u>	<u>0.60</u>	<u>6.63</u>	<u>-100.8</u>	<u>29.9</u>
35 min	<u>11.41</u>	<u>17.5</u>	<u>1.22</u>	<u>0.62</u>	<u>6.65</u>	<u>-101.2</u>	<u>28.5</u>
40 min	_____	_____	_____	_____	_____	_____	_____
45 min	_____	_____	_____	_____	_____	_____	_____
50 min	_____	_____	_____	_____	_____	_____	_____
55 min	_____	_____	_____	_____	_____	_____	_____
60 min	_____	_____	_____	_____	_____	_____	_____
65 min	_____	_____	_____	_____	_____	_____	_____
70 min	_____	_____	_____	_____	_____	_____	_____
75 min	_____	_____	_____	_____	_____	_____	_____
80 min	_____	_____	_____	_____	_____	_____	_____
85 min	_____	_____	_____	_____	_____	_____	_____
90 min	_____	_____	_____	_____	_____	_____	_____

**Water Sample:**

Time Collected 15:15

Physical Appearance at Start \_\_\_\_\_

Physical Appearance at Sampling \_\_\_\_\_

Color Yellowish  
 Odor None  
 Turbidity (> 100 NTU) 42.5  
 Sheen/Free Product None

Color Slightly Yellowish  
 Odor None  
 Turbidity (> 100 NTU) 28.5  
 Sheen/Free Product None

**Samples collected:**

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered
VOCs	3	40 ml Glass	HCL	
Total Metals	1	125 ml Plastic	HNO3	
Dissolved Metals	1	125 ml Plastic	HNO3	yes

Notes:

**O'Brien & Gere Engineers, Inc.**

**Standard Groundwater Sampling Log**

Date 10/1/2019  
 Site Name RACER Hemphill  
 Location Burton, MI  
 Project No. 72203  
 Personnel KBS

Weather Cloudy, 70's (°F)  
 Well # OBG MW-7D  
 Evacuation Method Peristaltic  
 Sampling Method Low Flow

**Well Information:**

Depth of Well \* 47.56 ft.  
 Depth to Water \* 12.42 ft.  
 Length of Water Column 35.14 ft.  
 Volume of Water in Well 5.72 gal.(s)  
 3X Volume of Water in Well 17.18 gal.(s)

Water Volume /ft. for:  
 2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling 1 gal.(s)  
 Did well go dry? No

\* Measurements taken from  Well Casing  Protective Casing  (Other, Specify) \_\_\_\_\_

**Instrument Calibration:**

Calibrated within range

pH Yes  
 ORP Yes  
 Conductivity Yes  
 DO Yes

**Water parameters:**

200 mL/min pumping rate

	Drawdown measured 0.3 feet or less	Temperature Celsius ±3 percent	Conductivity mS/cm ±3 percent	Dissolved Oxygen mg/L ±10 percent	pH ±0.1 pH units	ORP mV ±10 millivolts	Turbidity NTUs ±10 percent
initial	<u>12.45</u>	initial <u>19.5</u>	initial <u>1.01</u>	initial <u>1.76</u>	initial <u>6.99</u>	initial <u>-84.6</u>	initial <u>110.0</u>
5 min	<u>12.45</u>	<u>15.7</u>	<u>0.620</u>	<u>0.55</u>	<u>7.59</u>	<u>-104.5</u>	<u>90.0</u>
10 min	<u>12.45</u>	<u>15.4</u>	<u>0.563</u>	<u>0.44</u>	<u>7.56</u>	<u>-102.2</u>	<u>72.1</u>
15 min	<u>12.45</u>	<u>15.4</u>	<u>0.549</u>	<u>0.43</u>	<u>7.62</u>	<u>-106.1</u>	<u>51.6</u>
20 min	<u>12.45</u>	<u>15.3</u>	<u>0.547</u>	<u>1.25</u>	<u>7.56</u>	<u>-105.6</u>	<u>44.3</u>
25 min	<u>12.45</u>	<u>15.3</u>	<u>0.546</u>	<u>1.35</u>	<u>7.65</u>	<u>-111.2</u>	<u>34.7</u>
30 min	<u>12.45</u>	<u>15.4</u>	<u>0.546</u>	<u>1.30</u>	<u>7.67</u>	<u>-114.7</u>	<u>28.9</u>
35 min	<u>12.45</u>	<u>15.3</u>	<u>0.546</u>	<u>1.23</u>	<u>7.67</u>	<u>-115.3</u>	<u>23.0</u>
40 min	<u>12.45</u>	<u>15.3</u>	<u>0.546</u>	<u>1.22</u>	<u>7.67</u>	<u>-117.1</u>	<u>21.0</u>
45 min	<u>12.45</u>	<u>15.5</u>	<u>0.547</u>	<u>1.10</u>	<u>7.69</u>	<u>-118.0</u>	<u>19.0</u>
50 min							
55 min							
60 min							
65 min							
70 min							
75 min							
80 min							
85 min							
90 min							

**Water Sample:**

Time Collected 11:43

Physical Appearance at Start \_\_\_\_\_

Physical Appearance at Sampling \_\_\_\_\_

Color Cloudy / Light Gray  
 Odor None  
 Turbidity (> 100 NTU) 110.0  
 Sheen/Free Product None

Color Clear  
 Odor None  
 Turbidity (> 100 NTU) 19.0  
 Sheen/Free Product None

**Samples collected:**

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered
VOCs	3	40 ml Glass	HCL	
Total Metals	1	125 ml Plastic	HNO3	
Dissolved Metals	1	125 ml Plastic	HNO3	yes

Notes:

**O'Brien & Gere Engineers, Inc.**

**Standard Groundwater Sampling Log**

Date 10/2/2019  
 Site Name RACER Hemphill  
 Location Burton, MI  
 Project No. 72203  
 Personnel KBS

Weather Rain, 60's (°F)  
 Well # OBG OS MW-1  
 Evacuation Method Peristaltic  
 Sampling Method Low Flow

**Well Information:**

Depth of Well \* 30.17 ft.  
 Depth to Water \* \_\_\_\_\_ ft.  
 Length of Water Column \_\_\_\_\_ ft.  
 Volume of Water in Well \_\_\_\_\_ gal.(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal.(s)

Water Volume /ft. for:  
 2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling 1½ gal.(s)  
 Did well go dry? No

\* Measurements taken from  Well Casing  Protective Casing  (Other, Specify) \_\_\_\_\_

**Instrument Calibration:**

Calibrated within range

pH Yes  
 ORP Yes  
 Conductivity Yes  
 DO Yes

**Water parameters:**

200 mL/min pumping rate

	Drawdown measured 0.3 feet or less	Temperature Celsius ±3 percent	Conductivity mS/cm ±3 percent	Dissolved Oxygen mg/L ±10 percent	pH ±0.1 pH units	ORP mV ±10 millivolts	Turbidity NTUs ±10 percent
initial	22.35	initial 12.9	initial 1.17	initial 0.54	initial 6.75	initial 24.4	initial 104
5 min	22.47	13.4	1.15	0.56	6.70	8.3	86.5
10 min	22.59	13.3	1.14	0.57	6.70	-9.4	86.5
15 min	22.69	13.3	1.12	0.61	6.71	-26.4	66.2
20 min	22.75	13.3	1.09	0.56	6.70	-36.6	38.7
25 min	22.83	13.2	1.08	0.57	6.69	-42.4	25.5
30 min	22.92	13.2	1.07	0.55	6.69	-47.7	17.1
35 min	23.00	13.1	1.06	0.59	6.68	-50.7	12.1
40 min	23.08	13.0	1.06	0.54	6.68	-52.0	9.51
45 min	23.11	13.0	1.07	0.55	6.69	-53.3	10.5
50 min							
55 min							
60 min							
65 min							
70 min							
75 min							
80 min							
85 min							
90 min							

**Water Sample:**

Time Collected 16:30

Physical Appearance at Start \_\_\_\_\_

Physical Appearance at Sampling \_\_\_\_\_

Color Light Gray  
 Odor None  
 Turbidity (> 100 NTU) 104  
 Sheen/Free Product None

Color Clear  
 Odor None  
 Turbidity (> 100 NTU) 10.5  
 Sheen/Free Product None

**Samples collected:**

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered
VOCs	3	40 ml Glass	HCL	
Total Metals	1	125 ml Plastic	HNO3	
Dissolved Metals	1	125 ml Plastic	HNO3	yes

Notes:

**O'Brien & Gere Engineers, Inc.**

**Standard Groundwater Sampling Log**

Date 10/2/2019  
 Site Name RACER Hemphill  
 Location Burton, MI  
 Project No. 72203  
 Personnel KBS

Weather Rain, 60's (°F)  
 Well # OBG OS MW-2  
 Evacuation Method Peristaltic  
 Sampling Method Low Flow

**Well Information:**

Depth of Well \* 30.16 ft.  
 Depth to Water \* 21.31 ft.  
 Length of Water Column 8.85 ft.  
 Volume of Water in Well 1.44 gal.(s)  
 3X Volume of Water in Well 4.32 gal.(s)

Water Volume /ft. for:  
 2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling 1 gal.(s)  
 Did well go dry? No

\* Measurements taken from  Well Casing  Protective Casing  (Other, Specify) \_\_\_\_\_

**Instrument Calibration:**

Calibrated within range

pH Yes  
 ORP Yes  
 Conductivity Yes  
 DO Yes

**Water parameters:** 200 mL/min pumping rate

	Drawdown measured 0.3 feet or less	Temperature Celsius ±3 percent	Conductivity mS/cm ±3 percent	Dissolved Oxygen mg/L ±10 percent	pH ±0.1 pH units	ORP mV ±10 millivolts	Turbidity NTUs ±10 percent
initial	<u>21.50</u>	initial <u>13.1</u>	initial <u>1.03</u>	initial <u>0.45</u>	initial <u>6.81</u>	initial <u>-83.7</u>	initial <u>11.6</u>
5 min	<u>21.56</u>	<u>13.1</u>	<u>1.02</u>	<u>0.43</u>	<u>6.78</u>	<u>-88.1</u>	<u>7.34</u>
10 min	<u>21.63</u>	<u>13.1</u>	<u>1.02</u>	<u>0.42</u>	<u>6.78</u>	<u>-78.8</u>	<u>6.23</u>
15 min	<u>21.71</u>	<u>13.1</u>	<u>1.02</u>	<u>0.42</u>	<u>6.78</u>	<u>-78.3</u>	<u>4.90</u>
20 min	<u>21.80</u>	<u>13.0</u>	<u>1.02</u>	<u>0.45</u>	<u>6.79</u>	<u>-77.9</u>	<u>5.10</u>
25 min	<u>21.89</u>	<u>13.0</u>	<u>1.02</u>	<u>0.42</u>	<u>6.79</u>	<u>-77.9</u>	<u>6.46</u>
30 min	<u>21.98</u>	<u>13.1</u>	<u>1.02</u>	<u>0.43</u>	<u>6.79</u>	<u>-77.9</u>	<u>5.16</u>
35 min							
40 min							
45 min							
50 min							
55 min							
60 min							
65 min							
70 min							
75 min							
80 min							
85 min							
90 min							

**Water Sample:**

Time Collected 17:25

Physical Appearance at Start

Physical Appearance at Sampling

Color Clear Color Clear  
 Odor None Odor None  
 Turbidity (> 100 NTU) 11.6 Turbidity (> 100 NTU) 5.16  
 Sheen/Free Product None Sheen/Free Product None

**Samples collected:**

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered
VOCs	3	40 ml Glass	HCL	
Total Metals	1	125 ml Plastic	HNO3	
Dissolved Metals	1	125 ml Plastic	HNO3	yes

Notes:

**O'Brien & Gere Engineers, Inc.**

**Standard Groundwater Sampling Log**

Date 10/2/2019  
 Site Name RACER Hemphill  
 Location Burton, MI  
 Project No. 72203  
 Personnel KBS

Weather Rain, 60's (°F)  
 Well # OBG OS MW-3  
 Evacuation Method Peristaltic  
 Sampling Method Low Flow

**Well Information:**

Depth of Well \* 30.28 ft.  
 Depth to Water \* 25.81 ft.  
 Length of Water Column 4.77 ft.  
 Volume of Water in Well 0.72 gal.(s)  
 3X Volume of Water in Well 2.18 gal.(s)

Water Volume /ft. for:  
 2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling 1½ gal.(s)  
 Did well go dry? No

\* Measurements taken from  Well Casing  Protective Casing  (Other, Specify) \_\_\_\_\_

**Instrument Calibration:**

Calibrated within range  
 pH Yes  
 ORP Yes  
 Conductivity Yes  
 DO Yes

**Water parameters:** 200 mL/min pumping rate

	Drawdown measured 0.3 feet or less	Temperature Celsius ±3 percent	Conductivity mS/cm ±3 percent	Dissolved Oxygen mg/L ±10 percent	pH ±0.1 pH units	ORP mV ±10 millivolts	Turbidity NTUs ±10 percent
initial	<u>25.81</u>	initial <u>15.7</u>	initial <u>1.21</u>	initial <u>0.73</u>	initial <u>6.98</u>	initial <u>-23.0</u>	initial <u>17.10</u>
5 min	<u>25.81</u>	<u>13.6</u>	<u>1.05</u>	<u>0.31</u>	<u>7.10</u>	<u>-3.9</u>	<u>12.70</u>
10 min	<u>25.81</u>	<u>13.4</u>	<u>1.02</u>	<u>0.24</u>	<u>7.08</u>	<u>-34.9</u>	<u>9.43</u>
15 min	<u>25.81</u>	<u>13.3</u>	<u>1.01</u>	<u>0.22</u>	<u>7.11</u>	<u>-77.2</u>	<u>5.76</u>
20 min	<u>25.81</u>	<u>13.3</u>	<u>1.01</u>	<u>0.25</u>	<u>7.13</u>	<u>-97.5</u>	<u>4.02</u>
25 min	<u>25.81</u>	<u>13.3</u>	<u>1.01</u>	<u>0.26</u>	<u>7.16</u>	<u>-114.8</u>	<u>2.36</u>
30 min	<u>25.81</u>	<u>13.3</u>	<u>1.01</u>	<u>0.22</u>	<u>7.18</u>	<u>-125.8</u>	<u>2.01</u>
35 min	<u>25.81</u>	<u>13.3</u>	<u>1.01</u>	<u>0.24</u>	<u>7.18</u>	<u>-129.2</u>	<u>1.78</u>
40 min	<u>25.81</u>	<u>13.2</u>	<u>1.01</u>	<u>0.25</u>	<u>7.19</u>	<u>-133.8</u>	<u>1.40</u>
45 min	_____	_____	_____	_____	_____	_____	_____
50 min	_____	_____	_____	_____	_____	_____	_____
55 min	_____	_____	_____	_____	_____	_____	_____
60 min	_____	_____	_____	_____	_____	_____	_____
65 min	_____	_____	_____	_____	_____	_____	_____
70 min	_____	_____	_____	_____	_____	_____	_____
75 min	_____	_____	_____	_____	_____	_____	_____
80 min	_____	_____	_____	_____	_____	_____	_____
85 min	_____	_____	_____	_____	_____	_____	_____
90 min	_____	_____	_____	_____	_____	_____	_____

**Water Sample:**

Time Collected 12:20

Physical Appearance at Start \_\_\_\_\_

Physical Appearance at Sampling \_\_\_\_\_

Color Clear  
 Odor None  
 Turbidity (> 100 NTU) 17.1  
 Sheen/Free Product None

Color Clear  
 Odor None  
 Turbidity (> 100 NTU) 1.40  
 Sheen/Free Product None

**Samples collected:**

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered
VOCs	3	40 ml Glass	HCL	
Total Metals	1	125 ml Plastic	HNO3	
Dissolved Metals	1	125 ml Plastic	HNO3	yes

Notes:

**O'Brien & Gere Engineers, Inc.**

**Standard Groundwater Sampling Log**

Date 10/2/2019  
 Site Name RACER Hemphill  
 Location Burton, MI  
 Project No. 72203  
 Personnel KBS

Weather Rain, 60's (°F)  
 Well # OBG OS MW-4  
 Evacuation Method Peristaltic  
 Sampling Method Low Flow

**Well Information:**

Depth of Well \* 27.76 ft.  
 Depth to Water \* 24.6 ft.  
 Length of Water Column 3.16 ft.  
 Volume of Water in Well 0.51 gal.(s)  
 3X Volume of Water in Well 1.54 gal.(s)

Water Volume /ft. for:  
 2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling 1 gal.(s)  
 Did well go dry? No

\* Measurements taken from  Well Casing  Protective Casing  (Other, Specify) \_\_\_\_\_

**Instrument Calibration:**

Calibrated within range

pH Yes  
 ORP Yes  
 Conductivity Yes  
 DO Yes

**Water parameters:** 200 mL/min pumping rate

	Drawdown measured 0.3 feet or less	Temperature Celsius ±3 percent	Conductivity mS/cm ±3 percent	Dissolved Oxygen mg/L ±10 percent	pH ±0.1 pH units	ORP mV ±10 millivolts	Turbidity NTUs ±10 percent
initial	<u>24.60</u>	initial <u>14</u>	initial <u>2.07</u>	initial <u>0.84</u>	initial <u>6.66</u>	initial <u>-67.8</u>	initial <u>16.80</u>
5 min	<u>24.6</u>	<u>13.8</u>	<u>2.07</u>	<u>0.83</u>	<u>6.66</u>	<u>-78</u>	<u>12.80</u>
10 min	<u>24.6</u>	<u>13.8</u>	<u>2.07</u>	<u>0.88</u>	<u>6.66</u>	<u>-87.8</u>	<u>4.74</u>
15 min	<u>24.6</u>	<u>14</u>	<u>2.06</u>	<u>0.85</u>	<u>6.67</u>	<u>-94.4</u>	<u>3.73</u>
20 min	<u>24.6</u>	<u>14.2</u>	<u>2.07</u>	<u>0.88</u>	<u>6.68</u>	<u>-97.8</u>	<u>3.34</u>
25 min	<u>24.6</u>	<u>14.2</u>	<u>2.07</u>	<u>0.84</u>	<u>6.68</u>	<u>-99.1</u>	<u>3.23</u>
30 min	<u>24.6</u>	<u>14.2</u>	<u>2.07</u>	<u>0.86</u>	<u>6.68</u>	<u>-99.7</u>	<u>3.48</u>
35 min							
40 min							
45 min							
50 min							
55 min							
60 min							
65 min							
70 min							
75 min							
80 min							
85 min							
90 min							

**Water Sample:**

Time Collected 13:40

Physical Appearance at Start

Physical Appearance at Sampling

Color Clear Color Clear  
 Odor None Odor None  
 Turbidity (> 100 NTU) 16.8 Turbidity (> 100 NTU) 3.48  
 Sheen/Free Product None Sheen/Free Product None

**Samples collected:**

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered
VOCs	3	40 ml Glass	HCL	
Total Metals	1	125 ml Plastic	HNO3	
Dissolved Metals	1	125 ml Plastic	HNO3	yes

Notes:

**O'Brien & Gere Engineers, Inc.**

**Standard Groundwater Sampling Log**

Date 10/2/2019  
 Site Name RACER Hemphill  
 Location Burton, MI  
 Project No. 72203  
 Personnel KBS

Weather Rain, 60's (°F)  
 Well # OBG OS MW-5  
 Evacuation Method Peristaltic  
 Sampling Method Low Flow

**Well Information:**

Depth of Well \* 28.13 ft.  
 Depth to Water \* 24.96 ft.  
 Length of Water Column 3.17 ft.  
 Volume of Water in Well 0.51 gal.(s)  
 3X Volume of Water in Well 1.55 gal.(s)

Water Volume /ft. for:  
 2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling 1 gal.(s)  
 Did well go dry? No

\* Measurements taken from  Well Casing  Protective Casing  (Other, Specify) \_\_\_\_\_

**Instrument Calibration:**

Calibrated within range

pH Yes  
 ORP Yes  
 Conductivity Yes  
 DO Yes

**Water parameters:** 200 mL/min pumping rate

	Drawdown measured 0.3 feet or less	Temperature Celsius ±3 percent	Conductivity mS/cm ±3 percent	Dissolved Oxygen mg/L ±10 percent	pH ±0.1 pH units	ORP mV ±10 millivolts	Turbidity NTUs ±10 percent
initial	<u>25.07</u>	initial <u>14.5</u>	initial <u>2.67</u>	initial <u>1.00</u>	initial <u>6.56</u>	initial <u>11.3</u>	initial <u>39.70</u>
5 min	<u>25.09</u>	<u>13.7</u>	<u>2.71</u>	<u>1.13</u>	<u>6.52</u>	<u>-4.0</u>	<u>18.50</u>
10 min	<u>25.09</u>	<u>13.3</u>	<u>2.7</u>	<u>1.13</u>	<u>6.48</u>	<u>-23.4</u>	<u>13.50</u>
15 min	<u>25.09</u>	<u>13.2</u>	<u>2.67</u>	<u>1.15</u>	<u>6.48</u>	<u>-35.9</u>	<u>7.44</u>
20 min	<u>25.09</u>	<u>13.2</u>	<u>2.62</u>	<u>1.14</u>	<u>6.47</u>	<u>-44.4</u>	<u>5.81</u>
25 min	<u>25.09</u>	<u>13.2</u>	<u>2.59</u>	<u>1.14</u>	<u>6.46</u>	<u>-51.2</u>	<u>4.59</u>
30 min	<u>25.09</u>	<u>13.2</u>	<u>2.56</u>	<u>1.16</u>	<u>6.45</u>	<u>-54.4</u>	<u>3.86</u>
35 min							
40 min							
45 min							
50 min							
55 min							
60 min							
65 min							
70 min							
75 min							
80 min							
85 min							
90 min							

**Water Sample:**

Time Collected 14:40

Physical Appearance at Start

Physical Appearance at Sampling


Color Clear / Black flecks  
 Odor Chemical Odor  
 Turbidity (> 100 NTU) 39.7  
 Sheen/Free Product None

Color Clear / Black flecks  
 Odor Chemical Odor  
 Turbidity (> 100 NTU) 3.86  
 Sheen/Free Product None

**Samples collected:**

Analyses	# Bottles	Bottle size/type	Preservative	Field Filtered
VOCs	3	40 ml Glass	HCL	
Total Metals	1	125 ml Plastic	HNO3	
Dissolved Metals	1	125 ml Plastic	HNO3	yes

Notes:



**Exhibit B**  
**Groundwater Analytical**  
**Data – October 2019**



# Analytical Laboratory Report

Report ID: S07783.01(01)  
Generated on 10/11/2019

## Report to

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Attention: Clifford Yantz  
O'Brien & Gere Engineers, Inc.  
2260 East Saginaw Street  
East Lansing, MI 48823

Phone: 313-333-0211 FAX:  
Email: Clifford.Yantz@obg.com

## Report produced by

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Merit Laboratories, Inc.  
2680 East Lansing Drive  
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:  
John Lavery (johnlavery@meritlabs.com)  
Barbara Ball (bball@meritlabs.com)

## Report Summary

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Lab Sample ID(s): S07783.01-S07783.20  
Project: RACER Hemphill Rd Sampling  
Collected Date(s): 10/01/2019 - 10/02/2019  
Submitted Date/Time: 10/03/2019 08:45  
Sampled by: Kevin Schneider  
P.O. #: 11900693

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Maya Murshak  
Technical Director



# Analytical Laboratory Report

## General Report Notes

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Analytical results relate only to the samples tested, in the condition received by the laboratory.

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).

40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.

QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.

Full accreditation certificates are available upon request. Starred (\*) analytes are not NELAP accredited.

Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.

Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.

Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)

## Report Narrative

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There is no additional narrative for this analytical report



# Analytical Laboratory Report

## Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001

## Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

## Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched



# Analytical Laboratory Report

## Method Summary

Method	Version
E200.8	EPA Method 200.8 Revision 5.4
N/A	Not Applicable
SW3015A	SW 846 Method 3015A Revision 1 February 2007
SW5030C/8260C	SW 846 Method 8260C Revision 3 August 2006 / 5030C Revision 3 May 2003



# Analytical Laboratory Report

## Sample Summary (20 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S07783.01	OBG MW-1S	Groundwater	10/01/19 09:38
S07783.02	OBG MW-7S	Groundwater	10/01/19 10:33
S07783.03	OBG MW-7D	Groundwater	10/01/19 11:43
S07783.04	OBG MW-6S	Groundwater	10/01/19 12:47
S07783.05	OBG MW-6D	Groundwater	10/01/19 14:07
S07783.06	OBG MW-2S	Groundwater	10/01/19 14:57
S07783.07	OBG MW-2S MS	Groundwater	10/01/19 14:57
S07783.08	OBG MW-2S MSD	Groundwater	10/01/19 14:57
S07783.09	OBG MW-2D	Groundwater	10/01/19 16:06
S07783.10	OBG MW-2D Collocated	Groundwater	10/01/19 16:06
S07783.11	DUP-1	Groundwater	10/02/19 00:01
S07783.12	OBG MW-5S	Groundwater	10/02/19 10:05
S07783.13	Field Blank-1	Water	10/02/19 11:00
S07783.14	OBG MW-3S	Groundwater	10/02/19 11:07
S07783.15	OBG-OS-MW-3	Groundwater	10/02/19 12:20
S07783.16	OBG-OS-MW-4	Groundwater	10/02/19 13:40
S07783.17	OBG-OS-MW-5	Groundwater	10/02/19 14:40
S07783.18	OBG-OS-MW-1	Groundwater	10/02/19 16:30
S07783.19	OBG-OS-MW-2	Groundwater	10/02/19 17:25
S07783.20	Trip Blank-100219	Water	10/02/19 00:01



# Analytical Laboratory Report

Lab Sample ID: S07783.01

Sample Tag: OBG MW-1S

Collected Date/Time: 10/01/2019 09:38

Matrix: Groundwater

COC Reference: 124395

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	3.8	IR
3	40ml Glass	HCL	Yes	3.8	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	10/07/19 11:30	JML	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	

**Metals**

**Method: E200.8, Run Date: 10/03/19 13:30, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	Not detected	0.002		mg/L	5	7440-38-2	
Barium	0.169	0.005		mg/L	5	7440-39-3	
Lead	Not detected	0.003		mg/L	5	7439-92-1	
Selenium	Not detected	0.005		mg/L	5	7782-49-2	
Zinc	Not detected	0.005		mg/L	5	7440-66-6	

**Method: E200.8, Run Date: 10/03/19 13:34, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	Not detected	0.002		mg/L	5	7440-38-2	
Barium, Dissolved	0.161	0.005		mg/L	5	7440-39-3	
Lead, Dissolved	Not detected	0.003		mg/L	5	7439-92-1	
Selenium, Dissolved	Not detected	0.005		mg/L	5	7782-49-2	
Zinc, Dissolved	Not detected	0.005		mg/L	5	7440-66-6	

**Organics - Volatiles**

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 14:04, Analyst: KAG**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	



# Analytical Laboratory Report

Lab Sample ID: S07783.01 (continued)

Sample Tag: OBG MW-1S

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 14:04, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



# Analytical Laboratory Report

Lab Sample ID: S07783.02

Sample Tag: OBG MW-7S

Collected Date/Time: 10/01/2019 10:33

Matrix: Groundwater

COC Reference: 124395

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	3.8	IR
3	40ml Glass	HCL	Yes	3.8	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	10/07/19 11:30	JML	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	

**Metals**

**Method: E200.8, Run Date: 10/03/19 13:36, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.022	0.002		mg/L	5	7440-38-2	
Barium	0.237	0.005		mg/L	5	7440-39-3	
Lead	Not detected	0.003		mg/L	5	7439-92-1	
Selenium	Not detected	0.005		mg/L	5	7782-49-2	
Zinc	Not detected	0.005		mg/L	5	7440-66-6	

**Method: E200.8, Run Date: 10/03/19 13:37, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.018	0.002		mg/L	5	7440-38-2	
Barium, Dissolved	0.226	0.005		mg/L	5	7440-39-3	
Lead, Dissolved	Not detected	0.003		mg/L	5	7439-92-1	
Selenium, Dissolved	Not detected	0.005		mg/L	5	7782-49-2	
Zinc, Dissolved	Not detected	0.005		mg/L	5	7440-66-6	

**Organics - Volatiles**

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 14:24, Analyst: KAG**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	



# Analytical Laboratory Report

Lab Sample ID: S07783.02 (continued)

Sample Tag: OBG MW-7S

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 14:24, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



# Analytical Laboratory Report

Lab Sample ID: S07783.03

Sample Tag: OBG MW-7D

Collected Date/Time: 10/01/2019 11:43

Matrix: Groundwater

COC Reference: 124395

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	3.8	IR
3	40ml Glass	HCL	Yes	3.8	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	10/07/19 11:30	JML	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	

**Metals**

**Method: E200.8, Run Date: 10/03/19 13:39, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.034	0.002		mg/L	5	7440-38-2	
Barium	0.089	0.005		mg/L	5	7440-39-3	
Lead	Not detected	0.003		mg/L	5	7439-92-1	
Selenium	Not detected	0.005		mg/L	5	7782-49-2	
Zinc	Not detected	0.005		mg/L	5	7440-66-6	

**Method: E200.8, Run Date: 10/03/19 13:41, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.033	0.002		mg/L	5	7440-38-2	
Barium, Dissolved	0.087	0.005		mg/L	5	7440-39-3	
Lead, Dissolved	Not detected	0.003		mg/L	5	7439-92-1	
Selenium, Dissolved	Not detected	0.005		mg/L	5	7782-49-2	
Zinc, Dissolved	Not detected	0.005		mg/L	5	7440-66-6	

**Organics - Volatiles**

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 14:43, Analyst: KAG**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	



# Analytical Laboratory Report

Lab Sample ID: S07783.03 (continued)

Sample Tag: OBG MW-7D

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 14:43, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



# Analytical Laboratory Report

Lab Sample ID: S07783.04

Sample Tag: OBG MW-6S

Collected Date/Time: 10/01/2019 12:47

Matrix: Groundwater

COC Reference: 124395

### Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	3.8	IR
3	40ml Glass	HCL	Yes	3.8	IR

### Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	10/07/19 11:30	JML	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	

### Metals

Method: E200.8, Run Date: 10/03/19 13:42, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.010	0.002		mg/L	5	7440-38-2	
Barium	0.158	0.005		mg/L	5	7440-39-3	
Lead	0.006	0.003		mg/L	5	7439-92-1	
Selenium	Not detected	0.005		mg/L	5	7782-49-2	
Zinc	Not detected	0.005		mg/L	5	7440-66-6	

Method: E200.8, Run Date: 10/03/19 13:44, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.014	0.002		mg/L	5	7440-38-2	
Barium, Dissolved	0.158	0.005		mg/L	5	7440-39-3	
Lead, Dissolved	Not detected	0.003		mg/L	5	7439-92-1	
Selenium, Dissolved	Not detected	0.005		mg/L	5	7782-49-2	
Zinc, Dissolved	Not detected	0.005		mg/L	5	7440-66-6	

### Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 15:02, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	



# Analytical Laboratory Report

Lab Sample ID: S07783.04 (continued)

Sample Tag: OBG MW-6S

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 15:02, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



# Analytical Laboratory Report

Lab Sample ID: S07783.05

Sample Tag: OBG MW-6D

Collected Date/Time: 10/01/2019 14:07

Matrix: Groundwater

COC Reference: 124395

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	3.8	IR
3	40ml Glass	HCL	Yes	3.8	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	10/07/19 11:30	JML	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	

**Metals**

**Method: E200.8, Run Date: 10/03/19 13:58, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.012	0.002		mg/L	5	7440-38-2	
Barium	0.076	0.005		mg/L	5	7440-39-3	
Lead	Not detected	0.003		mg/L	5	7439-92-1	
Selenium	Not detected	0.005		mg/L	5	7782-49-2	
Zinc	Not detected	0.005		mg/L	5	7440-66-6	

**Method: E200.8, Run Date: 10/03/19 14:00, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.014	0.002		mg/L	5	7440-38-2	
Barium, Dissolved	0.075	0.005		mg/L	5	7440-39-3	
Lead, Dissolved	Not detected	0.003		mg/L	5	7439-92-1	
Selenium, Dissolved	Not detected	0.005		mg/L	5	7782-49-2	
Zinc, Dissolved	0.007	0.005		mg/L	5	7440-66-6	

**Organics - Volatiles**

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 15:22, Analyst: KAG**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	



# Analytical Laboratory Report

Lab Sample ID: S07783.05 (continued)

Sample Tag: OBG MW-6D

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 15:22, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



# Analytical Laboratory Report

Lab Sample ID: S07783.06

Sample Tag: OBG MW-2S

Collected Date/Time: 10/01/2019 14:57

Matrix: Groundwater

COC Reference: 124395

### Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	3.8	IR
3	40ml Glass	HCL	Yes	3.8	IR

### Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	10/11/19 13:00	JML	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	

### Metals

Method: E200.8, Run Date: 10/03/19 13:46, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.027	0.002		mg/L	5	7440-38-2	
Barium	0.169	0.005		mg/L	5	7440-39-3	
Lead	Not detected	0.003		mg/L	5	7439-92-1	
Selenium	Not detected	0.005		mg/L	5	7782-49-2	
Zinc	Not detected	0.005		mg/L	5	7440-66-6	

Method: E200.8, Run Date: 10/03/19 14:08, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.027	0.002		mg/L	5	7440-38-2	
Barium, Dissolved	0.165	0.005		mg/L	5	7440-39-3	
Lead, Dissolved	Not detected	0.003		mg/L	5	7439-92-1	
Selenium, Dissolved	Not detected	0.005		mg/L	5	7782-49-2	
Zinc, Dissolved	Not detected	0.005		mg/L	5	7440-66-6	

### Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/10/19 13:23, Analyst: JML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	



# Analytical Laboratory Report

Lab Sample ID: S07783.06 (continued)

Sample Tag: OBG MW-2S

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/10/19 13:23, Analyst: JML (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



# Analytical Laboratory Report

Lab Sample ID: S07783.07

Sample Tag: OBG MW-2S MS

Collected Date/Time: 10/01/2019 14:57

Matrix: Groundwater

COC Reference: 124395

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	3.8	IR
4	40ml Glass	HCL	Yes	3.8	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	10/11/19 13:00	JML	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	

**Metals**

Method: E200.8, Run Date: 10/03/19 13:50, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.281	0.002		mg/L	5	7440-38-2	
Barium	0.426	0.005		mg/L	5	7440-39-3	
Lead	0.249	0.003		mg/L	5	7439-92-1	
Selenium	0.254	0.005		mg/L	5	7782-49-2	
Zinc	0.241	0.005		mg/L	5	7440-66-6	

Method: E200.8, Run Date: 10/03/19 14:09, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.271	0.002		mg/L	5	7440-38-2	
Barium, Dissolved	0.408	0.005		mg/L	5	7440-39-3	
Lead, Dissolved	0.237	0.003		mg/L	5	7439-92-1	
Selenium, Dissolved	0.242	0.005		mg/L	5	7782-49-2	
Zinc, Dissolved	0.232	0.005		mg/L	5	7440-66-6	

**Organics - Volatiles**

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/10/19 11:47, Analyst: JML

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	51	10		ug/L	1	60-29-7	1
Acetone	53	50		ug/L	1	67-64-1	1
Methyl iodide	49	1		ug/L	1	74-88-4	1
Carbon disulfide	48	5		ug/L	1	75-15-0	1
tert-Methyl butyl ether (MTBE)	50	5		ug/L	1	1634-04-4	1
Acrylonitrile	59	2		ug/L	1	107-13-1	1
2-Butanone (MEK)	65	25		ug/L	1	78-93-3	1
Dichlorodifluoromethane	55	5		ug/L	1	75-71-8	1
Chloromethane	50	5		ug/L	1	74-87-3	1
Vinyl chloride	50	1		ug/L	1	75-01-4	1
Bromomethane	46	5		ug/L	1	74-83-9	1
Chloroethane	49	5		ug/L	1	75-00-3	1
Trichlorofluoromethane	50	1		ug/L	1	75-69-4	1
1,1-Dichloroethene	50	1		ug/L	1	75-35-4	1
Methylene chloride	48	5		ug/L	1	75-09-2	1
trans-1,2-Dichloroethene	48	1		ug/L	1	156-60-5	1

1-spiked at 50ug/L



# Analytical Laboratory Report

Lab Sample ID: S07783.07 (continued)

Sample Tag: OBG MW-2S MS

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/10/19 11:47, Analyst: JML (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,1-Dichloroethane	49	1		ug/L	1	75-34-3	1
cis-1,2-Dichloroethene	47	1		ug/L	1	156-59-2	1
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	1
Chloroform	49	1		ug/L	1	67-66-3	1
Bromochloromethane	48	1		ug/L	1	74-97-5	1
1,1,1-Trichloroethane	49	1		ug/L	1	71-55-6	1
4-Methyl-2-pentanone (MIBK)	62	50		ug/L	1	108-10-1	1
2-Hexanone	66	50		ug/L	1	591-78-6	1
Carbon tetrachloride	49	1		ug/L	1	56-23-5	1
Benzene	49	1		ug/L	1	71-43-2	1
1,2-Dichloroethane	50	1		ug/L	1	107-06-2	1
Trichloroethene	48	1		ug/L	1	79-01-6	1
1,2-Dichloropropane	51	1		ug/L	1	78-87-5	1
Bromodichloromethane	51	1		ug/L	1	75-27-4	1
Dibromomethane	51	5		ug/L	1	74-95-3	1
cis-1,3-Dichloropropene	52	1		ug/L	1	10061-01-5	1
Toluene	50	1		ug/L	1	108-88-3	1
trans-1,3-Dichloropropene	53	1		ug/L	1	10061-02-6	1
1,1,2-Trichloroethane	53	1		ug/L	1	79-00-5	1
Tetrachloroethene	49	1		ug/L	1	127-18-4	1
trans-1,4-Dichloro-2-butene	59	1		ug/L	1	110-57-6	1
Dibromochloromethane	52	5		ug/L	1	124-48-1	1
1,2-Dibromoethane	53	1		ug/L	1	106-93-4	1
Chlorobenzene	49	1		ug/L	1	108-90-7	1
1,1,1,2-Tetrachloroethane	50	1		ug/L	1	630-20-6	1
Ethylbenzene	49	1		ug/L	1	100-41-4	1
p,m-Xylene*	98	2		ug/L	1		1
o-Xylene	49	1		ug/L	1	95-47-6	1
Styrene	50	1		ug/L	1	100-42-5	1
Isopropylbenzene	49	5		ug/L	1	98-82-8	1
Bromoform	55	1		ug/L	1	75-25-2	1
1,1,2,2-Tetrachloroethane	57	1		ug/L	1	79-34-5	1
1,2,3-Trichloropropane	57	1		ug/L	1	96-18-4	1
n-Propylbenzene	50	1		ug/L	1	103-65-1	1
Bromobenzene	49	1		ug/L	1	108-86-1	1
1,3,5-Trimethylbenzene	49	1		ug/L	1	108-67-8	1
tert-Butylbenzene	48	1		ug/L	1	98-06-6	1
1,2,4-Trimethylbenzene	48	1		ug/L	1	95-63-6	1
sec-Butylbenzene	50	1		ug/L	1	135-98-8	1
p-Isopropyltoluene	49	5		ug/L	1	99-87-6	1
1,3-Dichlorobenzene	49	1		ug/L	1	541-73-1	1
1,4-Dichlorobenzene	49	1		ug/L	1	106-46-7	1
1,2-Dichlorobenzene	49	1		ug/L	1	95-50-1	1
1,2,3-Trimethylbenzene	49	1		ug/L	1	526-73-8	1
n-Butylbenzene	49	1		ug/L	1	104-51-8	1
Hexachloroethane	50	5		ug/L	1	67-72-1	1
1,2-Dibromo-3-chloropropane	59	5		ug/L	1	96-12-8	1
1,2,4-Trichlorobenzene	41	5		ug/L	1	120-82-1	1
1,2,3-Trichlorobenzene	39	5		ug/L	1	87-61-6	1

1-spiked at 50ug/L



# Analytical Laboratory Report

Lab Sample ID: S07783.07 (continued)

Sample Tag: OBG MW-2S MS

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/10/19 11:47, Analyst: JML (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Naphthalene	47	5		ug/L	1	91-20-3	1
2-Methylnaphthalene	40	5		ug/L	1	91-57-6	1

1-spiked at 50ug/L



# Analytical Laboratory Report

Lab Sample ID: S07783.08

Sample Tag: OBG MW-2S MSD

Collected Date/Time: 10/01/2019 14:57

Matrix: Groundwater

COC Reference: 124395

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	3.8	IR
4	40ml Glass	HCL	Yes	3.8	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	10/11/19 13:00	JML	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	

**Metals**

**Method: E200.8, Run Date: 10/03/19 13:51, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.276	0.002		mg/L	5	7440-38-2	
Barium	0.422	0.005		mg/L	5	7440-39-3	
Lead	0.230	0.003		mg/L	5	7439-92-1	
Selenium	0.249	0.005		mg/L	5	7782-49-2	
Zinc	0.239	0.005		mg/L	5	7440-66-6	

**Method: E200.8, Run Date: 10/03/19 14:10, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.277	0.002		mg/L	5	7440-38-2	
Barium, Dissolved	0.420	0.005		mg/L	5	7440-39-3	
Lead, Dissolved	0.245	0.003		mg/L	5	7439-92-1	
Selenium, Dissolved	0.256	0.005		mg/L	5	7782-49-2	
Zinc, Dissolved	0.238	0.005		mg/L	5	7440-66-6	

**Organics - Volatiles**

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/10/19 12:06, Analyst: JML**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	51	10		ug/L	1	60-29-7	1
Acetone	51	50		ug/L	1	67-64-1	1
Methyl iodide	48	1		ug/L	1	74-88-4	1
Carbon disulfide	47	5		ug/L	1	75-15-0	1
tert-Methyl butyl ether (MTBE)	49	5		ug/L	1	1634-04-4	1
Acrylonitrile	58	2		ug/L	1	107-13-1	1
2-Butanone (MEK)	60	25		ug/L	1	78-93-3	1
Dichlorodifluoromethane	54	5		ug/L	1	75-71-8	1
Chloromethane	49	5		ug/L	1	74-87-3	1
Vinyl chloride	48	1		ug/L	1	75-01-4	1
Bromomethane	45	5		ug/L	1	74-83-9	1
Chloroethane	48	5		ug/L	1	75-00-3	1
Trichlorofluoromethane	49	1		ug/L	1	75-69-4	1
1,1-Dichloroethene	49	1		ug/L	1	75-35-4	1
Methylene chloride	48	5		ug/L	1	75-09-2	1
trans-1,2-Dichloroethene	47	1		ug/L	1	156-60-5	1

1-spiked at 50ug/L



# Analytical Laboratory Report

Lab Sample ID: S07783.08 (continued)

Sample Tag: OBG MW-2S MSD

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/10/19 12:06, Analyst: JML (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,1-Dichloroethane	49	1		ug/L	1	75-34-3	1
cis-1,2-Dichloroethene	46	1		ug/L	1	156-59-2	1
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	1
Chloroform	49	1		ug/L	1	67-66-3	1
Bromochloromethane	48	1		ug/L	1	74-97-5	1
1,1,1-Trichloroethane	48	1		ug/L	1	71-55-6	1
4-Methyl-2-pentanone (MIBK)	61	50		ug/L	1	108-10-1	1
2-Hexanone	65	50		ug/L	1	591-78-6	1
Carbon tetrachloride	48	1		ug/L	1	56-23-5	1
Benzene	49	1		ug/L	1	71-43-2	1
1,2-Dichloroethane	49	1		ug/L	1	107-06-2	1
Trichloroethene	47	1		ug/L	1	79-01-6	1
1,2-Dichloropropane	51	1		ug/L	1	78-87-5	1
Bromodichloromethane	50	1		ug/L	1	75-27-4	1
Dibromomethane	50	5		ug/L	1	74-95-3	1
cis-1,3-Dichloropropene	52	1		ug/L	1	10061-01-5	1
Toluene	49	1		ug/L	1	108-88-3	1
trans-1,3-Dichloropropene	52	1		ug/L	1	10061-02-6	1
1,1,2-Trichloroethane	53	1		ug/L	1	79-00-5	1
Tetrachloroethene	48	1		ug/L	1	127-18-4	1
trans-1,4-Dichloro-2-butene	58	1		ug/L	1	110-57-6	1
Dibromochloromethane	52	5		ug/L	1	124-48-1	1
1,2-Dibromoethane	53	1		ug/L	1	106-93-4	1
Chlorobenzene	48	1		ug/L	1	108-90-7	1
1,1,1,2-Tetrachloroethane	50	1		ug/L	1	630-20-6	1
Ethylbenzene	49	1		ug/L	1	100-41-4	1
p,m-Xylene*	98	2		ug/L	1		1
o-Xylene	49	1		ug/L	1	95-47-6	1
Styrene	50	1		ug/L	1	100-42-5	1
Isopropylbenzene	49	5		ug/L	1	98-82-8	1
Bromoform	55	1		ug/L	1	75-25-2	1
1,1,2,2-Tetrachloroethane	57	1		ug/L	1	79-34-5	1
1,2,3-Trichloropropane	56	1		ug/L	1	96-18-4	1
n-Propylbenzene	50	1		ug/L	1	103-65-1	1
Bromobenzene	49	1		ug/L	1	108-86-1	1
1,3,5-Trimethylbenzene	49	1		ug/L	1	108-67-8	1
tert-Butylbenzene	48	1		ug/L	1	98-06-6	1
1,2,4-Trimethylbenzene	48	1		ug/L	1	95-63-6	1
sec-Butylbenzene	49	1		ug/L	1	135-98-8	1
p-Isopropyltoluene	49	5		ug/L	1	99-87-6	1
1,3-Dichlorobenzene	49	1		ug/L	1	541-73-1	1
1,4-Dichlorobenzene	49	1		ug/L	1	106-46-7	1
1,2-Dichlorobenzene	49	1		ug/L	1	95-50-1	1
1,2,3-Trimethylbenzene	49	1		ug/L	1	526-73-8	1
n-Butylbenzene	49	1		ug/L	1	104-51-8	1
Hexachloroethane	50	5		ug/L	1	67-72-1	1
1,2-Dibromo-3-chloropropane	58	5		ug/L	1	96-12-8	1
1,2,4-Trichlorobenzene	41	5		ug/L	1	120-82-1	1
1,2,3-Trichlorobenzene	39	5		ug/L	1	87-61-6	1

1-spiked at 50ug/L



# Analytical Laboratory Report

Lab Sample ID: S07783.08 (continued)

Sample Tag: OBG MW-2S MSD

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/10/19 12:06, Analyst: JML (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Naphthalene	47	5		ug/L	1	91-20-3	1
2-Methylnaphthalene	41	5		ug/L	1	91-57-6	1

1-spiked at 50ug/L



# Analytical Laboratory Report

Lab Sample ID: S07783.09

Sample Tag: OBG MW-2D

Collected Date/Time: 10/01/2019 16:06

Matrix: Groundwater

COC Reference: 124395

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	3.8	IR
3	40ml Glass	HCL	Yes	3.8	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	10/07/19 11:30	JML	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	

**Metals**

**Method: E200.8, Run Date: 10/03/19 14:02, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.040	0.002		mg/L	5	7440-38-2	
Barium	0.230	0.005		mg/L	5	7440-39-3	
Lead	Not detected	0.003		mg/L	5	7439-92-1	
Selenium	Not detected	0.005		mg/L	5	7782-49-2	
Zinc	Not detected	0.005		mg/L	5	7440-66-6	

**Method: E200.8, Run Date: 10/03/19 14:03, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.042	0.002		mg/L	5	7440-38-2	
Barium, Dissolved	0.231	0.005		mg/L	5	7440-39-3	
Lead, Dissolved	Not detected	0.003		mg/L	5	7439-92-1	
Selenium, Dissolved	Not detected	0.005		mg/L	5	7782-49-2	
Zinc, Dissolved	Not detected	0.005		mg/L	5	7440-66-6	

**Organics - Volatiles**

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 15:41, Analyst: KAG**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	



# Analytical Laboratory Report

Lab Sample ID: S07783.09 (continued)

Sample Tag: OBG MW-2D

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 15:41, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



# Analytical Laboratory Report

Lab Sample ID: S07783.10

Sample Tag: OBG MW-2D Collocated

Collected Date/Time: 10/01/2019 16:06

Matrix: Groundwater

COC Reference: 124395

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	3.8	IR
3	40ml Glass	HCL	Yes	3.8	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	10/07/19 11:30	JML	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	

**Metals**

**Method: E200.8, Run Date: 10/03/19 14:05, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.041	0.002		mg/L	5	7440-38-2	
Barium	0.226	0.005		mg/L	5	7440-39-3	
Lead	Not detected	0.003		mg/L	5	7439-92-1	
Selenium	Not detected	0.005		mg/L	5	7782-49-2	
Zinc	Not detected	0.005		mg/L	5	7440-66-6	

**Method: E200.8, Run Date: 10/03/19 14:07, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.039	0.002		mg/L	5	7440-38-2	
Barium, Dissolved	0.227	0.005		mg/L	5	7440-39-3	
Lead, Dissolved	Not detected	0.003		mg/L	5	7439-92-1	
Selenium, Dissolved	Not detected	0.005		mg/L	5	7782-49-2	
Zinc, Dissolved	Not detected	0.005		mg/L	5	7440-66-6	

**Organics - Volatiles**

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 16:00, Analyst: KAG**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	



# Analytical Laboratory Report

Lab Sample ID: S07783.10 (continued)

Sample Tag: OBG MW-2D Collocated

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 16:00, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



# Analytical Laboratory Report

Lab Sample ID: S07783.11

Sample Tag: DUP-1

Collected Date/Time: 10/02/2019 00:01

Matrix: Groundwater

COC Reference: 124395

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	3.8	IR
3	40ml Glass	HCL	Yes	3.8	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	10/07/19 11:30	JML	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	

**Metals**

**Method: E200.8, Run Date: 10/03/19 14:24, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.003	0.002		mg/L	5	7440-38-2	
Barium	1.14	0.005		mg/L	5	7440-39-3	
Lead	Not detected	0.003		mg/L	5	7439-92-1	
Selenium	Not detected	0.005		mg/L	5	7782-49-2	
Zinc	0.009	0.005		mg/L	5	7440-66-6	

**Method: E200.8, Run Date: 10/03/19 14:27, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.004	0.002		mg/L	5	7440-38-2	
Barium, Dissolved	1.10	0.005		mg/L	5	7440-39-3	
Lead, Dissolved	Not detected	0.003		mg/L	5	7439-92-1	
Selenium, Dissolved	Not detected	0.005		mg/L	5	7782-49-2	
Zinc, Dissolved	Not detected	0.005		mg/L	5	7440-66-6	

**Organics - Volatiles**

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 16:20, Analyst: KAG**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	



# Analytical Laboratory Report

Lab Sample ID: S07783.11 (continued)

Sample Tag: DUP-1

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 16:20, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



# Analytical Laboratory Report

Lab Sample ID: S07783.12

Sample Tag: OBG MW-5S

Collected Date/Time: 10/02/2019 10:05

Matrix: Groundwater

COC Reference: 124395

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	3.8	IR
3	40ml Glass	HCL	Yes	3.8	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	10/07/19 11:30	JML	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	

**Metals**

**Method: E200.8, Run Date: 10/03/19 14:30, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.003	0.002		mg/L	5	7440-38-2	
Barium	1.13	0.005		mg/L	5	7440-39-3	
Lead	Not detected	0.003		mg/L	5	7439-92-1	
Selenium	Not detected	0.005		mg/L	5	7782-49-2	
Zinc	0.010	0.005		mg/L	5	7440-66-6	

**Method: E200.8, Run Date: 10/03/19 14:33, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.003	0.002		mg/L	5	7440-38-2	
Barium, Dissolved	1.11	0.005		mg/L	5	7440-39-3	
Lead, Dissolved	Not detected	0.003		mg/L	5	7439-92-1	
Selenium, Dissolved	Not detected	0.005		mg/L	5	7782-49-2	
Zinc, Dissolved	Not detected	0.005		mg/L	5	7440-66-6	

**Organics - Volatiles**

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 16:39, Analyst: KAG**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	



# Analytical Laboratory Report

Lab Sample ID: S07783.12 (continued)

Sample Tag: OBG MW-5S

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 16:39, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



# Analytical Laboratory Report

Lab Sample ID: S07783.13

Sample Tag: Field Blank-1

Collected Date/Time: 10/02/2019 11:00

Matrix: Water

COC Reference: 124395

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	3.8	IR
3	40ml Glass	HCL	Yes	3.8	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	10/07/19 11:30	JML	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	

**Metals**

**Method: E200.8, Run Date: 10/03/19 13:28, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	Not detected	0.002		mg/L	2	7440-38-2	
Barium	Not detected	0.005		mg/L	2	7440-39-3	
Lead	Not detected	0.003		mg/L	2	7439-92-1	
Selenium	Not detected	0.005		mg/L	2	7782-49-2	
Zinc	Not detected	0.005		mg/L	2	7440-66-6	

**Organics - Volatiles**

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 11:10, Analyst: KAG**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	



# Analytical Laboratory Report

Lab Sample ID: S07783.13 (continued)

Sample Tag: Field Blank-1

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 11:10, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



# Analytical Laboratory Report

Lab Sample ID: S07783.14

Sample Tag: OBG MW-3S

Collected Date/Time: 10/02/2019 11:07

Matrix: Groundwater

COC Reference: 124397

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	3.8	IR
3	40ml Glass	HCL	Yes	3.8	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	10/07/19 11:30	JML	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	

**Metals**

**Method: E200.8, Run Date: 10/03/19 14:35, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.007	0.002		mg/L	5	7440-38-2	
Barium	0.194	0.005		mg/L	5	7440-39-3	
Lead	Not detected	0.003		mg/L	5	7439-92-1	
Selenium	Not detected	0.005		mg/L	5	7782-49-2	
Zinc	Not detected	0.005		mg/L	5	7440-66-6	

**Method: E200.8, Run Date: 10/03/19 14:37, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.005	0.002		mg/L	5	7440-38-2	
Barium, Dissolved	0.193	0.005		mg/L	5	7440-39-3	
Lead, Dissolved	Not detected	0.003		mg/L	5	7439-92-1	
Selenium, Dissolved	Not detected	0.005		mg/L	5	7782-49-2	
Zinc, Dissolved	Not detected	0.005		mg/L	5	7440-66-6	

**Organics - Volatiles**

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 16:58, Analyst: KAG**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	



# Analytical Laboratory Report

Lab Sample ID: S07783.14 (continued)

Sample Tag: OBG MW-3S

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 16:58, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



# Analytical Laboratory Report

Lab Sample ID: S07783.15

Sample Tag: OBG-OS-MW-3

Collected Date/Time: 10/02/2019 12:20

Matrix: Groundwater

COC Reference: 124397

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	3.8	IR
3	40ml Glass	HCL	Yes	3.8	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	10/07/19 11:30	JML	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	

**Metals**

**Method: E200.8, Run Date: 10/03/19 14:40, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.028	0.002		mg/L	5	7440-38-2	
Barium	0.145	0.005		mg/L	5	7440-39-3	
Lead	Not detected	0.003		mg/L	5	7439-92-1	
Selenium	Not detected	0.005		mg/L	5	7782-49-2	
Zinc	Not detected	0.005		mg/L	5	7440-66-6	

**Method: E200.8, Run Date: 10/03/19 14:42, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.028	0.002		mg/L	5	7440-38-2	
Barium, Dissolved	0.144	0.005		mg/L	5	7440-39-3	
Lead, Dissolved	Not detected	0.003		mg/L	5	7439-92-1	
Selenium, Dissolved	Not detected	0.005		mg/L	5	7782-49-2	
Zinc, Dissolved	Not detected	0.005		mg/L	5	7440-66-6	

**Organics - Volatiles**

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 17:18, Analyst: KAG**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	



# Analytical Laboratory Report

Lab Sample ID: S07783.15 (continued)

Sample Tag: OBG-OS-MW-3

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 17:18, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



# Analytical Laboratory Report

Lab Sample ID: S07783.16

Sample Tag: OBG-OS-MW-4

Collected Date/Time: 10/02/2019 13:40

Matrix: Groundwater

COC Reference: 124397

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	3.8	IR
3	40ml Glass	HCL	Yes	3.8	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	10/07/19 11:30	JML	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	

**Metals**

**Method: E200.8, Run Date: 10/03/19 14:55, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.003	0.002		mg/L	5	7440-38-2	
Barium	1.26	0.005		mg/L	5	7440-39-3	
Lead	Not detected	0.003		mg/L	5	7439-92-1	
Selenium	Not detected	0.005		mg/L	5	7782-49-2	
Zinc	Not detected	0.005		mg/L	5	7440-66-6	

**Method: E200.8, Run Date: 10/03/19 14:56, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.002	0.002		mg/L	5	7440-38-2	
Barium, Dissolved	1.20	0.005		mg/L	5	7440-39-3	
Lead, Dissolved	Not detected	0.003		mg/L	5	7439-92-1	
Selenium, Dissolved	Not detected	0.005		mg/L	5	7782-49-2	
Zinc, Dissolved	Not detected	0.005		mg/L	5	7440-66-6	

**Organics - Volatiles**

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 17:37, Analyst: KAG**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	



# Analytical Laboratory Report

Lab Sample ID: S07783.16 (continued)

Sample Tag: OBG-OS-MW-4

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 17:37, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	8	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	5	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	9	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	2	1		ug/L	1	95-63-6	
sec-Butylbenzene	2	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	4	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	3	1		ug/L	1	526-73-8	
n-Butylbenzene	1	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	22	5		ug/L	1	91-20-3	
2-Methylnaphthalene	35	5		ug/L	1	91-57-6	



# Analytical Laboratory Report

Lab Sample ID: S07783.17

Sample Tag: OBG-OS-MW-5

Collected Date/Time: 10/02/2019 14:40

Matrix: Groundwater

COC Reference: 124397

### Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	3.8	IR
3	40ml Glass	HCL	Yes	3.8	IR

### Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	10/07/19 11:30	JML	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	

### Metals

Method: E200.8, Run Date: 10/03/19 14:43, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	Not detected	0.002		mg/L	5	7440-38-2	
Barium	2.55	0.005		mg/L	5	7440-39-3	
Lead	Not detected	0.003		mg/L	5	7439-92-1	
Selenium	Not detected	0.005		mg/L	5	7782-49-2	
Zinc	Not detected	0.005		mg/L	5	7440-66-6	

Method: E200.8, Run Date: 10/03/19 14:46, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	Not detected	0.002		mg/L	5	7440-38-2	
Barium, Dissolved	2.48	0.005		mg/L	5	7440-39-3	
Lead, Dissolved	Not detected	0.003		mg/L	5	7439-92-1	
Selenium, Dissolved	Not detected	0.005		mg/L	5	7782-49-2	
Zinc, Dissolved	Not detected	0.005		mg/L	5	7440-66-6	

### Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/07/19 15:24, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	



# Analytical Laboratory Report

Lab Sample ID: S07783.17 (continued)

Sample Tag: OBG-OS-MW-5

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/07/19 15:24, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	5	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	3	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



# Analytical Laboratory Report

Lab Sample ID: S07783.18

Sample Tag: OBG-OS-MW-1

Collected Date/Time: 10/02/2019 16:30

Matrix: Groundwater

COC Reference: 124397

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	3.8	IR
3	40ml Glass	HCL	Yes	3.8	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	10/07/19 11:30	JML	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	

**Metals**

**Method: E200.8, Run Date: 10/03/19 15:06, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.036	0.002		mg/L	5	7440-38-2	
Barium	0.690	0.005		mg/L	5	7440-39-3	
Lead	Not detected	0.003		mg/L	5	7439-92-1	
Selenium	Not detected	0.005		mg/L	5	7782-49-2	
Zinc	Not detected	0.005		mg/L	5	7440-66-6	

**Method: E200.8, Run Date: 10/03/19 15:07, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.033	0.002		mg/L	5	7440-38-2	
Barium, Dissolved	0.677	0.005		mg/L	5	7440-39-3	
Lead, Dissolved	Not detected	0.003		mg/L	5	7439-92-1	
Selenium, Dissolved	Not detected	0.005		mg/L	5	7782-49-2	
Zinc, Dissolved	Not detected	0.005		mg/L	5	7440-66-6	

**Organics - Volatiles**

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 18:16, Analyst: KAG**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	



# Analytical Laboratory Report

Lab Sample ID: S07783.18 (continued)

Sample Tag: OBG-OS-MW-1

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 18:16, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



# Analytical Laboratory Report

Lab Sample ID: S07783.19

Sample Tag: OBG-OS-MW-2

Collected Date/Time: 10/02/2019 17:25

Matrix: Groundwater

COC Reference: 124397

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	3.8	IR
3	40ml Glass	HCL	Yes	3.8	IR

**Extraction / Prep.**

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	10/08/19 12:10	JML	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	
Metal Digestion	Completed	SW3015A	10/03/19 12:00	CCM	

**Metals**

**Method: E200.8, Run Date: 10/03/19 15:01, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.038	0.002		mg/L	5	7440-38-2	
Barium	0.265	0.005		mg/L	5	7440-39-3	
Lead	0.013	0.003		mg/L	5	7439-92-1	
Selenium	Not detected	0.005		mg/L	5	7782-49-2	
Zinc	0.013	0.005		mg/L	5	7440-66-6	

**Method: E200.8, Run Date: 10/03/19 15:03, Analyst: CCM**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic, Dissolved	0.035	0.002		mg/L	5	7440-38-2	
Barium, Dissolved	0.255	0.005		mg/L	5	7440-39-3	
Lead, Dissolved	0.009	0.003		mg/L	5	7439-92-1	
Selenium, Dissolved	Not detected	0.005		mg/L	5	7782-49-2	
Zinc, Dissolved	0.013	0.005		mg/L	5	7440-66-6	

**Organics - Volatiles**

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/07/19 15:43, Analyst: KAG**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	



# Analytical Laboratory Report

Lab Sample ID: S07783.19 (continued)

Sample Tag: OBG-OS-MW-2

**Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/07/19 15:43, Analyst: KAG (continued)**

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	



# Analytical Laboratory Report

Lab Sample ID: S07783.20

Sample Tag: Trip Blank-100219

Collected Date/Time: 10/02/2019 00:01

Matrix: Water

COC Reference: 124397

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40ml Glass	HCL	Yes	3.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
pH check for VOCs*	<2	N/A	10/07/19 11:30	JML	

Organics - Volatiles

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 11:30, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	10		ug/L	1	60-29-7	
Acetone	Not detected	50		ug/L	1	67-64-1	
Methyl iodide	Not detected	1		ug/L	1	74-88-4	
Carbon disulfide	Not detected	5		ug/L	1	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	5		ug/L	1	1634-04-4	
Acrylonitrile	Not detected	2		ug/L	1	107-13-1	
2-Butanone (MEK)	Not detected	25		ug/L	1	78-93-3	
Dichlorodifluoromethane	Not detected	5		ug/L	1	75-71-8	
Chloromethane	Not detected	5		ug/L	1	74-87-3	
Vinyl chloride	Not detected	1		ug/L	1	75-01-4	
Bromomethane	Not detected	5		ug/L	1	74-83-9	
Chloroethane	Not detected	5		ug/L	1	75-00-3	
Trichlorofluoromethane	Not detected	1		ug/L	1	75-69-4	
1,1-Dichloroethene	Not detected	1		ug/L	1	75-35-4	
Methylene chloride	Not detected	5		ug/L	1	75-09-2	
trans-1,2-Dichloroethene	Not detected	1		ug/L	1	156-60-5	
1,1-Dichloroethane	Not detected	1		ug/L	1	75-34-3	
cis-1,2-Dichloroethene	Not detected	1		ug/L	1	156-59-2	
Tetrahydrofuran*	Not detected	90		ug/L	1	109-99-9	
Chloroform	Not detected	1		ug/L	1	67-66-3	
Bromochloromethane	Not detected	1		ug/L	1	74-97-5	
1,1,1-Trichloroethane	Not detected	1		ug/L	1	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	50		ug/L	1	108-10-1	
2-Hexanone	Not detected	50		ug/L	1	591-78-6	
Carbon tetrachloride	Not detected	1		ug/L	1	56-23-5	
Benzene	Not detected	1		ug/L	1	71-43-2	
1,2-Dichloroethane	Not detected	1		ug/L	1	107-06-2	
Trichloroethene	Not detected	1		ug/L	1	79-01-6	
1,2-Dichloropropane	Not detected	1		ug/L	1	78-87-5	
Bromodichloromethane	Not detected	1		ug/L	1	75-27-4	
Dibromomethane	Not detected	5		ug/L	1	74-95-3	
cis-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-01-5	
Toluene	Not detected	1		ug/L	1	108-88-3	
trans-1,3-Dichloropropene	Not detected	1		ug/L	1	10061-02-6	
1,1,2-Trichloroethane	Not detected	1		ug/L	1	79-00-5	
Tetrachloroethene	Not detected	1		ug/L	1	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	1		ug/L	1	110-57-6	



# Analytical Laboratory Report

Lab Sample ID: S07783.20 (continued)

Sample Tag: Trip Blank-100219

Volatile Organics - DEQ List, Method: SW5030C/8260C, Run Date: 10/03/19 11:30, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Dibromochloromethane	Not detected	5		ug/L	1	124-48-1	
1,2-Dibromoethane	Not detected	1		ug/L	1	106-93-4	
Chlorobenzene	Not detected	1		ug/L	1	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	1		ug/L	1	630-20-6	
Ethylbenzene	Not detected	1		ug/L	1	100-41-4	
p,m-Xylene*	Not detected	2		ug/L	1		
o-Xylene	Not detected	1		ug/L	1	95-47-6	
Styrene	Not detected	1		ug/L	1	100-42-5	
Isopropylbenzene	Not detected	5		ug/L	1	98-82-8	
Bromoform	Not detected	1		ug/L	1	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	1		ug/L	1	79-34-5	
1,2,3-Trichloropropane	Not detected	1		ug/L	1	96-18-4	
n-Propylbenzene	Not detected	1		ug/L	1	103-65-1	
Bromobenzene	Not detected	1		ug/L	1	108-86-1	
1,3,5-Trimethylbenzene	Not detected	1		ug/L	1	108-67-8	
tert-Butylbenzene	Not detected	1		ug/L	1	98-06-6	
1,2,4-Trimethylbenzene	Not detected	1		ug/L	1	95-63-6	
sec-Butylbenzene	Not detected	1		ug/L	1	135-98-8	
p-Isopropyltoluene	Not detected	5		ug/L	1	99-87-6	
1,3-Dichlorobenzene	Not detected	1		ug/L	1	541-73-1	
1,4-Dichlorobenzene	Not detected	1		ug/L	1	106-46-7	
1,2-Dichlorobenzene	Not detected	1		ug/L	1	95-50-1	
1,2,3-Trimethylbenzene	Not detected	1		ug/L	1	526-73-8	
n-Butylbenzene	Not detected	1		ug/L	1	104-51-8	
Hexachloroethane	Not detected	5		ug/L	1	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	5		ug/L	1	96-12-8	
1,2,4-Trichlorobenzene	Not detected	5		ug/L	1	120-82-1	
1,2,3-Trichlorobenzene	Not detected	5		ug/L	1	87-61-6	
Naphthalene	Not detected	5		ug/L	1	91-20-3	
2-Methylnaphthalene	Not detected	5		ug/L	1	91-57-6	

# Merit Laboratories Login Checklist

Lab Set ID:S07783

Client:OBG02 (O'Brien & Gere Engineers, Inc. - East Lansing, MI)

Project: RACER Hemphill Rd Sampling

Submitted: 10/03/2019 08:45 Login User: SRS

Attention: Clifford Yantz

Address: O'Brien & Gere Engineers, Inc.  
2260 East Saginaw Street  
East Lansing, MI 48823

Phone: 313-333-0211 FAX:

Email: Clifford.Yantz@obg.com

Selection	Description	Note
-----------	-------------	------

**Sample Receiving**

- |     |  |  |        |
|-----|--|--|--------|
| 01. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Samples are received at 4C +/- 2C Thermometer #        | IR 3.8 |
| 02. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Received on ice/ cooling process begun                 |        |
| 03. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples shipped  |        |
| 04. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples left in 24 hr. drop box                        |        |
| 05. | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | Are there custody seals/tape or is the drop box locked |        |

**Chain of Custody**

- |     |  |  |  |
|-----|--|--|--|
| 06. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | COC adequately filled out                |  |
| 07. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | COC signed and relinquished to the lab   |  |
| 08. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Sample tag on bottles match COC          |  |
| 09. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Subcontracting needed? Subcontracted to: |  |

**Preservation**

- |     |  |   |  |
|-----|--|---|--|
| 10. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Do sample have correct chemical preservation        |  |
| 11. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Completed pH checks on preserved samples? (no VOAs) |  |
| 12. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Did any samples need to be preserved in the lab?    |  |

**Bottle Conditions**

- |     |  |   |  |
|-----|--|---|--|
| 13. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | All bottles intact                            |  |
| 14. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Appropriate analytical bottles are used       |  |
| 15. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Merit bottles used                            |  |
| 16. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Sufficient sample volume received             |  |
| 17. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples require laboratory filtration         |  |
| 18. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Samples submitted within holding time         |  |
| 19. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Do water VOC or TOX bottles contain headspace |  |

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: \_\_\_\_\_ Date: \_\_\_\_\_

### Merit Laboratories Bottle Preservation Check

Lab Set ID: S07783

Initials: SRS

Attention: Clifford Yantz

Address: O'Brien & Gere Engineers, Inc.  
2260 East Saginaw Street  
East Lansing, MI 48823

Client: OBG02 (O'Brien & Gere Engineers, Inc. - East Lansing, MI)

Project: RACER Hemphill Rd Sampling

Submitted: 10/03/2019 08:45 Login User:

Phone: 313-333-0211

FAX:

Email: Clifford.Yantz@obg.com

Lab ID	125 ml Plastic HNO <sub>3</sub>	250 ml Plastic HNO <sub>3</sub>	1 L Plastic HNO <sub>3</sub>	250 ml Plastic H <sub>2</sub> SO <sub>4</sub>	125 ml Amber H <sub>2</sub> SO <sub>4</sub>	32 oz Glass HCl	125 ml Plastic NaOH	125 ml Amber PbCO <sub>3</sub> NaOH	pH					Notes	
									<2	>12	other	ml add	new pH		
S07783.01	X								X						
S07783.01	X								X						
S07783.02	X								X						
S07783.02	X								X						
S07783.03	X								X						
S07783.03	X								X						
S07783.04	X								X						
S07783.04	X								X						
S07783.05	X								X						
S07783.05	X								X						
S07783.06	X								X						
S07783.06	X								X						
S07783.07	X								X						
S07783.07	X								X						
S07783.08	X								X						
S07783.08	X								X						
S07783.09	X								X						
S07783.09	X								X						
S07783.10	X								X						
S07783.10	X								X						
S07783.11	X								X						
S07783.11	X								X						
S07783.12	X								X						
S07783.12	X								X						
S07783.13	X								X						
S07783.14	X								X						
S07783.14	X								X						
S07783.15	X								X						
S07783.15	X								X						

### Merit Laboratories Bottle Preservation Check

Lab Set ID: S07783

Initials: SRS

Attention: Clifford Yantz

Address: O'Brien & Gere Engineers, Inc.  
2260 East Saginaw Street  
East Lansing, MI 48823

Client: OBG02 (O'Brien & Gere Engineers, Inc. - East Lansing, MI)

Project: RACER Hemphill Rd Sampling

Submitted: 10/03/2019 08:45 Login User:

Phone: 313-333-0211

FAX:

Email: Clifford.Yantz@obg.com

Lab ID	125 ml Plastic HNO <sub>3</sub>	250 ml Plastic HNO <sub>3</sub>	1 L Plastic HNO <sub>3</sub>	250 ml Plastic H <sub>2</sub> SO <sub>4</sub>	125 ml Amber H <sub>2</sub> SO <sub>4</sub>	32 oz Glass HCl	125 ml Plastic NaOH	125 ml Amber PbCO <sub>3</sub> NaOH	pH					Notes	
									<2	>12	other	ml add	new pH		
S07783.16	X								X						
S07783.16	X								X						
S07783.17	X								X						
S07783.17	X								X						
S07783.18	X								X						
S07783.18	X								X						
S07783.19	X								X						
S07783.19	X								X						
S07783.20	X								X						
S07783.20	X								X						



2680 East Lansing Dr., East Lansing, MI 48823  
 Phone (517) 332-0167 Fax (517) 332-4034  
 www.meritlabs.com

C.O.C. PAGE # 1 OF 2

124395

**REPORT TO**

**CHAIN OF CUSTODY RECORD**

**INVOICE TO**

CONTACT NAME: Clifford Yantz  
 COMPANY: O'Brien & Gere Part of Ramboll  
 ADDRESS: 2260 E Saginaw  
 CITY: East Lansing STATE: MI ZIP CODE: 48823  
 PHONE NO.: 313-333-0211 FAX NO.: P.O. NO.: QUOTE NO.:  
 E-MAIL ADDRESS: Clifford.Yantz@obg.com

CONTACT NAME:  SAME  
 COMPANY:  
 ADDRESS:  
 CITY: STATE: ZIP CODE:  
 PHONE NO.: E-MAIL ADDRESS:

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME: WATER Hemphill Rd Sampling SAMPLER(S) - PLEASE PRINT/SIGN NAME: Kevin Summers  
 TURNAROUND TIME REQUIRED:  1 DAY  2 DAYS  3 DAYS  STANDARD  OTHER  
 DELIVERABLES REQUIRED:  STD  LEVEL II  LEVEL III  LEVEL IV  EDD  OTHER

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE  
 # Containers & Preservatives:

MERIT LAB NO. <small>FOR LAB USE ONLY</small>	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	NaOH	MeOH	OTHER	VOCs			Total As, Ba, Pb, Se, Zn	Dissolved As, Ba, Pb, Se, Zn	Certifications	Project Locations	Special Instructions
	DATE	TIME																		
07183.01	10/1/19	938	OBG MW-1S	GW	5		3	2					X	X	X				Dissolved Metals were field filtered	
.02		1033	OBG MW-7S		5		3	2					X	X	X					
.03		1143	OBG MW-7D		5		3	2					X	X	X					
.04		1247	OBG MW-6S		5		3	2					X	X	X					
.05		1407	OBG MW-6D		5		3	2					X	X	X					
.06		1457	OBG MW-2S		5		3	2					X	X	X					
.07/.08		1457	OBG MW-2S (MS/MSD)		12		8	4					X	X	X					
.09		1600	OBG MW-2D		5		3	2					X	X	X					
.10		1606	OBG MW-2D collocated		5		3	2					X	X	X					
.11	10/2/19	-	DWP-1		5		3	2					X	X	X					
.12		1005	OBG MW-5S		5		3	2					X	X	X					
.13		1100	Field Blank-1	QC	4		3	1					X	X						

RELINQUISHED BY: *Kevin Summers* OBG ASampler DATE: 10/3/19 TIME: 8:45  
 RECEIVED BY: *[Signature]* DATE: 10/3/19 TIME: 8:45  
 RELINQUISHED BY: DATE: TIME:  
 RECEIVED BY: DATE: TIME:

RELINQUISHED BY: DATE: TIME:  
 RECEIVED BY: DATE: TIME:  
 SEAL NO. SEAL INTACT YES  NO  INITIALS: NOTES: TEMP. ON ARRIVAL: 3.8  
 SEAL NO. SEAL INTACT YES  NO  INITIALS:



