June 26, 2018

Reference No. 077150

Ms. Regan Rahn
South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201

Dear Ms. Rahn:

Re: Groundwater Delineation and Soil Gas Investigation Report
Bluewater Thermal Solutions LLC
VCC # 14-6226
Fountain Inn, South Carolina

GHD is providing the attached Groundwater Delineation and Soil Gas Investigation Report (Delineation Report) for the Former Bluewater Thermal Solutions (Bluewater) Site located at 100 Hunts Bridge Road in Fountain Inn, South Carolina. The investigation was conducted based on the requirement of the May 2015 Voluntary Cleanup Contract (VCC # 14-6226) and the Remedial Site Investigation Work Plan approved by SCDHEC on September 12, 2016 and subsequent comment letter on November 2, 2017.

The groundwater delineation work was conducted by installing nine temporary and two permanent monitoring wells. Four soil gas monitoring locations were also installed outside the buildings to monitor soil gas concentrations at shallow and deep intervals. Attached are two hard copies and one electronic copy (compact disk) of the report.

Please contact the undersigned or Mr. Richard Scherer with Lippes Mathias Wexler Friedman LLP for any comments or questions on the report.

We appreciate the input which will be provided by your unit during the review of this report.

Sincerely,

GHD

Terese Mazengia, PG.

TM/tb/2
Encl.

cc: Richard Scherer, Lippes Mathis Wexler Friedman, LLP
Steven Wilsey, GHD

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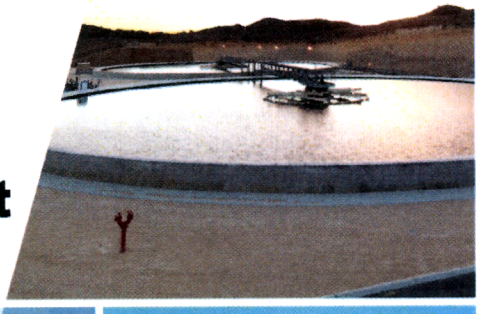
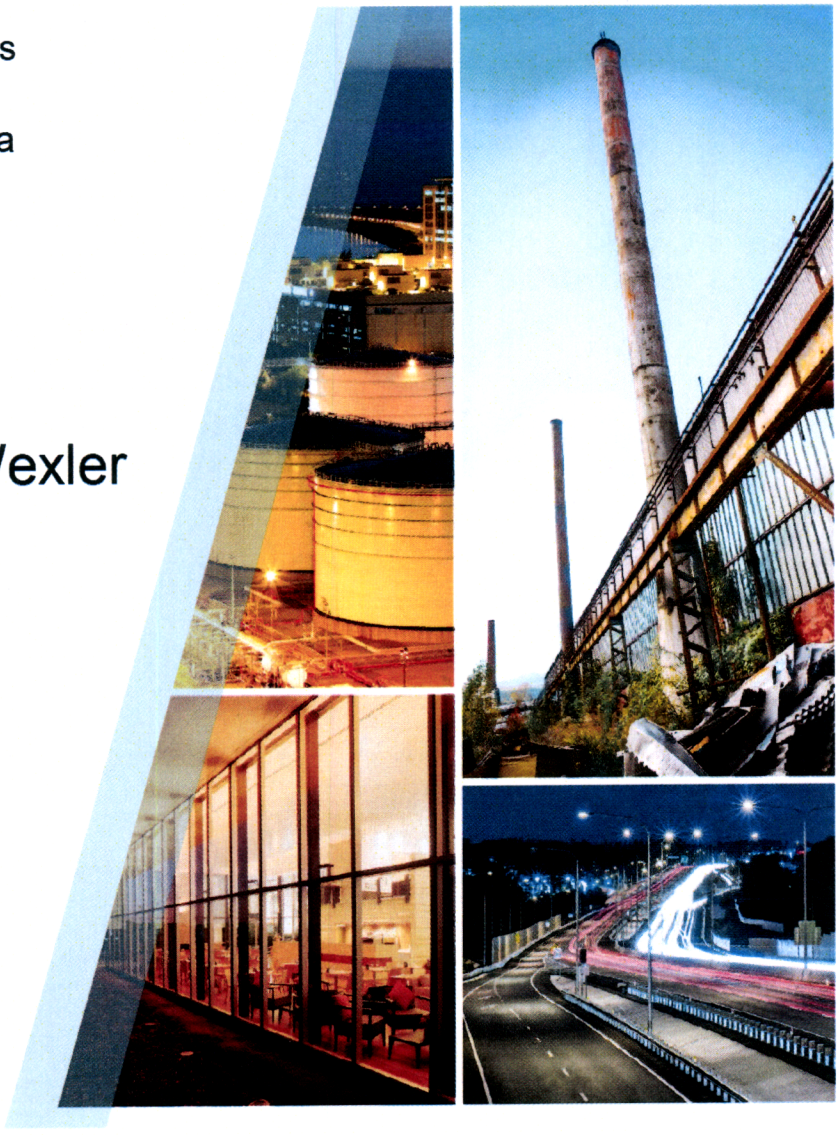


Groundwater Delineation & Soil Gas Investigation Report

Bluewater Thermal Solutions
100 Hunts Bridge Road
Fountain Inn, South Carolina
VCC #14-6226



Lippes Mathias Wexler Frideman LLP

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1. Introduction

GHD, on behalf of Gibraltar Industries Inc. (Gibraltar), hereby submits this Groundwater Delineation and Soil gas investigation Report (Report) to the South Carolina Department of Health and Environmental Control (SCDHEC) for the former Bluewater Thermal Solutions facility located at 100 Hunts Bridge Road in Fountain Inn, South Carolina (Property or Site). The Site is currently owned by Bodycote Thermal Processing, Inc. Refer to Figure 1 for a Site Location Map.

This work was conducted in accordance with the Remedial Site Investigation Work Plan that was prepared based on the requirements of the State of South Carolina Voluntary Cleanup Program (VCP) and approved by the South Carolina Department of Health and Environmental Control (DHEC) in a letter dated November 1, 2017. A monitoring well permit (MW-11309) was issued by DHEC for this portion of the work.

The purpose of the site investigation was to delineate the extent of groundwater impacts at areas of concern identified during the previous site investigations. The Site investigation included installation and sampling of temporary and permanent monitoring wells and installation and sampling of soil gas. Refer to Figure 2 for a Site Plan showing the soil gas and monitoring well locations.

The Site investigation was conducted between January 2 and 17, 2018. The activities performed during this event are detailed in the following sections and include the preparation for and performance of remedial investigation activities, as approved by the DHEC.

1.1 Scope of Work

The scope of work (SOW) of the Work Plan included the following:

- Installation of four soil gas (SG-1 through SG-4) points south of Building 5 and 6, and southwest of Building 2 and 3.
- Sampling of the four soil gas sampling points for TO-15 analysis method.
- Installation and sampling of temporary monitoring wells (TW-1 through TW-9) at the area where previous groundwater impact was detected.
- Screening of all groundwater samples using Color-Tec® field methodology to delineate horizontal groundwater impact.
- Installation of two shallow monitoring wells (MW-7-18 through MW-8-18) to delineate horizontal groundwater impact.
- Development of the two new wells and MW-1D-16 and sampling of all Site monitoring wells for laboratory analysis.
- Analysis of all groundwater samples for Target Compound List (TCL) volatile organic compounds (VOCs).

1.2 Report Layout

The remaining sections of the report are organized as follows:

Section 2.0	Site Investigation: description of groundwater sampling, temporary and monitoring wells installation methodology;
Section 3.0	Groundwater Monitoring: description of groundwater sampling methodology;
Section 4.0	Analytical results: presentation of groundwater analytical results;
Section 5.0	Soil Gas Investigation: Installation and sampling of soil gas points outside the buildings; and
Section 6.0	Summary and Conclusions: summary of the findings of all site investigation activities during this event.
Section 7.0	Certification

2. Site Investigation

The Site assessment included installation and sampling of temporary monitoring wells, sampling of all new and existing monitoring well locations and installation and sampling of soil gas points outside the buildings to investigate presence of impact in soil gas. It also included redevelopment of monitoring well MW-1D-16 before sampling. Monitoring well locations are provided on Figure 2.

2.1 Groundwater Delineation

Under the supervision and direction of a GHD geologist, Atlas Geo-Sampling of Alpharetta, Georgia advanced nine direct push technology (DPT) borings and installed temporary monitoring wells TW-1 through TW-9 for delineation of groundwater impact. Each of the temporary monitoring well was constructed using 1-inch diameter PVC casing with 5-foot screen. Stratigraphic descriptions and well construction logs for the temporary wells are provided in Appendix A.

During this Site investigation, soil samples were collected from all soil borings starting from the surface continuously to boring termination. All samples were examined for soil type, stratigraphy, banding, moisture, color, and visual evidence of potential impact. The stratigraphy observed in each soil boring was described and logged according to the Unified Soil Classification System (USCS). Representative portions of the soil from each interval were screened for total VOCs with a photoionization detector (PID) and included on the stratigraphic logs. The soil sampling helped fill in the data gaps in areas or intervals which were not sampled during the previous two Phase II Environmental Site Assessments (ESA).

Following completion of the soil sampling activities, the borings were converted to temporary monitoring wells for groundwater sampling. Temporary monitoring wells were abandoned by removing the PVC pipe and backfilling the boring with bentonite chips after the groundwater sampling was completed. All backfilled borings were restored to match the original grade.

2.2 Monitoring Well Installation

Two shallow monitoring wells (MW-7-18 and MW-8-18) were installed at the boundary of the groundwater plume identified by the Color-Tec® field methodology conducted to delineate the groundwater concentration of total chlorinated VOCs:

- One monitoring well (MW-7-18) was installed approximately 150 feet southwest of MW-1S-16 at temporary well TW-5 where a Color-Tec® sample was collected.
- Another shallow monitoring well (MW-8-18) was installed approximately 100 feet west/southwest of MW-5-16 to define the horizontal groundwater impact. This well was located at TW-6 where Color-Tec® reading was 0 ppm.

Monitoring wells were installed in general accordance to the United States Environmental Protection Agency (USEPA) Region 4, Science and Ecosystem Support Division (SESD), Field Branches and Quality System and Technical Procedures (FBQSTP) (SESDGUID-101-R1) and GHD's Standard Operating Procedures (SOPs). The shallow monitoring wells were drilled and installed to depths ranging from 28 to 29 feet bgs using 4¼-inches inside diameter hollow stem auger (HSA) drilling techniques.

Both monitoring wells were completed with standard 2-inch diameter PVC casing with 10-foot machine slotted #10, schedule 40 PVC screen. The deep monitoring well was completed with 5-foot screen. The annular space around the wells was filled with sand to a depth of approximately 2-feet above the top of the screened interval. A nominal 2-foot thick layer of bentonite chips was poured in above the sand to create a seal. The remaining space was filled with cement and bentonite grout mix. The wells were finished with flush mount well covers within a 2-foot by 2-foot concrete pad and secured with locks. Monitoring well MW-7-18 was finished with aluminum stick up well cover. The monitoring wells were developed 24 hours after well construction to remove silt introduced during the well installation process. Each monitoring well was developed until zero Nephelometric Turbidity Unit (NTU) turbidity was attained. Well Construction logs and well development forms are provided in Appendix A.

Soil cuttings and water generated during well installation, decontamination of augers, well development, purging and sampling activities were drummed and staged on-site for subsequent characterization and off-site disposal.

A groundwater monitoring event was conducted between January 15 and 17, 2018 on the two new (MW-7-18 and MW-8-18) and seven existing monitoring wells (one deep and six shallow) to assess impact in groundwater quality and define extent of groundwater impact horizontally and vertically. All monitoring wells were sampled and analyzed for TCL VOCs.

2.3 Groundwater Elevations

Depth to groundwater was measured in all monitoring wells on January 15, 2018. Water level data were reduced to a common vertical datum based on the surveyed top of casing (TOC) elevations. Table 1 provides the depth to water measurements and corresponding groundwater elevations. The groundwater elevation data were further evaluated to show groundwater flow direction as shown on Figure 3. Groundwater flows toward the southeast with an average hydraulic gradient of 0.01.

2.4 Groundwater Sampling Procedures

Groundwater measurement and sampling procedures were conducted in general accordance with the USEPA Region IV, Field Branches Quality System and Technical Procedures (FBQSTP) guidance documents[1]. All samples were collected in laboratory supplied containers with appropriate preservative as specified by the method. The list of monitoring wells sampled during this groundwater monitoring event along with the field sample key is provided in Table 2.

Prior to groundwater sampling, each monitoring well was purged using low flow purging (LFP) or multi-volume purging technique. The LFP technique was performed using a peristaltic pump fitted with new disposable polyethylene tubing prior to use in each well. During purging, the water level was measured, and field parameters (i.e., pH, conductivity, turbidity, temperature, dissolved oxygen [DO], and oxidation reduction potential [ORP]) were recorded every five minutes using a Horiba U-53 with flow through cell. The flow through cell was decontaminated prior to use at each well location. Flow rates were monitored and maintained within a steady range to minimize drawdown of the water column. Drawdown in monitoring well MW-1D-16 was recorded slightly above the standard drawdown of 0.30 ft. Stabilization of parameters in the groundwater in the screened interval was evaluated using the real time parameter data measured by the flow through cell of a calibrated Horiba U-53 and was determined complete when three consecutive sets of parameter measurements were within the appropriate range[2].

Following stabilization of field measured parameters for LFP, the flow through cell was disconnected and groundwater samples were collected directly from the discharge end of the pump. Purge water was containerized in 55-gallon drums and staged at the Site pending off Site disposal. Appendix B provides summary of field measurements that were recorded during purging and sampling activities for each monitoring well location.

A blind duplicate groundwater sample was collected from monitoring well MW-1S-16 (GW-077150-011718-DJB-009). Matrix spike/matrix spike duplicate (MS/MSD) samples were collected from monitoring well MW-1D-16 (GW-077150-011718-DJB-010). The duplicate and MS/MSD samples were collected for quality assurance/quality control (QA/QC) purposes and the data were independently validated by a GHD chemist.

All samples were stored in ice-filled coolers and hand delivered to Analytical Environmental Services (AES) of Atlanta, GA under proper Chain-of-Custody (COC) protocols for analyses.

3. Analytical Results

The groundwater analytical results from the temporary monitoring wells which were field screened using the Color-Tec® method and groundwater analytical results from the permanent monitoring wells are presented in this section.

[1] SESD, Guidance Numbers SESDPROC-105-R2 and SESDPROC-301-R3.

[2] pH ±0.1 pH units of the average value of the three readings; temperature ±3 percent of the average value of the three readings; conductivity ±0.005 milliSiemen per centimeter (mS/cm) of the average value of the three readings for conductivity <1 mS/cm and ±0.01 mS/cm of the average value of the three readings for conductivity >1 mS/cm; ORP ±10 millivolts (mV) of the average value of the three readings; DO ±10 percent of the average value of the three readings; and turbidity ±10 percent of the average value of the three readings or a final value of less than 10 NTU.

3.1 Color-Tec® Screening Results

The Color-Tec® field screening results are summarized in Table 3. Estimated concentrations of chlorinated VOCs were below the detection limit or zero for all temporary wells/groundwater samples except at TW-3, TW-4 and TW-8 where concentrations were 3,300 µg/L, 7 µg/l and 450 µg/l, respectively. Concentration in TW-7 (approx. 50 feet south of TW-3) was below the method screening level defining the extent of the plume southwards. The plume has been defined in the northwest by MW-4-16; in the west, south and southwest by MW-2-16, MW-3-16, MW-7-18, MW-8-18 and TW-9 and in the east by TW-3, TW-8 and BH-3 (November 2013).

3.2 Groundwater Analytical results

Groundwater analytical results from the 2018 monitoring event are summarized in Table 4. Copy of the AES analytical report and the GHD data validation memorandum for all samples are provided in Appendix C.

Select VOC compounds (tetrachloroethene (PCE), trichloroethene (TCE), 1,1-dichloroethane (1,1-DCA), and 1,1-dichloroethene (1,1-DCE)) were detected above the screening criteria in select groundwater samples (MW-1S-16, MW-5-16 and MW-6-16). Highest concentration of PCE and TCE were detected at MW-1S-16. PCE was also detected at side-gradient well MW-5-16 above the MCL. Slight exceedances of 1,1-DCA and 1,1-DCE (daughter products of PCE) were detected at the furthest downgradient monitoring well MW-6-16. Overall, the groundwater plume has been defined with the source area focusing between MW-1S-16 and TW-3. The November 2013 site investigation has also identified the same area (BH-4 and BH-5) with the highest concentration of PCE and TCE. Detections of groundwater analytical results are summarized in the data boxes presented on Figure 4. Figures 5 and 6 show the PCE and TCE concentration map which show the approximate horizontal extent of the PCE and TCE plumes in groundwater. Total VOC concentrations in the temporary wells obtained during the Color-Tec® field method and used for screening purposes were used as PCE concentrations on Figure 5 to complete the iso-concentration contours as PCE is the dominant contaminant on site.

4. Soil Gas Investigation

Four soil gas sample points (SG-1 through SG-4) were installed around the buildings on January 2, 2018; the points were sampled on January 4. SG-1 and SG-2 are located south of Building 6 and 5, respectively. SG-3 is located west of Building 2 and SG-4 is located west/southwest of Building 3. All points are installed within 10 feet away from the buildings except SG-4, which is located approximately 20 feet away from Building 3 due to underground utility and topography of the area. Locations of the soil gas sample points are shown on Figure 7.

4.1 Installation of Soil Gas Points

Atlas Geo-Sampling of Atlanta, Georgia (Atlas) under the oversight of GHD installed the four soil gas points (implants) to a maximum depth of 7 feet below ground surface (bgs) using DPT. The implants consist of approximately 0.5-inch diameter aquarium grade sandstone used as screens and attached to Teflon-lined tubing that extends to the surface. Sand pack was placed in the annulus space around each implant and then backfilled approximately 0.5 foot above the top of the screen; the rest of the borehole up to ground surface was sealed with hydrated granular bentonite.

4.2 Soil Gas Sampling Procedure

On January 4, 2018, Atlas and GHD completed leak testing, purging and soil gas sampling at the locations listed above. The helium leak testing, purging and sampling consisted of the following:

- A shroud was placed over the soil gas probe assembly as part of the leak testing.
- Helium gas was introduced within the shroud via tubing, and the helium concentration under the shroud was measured using a helium meter. Soil gas was collected from the soil gas probe and pushed into a tedlar bag.
- The helium meter was then connected to the tedlar bag to monitor for any helium leaks due to the integrity of the sample point.

Detection of helium within the sampling assembly greater than 10 percent of the helium concentration beneath the shroud was considered a substantial leak that would compromise the soil gas sample. All sample locations passed the helium leak testing. Field documentation during the sampling is provided in Appendix D.

The soil gas sample locations were purged at least three volumes immediately before sampling. The samples were subsequently collected into 400 ml laboratory supplied Summa canisters at a flow rate of approximately 100 milliliters per minute (mL/min). The sampling time ranged from 3 to 6 minutes with the exception of SG-1 location which took over 4.5 hours due to tight soil formation.

The soil gas samples were shipped under chain-of-custody protocols to H&P Mobile Geochemistry Inc. of Carlsbad, California (H&P). H&P analyzed the soil gas samples by USEPA Method TO-15.

4.3 Soil Gas Analytical Results

The soil gas results are summarized in Table 4.1 and compared to the Target Sub-Slab and Exterior Soil Gas Concentrations (target sub-slab concentrations) for soil gas under a commercial exposure scenario which were calculated using the USEPA Vapor Intrusion Screening Level (VISL) calculator version 3.5, June 2017 RSLs. Target risk for carcinogens of 10^{-5}, an attenuation factor (AF) of 0.03 and a target hazard index of 1.0 for non-carcinogens were used to calculate the target sub-slab concentrations. The target sub-slab concentrations were calculated for compounds which were detected in one or more of the soil gas samples. The VISL calculator and the calculated target sub-slab concentrations for the select compounds are provided in Appendix E.

Results of the screening data show that soil gas concentrations in the vadose zone are all below the calculated screening levels for a commercial exposure scenario with only one exception. PCE exceeded the screening criteria of 5,800 µg/m^3 at SG-2 where a soil gas concentration of 9,200 µg/m^3 was detected. The January 2018 soil gas analytical reports provided by H&P are included in Appendix F.

5. Summary and Conclusion

Nine temporary monitoring wells, two permanent monitoring wells and four soil gas sample points were installed during the January 2018 event. The groundwater from all the temporary wells was screened using Color-Tec® field screening method to delineate the horizontal groundwater impact. One more round of groundwater sampling was also conducted at all monitoring wells (new and existing). All groundwater samples were analyzed for TCL VOCs. Soil gas samples were collected from the four point as part of the soil vapor intrusion assessment.

PCE and TCE in groundwater were detected above the MCL at MW-1S-16 and TCE was detected above MCL at the side-gradient well MW-5-16. Daughter products 1,1-DCA and 1,1-DCE were detected at the further downgradient well MW-6-16 slightly above the criteria used. No TCL VOCs and SVOCs were detected at MW-2-16, MW-3-16, MW-6-16, MW-7-18 and MW-8-18 above the reporting limits. Groundwater impact (primarily PCE and TCE) is delineated in all directions; the plume is centered at MW-1S-16 and BH-4 (sampled in November 2103). PCE and TCE plume in groundwater is shown on the iso-concentration map and it follows the groundwater flow direction.

The soil screening results show that soil gas concentrations in the vadose zone are all below the calculated screening levels for a commercial exposure scenario with the only exception of PCE, which exceeded the screening criteria at SG-2.

6. Groundwater Remediation

As described in the previous section, the Site has concentrations of select VOC analytes (PCE and TCE) in excess of their MCL (remediation goals). We have determined that the Site requires remedial action.

The selected Remedial Action for the Site groundwater will consist of the following components:

- In-Situ groundwater treatment by In-situ chemical oxidation (ISCO) to immediately reduce the contaminant mass of VOCs in groundwater. Once in-Situ treatment is deemed complete, final remediation of groundwater may be achieved through natural attenuation.
- Follow up groundwater monitoring to assess the effectiveness and integrity of the selected remedy.

Based on results from recent groundwater sampling within the plume area, the natural attenuation data suggest that conditions at the Site are not anaerobic. Highly anaerobic conditions are necessary for the development of a population of dehalococcoides (Dhc) bacteria therefore the absence of a DHC population is not unexpected. Little to no reductive dechlorination of PCE appears to have occurred and the PCE is still in its parent form rather than being converted into daughter compounds. Based on these findings, it does not appear that reductive dechlorination would occur at the Site.

ISCO is an effective method for treating localized high concentrations of a wide range of organic compounds, including petroleum hydrocarbons and other volatile organic compounds (VOC). In an oxidation reaction, the oxidizing agent breaks the carbon bonds in the compounds and converts them into nonhazardous compounds, primarily carbon dioxide and water. Commonly used oxidizing reagents include potassium permanganate (KMnO4), Fenton's Reagent (hydrogen peroxide in a solution of ferrous salts), catalyzed sodium persulfate, and ozone.

$KMnO_4$, Fenton's Reagent and catalyzed sodium persulfate are effective when delivered in an aqueous solution and react with a wide range of organic compounds. They are inexpensive and readily available in large quantities. ISCO is successful treatment option, however it is typically a function of the effectiveness of the delivery system (being able to deliver sufficient amounts of oxidant to the impacted soil and groundwater and making sufficient "contact") and subsequent transport of the oxidant within the soil and groundwater. The treatment performance is dependent to a great extent on the soil chemistry. A critical factor in the evaluation of ISCO treatment is determining the dosages of oxidant that are required to effectively oxidize the hydrocarbon compounds present (referred to as stoichiometric demand) as well as the competing reactions. The competing reactions are typically caused by the presence of natural organic materials. The consumption of oxidants by these non-target compounds is defined as natural oxidant demand (NOD). In order to determine the optimum dosage, treatability studies are required. Active ISCO requires accurate delineation of the source of hydrocarbons. Large quantities of oxidizing chemicals require regulated handling and may pose health and safety concerns. Sometimes, chemical oxidation may cause mobilization of metals and possible formation of toxic by-products, heat, gas, and biological perturbation.

6.1 Conceptual Design

The groundwater plume with the highest concentration is located at MW-1S-16 and BH-4. In order to treat the area within the 50 ug/L contour (Figure 5) it would be necessary to treat an area of approximately 30,000 square feet. It should be possible to get a 15 foot radius of influence in the saprolite material therefore approximately 24 injection points/direct push locations would be estimated to cover the approximate plume area. Injection intervals would be made between 20 and 30 ft bgs.

As stated above, oxidants that could be used would be catalyzed sodium persulfate, potassium permanganate, sodium permanganate. Sodium persulfate has a high solubility but will oxidize a wide range of organic compounds and therefore more will be consumed in non-specific oxidations. Potassium permanganate has a low cost and is fairly specific to chlorinated ethenes but has a low solubility in water. Sodium permanganate has a higher solubility in water but also a higher cost. Conceptual designs for treatment with sodium persulfate, potassium permanganate and sodium permanganate will be tested during the treatability testing.

Details of the design which will include number and layout of injection points, type of reagent, dosage and concentrations of solution, and overall injection layout will be provided in a work plan based on the results of the treatability study. The injection/groundwater performance monitoring will also be included in the work plan.

6.2 Laboratory Treatability Study

In order to verify the assumptions made above, to calculate the applicable doses and to determine which oxidant has the best reactivity under Site conditions, a laboratory treatability study is recommended. The study would use microcosms to test different doses of sodium persulfate, potassium permanganate and sodium permanganate, would assess the natural oxidant demand of Site soil for each oxidant and determine whether the oxidant has the potential to solubilize metals from the soil. In order to perform the treatability study three gallons of groundwater and five pounds of soil collected from the area of well MW-1S-16 would be used.

7. Certification

In accordance with Section 3 (RESPONSE ACTION) of the VCC 14-6226-RP, this report is signed as sealed below by a Professional Geologist duly-licensed in the State of South Carolina.

Professional Geologist Statement

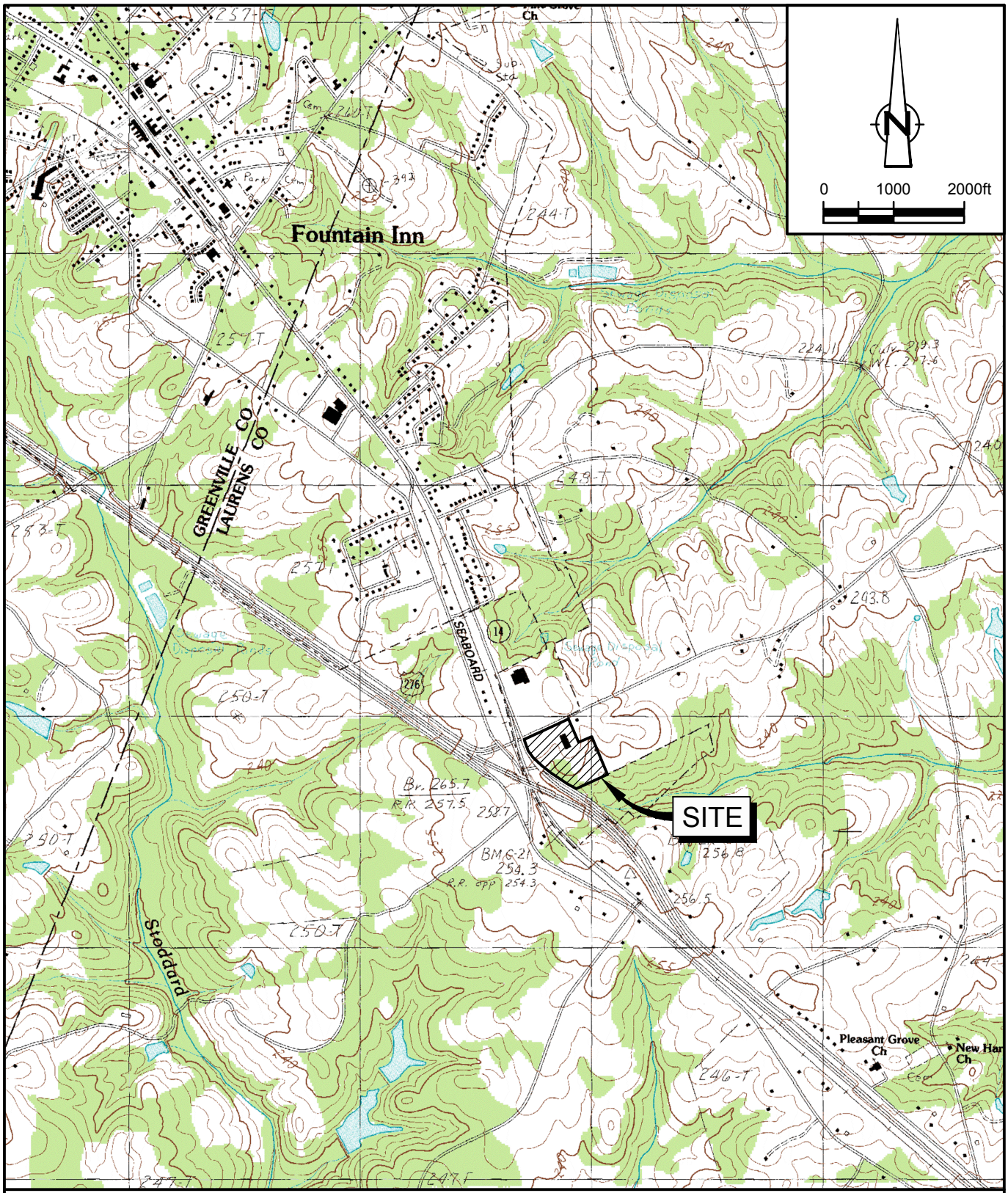
I certify that I am a qualified groundwater scientist who has received a baccalaureate or postgraduate degree in the natural sciences or engineering, and have sufficient training and experience in groundwater hydrology and related fields, as demonstrated by state registration and completion of accredited university courses, that enable me to make sound professional judgments regarding groundwater monitoring and contaminant fate and transport. I further certify that this Groundwater Delineation and Soil Gas Investigation Report was prepared in conjunction with others working under my direction.

Terefe Mazengia, RPG #2573
Registered Professional Geologist

Terefe

Signature (Registered Professional Geologist

Figures

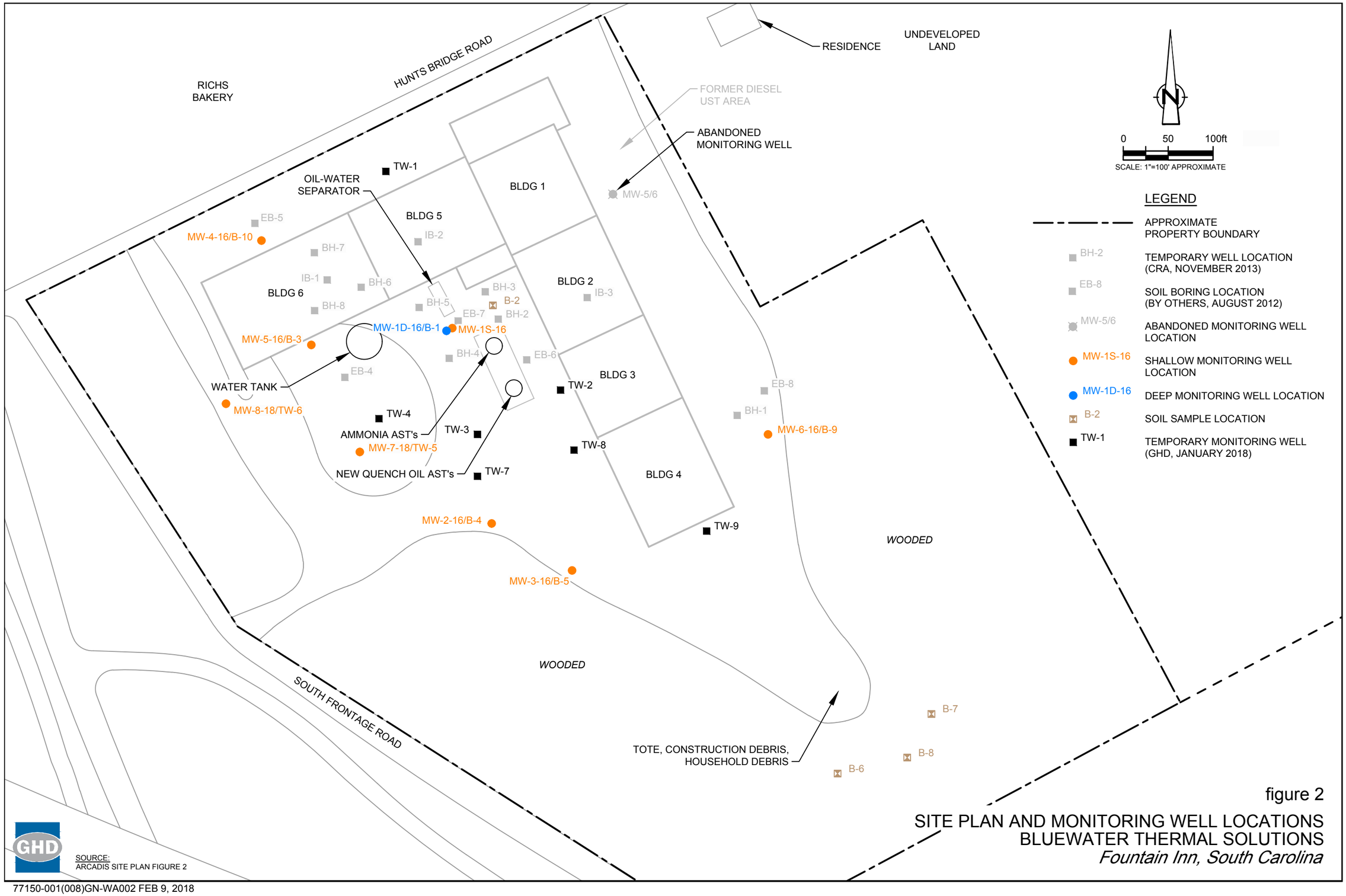


SOURCE: USGS QUADRANGLE MAP: FOUNTAIN INN, SC.

figure 1

SITE LOCATION MAP
BLUEWATER THERMAL SOLUTIONS
100 HUNTS BRIDGE ROAD
Fountain Inn, South Carolina

77150-001(008)GN-WA001 FEB 7, 2018

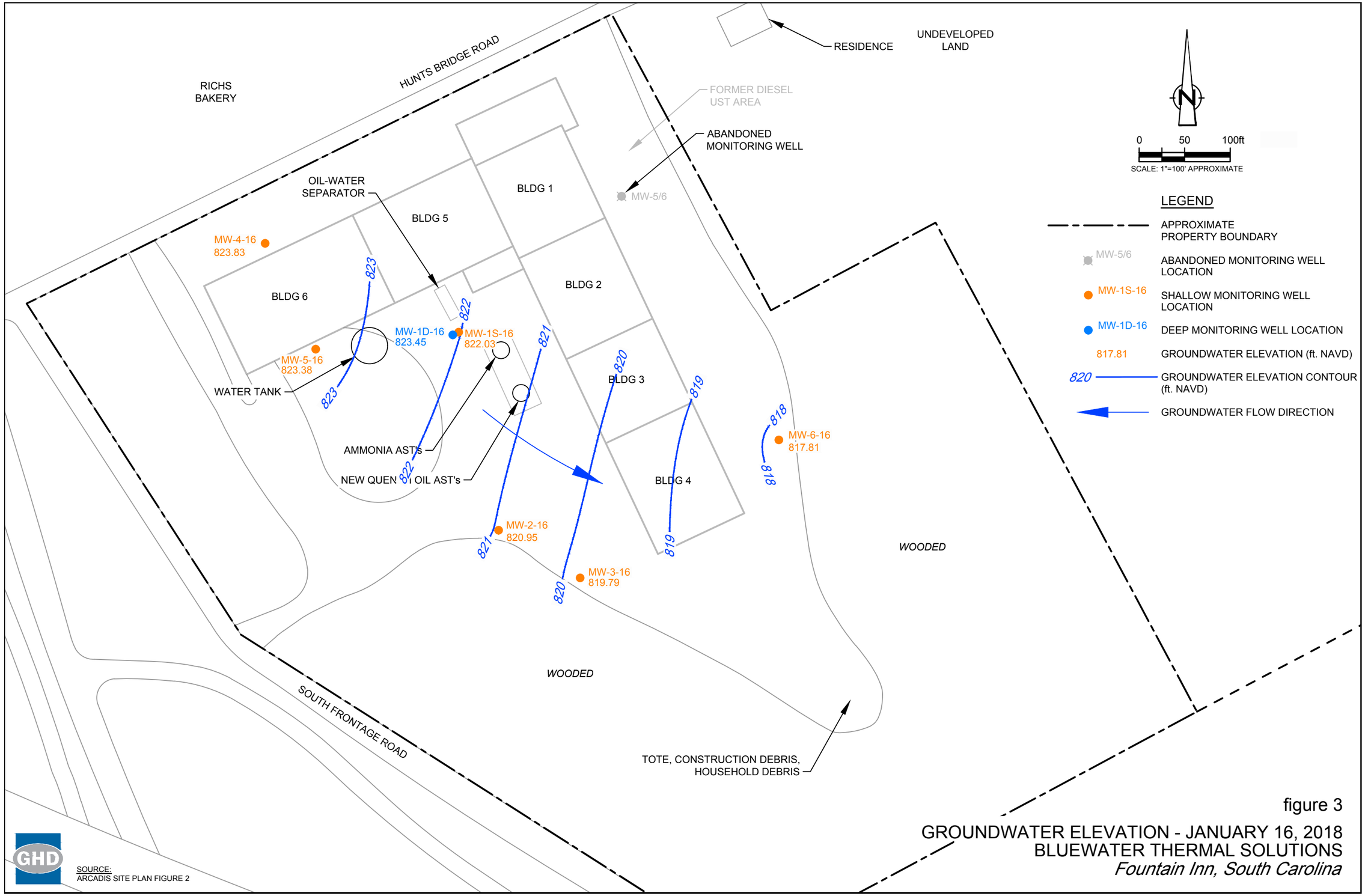


SOURCE:
ARCADIS SITE PLAN FIGURE 2

figure 2

SITE PLAN AND MONITORING WELL LOCATIONS
BLUEWATER THERMAL SOLUTIONS
Fountain Inn, South Carolina

77150-001(008)GN-WA002 FEB 9, 2018

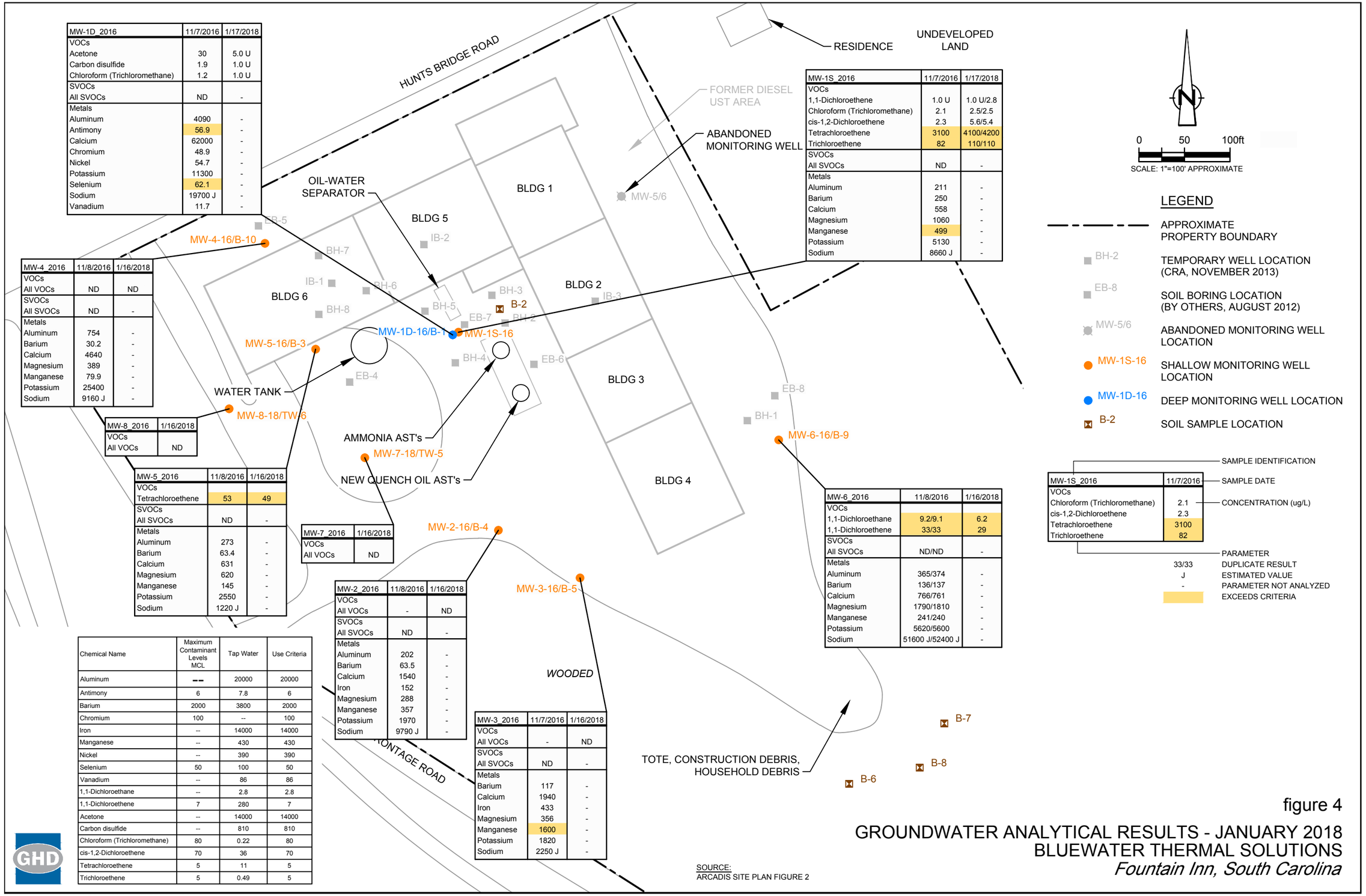


SOURCE:
ARCADIS SITE PLAN FIGURE 2

figure 3

GROUNDWATER ELEVATION - JANUARY 16, 2018
BLUEWATER THERMAL SOLUTIONS
Fountain Inn, South Carolina

77150-001(008)GN-WA003 FEB 7, 2018



MW-1D_2016	11/7/2016	1/17/2018
VOCs		
Acetone	30	5.0 U
Carbon disulfide	1.9	1.0 U
Chloroform (Trichloromethane)	1.2	1.0 U
SVOCs		
All SVOCs	ND	-
Metals		
Aluminum	4090	-
Antimony	56.9	-
Calcium	62000	-
Chromium	48.9	-
Nickel	54.7	-
Potassium	11300	-
Selenium	62.1	-
Sodium	19700 J	-
Vanadium	11.7	-

MW-1S_2016	11/7/2016	1/17/2018
VOCs		
1,1-Dichloroethene	1.0 U	1.0 U/2.8
Chloroform (Trichloromethane)	2.1	2.5/2.5
cis-1,2-Dichloroethene	2.3	5.6/5.4
Tetrachloroethene	3100	4100/4200
Trichloroethene	82	110/110
SVOCs		
All SVOCs	ND	-
Metals		
Aluminum	211	-
Barium	250	-
Calcium	558	-
Magnesium	1060	-
Manganese	499	-
Potassium	5130	-
Sodium	8660 J	-

MW-4_2016	11/8/2016	1/16/2018
VOCs		
All VOCs	ND	ND
SVOCs		
All SVOCs	ND	-
Metals		
Aluminum	754	-
Barium	30.2	-
Calcium	4640	-
Magnesium	389	-
Manganese	79.9	-
Potassium	25400	-
Sodium	9160 J	-

MW-8_2016	1/16/2018
VOCs	
All VOCs	ND

MW-5_2016	11/8/2016	1/16/2018
VOCs		
Tetrachloroethene	53	49
SVOCs		
All SVOCs	ND	-
Metals		
Aluminum	273	-
Barium	63.4	-
Calcium	631	-
Magnesium	620	-
Manganese	145	-
Potassium	2550	-
Sodium	1220 J	-

MW-7_2016	1/16/2018
VOCs	
All VOCs	ND

MW-2_2016	11/8/2016	1/16/2018
VOCs		
All VOCs	-	ND
SVOCs		
All SVOCs	ND	-
Metals		
Aluminum	202	-
Barium	63.5	-
Calcium	1540	-
Iron	152	-
Magnesium	288	-
Manganese	357	-
Potassium	1970	-
Sodium	9790 J	-

MW-3_2016	11/7/2016	1/16/2018
VOCs		
All VOCs	-	ND
SVOCs		
All SVOCs	ND	-
Metals		
Barium	117	-
Calcium	1940	-
Iron	433	-
Magnesium	356	-
Manganese	1600	-
Potassium	1820	-
Sodium	2250 J	-

MW-6_2016	11/8/2016	1/16/2018
VOCs		
1,1-Dichloroethane	9.2/9.1	6.2
1,1-Dichloroethene	33/33	29
SVOCs		
All SVOCs	ND/ND	-
Metals		
Aluminum	365/374	-
Barium	136/137	-
Calcium	766/761	-
Magnesium	1790/1810	-
Manganese	241/240	-
Potassium	5620/5600	-
Sodium	51600 J/52400 J	-

Chemical Name	Maximum Contaminant Levels MCL	Tap Water	Use Criteria
Aluminum	--	20000	20000
Antimony	6	7.8	6
Barium	2000	3800	2000
Chromium	100	--	100
Iron	--	14000	14000
Manganese	--	430	430
Nickel	--	390	390
Selenium	50	100	50
Vanadium	--	86	86
1,1-Dichloroethane	--	2.8	2.8
1,1-Dichloroethene	7	280	7
Acetone	--	14000	14000
Carbon disulfide	--	810	810
Chloroform (Trichloromethane)	80	0.22	80
cis-1,2-Dichloroethene	70	36	70
Tetrachloroethene	5	11	5
Trichloroethene	5	0.49	5

SOURCE:
ARCADIS SITE PLAN FIGURE 2

figure 4

GROUNDWATER ANALYTICAL RESULTS - JANUARY 2018
BLUEWATER THERMAL SOLUTIONS
Fountain Inn, South Carolina

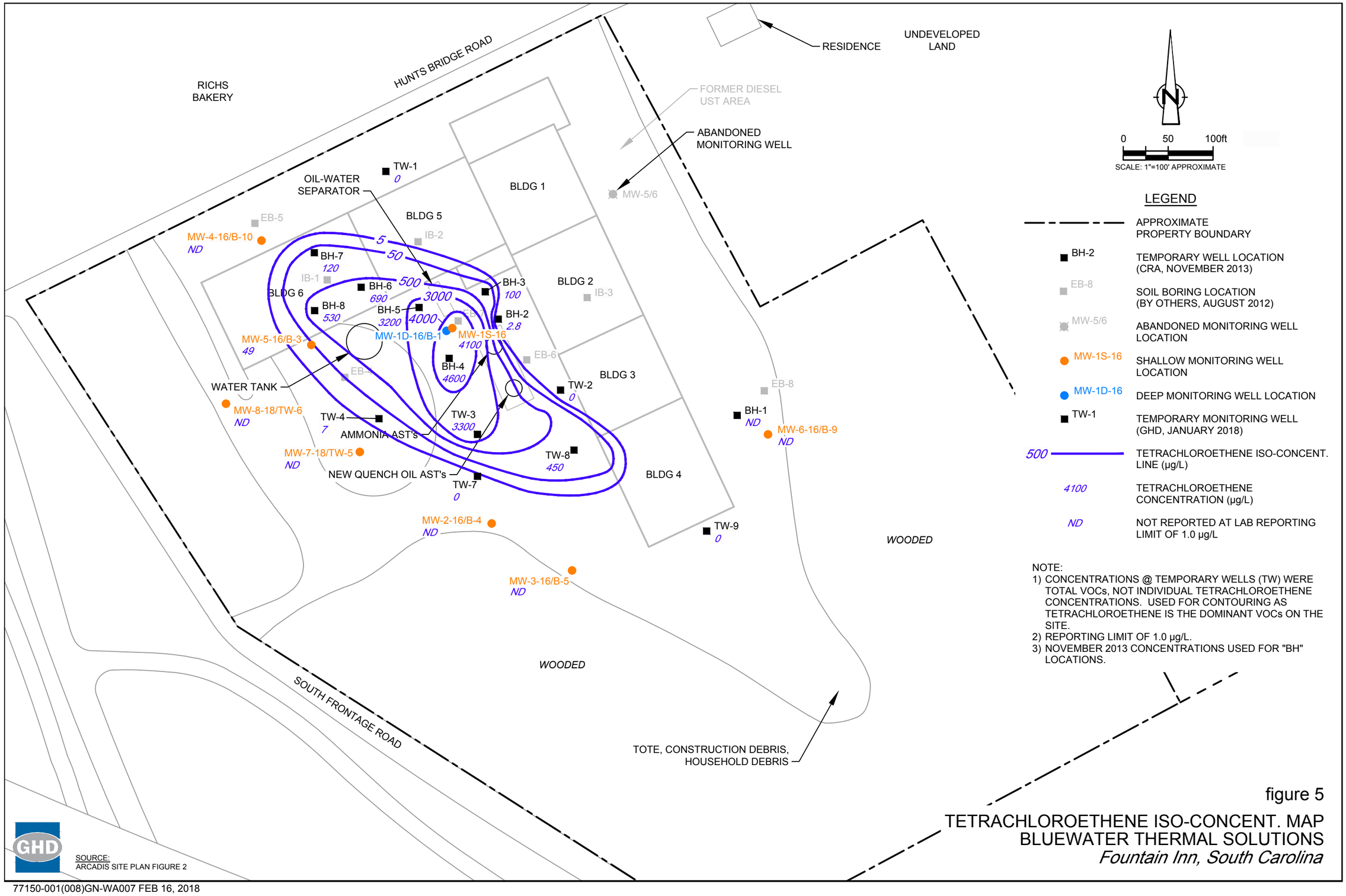


figure 5

TETRACHLOROETHENE ISO-CONCENT. MAP
BLUEWATER THERMAL SOLUTIONS
Fountain Inn, South Carolina

77150-001(008)GN-WA007 FEB 16, 2018

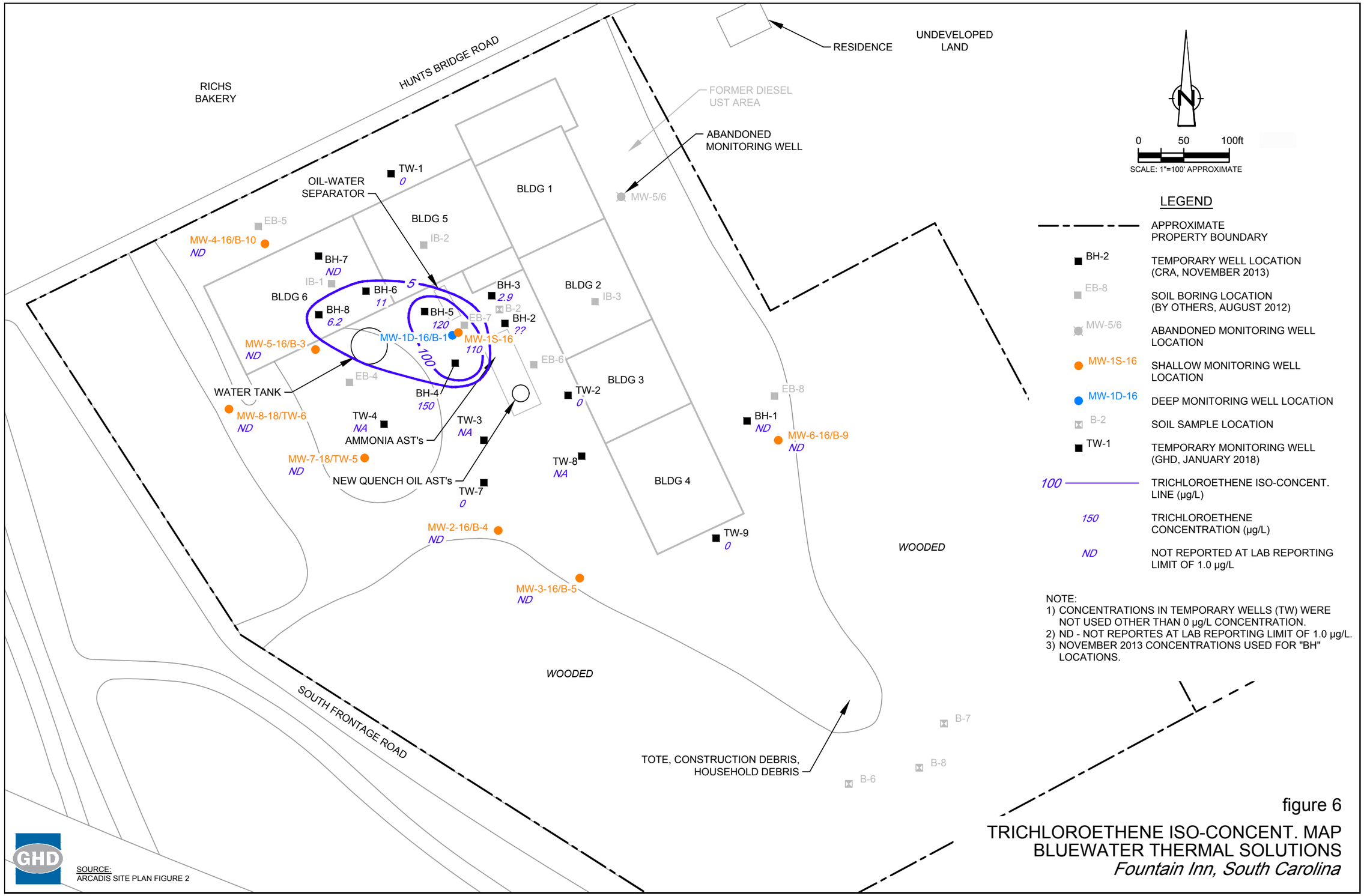
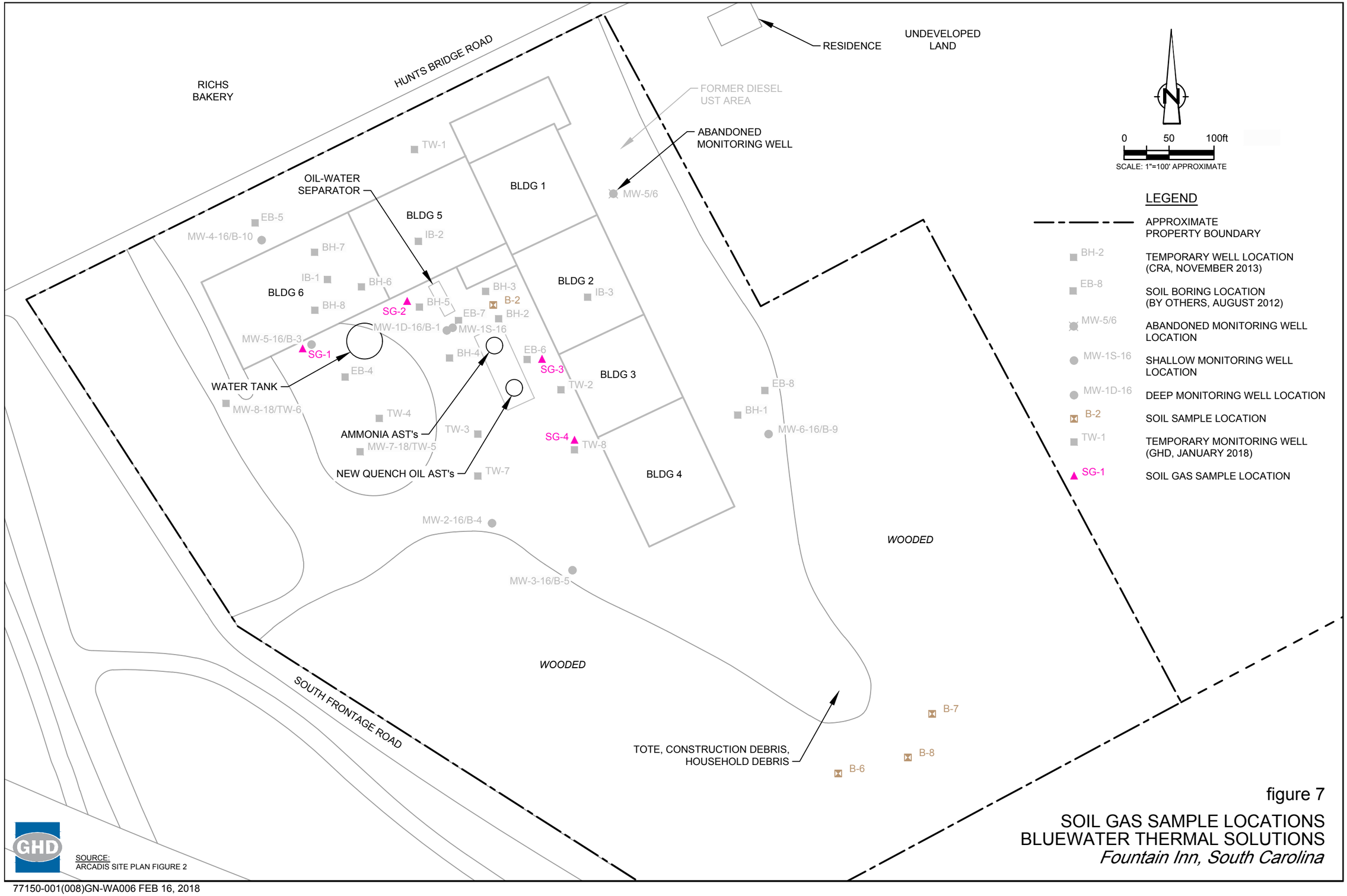


figure 6

TRICHLOROETHENE ISO-CONCENT. MAP
BLUEWATER THERMAL SOLUTIONS
Fountain Inn, South Carolina

77150-001(008)GN-WA008 FEB 16, 2018



SOURCE:
ARCADIS SITE PLAN FIGURE 2

figure 7

SOIL GAS SAMPLE LOCATIONS
BLUEWATER THERMAL SOLUTIONS
Fountain Inn, South Carolina

77150-001(008)GN-WA006 FEB 16, 2018

Tables

Table 1

Groundwater Elevations
Former Bluewater Thermal Solutions Site
Fountain Inn, South Carolina

Wells	*Total Depth feet bTOC*	*Ground Surface Elevation* [1]	*TOC Elevation* [1]	*Depth to Groundwater (feet bTOC)*	*Groundwater Elevation (feet NAVD)*
				January 16, 2018	
MW-1S-16	29.15	845.06	845.06	22.73	822.33
MW-1D-16	58.25	844.42	844.05	22.02	822.03
MW-2-16	27.45	838.72	841.03	20.08	820.95
MW-3-16	27.55	838.71	841.03	21.24	819.79
MW-4-16	29.70	847.47	847.22	23.39	823.83
MW-5-16	30.28	847.03	849.13	25.75	823.38
MW-6-16	29.90	839.71	839.46	21.65	817.81
MW-7-18	28.64	NS	NS	21.56	-
MW-8-18	27.25	NS	NS	20.43	-

Notes:

1 Elevations are reported relative to SC State Plane NAD83 and NAVD88
NS Wells not surveyed

Table 2

Groundwater Sample Key
Remedial Site Investigation
Former Bluewater Thermal Solutions
Fountain Inn, South Carolina

				Analysis/Parameters	
Sample ID	***Sample Location***	***Collection Date***	***Collection Time***	***TCL VOCs***	***Comments***
GW-077150-011618-DJB-001	MW-3-16	16-Jan-18	9:00	X	
GW-077150-011618-DJB-002	MW-2-16	16-Jan-18	10:00	X	
GW-077150-011618-DJB-003	MW-6-16	16-Jan-18	10:50	X	
GW-077150-011618-DJB-004	MW-4-16	16-Jan-18	11:50	X	
GW-077150-011618-DJB-005	MW-5-16	16-Jan-18	12:50	X	
GW-077150-011618-DJB-006	MW-8-18	16-Jan-18	13:45	X	
GW-077150-011618-DJB-007	MW-7-18	16-Jan-18	14:45	X	
GW-077150-011718-DJB-008	MW-1S-16	17-Jan-18	8:50	X	
GW-077150-011718-DJB-009	MW-1S-16	17-Jan-18	9:00	X	Duplicate
GW-077150-011718-DJB-010	MW-1D-16	17-Jan-18	10:30	X	MS/MSD
TRIP BLANK				X	

Table 3

Color-Tec Field Measurements
Former Bluewater Thermal Solutions Site
Fountain Inn, South Carolina

Groundwater Sample Locations	*Colo-Tech Reading 133 LL tube*	*Approx. Concentrations (ug/L)*
TW-1	0	0
TW-2	0	0
TW-3	10	3300
TW-4	0.2	7
TW-5 (MW-7-18) [1]	0	0
TW-6 (MW-8-18) [1]	0	0
TW-7	0	0
TW-8	2.2	450
TW-9	0	0
Blank (tap water) [2]	0	0

Notes:

[1] Temp wells TW-5 and TW-6 were converted to permanent wells MW-7-18 and MW-8-18, respectively.

[2] Tap water was used to run a blank sample

Table 4

Groundwater Analytical Results Summary
Remedial Site Investigation
Bluewater Thermal Solution Site
Fountain Inn, South Carolina

Sample Location:					**MW-1D-2016**	**MW-1D_2016**	**MW-1S-2016**	**MW-1S_2016**	**MW-1S_2016**
Sample ID:					**GW-077150-110716-TBM-102**	**GW-077150-011718-DJB-010**	**GW-077150-110716-TBM-101**	**GW-077150-011718-DJB-008**	**GW-077150-011718-DJB-009**
Sample Date:					**11/7/2016**	**1/17/2018**	**11/7/2016**	**1/17/2018**	**1/17/2018 (Duplicate)**
Parameters	**Units**	**EPA MCL** May 2016	**EPA Tapwater** May 2016	**Criteria Used** May 2016					
VOCs									
1,1,1,2-Tetrachloroethane	ug/L	--	0.57	0.57	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	ug/L	200	8000	200	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	5	0.28	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	--	2.8	2.8	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	7	280	7	1.0 U	1.0 U	1.0 U	1.0 U	2.8
1,2,4-Trichlorobenzene	ug/L	70	1.2	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.2	0.00033	0.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.05	0.0075	0.05	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	600	300	600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	5	0.17	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	5	0.44	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	75	0.48	75	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	--	5600	5600	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	ug/L	--	38	38	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methyl isobutyl ketone (MIBK)	ug/L	--	6300	6300	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	ug/L	--	14000	14000	30	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	5	0.46	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	80	0.13	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	80	3.3	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	--	7.5	7.5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	--	810	810	1.9	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	ug/L	5	0.46	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	100	78	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	--	21000	21000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	80	0.22	80	1.2	1.0 U	2.1	2.5	2.5
Chloromethane (Methyl chloride)	ug/L	--	190	190	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	70	36	70	1.0 U	1.0 U	2.3	5.6	5.4
cis-1,3-Dichloropropene	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	--	13000	13000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/L	80	0.87	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	--	200	200	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	700	1.5	700	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropyl benzene	ug/L	--	450	450	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl acetate	ug/L	--	20000	20000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl cyclohexane	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	ug/L	--	14	14	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	5	11	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	ug/L	100	1200	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	5	11	5	1.0 U	R	**3100**	**4200**	**4100**
Toluene	ug/L	1000	1100	1000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	100	360	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	5	0.49	5	1.0 U	1.0 U	**82**	**110**	**110**
Trichlorofluoromethane (CFC-11)	ug/L	--	5200	5200	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	ug/L	--	55000	55000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	ug/L	2	0.019	2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	10000	190	10000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Table 4

Groundwater Analytical Results Summary
Remedial Site Investigation
Bluewater Thermal Solution Site
Fountain Inn, South Carolina

Sample Location:					**MW-1D-2016**	**MW-1D_2016**	**MW-1S-2016**	**MW-1S_2016**	**MW-1S_2016**
Sample ID:					**GW-077150-110716-TBM-102**	**GW-077150-011718-DJB-010**	**GW-077150-110716-TBM-101**	**GW-077150-011718-DJB-008**	**GW-077150-011718-DJB-009**
Sample Date:					**11/7/2016**	**1/17/2018**	**11/7/2016**	**1/17/2018**	**1/17/2018 (Duplicate)**
Parameters	**Units**	**EPA MCL** May 2016	**EPA Tapwater** May 2016	**Criteria Used** May 2016					
SVOCs									
bis(2-Chloroisopropyl) ether	ug/L	--	710	710	10 U	--	10 U	--	--
2,4,5-Trichlorophenol	ug/L	--	1200	1200	25 U	--	25 U	--	--
2,4,6-Trichlorophenol	ug/L	--	4.1	4.1	10 U	--	10 U	--	--
2,4-Dichlorophenol	ug/L	--	46	46	10 UJ	--	10 UJ	--	--
2,4-Dimethylphenol	ug/L	--	360	360	10 UJ	--	10 UJ	--	--
2,4-Dinitrophenol	ug/L	--	39	39	25 U	--	25 U	--	--
2,4-Dinitrotoluene	ug/L	--	0.24	0.24	10 U	--	10 U	--	--
2,6-Dinitrotoluene	ug/L	--	0.049	0.049	10 U	--	10 U	--	--
2-Chloronaphthalene	ug/L	--	750	750	10 U	--	10 U	--	--
2-Chlorophenol	ug/L	--	91	91	10 U	--	10 U	--	--
2-Methylnaphthalene	ug/L	--	36	36	10 U	--	10 U	--	--
2-Methylphenol	ug/L	--	930	930	10 UJ	--	10 UJ	--	--
2-Nitroaniline	ug/L	--	190	190	25 U	--	25 U	--	--
2-Nitrophenol	ug/L	--	--	--	10 U	--	10 U	--	--
3,3'-Dichlorobenzidine	ug/L	--	0.13	0.13	10 U	--	10 U	--	--
3-Nitroaniline	ug/L	--	--	--	25 U	--	25 U	--	--
4,6-Dinitro-2-methylphenol	ug/L	--	1.5	1.5	25 U	--	25 U	--	--
4-Bromophenyl phenyl ether	ug/L	--	--	--	10 U	--	10 U	--	--
4-Chloro-3-methylphenol	ug/L	--	1400	1400	10 U	--	10 U	--	--
4-Chloroaniline	ug/L	--	0.37	0.37	10 U	--	10 U	--	--
4-Chlorophenyl phenyl ether	ug/L	--	--	--	10 U	--	10 U	--	--
4-Methylphenol	ug/L	--	1900	1900	10 U	--	10 U	--	--
4-Nitroaniline	ug/L	--	3.8	3.8	25 U	--	25 U	--	--
4-Nitrophenol	ug/L	--	--	--	25 U	--	25 U	--	--
Acenaphthene	ug/L	--	530	530	10 U	--	10 U	--	--
Acetophenone	ug/L	--	1900	1900	10 U	--	10 U	--	--
Anthracene	ug/L	--	1800	1800	10 U	--	10 U	--	--
Atrazine	ug/L	3	0.3	3	10 U	--	10 U	--	--
Benzaldehyde	ug/L	--	19	19	10 U	--	10 U	--	--
Benzo(a)anthracene	ug/L	--	0.012	0.012	10 U	--	10 U	--	--
Benzo(a)pyrene	ug/L	0.2	0.0034	0.2	10 U	--	10 U	--	--
Benzo(b)fluoranthene	ug/L	--	0.034	0.034	10 U	--	10 U	--	--
Benzo(g,h,i)perylene	ug/L	--	--	--	10 U	--	10 U	--	--
Benzo(k)fluoranthene	ug/L	--	0.34	0.34	10 U	--	10 U	--	--
Biphenyl (1,1-Biphenyl)	ug/L	--	0.83	0.83	10 U	--	10 U	--	--
bis(2-Chloroethoxy)methane	ug/L	--	59	59	10 U	--	10 U	--	--
bis(2-Chloroethyl)ether	ug/L	--	0.014	0.014	10 U	--	10 U	--	--
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	6	5.6	6	10 U	--	10 U	--	--
Butyl benzylphthalate (BBP)	ug/L	--	16	16	10 U	--	10 U	--	--
Caprolactam	ug/L	--	9900	9900	10 U	--	10 U	--	--
Carbazole	ug/L	--	--	--	10 U	--	10 U	--	--
Chrysene	ug/L	--	3.4	3.4	10 U	--	10 U	--	--
Dibenz(a,h)anthracene	ug/L	--	0.0034	0.0034	10 U	--	10 U	--	--
Dibenzofuran	ug/L	--	7.9	7.9	10 U	--	10 U	--	--
Diethyl phthalate	ug/L	--	15000	15000	10 U	--	10 U	--	--
Dimethyl phthalate	ug/L	--	--	--	10 U	--	10 U	--	--
Di-n-butylphthalate (DBP)	ug/L	--	900	900	10 U	--	10 U	--	--
Di-n-octyl phthalate (DnOP)	ug/L	--	200	200	10 U	--	10 U	--	--
Fluoranthene	ug/L	--	800	800	10 U	--	10 U	--	--
Fluorene	ug/L	--	290	290	10 U	--	10 U	--	--
Hexachlorobenzene	ug/L	1	0.0098	1	10 U	--	10 U	--	--
Hexachlorobutadiene	ug/L	--	0.14	0.14	10 UJ	--	10 UJ	--	--
Hexachlorocyclopentadiene	ug/L	50	0.41	50	10 U	--	10 U	--	--
Hexachloroethane	ug/L	--	0.33	0.33	10 U	--	10 U	--	--
Indeno(1,2,3-cd)pyrene	ug/L	--	0.034	0.034	10 U	--	10 U	--	--
Isophorone	ug/L	--	78	78	10 U	--	10 U	--	--
Naphthalene	ug/L	--	0.17	0.17	10 U	--	10 U	--	--
Nitrobenzene	ug/L	--	0.14	0.14	10 U	--	10 U	--	--
N-Nitrosodi-n-propylamine	ug/L	--	0.011	0.011	10 U	--	10 U	--	--
N-Nitrosodiphenylamine	ug/L	--	12	12	10 U	--	10 U	--	--
Pentachlorophenol	ug/L	1	0.041	1	25 U	--	25 U	--	--
Phenanthrene	ug/L	--	--	--	10 U	--	10 U	--	--
Phenol	ug/L	--	5800	5800	10 U	--	10 U	--	--
Pyrene	ug/L	--	120	120	10 U	--	10 U	--	--

Table 4

Groundwater Analytical Results Summary
Remedial Site Investigation
Bluewater Thermal Solution Site
Fountain Inn, South Carolina

Sample Location:					**MW-1D-2016**	**MW-1D_2016**	**MW-1S-2016**	**MW-1S_2016**	**MW-1S_2016**
Sample ID:					**GW-077150-110716-TBM-102**	**GW-077150-011718-DJB-010**	**GW-077150-110716-TBM-101**	**GW-077150-011718-DJB-008**	**GW-077150-011718-DJB-009**
Sample Date:					**11/7/2016**	**1/17/2018**	**11/7/2016**	**1/17/2018**	**1/17/2018 (Duplicate)**
Parameters	**Units**	**EPA MCL** May 2016	**EPA Tapwater** May 2016	**Criteria Used** May 2016					
Metals									
Aluminum	ug/L	--	20000	20000	4090	--	211	--	--
Antimony	ug/L	6	7.8	6	**56.9**	--	20.0 U	--	--
Arsenic	ug/L	10	0.052	10	10.0 U	--	10.0 U	--	--
Barium	ug/L	2000	3800	2000	20.0 U	--	250	--	--
Beryllium	ug/L	4	25	4	5.00 U	--	5.00 U	--	--
Cadmium	ug/L	5	9.2	5	5.00 U	--	5.00 U	--	--
Calcium	ug/L	--	--	--	62000	--	558	--	--
Chromium	ug/L	100	--	100	48.9	--	10.0 U	--	--
Cobalt	ug/L	--	6	6	20.0 U	--	20.0 U	--	--
Copper	ug/L	1300	800	1300	10.0 U	--	10.0 U	--	--
Iron	ug/L		14000	14000	100 U	--	100 U	--	--
Lead	ug/L	--	15	15	5.00 U	--	5.00 U	--	--
Magnesium	ug/L	--	--	--	100 U	--	1060	--	--
Manganese	ug/L	--	430	430	15.0 U	--	**499**	--	--
Mercury	ug/L	2	0.63	2	0.200 U	--	0.200 U	--	--
Nickel	ug/L	--	390	390	54.7	--	20.0 U	--	--
Potassium	ug/L	--	--	--	11300	--	5130	--	--
Selenium	ug/L	50	100	50	**62.1**	--	10.0 U	--	--
Silver	ug/L	--	94	94	10.0 U	--	10.0 U	--	--
Sodium	ug/L	--	--	--	19700 J	--	8660 J	--	--
Thallium	ug/L	2	0.2	2	10.0 U	--	10.0 U	--	--
Vanadium	ug/L	--	86	86	11.7	--	10.0 U	--	--
Zinc	ug/L	--	6000	6000	20.0 U	--	20.0 U	--	--

Notes:

U Not detected at the associated reporting limit.
J Estimated concentration.
UJ Not detected; associated reporting limit is estimated.
R Rejected.
Screening value USEPA RSL - Maximum Contaminant Levels (MCL) or Tapwater criteria
Bold, red and highlighted value represent exceedance of the screening value

Table 4

Groundwater Analytical Results Summary
Remedial Site Investigation
Bluewater Thermal Solution Site
Fountain Inn, South Carolina

Sample Location:					**MW-2-2016**	**MW-2_2016**	**MW-3-2016**	**MW-3_2016**	**MW-4-2016**	**MW-4_2016**
Sample ID:					**GW-077150-110816-TBM-104**	**GW-077150-011618-DJB-002**	**GW-077150-110716-TBM-103**	**GW-077150-011618-DJB-001**	**GW-077150-110816-TBM-107**	**GW-077150-011618-DJB-004**
Sample Date:					**11/8/2016**	**1/16/2018**	**11/7/2016**	**1/16/2018**	**11/8/2016**	**1/16/2018**
Parameters	**Units**	**EPA MCL** May 2016	**EPA Tapwater** May 2016	**Criteria Used** May 2016						
VOCs										
1,1,1,2-Tetrachloroethane	ug/L	--	0.57	0.57	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	ug/L	200	8000	200	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	5	0.28	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	--	2.8	2.8	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	7	280	7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	70	1.2	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.2	0.00033	0.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.05	0.0075	0.05	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	600	300	600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	5	0.17	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	5	0.44	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	75	0.48	75	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	--	5600	5600	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	ug/L	--	38	38	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methyl isobutyl ketone (MIBK)	ug/L	--	6300	6300	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	ug/L	--	14000	14000	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	5	0.46	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	80	0.13	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	80	3.3	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	--	7.5	7.5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	--	810	810	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	ug/L	5	0.46	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	100	78	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	--	21000	21000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	80	0.22	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	--	190	190	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	70	36	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	--	13000	13000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/L	80	0.87	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	--	200	200	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	700	1.5	700	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropyl benzene	ug/L	--	450	450	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl acetate	ug/L	--	20000	20000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl cyclohexane	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	ug/L	--	14	14	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	5	11	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	ug/L	100	1200	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	5	11	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1000	1100	1000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	100	360	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	5	0.49	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L	--	5200	5200	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	ug/L	--	55000	55000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	ug/L	2	0.019	2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	10000	190	10000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Table 4

Groundwater Analytical Results Summary
Remedial Site Investigation
Bluewater Thermal Solution Site
Fountain Inn, South Carolina

Sample Location:					**MW-2-2016**	**MW-2_2016**	**MW-3-2016**	**MW-3_2016**	**MW-4-2016**	**MW-4_2016**
Sample ID:					**GW-077150-110816-TBM-104**	**GW-077150-011618-DJB-002**	**GW-077150-110716-TBM-103**	**GW-077150-011618-DJB-001**	**GW-077150-110816-TBM-107**	**GW-077150-011618-DJB-004**
Sample Date:					**11/8/2016**	**1/16/2018**	**11/7/2016**	**1/16/2018**	**11/8/2016**	**1/16/2018**
Parameters	**Units**	**EPA MCL** May 2016	**EPA Tapwater** May 2016	**Criteria Used** May 2016						
SVOCs										
bis(2-Chloroisopropyl) ether	ug/L	--	710	710	10 U	--	10 U	--	10 U	--
2,4,5-Trichlorophenol	ug/L	--	1200	1200	25 U	--	25 U	--	25 U	--
2,4,6-Trichlorophenol	ug/L	--	4.1	4.1	10 U	--	10 U	--	10 U	--
2,4-Dichlorophenol	ug/L	--	46	46	10 UJ	--	10 UJ	--	10 UJ	--
2,4-Dimethylphenol	ug/L	--	360	360	10 UJ	--	10 UJ	--	10 UJ	--
2,4-Dinitrophenol	ug/L	--	39	39	25 U	--	25 U	--	25 U	--
2,4-Dinitrotoluene	ug/L	--	0.24	0.24	10 U	--	10 U	--	10 U	--
2,6-Dinitrotoluene	ug/L	--	0.049	0.049	10 U	--	10 U	--	10 U	--
2-Chloronaphthalene	ug/L	--	750	750	10 U	--	10 U	--	10 U	--
2-Chlorophenol	ug/L	--	91	91	10 U	--	10 U	--	10 U	--
2-Methylnaphthalene	ug/L	--	36	36	10 U	--	10 U	--	10 U	--
2-Methylphenol	ug/L	--	930	930	10 UJ	--	10 UJ	--	10 UJ	--
2-Nitroaniline	ug/L	--	190	190	25 U	--	25 U	--	25 U	--
2-Nitrophenol	ug/L	--	--	--	10 U	--	10 U	--	10 U	--
3,3'-Dichlorobenzidine	ug/L	--	0.13	0.13	R	--	10 U	--	10 U	--
3-Nitroaniline	ug/L	--	--	--	25 U	--	25 U	--	25 U	--
4,6-Dinitro-2-methylphenol	ug/L	--	1.5	1.5	25 U	--	25 U	--	25 U	--
4-Bromophenyl phenyl ether	ug/L	--	--	--	10 U	--	10 U	--	10 U	--
4-Chloro-3-methylphenol	ug/L	--	1400	1400	10 U	--	10 U	--	10 U	--
4-Chloroaniline	ug/L	--	0.37	0.37	10 U	--	10 U	--	10 U	--
4-Chlorophenyl phenyl ether	ug/L	--	--	--	10 U	--	10 U	--	10 U	--
4-Methylphenol	ug/L	--	1900	1900	10 U	--	10 U	--	10 U	--
4-Nitroaniline	ug/L	--	3.8	3.8	25 U	--	25 U	--	25 U	--
4-Nitrophenol	ug/L	--	--	--	25 U	--	25 U	--	25 U	--
Acenaphthene	ug/L	--	530	530	10 U	--	10 U	--	10 U	--
Acetophenone	ug/L	--	1900	1900	10 U	--	10 U	--	10 U	--
Anthracene	ug/L	--	1800	1800	10 U	--	10 U	--	10 U	--
Atrazine	ug/L	3	0.3	3	10 U	--	10 U	--	10 U	--
Benzaldehyde	ug/L	--	19	19	10 U	--	10 U	--	10 U	--
Benzo(a)anthracene	ug/L	--	0.012	0.012	10 U	--	10 U	--	10 U	--
Benzo(a)pyrene	ug/L	0.2	0.0034	0.2	10 U	--	10 U	--	10 U	--
Benzo(b)fluoranthene	ug/L	--	0.034	0.034	10 U	--	10 U	--	10 U	--
Benzo(g,h,i)perylene	ug/L	--	--	--	10 U	--	10 U	--	10 U	--
Benzo(k)fluoranthene	ug/L	--	0.34	0.34	10 U	--	10 U	--	10 U	--
Biphenyl (1,1-Biphenyl)	ug/L	--	0.83	0.83	10 U	--	10 U	--	10 U	--
bis(2-Chloroethoxy)methane	ug/L	--	59	59	10 U	--	10 U	--	10 U	--
bis(2-Chloroethyl)ether	ug/L	--	0.014	0.014	10 U	--	10 U	--	10 U	--
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	6	5.6	6	10 U	--	10 U	--	10 U	--
Butyl benzylphthalate (BBP)	ug/L	--	16	16	10 U	--	10 U	--	10 U	--
Caprolactam	ug/L	--	9900	9900	10 U	--	10 U	--	10 U	--
Carbazole	ug/L	--	--	--	10 U	--	10 U	--	10 U	--
Chrysene	ug/L	--	3.4	3.4	10 U	--	10 U	--	10 U	--
Dibenz(a,h)anthracene	ug/L	--	0.0034	0.0034	10 U	--	10 U	--	10 U	--
Dibenzofuran	ug/L	--	7.9	7.9	10 U	--	10 U	--	10 U	--
Diethyl phthalate	ug/L	--	15000	15000	10 U	--	10 U	--	10 U	--
Dimethyl phthalate	ug/L	--	--	--	10 U	--	10 U	--	10 U	--
Di-n-butylphthalate (DBP)	ug/L	--	900	900	10 U	--	10 U	--	10 U	--
Di-n-octyl phthalate (DnOP)	ug/L	--	200	200	10 U	--	10 U	--	10 U	--
Fluoranthene	ug/L	--	800	800	10 U	--	10 U	--	10 U	--
Fluorene	ug/L	--	290	290	10 U	--	10 U	--	10 U	--
Hexachlorobenzene	ug/L	1	0.0098	1	10 U	--	10 U	--	10 U	--
Hexachlorobutadiene	ug/L	--	0.14	0.14	10 UJ	--	10 UJ	--	10 UJ	--
Hexachlorocyclopentadiene	ug/L	50	0.41	50	10 U	--	10 U	--	10 U	--
Hexachloroethane	ug/L	--	0.33	0.33	10 U	--	10 U	--	10 U	--
Indeno(1,2,3-cd)pyrene	ug/L	--	0.034	0.034	10 U	--	10 U	--	10 U	--
Isophorone	ug/L	--	78	78	10 U	--	10 U	--	10 U	--
Naphthalene	ug/L	--	0.17	0.17	10 U	--	10 U	--	10 U	--
Nitrobenzene	ug/L	--	0.14	0.14	10 U	--	10 U	--	10 U	--
N-Nitrosodi-n-propylamine	ug/L	--	0.011	0.011	10 U	--	10 U	--	10 U	--
N-Nitrosodiphenylamine	ug/L	--	12	12	10 U	--	10 U	--	10 U	--
Pentachlorophenol	ug/L	1	0.041	1	25 U	--	25 U	--	25 U	--
Phenanthrene	ug/L	--	--	--	10 U	--	10 U	--	10 U	--
Phenol	ug/L	--	5800	5800	10 U	--	10 U	--	10 U	--
Pyrene	ug/L	--	120	120	10 U	--	10 U	--	10 U	--

Table 4

Groundwater Analytical Results Summary
Remedial Site Investigation
Bluewater Thermal Solution Site
Fountain Inn, South Carolina

Sample Location:					**MW-2-2016**	**MW-2_2016**	**MW-3-2016**	**MW-3_2016**	**MW-4-2016**	**MW-4_2016**
Sample ID:					**GW-077150-110816-TBM-104**	**GW-077150-011618-DJB-002**	**GW-077150-110716-TBM-103**	**GW-077150-011618-DJB-001**	**GW-077150-110816-TBM-107**	**GW-077150-011618-DJB-004**
Sample Date:					**11/8/2016**	**1/16/2018**	**11/7/2016**	**1/16/2018**	**11/8/2016**	**1/16/2018**
Parameters	**Units**	**EPA MCL** May 2016	**EPA Tapwater** May 2016	**Criteria Used** May 2016						
Metals										
Aluminum	ug/L	--	20000	20000	202	--	200 U	--	754	--
Antimony	ug/L	6	7.8	6	20.0 U	--	20.0 U	--	20.0 U	--
Arsenic	ug/L	10	0.052	10	10.0 U	--	10.0 U	--	10.0 U	--
Barium	ug/L	2000	3800	2000	63.5	--	117	--	30.2	--
Beryllium	ug/L	4	25	4	5.00 U	--	5.00 U	--	5.00 U	--
Cadmium	ug/L	5	9.2	5	5.00 U	--	5.00 U	--	5.00 U	--
Calcium	ug/L	--	--	--	1540	--	1940	--	4640	--
Chromium	ug/L	100	--	100	10.0 U	--	10.0 U	--	10.0 U	--
Cobalt	ug/L	--	6	6	20.0 U	--	20.0 U	--	20.0 U	--
Copper	ug/L	1300	800	1300	10.0 U	--	10.0 U	--	10.0 U	--
Iron	ug/L		14000	14000	152	--	433	--	100 U	--
Lead	ug/L	--	15	15	5.00 U	--	5.00 U	--	5.00 U	--
Magnesium	ug/L	--	--	--	288	--	356	--	389	--
Manganese	ug/L	--	430	430	357	--	**1600**	--	79.9	--
Mercury	ug/L	2	0.63	2	0.200 U	--	0.200 U	--	0.200 U	--
Nickel	ug/L	--	390	390	20.0 U	--	20.0 U	--	20.0 U	--
Potassium	ug/L	--	--	--	1970	--	1820	--	25400	--
Selenium	ug/L	50	100	50	10.0 U	--	10.0 U	--	10.0 U	--
Silver	ug/L	--	94	94	10.0 U	--	10.0 U	--	10.0 U	--
Sodium	ug/L	--	--	--	9790 J	--	2250 J	--	9160 J	--
Thallium	ug/L	2	0.2	2	10.0 U	--	10.0 U	--	10.0 U	--
Vanadium	ug/L	--	86	86	10.0 U	--	10.0 U	--	10.0 U	--
Zinc	ug/L	--	6000	6000	20.0 U	--	20.0 U	--	20.0 U	--

Notes:
U Not detected at the associated reporting limit.
J Estimated concentration.
UJ Not detected; associated reporting limit is estimated.
R Rejected.
Screening value USEPA RSL - Maximum Contaminant Levels (MCL) or Tapwa
Bold, red and highlighted value represent exceedance of the s

Table 4

Groundwater Analytical Results Summary
Remedial Site Investigation
Bluewater Thermal Solution Site
Fountain Inn, South Carolina

Sample Location:					**MW-5-2016**	**MW-5_2016**	**MW-6-2016**	**MW-6-2016**	**MW-6_2016**	**MW-7_2016**	**MW-8_2016**
Sample ID:					**GW-077150-110816-TBM-108**	**GW-077150-011618-DJB-005**	**GW-077150-110816-TBM-105**	**GW-077150-110816-TBM-106**	**GW-077150-011618-DJB-003**	**GW-077150-011618-DJB-007**	**GW-077150-011618-DJB-006**
Sample Date:					**11/8/2016**	**1/16/2018**	**11/8/2016**	**11/8/2016 (Duplicate)**	**1/16/2018**	**1/16/2018**	**1/16/2018**
Parameters	**Units**	**EPA MCL** May 2016	**EPA Tapwater** May 2016	**Criteria Used** May 2016							
VOCs											
1,1,1,2-Tetrachloroethane	ug/L	--	0.57	0.57	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	ug/L	200	8000	200	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	5	0.28	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	--	2.8	2.8	1.0 U	1.0 U	**9.1**	**9.2**	**6.2**	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	7	280	7	1.0 U	1.0 U	**33**	**33**	**29**	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	70	1.2	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.2	0.00033	0.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.05	0.0075	0.05	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	600	300	600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	5	0.17	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	5	0.44	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	75	0.48	75	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	--	5600	5600	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	ug/L	--	38	38	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methyl isobutyl ketone (MIBK)	ug/L	--	6300	6300	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	ug/L	--	14000	14000	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	5	0.46	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	80	0.13	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	80	3.3	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	--	7.5	7.5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	--	810	810	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	ug/L	5	0.46	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	100	78	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	--	21000	21000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	80	0.22	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	--	190	190	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	70	36	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	--	13000	13000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/L	80	0.87	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	--	200	200	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	700	1.5	700	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropyl benzene	ug/L	--	450	450	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl acetate	ug/L	--	20000	20000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl cyclohexane	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	ug/L	--	14	14	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/L	5	11	5	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	ug/L	100	1200	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	5	11	5	**53**	**49**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1000	1100	1000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	100	360	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	5	0.49	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L	--	5200	5200	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	ug/L	--	55000	55000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	ug/L	2	0.019	2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	10000	190	10000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Table 4

Groundwater Analytical Results Summary
Remedial Site Investigation
Bluewater Thermal Solution Site
Fountain Inn, South Carolina

Sample Location:					**MW-5-2016**	**MW-5_2016**	**MW-6-2016**	**MW-6-2016**	**MW-6_2016**	**MW-7_2016**	**MW-8_2016**
Sample ID:					**GW-077150-110816-TBM-108**	**GW-077150-011618-DJB-005**	**GW-077150-110816-TBM-105**	**GW-077150-110816-TBM-106**	**GW-077150-011618-DJB-003**	**GW-077150-011618-DJB-007**	**GW-077150-011618-DJB-006**
Sample Date:					**11/8/2016**	**1/16/2018**	**11/8/2016**	**11/8/2016 (Duplicate)**	**1/16/2018**	**1/16/2018**	**1/16/2018**
Parameters	**Units**	**EPA MCL** May 2016	**EPA Tapwater** May 2016	**Criteria Used** May 2016							
SVOCs											
bis(2-Chloroisopropyl) ether	ug/L	--	710	710	10 U	--	10 U	10 U	--	--	--
2,4,5-Trichlorophenol	ug/L	--	1200	1200	25 U	--	25 U	25 U	--	--	--
2,4,6-Trichlorophenol	ug/L	--	4.1	4.1	10 U	--	10 U	10 U	--	--	--
2,4-Dichlorophenol	ug/L	--	46	46	10 UJ	--	10 UJ	10 UJ	--	--	--
2,4-Dimethylphenol	ug/L	--	360	360	10 UJ	--	10 UJ	10 UJ	--	--	--
2,4-Dinitrophenol	ug/L	--	39	39	25 U	--	25 U	25 U	--	--	--
2,4-Dinitrotoluene	ug/L	--	0.24	0.24	10 U	--	10 U	10 U	--	--	--
2,6-Dinitrotoluene	ug/L	--	0.049	0.049	10 U	--	10 U	10 U	--	--	--
2-Chloronaphthalene	ug/L	--	750	750	10 U	--	10 U	10 U	--	--	--
2-Chlorophenol	ug/L	--	91	91	10 U	--	10 U	10 U	--	--	--
2-Methylnaphthalene	ug/L	--	36	36	10 U	--	10 U	10 U	--	--	--
2-Methylphenol	ug/L	--	930	930	10 UJ	--	10 UJ	10 UJ	--	--	--
2-Nitroaniline	ug/L	--	190	190	25 U	--	25 U	25 U	--	--	--
2-Nitrophenol	ug/L	--	--	--	10 U	--	10 U	10 U	--	--	--
3,3'-Dichlorobenzidine	ug/L	--	0.13	0.13	10 U	--	10 U	10 U	--	--	--
3-Nitroaniline	ug/L	--	--	--	25 U	--	25 U	25 U	--	--	--
4,6-Dinitro-2-methylphenol	ug/L	--	1.5	1.5	25 U	--	25 U	25 U	--	--	--
4-Bromophenyl phenyl ether	ug/L	--	--	--	10 U	--	10 U	10 U	--	--	--
4-Chloro-3-methylphenol	ug/L	--	1400	1400	10 U	--	10 U	10 U	--	--	--
4-Chloroaniline	ug/L	--	0.37	0.37	10 U	--	10 U	10 U	--	--	--
4-Chlorophenyl phenyl ether	ug/L	--	--	--	10 U	--	10 U	10 U	--	--	--
4-Methylphenol	ug/L	--	1900	1900	10 U	--	10 U	10 U	--	--	--
4-Nitroaniline	ug/L	--	3.8	3.8	25 U	--	25 U	25 U	--	--	--
4-Nitrophenol	ug/L	--	--	--	25 U	--	25 U	25 U	--	--	--
Acenaphthene	ug/L	--	530	530	10 U	--	10 U	10 U	--	--	--
Acetophenone	ug/L	--	1900	1900	10 U	--	10 U	10 U	--	--	--
Anthracene	ug/L	--	1800	1800	10 U	--	10 U	10 U	--	--	--
Atrazine	ug/L	3	0.3	3	10 U	--	10 U	10 U	--	--	--
Benzaldehyde	ug/L	--	19	19	10 U	--	10 U	10 U	--	--	--
Benzo(a)anthracene	ug/L	--	0.012	0.012	10 U	--	10 U	10 U	--	--	--
Benzo(a)pyrene	ug/L	0.2	0.0034	0.2	10 U	--	10 U	10 U	--	--	--
Benzo(b)fluoranthene	ug/L	--	0.034	0.034	10 U	--	10 U	10 U	--	--	--
Benzo(g,h,i)perylene	ug/L	--	--	--	10 U	--	10 U	10 U	--	--	--
Benzo(k)fluoranthene	ug/L	--	0.34	0.34	10 U	--	10 U	10 U	--	--	--
Biphenyl (1,1-Biphenyl)	ug/L	--	0.83	0.83	10 U	--	10 U	10 U	--	--	--
bis(2-Chloroethoxy)methane	ug/L	--	59	59	10 U	--	10 U	10 U	--	--	--
bis(2-Chloroethyl)ether	ug/L	--	0.014	0.014	10 U	--	10 U	10 U	--	--	--
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	6	5.6	6	10 U	--	10 U	10 U	--	--	--
Butyl benzylphthalate (BBP)	ug/L	--	16	16	10 U	--	10 U	10 U	--	--	--
Caprolactam	ug/L	--	9900	9900	10 U	--	10 U	10 U	--	--	--
Carbazole	ug/L	--	--	--	10 U	--	10 U	10 U	--	--	--
Chrysene	ug/L	--	3.4	3.4	10 U	--	10 U	10 U	--	--	--
Dibenz(a,h)anthracene	ug/L	--	0.0034	0.0034	10 U	--	10 U	10 U	--	--	--
Dibenzofuran	ug/L	--	7.9	7.9	10 U	--	10 U	10 U	--	--	--
Diethyl phthalate	ug/L	--	15000	15000	10 U	--	10 U	10 U	--	--	--
Dimethyl phthalate	ug/L	--	--	--	10 U	--	10 U	10 U	--	--	--
Di-n-butylphthalate (DBP)	ug/L	--	900	900	10 U	--	10 U	10 U	--	--	--
Di-n-octyl phthalate (DnOP)	ug/L	--	200	200	10 U	--	10 U	10 U	--	--	--
Fluoranthene	ug/L	--	800	800	10 U	--	10 U	10 U	--	--	--
Fluorene	ug/L	--	290	290	10 U	--	10 U	10 U	--	--	--
Hexachlorobenzene	ug/L	1	0.0098	1	10 U	--	10 U	10 U	--	--	--
Hexachlorobutadiene	ug/L	--	0.14	0.14	10 UJ	--	10 UJ	10 UJ	--	--	--
Hexachlorocyclopentadiene	ug/L	50	0.41	50	10 U	--	10 U	10 U	--	--	--
Hexachloroethane	ug/L	--	0.33	0.33	10 U	--	10 U	10 U	--	--	--
Indeno(1,2,3-cd)pyrene	ug/L	--	0.034	0.034	10 U	--	10 U	10 U	--	--	--
Isophorone	ug/L	--	78	78	10 U	--	10 U	10 U	--	--	--
Naphthalene	ug/L	--	0.17	0.17	10 U	--	10 U	10 U	--	--	--
Nitrobenzene	ug/L	--	0.14	0.14	10 U	--	10 U	10 U	--	--	--
N-Nitrosodi-n-propylamine	ug/L	--	0.011	0.011	10 U	--	10 U	10 U	--	--	--
N-Nitrosodiphenylamine	ug/L	--	12	12	10 U	--	10 U	10 U	--	--	--
Pentachlorophenol	ug/L	1	0.041	1	25 U	--	25 U	25 U	--	--	--
Phenanthrene	ug/L	--	--	--	10 U	--	10 U	10 U	--	--	--
Phenol	ug/L	--	5800	5800	10 U	--	10 U	10 U	--	--	--
Pyrene	ug/L	--	120	120	10 U	--	10 U	10 U	--	--	--

Table 4

Groundwater Analytical Results Summary
Remedial Site Investigation
Bluewater Thermal Solution Site
Fountain Inn, South Carolina

Sample Location:					**MW-5-2016**	**MW-5_2016**	**MW-6-2016**	**MW-6-2016**	**MW-6_2016**	**MW-7_2016**	**MW-8_2016**
Sample ID:					**GW-077150-110816-TBM-108**	**GW-077150-011618-DJB-005**	**GW-077150-110816-TBM-105**	**GW-077150-110816-TBM-106**	**GW-077150-011618-DJB-003**	**GW-077150-011618-DJB-007**	**GW-077150-011618-DJB-006**
Sample Date:					**11/8/2016**	**1/16/2018**	**11/8/2016**	**11/8/2016 (Duplicate)**	**1/16/2018**	**1/16/2018**	**1/16/2018**
Parameters	**Units**	**EPA MCL** May 2016	**EPA Tapwater** May 2016	**Criteria Used** May 2016							
Metals											
Aluminum	ug/L	--	20000	20000	273	--	374	365	--	--	--
Antimony	ug/L	6	7.8	6	20.0 U	--	20.0 U	20.0 U	--	--	--
Arsenic	ug/L	10	0.052	10	10.0 U	--	10.0 U	10.0 U	--	--	--
Barium	ug/L	2000	3800	2000	63.4	--	137	136	--	--	--
Beryllium	ug/L	4	25	4	5.00 U	--	5.00 U	5.00 U	--	--	--
Cadmium	ug/L	5	9.2	5	5.00 U	--	5.00 U	5.00 U	--	--	--
Calcium	ug/L	--	--	--	631	--	761	766	--	--	--
Chromium	ug/L	100	--	100	10.0 U	--	10.0 U	10.0 U	--	--	--
Cobalt	ug/L	--	6	6	20.0 U	--	20.0 U	20.0 U	--	--	--
Copper	ug/L	1300	800	1300	10.0 U	--	10.0 U	10.0 U	--	--	--
Iron	ug/L		14000	14000	100 U	--	100 U	100 U	--	--	--
Lead	ug/L	--	15	15	5.00 U	--	5.00 U	5.00 U	--	--	--
Magnesium	ug/L	--	--	--	620	--	1810	1790	--	--	--
Manganese	ug/L	--	430	430	145	--	240	241	--	--	--
Mercury	ug/L	2	0.63	2	0.200 U	--	0.200 U	0.200 U	--	--	--
Nickel	ug/L	--	390	390	20.0 U	--	20.0 U	20.0 U	--	--	--
Potassium	ug/L	--	--	--	2550	--	5600	5620	--	--	--
Selenium	ug/L	50	100	50	10.0 U	--	10.0 U	10.0 U	--	--	--
Silver	ug/L	--	94	94	10.0 U	--	10.0 U	10.0 U	--	--	--
Sodium	ug/L	--	--	--	1220 J	--	52400 J	51600 J	--	--	--
Thallium	ug/L	2	0.2	2	10.0 U	--	10.0 U	10.0 U	--	--	--
Vanadium	ug/L	--	86	86	10.0 U	--	10.0 U	10.0 U	--	--	--
Zinc	ug/L	--	6000	6000	20.0 U	--	20.0 U	20.0 U	--	--	--

Notes:
U Not detected at the associated reporting limit.
J Estimated concentration.
UJ Not detected; associated reporting limit is estimated.
R Rejected.
Screening value USEPA RSL - Maximum Contaminant Levels (MCL) or Tapwa
Bold, red and highlighted value represent exceedance of the s

Table 5

Soil Gas Analytical Results Summary
Former Bluewater Thermal Solutions Site
Fountain Inn, South Carolina

Sample Location:			***100 Hunts Bridge Rd***	***100 Hunts Bridge Rd***	***100 Hunts Bridge Rd***	***100 Hunts Bridge Rd***
Sample ID:			***SG-1***	***SG-2***	***SG-3***	***SG-4***
Sample Date:			***1/4/2018***	***1/4/2018***	***1/4/2018***	***1/4/2018***
Sample Depth (ft):			***7***	***7***	***7***	***7***
Parameters	***Units***	***Target Sub-Slab and Exterior soil Gas Concentrations*** [1]				
Detected VOCs		AF= 0.03				
Benzene	ug/m3	5.20E+02	20	20	3.2 U	
Carbon disulfide	ug/m4	1.00E+05	70	110	6.4	7.5
Chloroform (Trichloromethane)	ug/m3	1.80E+02	10	37	100	8.0 U
1,1-Dichloroethane	ug/m3	2.60E+03	8.2 U	8.2 U	4.1 U	34
1,1-Dichloroethene	ug/m3	2.90E+04	8.0 U	8.0 U	4.0 U	37
Ethylbenzene	ug/m4	1.60E+03	9.7	24	4.4 U	4.4 U
Tetrachloroethene	ug/m3	5.80E+03	170	**9200**	6.9 U	610
Toluene	ug/m3	7.30E+05	86	150	20	25
1,1,1-Trichlorothane	ug/m4	7.30E+05	11 U	11 U	7.8	55
Trichloroethene	ug/m3	2.90E+02	11 U	240	5.5 U	6.3
1,2,4-Trimethylbenzene	ug/m3	8.80E+03	10	11	5.8	5.0 U
m&p-Xylenes	ug/m3	1.50E+04	31	74	11	12
o-Xylene	ug/m3	1.50E+04	12	24	4.5	4.9

Notes:

8.2 U - Not detected at the associated reporting limit.

9200 - Bold values exceed the Target Sub-Slab and Exterior Soil Gas concentration under commercial exposure scenario

NV - No value established on the RSL calculator

NC - Not calculated, screening levels were only calculated for compounds detected in the vapor samples

[1] Calculated using Vapor Intrusion Screening Level (VISL) Calculator, June 2017 USEPA VISL, Version 3.5

(THQ = 1, AF = 0.03 and Target risk for carcinogens = 10^{-5})

Appendices

Appendix A
Stratigraphic and Well Construction Logs and Well Development Forms

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: BODYCOATE THERMAL PROCESSING, INC
PROJECT NUMBER: 077150
CLIENT: LIPPES, MATHIAS, WEXLER & FRIEDMAN LLP
LOCATION: FOUNTAIN INN, SC

HOLE DESIGNATION: MW-7-18/TW-5
DATE COMPLETED: January 3, 2018
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: D. BRYTOWSKI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	SC-CLAY/SAND (residuum), stiff, red/brown/tan mottled, moist		CONCRETE	1HA				
2			2" PVC WELL CASING					
4								
6			CEMENT GROUT	2DP		100		0.3
8			8" BOREHOLE					
10	SM-SILT/SAND (residuum), dense, tan, moist - micaceous saprolite, white/tan/gray, very moist at 10.2ft BGS	9.30	BENTONITE CHIPS	3DP		100		0.3
12								
14				4DP		100		0.3
16								
18	- saturated at 17.5ft BGS		2" PVC WELL SCREEN	5DP		95		0.3
20			SAND PACK					
22				6DP		100		0.3
24								
26				7DP		100		NA
28	END OF BOREHOLE @ 28.0ft BGS	28.00						
30								
32								
34								

WELL DETAILS
Screened interval:
16.20 to 26.20ft BGS
Length: 10ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Seal:
9.20 to 13.00ft BGS
Material: BENTONITE CHIPS
Sand Pack:

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

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: BODYCOATE THERMAL PROCESSING, INC
PROJECT NUMBER: 077150
CLIENT: LIPPES, MATHIAS, WEXLER & FRIEDMAN LLP
LOCATION: FOUNTAIN INN, SC

HOLE DESIGNATION: MW-7-18/TW-5
DATE COMPLETED: January 3, 2018
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: D. BRYTOWSKI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
36			13.00 to 28.00ft BGS Material: SAND					
38								
40								
42								
44								
46								
48								
50								
52								
54								
56								
58								
60								
62								
64								
66								
68								

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

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: BODYCOATE THERMAL PROCESSING, INC
PROJECT NUMBER: 077150
CLIENT: LIPPES, MATHIAS, WEXLER & FRIEDMAN LLP
LOCATION: FOUNTAIN INN, SC

HOLE DESIGNATION: MW-8-18/TW-6
DATE COMPLETED: January 3, 2018
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: D. BRYTOWSKI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITORING WELL	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
2	SM-SILT/SAND (FILL), dense, brown, low moisture	1.10	CONCRETE	1DP		93		0.2
4	SC-CLAY/SAND (residuum), stiff, red/brown/tan, moist		2" PVC WELL CASING					
6			CEMENT GROUT	2DP		100		0.2
8		7.70	8" BOREHOLE					
10	SM-SAND/SILT (residuum), dense, tan, moist			3DP		100		0.3
12								
14			BENTONITE CHIPS	4DP		100		0.3
16	SAPROLITE	15.30						
18	- saturated at 18.0ft BGS			5DP		98		0.2
20			2" PVC WELL SCREEN					
22			SAND PACK	6DP				NA
24								
26				7DP				NA
28	END OF BOREHOLE @ 28.0ft BGS	28.00						
30								
32								
34								

WELL DETAILS
Screened interval:
18.00 to 28.00ft BGS
Length: 10ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Seal:
11.60 to 16.00ft BGS

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

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: BODYCOATE THERMAL PROCESSING, INC
PROJECT NUMBER: 077150
CLIENT: LIPPES, MATHIAS, WEXLER & FRIEDMAN LLP
LOCATION: FOUNTAIN INN, SC

HOLE DESIGNATION: MW-8-18/TW-6
DATE COMPLETED: January 3, 2018
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: D. BRYTOWSKI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
36			Material: BENTONITE CHIPS Sand Pack: 16.00 to 29.00ft BGS Material: SAND					
38								
40								
42								
44								
46								
48								
50								
52								
54								
56								
58								
60								
62								
64								
66								
68								

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

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: BODYCOATE THERMAL PROCESSING, INC
PROJECT NUMBER: 077150
CLIENT: LIPPES, MATHIAS, WEXLER & FRIEDMAN LLP
LOCATION: FOUNTAIN INN, SC

HOLE DESIGNATION: TW-1
DATE COMPLETED: January 3, 2018
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: D. BRYTOWSKI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	SM-SAND/SILT (FILL), dense, tan/brown, low moisture							
		1.20						
2	SM-SILT/SAND (residuum), dense, tan, moist			1DP		95		0.3
4								
6			1" PVC WELL CASING	2DP		55		0.3
8								
10			ABANDONED AND BACKFILLED WITH CEMENT GROUT	3DP		100		0.2
12								
14	SAPROLITE	13.70		4DP		100		0.3
16								
18	- saturated at 18.0ft BGS			5DP		100		0.4
20								
22				6DP		100		0.4
24								
26			1" PVC WELL SCREEN	7DP		100		--
28	END OF BOREHOLE @ 28.0ft BGS	28.00						
30								
32								
34								

WELL DETAILS
Screened interval:
23.00 to 28.00ft BGS
Length: 5ft
Diameter: 1in
Slot Size: 0.010
Material: PVC
Seal:
0.00 to 28.00ft BGS
Material: CEMENT GROUT

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

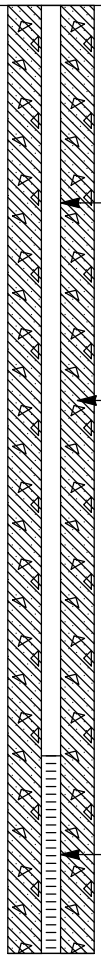
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: BODYCOATE THERMAL PROCESSING, INC
PROJECT NUMBER: 077150
CLIENT: LIPPES, MATHIAS, WEXLER & FRIEDMAN LLP
LOCATION: FOUNTAIN INN, SC

HOLE DESIGNATION: TW-2
DATE COMPLETED: January 3, 2018
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: D. BRYTOWSKI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS
	TOPSOIL	0.60
2	SM-SILT/SAND (FILL), dense, brown moist	2.20
4	SC-CLAY/SAND (residuum), dense, red/brown/tan mottled, moist	
6		6.70
8	SM-SAND/SILT (residuum), dense, tan/brown, moist	
10		
12		13.20
14	SAPROLITE, micaceous, light gray/white	
16		
18		18.50
20	SC-CLAY/SAND (residuum), soft, gray, saturated	
22		
24	END OF BOREHOLE @ 24.0ft BGS	24.00
26		
28		
30		
32		
34		

BOREHOLE



WELL DETAILS
Screened interval:
19.00 to 24.00ft BGS
Length: 5ft
Diameter: 1in
Slot Size: 0.010
Material: PVC
Seal:
0.00 to 24.00ft BGS
Material: CEMENT GROUT

SAMPLE NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
1DP		93		0.3
2DP		100		0.3
3DP		100		0.3
4DP		100		0.3
5DP		100		0.3
6DP		100		0.3

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

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: BODYCOATE THERMAL PROCESSING, INC
PROJECT NUMBER: 077150
CLIENT: LIPPES, MATHIAS, WEXLER & FRIEDMAN LLP
LOCATION: FOUNTAIN INN, SC

HOLE DESIGNATION: TW-3
DATE COMPLETED: January 2, 2018
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: D. BRYTOWSKI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	GP-GRAVEL, parking lot	0.50						
2	SM-SAND/SILT (residuum), dense, tan, moist			1DP		98		0.0
4		4.00						
6	SC-SAND/CLAY (residuum), stiff, tan/orange mottled, very moist		1" PVC WELL CASING	2DP		100		0.0
8								
10			ABANDONED AND BACKFILLED WITH CEMENT GROUT	3DP		98		0.0
12								
14	SM-SAND/SILT (residuum), micaceous saprolite, dense, white/gray, very moist	14.00		4DP		93		0.0
16								
18				5DP		98		0.5
20								
22	- saturated at 21.8ft BGS			6DP		100		0.4
24								
26			1" PVC WELL SCREEN	7DP		100		--
28	END OF BOREHOLE @ 28.0ft BGS	28.00						
30								
32								
34								

WELL DETAILS
Screened interval:
23.00 to 28.00ft BGS
Length: 5ft
Diameter: 1in
Slot Size: 0.010
Material: PVC
Seal:
0.00 to 28.00ft BGS
Material: CEMENT GROUT

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

OVERBURDEN LOG 077150-WI.GPJ GHD_Corp 1/29/18

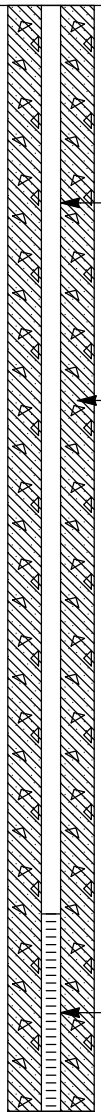
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: BODYCOATE THERMAL PROCESSING, INC
PROJECT NUMBER: 077150
CLIENT: LIPPES, MATHIAS, WEXLER & FRIEDMAN LLP
LOCATION: FOUNTAIN INN, SC

HOLE DESIGNATION: TW-4
DATE COMPLETED: January 3, 2018
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: D. BRYTOWSKI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS
0	SM-SAND/SILT (FILL), dense, brown, low moisture	
2		2.20
	SM-SAND/SILT (residuum, dense, brown	3.10
4	SC-CLAY/SAND (residuum), stiff, red/brown mottled, moist	
6		
8		
10		
12		11.30
	SM-SILT/SAND (residuum), dense, tan/white/gray, moist	
14		
16		
18	- saturated at 18.0ft BGS	
20		
22		
24		23.40
	SAPROLITE, micaceous	
26		
28		28.00
	END OF BOREHOLE @ 28.0ft BGS	
30		
32		
34		

BOREHOLE



WELL DETAILS
Screened interval:
23.00 to 28.00ft BGS
Length: 5ft
Diameter: 1in
Slot Size: 0.010
Material: PVC
Seal:
0.00 to 28.00ft BGS
Material: CEMENT GROUT

SAMPLE NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
1DP		80		0.3
2DP		100		0.2
3DP		98		0.2
4DP		100		0.2
5DP		100		0.1
6DP		100		0.2
7DP		100		--

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

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: BODYCOATE THERMAL PROCESSING, INC
PROJECT NUMBER: 077150
CLIENT: LIPPES, MATHIAS, WEXLER & FRIEDMAN LLP
LOCATION: FOUNTAIN INN, SC

HOLE DESIGNATION: TW-7
DATE COMPLETED: January 3, 2018
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: D. BRYTOWSKI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	GP-GRAVEL (FILL)							
	SC-CLAY/SAND (FILL), stiff, tan, moist	1.00						
2				1DP		93		0.3
	- 2" debris, black staining at 3.6ft BGS							
4	SC-CLAY/SAND (residuum), stiff, brown, moist	4.00	1" PVC WELL CASING					
6	- gray/red/brown mottled at 5.8ft BGS			2DP		100		0.2
8								
10			ABANDONED AND BACKFILLED WITH CEMENT GROUT	3DP		100		0.2
12								
14	SM-SAND/SILT (residuum), saprolite, dense, brown/tan/gray, very moist	14.20		4DP		100		0.3
16								
18				5DP		100		0.3
20	- saturated at 20.1ft BGS							
22				6DP		100		0.3
24								
26			1" PVC WELL SCREEN	7DP		100		--
28	END OF BOREHOLE @ 28.0ft BGS	28.00						
30								
32								
34								

WELL DETAILS
Screened interval:
23.00 to 28.00ft BGS
Length: 5ft
Diameter: 1in
Slot Size: 0.010
Material: PVC
Seal:
0.00 to 28.00ft BGS
Material: CEMENT GROUT

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

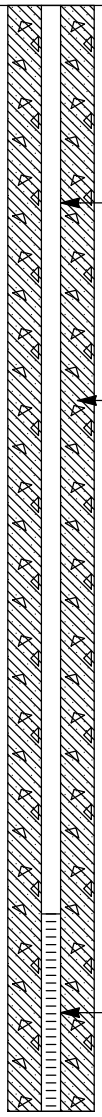
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: BODYCOATE THERMAL PROCESSING, INC
PROJECT NUMBER: 077150
CLIENT: LIPPES, MATHIAS, WEXLER & FRIEDMAN LLP
LOCATION: FOUNTAIN INN, SC

HOLE DESIGNATION: TW-8
DATE COMPLETED: January 4, 2018
DRILLING METHOD: DIRECT PUSH
FIELD PERSONNEL: D. BRYTOWSKI

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS
0	SM-SILT/SAND (FILL), dense, brown, low moisture	
2		
4	- 2" debris, black at 3.6ft BGS	
6	SM-SAND/SILT (residuum), micaceous, dense, tan	5.70
8		
10		
12		12.50
14	SM-SAND/SILT (residuum), micaceous, saprolite, dense, light gray/tan, increase in moisture	
16		
18		
20		
22		
24	- saturated at 24.0ft BGS	
26		
28	END OF BOREHOLE @ 28.0ft BGS	28.00
30		
32		
34		

BOREHOLE



WELL DETAILS
Screened interval:
23.00 to 28.00ft BGS
Length: 5ft
Diameter: 1in
Slot Size: 0.010
Material: PVC
Seal:
0.00 to 28.00ft BGS
Material: CEMENT GROUT

SAMPLE NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
1DP		75		0.1
2DP		93		0.0
3DP		95		0.1
4DP		100		0.1
5DP		100		0.3
6DP		90		0.2
7DP		95		--

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

PROJECT #: 77150 PROJECT NAME: Bluewater Thermal Solutions DATE: 1/15/2018

WELL ID: MW-1D FIELD PERSONNEL: David Brytowski

WELL DIAMETER	2	in
WELL DEPTH	60.07	m/ft
STATIC DEPTH TO WATER	21.95	m/ft
WATER COLUMN HEIGHT	38.12	m/ft
CASING VOLUME	6.22	L/gal
MEASURING REFERENCE POINT	TOC	

Well Diameter (in)	Casing Volume (L/m)	Casing Volume (US gallon/foot)
1.5	1.14	0.09
2	2.03	0.16
4	8.11	0.65
6	18.24	1.47

PURGING AND SAMPLING EQUIPMENT

DEDICATED PURGING EQUIPMENT? YES (NO) DEDICATED SAMPLING EQUIPMENT? (YES) NO

PURGING DEVICE	D	A - INERTIAL PUMP (WATERRA®)	B - BAILER	C - PERISTALTIC PUMP	D - SUBMERSIBLE PUMP	X -
SAMPLING DEVICE	C	E - BLADDER PUMP	F - PURGE PUMP	G - DIPPER BOTTLE	H - GAS LIFT PUMP	OTHER (SPECIFY)
PURGING MATERIAL	A	A - POLYETHYLENE	B - TEFLON	C - PVC	D - POLYPROPYLENE	X -
SAMPLING MATERIAL	A	E - STAINLESS STEEL				OTHER (SPECIFY)
TUBING PURGING	A	A - POLYETHYLENE	B - TEFLON	C - TYGON	D - POLYPROPYLENE	X -
TUBING SAMPLING	A	E - SILICONE	F - ROPE	G - COMBINATION TEFLON/POLYPROPYLENE		OTHER (SPECIFY)
FILTERING DEVICES	-	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	PORE SIZE :	

DEVELOPMENT/PURGING FIELD MEASUREMENTS ARE RECORDED ON PAGE 2.

SAMPLING INFORMATION

SAMPLE DATE/TIME: 1/15/18 @ 10:30

WEATHER CONDITIONS AT TIME OF SAMPLING: Dusk 25 degrees Farenheit

SAMPLE ID: GW-077150-011718-DJB-010

SAMPLE WAS FILTERED FOR (ANALYSIS): No

SAMPLE APPEARANCE: Clear

FIELD MEASUREMENTS

DATE	TIME	VOLUME	TEMPERATURE	CONDUCTIVITY	pH	TURBIDITY	COLOUR	ODOUR	COMMENTS
	Units:	*(US gal)*	*(°C)*	*(mS/cm)*	-	*(NTU)*	-	-	-
	Stabilization:	-		±10%	±0.1 units	<5	-	-	-
1/15/2018		10	19.24	0.431	11.49	MAX	-	-	
		20	18.65	0.334	11.46	MAX	-	-	
		30	17.58	0.197	10.91	MAX	-	-	
		35	18.76	0.062	9.99	14.9	-	-	
		45	18.94	0.159	10.22	23.1	-	-	

PROJECT #: 77150 PROJECT NAME: Bluewater Thermal Solutions DATE: 1/15/2018

WELL ID: MW-7 FIELD PERSONNEL: David Brytowski

WELL DIAMETER	2	in
WELL DEPTH	28.6	m/ft
STATIC DEPTH TO WATER	21.58	m/ft
WATER COLUMN HEIGHT	7.02	m/ft
CASING VOLUME	1.15	L/gal
MEASURING REFERENCE POINT	TOC (2.45)	

Well Diameter (in)	Casing Volume (L/m)	Casing Volume (US gallon/foot)
1.5	1.14	0.09
2	2.03	0.16
4	8.11	0.65
6	18.24	1.47

PURGING AND SAMPLING EQUIPMENT

DEDICATED PURGING EQUIPMENT? YES (NO) DEDICATED SAMPLING EQUIPMENT? (YES) NO

PURGING DEVICE	D	A - INERTIAL PUMP (WATERRA®)	B - BAILER	C - PERISTALTIC PUMP	D - SUBMERSIBLE PUMP	X -
SAMPLING DEVICE	C	E - BLADDER PUMP	F - PURGE PUMP	G - DIPPER BOTTLE	H - GAS LIFT PUMP	OTHER (SPECIFY)
PURGING MATERIAL	A	A - POLYETHYLENE	B - TEFLON	C - PVC	D - POLYPROPYLENE	X -
SAMPLING MATERIAL	A	E - STAINLESS STEEL				OTHER (SPECIFY)
TUBING PURGING	A	A - POLYETHYLENE	B - TEFLON	C - TYGON	D - POLYPROPYLENE	X -
TUBING SAMPLING	A	E - SILICONE	F - ROPE	G - COMBINATION TEFLON/POLYPROPYLENE		OTHER (SPECIFY)
FILTERING DEVICES	-	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	PORE SIZE :	

DEVELOPMENT/PURGING FIELD MEASUREMENTS ARE RECORDED ON PAGE 2.

SAMPLING INFORMATION

SAMPLE DATE/TIME: 1/16/18 @ 14:45

WEATHER CONDITIONS AT TIME OF SAMPLING: Dusk 25 degrees Farenheit

SAMPLE ID: GW-077150-011618-DJB-007

SAMPLE WAS FILTERED FOR (ANALYSIS): No

SAMPLE APPEARANCE: Clear

FIELD MEASUREMENTS

DATE	TIME	VOLUME	TEMPERATURE	CONDUCTIVITY	pH	TURBIDITY	COLOUR	ODOUR	COMMENTS
	Units:	*(US gal)*	*(°C)*	*(mS/cm)*	-	*(NTU)*	-	-	-
	Stabilization:	-		±10%	±0.1 units	<5	-	-	-
1/15/2018		5	18.27	0.047	5.11	MAX	-	-	
		10	18.45	0.047	4.65	MAX	-	-	
		15	18.67	0.045	4.48	MAX	-	-	
		20	18.81	0.045	4.58	MAX	-	-	

PROJECT #: 77150 PROJECT NAME: Bluewater Thermal Solutions DATE: 1/15/2018

WELL ID: MW-8 FIELD PERSONNEL: David Brytowski

WELL DIAMETER	2	in
WELL DEPTH	27.2	m/ft
STATIC DEPTH TO WATER	20.41	m/ft
WATER COLUMN HEIGHT	6.79	m/ft
CASING VOLUME	1.11	L/gal
MEASURING REFERENCE POINT	TOC	

Well Diameter (in)	Casing Volume (L/m)	Casing Volume (US gallon/foot)
1.5	1.14	0.09
2	2.03	0.16
4	8.11	0.65
6	18.24	1.47

PURGING AND SAMPLING EQUIPMENT

DEDICATED PURGING EQUIPMENT? YES (NO) DEDICATED SAMPLING EQUIPMENT? YES (NO)

PURGING DEVICE	D	A - INERTIAL PUMP (WATERRA®)	B - BAILER	C - PERISTALTIC PUMP	D - SUBMERSIBLE PUMP	X -
SAMPLING DEVICE	C	E - BLADDER PUMP	F - PURGE PUMP	G - DIPPER BOTTLE	H - GAS LIFT PUMP	OTHER (SPECIFY)
PURGING MATERIAL	A	A - POLYETHYLENE	B - TEFLON	C - PVC	D - POLYPROPYLENE	X -
SAMPLING MATERIAL	A	E - STAINLESS STEEL				OTHER (SPECIFY)
TUBING PURGING	A	A - POLYETHYLENE	B - TEFLON	C - TYGON	D - POLYPROPYLENE	X -
TUBING SAMPLING	A	E - SILICONE	F - ROPE	G - COMBINATION TEFLON/POLYPROPYLENE		OTHER (SPECIFY)
FILTERING DEVICES	-	A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	PORE SIZE :	

DEVELOPMENT/PURGING FIELD MEASUREMENTS ARE RECORDED ON PAGE 2.

SAMPLING INFORMATION

SAMPLE DATE/TIME: 1/16/18 @ 13:45

WEATHER CONDITIONS AT TIME OF SAMPLING: Dusk 25 degrees Farenheit

SAMPLE ID: GW-077150-011618-DJB-006

SAMPLE WAS FILTERED FOR (ANALYSIS): No

SAMPLE APPEARANCE: Clear

FIELD MEASUREMENTS

DATE	TIME	VOLUME	TEMPERATURE	CONDUCTIVITY	pH	TURBIDITY	COLOUR	ODOUR	COMMENTS
	Units:	*(US gal)*	*(°C)*	*(mS/cm)*	-	*(NTU)*	-	-	-
	Stabilization:	-		±10%	±0.1 units	<5	-	-	-
1/15/2018		5	15.31	0.072	7.32	MAX	-	-	
		10	16.61	0.065	5.96	MAX	-	-	
		15	18.43	0.035	4.93	MAX	-	-	
		20	18.53	0.056	5.19	MAX	-	-	

Appendix B
Purging and Sampling Forms

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: Bluewater
Ref. No.: 77150
Date: January 17, 2018
Personnel: David Brytowski

Monitoring Well Data:

Well ID: **MW-1S**
Measured Well Depth (ft): 29.2
Screen Length (ft): 10
Well Diameter, D (in): 2
Total Volume in Well (gal): 1.04

Purging/Sampling Data:

Purging/Sampling Device: Peristaltic
Depth to Pump Intake (ft)[(1)]: 24
Initial Depth to Water (ft): 22.73
Total Volume Purged (gal): 1.1

Time	*Pumping Rate (mL/min)*	*Depth to Water (ft)*	*Drawdown from Initial Water Level [(3)] (ft)*	*Temperature °C*	*Conductivity (mS/cm)*	*Turbidity NTU*	*DO (mg/L)*	*pH*	*ORP (mV)*
			Precision Required:	***±3 %***	***±0.005 or 0.01 [(3)]***	***±10 %***	***±10 %***	***±0.1 Units***	***±10 mV***
8:15									
8:30	120	22.85	0.12	13.34	0.106	0.0	0.00	4.22	327
8:35	120	22.86	0.13	12.73	0.102	0.0	0.00	4.16	336
8:40	120	22.87	0.14	12.55	0.104	0.0	0.00	4.07	345
8:45	120	22.87	0.14	12.42	0.104	0.0	0.00	4.02	351
8:50/9:00	Sample Time		**GW-077150-011718-DJB-008/GW-077150-011718-DJB-009**						
			x2 VOAs w/ HCl		VOCs				

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(3) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: Bluewater

Ref. No.: 77150

Date: January 17, 2018

Personnel: David Brytowski

Monitoring Well Data:

Well ID: **MW-1D**

Measured Well Depth (ft): 60.07

Screen Length (ft): 5

Well Diameter, D (in): 2

Total Volume in Well (gal): 6.09

Purging/Sampling Data:

Purging/Sampling Device: Peristaltic

Depth to Pump Intake (ft)[(1)]: 56

Initial Depth to Water (ft): 22.02

Total Volume Purged (gal): 1.3

Time	*Pumping Rate (mL/min)*	*Depth to Water (ft)*	*Drawdown from Initial Water Level [(3)] (ft)*	*Temperature °C*	*Conductivity (mS/cm)*	*Turbidity NTU*	*DO (mg/L)*	*pH*	*ORP (mV)*
			Precision Required:	*±3 %*	*±0.005 or 0.01 [(3)]*	*±10 %*	*±10 %*	*±0.1 Units*	*±10 mV*
9:10									
9:30	110	22.44	0.42	12.01	0.101	0.0	8.80	7.46	178
9:35	110	22.44	0.42	11.98	0.101	0.0	8.00	7.76	171
9:40	110	22.45	0.43	11.96	0.102	0.0	6.61	8.17	165
9:45	110	22.45	0.43	11.82	0.102	0.0	6.22	8.33	161
9:50	110	22.45	0.43	11.76	0.103	0.0	6.37	8.39	159
10:30	Sample Time		**GW-077150-011718-DJB-010**						
			x6 VOAs w/ HCl, +MS/MSD		VOCs				

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(3) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: Bluewater

Ref. No.: 77150

Date: January 16, 2018

Personnel: David Brytowski

Monitoring Well Data:

Well ID: **MW-2**

Measured Well Depth (ft): 27.45

Screen Length (ft): 10

Well Diameter, D (in): 2

Total Volume in Well (gal): 1.18

Purging/Sampling Data:

Purging/Sampling Device: Peristaltic

Depth to Pump Intake (ft)[1]: 22

Initial Depth to Water (ft): 20.08

Total Volume Purged (gal): 1.6

Time	*Pumping Rate (mL/min)*	*Depth to Water (ft)*	*Drawdown from Initial Water Level [3] (ft)*	*Temperature °C*	*Conductivity (mS/cm)*	*Turbidity NTU*	*DO (mg/L)*	*pH*	*ORP (mV)*
			Precision Required:	*±3 %*	*±0.005 or 0.01 [3]*	*±10 %*	*±10 %*	*±0.1 Units*	*±10 mV*
9:15									
9:30	120	20.20	0.12	14.35	0.068	0.0	0.00	4.45	270
9:35	120	20.21	0.13	14.79	0.067	0.0	0.00	4.45	267
9:40	120	20.21	0.13	15.21	0.066	0.0	0.00	4.48	267
9:45	120	20.21	0.13	15.42	0.065	0.0	0.00	4.51	271
9:50	120	20.21	0.13	15.38	0.065	0.0	0.00	4.55	271
10:00	Sample Time		**GW-077150-011618-DJB-002**						
			x2 VOAs w/ HCl		VOCs				

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(3) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: Bluewater

Ref. No.: 77150

Date: January 16, 2018

Personnel: David Brytowski

Monitoring Well Data:

Well ID: **MW-3**

Measured Well Depth (ft): 27.53

Screen Length (ft): 10

Well Diameter, D (in): 2

Total Volume in Well (gal): 1.01

Purging/Sampling Data:

Purging/Sampling Device: Peristaltic

Depth to Pump Intake (ft)[(1)]: 24

Initial Depth to Water (ft): 21.24

Total Volume Purged (gal): 1.6

Time	*Pumping Rate (mL/min)*	*Depth to Water (ft)*	*Drawdown from Initial Water Level [(3)] (ft)*	*Temperature °C*	*Conductivity (mS/cm)*	*Turbidity NTU*	*DO (mg/L)*	*pH*	*ORP (mV)*
			Precision Required:	***±3 %***	***±0.005 or 0.01 [(3)]***	***±10 %***	***±10 %***	***±0.1 Units***	***±10 mV***
8:10									
8:35	100	21.35	0.11	10.67	0.084	0.0	0.00	4.07	250
8:40	100	21.35	0.11	11.44	0.074	0.0	0.00	4.07	246
8:45	100	21.35	0.11	12.21	0.060	0.0	0.00	4.04	244
8:50	100	21.36	0.12	12.90	0.049	0.0	0.00	4.00	244
8:55	100	21.31	0.07	13.11	0.046	0.0	0.00	4.25	246
9:00	100	21.36	0.12	13.20	0.440	0.0	0.00	4.31	247
9:05	100	21.36	0.12	13.33	0.440	0.0	0.00	4.22	249
9:10	Sample Time		**GW-077150-011618-DJB-001**						
			x2 VOAs w/ HCl		VOCs				

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(3) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: Bluewater
Ref. No.: 77150
Date: January 16, 2018
Personnel: David Brytowski

Monitoring Well Data:

Well ID: **MW-4**
Measured Well Depth (ft): 29.75
Screen Length (ft): 10
Well Diameter, D (in): 2
Total Volume in Well (gal): 1.02

Purging/Sampling Data:

Purging/Sampling Device: Peristaltic
Depth to Pump Intake (ft)[(1)]: 24
Initial Depth to Water (ft): 23.39
Total Volume Purged (gal): 1.2

Time	*Pumping Rate (mL/min)*	*Depth to Water (ft)*	*Drawdown from Initial Water Level [(3)] (ft)*	*Temperature °C*	*Conductivity (mS/cm)*	*Turbidity NTU*	*DO (mg/L)*	*pH*	*ORP (mV)*
			Precision Required:	***±3 %***	***±0.005 or 0.01 [(3)]***	***±10 %***	***±10 %***	***±0.1 Units***	***±10 mV***
11:10									
11:25	110	23.59	0.20	12.66	0.055	0.0	0.00	4.67	326
11:30	110	23.60	0.21	12.67	0.055	0.0	0.00	4.64	328
11:35	110	23.60	0.21	12.85	0.056	0.0	0.00	4.54	337
11:40	110	23.60	0.21	13.10	0.056	0.0	0.00	4.42	349
11:45	110	23.59	0.20	13.09	0.056	0.0	0.00	4.44	348
11:50	Sample Time		**GW-077150-011618-DJB-005**						
			x2 VOAs w/ HCl		VOCs				

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(3) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: Bluewater

Ref. No.: 77150

Date: November 8, 2016

Personnel: Terefe Mazengia

Monitoring Well Data:

Well ID: **MW-5**

Measured Well Depth (ft): 30.28

Screen Length (ft): 10

Well Diameter, D (in): 2

Total Volume in Well (gal): 0.95

Purging/Sampling Data:

Purging/Sampling Device: Peristaltic

Depth to Pump Intake (ft)[(1)]: 27

Initial Depth to Water (ft): 24.33

Total Volume Purged (gal): 0.8

Time	*Pumping Rate (mL/min)*	*Depth to Water (ft)*	*Drawdown from Initial Water Level [(3)] (ft)*	*Temperature °C*	*Conductivity (mS/cm)*	*Turbidity NTU*	*DO (mg/L)*	*pH*	*ORP (mV)*
			Precision Required:	***±3 %***	***±0.005 or 0.01 [(3)]***	***±10 %***	***±10 %***	***±0.1 Units***	***±10 mV***
12:35	100	24.42	0.09	18.30	0.045	0.0	4.68	6.29	183
12:40	100	24.58	0.25	18.80	0.043	0.0	3.17	4.90	292
12:45	100	24.62	0.29	19.20	0.042	0.0	3.05	4.78	308
12:50	100	24.62	0.29	19.40	0.042	0.0	3.01	4.76	310
12:55	100	24.65	0.32	19.80	.0.41	0.0	2.66	4.76	315
13:00	100	24.66	0.33	20.00	0.040	0.0	2.15	4.78	317
13:05	100	24.66	0.33	20.02	0.040	0.0	2.03	4.78	320
13:10	Sample Time		**GW-077150-110816-TBM-108**						
			x2 VOAs w/ HCl		VOCs				
			x2 1000 mL ambers		SVOCs				
			x1 250 mL plastic w/HNO3		TAL Metals				

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(3) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: Bluewater
Ref. No.: 77150
Date: January 16, 2018
Personnel: David Brytowski

Monitoring Well Data:

Well ID: **MW-6**
Measured Well Depth (ft): 29.92
Screen Length (ft): 10
Well Diameter, D (in): 2
Total Volume in Well (gal): 1.32

Purging/Sampling Data:

Purging/Sampling Device: Peristaltic
Depth to Pump Intake (ft)[(1)]: 24
Initial Depth to Water (ft): 21.65
Total Volume Purged (gal): 1.25

Time	*Pumping Rate (mL/min)*	*Depth to Water (ft)*	*Drawdown from Initial Water Level [(3)] (ft)*	*Temperature °C*	*Conductivity (mS/cm)*	*Turbidity NTU*	*DO (mg/L)*	*pH*	*ORP (mV)*
			Precision Required:	***±3 %***	***±0.005 or 0.01 [(3)]***	***±10 %***	***±10 %***	***±0.1 Units***	***±10 mV***
10:10									
10:30	120	21.96	0.31	13.24	0.332	0.0	0.00	4.56	318
10:35	120	21.96	0.31	13.53	0.329	0.0	0.00	4.57	319
10:40	120	21.97	0.32	13.91	0.327	0.0	0.00	4.67	317
10:45	120	21.97	0.32	14.02	0.324	0.0	0.00	4.70	316
10:50	Sample Time		**GW-077150-011618-DJB-003**						
			x2 VOAs w/ HCl		VOCs				

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(3) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: Bluewater

Ref. No.: 77150

Date: January 16, 2018

Personnel: David Brytowski

Monitoring Well Data:

Well ID: **MW-7**

Measured Well Depth (ft): 28.64

Screen Length (ft): 10

Well Diameter, D (in): 2

Total Volume in Well (gal): 1.13

Purging/Sampling Data:

Purging/Sampling Device: Peristaltic

Depth to Pump Intake (ft)[(1)]: 23

Initial Depth to Water (ft): 21.56

Total Volume Purged (gal): 1.42

Time	*Pumping Rate (mL/min)*	*Depth to Water (ft)*	*Drawdown from Initial Water Level [(3)] (ft)*	*Temperature °C*	*Conductivity (mS/cm)*	*Turbidity NTU*	*DO (mg/L)*	*pH*	*ORP (mV)*
			Precision Required:	***±3 %***	***±0.005 or 0.01 [(3)]***	***±10 %***	***±10 %***	***±0.1 Units***	***±10 mV***
13:55									
14:15	120	21.66	0.10	16.66	0.045	0.0	5.34	4.38	329
14:20	120	21.66	0.10	16.62	0.045	0.0	5.19	4.36	335
14:25	120	21.67	0.11	16.37	0.045	0.0	4.83	4.21	348
14:30	120	21.67	0.11	16.30	0.045	0.0	4.40	4.12	359
14:35	120	21.68	0.12	16.17	0.045	0.0	4.19	4.10	363
14:40	120	21.68	0.12	16.23	0.044	0.0	4.09	4.07	366
14:45	Sample Time		**GW-077150-011618-DJB-007**						
			x2 VOAs w/ HCl		VOCs				

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(3) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: Bluewater

Ref. No.: 77150

Date: January 16, 2018

Personnel: David Brytowski

Monitoring Well Data:

Well ID: **MW-8**

Measured Well Depth (ft): 27.25

Screen Length (ft): 10

Well Diameter, D (in): 2

Total Volume in Well (gal): 1.09

Purging/Sampling Data:

Purging/Sampling Device: Peristaltic

Depth to Pump Intake (ft)[(1)]: 23

Initial Depth to Water (ft): 20.43

Total Volume Purged (gal): 1.3

Time	*Pumping Rate (mL/min)*	*Depth to Water (ft)*	*Drawdown from Initial Water Level [(3)] (ft)*	*Temperature °C*	*Conductivity (mS/cm)*	*Turbidity NTU*	*DO (mg/L)*	*pH*	*ORP (mV)*
			Precision Required:	***±3 %***	***±0.005 or 0.01 [(3)]***	***±10 %***	***±10 %***	***±0.1 Units***	***±10 mV***
13:00									
13:15	120	20.71	0.28	17.55	0.052	0.0	2.04	4.50	258
13:20	120	20.71	0.28	17.60	0.053	0.0	1.88	4.57	261
13:25	120	20.68	0.25	17.65	0.053	0.0	1.13	4.55	262
13:30	120	20.68	0.25	17.70	0.052	0.0	1.11	4.57	261
13:35	120	20.70	0.27	17.74	0.053	0.0	1.03	4.60	258
13:45	Sample Time		**GW-077150-011618-DJB-006**						
			x2 VOAs w/ HCl		VOCs				

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.

(3) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Appendix C
Data Validation Memo and Groundwater Analytical Reports

Memorandum

February 1, 2018

To:	Terefe Mazengia	Ref. No.:	077150
From:	Chris G. Knight/eew/7-NF	Tel:	512-506-8803
cc:	Paul McMahon		

Subject: **Analytical Results and Reduced Validation**
Site-Wide Groundwater Sampling Event
Blue Water Thermal Solutions LLC
Fountain Inn, South Carolina
January 2018

1. Introduction

This document details a reduced validation of analytical results for groundwater samples collected in support of the Site-Wide Groundwater Sampling Event at the Blue Water Thermal Solutions LLC site located in Fountain Inn, South Carolina during January 2018. Samples were submitted to Analytical Environmental Services, Inc (AES), located in Atlanta, Georgia. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Table 2. A summary of the analytical methodology is presented in Table 3.

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

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

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

Item i) will subsequently be referred to as the "Guidelines" in this Memorandum.

2. Sample Holding Time and Preservation

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

All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

3. Laboratory Method Blank Analyses

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

For this study, a laboratory method blank was analyzed at a minimum frequency of one per twenty investigative samples and/or one per analytical batch.

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

4. Surrogate Spike Recoveries

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

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

Surrogate recoveries were assessed against laboratory control limits. All surrogate recoveries met the above criteria.

5. Laboratory Control Sample (LCS) Analyses

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

For this study, an LCS was analyzed at a minimum frequency of one per twenty investigative samples and/or one per analytical batch.

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

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

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

The MS/MSD analysis was performed as specified in Table 1. The MS/MSD samples were spiked with all compounds of interest. All percent recoveries and RPD values were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision with the following exceptions (see Table 4):

i) The MS/MSD was reported with elevated recoveries for 1,2,4-trichlorobenzene. The associated sample result was non-detect and not affected by the potential high bias. No further action was required.

ii) The MS/MSD was also reported with low recoveries for tetrachloroethene. The associated non-detect sample result was rejected due to recoveries of less than ten percent.

7. Field QA/QC Samples

The field QA/QC consisted of one trip blank sample and one field duplicate sample set.

Trip Blank Sample Analysis

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

Field Duplicate Sample Analysis

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

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

8. Analyte Reporting

Non-detect results were presented as non-detect at the RL in Table 2.

9. Conclusion

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

Table 1

Sample Collection and Analysis Summary
Site-Wide Groundwater Sampling Event
Blue Water Thermal Solutions LLC
Fountain Inn, South Carolina
January 2018

					Analysis/Parameter	
Sample Identification	**Location**	**Matrix**	**Collection Date (mm/dd/yyyy)**	**Collection Time (hr:min)**	**VOCs**	**Comments**
GW-077150-011618-DJB-001	MW-3_2016	Water	01/16/2018	09:10	X	
GW-077150-011618-DJB-002	MW-2_2016	Water	01/16/2018	10:00	X	
GW-077150-011618-DJB-003	MW-6_2016	Water	01/16/2018	10:50	X	
GW-077150-011618-DJB-004	MW-4_2016	Water	01/16/2018	11:50	X	
GW-077150-011618-DJB-005	MW-5_2016	Water	01/16/2018	12:50	X	
GW-077150-011618-DJB-006	MW-8_2016	Water	01/16/2018	13:45	X	
GW-077150-011618-DJB-007	MW-7_2016	Water	01/16/2018	14:45	X	
TRIP BLANK	-	Water	01/16/2018	-	X	TripBlank
GW-077150-011718-DJB-008	MW-1S_2016	Water	01/17/2018	08:50	X	
GW-077150-011718-DJB-009	MW-1S_2016	Water	01/17/2018	09:00	X	
GW-077150-011718-DJB-010	MW-1D_2016	Water	01/17/2018	10:30	X	MS/MSD

Notes:

VOCs - Volatile Organic Compounds
MS/MSD - Matrix Spike/Matrix Spike Duplicate

Table 2

Analytical Results Summary
Site-Wide Groundwater Sampling Event
Blue Water Thermal Solutions LLC
Fountain Inn, South Carolina
January 2018

Location ID:		MW-1D 2016	MW-1S 2016	MW-1S 2016	MW-2 2016
Sample Name:		GW-077150-011718-DJB-010	GW-077150-011718-DJB-008	GW-077150-011718-DJB-009	GW-077150-011618-DJB-002
Sample Date:		01/17/2018	01/17/2018	01/17/2018 Duplicate	01/16/2018
Parameters	**Unit**				
Volatile Organic Compounds					
1,1,1,2-Tetrachloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	2.8	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	µg/L	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	µg/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	1.0 U	2.5	2.5	1.0 U
Chloromethane (Methyl chloride)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U

Table 2

Analytical Results Summary
Site-Wide Groundwater Sampling Event
Blue Water Thermal Solutions LLC
Fountain Inn, South Carolina
January 2018

Location ID:		MW-1D 2016	MW-1S 2016	MW-1S 2016	MW-2 2016
Sample Name:		GW-077150-011718-DJB-010	GW-077150-011718-DJB-008	GW-077150-011718-DJB-009	GW-077150-011618-DJB-002
Sample Date:		01/17/2018	01/17/2018	01/17/2018 Duplicate	01/16/2018
Parameters	**Unit**				
Volatile Organic Compounds					
cis-1,2-Dichloroethene	µg/L	1.0 U	5.6	5.4	1.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Isopropyl benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Methyl acetate	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Methyl cyclohexane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	µg/L	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	R	4200	4100	1.0 U
Toluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	1.0 U	110	110	1.0 U
Trichlorofluoromethane (CFC-11)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U

Table 2

Analytical Results Summary
Site-Wide Groundwater Sampling Event
Blue Water Thermal Solutions LLC
Fountain Inn, South Carolina
January 2018

Location ID:	MW-3 2016	MW-4 2016	MW-5 2016	MW-6 2016
Sample Name:	GW-077150-011618-DJB-001	GW-077150-011618-DJB-004	GW-077150-011618-DJB-005	GW-077150-011618-DJB-003
Sample Date:	01/16/2018	01/16/2018	01/16/2018	01/16/2018
Parameters	**Unit**			
Volatile Organic Compounds				
1,1,1,2-Tetrachloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	6.2
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	29
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	µg/L	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	µg/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U

Table 2

Analytical Results Summary
Site-Wide Groundwater Sampling Event
Blue Water Thermal Solutions LLC
Fountain Inn, South Carolina
January 2018

Location ID:		MW-3 2016	MW-4 2016	MW-5 2016	MW-6 2016
Sample Name:		GW-077150-011618-DJB-001	GW-077150-011618-DJB-004	GW-077150-011618-DJB-005	GW-077150-011618-DJB-003
Sample Date:		01/16/2018	01/16/2018	01/16/2018	01/16/2018
Parameters	**Unit**				
Volatile Organic Compounds					
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Isopropyl benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Methyl acetate	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Methyl cyclohexane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	µg/L	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	49	1.0 U
Toluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U

Table 2

Analytical Results Summary
Site-Wide Groundwater Sampling Event
Blue Water Thermal Solutions LLC
Fountain Inn, South Carolina
January 2018

Location ID:		MW-7 2016	MW-8 2016	TripBlank
Sample Name:		GW-077150-011618-DJB-007	GW-077150-011618-DJB-006	TRIP BLANK
Sample Date:		01/16/2018	01/16/2018	01/17/2018
Parameters	**Unit**			
Volatile Organic Compounds				
1,1,1,2-Tetrachloroethane	µg/L	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	5.0 U	5.0 U	5.0 U
2-Hexanone	µg/L	5.0 U	5.0 U	5.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	5.0 U	5.0 U	5.0 U
Acetone	µg/L	5.0 U	5.0 U	5.0 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	1.0 U	1.0 U	1.0 U
Carbon disulfide	µg/L	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	µg/L	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	µg/L	1.0 U	1.0 U	1.0 U

Table 2

Analytical Results Summary
Site-Wide Groundwater Sampling Event
Blue Water Thermal Solutions LLC
Fountain Inn, South Carolina
January 2018

Location ID:		**MW-7 2016**	**MW-8 2016**	**TripBlank**
Sample Name:		**GW-077150-011618-DJB-007**	**GW-077150-011618-DJB-006**	**TRIP BLANK**
Sample Date:		**01/16/2018**	**01/16/2018**	**01/17/2018**
Parameters	**Unit**			
Volatile Organic Compounds				
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U
Cyclohexane	µg/L	1.0 U	1.0 U	1.0 U
Dibromochloromethane	µg/L	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	1.0 U	1.0 U	1.0 U
Ethylbenzene	µg/L	1.0 U	1.0 U	1.0 U
Isopropyl benzene	µg/L	1.0 U	1.0 U	1.0 U
Methyl acetate	µg/L	1.0 U	1.0 U	1.0 U
Methyl cyclohexane	µg/L	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	µg/L	1.0 U	1.0 U	1.0 U
Methylene chloride	µg/L	2.0 U	2.0 U	2.0 U
Styrene	µg/L	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U
Toluene	µg/L	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	µg/L	1.0 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	µg/L	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	1.0 U
Xylenes (total)	µg/L	1.0 U	1.0 U	1.0 U

Notes:

U - Not detected at the associated reporting limit
R - Rejected

Table 3

Analytical Methods
Site-Wide Groundwater Sampling Event
Blue Water Thermal Solutions LLC
Fountain Inn, South Carolina
January 2018

Parameter	Method	Matrix	Holding Time Collection to Analysis (Days)
VOCs	SW-846 8260B	Water	14

Notes:

VOCs - Volatile Organic Compounds

Method References:

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

Table 4

Qualified Sample Results Due to Outlying MS/MSD Results
Site-Wide Groundwater Sampling Event
Blue Water Thermal Solutions LLC
Fountain Inn, South Carolina
January 2018

Parameter	Sample ID	Analyte	MS % Recovery	MSD % Recovery	RPD (percent)	Control Limits % Recovery	Control Limits RPD	Qualified Result
VOCs	GW-077150-011718-DJB-010	1,2,4-Trichlorobenzene	0	0	9.49	66.1-136	20	R

Notes:

MS - Matrix Spike
MSD - Matrix Spike Duplicate
RPD - Relative Percent Difference
VOCs - Volatile Organic Compounds
R - Rejected

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

January 26, 2018

Terefe Mazengia
GHD Services, Inc.

3075 Breckenridge Blvd., Suite 470
Duluth GA 30096

RE: Bluewater Thermal Solutions

Dear Terefe Mazengia: Order No: 1801D64

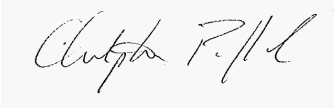
Analytical Environmental Services, Inc. received 11 samples on 1/18/2018 1:10:00 PM
for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative. AES' certifications are as follows:
-South Carolina Certification number 98016003 for Clean Water Act and for Solid and Hazardous Waste, effective until 6/30/18.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Sincerely,



Chris Pafford

Project Manager

ANALYTICAL ENVIRONMENTAL SERVICES, INC.
3080 Presidential Drive Atlanta, GA 30340-3704
Phone: (770) 457-8177 / Toll-Free: (800) 972-4889 / Fax: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1801D64

Date: _____ Page _____ of _____

COMPANY: GHD

ADDRESS: 3075 Breckinridge Blvd. suite 470 Duluth, GA. 30096

PHONE: 770-441-0027

EMAIL:

SAMPLED BY: David Brytowski

SIGNATURE: [signature]

#	SAMPLE ID	SAMPLED: DATE	SAMPLED: TIME	GRAB	COMPOSITE	MATRIX (see codes)	ANALYSIS REQUESTED: TCL VOCs	ANALYSIS REQUESTED: MS/MSD	PRESERVATION (see codes)	REMARKS	Number of Containers
1	GW-077150-011618-DJB-001	1/16/18	9:10	✓		GW	X			SSOW #	2
2	002		10:00	✓			X			077150-002	2
3	003		10:50	✓			X				2
4	004		11:50	✓			X				2
5	005		12:50	✓			X				2
6	006		13:45	✓			X				2
7	GW-077150-011618-DJB-007	1/16/18	14:45	✓			X				2
8	GW-077150-011718-DJB-008	1/17/18	8:50	✓			X				2
9	009		9:00	✓			X				2
10	GW-077150-011718-DJB-010	1/17/18	10:30	✓			X	X			6
11	Trip Blank						X				2
12											
13											
14											

Visit our website www.aesatlanta.com for downloadable COCs and to log in to your AESAccess account.

RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:
1. [signature]	1/19/18 13:10	1. Monique Abraham	1/18/18 1:10pm
2.		2.	
3.		3.	

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD
OUT: / / VIA:
IN: / / VIA:
client FedEx UPS US mail courier Greyhound
other: _____

PROJECT INFORMATION
PROJECT NAME: Bluewater thermal solutions
PROJECT #: 077150
SITE ADDRESS: Fountain Inn, SC
SEND REPORT TO: see SSOW
INVOICE TO: (IF DIFFERENT FROM ABOVE)
QUOTE #:_____ PO#:_____

RECEIPT
Total # of Containers: 26

Turnaround Time (TAT) Request
- [X] Standard 5 Business Days
- [ ] 2 Business Day Rush
- [ ] Next Business Day Rush
- [ ] Same-Day Rush (auth req.)
- [ ] Other _____

STATE PROGRAM (if any): _____
E-mail? ☐ Fax? ☐
DATA PACKAGE: I ○ II ○ III ○ IV ○

Submission of samples to the laboratory constitutes acceptance of AES's Terms & Conditions. Samples received after 3PM or on Saturday are considered as received the following business day. If no TAT is marked on COC, AES will proceed with standard TAT. Samples are disposed of 30 days after completion of report unless other arangements are made.

Matrix Codes: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water WW = Waste Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify)

Preservative Codes: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

Analytical Environmental Services, Inc

Date: 26-Jan-18

Client: GHD Services, Inc.
Project: Bluewater Thermal Solutions
Lab ID: 1801D64

Case Narrative

Sample Receiving Non-conformance:

Vial 2 of 2 for sample GW-077150-11618-DJB-003 was received with a cracked cap. The laboratory proceeded with anlaysis using the remaining vial.

Analytical Environmental Services, Inc **Date:** 26-Jan-18

Client:	GHD Services, Inc.	**Client Sample ID:**	GW-077150-11618-DJB-001
Project Name:	Bluewater Thermal Solutions	**Collection Date:**	1/16/2018 9:10:00 AM
Lab ID:	1801D64-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS	**SW8260B**			**(SW5030B)**				
1,1,1,2-Tetrachloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
1,1,1-Trichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
1,1,2-Trichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
1,1-Dichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
1,1-Dichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
1,2,4-Trichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
1,2-Dibromo-3-chloropropane	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
1,2-Dibromoethane	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
1,2-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
1,2-Dichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
1,2-Dichloropropane	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
1,3-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
1,4-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
2-Butanone	BRL	5.0		ug/L	254722	1	01/24/2018 21:20	OM
2-Hexanone	BRL	5.0		ug/L	254722	1	01/24/2018 21:20	OM
4-Methyl-2-pentanone	BRL	5.0		ug/L	254722	1	01/24/2018 21:20	OM
Acetone	BRL	5.0		ug/L	254722	1	01/24/2018 21:20	OM
Benzene	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
Bromodichloromethane	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
Bromoform	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
Bromomethane	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
Carbon disulfide	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
Carbon tetrachloride	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
Chlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
Chloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
Chloroform	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
Chloromethane	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
cis-1,2-Dichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
cis-1,3-Dichloropropene	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
Cyclohexane	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
Dibromochloromethane	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
Dichlorodifluoromethane	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
Ethylbenzene	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
Freon-113	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
Isopropylbenzene	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
Methyl acetate	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
Methyl tert-butyl ether	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
Methylcyclohexane	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
Methylene chloride	BRL	2.0		ug/L	254722	1	01/24/2018 21:20	OM
Styrene	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
Tetrachloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 26-Jan-18

Client:	GHD Services, Inc.	**Client Sample ID:**	GW-077150-11618-DJB-001
Project Name:	Bluewater Thermal Solutions	**Collection Date:**	1/16/2018 9:10:00 AM
Lab ID:	1801D64-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5030B)								
Toluene	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
trans-1,2-Dichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
trans-1,3-Dichloropropene	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
Trichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
Trichlorofluoromethane	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
Vinyl chloride	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
Xylenes, Total	BRL	1.0		ug/L	254722	1	01/24/2018 21:20	OM
Surr: 4-Bromofluorobenzene	90	70-130		%REC	254722	1	01/24/2018 21:20	OM
Surr: Dibromofluoromethane	107	70-130		%REC	254722	1	01/24/2018 21:20	OM
Surr: Toluene-d8	96.5	70-130		%REC	254722	1	01/24/2018 21:20	OM

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 26-Jan-18

Client:	GHD Services, Inc.	**Client Sample ID:**	GW-077150-11618-DJB-002
Project Name:	Bluewater Thermal Solutions	**Collection Date:**	1/16/2018 10:00:00 AM
Lab ID:	1801D64-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5030B)								
1,1,1,2-Tetrachloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
1,1,1-Trichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
1,1,2-Trichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
1,1-Dichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
1,1-Dichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
1,2,4-Trichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
1,2-Dibromo-3-chloropropane	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
1,2-Dibromoethane	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
1,2-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
1,2-Dichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
1,2-Dichloropropane	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
1,3-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
1,4-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
2-Butanone	BRL	5.0		ug/L	254722	1	01/24/2018 21:46	OM
2-Hexanone	BRL	5.0		ug/L	254722	1	01/24/2018 21:46	OM
4-Methyl-2-pentanone	BRL	5.0		ug/L	254722	1	01/24/2018 21:46	OM
Acetone	BRL	5.0		ug/L	254722	1	01/24/2018 21:46	OM
Benzene	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
Bromodichloromethane	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
Bromoform	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
Bromomethane	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
Carbon disulfide	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
Carbon tetrachloride	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
Chlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
Chloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
Chloroform	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
Chloromethane	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
cis-1,2-Dichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
cis-1,3-Dichloropropene	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
Cyclohexane	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
Dibromochloromethane	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
Dichlorodifluoromethane	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
Ethylbenzene	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
Freon-113	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
Isopropylbenzene	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
Methyl acetate	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
Methyl tert-butyl ether	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
Methylcyclohexane	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
Methylene chloride	BRL	2.0		ug/L	254722	1	01/24/2018 21:46	OM
Styrene	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
Tetrachloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 26-Jan-18

Client:	GHD Services, Inc.	**Client Sample ID:**	GW-077150-11618-DJB-002
Project Name:	Bluewater Thermal Solutions	**Collection Date:**	1/16/2018 10:00:00 AM
Lab ID:	1801D64-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5030B)								
Toluene	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
trans-1,2-Dichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
trans-1,3-Dichloropropene	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
Trichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
Trichlorofluoromethane	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
Vinyl chloride	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
Xylenes, Total	BRL	1.0		ug/L	254722	1	01/24/2018 21:46	OM
Surr: 4-Bromofluorobenzene	87.8	70-130		%REC	254722	1	01/24/2018 21:46	OM
Surr: Dibromofluoromethane	106	70-130		%REC	254722	1	01/24/2018 21:46	OM
Surr: Toluene-d8	95.8	70-130		%REC	254722	1	01/24/2018 21:46	OM

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 26-Jan-18

Client:	GHD Services, Inc.	**Client Sample ID:**	GW-077150-11618-DJB-003
Project Name:	Bluewater Thermal Solutions	**Collection Date:**	1/16/2018 10:50:00 AM
Lab ID:	1801D64-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5030B)								
1,1,1,2-Tetrachloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
1,1,1-Trichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
1,1,2-Trichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
1,1-Dichloroethane	6.2	1.0		ug/L	254722	1	01/24/2018 22:12	OM
1,1-Dichloroethene	29	1.0		ug/L	254722	1	01/24/2018 22:12	OM
1,2,4-Trichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
1,2-Dibromo-3-chloropropane	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
1,2-Dibromoethane	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
1,2-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
1,2-Dichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
1,2-Dichloropropane	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
1,3-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
1,4-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
2-Butanone	BRL	5.0		ug/L	254722	1	01/24/2018 22:12	OM
2-Hexanone	BRL	5.0		ug/L	254722	1	01/24/2018 22:12	OM
4-Methyl-2-pentanone	BRL	5.0		ug/L	254722	1	01/24/2018 22:12	OM
Acetone	BRL	5.0		ug/L	254722	1	01/24/2018 22:12	OM
Benzene	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
Bromodichloromethane	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
Bromoform	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
Bromomethane	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
Carbon disulfide	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
Carbon tetrachloride	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
Chlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
Chloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
Chloroform	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
Chloromethane	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
cis-1,2-Dichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
cis-1,3-Dichloropropene	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
Cyclohexane	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
Dibromochloromethane	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
Dichlorodifluoromethane	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
Ethylbenzene	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
Freon-113	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
Isopropylbenzene	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
Methyl acetate	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
Methyl tert-butyl ether	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
Methylcyclohexane	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
Methylene chloride	BRL	2.0		ug/L	254722	1	01/24/2018 22:12	OM
Styrene	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
Tetrachloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 26-Jan-18

Client:	GHD Services, Inc.	**Client Sample ID:**	GW-077150-11618-DJB-003
Project Name:	Bluewater Thermal Solutions	**Collection Date:**	1/16/2018 10:50:00 AM
Lab ID:	1801D64-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5030B)								
Toluene	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
trans-1,2-Dichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
trans-1,3-Dichloropropene	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
Trichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
Trichlorofluoromethane	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
Vinyl chloride	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
Xylenes, Total	BRL	1.0		ug/L	254722	1	01/24/2018 22:12	OM
Surr: 4-Bromofluorobenzene	91.7	70-130		%REC	254722	1	01/24/2018 22:12	OM
Surr: Dibromofluoromethane	105	70-130		%REC	254722	1	01/24/2018 22:12	OM
Surr: Toluene-d8	95.8	70-130		%REC	254722	1	01/24/2018 22:12	OM

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 26-Jan-18

Client:	GHD Services, Inc.	**Client Sample ID:**	GW-077150-11618-DJB-004
Project Name:	Bluewater Thermal Solutions	**Collection Date:**	1/16/2018 11:50:00 AM
Lab ID:	1801D64-004	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5030B)								
1,1,1,2-Tetrachloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
1,1,1-Trichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
1,1,2-Trichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
1,1-Dichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
1,1-Dichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
1,2,4-Trichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
1,2-Dibromo-3-chloropropane	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
1,2-Dibromoethane	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
1,2-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
1,2-Dichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
1,2-Dichloropropane	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
1,3-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
1,4-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
2-Butanone	BRL	5.0		ug/L	254722	1	01/24/2018 22:38	OM
2-Hexanone	BRL	5.0		ug/L	254722	1	01/24/2018 22:38	OM
4-Methyl-2-pentanone	BRL	5.0		ug/L	254722	1	01/24/2018 22:38	OM
Acetone	BRL	5.0		ug/L	254722	1	01/24/2018 22:38	OM
Benzene	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
Bromodichloromethane	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
Bromoform	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
Bromomethane	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
Carbon disulfide	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
Carbon tetrachloride	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
Chlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
Chloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
Chloroform	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
Chloromethane	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
cis-1,2-Dichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
cis-1,3-Dichloropropene	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
Cyclohexane	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
Dibromochloromethane	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
Dichlorodifluoromethane	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
Ethylbenzene	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
Freon-113	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
Isopropylbenzene	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
Methyl acetate	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
Methyl tert-butyl ether	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
Methylcyclohexane	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
Methylene chloride	BRL	2.0		ug/L	254722	1	01/24/2018 22:38	OM
Styrene	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
Tetrachloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 26-Jan-18

Client:	GHD Services, Inc.	**Client Sample ID:**	GW-077150-11618-DJB-004
Project Name:	Bluewater Thermal Solutions	**Collection Date:**	1/16/2018 11:50:00 AM
Lab ID:	1801D64-004	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5030B)								
Toluene	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
trans-1,2-Dichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
trans-1,3-Dichloropropene	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
Trichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
Trichlorofluoromethane	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
Vinyl chloride	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
Xylenes, Total	BRL	1.0		ug/L	254722	1	01/24/2018 22:38	OM
Surr: 4-Bromofluorobenzene	93	70-130		%REC	254722	1	01/24/2018 22:38	OM
Surr: Dibromofluoromethane	104	70-130		%REC	254722	1	01/24/2018 22:38	OM
Surr: Toluene-d8	95.6	70-130		%REC	254722	1	01/24/2018 22:38	OM

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 26-Jan-18

Client:	GHD Services, Inc.	**Client Sample ID:**	GW-077150-11618-DJB-005
Project Name:	Bluewater Thermal Solutions	**Collection Date:**	1/16/2018 12:50:00 PM
Lab ID:	1801D64-005	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5030B)								
1,1,1,2-Tetrachloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
1,1,1-Trichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
1,1,2-Trichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
1,1-Dichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
1,1-Dichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
1,2,4-Trichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
1,2-Dibromo-3-chloropropane	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
1,2-Dibromoethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
1,2-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
1,2-Dichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
1,2-Dichloropropane	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
1,3-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
1,4-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
2-Butanone	BRL	5.0		ug/L	254722	1	01/24/2018 23:04	OM
2-Hexanone	BRL	5.0		ug/L	254722	1	01/24/2018 23:04	OM
4-Methyl-2-pentanone	BRL	5.0		ug/L	254722	1	01/24/2018 23:04	OM
Acetone	BRL	5.0		ug/L	254722	1	01/24/2018 23:04	OM
Benzene	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
Bromodichloromethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
Bromoform	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
Bromomethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
Carbon disulfide	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
Carbon tetrachloride	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
Chlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
Chloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
Chloroform	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
Chloromethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
cis-1,2-Dichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
cis-1,3-Dichloropropene	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
Cyclohexane	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
Dibromochloromethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
Dichlorodifluoromethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
Ethylbenzene	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
Freon-113	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
Isopropylbenzene	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
Methyl acetate	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
Methyl tert-butyl ether	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
Methylcyclohexane	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
Methylene chloride	BRL	2.0		ug/L	254722	1	01/24/2018 23:04	OM
Styrene	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
Tetrachloroethene	49	1.0		ug/L	254722	1	01/24/2018 23:04	OM

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 26-Jan-18

Client:	GHD Services, Inc.	**Client Sample ID:**	GW-077150-11618-DJB-005
Project Name:	Bluewater Thermal Solutions	**Collection Date:**	1/16/2018 12:50:00 PM
Lab ID:	1801D64-005	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5030B)								
Toluene	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
trans-1,2-Dichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
trans-1,3-Dichloropropene	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
Trichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
Trichlorofluoromethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
Vinyl chloride	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
Xylenes, Total	BRL	1.0		ug/L	254722	1	01/24/2018 23:04	OM
Surr: 4-Bromofluorobenzene	94	70-130		%REC	254722	1	01/24/2018 23:04	OM
Surr: Dibromofluoromethane	107	70-130		%REC	254722	1	01/24/2018 23:04	OM
Surr: Toluene-d8	95.4	70-130		%REC	254722	1	01/24/2018 23:04	OM

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 26-Jan-18

Client:	GHD Services, Inc.	**Client Sample ID:**	GW-077150-11618-DJB-006
Project Name:	Bluewater Thermal Solutions	**Collection Date:**	1/16/2018 1:45:00 PM
Lab ID:	1801D64-006	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5030B)								
1,1,1,2-Tetrachloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
1,1,1-Trichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
1,1,2-Trichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
1,1-Dichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
1,1-Dichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
1,2,4-Trichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
1,2-Dibromo-3-chloropropane	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
1,2-Dibromoethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
1,2-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
1,2-Dichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
1,2-Dichloropropane	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
1,3-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
1,4-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
2-Butanone	BRL	5.0		ug/L	254722	1	01/24/2018 23:30	OM
2-Hexanone	BRL	5.0		ug/L	254722	1	01/24/2018 23:30	OM
4-Methyl-2-pentanone	BRL	5.0		ug/L	254722	1	01/24/2018 23:30	OM
Acetone	BRL	5.0		ug/L	254722	1	01/24/2018 23:30	OM
Benzene	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
Bromodichloromethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
Bromoform	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
Bromomethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
Carbon disulfide	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
Carbon tetrachloride	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
Chlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
Chloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
Chloroform	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
Chloromethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
cis-1,2-Dichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
cis-1,3-Dichloropropene	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
Cyclohexane	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
Dibromochloromethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
Dichlorodifluoromethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
Ethylbenzene	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
Freon-113	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
Isopropylbenzene	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
Methyl acetate	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
Methyl tert-butyl ether	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
Methylcyclohexane	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
Methylene chloride	BRL	2.0		ug/L	254722	1	01/24/2018 23:30	OM
Styrene	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
Tetrachloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 26-Jan-18

Client:	GHD Services, Inc.	**Client Sample ID:**	GW-077150-11618-DJB-006
Project Name:	Bluewater Thermal Solutions	**Collection Date:**	1/16/2018 1:45:00 PM
Lab ID:	1801D64-006	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5030B)								
Toluene	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
trans-1,2-Dichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
trans-1,3-Dichloropropene	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
Trichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
Trichlorofluoromethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
Vinyl chloride	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
Xylenes, Total	BRL	1.0		ug/L	254722	1	01/24/2018 23:30	OM
Surr: 4-Bromofluorobenzene	92.3	70-130		%REC	254722	1	01/24/2018 23:30	OM
Surr: Dibromofluoromethane	106	70-130		%REC	254722	1	01/24/2018 23:30	OM
Surr: Toluene-d8	94.6	70-130		%REC	254722	1	01/24/2018 23:30	OM

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
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- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 26-Jan-18

Client:	GHD Services, Inc.	**Client Sample ID:**	GW-077150-11618-DJB-007
Project Name:	Bluewater Thermal Solutions	**Collection Date:**	1/16/2018 2:45:00 PM
Lab ID:	1801D64-007	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				**(SW5030B)**				
1,1,1,2-Tetrachloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
1,1,1-Trichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
1,1,2-Trichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
1,1-Dichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
1,1-Dichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
1,2,4-Trichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
1,2-Dibromo-3-chloropropane	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
1,2-Dibromoethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
1,2-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
1,2-Dichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
1,2-Dichloropropane	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
1,3-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
1,4-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
2-Butanone	BRL	5.0		ug/L	254722	1	01/24/2018 23:55	OM
2-Hexanone	BRL	5.0		ug/L	254722	1	01/24/2018 23:55	OM
4-Methyl-2-pentanone	BRL	5.0		ug/L	254722	1	01/24/2018 23:55	OM
Acetone	BRL	5.0		ug/L	254722	1	01/24/2018 23:55	OM
Benzene	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
Bromodichloromethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
Bromoform	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
Bromomethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
Carbon disulfide	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
Carbon tetrachloride	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
Chlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
Chloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
Chloroform	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
Chloromethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
cis-1,2-Dichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
cis-1,3-Dichloropropene	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
Cyclohexane	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
Dibromochloromethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
Dichlorodifluoromethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
Ethylbenzene	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
Freon-113	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
Isopropylbenzene	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
Methyl acetate	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
Methyl tert-butyl ether	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
Methylcyclohexane	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
Methylene chloride	BRL	2.0		ug/L	254722	1	01/24/2018 23:55	OM
Styrene	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
Tetrachloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 26-Jan-18

Client:	GHD Services, Inc.	**Client Sample ID:**	GW-077150-11618-DJB-007
Project Name:	Bluewater Thermal Solutions	**Collection Date:**	1/16/2018 2:45:00 PM
Lab ID:	1801D64-007	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5030B)								
Toluene	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
trans-1,2-Dichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
trans-1,3-Dichloropropene	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
Trichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
Trichlorofluoromethane	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
Vinyl chloride	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
Xylenes, Total	BRL	1.0		ug/L	254722	1	01/24/2018 23:55	OM
Surr: 4-Bromofluorobenzene	94.1	70-130		%REC	254722	1	01/24/2018 23:55	OM
Surr: Dibromofluoromethane	106	70-130		%REC	254722	1	01/24/2018 23:55	OM
Surr: Toluene-d8	95.2	70-130		%REC	254722	1	01/24/2018 23:55	OM

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 26-Jan-18

Client:	GHD Services, Inc.	**Client Sample ID:**	GW-077150-11718-DJB-008
Project Name:	Bluewater Thermal Solutions	**Collection Date:**	1/17/2018 8:50:00 AM
Lab ID:	1801D64-008	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				**(SW5030B)**				
1,1,1,2-Tetrachloroethane	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
1,1,1-Trichloroethane	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
1,1,2-Trichloroethane	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
1,1-Dichloroethane	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
1,1-Dichloroethene	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
1,2,4-Trichlorobenzene	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
1,2-Dibromo-3-chloropropane	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
1,2-Dibromoethane	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
1,2-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
1,2-Dichloroethane	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
1,2-Dichloropropane	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
1,3-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
1,4-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
2-Butanone	BRL	5.0		ug/L	254722	1	01/25/2018 00:21	OM
2-Hexanone	BRL	5.0		ug/L	254722	1	01/25/2018 00:21	OM
4-Methyl-2-pentanone	BRL	5.0		ug/L	254722	1	01/25/2018 00:21	OM
Acetone	BRL	5.0		ug/L	254722	1	01/25/2018 00:21	OM
Benzene	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
Bromodichloromethane	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
Bromoform	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
Bromomethane	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
Carbon disulfide	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
Carbon tetrachloride	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
Chlorobenzene	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
Chloroethane	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
Chloroform	2.5	1.0		ug/L	254722	1	01/25/2018 00:21	OM
Chloromethane	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
cis-1,2-Dichloroethene	5.6	1.0		ug/L	254722	1	01/25/2018 00:21	OM
cis-1,3-Dichloropropene	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
Cyclohexane	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
Dibromochloromethane	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
Dichlorodifluoromethane	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
Ethylbenzene	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
Freon-113	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
Isopropylbenzene	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
Methyl acetate	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
Methyl tert-butyl ether	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
Methylcyclohexane	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
Methylene chloride	BRL	2.0		ug/L	254722	1	01/25/2018 00:21	OM
Styrene	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
Tetrachloroethene	4200	100		ug/L	254722	100	01/25/2018 17:17	OM

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 26-Jan-18

Client:	GHD Services, Inc.	**Client Sample ID:**	GW-077150-11718-DJB-008
Project Name:	Bluewater Thermal Solutions	**Collection Date:**	1/17/2018 8:50:00 AM
Lab ID:	1801D64-008	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5030B)								
Toluene	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
trans-1,2-Dichloroethene	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
trans-1,3-Dichloropropene	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
Trichloroethene	110	1.0		ug/L	254722	1	01/25/2018 00:21	OM
Trichlorofluoromethane	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
Vinyl chloride	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
Xylenes, Total	BRL	1.0		ug/L	254722	1	01/25/2018 00:21	OM
Surr: 4-Bromofluorobenzene	90.1	70-130		%REC	254722	100	01/25/2018 17:17	OM
Surr: 4-Bromofluorobenzene	94.6	70-130		%REC	254722	1	01/25/2018 00:21	OM
Surr: Dibromofluoromethane	101	70-130		%REC	254722	100	01/25/2018 17:17	OM
Surr: Dibromofluoromethane	105	70-130		%REC	254722	1	01/25/2018 00:21	OM
Surr: Toluene-d8	94.8	70-130		%REC	254722	1	01/25/2018 00:21	OM
Surr: Toluene-d8	94.2	70-130		%REC	254722	100	01/25/2018 17:17	OM

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 26-Jan-18

Client:	GHD Services, Inc.	**Client Sample ID:**	GW-077150-11718-DJB-009
Project Name:	Bluewater Thermal Solutions	**Collection Date:**	1/17/2018 9:00:00 AM
Lab ID:	1801D64-009	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				**(SW5030B)**				
1,1,1,2-Tetrachloroethane	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
1,1,1-Trichloroethane	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
1,1,2-Trichloroethane	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
1,1-Dichloroethane	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
1,1-Dichloroethene	2.8	1.0		ug/L	254722	1	01/25/2018 00:47	OM
1,2,4-Trichlorobenzene	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
1,2-Dibromo-3-chloropropane	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
1,2-Dibromoethane	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
1,2-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
1,2-Dichloroethane	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
1,2-Dichloropropane	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
1,3-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
1,4-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
2-Butanone	BRL	5.0		ug/L	254722	1	01/25/2018 00:47	OM
2-Hexanone	BRL	5.0		ug/L	254722	1	01/25/2018 00:47	OM
4-Methyl-2-pentanone	BRL	5.0		ug/L	254722	1	01/25/2018 00:47	OM
Acetone	BRL	5.0		ug/L	254722	1	01/25/2018 00:47	OM
Benzene	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
Bromodichloromethane	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
Bromoform	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
Bromomethane	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
Carbon disulfide	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
Carbon tetrachloride	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
Chlorobenzene	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
Chloroethane	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
Chloroform	2.5	1.0		ug/L	254722	1	01/25/2018 00:47	OM
Chloromethane	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
cis-1,2-Dichloroethene	5.4	1.0		ug/L	254722	1	01/25/2018 00:47	OM
cis-1,3-Dichloropropene	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
Cyclohexane	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
Dibromochloromethane	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
Dichlorodifluoromethane	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
Ethylbenzene	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
Freon-113	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
Isopropylbenzene	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
Methyl acetate	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
Methyl tert-butyl ether	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
Methylcyclohexane	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
Methylene chloride	BRL	2.0		ug/L	254722	1	01/25/2018 00:47	OM
Styrene	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
Tetrachloroethene	4100	100		ug/L	254722	100	01/25/2018 17:43	OM

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 26-Jan-18

Client:	GHD Services, Inc.	**Client Sample ID:**	GW-077150-11718-DJB-009
Project Name:	Bluewater Thermal Solutions	**Collection Date:**	1/17/2018 9:00:00 AM
Lab ID:	1801D64-009	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				**(SW5030B)**				
Toluene	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
trans-1,2-Dichloroethene	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
trans-1,3-Dichloropropene	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
Trichloroethene	110	1.0		ug/L	254722	1	01/25/2018 00:47	OM
Trichlorofluoromethane	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
Vinyl chloride	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
Xylenes, Total	BRL	1.0		ug/L	254722	1	01/25/2018 00:47	OM
Surr: 4-Bromofluorobenzene	89.5	70-130		%REC	254722	100	01/25/2018 17:43	OM
Surr: 4-Bromofluorobenzene	93.6	70-130		%REC	254722	1	01/25/2018 00:47	OM
Surr: Dibromofluoromethane	105	70-130		%REC	254722	1	01/25/2018 00:47	OM
Surr: Dibromofluoromethane	104	70-130		%REC	254722	100	01/25/2018 17:43	OM
Surr: Toluene-d8	93.5	70-130		%REC	254722	100	01/25/2018 17:43	OM
Surr: Toluene-d8	95.9	70-130		%REC	254722	1	01/25/2018 00:47	OM

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 26-Jan-18

Client:	GHD Services, Inc.	**Client Sample ID:**	GW-077150-11718-DJB-010
Project Name:	Bluewater Thermal Solutions	**Collection Date:**	1/17/2018 10:30:00 AM
Lab ID:	1801D64-010	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5030B)								
1,1,1,2-Tetrachloroethane	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
1,1,1-Trichloroethane	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
1,1,2-Trichloroethane	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
1,1-Dichloroethane	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
1,1-Dichloroethene	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
1,2,4-Trichlorobenzene	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
1,2-Dibromo-3-chloropropane	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
1,2-Dibromoethane	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
1,2-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
1,2-Dichloroethane	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
1,2-Dichloropropane	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
1,3-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
1,4-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
2-Butanone	BRL	5.0		ug/L	254722	1	01/25/2018 15:59	NP
2-Hexanone	BRL	5.0		ug/L	254722	1	01/25/2018 15:59	NP
4-Methyl-2-pentanone	BRL	5.0		ug/L	254722	1	01/25/2018 15:59	NP
Acetone	BRL	5.0		ug/L	254722	1	01/25/2018 15:59	NP
Benzene	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
Bromodichloromethane	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
Bromoform	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
Bromomethane	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
Carbon disulfide	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
Carbon tetrachloride	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
Chlorobenzene	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
Chloroethane	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
Chloroform	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
Chloromethane	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
cis-1,2-Dichloroethene	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
cis-1,3-Dichloropropene	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
Cyclohexane	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
Dibromochloromethane	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
Dichlorodifluoromethane	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
Ethylbenzene	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
Freon-113	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
Isopropylbenzene	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
Methyl acetate	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
Methyl tert-butyl ether	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
Methylcyclohexane	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
Methylene chloride	BRL	2.0		ug/L	254722	1	01/25/2018 15:59	NP
Styrene	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
Tetrachloroethene	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 26-Jan-18

Client:	GHD Services, Inc.	**Client Sample ID:**	GW-077150-11718-DJB-010
Project Name:	Bluewater Thermal Solutions	**Collection Date:**	1/17/2018 10:30:00 AM
Lab ID:	1801D64-010	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5030B)								
Toluene	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
trans-1,2-Dichloroethene	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
trans-1,3-Dichloropropene	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
Trichloroethene	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
Trichlorofluoromethane	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
Vinyl chloride	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
Xylenes, Total	BRL	1.0		ug/L	254722	1	01/25/2018 15:59	NP
Surr: 4-Bromofluorobenzene	70.5	70-130		%REC	254722	1	01/25/2018 15:59	NP
Surr: Dibromofluoromethane	96.8	70-130		%REC	254722	1	01/25/2018 15:59	NP
Surr: Toluene-d8	91	70-130		%REC	254722	1	01/25/2018 15:59	NP

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 26-Jan-18

Client:	GHD Services, Inc.	**Client Sample ID:**	TRIP BLANK
Project Name:	Bluewater Thermal Solutions	**Collection Date:**	1/17/2018
Lab ID:	1801D64-011	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				**(SW5030B)**				
1,1,1,2-Tetrachloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
1,1,1-Trichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
1,1,2-Trichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
1,1-Dichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
1,1-Dichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
1,2,4-Trichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
1,2-Dibromo-3-chloropropane	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
1,2-Dibromoethane	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
1,2-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
1,2-Dichloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
1,2-Dichloropropane	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
1,3-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
1,4-Dichlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
2-Butanone	BRL	5.0		ug/L	254722	1	01/24/2018 20:54	OM
2-Hexanone	BRL	5.0		ug/L	254722	1	01/24/2018 20:54	OM
4-Methyl-2-pentanone	BRL	5.0		ug/L	254722	1	01/24/2018 20:54	OM
Acetone	BRL	5.0		ug/L	254722	1	01/24/2018 20:54	OM
Benzene	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
Bromodichloromethane	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
Bromoform	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
Bromomethane	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
Carbon disulfide	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
Carbon tetrachloride	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
Chlorobenzene	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
Chloroethane	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
Chloroform	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
Chloromethane	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
cis-1,2-Dichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
cis-1,3-Dichloropropene	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
Cyclohexane	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
Dibromochloromethane	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
Dichlorodifluoromethane	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
Ethylbenzene	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
Freon-113	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
Isopropylbenzene	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
Methyl acetate	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
Methyl tert-butyl ether	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
Methylcyclohexane	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
Methylene chloride	BRL	2.0		ug/L	254722	1	01/24/2018 20:54	OM
Styrene	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
Tetrachloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 26-Jan-18

Client:	GHD Services, Inc.	**Client Sample ID:**	TRIP BLANK
Project Name:	Bluewater Thermal Solutions	**Collection Date:**	1/17/2018
Lab ID:	1801D64-011	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B (SW5030B)								
Toluene	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
trans-1,2-Dichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
trans-1,3-Dichloropropene	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
Trichloroethene	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
Trichlorofluoromethane	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
Vinyl chloride	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
Xylenes, Total	BRL	1.0		ug/L	254722	1	01/24/2018 20:54	OM
Surr: 4-Bromofluorobenzene	93.3	70-130		%REC	254722	1	01/24/2018 20:54	OM
Surr: Dibromofluoromethane	107	70-130		%REC	254722	1	01/24/2018 20:54	OM
Surr: Toluene-d8	95.7	70-130		%REC	254722	1	01/24/2018 20:54	OM

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 26-Jan-18

SUMMARY OF ANALYTES DETECTED

Analyses	Result	Qual	MDL	Reporting Limit	Units	BatchID	Dilution Factor
Client Sample ID: GW-077150-11618-DJB-003				**Lab ID:** 1801D64-003			
Collection Date: 1/16/2018 10:50:00 AM				**Matrix:** Groundwater			
Volatile Organic Compounds by GC/MS SW8260B				**(SW5030B)**			
1,1-Dichloroethane	6.2		0.43	1.0	ug/L	254722	1
1,1-Dichloroethene	29		0.40	1.0	ug/L	254722	1
Client Sample ID: GW-077150-11618-DJB-005				**Lab ID:** 1801D64-005			
Collection Date: 1/16/2018 12:50:00 PM				**Matrix:** Groundwater			
Volatile Organic Compounds by GC/MS SW8260B				**(SW5030B)**			
Tetrachloroethene	49		0.46	1.0	ug/L	254722	1
Client Sample ID: GW-077150-11718-DJB-008				**Lab ID:** 1801D64-008			
Collection Date: 1/17/2018 8:50:00 AM				**Matrix:** Groundwater			
Volatile Organic Compounds by GC/MS SW8260B				**(SW5030B)**			
Chloroform	2.5		0.20	1.0	ug/L	254722	1
cis-1,2-Dichloroethene	5.6		0.28	1.0	ug/L	254722	1
Tetrachloroethene	4200		46	100	ug/L	254722	100
Trichloroethene	110		0.30	1.0	ug/L	254722	1
Client Sample ID: GW-077150-11718-DJB-009				**Lab ID:** 1801D64-009			
Collection Date: 1/17/2018 9:00:00 AM				**Matrix:** Groundwater			
Volatile Organic Compounds by GC/MS SW8260B				**(SW5030B)**			
1,1-Dichloroethene	2.8		0.40	1.0	ug/L	254722	1
Chloroform	2.5		0.20	1.0	ug/L	254722	1
cis-1,2-Dichloroethene	5.4		0.28	1.0	ug/L	254722	1
Tetrachloroethene	4100		46	100	ug/L	254722	100
Trichloroethene	110		0.30	1.0	ug/L	254722	1

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Clear | Save as

AES Analytical Environmental Services, Inc.

SAMPLE/COOLER RECEIPT CHECKLIST

1. Client Name: **GHD Services, Inc.** AES Work Order Number: **1801D64**

2. Carrier: FedEx ☐ UPS ☐ USPS ☐ Client ■ Courier ☐ Other _____

		Yes	No	N/A	Details	Comments
3.	Shipping container/cooler received in good condition?	●	○	○	damaged ☐ leaking ☐ other ☐	
4.	Custody seals present on shipping container?	○	●	○		
5.	Custody seals intact on shipping container?	○	○	●		
6.	Temperature blanks present?	●	○	○		
7.	Cooler temperature(s) within limits of 0-6°C? [See item 13 and 14 for temperature recordings.]	●	○	○	Cooling initiated for recently collected samples / ice present ☐	
8.	Chain of Custody (COC) present?	●	○	○		
9.	Chain of Custody signed, dated, and timed when relinquished and received?	●	○	○		
10.	Sampler name and/or signature on COC?	●	○	○		
11.	Were all samples received within holding time?	●	○	○		
12.	TAT marked on the COC?	●	○	○	If no TAT indicated, proceeded with standard TAT per Terms & Conditions. ☐	

13. Cooler 1 Temperature 4.4 °C Cooler 2 Temperature _____ °C Cooler 3 Temperature _____ °C Cooler 4 Temperature _____ °C

14. Cooler 5 Temperature _____ °C Cooler 6 Temperature _____ °C Cooler 7 Temperature _____ °C Cooler 8 Temperature _____ °C

15. Comments: _____

I certify that I have completed sections 1-15 (dated initials). TR 1/18/18

		Yes	No	N/A	Details	Comments
16.	Were sample containers intact upon receipt?	○	●	○		
17.	Custody seals present on sample containers?	○	●	○		
18.	Custody seals intact on sample containers?	○	○	●		
19.	Do sample container labels match the COC?	●	○	○	incomplete info ☐ illegible ☐ no label ☐ other ☐	
20.	Are analyses requested indicated on the COC?	●	○	○		
21.	Were all of the samples listed on the COC received?	●	○	○	samples received but not listed on COC ☐ samples listed on COC not received ☐	
22.	Was the sample collection date/time noted?	●	○	○		
23.	Did we receive sufficient sample volume for indicated analyses?	●	○	○		
24.	Were samples received in appropriate containers?	●	○	○		
25.	Were VOA samples received without headspace (< 1/4" bubble)?	●	○	○		
26.	Were trip blanks submitted?	●	○	○	listed on COC ■ not listed on COC ☐	

27. Comments: _____

I certify that I have completed sections 16-27 (dated initials). AJJ 1/19/18

This section only applies to samples where pH can be checked at Sample Receipt.

		Yes	No	N/A	Details	Comments
28.	Have containers needing chemical preservation been checked? *	○	○	●		
29.	Containers meet preservation guidelines?	○	○	●		
30.	Was pH adjusted at Sample Receipt?	○	○	●		

* Note: Certain analyses require chemical preservation but must be checked in the laboratory and not upon Sample Receipt such as Coliforms, VOCs and Oil & Grease/TPH.

I certify that I have completed sections 28-30 (dated initials). AJJ 1/19/18

Checklist 6.9.17 Rev 2

Locked

Client: GHD Services, Inc.
Project Name: Bluewater Thermal Solutions
Workorder: 1801D64

ANALYTICAL QC SUMMARY REPORT

BatchID: 254722

Sample ID: **MB-254722** Client ID: Units: **ug/L** Prep Date: **01/24/2018** Run No: **361616**
SampleType: **MBLK** TestCode: **Volatile Organic Compounds by GC/MS SW8260B** BatchID: **254722** Analysis Date: **01/24/2018** Seq No: **7985215**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	BRL	1.0									
1,1,1-Trichloroethane	BRL	1.0									
1,1,2-Trichloroethane	BRL	1.0									
1,1-Dichloroethane	BRL	1.0									
1,1-Dichloroethene	BRL	2.0									
1,2,4-Trichlorobenzene	BRL	1.0									
1,2-Dibromo-3-chloropropane	BRL	1.0									
1,2-Dibromoethane	BRL	1.0									
1,2-Dichlorobenzene	BRL	1.0									
1,2-Dichloroethane	BRL	1.0									
1,2-Dichloropropane	BRL	1.0									
1,3-Dichlorobenzene	BRL	1.0									
1,4-Dichlorobenzene	BRL	1.0									
2-Butanone	BRL	10									
2-Hexanone	BRL	10									
4-Methyl-2-pentanone	BRL	10									
Acetone	BRL	20									
Benzene	BRL	1.0									
Bromodichloromethane	BRL	1.0									
Bromoform	BRL	1.0									
Bromomethane	BRL	1.0									
Carbon disulfide	BRL	5.0									
Carbon tetrachloride	BRL	2.0									
Chlorobenzene	BRL	1.0									
Chloroethane	BRL	1.0									
Chloroform	BRL	1.0									
Chloromethane	BRL	1.0									

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: GHD Services, Inc.
Project Name: Bluewater Thermal Solutions
Workorder: 1801D64

ANALYTICAL QC SUMMARY REPORT

BatchID: 254722

Sample ID: **MB-254722** Client ID: Units: **ug/L** Prep Date: **01/24/2018** Run No: **361616**
SampleType: **MBLK** TestCode: **Volatile Organic Compounds by GC/MS SW8260B** BatchID: **254722** Analysis Date: **01/24/2018** Seq No: **7985215**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	BRL	1.0									
cis-1,3-Dichloropropene	BRL	1.0									
Cyclohexane	BRL	2.0									
Dibromochloromethane	BRL	1.0									
Dichlorodifluoromethane	BRL	1.0									
Ethylbenzene	BRL	1.0									
Freon-113	BRL	5.0									
Isopropylbenzene	BRL	1.0									
Methyl acetate	BRL	2.0									
Methyl tert-butyl ether	BRL	1.0									
Methylcyclohexane	BRL	2.0									
Methylene chloride	BRL	5.0									
Styrene	BRL	1.0									
Tetrachloroethene	BRL	1.0									
Toluene	BRL	1.0									
trans-1,2-Dichloroethene	BRL	2.0									
trans-1,3-Dichloropropene	BRL	2.0									
Trichloroethene	BRL	1.0									
Trichlorofluoromethane	BRL	1.0									
Vinyl chloride	BRL	1.0									
Xylenes, Total	BRL	1.0									
Surr: 4-Bromofluorobenzene	46.94	0	50.00		93.9	70	130				
Surr: Dibromofluoromethane	50.88	0	50.00		102	70	130				
Surr: Toluene-d8	46.80	0	50.00		93.6	70	130				

Client: GHD Services, Inc.
Project Name: Bluewater Thermal Solutions
Workorder: 1801D64

ANALYTICAL QC SUMMARY REPORT

BatchID: 254722

Sample ID: **LCS-254722** Client ID: Units: **ug/L** Prep Date: **01/24/2018** Run No: **361616**
SampleType: **LCS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B** BatchID: **254722** Analysis Date: **01/24/2018** Seq No: **7985212**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	55.38	1.0	50.00		111	70	130				
1,1,1-Trichloroethane	49.85	1.0	50.00		99.7	70	130				
1,1,2-Trichloroethane	44.87	1.0	50.00		89.7	70	130				
1,1-Dichloroethane	38.95	1.0	50.00		77.9	70	130				
1,1-Dichloroethene	55.68	2.0	50.00		111	60	140				
1,2,4-Trichlorobenzene	59.16	1.0	50.00		118	70	130				
1,2-Dibromo-3-chloropropane	47.72	1.0	50.00		95.4	70	130				
1,2-Dibromoethane	50.93	1.0	50.00		102	70	130				
1,2-Dichlorobenzene	49.78	1.0	50.00		99.6	70	130				
1,2-Dichloroethane	50.45	1.0	50.00		101	70	130				
1,2-Dichloropropane	42.38	1.0	50.00		84.8	70	130				
1,3-Dichlorobenzene	48.16	1.0	50.00		96.3	70	130				
1,4-Dichlorobenzene	47.91	1.0	50.00		95.8	70	130				
Benzene	44.79	1.0	50.00		89.6	70	130				
Bromodichloromethane	50.06	1.0	50.00		100	70	130				
Bromoform	63.52	1.0	50.00		127	70	130				
Carbon tetrachloride	60.92	2.0	50.00		122	70	130				
Chlorobenzene	48.84	1.0	50.00		97.7	70	130				
Chloroform	44.12	1.0	50.00		88.2	70	130				
cis-1,2-Dichloroethene	40.81	1.0	50.00		81.6	70	130				
cis-1,3-Dichloropropene	45.97	1.0	50.00		91.9	70	130				
Dibromochloromethane	57.46	1.0	50.00		115	70	130				
Ethylbenzene	46.79	1.0	50.00		93.6	70	130				
Isopropylbenzene	43.21	1.0	50.00		86.4	70	130				
Methylene chloride	39.62	5.0	50.00		79.2	70	130				
Styrene	46.82	1.0	50.00		93.6	70	130				
Tetrachloroethene	56.65	1.0	50.00		113	70	130				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: GHD Services, Inc.
Project Name: Bluewater Thermal Solutions
Workorder: 1801D64

ANALYTICAL QC SUMMARY REPORT

BatchID: 254722

Sample ID: **LCS-254722** Client ID: Units: **ug/L** Prep Date: **01/24/2018** Run No: **361616**
SampleType: **LCS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B** BatchID: **254722** Analysis Date: **01/24/2018** Seq No: **7985212**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Toluene	45.46	1.0	50.00		90.9	70	130				
trans-1,2-Dichloroethene	44.07	2.0	50.00		88.1	70	130				
trans-1,3-Dichloropropene	47.14	2.0	50.00		94.3	70	130				
Trichloroethene	52.77	1.0	50.00		106	70	130				
Vinyl chloride	54.61	1.0	50.00		109	70	130				
Xylenes, Total	142.9	1.0	150.0		95.3	70	130				
Surr: 4-Bromofluorobenzene	48.72	0	50.00		97.4	70	130				
Surr: Dibromofluoromethane	52.59	0	50.00		105	70	130				
Surr: Toluene-d8	47.57	0	50.00		95.1	70	130				

Sample ID: **1801D64-010AMS** Client ID: **GW-077150-11718-DJB-010** Units: **ug/L** Prep Date: **01/24/2018** Run No: **361616**
SampleType: **MS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B** BatchID: **254722** Analysis Date: **01/24/2018** Seq No: **7985213**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	23.99	1.0	20.00		120	69.5	142				
1,1,1-Trichloroethane	21.24	1.0	20.00		106	67.9	140				
1,1,2-Trichloroethane	18.86	1.0	20.00		94.3	71.6	134				
1,1-Dichloroethane	16.40	1.0	20.00		82.0	62.5	135				
1,1-Dichloroethene	19.36	2.0	20.00		96.8	65.7	143				
1,2,4-Trichlorobenzene	31.95	1.0	20.00		160	57.6	133				S
1,2-Dibromo-3-chloropropane	20.65	1.0	20.00		103	55.8	134				
1,2-Dibromoethane	21.85	1.0	20.00		109	75.9	131				
1,2-Dichlorobenzene	23.74	1.0	20.00		119	67.3	128				
1,2-Dichloroethane	21.90	1.0	20.00		110	67	133				
1,2-Dichloropropane	18.08	1.0	20.00		90.4	70	128				
1,3-Dichlorobenzene	22.48	1.0	20.00		112	68.3	125				
1,4-Dichlorobenzene	23.03	1.0	20.00		115	68.4	126				
Benzene	19.39	1.0	20.00		97.0	66.1	137				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: GHD Services, Inc.
Project Name: Bluewater Thermal Solutions
Workorder: 1801D64

ANALYTICAL QC SUMMARY REPORT

BatchID: 254722

Sample ID: **1801D64-010AMS** Client ID: **GW-077150-11718-DJB-010** Units: **ug/L** Prep Date: **01/24/2018** Run No: **361616**
SampleType: **MS** TestCode: **Volatile Organic Compounds by GC/MS SW8260B** BatchID: **254722** Analysis Date: **01/24/2018** Seq No: **7985213**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Bromodichloromethane	21.01	1.0	20.00		105	70.7	132				
Bromoform	26.09	1.0	20.00		130	56.9	134				
Carbon tetrachloride	26.12	2.0	20.00		131	73.9	147				
Chlorobenzene	22.23	1.0	20.00		111	70.9	132				
Chloroform	18.82	1.0	20.00		94.1	68.3	134				
cis-1,2-Dichloroethene	17.44	1.0	20.00		87.2	66.1	132				
cis-1,3-Dichloropropene	18.87	1.0	20.00		94.4	62.6	132				
Dibromochloromethane	24.21	1.0	20.00		121	60.3	143				
Ethylbenzene	20.92	1.0	20.00		105	74	134				
Isopropylbenzene	19.73	1.0	20.00		98.6	65.2	125				
Methylene chloride	17.53	5.0	20.00		87.6	64.4	133				
Styrene	20.76	1.0	20.00		104	73.8	137				
Tetrachloroethene	25.28	1.0	20.00	30.47	-26.0	66.1	136				S
Toluene	19.68	1.0	20.00		98.4	63.8	141				
trans-1,2-Dichloroethene	18.86	2.0	20.00		94.3	63.1	136				
trans-1,3-Dichloropropene	18.77	2.0	20.00		93.8	60	133				
Trichloroethene	22.56	1.0	20.00		113	70.6	128				
Vinyl chloride	23.69	1.0	20.00		118	60.8	143				
Xylenes, Total	64.36	1.0	60.00		107	77.9	138				
Surr: 4-Bromofluorobenzene	48.58	0	50.00		97.2	70	130				
Surr: Dibromofluoromethane	53.35	0	50.00		107	70	130				
Surr: Toluene-d8	47.27	0	50.00		94.5	70	130				

Sample ID: **1801D64-010AMSD** Client ID: **GW-077150-11718-DJB-010** Units: **ug/L** Prep Date: **01/24/2018** Run No: **361616**
SampleType: **MSD** TestCode: **Volatile Organic Compounds by GC/MS SW8260B** BatchID: **254722** Analysis Date: **01/24/2018** Seq No: **7985214**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	21.52	1.0	20.00		108	69.5	142	23.99	10.9	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: GHD Services, Inc.
Project Name: Bluewater Thermal Solutions
Workorder: 1801D64

ANALYTICAL QC SUMMARY REPORT

BatchID: 254722

Sample ID: **1801D64-010AMSD** Client ID: **GW-077150-11718-DJB-010** Units: **ug/L** Prep Date: **01/24/2018** Run No: **361616**
SampleType: **MSD** TestCode: **Volatile Organic Compounds by GC/MS SW8260B** BatchID: **254722** Analysis Date: **01/24/2018** Seq No: **7985214**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	18.95	1.0	20.00		94.8	67.9	140	21.24	11.4	20	
1,1,2-Trichloroethane	17.65	1.0	20.00		88.2	71.6	134	18.86	6.63	20	
1,1-Dichloroethane	14.88	1.0	20.00		74.4	62.5	135	16.40	9.72	20	
1,1-Dichloroethene	17.55	2.0	20.00		87.8	65.7	143	19.36	9.81	17.7	
1,2,4-Trichlorobenzene	28.85	1.0	20.00		144	57.6	133	31.95	10.2	29	S
1,2-Dibromo-3-chloropropane	19.52	1.0	20.00		97.6	55.8	134	20.65	5.63	21	
1,2-Dibromoethane	19.96	1.0	20.00		99.8	75.9	131	21.85	9.04	20	
1,2-Dichlorobenzene	21.94	1.0	20.00		110	67.3	128	23.74	7.88	20	
1,2-Dichloroethane	19.89	1.0	20.00		99.4	67	133	21.90	9.62	20	
1,2-Dichloropropane	16.64	1.0	20.00		83.2	70	128	18.08	8.29	20	
1,3-Dichlorobenzene	21.18	1.0	20.00		106	68.3	125	22.48	5.96	20	
1,4-Dichlorobenzene	21.33	1.0	20.00		107	68.4	126	23.03	7.66	20	
Benzene	17.47	1.0	20.00		87.4	66.1	137	19.39	10.4	20	
Bromodichloromethane	18.68	1.0	20.00		93.4	70.7	132	21.01	11.7	20	
Bromoform	23.63	1.0	20.00		118	56.9	134	26.09	9.90	20	
Carbon tetrachloride	23.70	2.0	20.00		118	73.9	147	26.12	9.71	20	
Chlorobenzene	19.71	1.0	20.00		98.6	70.9	132	22.23	12.0	20	
Chloroform	17.13	1.0	20.00		85.6	68.3	134	18.82	9.40	20	
cis-1,2-Dichloroethene	15.59	1.0	20.00		78.0	66.1	132	17.44	11.2	20	
cis-1,3-Dichloropropene	17.25	1.0	20.00		86.2	62.6	132	18.87	8.97	20	
Dibromochloromethane	21.80	1.0	20.00		109	60.3	143	24.21	10.5	20	
Ethylbenzene	18.76	1.0	20.00		93.8	74	134	20.92	10.9	20	
Isopropylbenzene	18.29	1.0	20.00		91.4	65.2	125	19.73	7.57	20	
Methylene chloride	15.32	5.0	20.00		76.6	64.4	133	17.53	13.5	20	
Styrene	18.63	1.0	20.00		93.2	73.8	137	20.76	10.8	20	
Tetrachloroethene	22.99	1.0	20.00	30.47	-37.4	66.1	136	25.28	9.49	20	S
Toluene	18.18	1.0	20.00		90.9	63.8	141	19.68	7.92	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: GHD Services, Inc.
Project Name: Bluewater Thermal Solutions
Workorder: 1801D64

ANALYTICAL QC SUMMARY REPORT

BatchID: 254722

Sample ID: **1801D64-010AMSD** Client ID: **GW-077150-11718-DJB-010** Units: **ug/L** Prep Date: **01/24/2018** Run No: **361616**
SampleType: **MSD** TestCode: **Volatile Organic Compounds by GC/MS SW8260B** BatchID: **254722** Analysis Date: **01/24/2018** Seq No: **7985214**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
trans-1,2-Dichloroethene	16.70	2.0	20.00		83.5	63.1	136	18.86	12.1	20	
trans-1,3-Dichloropropene	17.10	2.0	20.00		85.5	60	133	18.77	9.31	20	
Trichloroethene	20.30	1.0	20.00		102	70.6	128	22.56	10.5	20	
Vinyl chloride	21.20	1.0	20.00		106	60.8	143	23.69	11.1	20.1	
Xylenes, Total	57.46	1.0	60.00		95.8	77.9	138	64.36	11.3	20	
Surr: 4-Bromofluorobenzene	47.99	0	50.00		96.0	70	130	48.58	0	0	
Surr: Dibromofluoromethane	52.41	0	50.00		105	70	130	53.35	0	0	
Surr: Toluene-d8	47.34	0	50.00		94.7	70	130	47.27	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Appendix D
Soil Gas Sampling Field Documentation

Bluewater Thermal 07150, 2018-01-04

Created	2018-01-04 12:25:36 EST by Jim Fineis
Updated	2018-01-17 14:26:07 EST by Jim Fineis
Location	34.669832, -82.1805406
Atlas Geo-Sampling Data Sheets	

Project Information

Project Name	Bluewater Thermal 07150
Client Name	GHD
General Weather Conditons	32 degrees and cold
Client Onsite?	Yes
Onsite Reprsenative	Dave Bentowski
Job Site Address	395 South Frontage Road Fountain Inn, South Carolina 29644
Facility or Location Name	Bodycote
Project Start Date	2018-01-04
Project End Data	2018-01-04
Atlas / Total Vapor Responsible for Shipping Samples?	Yes
Job Site Photo	 

SG-1, SG-1

Sample Collected from Existing Implant	No
Boring Number or ID	SG-1
Longitude	-82.180839
Latitude	34.67015

Sample ID / Location ID

Sample Location Photo	
Implant Location (Address or Lat/Long)	395 South Frontage Road Fountain Inn, South Carolina 29644
Implant Location Description	Near MW5

Soil Vapor Implant Construction

Implant Installed	Yes
Installation Date	2018-01-02
Temporary or Permanent Implant	Permanent
Installation Method	DPT
Borehole Diameter in Inches	1.6
Implant Type	Shallow Soil Vapor Sample
Implant Material	Air-stone
Implant Depth in Inches	84
Sand Thickness (")	12
Bentonite Thickness (")	72
Water Dam Test Completed	No
Helium Leak Test Information	

Helium Leak Test Information

Helium Leak Test Performed	Yes
Helium % Start	56
Helium % Final	48
Helium In Implant (PPM or %)	0
Sample / Summa Can Information	

Sample Collection

Sample Collected?	Yes
Duplicate Sample Collected?	No
Sample Type	Soil Vapor
Other Field Parameters Collected?	No
Laboratory Sample ID	SG-1
Sample Date	2018-01-04
Purge Volume (ml)	180
Shut In Test Completed	Yes
Flow Controller ID	82
Summa Canister ID	612
Beginning Summa Vacuum	30
Ending Summa Vacuum	18
Sample Time Start	12:53
Sample End Time	17:30
Sample Tag Photo	

SG-2, SG-2

Sample Collected from Existing Implant	No
Boring Number or ID	SG-2
Longitude	-82.180475
Latitude	34.670148

Sample ID / Location ID

Sample Location Photo

Implant Location (Address or Lat/Long)	State Road S-30-731 Fountain Inn, South Carolina 29644

Implant Location Description	SG-2

Soil Vapor Implant Construction

Implant Installed	Yes
Installation Date	2018-01-02
Temporary or Permanent Implant	Permanent
Installation Method	DPT
Borehole Diameter in Inches	1.6
Implant Type	Shallow Soil Vapor Sample
Implant Material	Air-stone
Implant Depth in Inches	84
Sand Thickness (")	12
Bentonite Thickness (")	72
Water Dam Test Completed	No
Helium Leak Test Information	

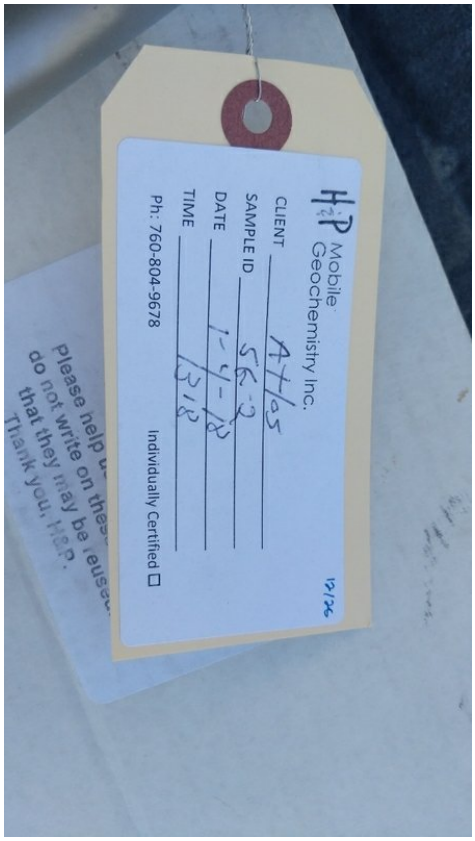
Helium Leak Test Information

Helium Leak Test Performed	Yes
Helium % Start	62
Helium % Final	58
Helium In Implant (PPM or %)	0
Sample / Summa Can Information	

Sample Collection

Sample Collected?	Yes
Duplicate Sample Collected?	No
Sample Type	Soil Vapor
Other Field Parameters Collected?	No
Laboratory Sample ID	SG-2
Sample Date	2018-01-04
Purge Volume (ml)	180
Shut In Test Completed	Yes
Flow Controller ID	45
Summa Canister ID	628
Beginning Summa Vacuum	28
Ending Summa Vacuum	0
Sample Time Start	13:18
Sample End Time	13:21

Sample Tag Photo



SG-3, SG-3

Sample Collected from Existing Implant	No
Boring Number or ID	SG-3
Longitude	-82.18007
Latitude	34.6701

Sample ID / Location ID

Sample Location Photo

Implant Location (Address or Lat/Long)	100 Hunts Bridge Road Fountain Inn, South Carolina 29644

Soil Vapor Implant Construction

Implant Installed	Yes
Installation Date	2018-01-02
Temporary or Permanent Implant	Permanent
Installation Method	DPT
Borehole Diameter in Inches	1.6
Implant Type	Shallow Soil Vapor Sample
Implant Material	Air-stone
Implant Depth in Inches	84
Sand Thickness (")	12
Bentonite Thickness (")	72
Water Dam Test Completed	No
Helium Leak Test Information	

Helium Leak Test Information

Helium Leak Test Performed	Yes
Helium % Start	62
Helium % Final	52
Helium In Implant (PPM or %)	0
Sample / Summa Can Information	

Sample Collection

Sample Collected?	Yes

Duplicate Sample Collected?	No
Sample Type	Soil Vapor
Other Field Parameters Collected?	No
Laboratory Sample ID	SG-3
Sample Date	2018-01-04
Purge Volume (ml)	180
Shut In Test Completed	Yes
Flow Controller ID	290
Summa Canister ID	607
Beginning Summa Vacuum	27
Ending Summa Vacuum	0
Sample Time Start	13:35
Sample End Time	13:41

SG-4, SG-4

Sample Collected from Existing Implant	No
Boring Number or ID	SG-4
Longitude	-82.179969
Latitude	34.669856

Sample ID / Location ID

Sample Location Photo

Implant Location (Address or Lat/Long)	100 Hunts Bridge Road Fountain Inn, South Carolina 29644

Soil Vapor Implant Construction

Implant Installed	Yes
Installation Date	2018-01-02
Temporary or Permanent Implant	Permanent
Installation Method	DPT
Borehole Diameter in Inches	1.6
Implant Type	Shallow Soil Vapor Sample
Implant Material	Air-stone
Implant Depth in Inches	84
Sand Thickness (")	12
Bentonite Thickness (")	72

Water Dam Test Completed	No
Helium Leak Test Information	

Helium Leak Test Information

Helium Leak Test Performed	Yes
Helium % Start	68
Helium % Final	61
Helium In Implant (PPM or %)	0
Sample / Summa Can Information	

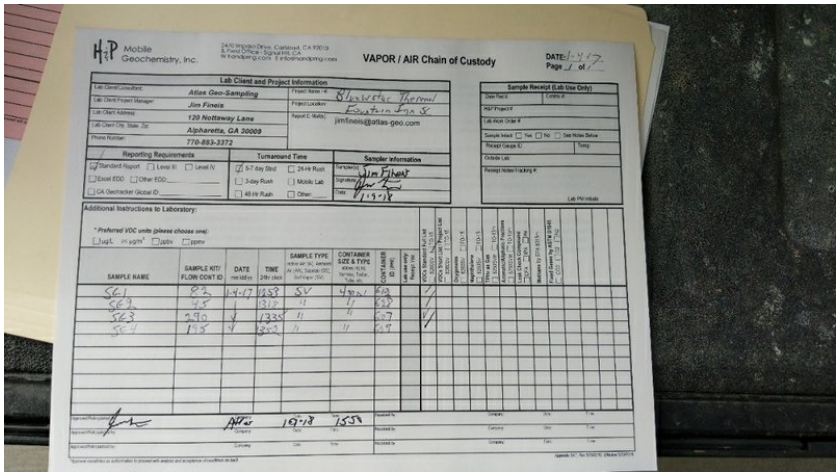
Sample Collection

Sample Collected?	Yes
Duplicate Sample Collected?	No
Sample Type	Soil Vapor
Other Field Parameters Collected?	No
Laboratory Sample ID	SG-4
Sample Date	2018-01-04
Purge Volume (ml)	180
Shut In Test Completed	Yes
Flow Controller ID	195
Summa Canister ID	629
Beginning Summa Vacuum	27
Ending Summa Vacuum	0
Sample Time Start	13:53
Sample End Time	13:57
Sample Tag Photo	
Sample Shipping Information	
Method of Shipping or Delivery	UPS
Scan Shipping Label	1Z93TT618751055368

Signature of Sampler or Installer

Signed 2018-01-09 15:04:42 EST

Photo of Chain of Custody



Appendix E
VISL Calculation

OSWER VAPOR INTRUSION ASSESSMENT
Vapor Intrusion Screening Level (VISL) Calculator Version 3.5, June 2017 RSLs

The primary objective of risk-based screening is to identify sites or buildings unlikely to pose a health concern through the vapor intrusion pathway. Generally, at properties where subsurface concentrations of vapor-forming chemicals (e.g., groundwater or "near source" soil gas concentrations) fall below screening levels (i.e., VISLs), no further action or study is warranted, so long as the exposure assumptions match those taken into account by the calculations and the site fulfills the conditions and assumptions of the generic conceptual model underlying the screening levels. In a similar fashion, the results of risk-based screening can help the data review team identify areas, buildings, and/or chemicals that can be eliminated from further assessment. The generic conceptual model underlying these screening levels is described in OSWER Publication 9200.2-154 (OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway From Subsurface Vapor Sources to Indoor Air) (EPA 2015; Section 6.5)

Parameter	Value	Instructions
Exposure Scenario	Commercial	Select residential or commercial scenario from pull down list
Target Risk for Carcinogens	1.00E-05	Enter target risk for carcinogens
Target Hazard Quotient for Non-Carcinogens	1	Enter target hazard quotient for non-carcinogens
Average Groundwater Temperature (^{o}C)	25	Enter average of the stabilized groundwater temperature to correct Henry's Law Constant for groundwater target concentrations

CAS	Chemical Name	Does the chemical meet the definition for volatility? (HLC>1E-5 or VP>1) Yes/No	Does chemical have inhalation toxicity data? (IUR and/or RfC) Yes/No	Is Chemical Sufficiently Volatile and Toxic to Pose Inhalation Risk Via Vapor Intrusion from Groundwater Source? Chc > Cia,target? Yes/No	Target Indoor Air Conc. @ TCR = 10E-06 or THQ = 1 MIN(Cia,c;Cia,nc) (ug/m^3)	Toxicity Basis C/NC	Target Sub-Slab and Exterior Soil Gas Conc. @ TCR = 10E-06 or THQ = 1 Csg (ug/m^3)	Target Ground Water Conc. @ TCR = 10E-06 or THQ = 1 Cgw (ug/L)	Is Target Ground Water Conc. < MCL? Cgw<MCL? Yes/No (MCL ug/L)	Pure Phase Vapor Conc. @ 25^{o}C Cvp (ug/m^3)	Maximum Groundwater Vapor Conc. Chc (ug/m^3)	Temperature for Max. Groundwater Vapor Conc. Tgw or 25 C	Lower Explosive Limit** LEL (% by vol)	LEL Source	Inhalation Unit Risk IUR (ug/m^3)$^{-1}$	IUR Source*	Reference Concentration RfC (mg/m^3)	RFC Source*	Mutagenic Indicator i	Target Indoor Air Conc. for Carcinogens @ TCR = 10E-06 Cia,c (ug/m^3)	Target Indoor Air Conc. for Non-Carcinogens @ THQ = 1 Cia,nc (ug/m^3)
71-43-2	Benzene	Yes	Yes	Yes	1.6E+01	C	5.2E+02	6.9E+01	No (5)	3.98E+08	4.06E+08	25	1.2	N	7.80E-06	I	3.00E-02	I		1.6E+01	1.3E+02
75-15-0	Carbon Disulfide	Yes	Yes	Yes	3.1E+03	NC	1.0E+05	5.2E+03	--	1.47E+09	1.27E+09	25	1.3	N			7.00E-01	I			3.1E+03
67-66-3	Chloroform	Yes	Yes	Yes	5.3E+00	C	1.8E+02	3.6E+01	Yes (8.0E+01(F))	1.27E+09	1.19E+09	25			2.30E-05	I	9.80E-02	A		5.3E+00	4.3E+02
75-34-3	Dichloroethane, 1,1-	Yes	Yes	Yes	7.7E+01	C	2.6E+03	3.3E+02	--	1.21E+09	1.16E+09	25	5.4	N	1.60E-06	CA				7.7E+01	
75-35-4	Dichloroethylene, 1,1-	Yes	Yes	Yes	8.8E+02	NC	2.9E+04	8.2E+02	No (7)	3.13E+09	2.58E+09	25	6.5	N			2.00E-01	I			8.8E+02
100-41-4	Ethylbenzene	Yes	Yes	Yes	4.9E+01	C	1.6E+03	1.5E+02	Yes (700)	5.48E+07	5.44E+07	25	0.8	N	2.50E-06	CA	1.00E+00	I		4.9E+01	4.4E+03
127-18-4	Tetrachloroethylene	Yes	Yes	Yes	1.8E+02	NC	5.8E+03	2.4E+02	No (5)	1.65E+08	1.49E+08	25			2.60E-07	I	4.00E-02	I		4.7E+02	1.8E+02
108-88-3	Toluene	Yes	Yes	Yes	2.2E+04	NC	7.3E+05	8.1E+04	No (1000)	1.41E+08	1.43E+08	25	1.1	N			5.00E+00	I			2.2E+04
71-55-6	Trichloroethane, 1,1,1-	Yes	Yes	Yes	2.2E+04	NC	7.3E+05	3.1E+04	No (200)	8.90E+08	9.07E+08	25	7.5	N			5.00E+00	I			2.2E+04
79-01-6	Trichloroethylene	Yes	Yes	Yes	8.8E+00	NC	2.9E+02	2.2E+01	No (5)	4.88E+08	5.15E+08	25	8	N	see note	I	2.00E-03	I	TCE	3.0E+01	8.8E+00
95-63-6	Trimethylbenzene, 1,2,4-	Yes	Yes	Yes	2.6E+02	NC	8.8E+03	1.0E+03	--	1.36E+07	1.44E+07	25	0.9	N			6.00E-02	I			2.6E+02
108-38-3	Xylene, m-	Yes	Yes	Yes	4.4E+02	NC	1.5E+04	1.5E+03	--	4.74E+07	4.73E+07	25		N			1.00E-01	S			4.4E+02
95-47-6	Xylene, o-	Yes	Yes	Yes	4.4E+02	NC	1.5E+04	2.1E+03	--	3.78E+07	3.77E+07	25		N			1.00E-01	S			4.4E+02
106-42-3	Xylene, P-	Yes	Yes	Yes	4.4E+02	NC	1.5E+04	1.6E+03	--	5.05E+07	4.57E+07	25		N			1.00E-01	S			4.4E+02

Notes:

(1) **Inhalation Pathway Exposure Parameters (RME):**

Exposure Scenario	Units	Residential Symbol	Residential Value	Commercial Symbol	Commercial Value	Selected (based on scenario in cell G10) Symbol	Selected Value
Averaging time for carcinogens	(yrs)	ATc_R	70	ATc_C	70	ATc	70
Averaging time for non-carcinogens	(yrs)	ATnc_R	26	ATnc_C	25	ATnc	25
Exposure duration	(yrs)	ED_R	26	ED_C	25	ED	25
Exposure frequency	(days/yr)	EF_R	350	EF_C	250	EF	250
Exposure time	(hr/day)	ET_R	24	ET_C	8	ET	8

(2) **Generic Attenuation Factors:**

Source Medium of Vapors		Residential Symbol	Residential Value	Commercial Symbol	Commercial Value	Selected (based on scenario in cell G10) Symbol	Selected Value
Groundwater	(-)	AFgw_R	0.001	AFgw_C	0.001	AFgw	0.001
Sub-Slab and Exterior Soil Gas	(-)	AFss_R	0.03	AFss_C	0.03	AFss	0.03

(3) **Formulas**
Cia, target = MIN(Cia,c; Cia,nc)
Cia,c (ug/m3) = TCR x ATc x (365 days/yr) x (24 hrs/day) / (ED x EF x ET x IUR)
Cia,nc (ug/m3) = THQ x ATnc x (365 days/yr) x (24 hrs/day) x RfC x (1000 ug/mg) / (ED x EF x ET)

(4) **Special Case Chemicals**
Trichloroethylene

	Residential Symbol	Residential Value	Commercial Symbol	Commercial Value	Selected (based on scenario in cell G10) Symbol	Selected Value
mIURTCE	mIURTCE_R	1.00E-06	mIURTCE_C	0.00E+00	mIURTCE	0.00E+00
IURTCE	IURTCE_R	3.10E-06	IURTCE_C	4.10E-06	IURTCE	4.10E-06

Mutagenic Chemicals

Note: This section applies to trichloroethylene and other mutagenic chemicals, but not to vinyl chloride.

Age Cohort	Exposure Duration (years)	Age-dependent adjustment factor
0 - 2 years	2	10
2 - 6 years	4	3
6 - 16 years	10	3
16 - 26 years	10	1

Mutagenic-mode-of-action (MMOA) adjustment factor 25 This factor is used in the equations for mutagenic chemicals.

Notation:
NVT = Not sufficiently volatile and/or toxic to pose inhalation risk in selected exposure scenario for the indicated medium
C = Carcinogenic
NC = Non-carcinogenic
I = IRIS: EPA Integrated Risk Information System (IRIS). Available online at: http://www.epa.gov/iris/subst/index.html
P = PPRTV. EPA Provisional Peer Reviewed Toxicity Values (PPRTVs). Available online at: http://hhpprtv.ornl.gov/pprtv.shtml
A = Agency for Toxic Substances and Disease Registry (ATSDR) Minimum Risk Levels (MRLs). Available online at: http://www.atsdr.cdc.gov/mrls/index.html
CA = California Environmental Protection Agency/Office of Environmental Health Hazard Assessment assessments. Available online at: http://www.oehha.ca.gov/risk/ChemicalDB/index.asp
H = HEAST. EPA Superfund Health Effects Assessment Summary Tables (HEAST) database. Available online at: http://epa-heast.ornl.gov/heast.shtml
S = See RSL User Guide, Section 5
X = PPRTV Appendix
E = The Engineering ToolBox. Available online at http://www.engineeringtoolbox.com/explosive-concentration-limits-d_423.html
N = Centers for Disease Control and Prevention (CDC) National Institute for Occupational Safety and Health (NIOSH). Pocket Guide to Chemical Hazards. Available online at: http://www.cdc.gov/niosh/npg/default.html http://www.cdc.gov/niosh/npg/default.html
M = Chemical-specific MSDS
Mut = Chemical acts according to the mutagenic-mode-of-action, special exposure parameters apply (see footnote (4) above).
VC = Special exposure equation for vinyl chloride applies (see Navigation Guide for equation).
TCE = Special mutagenic and non-mutagenic IURs for trichloroethylene apply (see footnote (4) above).
Yellow highlighting indicates site-specific parameters that may be edited by the user.
Blue highlighting indicates exposure factors that are based on Risk Assessment Guidance for Superfund (RAGS) or EPA vapor intrusion guidance, which generally should not be changed.
**Lower explosive limit is the minimum concentration of the compound in air (% by volume) that is needed for the gas to ignite and explode.

Appendix F
Soil Gas Analytical Report

Mobile
Geochemistry Inc.

17 January 2018

Mr. Jim Fineis
Atlas Geo-Sampling Company
120 Nottaway Lane
Alpharetta, GA 30009

H&P Project: AG011118-10
Client Project: Bluewater Thermal/ Fountain Inn SC

Dear Mr. Jim Fineis:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 11-Jan-18 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody
- Sampling Logs (if applicable)

Unless otherwise noted, I certify that all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Janis La Roux
Laboratory Director

H&P Mobile Geochemistry, Inc. is certified under the California ELAP and the National Environmental Laboratory Accreditation Conference (NELAC). H&P is approved as an Environmental Testing Laboratory and Mobile Laboratory in accordance with the DoD-ELAP Program and ISO/IEC 17025:2005 programs, accreditation number 69070 for EPA Method TO-15, H&P Method TO-15, EPA Method 8260B and H&P 8260SV.

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Atlas Geo-Sampling Company	Project: AG011118-10	
120 Nottaway Lane	Project Number: Bluewater Thermal/ Fountain Inn SC	Reported:
Alpharetta, GA 30009	Project Manager: Mr. Jim Fineis	17-Jan-18 11:09

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SG1	E801028-01	Vapor	04-Jan-18	11-Jan-18
SG2	E801028-02	Vapor	04-Jan-18	11-Jan-18
SG3	E801028-03	Vapor	04-Jan-18	11-Jan-18
SG4	E801028-04	Vapor	04-Jan-18	11-Jan-18

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Atlas Geo-Sampling Company	Project: AG011118-10	
120 Nottaway Lane	Project Number: Bluewater Thermal/ Fountain Inn SC	Reported:
Alpharetta, GA 30009	Project Manager: Mr. Jim Fineis	17-Jan-18 11:09

DETECTIONS SUMMARY

Sample ID: **SG1** Laboratory ID: **E801028-01**

Analyte	Result	Reporting Limit	Units	Method	Notes
Carbon disulfide	**70**	13	ug/m3	EPA TO-15	
Chloroform	**10**	9.9	ug/m3	EPA TO-15	
Benzene	**20**	6.5	ug/m3	EPA TO-15	
Toluene	**86**	7.6	ug/m3	EPA TO-15	
Tetrachloroethene	**170**	14	ug/m3	EPA TO-15	
Ethylbenzene	**9.7**	8.8	ug/m3	EPA TO-15	
m,p-Xylene	**31**	18	ug/m3	EPA TO-15	
o-Xylene	**12**	8.8	ug/m3	EPA TO-15	
1,2,4-Trimethylbenzene	**10**	10	ug/m3	EPA TO-15	

Sample ID: **SG2** Laboratory ID: **E801028-02**

Analyte	Result	Reporting Limit	Units	Method	Notes
Carbon disulfide	**110**	13	ug/m3	EPA TO-15	
Chloroform	**37**	9.9	ug/m3	EPA TO-15	
Benzene	**20**	6.5	ug/m3	EPA TO-15	
Trichloroethene	**240**	11	ug/m3	EPA TO-15	
Toluene	**150**	7.6	ug/m3	EPA TO-15	
Tetrachloroethene	**9200**	34	ug/m3	EPA TO-15	
Ethylbenzene	**24**	8.8	ug/m3	EPA TO-15	
m,p-Xylene	**74**	18	ug/m3	EPA TO-15	
o-Xylene	**24**	8.8	ug/m3	EPA TO-15	
1,2,4-Trimethylbenzene	**11**	10	ug/m3	EPA TO-15	

Sample ID: **SG3** Laboratory ID: **E801028-03**

Analyte	Result	Reporting Limit	Units	Method	Notes
Carbon disulfide	**6.4**	6.3	ug/m3	EPA TO-15	
Chloroform	**100**	4.9	ug/m3	EPA TO-15	
1,1,1-Trichloroethane	**7.8**	5.5	ug/m3	EPA TO-15	
Bromodichloromethane	**17**	6.8	ug/m3	EPA TO-15	
Toluene	**20**	3.8	ug/m3	EPA TO-15	
m,p-Xylene	**11**	8.8	ug/m3	EPA TO-15	
o-Xylene	**4.5**	4.4	ug/m3	EPA TO-15	
1,2,4-Trimethylbenzene	**5.8**	5.0	ug/m3	EPA TO-15	

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Atlas Geo-Sampling Company	Project: AG011118-10	
120 Nottaway Lane	Project Number: Bluewater Thermal/ Fountain Inn SC	Reported:
Alpharetta, GA 30009	Project Manager: Mr. Jim Fineis	17-Jan-18 11:09

Sample ID: **SG4** Laboratory ID: **E801028-04**

Analyte	Result	Reporting Limit	Units	Method	Notes
1,1-Dichloroethene	**37**	4.0	ug/m3	EPA TO-15	
Carbon disulfide	**7.5**	6.3	ug/m3	EPA TO-15	
1,1-Dichloroethane	**34**	4.1	ug/m3	EPA TO-15	
1,1,1-Trichloroethane	**55**	5.5	ug/m3	EPA TO-15	
Trichloroethene	**6.3**	5.5	ug/m3	EPA TO-15	
Toluene	**25**	3.8	ug/m3	EPA TO-15	
Tetrachloroethene	**610**	6.9	ug/m3	EPA TO-15	
m,p-Xylene	**12**	8.8	ug/m3	EPA TO-15	
o-Xylene	**4.9**	4.4	ug/m3	EPA TO-15	

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120 Nottaway Lane	Project Number: Bluewater Thermal/ Fountain Inn SC	Reported:
Alpharetta, GA 30009	Project Manager: Mr. Jim Fineis	17-Jan-18 11:09

Volatile Organic Compounds by EPA TO-15

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Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG1 (E801028-01) Vapor Sampled: 04-Jan-18 Received: 11-Jan-18									
Dichlorodifluoromethane (F12)	ND	10	ug/m3	2	EA81507	15-Jan-18	15-Jan-18	EPA TO-15	
Chloromethane	ND	4.1	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	14	"	"	"	"	"	"	
Vinyl chloride	ND	5.2	"	"	"	"	"	"	
Bromomethane	ND	32	"	"	"	"	"	"	
Chloroethane	ND	16	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	11	"	"	"	"	"	"	
1,1-Dichloroethene	ND	8.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	15	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	7.1	"	"	"	"	"	"	
Carbon disulfide	**70**	13	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	16	"	"	"	"	"	"	
1,1-Dichloroethane	ND	8.2	"	"	"	"	"	"	
2-Butanone (MEK)	ND	60	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
Chloroform	**10**	9.9	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	11	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	8.2	"	"	"	"	"	"	
Benzene	**20**	6.5	"	"	"	"	"	"	
Carbon tetrachloride	ND	13	"	"	"	"	"	"	
Trichloroethene	ND	11	"	"	"	"	"	"	
1,2-Dichloropropane	ND	19	"	"	"	"	"	"	
Bromodichloromethane	ND	14	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	9.2	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	17	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	9.2	"	"	"	"	"	"	
Toluene	**86**	7.6	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	11	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	17	"	"	"	"	"	"	
Dibromochloromethane	ND	17	"	"	"	"	"	"	
Tetrachloroethene	**170**	14	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	16	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	14	"	"	"	"	"	"	
Chlorobenzene	ND	9.4	"	"	"	"	"	"	
Ethylbenzene	**9.7**	8.8	"	"	"	"	"	"	
m,p-Xylene	**31**	18	"	"	"	"	"	"	
Styrene	ND	8.6	"	"	"	"	"	"	
o-Xylene	**12**	8.8	"	"	"	"	"	"	

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Atlas Geo-Sampling Company	Project: AG011118-10	
120 Nottaway Lane	Project Number: Bluewater Thermal/ Fountain Inn SC	Reported:
Alpharetta, GA 30009	Project Manager: Mr. Jim Fineis	17-Jan-18 11:09

Volatile Organic Compounds by EPA TO-15

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Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG1 (E801028-01) Vapor Sampled: 04-Jan-18 Received: 11-Jan-18									
Bromoform	ND	21	ug/m3	2	EA81507	15-Jan-18	15-Jan-18	EPA TO-15	
1,1,2,2-Tetrachloroethane	ND	14	"	"	"	"	"	"	
4-Ethyltoluene	ND	10	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	**10**	10	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	24	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	24	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	24	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	75	"	"	"	"	"	"	
Hexachlorobutadiene	ND	110	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*116 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*102 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*91.9 %*		*77-127*	"	"	"	"	
SG2 (E801028-02) Vapor Sampled: 04-Jan-18 Received: 11-Jan-18									
Dichlorodifluoromethane (F12)	ND	10	ug/m3	2	EA81507	15-Jan-18	15-Jan-18	EPA TO-15	
Chloromethane	ND	4.1	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	14	"	"	"	"	"	"	
Vinyl chloride	ND	5.2	"	"	"	"	"	"	
Bromomethane	ND	32	"	"	"	"	"	"	
Chloroethane	ND	16	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	11	"	"	"	"	"	"	
1,1-Dichloroethene	ND	8.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	15	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	7.1	"	"	"	"	"	"	
Carbon disulfide	**110**	13	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	16	"	"	"	"	"	"	
1,1-Dichloroethane	ND	8.2	"	"	"	"	"	"	
2-Butanone (MEK)	ND	60	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
Chloroform	**37**	9.9	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	11	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	8.2	"	"	"	"	"	"	
Benzene	**20**	6.5	"	"	"	"	"	"	
Carbon tetrachloride	ND	13	"	"	"	"	"	"	
Trichloroethene	**240**	11	"	"	"	"	"	"	
1,2-Dichloropropane	ND	19	"	"	"	"	"	"	

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Alpharetta, GA 30009	Project Manager: Mr. Jim Fineis	17-Jan-18 11:09

Volatile Organic Compounds by EPA TO-15

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Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG2 (E801028-02) Vapor Sampled: 04-Jan-18 Received: 11-Jan-18									
Bromodichloromethane	ND	14	ug/m3	2	EA81507	15-Jan-18	15-Jan-18	EPA TO-15	
cis-1,3-Dichloropropene	ND	9.2	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	17	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	9.2	"	"	"	"	"	"	
Toluene	**150**	7.6	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	11	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	17	"	"	"	"	"	"	
Dibromochloromethane	ND	17	"	"	"	"	"	"	
Tetrachloroethene	**9200**	34	"	5	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	16	"	2	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	14	"	"	"	"	"	"	
Chlorobenzene	ND	9.4	"	"	"	"	"	"	
Ethylbenzene	**24**	8.8	"	"	"	"	"	"	
m,p-Xylene	**74**	18	"	"	"	"	"	"	
Styrene	ND	8.6	"	"	"	"	"	"	
o-Xylene	**24**	8.8	"	"	"	"	"	"	
Bromoform	ND	21	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	14	"	"	"	"	"	"	
4-Ethyltoluene	ND	10	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	10	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	**11**	10	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	24	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	24	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	24	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	75	"	"	"	"	"	"	
Hexachlorobutadiene	ND	110	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*112 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*111 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*93.9 %*		*77-127*	"	"	"	"	

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Volatile Organic Compounds by EPA TO-15

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Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG3 (E801028-03) Vapor Sampled: 04-Jan-18 Received: 11-Jan-18									
Dichlorodifluoromethane (F12)	ND	5.0	ug/m3	1	EA81507	15-Jan-18	15-Jan-18	EPA TO-15	
Chloromethane	ND	2.1	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	7.1	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	3.5	"	"	"	"	"	"	
Carbon disulfide	**6.4**	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	ND	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Chloroform	**100**	4.9	"	"	"	"	"	"	
1,1,1-Trichloroethane	**7.8**	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	ND	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
1,2-Dichloropropane	ND	9.4	"	"	"	"	"	"	
Bromodichloromethane	**17**	6.8	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
Toluene	**20**	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Dibromochloromethane	ND	8.6	"	"	"	"	"	"	
Tetrachloroethene	ND	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	**11**	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	
o-Xylene	**4.5**	4.4	"	"	"	"	"	"	

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Volatile Organic Compounds by EPA TO-15

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Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG3 (E801028-03) Vapor Sampled: 04-Jan-18 Received: 11-Jan-18									
Bromoform	ND	10	ug/m3	1	EA81507	15-Jan-18	15-Jan-18	EPA TO-15	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	**5.8**	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	38	"	"	"	"	"	"	
Hexachlorobutadiene	ND	54	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*112 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*107 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*93.5 %*		*77-127*	"	"	"	"	
SG4 (E801028-04) Vapor Sampled: 04-Jan-18 Received: 11-Jan-18									
Dichlorodifluoromethane (F12)	ND	5.0	ug/m3	1	EA81507	15-Jan-18	15-Jan-18	EPA TO-15	
Chloromethane	ND	2.1	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	7.1	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
1,1-Dichloroethene	**37**	4.0	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	3.5	"	"	"	"	"	"	
Carbon disulfide	**7.5**	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
1,1-Dichloroethane	**34**	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	ND	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Chloroform	ND	4.9	"	"	"	"	"	"	
1,1,1-Trichloroethane	**55**	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	ND	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Trichloroethene	**6.3**	5.5	"	"	"	"	"	"	
1,2-Dichloropropane	ND	9.4	"	"	"	"	"	"	

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Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG4 (E801028-04) Vapor Sampled: 04-Jan-18 Received: 11-Jan-18									
Bromodichloromethane	ND	6.8	ug/m3	1	EA81507	15-Jan-18	15-Jan-18	EPA TO-15	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
Toluene	**25**	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Dibromochloromethane	ND	8.6	"	"	"	"	"	"	
Tetrachloroethene	**610**	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	**12**	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	
o-Xylene	**4.9**	4.4	"	"	"	"	"	"	
Bromoform	ND	10	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	38	"	"	"	"	"	"	
Hexachlorobutadiene	ND	54	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*116 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*103 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*92.4 %*		*77-127*	"	"	"	"	

H&P Mobile
Geochemistry Inc.

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Atlas Geo-Sampling Company	Project: AG011118-10	
120 Nottaway Lane	Project Number: Bluewater Thermal/ Fountain Inn SC	Reported:
Alpharetta, GA 30009	Project Manager: Mr. Jim Fineis	17-Jan-18 11:09

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EA81507 - TO-15										
Blank (EA81507-BLK1)				Prepared & Analyzed: 15-Jan-18						
Dichlorodifluoromethane (F12)	ND	5.0	ug/m3							
Chloromethane	ND	2.1	"							
Dichlorotetrafluoroethane (F114)	ND	7.1	"							
Vinyl chloride	ND	2.6	"							
Bromomethane	ND	16	"							
Chloroethane	ND	8.0	"							
Trichlorofluoromethane (F11)	ND	5.6	"							
1,1-Dichloroethene	ND	4.0	"							
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"							
Methylene chloride (Dichloromethane)	ND	3.5	"							
Carbon disulfide	ND	6.3	"							
trans-1,2-Dichloroethene	ND	8.0	"							
1,1-Dichloroethane	ND	4.1	"							
2-Butanone (MEK)	ND	30	"							
cis-1,2-Dichloroethene	ND	4.0	"							
Chloroform	ND	4.9	"							
1,1,1-Trichloroethane	ND	5.5	"							
1,2-Dichloroethane (EDC)	ND	4.1	"							
Benzene	ND	3.2	"							
Carbon tetrachloride	ND	6.4	"							
Trichloroethene	ND	5.5	"							
1,2-Dichloropropane	ND	9.4	"							
Bromodichloromethane	ND	6.8	"							
cis-1,3-Dichloropropene	ND	4.6	"							
4-Methyl-2-pentanone (MIBK)	ND	8.3	"							
trans-1,3-Dichloropropene	ND	4.6	"							
Toluene	ND	3.8	"							
1,1,2-Trichloroethane	ND	5.5	"							
2-Hexanone (MBK)	ND	8.3	"							
Dibromochloromethane	ND	8.6	"							
Tetrachloroethene	ND	6.9	"							
1,2-Dibromoethane (EDB)	ND	7.8	"							
1,1,1,2-Tetrachloroethane	ND	7.0	"							
Chlorobenzene	ND	4.7	"							

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Alpharetta, GA 30009	Project Manager: Mr. Jim Fineis	17-Jan-18 11:09

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EA81507 - TO-15										
Blank (EA81507-BLK1)				Prepared & Analyzed: 15-Jan-18						
Ethylbenzene	ND	4.4	ug/m3							
m,p-Xylene	ND	8.8	"							
Styrene	ND	4.3	"							
o-Xylene	ND	4.4	"							
Bromoform	ND	10	"							
1,1,2,2-Tetrachloroethane	ND	7.0	"							
4-Ethyltoluene	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
1,3-Dichlorobenzene	ND	12	"							
1,4-Dichlorobenzene	ND	12	"							
1,2-Dichlorobenzene	ND	12	"							
1,2,4-Trichlorobenzene	ND	38	"							
Hexachlorobutadiene	ND	54	"							
Surrogate: 1,2-Dichloroethane-d4	*239*		*"*	*214*		*111*	*76-134*			
Surrogate: Toluene-d8	*229*		*"*	*207*		*111*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*324*		*"*	*364*		*88.8*	*77-127*			
LCS (EA81507-BS1)				Prepared & Analyzed: 15-Jan-18						
Dichlorodifluoromethane (F12)	120	5.0	ug/m3	101		120	59-128			
Vinyl chloride	55	2.6	"	52.0		106	64-127			
Chloroethane	52	8.0	"	53.6		97.5	63-127			
Trichlorofluoromethane (F11)	130	5.6	"	113		112	62-126			
1,1-Dichloroethene	94	4.0	"	80.8		116	61-133			
1,1,2-Trichlorotrifluoroethane (F113)	140	7.7	"	155		88.6	66-126			
Methylene chloride (Dichloromethane)	54	3.5	"	70.8		75.7	62-115			
trans-1,2-Dichloroethene	83	8.0	"	80.8		103	67-124			
1,1-Dichloroethane	84	4.1	"	82.4		102	68-126			
cis-1,2-Dichloroethene	86	4.0	"	80.0		107	70-121			
Chloroform	100	4.9	"	99.2		103	68-123			
1,1,1-Trichloroethane	110	5.5	"	111		103	68-125			
1,2-Dichloroethane (EDC)	93	4.1	"	82.4		112	65-128			
Benzene	65	3.2	"	64.8		100	69-119			

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Atlas Geo-Sampling Company	Project: AG011118-10	
120 Nottaway Lane	Project Number: Bluewater Thermal/ Fountain Inn SC	Reported:
Alpharetta, GA 30009	Project Manager: Mr. Jim Fineis	17-Jan-18 11:09

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EA81507 - TO-15										
LCS (EA81507-BS1)				Prepared & Analyzed: 15-Jan-18						
Carbon tetrachloride	130	6.4	ug/m3	128		105	68-132			
Trichloroethene	110	5.5	"	110		99.6	71-123			
Toluene	77	3.8	"	76.8		101	66-119			
1,1,2-Trichloroethane	110	5.5	"	111		102	73-119			
Tetrachloroethene	140	6.9	"	138		98.4	66-124			
1,1,1,2-Tetrachloroethane	130	7.0	"	140		95.8	67-129			
Ethylbenzene	88	4.4	"	88.4		99.5	70-124			
m,p-Xylene	87	8.8	"	88.4		98.0	61-134			
o-Xylene	85	4.4	"	88.4		95.8	67-125			
1,1,2,2-Tetrachloroethane	140	7.0	"	140		99.3	65-127			
Surrogate: 1,2-Dichloroethane-d4	*256*		*"*	*214*		*120*	*76-134*			
Surrogate: Toluene-d8	*233*		*"*	*207*		*113*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*349*		*"*	*364*		*95.9*	*77-127*			
LCS Dup (EA81507-BSD1)				Prepared & Analyzed: 15-Jan-18						
Dichlorodifluoromethane (F12)	120	5.0	ug/m3	101		123	59-128	2.42	25	
Vinyl chloride	58	2.6	"	52.0		112	64-127	4.75	25	
Chloroethane	54	8.0	"	53.6		100	63-127	2.78	25	
Trichlorofluoromethane (F11)	120	5.6	"	113		110	62-126	1.39	25	
1,1-Dichloroethene	92	4.0	"	80.8		114	61-133	1.78	25	
1,1,2-Trichlorotrifluoroethane (F113)	130	7.7	"	155		86.8	66-126	2.04	25	
Methylene chloride (Dichloromethane)	61	3.5	"	70.8		85.7	62-115	12.3	25	
trans-1,2-Dichloroethene	80	8.0	"	80.8		99.4	67-124	3.30	25	
1,1-Dichloroethane	81	4.1	"	82.4		98.7	68-126	3.52	25	
cis-1,2-Dichloroethene	83	4.0	"	80.0		104	70-121	2.99	25	
Chloroform	100	4.9	"	99.2		101	68-123	2.58	25	
1,1,1-Trichloroethane	120	5.5	"	111		104	68-125	1.06	25	
1,2-Dichloroethane (EDC)	91	4.1	"	82.4		111	65-128	1.12	25	
Benzene	65	3.2	"	64.8		99.7	69-119	0.599	25	
Carbon tetrachloride	130	6.4	"	128		104	68-132	0.382	25	
Trichloroethene	100	5.5	"	110		94.2	71-123	5.59	25	
Toluene	79	3.8	"	76.8		103	66-119	2.01	25	
1,1,2-Trichloroethane	110	5.5	"	111		101	73-119	0.440	25	

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120 Nottaway Lane	Project Number: Bluewater Thermal/ Fountain Inn SC	Reported:
Alpharetta, GA 30009	Project Manager: Mr. Jim Fineis	17-Jan-18 11:09

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EA81507 - TO-15										
LCS Dup (EA81507-BSD1)				Prepared & Analyzed: 15-Jan-18						
Tetrachloroethene	130	6.9	ug/m3	138		96.7	66-124	1.74	25	
1,1,1,2-Tetrachloroethane	130	7.0	"	140		96.3	67-129	0.466	25	
Ethylbenzene	89	4.4	"	88.4		100	70-124	0.945	25	
m,p-Xylene	85	8.8	"	88.4		96.6	61-134	1.43	25	
o-Xylene	83	4.4	"	88.4		94.2	67-125	1.67	25	
1,1,2,2-Tetrachloroethane	140	7.0	"	140		97.4	65-127	2.02	25	
Surrogate: 1,2-Dichloroethane-d4	*255*		*"*	*214*		*119*	*76-134*			
Surrogate: Toluene-d8	*219*		*"*	*207*		*106*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*348*		*"*	*364*		*95.4*	*77-127*			

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Atlas Geo-Sampling Company	Project: AG011118-10	
120 Nottaway Lane	Project Number: Bluewater Thermal/ Fountain Inn SC	Reported:
Alpharetta, GA 30009	Project Manager: Mr. Jim Fineis	17-Jan-18 11:09

Notes and Definitions

LCC	Leak Check Compound
ND	Analyte NOT DETECTED at or above the reporting limit
MDL	Method Detection Limit
%REC	Percent Recovery
RPD	Relative Percent Difference

All soil results are reported in wet weight.

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Testing Laboratory and Mobile Laboratory in accordance with the DoD-ELAP Program and ISO/IEC 17025:2005 programs, accreditation number 69070 for EPA Method TO-15, H&P Method TO-15, EPA Method 8260B and H&P 8260SV.

H&P is approved by the State of Arizona as an Environmental Testing Laboratory and Mobile Laboratory, certification numbers AZM758 and AZ0779.

H&P is approved by the State of California as an Environmental Laboratory and Mobile Laboratory in conformance with the Environmental Laboratory Accreditation Program (ELAP) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste, certification numbers 2740, 2741, 2743, 2744, 2745, 2754 & 2930.

H&P is approved by the State of Florida Department of Health under the National Environmental Laboratory Accreditation Conference (NELAC) certification number E871100.

The complete list of stationary and mobile laboratory certifications along with the fields of testing (FOTs) and analyte lists are available at www.handpmg.com/about/certifications.

H&P Mobile Geochemistry, Inc.

2470 Impala Drive, Carlsbad, CA 92010
& Field Office - Signal Hill, CA
W handpmg.com E info@handpmg.com

VAPOR / AIR Chain of Custody

DATE: 1-4-17
Page 1 of 1

Lab Client and Project Information

Lab Client/Consultant:	Atlas Geo-Sampling	Project Name / #:	Bluewater Thermal
Lab Client Project Manager:	Jim Fineis	Project Location:	Fountain Inn SC
Lab Client Address:	120 Nottaway Lane	Report E-Mail(s):	jimfineis@atlas-geo.com
Lab Client City, State, Zip:	Alpharetta, GA 30009		
Phone Number:	770-883-3372		

Reporting Requirements

- [x] Standard Report ☐ Level III ☐ Level IV
- ☐ Excel EDD ☐ Other EDD:_____
- ☐ CA Geotracker Global ID:_____

Turnaround Time

- [x] 5-7 day Stnd ☐ 24-Hr Rush
- ☐ 3-day Rush ☐ Mobile Lab
- ☐ 48-Hr Rush ☐ Other:____

Sampler Information

Sampler(s): Jim Fineis
Signature:
Date: 1-9-18

Sample Receipt (Lab Use Only)

Date Rec'd: 1/11/18 Control #: 180014.01
H&P Project # AG011118-10
Lab Work Order # E801028
Sample Intact: ☐ Yes ☐ No ☐ See Notes Below
Receipt Gauge ID: 70020 Temp: RT
Outside Lab:
Receipt Notes/Tracking #: 1Z98TT618751055368
Lab PM Initials: KR

Additional Instructions to Laboratory:

* *Preferred VOC units (please choose one):*
☐ µg/L ☒ µg/m³ ☐ ppbv ☐ ppmv

SAMPLE NAME	SAMPLE KIT/ FLOW CONT ID	DATE mm/dd/yy	TIME 24hr clock	SAMPLE TYPE Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV)	CONTAINER SIZE & TYPE 400mL/1L/6L Summa, Tedlar, Tube, etc.	CONTAINER ID (###)	Lab use only: Receipt Vac	VOCs Standard Full List ☐ 8260SV ☐ TO-15	VOCs Short List / Project List ☐ 8260SV ☐ TO-15	Oxygenates ☐ 8260SV ☐ TO-15	Naphthalene ☐ 8260SV ☐ TO-15	TPHv as Gas ☐ 8260SVm ☐ TO-15m	Aromatic/Aliphatic Fractions ☐ 8260SVm ☐ TO-15m	Leak Check Compound ☐ DFA ☐ IPA ☐ He	Methane by EPA 8015m	Fixed Gases by ASTM D1945 ☐ CO2 ☐ O2 ☐ N2				
SG1	82	1-4-18	1253	SV	400ml	619	-18.8	✓												
SG2	45	"	1318	"	"	628	-1.01	✓												
SG3	290	↓	1335	"	"	607	-.52	✓												
SG4	195	↓	1352	"	"	629	-.34	✓												

Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
	Atlas	1-9-18	1550	Jon Thurmond	H&P	1/11/18	9:45
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:

*Approval constitutes as authorization to proceed with analysis and acceptance of conditions on back

about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

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