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May 31, 2023

Ms. Kim Kuhn
Bureau of Land and Waste Management
SC Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201

RE: Sitewide Groundwater Monitoring Report
Shakespeare Composite Structures Site, Newberry, South Carolina
SCDHEC VCC Number 14-6271-RP

Dear Ms. Kuhn:

On behalf of Signify North America Corporation (Signify), please find enclosed one hard copy and one DVD of the Sitewide Groundwater Monitoring Report for the Shakespeare Composite Structures Site located in Newberry, South Carolina. This report contains data from the 2022 sitewide groundwater monitoring event, including potentiometric maps, trichloroethylene (TCE) isoconcentration maps, groundwater gradient and flow rate calculations, limited comparisons between the 2022 data and groundwater data collected during previous investigative efforts, a summary of the 2021-2022 groundwater pilot study results, a comparison of the analytical results for samples obtained using both conventional groundwater sampling techniques and passive diffusion bags (PDBs) performed at selective monitoring wells, and an estimation of plume volumetrics. Conclusions drawn from the 2022 monitoring event data are also included in the report.

The following recommendations/requests and next step actions are also offered in the conclusions section of the report:

- Groundwater Pilot Study: Both in situ chemical oxidation (ISCO) and in situ enhanced reductive dechlorination (ISERD) should be retained as potential treatment technologies and for remedial alternatives development in the upcoming feasibility study (FS).

- Chemicals of Concern (COCs): The COCs which are being carried through from the remedial investigation (RI), through the sitewide groundwater monitoring event, and into the FS are TCE, cis-1,2-dichloroethene (DCE), and vinyl chloride (VC).

- Low-flow Purging Compared with PDB Sample Collection: Signify would like to incorporate the use of PDBs for future groundwater sampling events. Where it is critical that other groundwater natural attenuation or remediation parameters besides VOCs need to be sampled, it is recommended that low-flow groundwater sampling continue to be performed.

- Plume Volumetrics: The Earth Volumetric Studio (EVS) software was used to develop a 3-D model depicting the extent of TCE impact in groundwater beneath the site. Updating of this model as remedial efforts are implemented can be used to depict changes in plume dimensions.

- Initiation of Feasibility Study Phase: Based on the sitewide groundwater monitoring event data and the pilot study results, Signify recommends proceeding with the feasibility study phase. Signify anticipates that the FS will be completed by the end of 2023.

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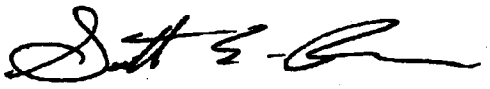
If you have questions regarding this Report, please feel free to contact me, or Dave Oliphant of AECOM at 864-380-6950, at your convenience.

Sincerely,

AECOM Technical Services, Inc.



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cc: Mr. Emil Filc – Signify North America Corporation
Mr. Dave Oliphant – AECOM

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Site Wide Groundwater Monitoring Report

Former Shakespeare Composite Structures Site
19845 US Highway 76
Newberry, SC

RP-VCC-14-6271-RP

Site ID # 51025

Prepared for:

Signify North America Corporation

May 2023

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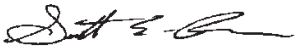
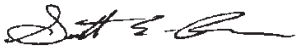
Quality information

Prepared by	Checked by	Verified by	Approved by
			
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List of Acronyms

AECOM	AECOM Technical Services, Inc.
AFCEE	Air Force Center for Engineering and the Environment
BRA	Baseline Risk Assessment
bgs	below ground surface
BSTS	bench-scale treatability study
BTEX	benzene, toluene, ethylbenzene, and xylenes
cells/mL	cells per milliliter
cis-1,2-DCE	cis-1,2 – dichloroethane
COCs	chemical of concerns
CVOCs	chlorinated volatile organic compounds
DHB	*Dehalobacter spp.*
DHC	*Dehalococcoides*
DO	dissolved oxygen
DPT	direct push technology
ERD	enhanced reductive dichlorination
EVS	Earth Volumetric Studio
FS	feasibility study
ft	feet or foot
ft/ft	feet per foot
ft/day	feet per day
ft/yr	feet per year
IDW	investigation derived waste
ISB	in situ bioremediation
ISCR	in situ chemical reduction
ISCO	in situ chemical oxidation
K	hydraulic conductivity
$KMnO_4$	potassium permanganate
LDPE	low-density polyethylene
µg/L	micrograms per liter
MCL	maximum contaminant level
mg/L	milligrams per liter
ml	milliliter
msl	mean sea level
mV	millivolts
ORP	oxidation reduction potential
Pace	Pace Analytical Services, Inc.
PCE	tetrachloroethene
PDB	passive diffusion bag
PENAC	Philips Electronics North America Corporation

List of Acronyms (cont'd.)

PS	Pilot Study
QAPP	Quality Assurance Project Plan
redox	oxygen reduction
RI	Remedial Investigation
ROI	radius of influence
RPD	relative percent difference
RP-VCC	responsible party-voluntary cleanup contract
SC	specific conductance
SCDHEC	South Carolina Department of Health and Environmental Control
Signify	Signify North America, Inc.
S.U.	standard units (for pH)
TCE	trichloroethene
TCL	target compound list
TDS	total dissolved solids
USEPA	United States Environmental Protection Agency
VC	vinyl chloride

Professional Geologist Certification

“I certify that I am a qualified groundwater scientist who has received a baccalaureate degree in geology and have sufficient training and experience in groundwater hydrology and related fields, as demonstrated by South Carolina 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 I have technically reviewed this report.”

By:

Scott E. Ross, PG
Project Manager
South Carolina P.G. No.: 2201

Date: May 31, 2023

1. Introduction

The Valmont Composite Structures Site (the "Site"), located in Newberry, South Carolina is participating in a voluntary cleanup program with the South Carolina Department of Health and Environmental Control (SCDHEC). The Site is currently listed as responsible party – voluntary cleanup contract (RP-VCC) number RP-VCC-14-6271-RP. As part of the RP-VCC process, the Site has undergone a Remedial Investigation (RI) and Baseline Risk Assessment (BRA), which were completed in November 2018. The RI efforts delineated a plume of dissolved phase chlorinated volatile organic compounds (CVOCs) in Site groundwater. Based on the results of the RI, it is anticipated that an active groundwater treatment remedy will be required for at least a portion of Site groundwater. The RP for the Site [Signify North America, Inc. – (Signify)] has been conducting several activities that will be incorporated into a Feasibility Study (FS) for potential remedial alternatives to treat CVOC-impacted groundwater.

1.1 Site Description

The Site is located at 19845 US Highway 76, approximately 1 mile northwest of Newberry, South Carolina **(Figure 1-1**). The Site is centered on the Valmont Composite Structures facility (the “facility”, formerly known as Shakespeare Composite Structures), and includes several surrounding properties (**Figure 1-2**). The facility was originally opened to produce fiberglass products, and it has continued to be used for this manufacturing process. Operations at the facility include the design and manufacture of large fiberglass utility poles and cross arms and a variety of other fiberglass outdoor products such as posts, signs, sheet piling, and signposts. Manufacturing is conducted inside two separate buildings – the Main Building and the Pole Winder Building.

General land use surrounding the facility consists of agricultural, residential, undeveloped, and commercial/light industrial properties (**AECOM Technical Services, Inc. [AECOM], 2018**). The topography of the Site is generally flat or slightly sloping on the Facility property. Land surface elevations generally decrease to the southwest, west, and north moving away from the Facility property. Surface elevations range from approximately 562 feet (ft) mean sea level (msl) on the east side of the Facility to less than 520 ft msl along an unnamed intermittent stream located to the north of the Facility.

More detailed descriptions of the facility’s description, historical operation, and site topographic setting information are included in the RI Report (**AECOM, 2018**).

1.2 Surrounding Properties

In addition to the Shakespeare property, the Site includes several surrounding properties (**Figure 1-2**). General land use surrounding the facility consists of agricultural, residential, undeveloped and commercial/light industrial properties. Uses of adjacent properties are as follows:

North: The Shakespeare property is bordered immediately to the north by a CSX rail line and undeveloped land planted with pine trees. The property bounding the facility to the north of the CSX rail line is owned by Mr. J.L. Dickert.

East: The Shakespeare property is bordered immediately to the east by a residential parcel (owned by Mr. Jesse Stephens), beyond which is vacant land (pine trees) and vacant buildings formerly occupied by the Dickert Lumber Company. The property immediately east of the private residence up to Lumber Road is also owned by J.L. Dickert.

South: The Shakespeare property is bordered to the south by U.S. Highway 76 and properties owned by the Newberry County Airport, Mr. Walter Shealy, and Ms. Yvonne Fisher. The property owned by Mr. Shealy is primarily farmland with a few small residences (rental homes) located sporadically across more than 60 acres.

West: There are three properties located immediately to the west of the Shakespeare property. The property that immediately bounds the facility to the west is owned by Ms. Harriet Boazman. The properties to the west of the Boazman property are owned by Ms. Edna Ringer and Ms. Kimberly Chapman.

Northwest: Property located to the north-northwest of the Ringer property and west of the Dickert property is owned by Ms. Merri Folk.

Some of these off-site properties have private water located on those parcels.

1.3 Previous and Ongoing Investigations

Several phases of investigative efforts have been performed at the Site. This includes multiple investigative efforts prior to execution of the VCC. The pre-VCC investigative efforts that were conducted include:

- Phase II Environmental Site Assessment – Collection of initial soil and groundwater samples from the Shakespeare facility (February through April 2014);
- Site Investigation – Collection of additional soil and groundwater samples from the Shakespeare facility along with several groundwater samples from surrounding private parcels (May 2014 through August 2014); and
- Expanded Investigation - Collection of additional shallow groundwater samples and evaluation of shallow bedrock for impacted groundwater on surrounding properties (August through September 2014).

An RP-VCC between the SCDHEC and Philips Electronics North America Corporation (PENAC) was executed in September 2014. Once this VCC was executed, additional investigative efforts were performed as part of the RI process. PENAC is the former name of Signify.

The RI was implemented in two phases, beginning in 2014 after execution of the VCC. The RI was conducted to further evaluate the vertical and/or horizontal extent of previously identified CVOCs in soil and groundwater; assess additional potential areas of interest for secondary sources of VOCs that could be contributing to soil and/or groundwater impacts; evaluate potential vapor intrusion pathways; determine risk to potential human and ecological receptors; and provide additional data needed to develop a remedial strategy for the Site.

RI efforts determined that the source areas for CVOCs present in groundwater originated from historical operational practices that impacted groundwater beneath the western portions of the Main and Pole Winder Buildings located on the Facility property. CVOCs subsequently migrated both horizontally and vertically within groundwater away from the identified source areas and impacted multiple aquifer depth intervals (shallow, intermediate, and bedrock) beyond the Facility property.

In general, the water table at the Site is encountered in the fine sands and silts and clays of the residuum. Groundwater is encountered at depths ranging from approximately two ft below ground surface (bgs) near the northern end of the Site and on the Dickert property to as deep as approximately 18 ft bgs on the former Shakespeare Composite Structures facility. Groundwater beneath the Site is mainly encountered under unconfined conditions.

As a result, the direction of groundwater flow beneath the Site, particularly in the shallow (water table) zone follows topography, with flow components to the west and northwest. CVOCs have migrated within the water table and saprolite zones primarily through natural dispersion. Vertical migration

downgradient of the source areas within the saprolite and into underlying granitic bedrock was influenced primarily by numerous privately-operated water supply wells located to the west and southwest of the Facility.

The RI defined the extent of CVOC-impacted groundwater at multiple aquifer depth intervals. Analytical results were screened against United States Environmental Protection Agency (USEPA) maximum contaminant levels (MCLs) to identify compounds of interest in groundwater beneath the Site. Concentrations of tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2 dichloroethene (cis-1,2-DCE), and vinyl chloride (VC) exceeded their respective MCLs in several groundwater samples collected from the Site. Of these, TCE was the most frequently detected chemical in groundwater samples collected at the Site. The elevated concentrations of CVOCs are most widespread in shallow zone groundwater (upper portion of the water table aquifer). TCE and cis-1,2-DCE also exceeded their respective MCLs in one or more samples collected in the intermediate (saprolite) zone.

A more detailed discussion of the results of the investigative efforts conducted at the Site to date is included in the RI Report (**AECOM, 2018**).

Following approval of the RI Report, SCDHEC requested that Signify develop an FS Work Plan for the Site. The purpose of the FS Work Plan was to outline the proposed information that would be included in the Site FS. The cover letter for the FS Work Plan also proposed that a BSTS and subsequent pilot study should be completed prior to development of the FS. The FS Work Plan was submitted to SCDHEC on May 15, 2019 (**AECOM, 2019**). SCDHEC approved the FS Work Plan in correspondenc dated June 4, 2019.

Previously completed groundwater treatability activities include a BSTS that was conducted between September 2019 and January 2020 (**AECOM, 2020a**). A field-scale, groundwater treatability pilot study was initiated in August 2021, and the final performance monitoring event was completed in December 2022. A site wide groundwater monitoring event, which is the subject of this report, was conducted in February 2022.

1.4 Purpose of This Report

The purpose of this report is to present the field and laboratory analytical data for the site wide groundwater monitoring event conducted in February 2022. It was stated in Section 2.3.5 of the Pilot Study Work Plan (**AECOM, 2020b**) that the baseline groundwater sampling event would be performed for both the site wide and for the pilot study wells. The report does include limited comparisons between the 2022 data and groundwater data collected during previous investigative efforts. This report also includes a comparison of the conventional groundwater sampling techniques along with passive diffusion bag (PDB) sampling performed at selective wells during the 2022 site wide monitoring event. Also, groundwater remediation pilot test data generated to date in 2021 and 2022 are briefly discussed in this document. Plume volumetrics, calculated using data from the 2022 monitoring event, are summarized, and conclusions regarding this information also are provided in this report.

1.5 Organization of This Report

This report is organized into four additional sections.

- Section 2 briefly summarizes the sampling and analysis procedures performed at the Site.
- Section 3 contains a discussion of the site wide groundwater monitoring results of February and March 2022, including a comparison of conventional sampling techniques with PDB sampling.
- Section 4 presents a discussion of the groundwater plume volumetrics.

- Section 5 contains a summary and conclusions that may be drawn from the 2022 sitewide monitoring event.

2. Sampling and Analysis Procedures

The site wide groundwater monitoring event was conducted in February and March 2022. Groundwater samples were collected from February 21 to March 8, 2022. The monitoring event included sampling of 65 monitoring wells located at the Site. This includes 39 shallow wells, 12 intermediate wells, and 14 bedrock wells. The sampling plan for the 2022 event is summarized in **Table 2-1.**

Figures 2-1, 2-2, and 2-3 show the locations of all the monitoring wells located at the Site. Each of the shallow wells are screened within the severely weathered residuum (at or just below the water table). The intermediate wells are screened within saprolite zone, above the bedrock zone interface. The majority of the bedrock wells are constructed as “open hole” borings, allowing monitoring of isolated fracture zones within the granitic bedrock underlying the site. **Table 2-2** lists the monitoring wells at the site, describes the portions of the site at which the wells are located, and denotes the well screened intervals.

Sampling and analysis procedures are discussed below. All groundwater samples collected during the site wide monitoring event were analysed for Target Compound List-Volatile Organic Compounds (TCL-VOCs) using SW-846 Method 8260D. As part of the site wide monitoring event, a subset of wells was also sampled for a several biogeochemical parameters. Results from these analyses, as well as those from the Pilot Study (PS) performed at the site, will be evaluated to determine if conditions within the groundwater beneath the site are suitable for in-situ treatment efforts. Section 2.2 below lists the analytical parameters for the 2022 site wide monitoring event. **Table 2-1** also summarizes the analyses performed on samples collected from each well during the 2022 site wide monitoring event.

In addition to the site wide event sampling of selected monitoring wells related to the groundwater PS was conducted between August 2021 and December 2022. Eight wells were included in the PS monitoring and the analysis program. The PS performance monitoring has included a baseline sampling event and four post injection monitoring events to date. In accordance with the approved Pilot Study Work Plan (**AECOM, 2020b**), VOC samples were collected from the in situ chemical oxidation (ISCO) study area wells and from the in situ enhanced reductive dichlorination (ISERD) study area wells. Samples from wells located within the ISCO PS area also were analyzed for chloride and total dissolved solids (TDS). Groundwater samples collected from the ISERD study area were analyzed for electron acceptors, electron donors, total organic carbon (TOC), alkalinity, dissolved gases, and biological parameters. Results of the pilot study sampling program are briefly discussed in this report. A more detailed discussion of the groundwater treatability study and pilot test results is included in the pilot study report (**AECOM, 2023**).

2.1 Sampling Procedures

Groundwater sampling was conducted in accordance with procedures described in the Phase II RI Work Plan for this Site (**AECOM, 2017**). Prior to well purging, depth to water readings were recorded for all wells. Each monitoring well was sampled using the low-flow sampling method. The purging efforts included use of a peristaltic or submersible pump to evacuate groundwater from a well along with periodic monitoring of groundwater quality parameters during the purging process. The groundwater quality parameters measured during well purging included pH, specific conductance (SC), temperature,

dissolved oxygen (DO), oxidation-reduction potential (ORP), and turbidity. Information obtained during well purging efforts was documented on Site-specific groundwater sampling forms. Once purging efforts were completed, sample containers provided by the contract laboratory were filled using the peristaltic or submersible pump. Copies of these forms and the depth to water readings for the 2022 monitoring event are included in **Appendix A**.

In addition to sampling via the low-flow sampling method,15 monitoring wells were also sampled for VOCs using PDBs. Nine shallow zone, four intermediate zone, and two deep zone wells were selected for PDB deployment and sampling. The wells designated for PDB sampling included upgradient, side gradient of treatment zones, and downgradient locations (**Table 2-2**).

PDB deployment included installation of a 500 milliliter (mL) semi-permeable low-density polyethylene (LDPE) bag filled with organic free water surrounded by a protective LDPE mesh sleeve. The PDBs were deployed in a well, being situated within 1-2 ft of the bottom of each well and allowed to remain in place (stabilize) for at least two weeks.

At the end of the stabilization period, all PDBs were removed from the wells. Approximately 150 mL of water from the PDB was used to measure the water quality parameters listed above. The remaining volume was poured into appropriate sample containers used for VOC analysis provided by the contract laboratory. Each of the wells used for PDB deployment were then purged and sampled using low flow sampling procedures as discussed above. The VOC analytical results from the PDBs and the low-flow sampling methods are compared and discussed later in this report.

2.2 Sample Analyses

Groundwater samples collected for this site wide monitoring event includes sampling from 39 shallow wells, 12 intermediate wells, and 14 bedrock wells during the February and March 2022 event, and they were analyzed for TCL VOCs.

In addition to the analysis for VOCs, samples from the following 15 wells were also analyzed for a list of specific biogeochemical parameters:

- Shallow: MW-5, -6, -7, -8, -9, -22 and TMW-21, -22, and -24
- Intermediate: MW-5I, 6I, 7I, 9I, and 20I
- Bedrock: MW-6D

Samples from each of these wells were analyzed for VOCs as well as the following parameters:

- Total Organic Carbon;
- Alkalinity;
- Nitrate and Nitrite;
- Electron acceptors – ferric iron (calculation), total manganese, and sulfate, plus total iron;
- Degradation indicators – ferrous iron, dissolved manganese, sulfide, and chloride;
- Degradation end compounds – carbon dioxide, methane, ethane, and ethene;
- Biological indicators (via QuantArray-Chlor testing method) – expanded list of bacteria and functional genes to determine if groundwater conditions can support either or both aerobic and anaerobic degradation of chlorinated solvents including TCE.

As indicated above, some of the monitoring wells sampled for these parameters were also part of the ISERD or the ISCO pilot study. **Table 2-1** lists the monitoring wells sampled during this sitewide event

and the analytical parameters for which each sample was analyzed. **Table 2-2** notes the wells included in the PS performance monitoring effort.

Each of the groundwater quality parameters as measured during well purging, VOC concentrations, and other indicator parameters are evaluated to determine if site conditions continue to be conducive for anaerobic biodegradation.

Pace Analytical Services, Inc. (Pace) performed analysis for all parameters except for the biological parameters. Microbial Insights, Inc performed the analysis for the biological parameters.

Analytical results were reviewed by AECOM personnel upon delivery. VOC data were evaluated and validated in accordance with guidance referenced in the RI Work Plan (**AECOM, 2017**). Validation reports for groundwater samples are included in **Appendix B**. Copies of analytical reports for VOCs and other parameters are shown in **Appendix C**. The laboratory analytical report for biogeochemical parameters is contained in **Appendix D**.

2.3 Investigation-Derived Waste

Purged water investigation-derived waste (IDW) from sampling of groundwater wells during the site wide monitoring event was contained in 55-gallon steel drums and staged at the on-Site designated staging area. The laboratory analytical reports containing those data is included in **Appendix C**. Those data, along with groundwater sampling data from October 2021 through December 2022 from the pilot study area, were used to indicate that the remedial action derived waste was not a hazardous waste. Therefore, there was no maximum holding time for the waste containers.

In January 2023, AECOM subcontracted Green Rock Strategies to mobilize to the Site, load and transport drums of remedial action derived waste, and dispose of the non-hazardous wastes through A&D Environmental Services. **Appendix E** contains a copy of the bill of lading / material manifest for eight drums of liquid, three drums of solids, and two empty used drums of IDW, from the installation and development of temporary pilot study monitoring wells, the sitewide sampling event, and the pilot study performance monitoring events. The wastes were picked up on January 10 and January 24, 2023 and transported to the A&D Environmental Services facility in Archdale, North Carolina for treatment and subsequent disposal.

3. Discussion of Site Wide Monitoring Results

Information collected during the 2022 site wide monitoring event, including hydrogeologic data, groundwater geochemical data, and biogeochemical data, are discussed in this section of the report. The following subsections describe the hydrogeology within the study areas, groundwater monitoring results, design, and implementation procedures.

This section also includes comparisons of the 2022 sitewide results with the data collected during the RI. The comparisons were performed to help evaluate whether the changes have occurred as a result of natural attenuation processes or as a result of the pilot study injections to date. Copies of sample analytical reports are included in **Appendix C and Appendix D.**

3.1 Site Hydrogeology

This section briefly discusses the site-specific hydrogeology summarized following the RI efforts, updated with 2022 groundwater elevation data.

3.1.1 Hydraulic Conductivity

During Phase II of the RI, hydraulic conductivity tests (slug tests) were performed on select shallow and intermediate monitoring wells. Data collected from the slug tests were used to calculate hydraulic conductivity (K), which is a two-dimensional measure of the ability of a square unit of the aquifer to allow the flow of water. The hydraulic conductivity is also used with the groundwater gradient to determine the rate of groundwater flow. The procedures for conducting slug tests are discussed in Section 3.3.7 of the RI Report (**AECOM, 2018**).

Slug tests were performed on seven paired shallow and intermediate wells:

- MW-2 and MW-2I
- MW-3 and MW-3I
- MW-5 and MW-5I
- MW-6 and MW-6I
- MW10 and MW10I
- MW-20 and MW-20I
- MW-21 and MW-21I

Data generated during the slug tests were evaluated using Aqtesolv, a commonly used, commercially available, computer software package. Aqtesolv allows a choice of published methods to evaluate slug test data. Two methods were used to calculate K values: the Bouwer and Rice method (1976 and 1989) and the Hvorslev method (1951). Initial values as calculated using the Bouwer and Rice method were confirmed by also analyzing the data by the Hvorslev method. Both methods provided similar values for hydraulic

conductivity, so only the K values calculated using the Bouwer and Rice method was used to determine groundwater flow velocity beneath the Site.

The results of the slug tests for the six shallow wells showed that the K values ranged from 0.13 to 2.19 feet per day (ft/day) with an average K of 0.80 ft/day. K values in the intermediate zone wells ranged from 0.055 to 1.65 ft/day for an average of 0.72 ft/day. The results of the analysis of the slug test data for the shallow wells are included in Appendix E of the RI Report, along with the copies of the raw water level data and graphs generated using Aqtesolv software.

3.1.2 Groundwater Hydraulic Gradients

Depth to groundwater data from the February 2022 sitewide groundwater monitoring event were used to calculate groundwater elevations and to prepare groundwater elevation contour maps for each zone. **Figures 2-1 through 2-3** contain groundwater elevation contour maps for the shallow, intermediate and bedrock zones, respectively. As shown in each of the contour maps, the general direction of groundwater flow appears to be to the west-northwest. In the shallow zone, the groundwater flow is to the northwest with a southwest flow component, likely the result of topographic low in that direction (**Figure 2-1**). Groundwater flow in the shallow zone can be interpreted to being in the direction of several small unnamed tributaries that lie to the west of the Site. The groundwater flow direction in the intermediate zone is also to the west (**Figure 2-2**).

Based on elevations determined for the bedrock wells, the direction of flow within bedrock appears to be to the west. There are several private water supply wells located to the west and southwest of the Site. Historic use of these wells has likely directed flow within the bedrock fracture system to the southwest (**Figure 2-3**).

The groundwater elevations and flow maps were used to calculate average horizontal and vertical groundwater gradients across the site. The triangulation method was used to calculate horizontal gradients for each zone. This method uses groundwater elevations from upgradient wells on the east side of the Site, side gradient wells, and down gradient wells located west of the Site. Based on the groundwater elevations determined during the February 2022 sitewide measurement event, the average hydraulic gradients for each zone are as follows:

- Shallow zone – 0.016 feet per foot (ft/ft), the same as that calculated in June 2018, to the west-northwest
- Intermediate zone – 0.015 ft/ft, which is almost identical to that calculated in June 2018, to the west-northwest
- Bedrock zone – 0.02 ft/ft, compared with 0.013 ft/ft in June 2018, also to the west

Horizontal hydraulic gradients were calculated using the February 2022 data provided in **Table 3-1**.

Determination of the vertical gradients provides a basic indication of whether contaminants have the potential to migrate vertically from shallower groundwater zones to deeper zones. Vertical hydraulic gradients were also calculated using the February 2022 data from paired shallow and intermediate well clusters across the Site. The following formula was used to calculate vertical hydraulic gradients at each well cluster:

$\frac{(GWSW-GWDW)}{(SW-DW)} = Vertical\ Gradient$ (ft/ft)

Where:
GW SW - groundwater elevation of shallow well (ft)
GW DW - groundwater elevation of intermediate zone well (ft)
SW - elevation of top of mid-point of shallow well screen (ft)
DW - elevation of top of mid-point of intermediate well screen (ft)

The vertical gradient calculations for the February 2022 monitoring event are shown in **Table 3-2**.

Based on the calculated hydraulic gradients, it appears that there is a general downward gradient between the shallow and intermediate zones across the site during this event. The average vertical gradient between the shallow and intermediate zones for this event was determined to be -0.044 ft/ft in the downward direction. The vertical gradient on Site ranged from -0.46 ft/ft at well pair MW-19 to +0.20 ft/ft at MW-21 well pair.

3.1.3 Groundwater Flow Rates

The hydrogeologic data (hydraulic conductivity and gradient) collected at the Site during the RI and updated with the February 2022 groundwater elevation data were used to calculate groundwater flow rates for the shallow zone using Darcy's Law as follows:

$$V = \frac{K \times i}{n}$$

Where:
V = Average Groundwater Flow Velocity
K = Hydraulic Conductivity
i = Groundwater Gradient
n = Porosity

Groundwater flow rates for the unconsolidated formation (water table/shallow zone and intermediate zone) beneath the Site are summarized in the table below.

Hydraulic Property Summary Table
Shakespeare Composite Structures Site

	Hydraulic Gradient (from February 2022 Monitoring Data) (ft/ft)	Assumed Effective Porosity	Average Hydraulic Conductivity (from RI Data)	Calculated Groundwater Velocity (ft/day)	Calculated Groundwater Velocity (ft/yr)
Shallow	0.016	0.25	0.81	0.051	18.9
Intermediate	0.015	0.3	0.72	0.036	13.14
Bedrock	0.020	NA*	NA*	NA*	NA*

* Not determined based on variability within screened fracture zones.

3.2 Summary of Field Parameter Measurements

DO, ORP, and pH values measured during the sitewide monitoring well purging efforts were evaluated as initial indicators to determine if reducing (anaerobic) conditions are present on site. Special field parameter evaluations were conducted within the pilot study treatment areas. The range of values for these parameters were assembled for areas not included in the pilot study treatment zone. Field parameter measurements obtained from the limited number of wells included in that program are discussed in the Pilot Study Report (**AECOM, 2023**).

Field parameter measurements obtained at the time of sample collection during the February 2022 sitewide monitoring event are included on field sampling logs in **Appendix A**. The recorded values for each field parameter are included in **Tables 3-3, 3-4, and 3-5** for the shallow, intermediate, and deep groundwater zones, respectively.

DO is the most preferred terminal electron acceptor relative to others (nitrate, ferric iron, sulfate) that can be used by microorganisms for the biodegradation of organic carbon. Organic carbon includes naturally occurring and anthropogenic sources. If DO is present in groundwater at concentrations above 0.5 milligrams per liter (mg/L), aerobic biodegradation is the predominant microbial process. During this process, microorganisms naturally present in groundwater couple the oxidation of an electron donor (usually organic carbon) with the reduction of an electron acceptor (**Air Force Center for Engineering and the Environment [AFCEE] et al., 2004**).

Reductive dechlorination is the primary process by which chlorinated solvents such as TCE are biologically degraded. This is an anaerobic process. Anaerobic bacteria generally cannot function at DO concentrations greater than 0.5 mg/L. After depletion of DO, anaerobic microorganisms will use nitrate as an electron acceptor, followed by ferric iron, sulfate, and carbon dioxide (methanogenesis). Each sequential reaction drives the ORP of the groundwater further downward and into the range within which reductive dechlorination can occur.

For wells not including the pilot study areas, the range of DO values observed in groundwater monitoring wells during the February 2022 sampling event was as follows:

- 0.24 to 8.30 mg/L in the shallow zone, with ten of the 36 samples having a DO of <0.5 mg/L;
- 0.21 to 3.67 mg/L in the intermediate zone, with four of the eleven samples having a DO of <0.5 mg/L;
- 0.16 to 7.71 mg/L in the bedrock zone, with six of the thirteen samples having a DO of <0.5 mg/L; five of these six wells are off Site private water wells.

ORP is a measure of the oxidation-reduction (redox) state of the aquifer, and it is an indicator of the relative tendency of the groundwater to accept or transfer electrons. ORP values in groundwater can vary from as low as -400 millivolts (mV) to 800 mV or higher. As terminal electron acceptors and nutrients are depleted, the ORP of the groundwater decreases (i.e., becomes more negative). Reductive dechlorination is possible at less than 50 mV.

For wells not including the pilot study areas, the range of ORP values observed in groundwater monitoring wells during the February 2022 sampling event was as follows:

- -1.0 to +869 mv in the shallow zone, with only one of the 36 samples having a negative ORP, and that sample was from an off Site water well;
- +13.0 to +498 mv in the intermediate zone, with all 11 values being positive;
- -146 to +225 mv in the bedrock zone, with six out of the 13 samples having a negative ORP (not the same wells as for DO. Two of the off Site water wells had a negative ORP.

The pH of groundwater influences the presence and activity of the microbial population in groundwater. Historical investigations and current groundwater monitoring conducted at the Site generally confirm that a lowered pH and oxidative conditions dominate the shallow and intermediate zone aquifers. Microorganisms capable of degrading TCE and its daughter products generally prefer pH values between 6 and 8 standard units (S.U.). A pH below 5.5 is generally considered inhibitory to CVOC degradation by *Dehalococcoides (DHC)* bacteria. The pH can be an issue in ERD applications when the targeted ambient aquifer pH is either above or below this preferred range. As a result, neutralization agents have been injected concurrently with the organic carbon source during all three phases of in situ treatment.

For wells not including the pilot study areas, the range of pH values observed in groundwater monitoring wells during the February 2022 sampling event was as follows:

- 4.20 to 6.22 S.U. in the shallow zone, with 29 of the 36 samples having a pH below 5.5;
- 4.77 to 6.47 S.U. in the intermediate zone, with four of the eleven samples having a pH below 5.5.
- 5.52 to 12.11 S.U. in the bedrock zone, with five of the thirteen samples having a pH between 8.0 and 12.2. Sometimes an elevated pH is due to grout from well installation, and one of those five high pH values was from an off Site private water well.

DO, ORP, and pH field parameter results are further evaluated in Section 3.3 below.

3.3 Sitewide Biogeochemical Parameter Evaluation

Microbial analysis groundwater samples were collected from monitoring wells MW-5, MW-6, MW-7, MW-8, MW-9, MW-22, TMW-21, TMW-22, TMW-24, MW-5I, MW-6I, MW-7I, MW-20I, and MW-6D, between February 24, 2022, and March 4, 2022. The samples were submitted to the Microbial Insights laboratory in Knoxville, Tennessee for analysis via the QuantArray®-Chlor Study process. The analytical results include cell count concentrations for bacteria and functional genes associated with anaerobic halorespiring bacteria capable of reductive dichlorination of TCE and PCE, and aerobic bacteria capable of co-oxidizing TCE, cis-1,2-dichloroethylene (cis-1,2-DCE), and VC. The laboratory analytical report is included in **Attachment D**. The laboratory results are also shown in **Tables 3-3, 3-4, and 3-5** for the shallow, intermediate, and deep groundwater zones, respectively.

Except for MW-22, all wells sampled are within the boundaries of the Site TCE plume, with concentrations ranging from 15 micrograms per liter (µg/L) in MW-6I to 850 µg/L in MW-9I during February and March 2022. MW-22 is an upgradient shallow monitoring well. The following sections include a discussion of the microbial results with respect to the potential for natural biological attenuation of TCE, cis-1,2-DCE, and VC in Site groundwater. Although the results and conclusions discussed can likely be applied to the Site as a whole, the discussion is limited to the aforementioned set of microbial analysis wells.

3.3.1 Background and Geochemical Conditions

In general, natural geochemical conditions in Site groundwater are not considered favorable to biological reductive dichlorination. As shown in the data contained in **Appendix D**,

- Total organic carbon concentrations are relatively low across the Site (<3 mg/L). A natural or anthropogenic carbon source is necessary to drive reductive dechlorination. Without a degradable carbon source, or when the source becomes exhausted, reductive dechlorination will not occur.

- At this Site, ORP values are relatively high (positive values) across all shallow and intermediate zone monitoring wells. ORP values less than 0.0 mV (negative values) would indicate that an environment conducive to reductive dechlorination has been achieved.
- The pH in the microbial analysis wells ranged from approximately 4.5 to 5.5 for the shallow zone wells and approximately 5 to 6 in the intermediate zone wells. The pH in deep well MW-6D was 10.67 in March 2022. Neutral pH conditions (i.e., 6 to 8) are more favorable for bacteria capable of reductive dichlorination.
- Methane is characteristic of highly reduced groundwater conditions and is usually present when reductive dechlorination is occurring. Methane concentrations in the microbial wells were generally minimal (< 500 µg/L).

Limited evidence of more favorable conditions was noted in some monitoring wells, including a negative ORP in MW-6D (-91.3) and a moderately high methane concentration in MW-6 (790 µg/L) in March 2022. However, the geochemical results are predominately unfavorable for biological reductive dichlorination without some type of enhancement. Despite these conditions, many of the microbial analysis wells exhibit concentrations of TCE degradation by products cis-1,2-DCE (i.e., MW-6, MW-7, MW-8, MW-7I, MW-9I, TMW-21, and TMW-22) and VC (MW-6, MW-7, MW-8, TMW-21, and TMW-22). Although low concentrations of these by-products can be generated via abiotic mineral process, the concentrations observed are high enough to suggest biological degradation. As discussed below, the QuantArray®-Chlor Study (**Appendix D**) results provide some insight into bacteria that may contribute to the TCE degradation observed.

3.3.2 QuantArray®-Chlor Study Results Discussion

Anaerobic Study Results

Three anaerobic bacteria capable of utilizing TCE as a growth-supporting electron acceptor were detected at low to mid-range concentrations: *Dehalobacter spp.(DHB), Desulfitobacterium, and Desulfuromonas*. *DHB* was detected in groundwater from wells MW-6, MW-22, TMW-21, MW-5I, MW-6I, and MW-20I, with the highest cell count identified at TMW-21 (9.64 x 10^3 cells per milliliter [cells/mL]). *Desulfitobacterium* was detected in MW-5, MW-6, MW-9, MW-22, TMW-21, MW-6I, MW-20I, and MW-6D with the highest cell counts identified at TMW-21 (1.14 x 10^4 cells/mL) and MW-20I (1.19 x 10^4 cells/mL). *Desulfuromonas* was detected in TMW-21, TMW-24, MW-20I, and MW-6D with the highest cell count identified at MW-6D (8.04 x 10^1 cells/mL). The presence of these bacteria may partially explain the degradation of TCE to cis-1,2-DCE at the Site. However, these bacteria are not capable of complete reductive dechlorination to ethene.

DHC are the only known bacterial group capable of complete reductive dechlorination of TCE to ethene. Cell counts for *DHC* and associated functional genes were generally low in the samples analyzed, with trace detections in monitoring wells MW-5, MW-6, TMW-22, MW-5I, MW-6I, MW-7I, and MW-20I. These low results are consistent with results for samples collected in 2014 and 2017 from wells MW-1, MW-6, MW-7, MW-8, MW-10, MW-7I, MW-9I, MW-10I, MW-20I, and MW-6D and are not surprising given the aforementioned geochemical conditions in Site groundwater.

Aerobic Study Results

The functional genes Soluble Methane Monooxygenase, Toluene Dioxygenase, Phenol Hydroxylase, Toluene Monooxygenase, Ethene Monooxygenase, or Epoxyalkane Transferase were detected at trace concentrations in MW-5 and MW-7 and at low to mid-range concentrations in wells MW-6, MW-9, MW-22, TMW-21, TMW-22, MW-5I, MW-6I, MW-7I, MW-20I, and MW-6D. These functional genes indicate the presence of bacteria capable of co-metabolizing TCE, cis-1,2-DCE, and VC under aerobic conditions. The

co-metabolism process is generally a result of monooxygenase enzymes that allow the bacteria to oxidize a primary growth supporting substrate (e.g., methane or benzene, toluene, ethylbenzene, and xylenes [BTEX]) and co-oxidize the chlorinated compounds.

The aforementioned unfavorable Site geochemical conditions for biological reductive dechlorination (e.g., high ORP) may be more favorable for these aerobic processes. Trace BTEX concentrations have been detected in wells MW-5, MW-6, MW-22, and MW-7I, and methane was detected at 790 µg/L in MW-6 in March 2022. However, concentrations of potential primary growth supporting compounds are relatively minimal in Site groundwater. Nevertheless, it is possible that the presence of bacteria capable of co-oxidation of chlorinated ethenes may allow for complete degradation of TCE, or further degradation of cis-1,2-DCE and VC generated via anaerobic degradation, under aerobic conditions.

3.3.3 Summary of Biogeochemical Evaluation

The QuantArray®-Chlor Study results demonstrate the presence of anaerobic bacteria capable of partial degradation of TCE and aerobic bacteria capable of degradation of TCE, cis-1,2-DCE, and VC. Natural attenuation of TCE at the Site will also continue to occur due to physical processes (e.g., diffusion and dispersion) and chemical processes (i.e., abiotic mineral processes). However, the relatively low cell counts for TCE-degrading bacteria at the Site suggest that natural biological attenuation rates will be limited without additional in-situ enhancement.

3.4 Laboratory Analytical Results

3.4.1 VOC Analytical Results – February 2022

Groundwater data have been collected during multiple phases of work beginning with the Phase II ESA and continuing through the Site Investigation, Expanded Investigation, RI Phase I, RI Phase II, and Pilot Study. This includes sampling from temporary well borings, permanent monitoring wells, and private water supply wells. **Tables 3-3** through **3-5** list the results for the groundwater samples collected from the monitoring well network in 2022. **Appendix F** contains historical data tables (**Tables F-1** through **F-3**) that include analytical results for groundwater samples collected from the Site since 2014. This section briefly summarizes the results of the historic and RI related groundwater investigative efforts. Maps depicting pre-RI and RI data have not been included in this report. This section of the report focuses primarily on the most recent data of the 2022 site wide monitoring event. See the RI Report (**AECOM, 2018**) for more information regarding previous analytical results.

All of the groundwater samples collected from the Site in 2022 were analyzed for TCL VOCs. A limited number of samples were also analyzed for both TCL VOCs and/or specific biogeochemical parameters used to evaluate natural attenuation potential. The biogeochemical parameter results are discussed in **Section 3.2.** This section presents VOC analytical results in groundwater from the shallow, intermediate, and bedrock zones.

Shallow Zone

During the site wide monitoring event, each of the 39 previously installed shallow wells were sampled for TCL VOCs. The results for the shallow zone samples are summarized in **Table 3-3**.

A number of VOCs were detected in at least one groundwater sample collected from the shallow wells during the 2022 monitoring event. The only compounds reported above their respective MCLs, in the shallow well samples collected during the side wide monitoring event, were the CVOCs TCE, PCE, cis-1,2-DCE, and VC.

TCE was detected above its MCL of 5 µg/L in 21 of the 39 shallow well samples collected during the site wide event. Exceedances of the MCL ranged from 8.6 µg/L in well MW-17 to 590 µg/L in well MW-10 (and 600 µg/L in the MW-8 sample collected from the PDB). This is compared to the elevated TCE concentrations exceeding the MCL reported during RFI Phase II in shallow well samples, which ranged from 7.3 µg/L in MW-18 to 1400 µg/L in TMW-31 in June 2017. The TCE concentration at TMW-31 had decreased to 480 µg/L in March 2022, likely due to the ISCO pilot study being performed in that area (see **Section 3.3.2**).

Shallow zone TCE concentrations in 2022 in groundwater at several other wells exhibited notable increases or decreases, in comparison with the 2017 RI Phase II concentrations, including the following:

- MW-5: increase in 2022 to 240 µg/L, compared with 71 and 11 µg/L in 2015 and 2017, respectively;
- MW-6: increase in 2022 to 330 µg/L, compared with 27 to 64 µg/L in 2014-2017;
- TMW-24: decrease in 2022 to 70 µg/L, compared with 1200 and 320 µg/L in 2015 and 2017, respectively;
- TMW-33: decrease in 2022 to 20 µg/L, compared with 240 and 120 µg/L in 2015 and 2017, respectively.

The CVOC degradation product cis-1,2-DCE was detected in several shallow zone samples collected during the 2022 monitoring event. However, cis-1,2-DCE was detected above its MCL (70 µg/L) in only a limited number of samples: MW-6 (220 µg/L), MW-8 (76 µg/L), and TMW-21 (130 µg/L). During the 2017 RI Phase II, the only samples where cis-1,2-DCE exceeded the MCL was at MW-6 (430 µg/L) and MW-8 (74 µg/L).

The CVOC degradation compound VC was detected in several groundwater samples collected during the 2022 monitoring event, but no concentrations exceeding its MCL of 2 µg/L were reported. The highest detected concentration in 2022 occurred at well MW-6 (2.0 µg/L, which is equal to the MCL).

The CVOC PCE was the only other CVOC detected above its MCL (5 µg/L) during historic groundwater sampling events, but there were no PCE MCL exceedances in 2017 or 2022. There have been two wells with exceedances of the PCE MCL of 5 µg/L prior to 2017 and 2022. At well MW-8, the PCE concentrations were 5.7 and 8.4 µg/L in 2014 and 2015, respectively, but less than the MCL in 2017 and 2022. At well TMW-21, the PCE concentration was 7.2 µg/L in 2015, but less than the MCL in all other sampling events.

One non-CVOC exceeded its MCL in 2022. Styrene at well TMW-29 (120 µg/L) exceeded its MCL of 100 µg/L in the March 2022 sample. There have been no styrene exceedances in groundwater from any other wells prior to 2022. Well TMW-29 is located inside the east end of the main building and in the ISCO pilot study area. It is not known whether or not this analytical result was anomalous.

It should be noted that well TMW-31, which is inside the ISCO pilot study area and near to TMW-29, had 929 µg/L TCE in August 2021 before the pilot study. The TCE concentration was reduced to 480 µg/L in March 2022, likely due to chemical oxidation from the permanganate injectant, but the concentration increased to 3,600 µg/L in December 2022. There may be a continuing TCE source beneath that part of the building that needs to be evaluated. See Section 3.3.2.1 below for additional evaluation.

Intermediate Zone

During the site wide monitoring event, the 12 intermediate zone wells were sampled for TCL VOCs. The results for the intermediate zone samples are summarized in **Table 3-4**.

A number of VOCs were detected in at least one intermediate zone permanent monitoring well sample collected during the 2022 monitoring event. The VOCs cis-1,2-DCE and TCE were the only compounds detected above their respective MCLs in these samples. TCE was detected above its MCL of 5 µg/L in eight intermediate zone samples ranging from 15 µg/L in MW-6I to 850 µg/L in MW-9I. In the 2017 RI Phase II event, there were also eight wells in which the TCE MCL was exceeded, with a maximum of 1,000 µg/L at MW-10I. The MW-10I TCE concentration in 2022 was only 50 µg/L, a concentration reduction likely due to the impact from substrate injections during the ISERD pilot study.

The CVOC degradation compound cis-1,2-DCE was detected above its MCL of 70 µg/L in the sample from MW-7I at 84 µg/L conventional sampling and 100 µg/L with the PDB. The 2017 result during the RI Phase II was 140 µg/L.

Deep Zone

During the site wide monitoring event, the 14 bedrock zone wells were sampled for TCL VOCs. The results for the deep zone samples are summarized in **Table 3-5**.

A small number of VOCs were detected in the samples collected from the bedrock intervals. However, the only compound detected above its MCL in bedrock zone samples during the 2022 sampling event was TCE. The CVOC TCE was detected above its MCL of 5 µg/L in six of the 14 shallow well samples collected during site wide event. TCE concentrations exceeding the MCL ranged from 10 µg/L in the downgradient, off-site well RDW-1 (on the Ringer Property) to 160 µg/L in MW-6D located on the north side of the Main building.

Groundwater Summary for the 2022 Site Wide Monitoring Event

As previously indicated, multiple temporary, permanent, and water well sampling events have been performed at the Site. For the 2022 site wide monitoring event, TCE continued to be the most widespread of the CVOCs detected in the groundwater zones. TCE isoconcentration maps were developed for the shallow, intermediate, and bedrock zones using the 2022 groundwater data. The site wide monitoring event isoconcentrations are shown for the shallow, intermediate, and deep zones in **Figures 3-1**, **3-2**, and **3-3**, respectively.

The highest TCE concentrations found in shallow wells in 2022 are beneath the Main building: MW-8 at 530 µg/L (600 µg/L from the PDB); and TMW-31 at 480 µg/L (down from 1,400 µg/L in 2017 and at the location of the ISCO pilot study). The highest concentration is also found outside and hydraulically downgradient of the Pole Winder building: (MW-10 at 590 µg/L, which is the location of the shallow zone ISERD pilot study). These concentrations are shown in **Figure 3-1**. The area of TCE impacted groundwater in the shallow zone extends radially from the Main building to the west and from the Pole Winder building to the north-northwest. This distribution of TCE in the shallow zone appears to be consistent with groundwater flow direction which is generally to the northwest or north-northwest.

As shown in **Figure 3-2**, the distribution of TCE in the intermediate zone is similar to that depicted beneath the facility property. The extent of TCE impacts to west-southwest is slightly more widespread than in the shallow zone, but less than that to the northwest. The highest TCE concentrations in the intermediate zone in 2022 occurred at wells MW-9I (850 µg/L), located west of the main building, and MW-5I (610 µg/L), located on the north side of the Pole Winder building. The previously high concentration at MW-10I in 2017 (1000 µg/L) was reduced to 50 µg/L in 2022, as a result of the ISERD pilot study initiated in fall 2021.

TCE impacts in the bedrock zone extends farther to the southwest than either the shallow or intermediate zones, as shown in **Figure 3-3**. This is thought to be due to the historic use of private water supply wells, screened in the bedrock, located to the south and west of the facility. The highest TCE concentration in the bedrock during the 2022 site wide monitoring event occurred at well MW-6D (160 µg/L), located on the north side of the main building. The second highest concentrations occurred at off-site well MW-12D (53 µg/L and 70 µg/L in the PDB sample); MW-12D is located on the tract of land (Dickert property) to the north of the Pole Winder building and railroad tracks.

Isoconcentration maps were not developed in this report for cis-1,2-DCE or any other VOC, since there were very few additional MCL exceedances other than for TCE. As previously mentioned above, cis-1,2-DCE was detected above its MCL (70 µg/L) in only three samples of the 2022 site wide monitoring event: MW-6 (220 µg/L), MW-8 (76 µg/L), and TMW-21 (130 µg/L). The area of cis-1,2-DCE impacted groundwater generally mimics the TCE plume but is much less widespread. The highest cis-1,2-DCE concentrations are also found in wells located on the Facility property near the Main building and towards the northwest corner of the Facility property.

3.4.2 Summary of Pilot Study Analytical Results to Date

In September 2021, Signify and AECOM implemented a pilot study (PS) designed to evaluate multiple groundwater remediation technologies at the Site. The PS has included an evaluation of ISCO and ISERD for groundwater at specific locations on the Site. Pilot study locations are shown in **Figures 3-4, 3-5, and 3-6**. The "Pilot Study Update Summary" (**AECOM, 2022**) was transmitted to SCDHEC in December 2022. Then, the "Pilot Study Report" was transmitted to SCDHEC in May 2023. The following overall conclusions of the PS were included in the PS Report:

ISCO Pilot Study: Review of field observations and measurements along with analytical results from the ISCO study area monitoring wells indicate the following ISCO PS conclusions:

- Treatment using $KMnO_4$ oxidant was effective in decreasing the TCE concentrations to non-detect levels in the area where obstructions did not limit access to the DPT injection equipment.
- The December 2022 TCE concentration of 3,600 µg/L in groundwater at "hot spot" well TMW-31 indicates that a TCE source still exists in groundwater underneath and potentially immediately next to the building in that area. A decrease in TCE concentration was observed March 2022 when a light purple color was observed in the sample, which indicated that some chemical oxidant remained in the vicinity of the well. Following the March 2022 sampling event, the concentration of TCE continued to increase, and the presence of the chemical oxidant was no longer observed. Matrix back diffusion of TCE from shallow aquifer materials in this area likely contributed to the increasing TCE concentrations in that well.
- Because of overhead obstructions inside the eastern end of the building, another approach to accessing appropriate injection locations in the TMW-31 CVOC groundwater source area may need to be identified.
- A radius of influence (ROI) of at most 10 ft was confirmed during the pilot study.

ISERD Pilot Study: Review of field observations and measurements along with analytical results from the ISERD study area monitoring wells indicate the following PS conclusions:

- CVOC and the biogeochemical concentrations indicate that overall conditions, with enhancement, in the treatment areas remain favorable for continued degradation to occur in the vicinity of MW-10, MW-10I, and ERD-OBSW-1I. The distance of ERD-OBSW-1S from the injection locations

prevented treatment at this well due to the tight lithology associated with the shallow zone groundwater aquifer.

- An increase in other parameters such as dissolved iron, TOC, and methane also support the conclusion that conditions still could be favorable for continued degradation of CVOCs.
- The ERD technology worked favorably for the intermediate zone, as evidenced by the decline in TCE concentrations and increase in cis-1,2-DCE. The pH may have been a limiting factor for success in the shallow zone.
- The bioaugmentation injection event conducted in December 2021 did not result in a significant increase in *DHC* and associated reductase enzymes, which indicates limited effectiveness of this procedure.
- If ISERD is conducted in the future, buffering to increase the targeted groundwater pH will need to be closely controlled in order to avoid increasing the pH to above 8 S.U., which is outside the favorable range for reductive dechlorination to occur.
- An ROI of at most 10 ft was confirmed during the pilot study.

3.5 Chemicals of Concern

As discussed in Section 3.3, the following CVOCs exceeded their MCLs in at least one groundwater sample during the 2014 to 2017 period: TCE, cis-1,2-DCE, VC, and PCE. These constituents were determined to be chemicals of concern (COCs) in the RI Report. Only two of these constituents, TCE and cis-1,2-DCE, exhibited exceedances of the MCL in the 2022 samples. One non-CVOC, styrene, had one MCL exceedance in one well, occurring only in March 2022. As a result, no new COCs were identified during the 2022 sitewide monitoring event.

3.6 Data Validation

Data validation was performed on the analytical laboratory deliverables for the sitewide groundwater monitoring event. The general and complete validation process was performed in accordance with the USEPA Region 4's *Data Validation Standard Operating Procedures for Contract Laboratory Program Routine Analytical Services* in association with the USEPA's *Contract Laboratory Program, National Functional Guidelines for Organic Data Review* (**USEPA, 1999**), Contract *Laboratory Program, National Functional Guidelines for Inorganic Data Review* (**USEPA, 2002**), and the approved Quality Assurance Project Plan (QAPP) for the project. The USEPA data validation protocols were used in conjunction with the SW-846 analytical methodologies to determine if data should be accepted without qualification, rejected, or qualified.

Data flags were added to some of the acetone and styrene results from some of the sample batches, due to those constituents being detected in either the trip blank or the field blank. Data flags, as applied, were consistent with the USEPA validation guidelines cited above. However, the QC excursions encountered during the validation of this data set did not result in the rejection of any data. Therefore, the data associated with this laboratory batch should be considered compliant and adequate for the intended use. Copies of the data validation reports are contained in **Appendix B**.

3.7 Comparison of Conventional Sampling Techniques vs. Passive Diffusion Bags

As part of the sitewide groundwater monitoring event, sampling was performed in order to make a comparison of conventions low-flow groundwater sampling techniques with passive diffusion bags (PDBs). The purpose of this comparison was to determine if results generated by samples collected using low-flow sampling methods are comparable to results obtained using PDBs, to evaluate if PDBs could be used instead of conventional techniques for some of the future groundwater sampling for VOC analysis. Use of PDBs would result in a decrease in the volume of purge water generated during sampling.

During the sitewide monitoring event, PDBs were inserted in the following monitoring wells in February 2022:

- Nine Shallow wells: MW-1, MW-7, MW-8, MW-9, MW-11, MW-12, MW-14, MW-20, and MW-25;
- Four Intermediate wells: MW-2I, MW-5I, MW-7I, and MW-20I;
- Two Bedrock Wells: MW-12D and RDW-1.

Tables 3-6A, 3-6B, and 3-6C contain comparisons of the laboratory analytical results for samples collected using conventional low-flow groundwater sampling techniques versus samples collected using PDBs, for shallow, intermediate, and bedrock zones, respectively. **Table 3-7** contains calculations for the relative percent difference (RPD) in TCE, cis-1,2-DCE, and VC concentrations between the two techniques. The results of the RPD comparison are shown on **Table 3-7**.

A summary of the RPD comparisons for TCE, cis-1,2 DCE, and VC results is also included on **Table 3-7**. A brief description is of each comparison is as follows:

- TCE: Of the 15 wells in which both techniques were utilized, four of those wells had non-detect concentrations for TCE. Samples from six wells had RPDs of less than 15%, three sample sets had an RPD of less than 30%, and one sample had an RPD of greater than 10%. Most of the larger RPDs for TCE were for concentrations that were less than 50 µg/L.

- Cis-1,2 DCE: 10 of the 15 wells selected had non-detect concentrations for cis-1,2 DCE (0% RPD). Two sets of results had an RPD of 15%, two sets had an RPD of less than 30%, and one set had an RPD of greater than 30%. Six wells had RPDs between 0.1 and 15%. Three wells had RPDs between 15 and 30%. One well had an RPD greater than 30%. The larger RPDs for the cis-1,2 DCE concentrations were for samples with concentrations that were also less than 50 µg/L.

- VC: VC was not detected in either sample collected from 14 of the 15 wells in which both sampling techniques were utilized during the 2022 monitoring event (0% RPD). The one sample set in which VC was detected had an RPD of just over 30% (**Table 3-7**). The concentrations in the two samples from this set were less than the MCL of 2 µg/L.

Conclusion and Request: Comparison of the PDB and low-flow sampling results indicates that the majority of the variations were less than 15%. The largest variations were seen within well sample data sets with concentrations of less than 50 µg/L. Based on the limited number of substantial variations, Signify would like to incorporate the use of PDBs for future groundwater sampling events. Where it is critical that other groundwater natural attenuation or remediation parameters besides VOCs need to be sampled, it is recommended that low-flow groundwater sampling continue to be performed.

4. Plume Volumetrics

Following completion of the previous monitoring efforts, the Earth Volumetric Studio (EVS) software (C Tech Development Corporation, Las Vegas, Nevada) was utilized to develop an additional line of evidence regarding the current extent of groundwater impact beneath the Site. The EVS process generated an updated three-dimensional (3-D) visualization of the TCE plume and estimated plume volumetrics for this parameter. The data generated and modeled during this event can be compared to information collected from the site in the future, particularly once remedial efforts have been implemented, to visually depict changes to plume dimensions over time.

4.1 Plume Dimensions

The EVS system has been used to depict the TCE plume dimensions and boundaries based on the analytical data obtained during the 2022 monitoring event. The visualizations show each well sampled during the 2022 event, highlights each well's screen interval, and the distribution of TCE concentrations.

A snapshot of the plume visualization from various angles has been included in **Appendix G**. A copy of the complete 3-D visualization is also included on the compact disc contained in **Appendix G**. Instructions for accessing the visualization and a link enabling access to the visualization are also included in **Appendix G**.

- **Figure G-1** is a snapshot depicting the extent of TCE detected at the site. This is a planar view depicting the horizontal extent in all depth intervals.
- **Figure G-2** depicts the extent of TCE looking north, through the plume.
- **Figure G-3** depicts the extent of TCE looking south through the plume.

4.2 Bulk Mass Calculations

The EVS process was also used to estimate the total mass[1] volume of TCE in groundwater. **Table 4-1** summarizes the calculated chemical mass (207 kilograms) and average concentration (43.5 µg/L) for this compound based on the 2022 groundwater data. The volume and mass values are based on concentrations above 1.0 µg/L.

[1] The molar mass creates a normalized concentration unit for the COC, which will allow for a better visualization of overall changes in mass loss not only for TCE but other compounds if incorporated into the model.

5. Conclusions, Recommendations, and Next Step Actions

The February 2022 sitewide groundwater monitoring event was performed to determine the status of groundwater quality beneath the Site. The monitoring event included sampling of 65 monitoring wells located at the Site. Sampling was conducted at 39 shallow zone wells, 12 intermediate zone wells, and 14 bedrock zone wells. Groundwater samples collected from all of these wells were analyzed for TCL-VOCs. Some of the wells were sampled for biogeochemical and biological parameters. All of the monitoring wells and piezometers were sampled using low flow-low volume purging methods. Nine shallow zone wells, four intermediate zone wells, and two bedrock wells were also sampled using PDBs, for comparison of laboratory analytical results with the low flow-low volume purging method.

The following conclusions are based on the data collected during this sitewide monitoring event:

- Groundwater Hydrogeology: The groundwater elevations, flow directions, and calculated flow velocities are similar to those determined during the RI.

- Field Parameter and Biogeochemical Data Evaluation: Field parameters from 2022 and earlier events, and biogeochemical data from 2022, indicate the presence of anaerobic bacteria capable of partial degradation of TCE and aerobic bacteria capable of degradation of TCE, cis-1,2-DCE, and VC. Natural attenuation of TCE at the Site will also continue to occur due to physical processes (e.g., diffusion and dispersion) and chemical processes (i.e., abiotic mineral processes). However, the relatively low cell counts for TCE-degrading bacteria at the Site suggest that natural biological attenuation rates will be limited.

- Shallow Zone Groundwater Analytical Results Outside of the Pilot Study Areas: TCE was detected above its MCL of 5 µg/L in 21 of the 39 shallow well samples collected during the site wide event, with the highest detection of 590 µg/L in well MW-10. Cis-1,2-DCE was detected above its MCL of 70 µg/L in only three of the 39 shallow zone samples, with the highest detection of 220 µg/L at well MW-6. VC was not detected at a concentration exceeding its MCL in any of the 39 samples.

- Intermediate Zone Groundwater Analytical Results Outside of the Pilot Study Areas: TCE was detected above its MCL of 5 µg/L in eight intermediate zone samples ranging from 15 µg/L in MW-6I to 850 µg/L in MW-9I. The CVOC degradation compound cis-1,2-DCE was detected above its MCL of 70 µg/L in only one well: MW-7I at 84 µg/L conventional sampling and 100 µg/L with the PDB. There were no exceedances of the VC MCL during the 2022 monitoring event.

- Deep Zone Groundwater Analytical Results: TCE, the only constituent exceeding its MCL during the sitewide monitoring event, was detected above its MCL of 5 µg/L in six of the 14 deep well samples collected during the site wide event. TCE concentrations exceeding the MCL ranged from 10 µg/L in the downgradient, off-site well RDW-1 (on the Ringer Property) to 160 µg/L in MW-6D located on the north side of the Main building.

- ISCO Pilot Study: Review of field observations and measurements along with analytical results from the ISCO study area monitoring wells indicate the following ISCO PS conclusions:
    - Treatment using potassium permanganate (KMnO4) oxidant was effective in decreasing the TCE concentrations to non-detection levels in the area where

obstructions did not limit access to the injection direct push technology (DPT) equipment.
    - The December 2022 TCE concentration of 3,600 µg/L in groundwater at source area well TMW-31 indicated that a significant TCE source still exists in groundwater under the building in that area.
    - Because of overhead obstructions inside the eastern end of the building, another approach to accessing appropriate injection locations in the TMW-31 CVOC groundwater source area may need to be identified.

- ISERD Pilot Study: Review of field observations and measurements along with analytical results from the ISERD study area monitoring wells indicate the following PS conclusions:
    - CVOC and the biogeochemical concentrations indicate that overall conditions, with enhancement, in the treatment areas remain favorable for continued degradation to occur in the vicinity of MW-10, MW-10I, and ERD-OBSW-1I. The distance of ERD-OBSW-1S from the injection locations prevented treatment at this well due to the tight lithology associated with the shallow zone groundwater aquifer.
    - An increase in other parameters such as dissolved iron, TOC, and methane also support the conclusion that conditions still could be favorable for continued degradation of CVOCs.
    - The ERD technology worked favorably for the intermediate zone, as evidenced by the decline in TCE concentrations and increase in cis-1,2-DCE. The pH may have been a limiting factor for success in the shallow zone.
    - The bioaugmentation injection event conducted in December 2021 did not result in a significant increase in *DHC* and associated reductase enzymes, which indicates limited effectiveness of this procedure.
    - If ISERD is conducted in the future, buffering to increase the targeted groundwater pH will need to be closely controlled in order to avoid increasing the pH to above 8 S.U., which is outside the favorable range for reductive dechlorination to occur.
    - A ROI of at most 10 ft was confirmed during the pilot study.

- Low-flow Purging Compared with PDB Sampling Collection: Comparison of the PDB and low-flow sampling results indicates that the majority of the variations were less than 15%. The largest variations were seen within well sample data sets with concentrations of less than 50 µg/L. Based on the limited number of substantial variations, Signify would like to incorporate the use of PDBs for future groundwater sampling events.

- Plume Volumetrics: The EVS software was used to develop a 3-D model depicting the extent of TCE impact in groundwater beneath the site. This software was also used to estimate the volume of TCE in groundwater beneath the site. The calculated TCE chemical mass was 207 kilograms and the average TCE concentration was 43.5 µg/L based on the 2022 groundwater data.

Recommendations/requests and next step actions are listed below:

- Groundwater Pilot Study: Both in situ chemical oxidation (ISCO) and in situ enhanced reductive dechlorination (ISERD) should be retained as potential treatment technologies and for remedial alternatives development in the upcoming feasibility study (FS).

- Chemicals of Concern (COCs): The COCs which are being carried through from the remedial investigation (RI), through the sitewide groundwater monitoring event, and into the FS are TCE, cis-1,2-dichloroethene (DCE), and vinyl chloride (VC).

- Low-flow Purging Compared with PDB Sample Collection: Signify would like to incorporate the use of PDBs for future groundwater sampling events. Where it is critical that other groundwater natural attenuation or remediation parameters besides VOCs need to be sampled, it is recommended that low-flow groundwater sampling continue to be performed.

- Plume Volumetrics: Updating of the EVS model as remedial efforts are implemented can be used to depict changes in plume dimensions.

- Initiation of Feasibility Study Phase: Based on the sitewide groundwater monitoring event data and the pilot study results, Signify recommends proceeding with the feasibility study phase. Signify anticipates that the FS will be completed by the end of 2023.

6. References

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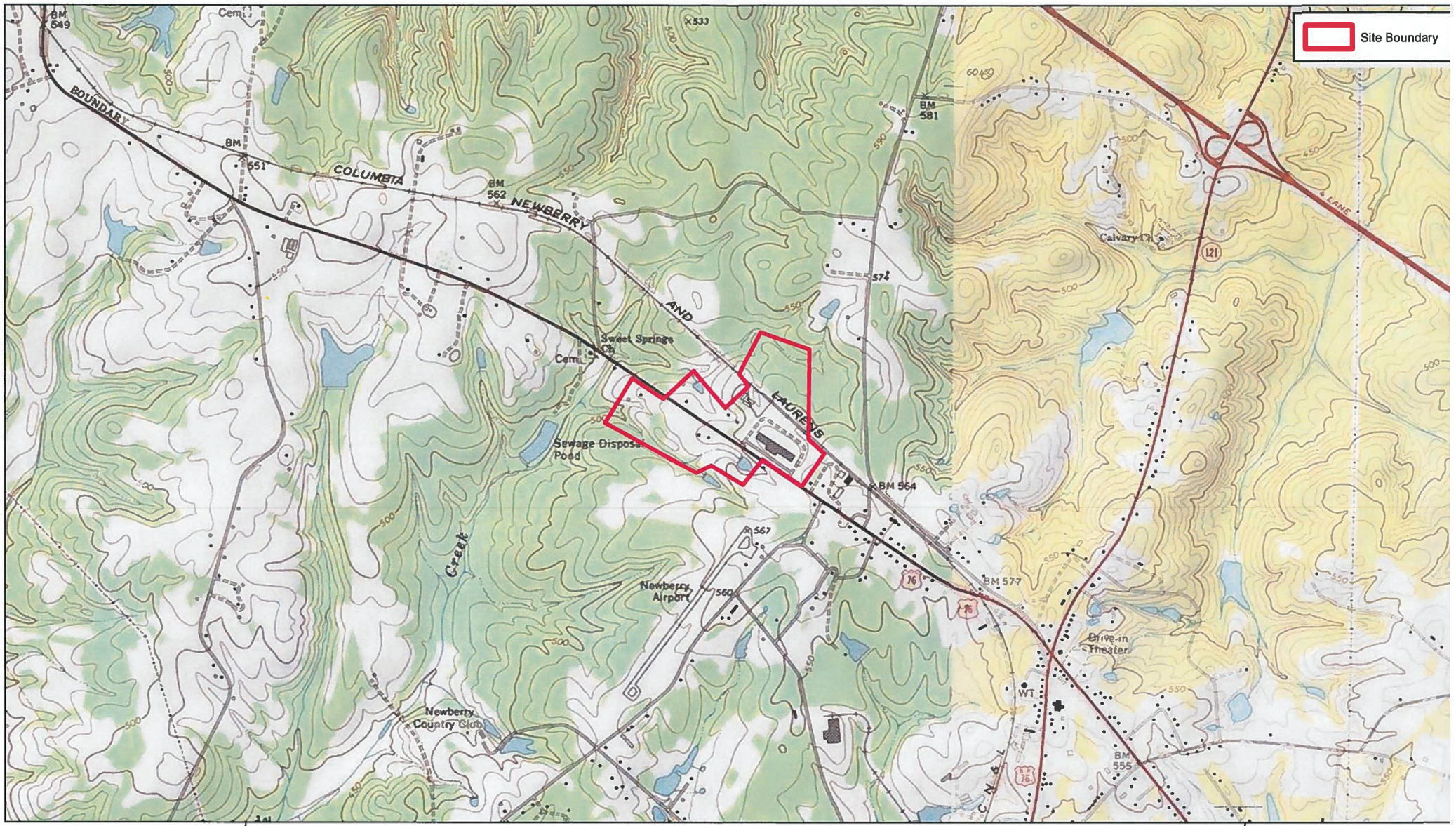
FIGURES



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101 Research Drive
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Figure 1-1: Site Location Map

Shakespeare Composition Structures
Newberry, South Carolina

Project No.: 60635197; Prepared by: KA; Date: 9/10/20

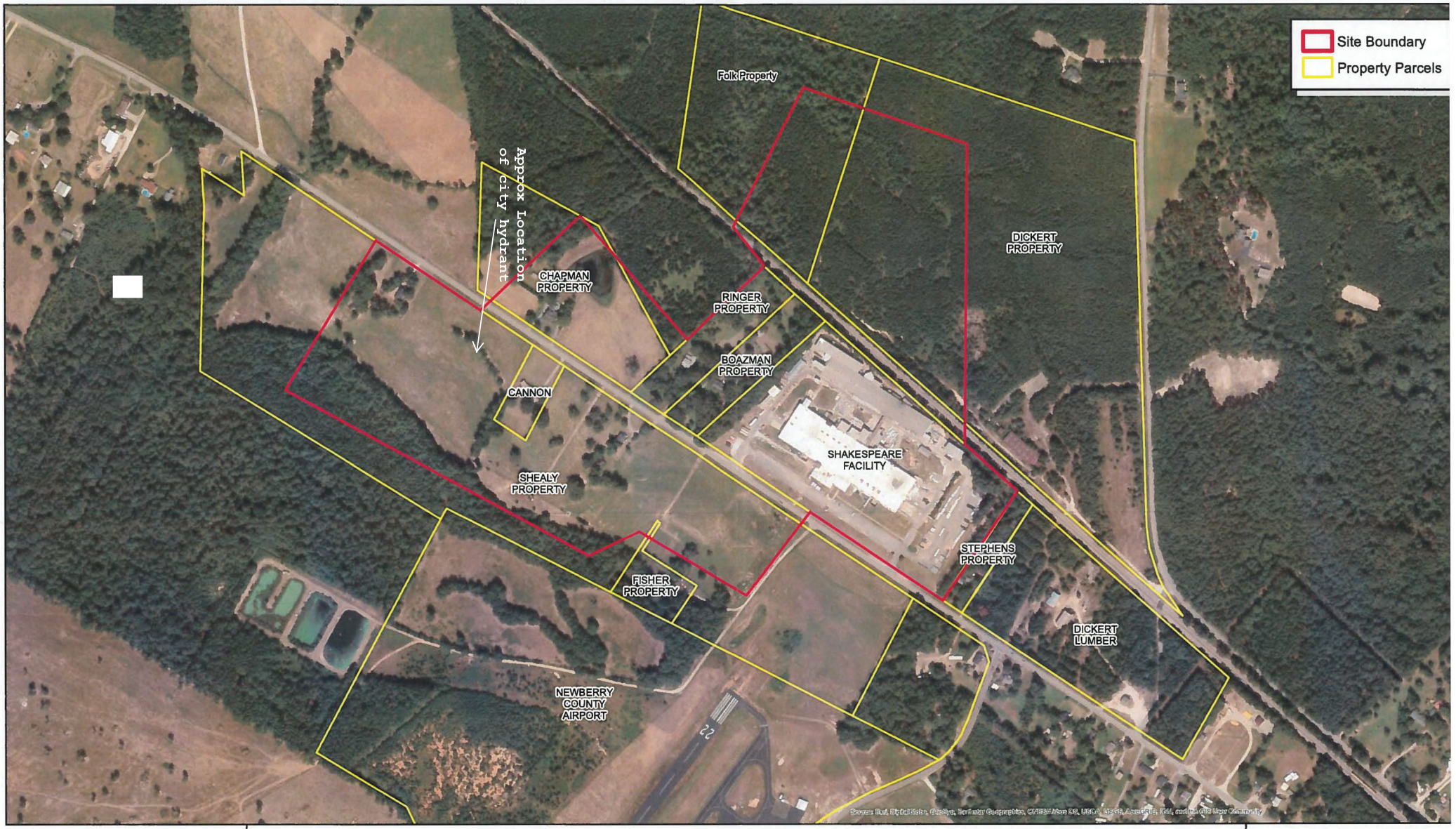

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Figure 1-2: Site Plan

Shakespeare Composition Structures
Newberry, South Carolina

Project No.: 60635197; Prepared by: KA; Date: 09/10/20

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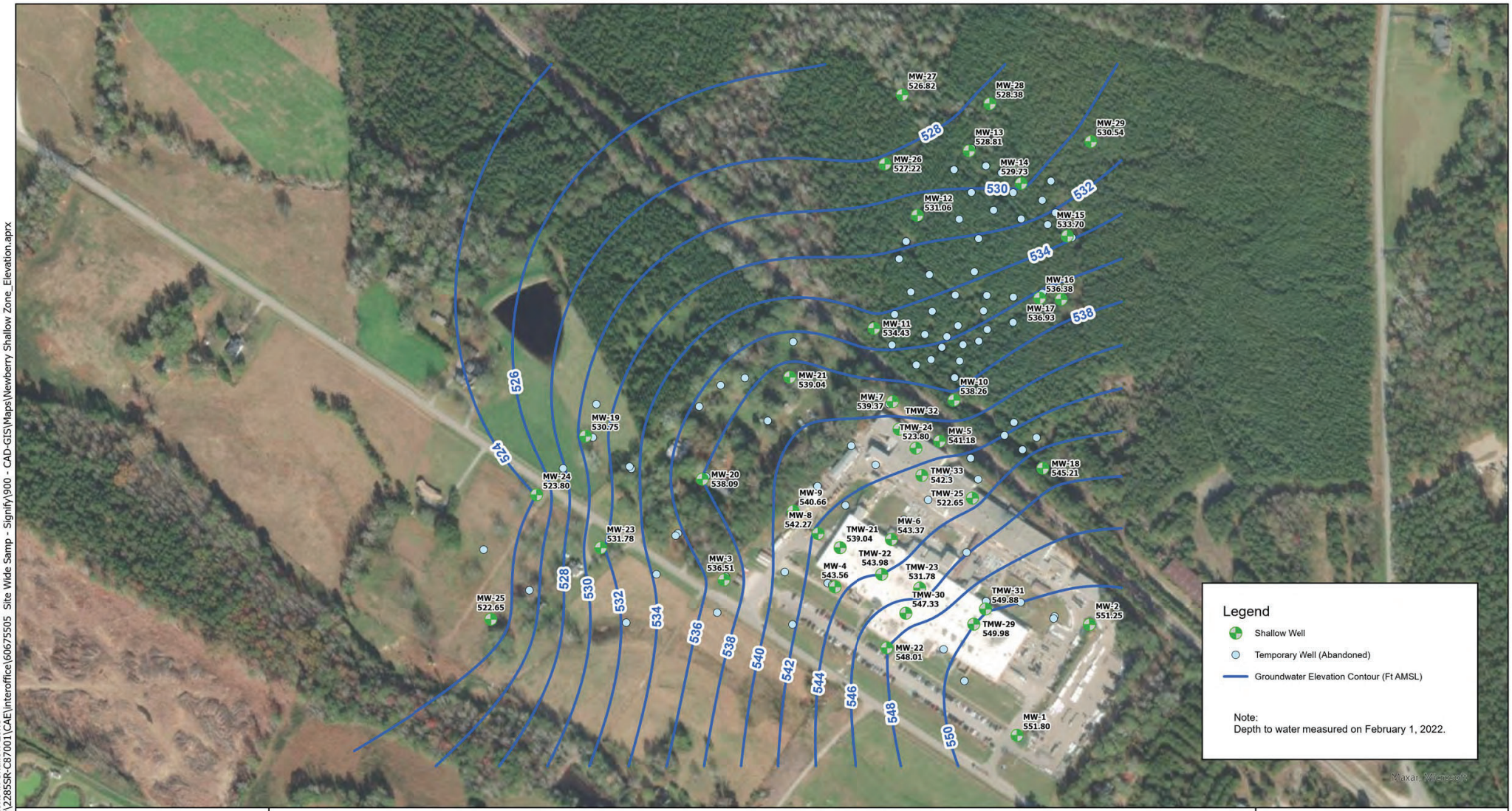

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Figure 2-1
Wells and Elevations in Shallow Zone

Shakespeare Composition Structures
Newberry, South Carolina
Project Number: 60704227

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Figure 2-2
Wells and Elevations in Intermediate Zone

Shakespeare Composition Structures
Newberry, South Carolina
Project Number: 60704227

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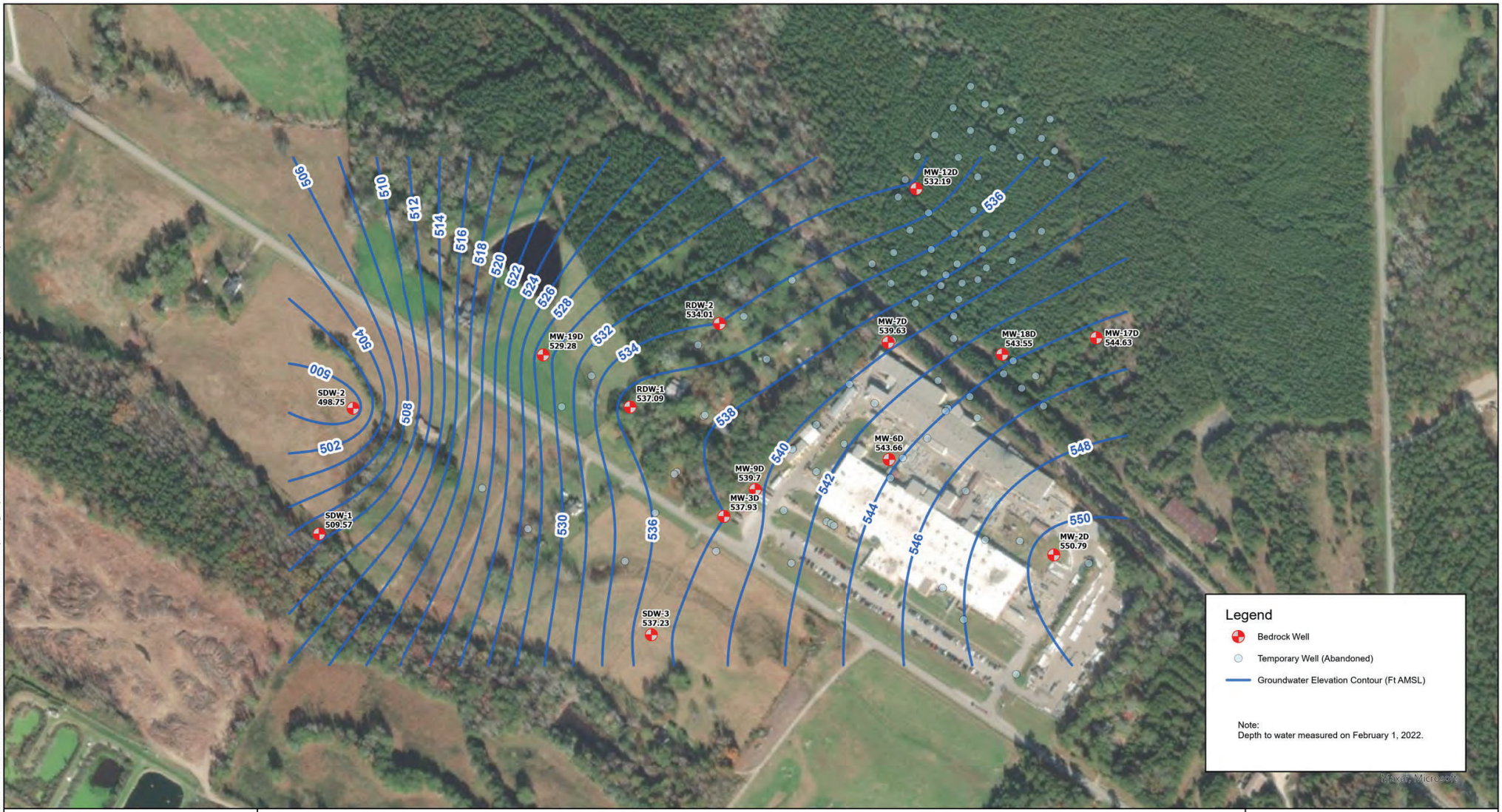

Figure 2-3
Wells and Elevations in Bedrock Zone

Shakespeare Composition Structures
Newberry, South Carolina
Project Number: 60704227

AECOM

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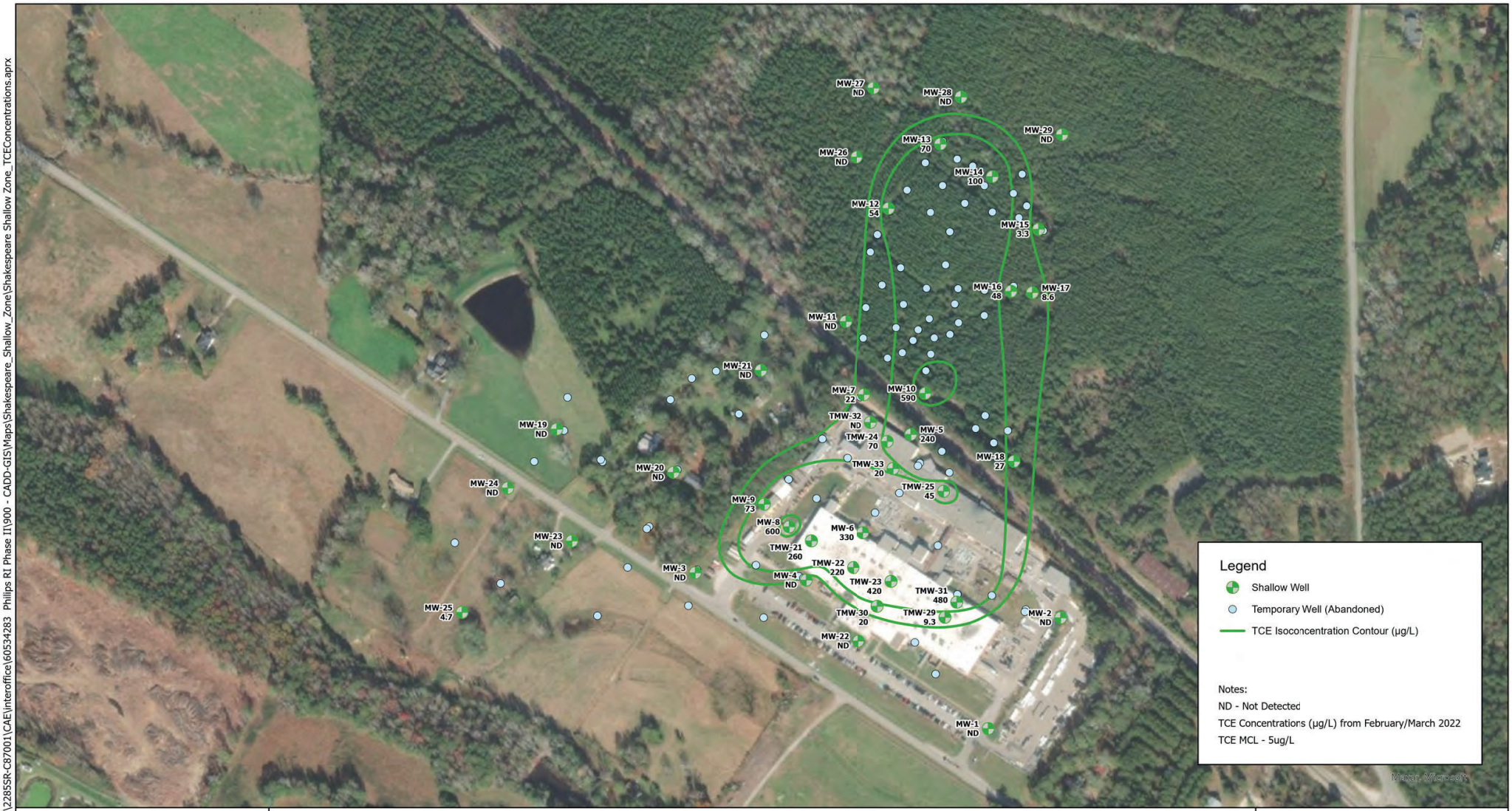

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Figure 3-1
TCE Concentrations in Shallow Zone

Shakespeare Composition Structures
Newberry, South Carolina
Project Number: 60704227

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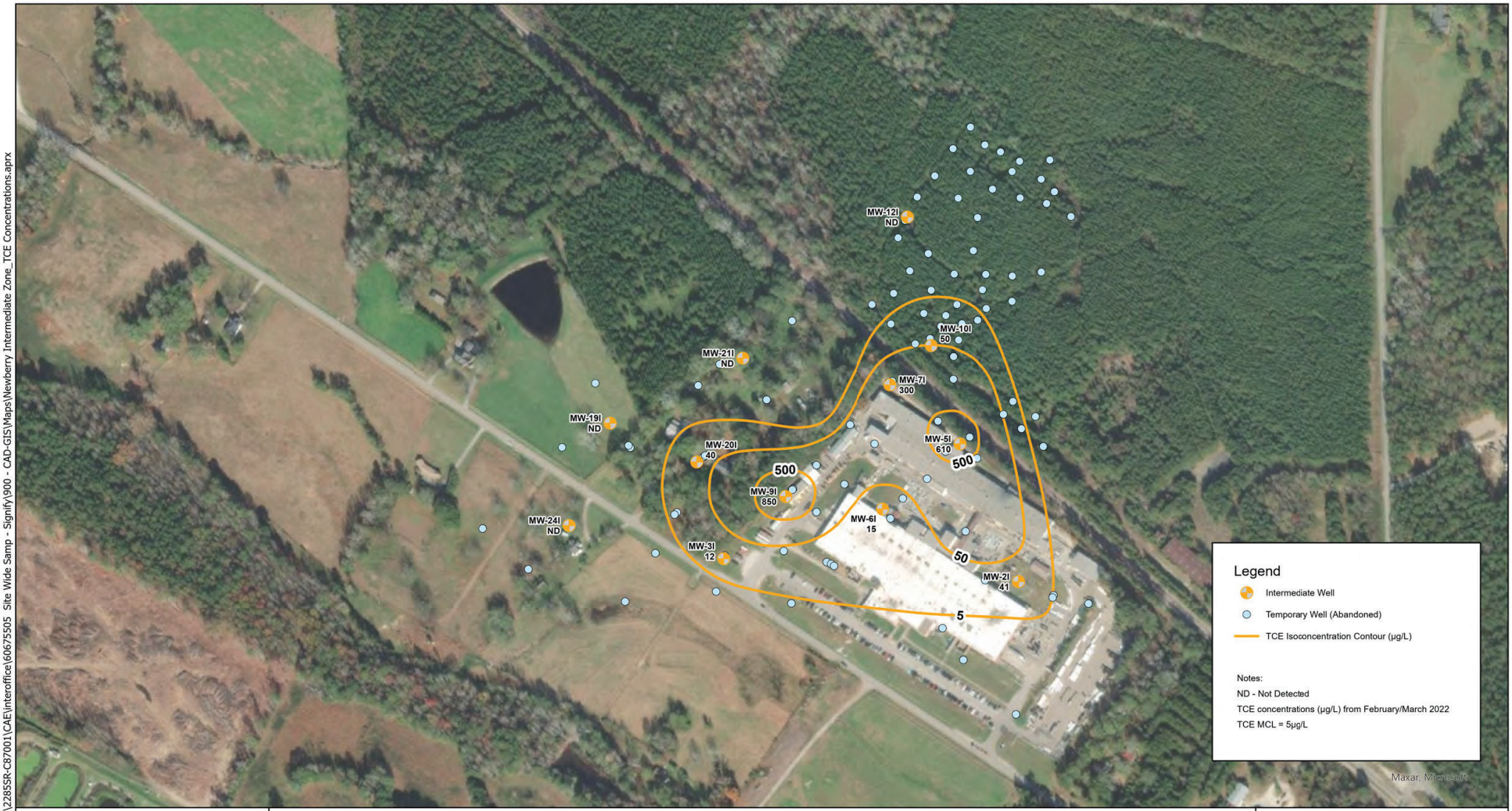

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Figure 3-2
TCE Concentrations in Intermediate Zone

Shakespeare Composition Structures
Newberry, South Carolina
Project Number: 60704227

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Name: Figure 1-7 TCE Concentrations in Intermediate Zone
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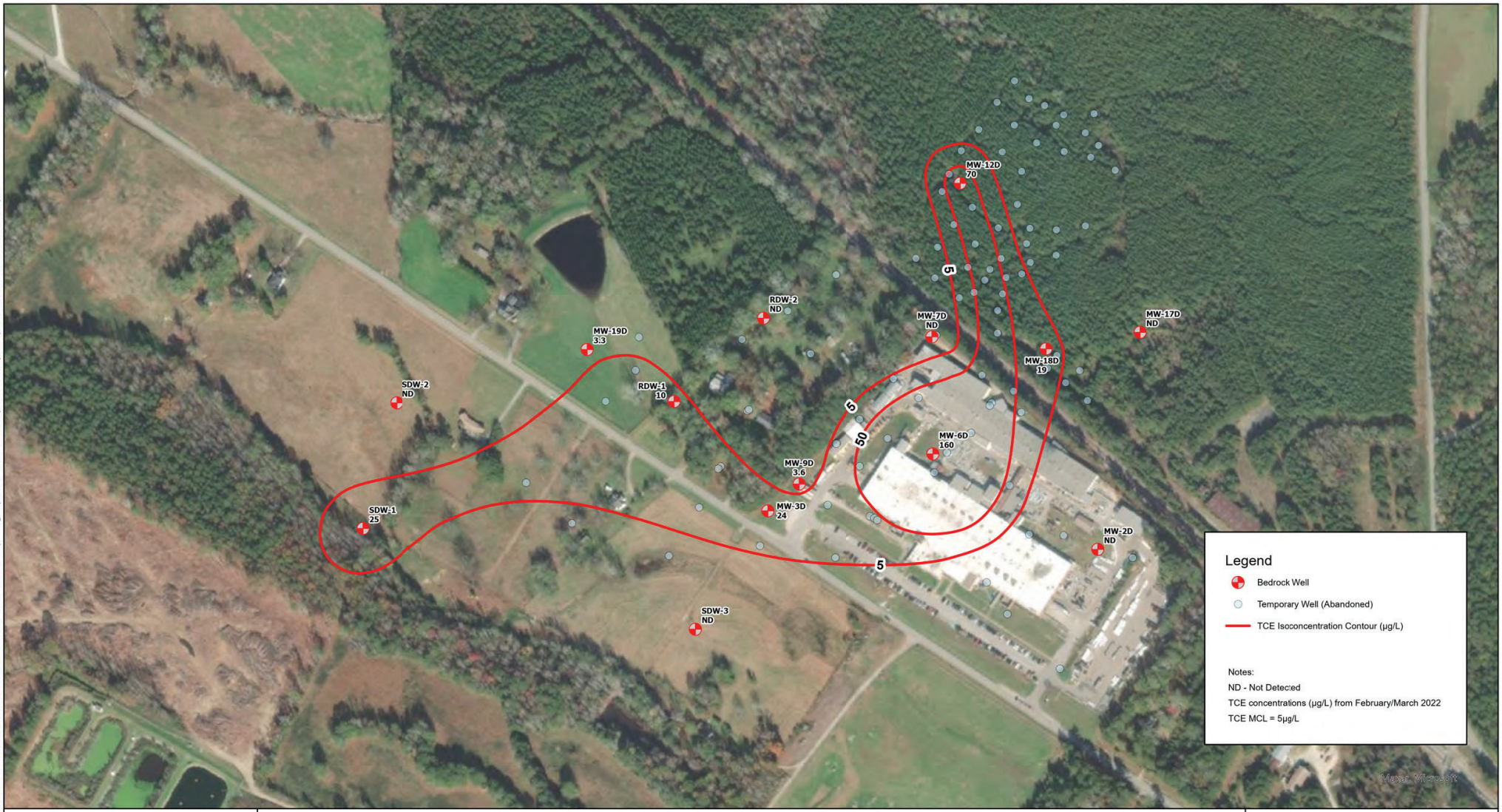

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Figure 3-3
TCE Concentrations in Bedrock Zone

Shakespeare Composition Structures
Newberry, South Carolina
Project Number: 60704227

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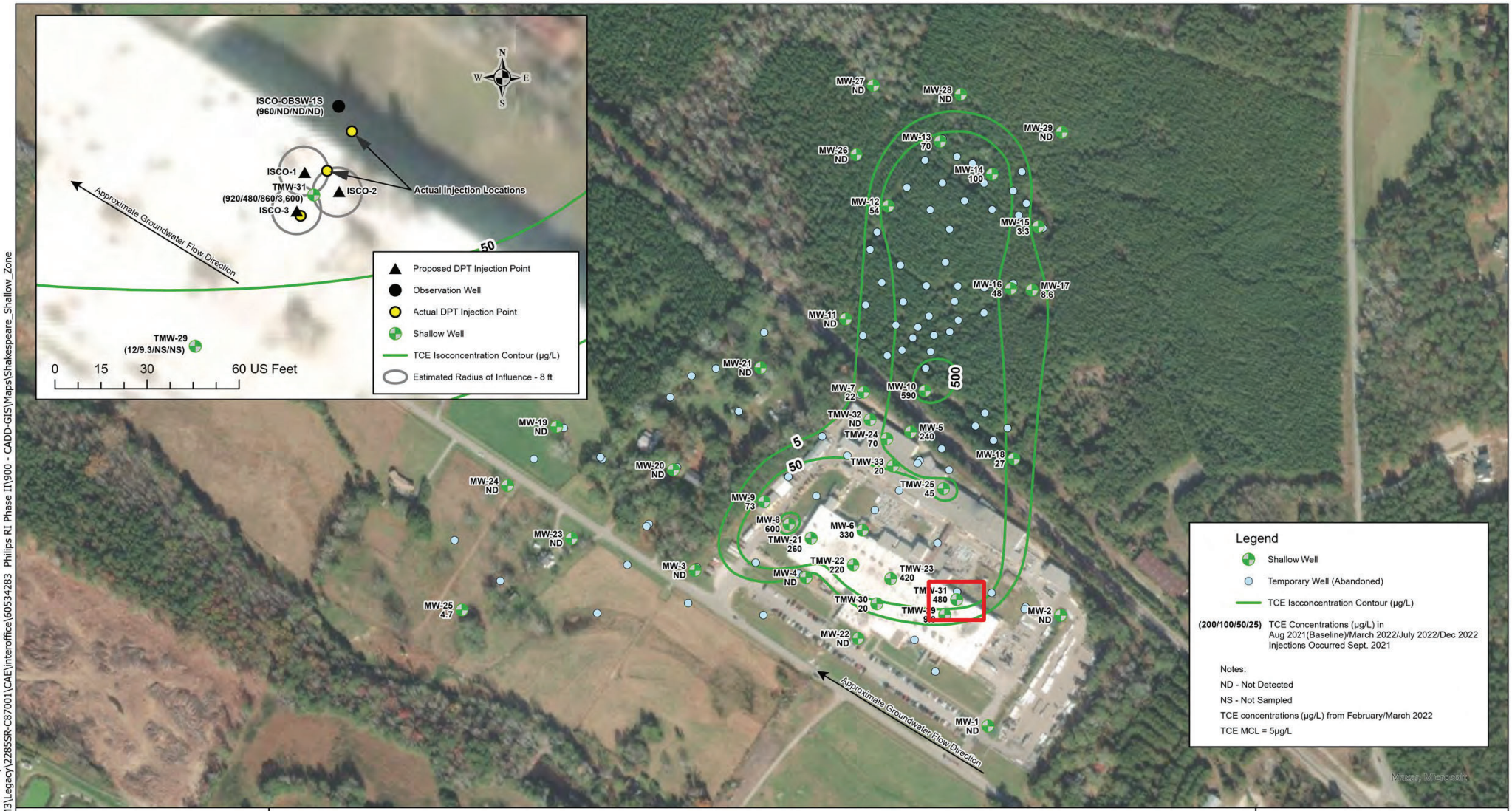

Figure 3-4
ISCO Pilot Study Results
Shallow Zone

Shakespeare Composition Structures
Newberry, South Carolina
Project No: 60704227

AECOM

Name of Map: Shakespeare ISCO Pilot Study Shallow Zone
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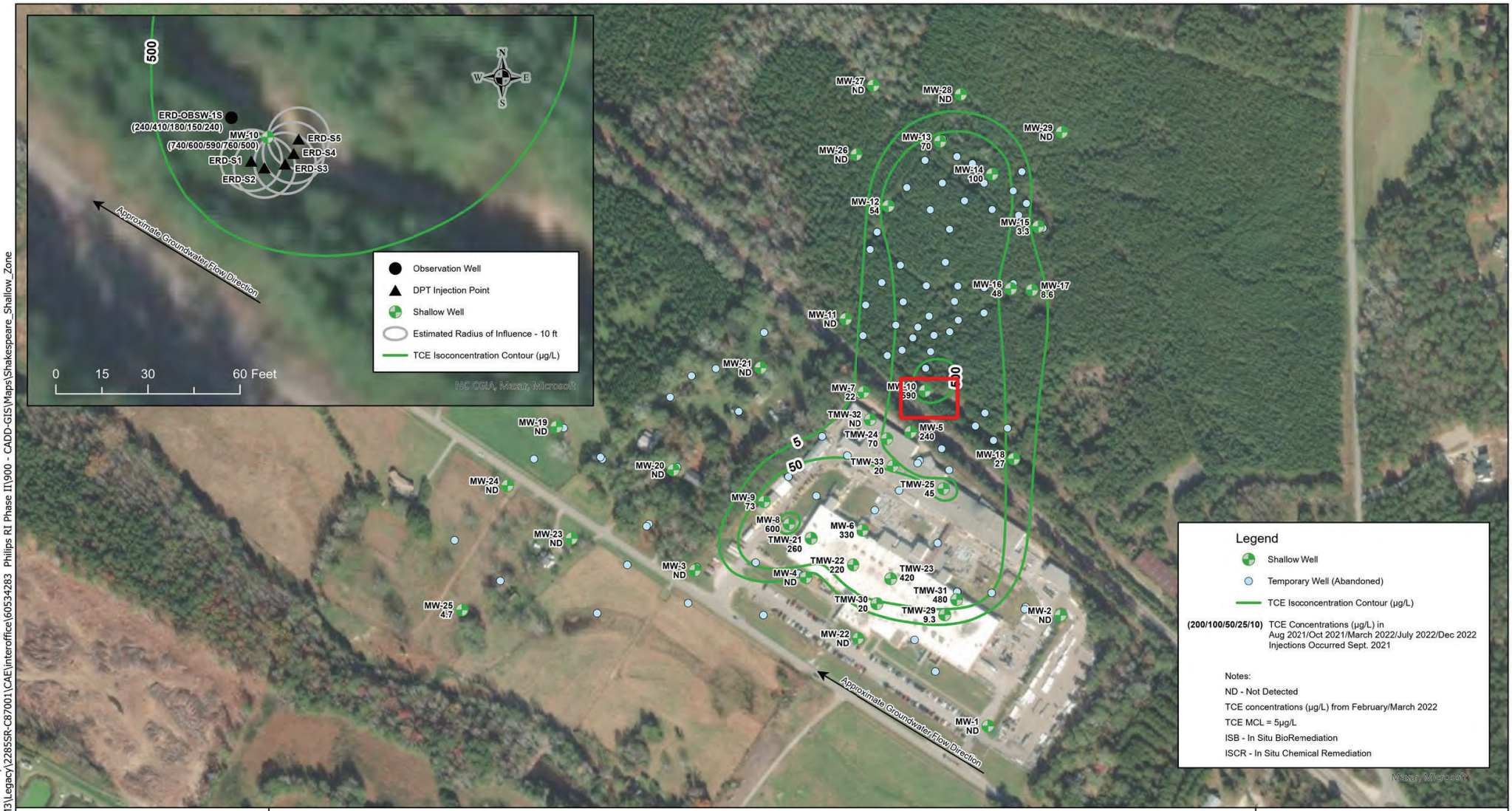

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Figure 3-5
Enhanced Reductive Dechlorination (ISB and ISCR) Pilot Study Results
Shallow Zone

Shakespeare Composition Structures
Newberry, South Carolina
Project No: 60704227

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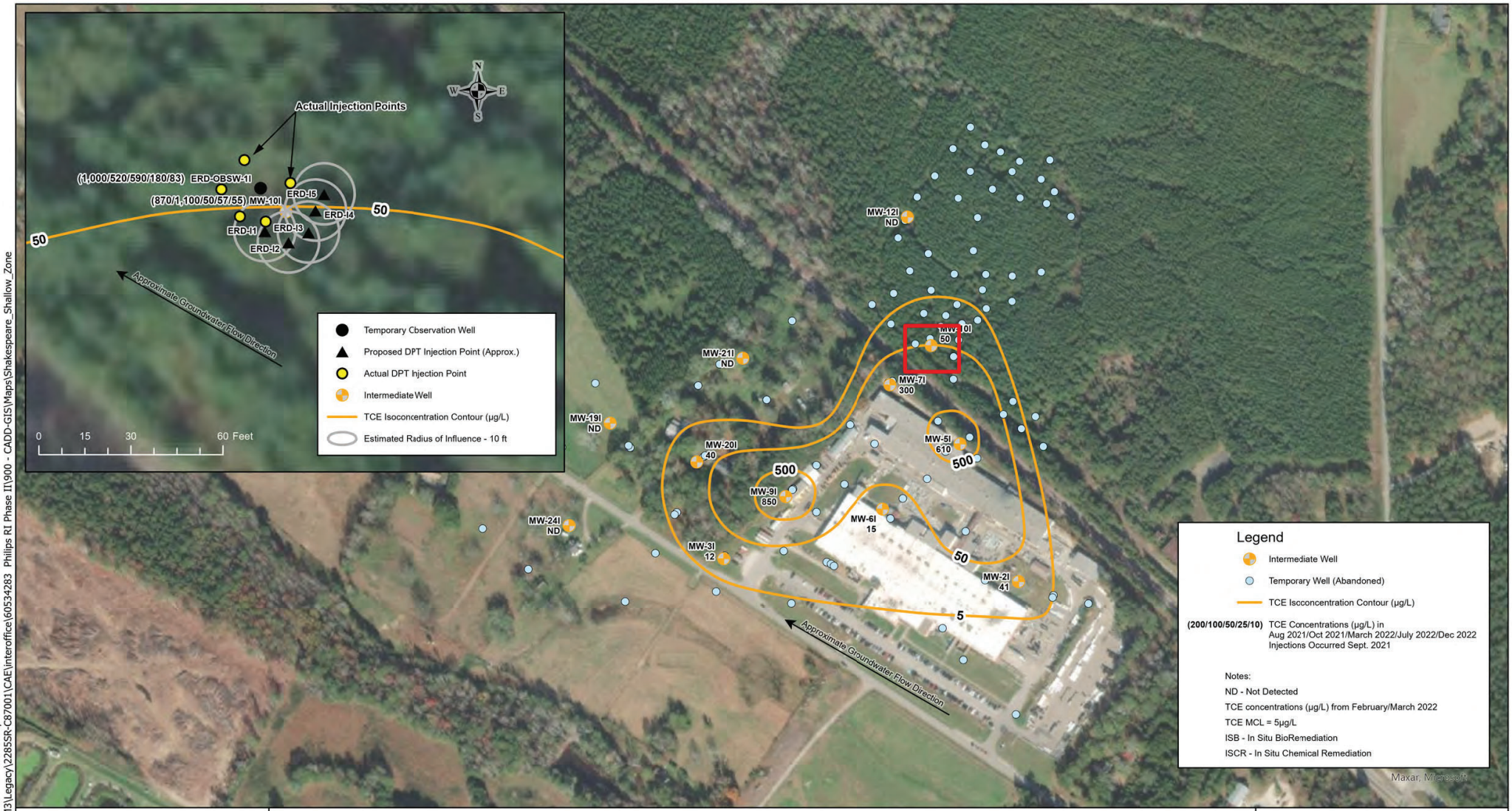

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Figure 3-6
Enhanced Reductive Dechlorination (ISB and ISCR) Pilot Study Results
Intermediate Zone

Shakespeare Composition Structures
Newberry, South Carolina
Project No: 60704227

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TABLES

TABLE 2-1
SITE WIDE SAMPLING PLAN: FEBRUARY 2022

Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

Well ID	Location and Purpose	TD	Screen Interval	Diameter	TOC Elevation	Sampling Method	Site Wide Analyses
	Shallow Wells						
MW-1	Former Shakespeare property. Permanent well installed at former location of TMW-8	14.2	4.2 - 14.2	2 inch	561.85	PDB Low flow - peristaltic	TCL VOCs
MW-2	Former Shakespeare property, Permanent well installed at former location of TMW-7	24.7	14.7-24.7	"	558.42	PS Sampling - Low Flow Peristaltic	ISCO
MW-3	Former Shakespeare facility property - southwest corner of plant property	26	14.7-24.7	"	549.00	Low flow - peristaltic	TCL VOCs
MW-4	Former Shakespeare property. Permanent well installed at former location of TMW-3	26	15.2-25.2	"	560.13	Low flow - peristaltic	TCL VOCs
MW-5	Former Shakespeare property. Permanent well installed at former location of TMW-11	26	15.8-25.8	"	557.74	Low flow - peristaltic	TCL VOCs, TOC, Alkalinity, Nitrate/Nitrite, Sulfate, Total and Dissolved Fe and Mn, MEE, and Targeted PCR
MW-6	Former Shakespeare property. Permanent well installed at former location of TMW-5	26	15.7-25.7	"	561.32	Low flow - peristaltic	TCL VOCs, TOC, Alkalinity, Nitrate/Nitrite, Sulfate, Total and Dissolved Fe and Mn, MEE, and Targeted PCR
MW-7	Former Shakespeare property. Permament well installed at former location of TMW-16	26	14.8-24.8	"	554.72	PDB Low flow - peristaltic	TCL VOCs, TOC, Alkalinity, Nitrate/Nitrite, Sulfate, Total and Dissolved Fe and Mn, MEE, and Targeted PCR
MW-8	Former Shakespeare property. Permament well installed at former location of TMW-13	26	15.5-25.5	"	558.27	PDB Low flow - peristaltic	TCL VOCs, TOC, Alkalinity, Nitrate/Nitrite, Sulfate, Total and Dissolved Fe and Mn, MEE, and Targeted PCR
MW-9	Former Shakespeare property. Permament well installed at former location of TMW-17	26	15.8-25.8	"	556.36	PDB Low flow - peristaltic	TCL VOCs, TOC, Alkalinity, Nitrate/Nitrite, Sulfate, Total and Dissolved Fe and Mn, MEE, and Targeted PCR
TMW-21	Former Shakespeare property - west end of main building. Temporary well converted to permanent well.	23.5	13.5-23.5	1 inch	550.96	Low flow - peristaltic	TCL VOCs, TOC, Alkalinity, Nitrate/Nitrite, Sulfate, Total and Dissolved Fe and Mn, MEE, and Targeted PCR
TMW-22	Former Shakespeare property - west end of main building. Temporary well converted to permanent well.	25	15-25	"	548.23	Low flow - peristaltic	TCL VOCs, TOC, Alkalinity, Nitrate/Nitrite, Sulfate, Total and Dissolved Fe and Mn, MEE, and Targeted PCR
TMW-23	Former Shakespeare property - central portion of main building. Temporary well onverted to permanent well.	25	15-25	"	537.03	Low flow - peristaltic	TCL VOCs
TMW-24	Former Shakespeare property - west end of pole winder building. Temporary well converted to permanent well.	25	15-25	"	531.12	Low flow - peristaltic	TCL VOCs, TOC, Alkalinity, Nitrate/Nitrite, Sulfate, Total and Dissolved Fe and Mn, MEE, and Targeted PCR
TMW-25	Former Shakespeare property - central portion of pole winder building. Temporary well converted to permanent well.	25	15-25	"	532.07	Low flow - peristaltic	TCL VOCs
TMW-29	Former Shakespeare properrty - east central portion of main building. Temporary well converted to permanent well.	13	8-13	"	536.41	PS Sampling - Low Flow Peristaltic	ISCO PS Sampling - VOC, TDS, Chloride
TMW-30	Fomrer Shakespeare property - Inside south central portion of main building. Temporary well converted to permanent well.	25	15-25	"	543.34	Low flow - peristaltic	TCL VOCs
TMW-31	Former Shakespeare property - Inside north portion of main building. Temporary well converted to permanent well.	21	11-21	"	542.24	PS Sampling - Low Flow Peristaltic	ISCO
TMW-32	Former Shakespeare property - Inside northwest corner of pole winder building. Temporary well converted to permanent well.	25	15-25	"	551.59	Low flow - peristaltic	TCL VOCs
TMW-33	Former Shakespeare property - Inside west central portion of pole winder building. Temporary well converted to permanent well.	25	15-25	"	531.58	Low flow - peristaltic	TCL VOCs

TABLE 2-1
SITE WIDE SAMPLING PLAN: FEBRUARY 2022

Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

Well ID	Location and Purpose	TD	Screen Interval	Diameter	TOC Elevation	Sampling Method	Site Wide Analyses
MW-10	Dickert property - Former Location of TMW-42	30.32	20.3 - 30.3	2 inch	550.96	PS Sampling - Low Flow Peristaltic	ISERD
MW-11	Dickert property - Former Location of TMW-87	30.32	20.3 - 30.3	"	548.24	Low flow - perstaltic	TCL VOCs
MW-12	Dickert property - Former Location of TMW-73	31.37	20.37 - 30.37	"	537.03	PDB Low flow - peristaltic	TCL VOCs
MW-13	Dickert property - Former Location of TMW-89	25.29	15.29 - 25.29	"	531.19	Low flow - peristaltic	TCL VOCs
MW-14	Dickert property - Former Location of TMW-95	20.22	10.22 - 20.22	"	532.07	PDB Low flow - peristaltic	TCL VOCs
MW-15	Dickert property - Former Location of TMW-98	11.63	1.63 - 11.63	"	536.41	Low flow - peristaltic	TCL VOCs
MW-16	Dickert property - Fomer Location of TMW-99	20.29	10.29 - 20.29	"	543.35	Low flow - peristaltic	TCL VOCs
MW-17	Dickert property - east of MW16	30.27	10.59 - 20.59	"	542.37	Low flow - peristaltic	TCL VOCs
MW-18	Dcikert property - Former Location of TMW 72	23.67	13.67 - 23.67	"	551.58	Low flow - peristaltic	TCL VOCs
MW-19	Chapman property - Former Location of TMW-105	14.77	4.77 - 14.77	"	531.58	Low flow - peristaltic	TCL VOCs
MW-20	Boazman property - Former Location of TMW -38/102	35.3	25.3 - 35.3	"	541.92	PDB Low flow - peristaltic	TCL VOCs
MW-21	Ringer property - South of TMW-39	24.17	14.17 - 24.17	"	548.24	Low flow - peristaltic	TCL VOCs
MW-22	Former Shakespeare property - South of entrance to main building	26.2	16.2 - 26.2	"	560.01	Low flow - peristaltic	TCL VOCs, TOC, Alkalinity, Nitrate/Nitrite, Sulfate, Total and Dissolved Fe and Mn, MEE, and Targeted PCR
MW-23	Shealy property - Former Location of TMW-107	25	10-20	"	543.48	Low flow - peristaltic	TCL VOCs
MW-24	Shealy property - Former Location of TMW-109	30	20 - 30	"	541.35	Low flow - peristaltic	TCL VOCs
MW25	Shealy property - Southwest of MW24I and MW23	30	20 - 30	"	535.60	PDB Low flow - peristaltic	TCL VOCs
MW-26	Dickert property - north of MW-13	24.5	14.5 - 24.5	1 inch	533.67	Low flow - peristaltic	TCL VOCs
MW-27	Dickert property - north of MW-14	30	20 - 30	"	530.65	Low flow - peristaltic	TCL VOCs
MW-28	Folk property - west-northwest of MW-12	23.5	13.5 - 23.5	"	532.43	Low flow - peristaltic	TCL VOCs
MW-29	Folk property - northwest of MW-12	24	14 - 24	"	539.53	Low flow - peristaltic	TCL VOCs
	Intermediate Wells						
MW-2I	Former Shakespeare property - west of MW-2	46.5	36.5 - 46.5	"	559.97	PDB Low flow - peristaltic	TCL VOCs
MW-3I	Former Shakespeare property - adjacent to MW-3	54.73	44.7 - 54.7	"	548.84	Low flow - peristaltic	TCL VOCs
MW-5I	Fomer Shakespeare property - east of MW-5	57	47 - 57	"	559.70	PDB Low flow - peristaltic	TCL VOCs, TOC, Alkalinity, Nitrate/Nitrite, Sulfate, Total and Dissolved Fe and Mn, MEE, and Targeted PCR
MW-6I	Former Shakespeare property - adjacent to MW-6	50	40 - 50	"	560.28	Low flow - peristaltic	TCL VOCs, TOC, Alkalinity, Nitrate/Nitrite, Sulfate, Total and Dissolved Fe and Mn, MEE, and Targeted PCR
MW-7I	Fomrer Shakespeare property - adjacent to MW-7	47.1	37.1 - 47.1	"	560.07	PDB Low flow - peristaltic	TCL VOCs, TOC, Alkalinity, Nitrate/Nitrite, Sulfate, Total and Dissolved Fe and Mn, MEE, and Targeted PCR
MW-9I	Former Shakespeare property - adjacent to MW-9	47.6	37.6 - 47.6	"	556.07	Low flow - peristaltic	TCL VOCs, TOC, Alkalinity, Nitrate/Nitrite, Sulfate, Total and Dissolved Fe and Mn, MEE, and Targeted PCR

TABLE 2-1

SITE WIDE SAMPLING PLAN: FEBRUARY 2022

Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

Well ID	Location and Purpose	TD	Screen Interval	Diameter	TOC Elevation	Sampling Method	Site Wide Analyses
MW-10I	Dickert property - northeast of MW-10	41	31 - 41		548.4	PS Sampling - low flow peristaltic	ISERD
MW-12I	Dickert property - south of MW-12	47	36.8 - 46.8		536.6	Low flow - peristaltic	TCL VOCs
MW-19I	Chapman property - east of MW-19	23	17.6 - 22.6		536.4	Low flow - peristaltic	TCL VOCs
MW-20I	Boazman property - adjacent to MW-20, former Location of TMW-36	53.11	43.1 - 53.1	"	541.25	PDB Low flow - peristaltic	TCL VOCs, TOC, Alkalinity, Nitrate/Nitrite, Sulfate, Total and Dissolved Fe and Mn, MEE, and Targeted PCR
MW-21I	Ringer property - adjacent to MW-2I	54.83	44.8 - 54.8	"	552.82	Low flow - peristaltic	TCL VOCs
MW24I	Shealy property - southwest of MW23	35	35 - 30	"	544.99	Low flow - peristaltic	TCL VOCs
	Bedrock Wells						
MW-2D	Fomer Shakespeare property - west of MW-2I, north of main building in pole test area	84.9	78.5 - 84.8	4 inch	559.28	Low flow - Sub pump	TCL VOCs
MW-3D	Former Shakespeare property - southwest corner of Shakespeare property, adjacent to MW-3	105.02	88.5 - 105	"	549.34	Low flow - Sub pump	TCL VOCs
MW-6D	Former Shakespeare property - north of MW-6, between main building and pole winder building	105.08	99.6 - 105.2	"	559.91	PDB Low flow - sub pump	TCL VOCs, TOC, Alkalinity, Nitrate/Nitrite, Sulfate, Total and Dissolved Fe and Mn, MEE, and Targeted PCR
MW-7D	Former Shakespeare property - northwest corner of Shakespeare property, adjacent to MW-7	94.87	88.5 - 94.8	"	555.25	Low flow - Sub pump	TCL VOCs
MW9D	Former Shakespeare property - west end of facility, south of MW-9	155	154.06-144.6	"	552.91	Low flow - Sub pump	TCL VOCs
MW-12D	Dickert property - south of MW-12	82	72 - 82	2 inch	537.31	PDB Low flow - peristaltic pump	TCL VOCs
MW-17D	Dickert property - east of MW-17	50	40 - 50	"	552.77	Low flow - peristaltic	TCL VOCs
MW-18D	Dickert property - between MW-10 and MW-18	64.7	54.7 - 64.7	2 inch	550.10	Low flow - peristaltic	TCL VOCs
MW-19D	Chapman property - west of MW-19	162.5	152 - 162	"	532.10	Low flow - Sub pump	TCL VOCs
RDW-1	Ringer property - southwest side	84.25	73.3 - 95.4	4 inch	537.69	PDB Low flow - sub pump	TCL VOCs
RDW-2	Ringer Property - north west side	69.65	71.3 - 85	"	551.16	Low flow - Sub pump	TCL VOCs
SDW-1	Shealy property - southwest of MW24I/MW25	85.88	73.5 - 85.88	"	529.67	Low flow - Sub pump	TCL VOCs
SDW2	Shealy property - west of MW24I	88.7	83.7 - 88.7	2 inch	527.77	Low flow - Sub pump	TCL VOCs
SDW-3	Shealy property - southwest of MW-3 cluster	106	90 - 100	"	545.12	Low flow - Sub pump	TCL VOCs

Table 2-2
Permanent Monitoring Well Construction Details
Shakespeare Composite Structures Site
Newberry, South Carolina

Well ID	Date of Installation	Location and Purpose	TD	Screen Interval (feet)	Diameter	Material	TOC Elevation (ft amsl)	Ground Elevation (ft amsl)	Depth to Bedrock (feet)	Top of Bedrock Elevation (ft amsl_	TD Elevation (ft amsl)
Shallow Wells											
MW-1	4/10/2014	Former Shakespeare property. Permanent well installed at former location of TMW-8	14.2	4.2 - 14.2	2 inch	Sch 40 PVC	561.85	561.85	15	546.85	547.65
MW-2	4/10/2014	Former Shakespeare property. Permanent well installed at former location of TMW-7	24.7	14.7-24.7	"	"	558.42	558.42	-----	----	533.72
MW-3	4/10/2014	Former Shakespeare facility property - southwest corner of plant property	26	14.7-24.7	"	"	549.00	549.00	-----	----	523.00
MW-4	4/11/2014	Former Shakespeare property. Permanent well installed at former location of TMW-3	26	15.2-25.2	"	"	560.13	560.13	-----	-----	534.13
MW-5	4/14/2014	Former Shakespeare property. Permanent well installed at former location of TMW-11	26	15.8-25.8	"	"	557.74	557.74	-----	-----	531.74
MW-6	4/14/2014	Former Shakespeare property. Permanent well installed at former location of TMW-5	26	15.7-25.7	"	"	561.32	561.32	-----	----	535.32
MW-7	4/15/2014	Former Shakespeare property. Permanent well installed at former location of TMW-16	26	14.8-24.8	"	"	554.72	554.72	-----	----	528.72
MW-8	4/15/2014	Former Shakespeare property. Permanent well installed at former location of TMW-13	26	15.5-25.5	"	"	558.27	558.27	-----	-----	532.27
MW-9	4/16/2014	Former Shakespeare property. Permanent well installed at former location of TMW-17	26	15.8-25.8	"	"	556.36	556.36	-----	----	530.36
TMW-21	5/21/2014	Former Shakespeare property - west end of main building. Temporary well converted to permanent well.	23.5	13.5-23.5	1 inch	"	550.96	550.96	-----	------	527.46
TMW-22	5/21/2014	Former Shakespeare property - west end of main building. Temporary well converted to permanent well.	25	15-25	"	"	548.23	548.23	-----	------	523.23
TMW-23	5/27/2014	Former Shakespeare property - central portion of main building. Temporary wel converted to permanent well.	25	15-25	"	"	537.03	537.03	-----	------	512.03
TMW-24	5/29/2014	Former Shakespeare property - west end of pole winder building. Temporary well converted to permanent well.	25	15-25	"	"	531.12	531.12	-----	------	506.12
TMW-25	5/29/2014	Former Shakespeare property - central portion of pole winder building. Temporary well converted to permanent well.	25	15-25	"	"	532.07	532.07	-----	------	507.07
TMW-29	6/3/2014	Former Shakespeare propertry - east central portion of main building. Temporary well converted to permanent well.	13	8-13	"	"	536.41	536.41	-----	------	523.41
TMW-30	6/3/2014	Fomrer Shakespeare property - Inside south central portion of main building. Temporary well converted to permanent well.	25	15-25	"	"	543.34	543.34	-----	------	518.34
TMW-31	6/3/2014	Former Shakespeare property - Inside north portion of main building. Temporary well converted to permanent well.	21	11-21	"	"	542.24	542.24	-----	------	521.24
ISCO OSW-1	8/6/2021	Former Shakespeare property - outside north portion of main building.	20	10 - 20	2 inch	"	548.19	548.33	-----	----	528.33
TMW-32	6/4/2014	Former Shakespeare property - Inside northwest corner of pole winder building. Temporary well converted to permanent well.	25	15-25	"	"	551.59	551.59	-----	------	526.59
TMW-33	6/4/2014	Former Shakespeare property - Inside west central portion of pole winder building. Temporary well converted to permanent well.	25	15-25	"	"	531.58	531.58	-----	------	506.58
MW-10	8/4/2015	Dickert property - Former Location of TMW-42	30.32	20.3 - 30.3	2 inch	Sch 40 PVC	550.96	550.96	42	508.96	520.64
ISERD OSW-1	8/5/2021	Dickert property - West of MW-10	30	20 - 30	"	"	560.72	560.71	-----	----	530.71
MW-11	"	Dickert property - Former Location of TMW-87	30.32	20.3 - 30.3	"	"	548.24	548.24	-----	----	517.92
MW-12	"	Dickert property - Former Location of TMW-73	31.37	20.37 - 30.37	"	"	537.03	537.31	-----	----	505.94
MW-13	"	Dickert property - Former Location of TMW-89	25.29	15.29 - 25.29	"	"	531.19	531.16	14	517.16	505.87
MW-14	8/5/2015	Dickert property - Former Location of TMW-95	20.22	10.22 - 20.22	"	"	532.07	531.97	-----	----	511.75
MW-15	"	Dickert property - Former Location of TMW-98	11.63	1.63 - 11.63	"	"	536.41	536.32	-----	----	524.69
MW-16	"	Dickert property - Former Location of TMW-99	20.29	10.29 - 20.29	"	"	543.35	543.23	-----	----	522.94
MW-17	"	Dickert property - east of MW16	30.27	10.59 - 20.59	"	"	542.37	542.36	-----	----	512.09
MW-18	8/3/2015	Dolkert property - Former Location of TMW 72	23.67	13.67 - 23.67	"	"	551.58	551.6	18	533.60	527.93
MW-19	8/6/2015	Chapman property - Former Location of TMW-105	14.77	4.77 - 14.77	"	"	531.58	531.59	11	520.59	516.82
MW-20	"	Boazman property - Former Location of TMW -38/102	35.3	25.3 - 35.3	"	"	541.92	541.86	-----	----	506.56
MW-21	8/7/2015	Ringer property - South of TMW-39	24.17	14.17 - 24.17	"	"	548.24	548.28	-----	----	524.11
MW-22	8/26/2015	Former Shakespeare property - South of entrance to main building	26.2	16.2 - 26.2	"	"	560.01	560.2	-----	----	534
MW-23	12/15/2015	Shealy property - Former Location of TMW-107	25	10-20	"	"	543.48	543.75	-----	----	518.75
MW-24	12/16/2015	Shealy property - Former Location of TMW-109	30	20 - 30	"	"	541.35	541.35	-----	----	511.35
MW-25	2/27/2016	Shealy property - Southwest of MW24I and MW23	30	20 - 30	"	"	535.60	535.5	30	505.50	505.5
MW-26	3/26/2018	Dickert property - north of MW-13	24.5	14.5 - 24.5	1 inch	Sch 40 PVC	533.67	533.88	----	----	509.38
MW-27	3/27/2018	Dickert property - north of MW-14	30	20 - 30	"	"	530.65	530.62	-----	----	500.62
MW-28	3/27/2018	Folk property - west-northwest of MW-12	23.5	13.5 - 23.5	"	"	532.43	532.23	-----	----	508.73
MW-29	3/27/2018	Folk property - northwest of MW-12	24	14 - 24	"	"	539.53	539.79	-----	----	515.79
Intermediate Wells											
MW-2I	8/18/2015	Former Shakespeare property - west of MW-2	46.5	36.5 - 46.5	2 inch	"	559.97	560.19	50	510.19	513.69
MW-3I	8/11/2015	Former Shakespeare property - adjacent to MW-3	54.73	44.7 - 54.7	"	"	548.84	548.96	-----	----	494.23
MW-5I	8/19/2015	Former Shakespeare property - east of MW-5	57	47 - 57	"	"	559.70	559.6	56	503.60	502.6
MW-6I	8/21/2015	Former Shakespeare property - adjacent to MW-6	50	40 - 50	"	"	560.28	560.19	-----	----	510.19
MW-7I	8/20/2015	Fomrer Shakespeare property - adjacent to MW-7	47.1	37.1 - 47.1	"	"	560.07	555.3	-----	----	508.2
MW-9I	8/21/2015	Former Shakespeare property - adjacent to MW-9	47.6	37.6 - 47.6	"	"	556.07	556.08	-----	----	508.48
MW-10I	8/24/2015	Dickert property - northwest of MW-10	41	31 - 41	"	"	548.4	548.5	-----	----	507.5
ERD OBSW-11	8/5/2021	Dickert property - northwest of MW-10I	36	26-36	2 inch	"	551.2	551.42	----	----	515.42
MW-12I	6/12/2017	Dickert property - south of MW-12	47	36.8 - 46.8			536.6	536.44	-----	----	489.44
MW-19I	5/6/2017	Chapman property - east of MW-19	23	17.6 - 22.6			536.4	536.51	-----	----	513.51
MW-20I	8/11/2015	Boazman property - adjacent to MW-20, former Location of TMW-36	53.11	43.1 - 53.1	"	"	541.25	541.51	-----	----	488.4
MW-21I	8/10/2015	Ringer property - adjacent to MW-2I	54.83	44.8 - 54.8	"	"	552.82	552.9	49	503.90	498.07
MW24I	2/18/2016	Shealy property - southwest of MW23	35	35 - 30	"	"	544.99	545.06	31	514.06	510.06
Bedrock Wells											
MW-2D	8/8/2014	Fomer Shakespeare property - west of MW-2I, north of main building in pole test area	84.9	78.5 - 84.8	4 inch	open hole	559.28	559.28	76	483.28	483.28
MW-3D	8/6/2014	Former Shakespeare property - southwest corner of Shakespeare property, adjacent to MW-3	105.02	88.5 - 105	"	"	549.34	549.34	80	469.34	469.34
MW-6D	8/7/2014	Former Shakespeare property - north of MW-6, between main building and pole winder building	105.08	99.6 - 105.2	"	"	559.91	559.91	95	464.91	464.91
MW-7D	7/21/2014	Former Shakespeare property - northwest corner of Shakespeare property, adjacent to MW-7	94.87	88.5 - 94.8	"	"	555.25	555.25	84	471.25	471.25
MW9D	4/14/2016	Former Shakespeare property - west end of facility, south of MW-9	155	154.06-144.6	"	"	552.91	533.04	91	442.04	442.04
MW-12D	7/12/2017	Dickert property - south of MW-12	82	72 - 82	2 inch	Schedule 40 PVC	537.31	537.18	63	474.18	474.18
MW-17D	7/14/2017	Dickert property - east of MW-17	50	40 - 50	"	"	552.77	552.7	38	514.7	514.70
MW-18D	8/21/2015	Dickert property - between MW-10 and MW-18	64.7	54.7 - 64.7	2 inch	Schedule 40 P VC	550.10	550.26	43	507.26	507.26
MW-19D	7/17/2017	Chapman property - west of MW-19	162.5	152 - 162	"	"	532.10	532.1	10	522.1	522.10
RDW-1	8/6/2014	Ringer property - southwest side	84.25	73.3 - 95.4	4 inch	Open hole	537.69	537.69	74.1	463.59	463.59
RDW-2	8/4/2014	Ringer Property - north west side	69.65	71.3 - 85	"	"	551.16	551.16	71	480.16	480.16
SDW-1	11/19/2014	Shealy property - southwest of MW24I/MW25	85.88	73.5 - 85.88	"	"	529.67	529.63	75	454.63	454.63
SDW2	4/13/2016	Shealy property - west of MW24I	88.7	83.7 - 88.7	2 inch	Schedule 40 P VC	527.77	527.76	40	487.76	487.76
SDW-3	7/9/2017	Shealy property - southwest of MW-3 cluster	106	90 - 100	"	"	545.12	545.17	56	489.17	489.17

Notes:

Monitoring well for background monitoring
Monitoring well targeted by ISCO pilot study.
Monitoring wells targeted by ERD pilot study.
Monitoring wells for PDB comparison

ft amsl - feet above mean sea level
ERD - Enhanced Reductive Dechlorination
ISCO - In Situ Chemical Oxidation
PDB - passive diffusion bag
PVC - polyvinyl chloride

Table 3-1
Groundwater Elevation Summary Table - 2017 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, South Carolina

		6/28/2017		6/4/2018		2/21/2022	
Well ID	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation
Shallow Wells							
MW-1	561.85	12.21	549.64	12.39	549.46	10.05	551.80
MW-2	558.42	9.13	549.29	9.16	549.26	7.17	551.25
MW-3	549.00	15.03	533.97	13.46	535.54	12.49	536.51
MW-4	560.13	18.49	541.64	18.42	541.71	16.57	543.56
MW-5	557.74	17.15	540.59	17.1	540.64	16.26	541.48
MW-6	561.32	19.36	541.96	19.5	541.82	17.95	543.37
MW-7	554.72	16.13	538.59	15.85	538.87	15.35	539.37
MW-8	558.27	17.85	540.42	12.63	545.64	16	542.27
MW-9	556.36	18.39	537.97	17.89	538.47	15.7	540.66
MW-10	550.96	12.65	538.31	12.55	538.41	12.7	538.26
MW-11	548.23	13.49	534.74	13.66	534.57	13.8	534.43
MW-12	537.03	6.33	530.70	5.94	531.09	5.97	531.06
MW-13	531.12	3.38	527.74	2.24	528.88	2.31	528.81
MW-14	532.07	2.35	529.72	2.65	529.42	2.34	529.73
MW-15	536.41	3.24	533.17	3.24	533.17	2.71	533.70
MW-16	543.34	7.98	535.36	7.71	535.63	6.96	536.38
MW-17	542.24	6.34	535.90	6.15	536.09	5.31	536.93
MW-18	551.59	8.18	543.41	8.21	543.38	6.38	545.21
MW-19	531.58	3.8	527.78	4.13	527.45	0.83	530.75
MW-20	541.72	7.94	533.78	7.09	534.63	3.63	538.09
MW-21	548.24	11.41	536.83	10.76	537.48	9.2	539.04
MW-22	560.11	15.3	544.81	15.3	544.81	12.1	548.01
TMW-21	561.45	20.61	540.84	20.2	541.25	18.4	543.05
TMW-22	561.47	19.11	542.36	19.24	542.23	17.49	543.98
TMW-23	561.48	16.1	545.38	18.29	543.19	16.55	544.93
TMW-24	559.96	19.19	540.77	19.45	540.51	18.49	541.47
TMW-25	560.03	21.6	538.43	17.65	542.38	16.58	543.45
TMW-29	561.58	Dry	---	Dry	---	11.6	549.98
TMW-30	561.50	16.09	545.41	13.62	547.88	14.17	547.33
TMW-31	561.52	13.43	548.09	16.15	545.37	11.64	549.88
TMW-32	559.93	20.05	539.88	NA	---	NA	---
TMW-33	560.01	18.45	541.56	NA	---	17.71	542.30
MW-23	543.48	20.47	523.01	19.91	523.57	11.7	531.78
MW-24	541.35	15.14	526.21	14.09	527.26	17.55	523.80
MW-25	535.60	15.71	519.89	15.2	520.40	12.95	522.65
MW-26	533.67	NA		6.31	527.36	6.45	527.22
MW-27	530.65	NA		4.35	526.30	3.83	526.82
MW-28	532.43	NA		4.31	528.12	4.05	528.38
MW-29	539.53	NA		9.19	530.34	8.99	530.54
Intermediate Wells							
MW-2I	559.97	13.69	546.28	12.82	547.15	10.5	549.47
MW-3I	548.84	14.59	534.25	13.76	535.08	11.29	537.55
MW-5I	559.70	16.7	543.00	18.42	541.28	16.64	543.06
MW-6I	560.28	18.81	541.47	19.19	541.09	17.6	542.68
MW-7I	560.07	16.35	543.72	16.14	543.93	15.6	544.47
MW-9I	556.07	19.26	536.81	15.69	540.38	16.55	539.52
MW-10I	548.4	11.14	537.26	11.16	537.24	12.3	536.10
MW-12I	536.6	4.16	532.47	8.96	527.67	4.18	532.45
MW-19I	536.4	6.49	529.94	5.65	530.78	3.17	533.26
MW-20I	541.25	7.9	533.35	7.6	533.65	3.93	537.32
MW-21I	552.82	20.98	531.84	21.11	531.71	19.02	533.80
MW-24I	544.99	16.98	528.01	15.92	529.07	14.4	530.59

Table 3-1
Groundwater Elevation Summary Table - 2017 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, South Carolina

		6/28/2017		6/4/2018		2/21/2022	
Well ID	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation	Depth to Water	Groundwater Elevation
Bedrock Wells							
MW-2D	559.28	10.28	549.00	10.32	548.96	8.49	550.79
MW-3D	549.34	15.2	534.14	13.83	535.51	11.41	537.93
MW-6D	559.91	18.02	541.89	17.83	542.08	16.25	543.66
MW-7D	555.25	16.2	539.05	16.08	539.17	15.62	539.63
MW-9D	552.91					13.21	539.70
MW-12D	537.31	6.05	531.26	5.16	532.15	5.12	532.19
RDW-1	537.69	5.23	532.46	4.41	533.28	0.6	537.09
RDW-2	551.16	19.19	531.97	19.72	531.44	17.15	534.01
MW-17D	552.77	10.31	542.46	9.56	543.21	8.14	544.63
MW-18D	550.10	8.61	541.49	11.16	538.94	6.55	543.55
MW-19D	532.10	8.78	523.32	5.55	526.55	2.82	529.28
SDW-1	529.646	22.15	507.496	21.61	508.04	20.08	509.57
SDW-2	527.75	69.5	458.25	73.15	454.60	29	498.75
SDW-3	545.12	17.88	527.24	10.65	534.47	7.89	537.23

Dry - Groundwater not measureable in well during this event.
NA - Well was not present at time of measurement event

Table 3-2
Vertical Gradient Calculations - February 2022
Sitewide Groundwater Monitoring Event
Shakespeare Composite Structures
Newberry, South Carolina

Well ID	TOC Elevation	Depth to Top of Well Screen	Top of Well Screen Elevation	Screen Length (ft)	Screen Mid-point elevation	Depth to Groundwater	Groundwater Elevations	Vertical Gradient - Shallow - Intermediate zone
MW-2	558.42	14.7	543.72	10	538.72	7.17	551.25	
MW-2I	559.97	36.5	523.47	10	518.47	10.5	549.47	0.09
MW-3	549.00	14.7	534.30	10	529.30	12.49	536.51	
MW-3I	548.84	44.7	504.14	10	499.14	11.27	537.57	-0.04
MW-5	557.74	15.8	541.94	10	536.94	16.26	541.48	
MW-5I	559.70	47	512.70	10	507.70	16.64	543.06	-0.05
MW-6	561.32	15.7	545.62	10	540.62	17.95	543.37	
MW-6I	560.28	40	520.28	10	515.28	17.6	542.68	0.03
MW-7	554.72	14.8	539.92	10	534.92	15.35	539.37	
MW-7I	560.07	47.6	512.47	10	507.47	15.6	544.47	-0.19
MW-9	556.36	15.8	540.56	10	535.56	15.7	540.66	
MW-9I	556.07	37.6	518.47	10	513.47	16.55	539.52	0.05
MW-10	550.96	20.3	530.66	10	525.66	12.7	538.26	
MW-10I	548.4	31	517.40	10	512.40	12.3	536.10	0.16
MW-12	537.03	20.37	516.66	10	511.66	5.97	531.06	
MW-12I	536.6	36.8	499.83	10	494.83	4.18	532.45	-0.08
MW-19	531.58	4.77	526.81	10	521.81	0.83	530.75	
MW-19I	536.4	17.6	518.83	5	516.33	3.17	533.26	-0.46
MW-20	541.72	25.3	516.42	10	511.42	3.63	538.09	
MW-20I	541.25	43.1	498.15	10	493.15	3.93	537.32	0.04
MW-21	548.24	14.17	534.07	10	529.07	9.2	539.04	
MW-21I	552.82	44.8	508.02	10	503.02	19.02	533.80	0.20
MW-24	541.35	7.5	533.85	10	528.85	17.55	523.80	
MW-24I	544.99	35	509.99	10	504.99	14.4	530.59	-0.28

Table 3-3
Shallow Monitoring Well Sample Results
Site Wide Groundwater Monitoring Event
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Main Building																
Sample ID		**MW-1**	**MW-1-PDB**	**MW-2**	**MW-3**	**MW-4**	**MW-5**	**MW-6**	**MW-7**	**MW-7-PDB**	**MW-8**	**MW-8-PDB**	**MW-9**	**MW-9-PDB**	**TMW-21**	**TMW-22**	**TMW-23**
Laboratory ID	USEPA MCL	XC02133-010	XC02133-009	XC01066-006	XB24099-007	XB28047-001	XB24099-014	XB24099-015	XC03052-004	XC03052-003	XC04096-002	XC04096-001	XC04096-004	XC04096-003	XB28047-005	XB28047-006	XC01061-002
Date Collected		03/02/22	03/02/22	03/01/22	02/23/22	02/28/22	02/24/22	02/24/22	03/03/22	03/03/22	03/04/22	03/04/22	03/04/22	03/04/22	02/28/22	02/28/22	03/01/22
Volatile Organic Compounds by USEPA Method 8260B (µg/L)																	
1,1,1-Trichloroethane	200	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
1,1,2,2-Tetrachloroethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 10
1,1,2-Trichloroethane	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
1,1-Dichloroethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	**0.55**	**0.43 J//**	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
1,1-Dichloroethene	7	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	**1.1**	**0.84**	**2.2 J//**	**2.7**	< 0.5	< 0.5	**3.9**	**3.1**	< 5
1,2,4-Trichlorobenzene	70	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
1,2-Dibromo-3-chloropropane (DBCP)	0.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
1,2-Dibromoethane (EDB)	0.05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
1,2-Dichlorobenzene	600	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
1,2-Dichloroethane	5	< 0.5	< 0.5	< 0.5	< 0.5	**1.1**	< 2.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
1,2-Dichloropropane	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
1,3-Dichlorobenzene	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
1,4-Dichlorobenzene	75	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
2-Butanone (MEK)	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 50	< 10	< 10	**23 J//**	< 50	< 10	< 10	**8 J//**	**2.8 J//**	< 100
2-Hexanone	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 50	< 10	< 10	< 50	< 50	< 10	< 10	< 10	< 10	< 100
4-Methyl-2-pentanone	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 50	< 10	< 10	< 50	< 50	< 10	< 10	< 10	< 10	< 100
Acetone	NS	< 10	**4.7 J//**	< 10	< 10	**4.8 J//**	**4 J/B/F**	< 50	< 10	**6.2 J//**	< 50	< 50	**4.5 J//**	< 10	**100**	**38**	< 100
Benzene	5	< 0.5	< 0.5	< 0.5	< 0.5	**0.6**	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
Bromodichloromethane	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
Bromoform	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
Bromomethane (Methyl bromide)	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
Carbon disulfide	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
Carbon tetrachloride	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
Chlorobenzene	100	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
Chloroethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
Chloroform	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**1.1**	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	**1.3**	**0.87**	**8.9**
Chloromethane (Methyl chloride)	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
cis-1,2-Dichloroethene	70	< 0.5	< 0.5	< 0.5	< 0.5	**5.1**	**0.58**	**220**	**48**	**38**	**76**	**83**	**11**	**11**	**130**	**49**	< 5
cis-1,3-Dichloropropene	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
Cyclohexane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
Dibromochloromethane	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
Dichlorodifluoromethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
Ethylbenzene	700	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
Isopropylbenzene	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
Methyl acetate	NS	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 10
Methyl tertiary butyl ether (MTBE)	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
Methylcyclohexane	NS	< 5	< 5	< 5	< 5	< 5	< 5	< 25	< 5	< 5	< 25	< 25	< 5	< 5	< 5	< 5	< 50
Methylene chloride	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
Styrene	100	< 0.5	< 0.5	**5.1**	< 0.5	< 0.5	< 0.5	**2.5 /B/F**	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	**56**	**31**	**20**
Tetrachloroethene	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**2.7**	< 0.5	< 0.5	< 2.5	**2.2 J//**	< 0.5	< 0.5	**1.1**	**0.95**	< 5
Toluene	1000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
trans-1,2-Dichloroethene	100	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**7.8**	**0.45 J//**	< 0.5	**3.7**	**4.4**	< 0.5	< 0.5	**5.1**	**2.2**	< 5
trans-1,3-Dichloropropene	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
Trichloroethene (TCE)	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**240**	**330**	**22**	**17**	**530**	**600**	**69**	**73**	**260**	**220**	**420**
Trichlorofluoromethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
Vinyl chloride	2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**2 J//**	**1.2**	**0.87**	< 2.5	< 2.5	< 0.5	< 0.5	**0.89**	**0.4 J//**	< 5
Xylenes (total)	10000	< 1	< 1	< 1	< 1	< 1	< 1	< 5	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1	< 10
Metals by USEPA Method 6010 and SM 3500-Fe B-2011 (mg/L)																	
Iron	0.3 [2]	NA	NA	NA	NA	NA	**0.052 J//**	**5.7**	**0.06 J//**	NA	**0.97**	NA	**0.3**	NA	< 0.1	< 0.1	NA
Manganese	0.05 [2]	NA	NA	NA	NA	NA	NA	NA	**0.23**	NA	**0.08**	NA	**0.045**	NA	NA	NA	NA
Dissolved Iron	0.3 [2]	NA	NA	NA	NA	NA	< 0.1	**5.9**	< 0.1	NA	< 0.1	NA	< 0.1	NA	< 0.1	< 0.1	NA
Dissolved Manganese	0.05 [2]	NA	NA	NA	NA	NA	NA	NA	**0.22**	NA	**0.076**	NA	**0.043**	NA	NA	NA	NA
Ferrous Iron	NS	NA	NA	NA	NA	NA	< 0.05	**5.7**	< 0.05	NA	**0.051 H//**	NA	< 0.05 H//	NA	**0.089**	< 0.05	NA
Ferric Iron (calculation)	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alkalinity by USEPA Method SM 2320B-2011 (mg/L)																	
Alkalinity	NS	NA	NA	NA	NA	NA	< 20	< 20	< 20	NA	< 20	NA	< 20	NA	< 20	< 20	NA
Chloride, Nitrate, Nitrite, and Sulfate by USEPA Method 300.0 (mg/L)																	
Chloride	250 [2]	NA	NA	**2.2**	NA	NA	NA	NA	**14**	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate	10	NA	NA	NA	NA	NA	**2.3 B//**	**0.053 B//**	< 0.02	NA	**0.053 B//**	NA	**0.69 B//**	NA	**0.37**	**0.026**	NA
Nitrite	1	NA	NA	NA	NA	NA	< 0.02	**0.015 J//**	< 0.02	NA	**0.036**	NA	< 0.02	NA	**0.011 J//**	< 0.02	NA
Sulfate	250 [2]	NA	NA	NA	NA	NA	< 1	**1.9**	**0.66 J//**	NA	**0.55 J//**	NA	**0.27 J//**	NA	< 1	< 1	NA

Table 3-3
Shallow Monitoring Well Sample Results
Site Wide Groundwater Monitoring Event
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Main Building															
Sample ID		**MW-1**	**MW-1-PDB**	**MW-2**	**MW-3**	**MW-4**	**MW-5**	**MW-6**	**MW-7**	**MW-7-PDB**	**MW-8**	**MW-8-PDB**	**MW-9**	**MW-9-PDB**	**TMW-21**	**TMW-22**	**TMW-23**
Laboratory ID	USEPA MCL	XC02133-010	XC02133-009	XC01066-006	XB24099-007	XB28047-001	XB24099-014	XB24099-015	XC03052-004	XC03052-003	XC04096-002	XC04096-001	XC04096-004	XC04096-003	XB28047-005	XB28047-006	XC01061-002
Date Collected		03/02/22	03/02/22	03/01/22	02/23/22	02/28/22	02/24/22	02/24/22	03/03/22	03/03/22	03/04/22	03/04/22	03/04/22	03/04/22	02/28/22	02/28/22	03/01/22
Sulfide by USEPA Method SM 4500-S2 F-2011 (mg/L)																	
Sulfide	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Gases by USEPA Method AM20GAX (ug/L)																	
Ethane	NS	NA	NA	NA	NA	NA	< 10	< 10	< 10	NA	< 10	NA	< 10	NA	< 10	< 10	NA
Methane	NS	NA	NA	NA	NA	NA	**5.6 J//**	**790**	**69 B//**	NA	**220**	NA	**4.2 J//**	NA	**280**	**120**	NA
Carbon Dioxide	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethene	NS	NA	NA	NA	NA	NA	< 10	< 10	< 10	NA	< 10	NA	< 10	NA	< 10	< 10	NA
Total Organic Carbon by USEPA Method SM 5310C-2014 (mg/L)																	
TOC	NS	NA	NA	NA	NA	NA	**1.6**	**1.4**	**1.5**	NA	**1.8**	NA	< 1	NA	< 1	< 1	NA
Microbial																	
Dehalococcoides	NS	NA	NA	NA	NA	NA	**0.5**	**6.5**	< 0.5	NA	< 0.5	NA	< 0.5	NA	< 0.5	**0.7**	NA
Dehalobacter spp	NS	NA	NA	NA	NA	NA	< 4.9	**200**	< 4.8	NA	< 5	NA	< 4.7	NA	**9640**	< 4.9	NA
BAV1 Vinyl Chloride Reductase	NS	NA	NA	NA	NA	NA	< 0.5	< 0.5	< 0.5	NA	< 0.5	NA	< 0.5	NA	< 0.5	< 0.5	NA
tceA Reductase	NS	NA	NA	NA	NA	NA	< 0.5	< 0.5	< 0.5	NA	< 0.5	NA	< 0.5	NA	< 0.5	< 0.5	NA
Vinyl chloride Reductase	NS	NA	NA	NA	NA	NA	< 0.5	< 0.5	< 0.5	NA	< 0.5	NA	< 0.5	NA	< 0.5	< 0.5	NA
1,1 DCA Reductase	NS	NA	NA	NA	NA	NA	< 4.9	< 4.8	< 4.8	NA	< 5	NA	< 4.7	NA	< 5.2	< 4.9	NA
1,2 DCA Reductase	NS	NA	NA	NA	NA	NA	< 4.9	< 4.8	< 4.8	NA	< 5	NA	< 4.7	NA	< 5.2	< 4.9	NA
cerA Reductase	NS	NA	NA	NA	NA	NA	< 4.9	< 4.8	< 4.8	NA	< 5	NA	< 4.7	NA	< 5.2	< 4.9	NA
Chloroform Reductase	NS	NA	NA	NA	NA	NA	< 4.9	< 4.8	< 4.8	NA	< 5	NA	< 4.7	NA	< 5.2	< 4.9	NA
Dehalobacter DCM	NS	NA	NA	NA	NA	NA	< 4.9	< 4.8	< 4.8	NA	< 5	NA	< 4.7	NA	< 5.2	< 4.9	NA
Dehalobium chlorocoercia	NS	NA	NA	NA	NA	NA	**384**	**2470**	< 4.8	NA	< 5	NA	< 4.7	NA	**246**	< 4.9	NA
Dehalogenimonas spp	NS	NA	NA	NA	NA	NA	< 4.9	< 4.8	< 4.8	NA	< 5	NA	< 4.7	NA	< 5.2	< 4.9	NA
Desulfitobacterium spp	NS	NA	NA	NA	NA	NA	**13.8**	**4470**	< 4.8	NA	< 5	NA	**13.3**	NA	**11400**	< 4.9	NA
Desulfuromonas spp	NS	NA	NA	NA	NA	NA	< 4.9	< 4.8	< 4.8	NA	< 5	NA	< 4.7	NA	**141**	< 4.9	NA
Dichloromethane Dehalogenase	NS	NA	NA	NA	NA	NA	< 4.9	< 4.8	< 4.8	NA	< 5	NA	< 4.7	NA	< 5.2	< 4.9	NA
Epoxyalkane Transferase	NS	NA	NA	NA	NA	NA	< 4.9	< 4.8	< 4.8	NA	< 5	NA	< 4.7	NA	< 5.2	< 4.9	NA
Ethene Monooxygenase	NS	NA	NA	NA	NA	NA	< 4.9	< 4.8	< 4.8	NA	< 5	NA	< 4.7	NA	< 5.2	< 4.9	NA
Methanogens	NS	NA	NA	NA	NA	NA	**2.6 J**	**1410**	**1.4 J**	NA	< 5	NA	**1.5 J**	NA	< 5.2	< 4.9	NA
PCE Reductase 1	NS	NA	NA	NA	NA	NA	< 4.9	< 4.8	< 4.8	NA	< 5	NA	< 4.7	NA	< 5.2	< 4.9	NA
PCE Reductase 2	NS	NA	NA	NA	NA	NA	< 4.9	< 4.8	< 4.8	NA	< 5	NA	< 4.7	NA	< 5.2	< 4.9	NA
Phenol Hydroxylase	NS	NA	NA	NA	NA	NA	< 4.9	**45.5**	**2.7 J**	NA	< 5	NA	**528**	NA	**2760**	**129**	NA
Soluble Methane Monooxygenase	NS	NA	NA	NA	NA	NA	< 4.9	**139**	< 4.8	NA	< 5	NA	< 4.7	NA	**331**	< 4.9	NA
Sulfate Reducing Bacteria	NS	NA	NA	NA	NA	NA	**474**	**38900**	**9.8**	NA	< 5	NA	< 4.7	NA	**7690**	**3180**	NA
Toluene Dioxygenase	NS	NA	NA	NA	NA	NA	**6**	**22.2**	**0.3 J**	NA	< 5	NA	< 4.7	NA	< 5.2	< 4.9	NA
Toluene Monooxygenase	NS	NA	NA	NA	NA	NA	< 4.9	**3220**	< 4.8	NA	< 5	NA	**4430**	NA	< 5.2	< 4.9	NA
Toluene Monooxygenase 2	NS	NA	NA	NA	NA	NA	< 4.9	**208**	< 4.8	NA	< 5	NA	**39.9**	NA	**253**	**1.6 J**	NA
Total Eubacteria	NS	NA	NA	NA	NA	NA	**5670**	**88900**	**5850**	NA	**573 I**	NA	**326000**	NA	**2400000**	**69900**	NA
trans-1,2-DCE Reductase	NS	NA	NA	NA	NA	NA	< 4.9	< 4.8	< 4.8	NA	< 5	NA	< 4.7	NA	< 5.2	< 4.9	NA
Trichlorobenzene Dioxygenase	NS	NA	NA	NA	NA	NA	< 4.9	< 4.8	< 4.8	NA	< 5	NA	< 4.7	NA	< 5.2	< 4.9	NA
Field Parameters																	
pH	NS	4.52	NA	4.63	4.80	5.37	5.28	4.72	4.32	NA	4.20	NA	4.29	NA	4.39	4.44	4.19
Specific Conductivity (uS/cm)	NS	37.77	NA	21.74	103.27	268.20	0.06	69.27	91.60	NA	50.58	NA	49.94	NA	44.94	37.32	36.93
Temperature (Celsius)	NS	19.91	NA	19.61	19.01	18.96	19.40	19.96	20.74	NA	19.02	NA	17.30	NA	20.57	22.17	23.01
Turbidity (NTU)	NS	0.01	NA	0.05	0.00	0.05	1.28	0.36	12.29	NA	46.17	NA	17.01	NA	3.42	5.36	2.55
Dissolved oxygen (mg/L)	NS	3.62	NA	8.30	0.69	0.81	2.21	0.29	0.30	NA	0.35	NA	0.53	NA	0.49	0.49	2.38
ORP (mV)	NS	559.50	NA	#####	433.60	190.20	57.80	340.30	642.60	NA	#####	NA	691.70	NA	424.00	478.00	#####

Notes:
-a - Indicates a field duplicate sample.
MCL - Maximum Contaminant Level (USEPA, April 2012)
NS - No Standard
USEPA - United States Environmental Protection Agency
Bold font indicates the analyte was detected.
Bold outline indicates an exceedance of the USEPA MCL.

Table 3-3
Shallow Monitoring Well Sample Results
Site Wide Groundwater Monitoring Event
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Main Building				Pole Winder Building			Dickert Property									
Sample ID		**TMW-29**	**TMW-30**	**TMW-31**	**MW-22**	**TMW-24**	**TMW-25**	**TMW-33**	**MW-10**	**MW-11**	**MW-11-PDB**	**MW-12**	**MW-12-PDB**	**MW-13**	**MW-14**	**MW-14-PDB**	**MW-15**	**MW-16**
Laboratory ID	USEPA MCL	XC01066-003	XC01061-001	XC01066-004	XB24099-017	XB28047-002	XB28047-004	XB28047-003	XC08061-004	XC02133-005	XC02133-006	XC02133-001	XC02133-002	XB24099-002	XC02133-003	XC02133-004	XB22075-005	XB22075-002
Date Collected		03/01/22	03/01/22	03/01/22	02/24/22	02/28/22	02/28/22	02/28/22	03/08/22	03/02/22	03/02/22	03/02/22	03/02/22	02/22/22	03/02/22	03/02/22	02/22/22	02/22/22
Volatile Organic Compounds by USEPA Method 8260B (µg/L																		
1,1,1-Trichloroethane	200	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	NS	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	< 1	< 1	< 5	< 1	< 1	< 1	< 1	< 20	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,1,2-Trichloroethane	5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethane	NS	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	**0.47 J//**	**0.46 J//**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethene	7	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	**0.61**	**0.68**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2,4-Trichlorobenzene	70	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dibromo-3-chloropropane (DBCP)	0.2	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dibromoethane (EDB)	0.05	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichlorobenzene	600	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloroethane	5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloropropane	5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichlorobenzene	NS	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,4-Dichlorobenzene	75	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	NS	< 10	< 10	< 50	< 10	< 10	< 10	< 10	< 200	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
2-Hexanone	NS	< 10	< 10	< 50	< 10	< 10	< 10	< 10	< 200	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-pentanone	NS	< 10	< 10	< 50	< 10	< 10	< 10	< 10	< 200	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Acetone	NS	**7.9 J//**	**12**	< 50	< 10	**29**	**5 J//**	**34**	< 200	< 10	**9.2 J//**	< 10	**10**	< 10	< 10	**6.9 J//**	< 10	< 10
Benzene	5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	80 [1]	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	80 [1]	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane (Methyl bromide)	NS	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	NS	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbon tetrachloride	5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	100	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	NS	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	80 [1]	< 0.5	**2.1**	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane (Methyl chloride)	NS	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,2-Dichloroethene	70	< 0.5	< 0.5	**3**	< 0.5	**1.3**	< 0.5	**0.74**	< 10	< 0.5	< 0.5	**29**	**30**	**3.1**	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,3-Dichloropropene	NS	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Cyclohexane	NS	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	80 [1]	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	NS	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	700	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Isopropylbenzene	NS	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methyl acetate	NS	< 1	< 1	< 5	< 1	< 1	< 1	< 1	< 20	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Methyl tertiary butyl ether (MTBE)	NS	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methylcyclohexane	NS	< 5	< 5	< 25	< 5	< 5	< 5	< 5	< 100	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Methylene chloride	5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Styrene	100	**120**	**18**	< 2.5	< 0.5	**22**	**4.8**	**10**	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	5	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	1000	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,2-Dichloroethene	100	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,3-Dichloropropene	NS	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene (TCE)	5	**9.3**	**20**	**480**	< 0.5	**70**	**45**	**20**	**590**	< 0.5	< 0.5	**47**	**54**	**70**	**100**	**100**	**3.3**	**48**
Trichlorofluoromethane	NS	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	2	< 0.5	< 0.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes (total)	10000	< 1	< 1	< 5	< 1	< 1	< 1	< 1	< 20	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Metals by USEPA Method 6010 and SM 3500-Fe B-2011 (mg																		
Iron	0.3 [2]	NA	NA	NA	< 0.1	**0.15**	NA	NA	**5.9**	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.05 [2]	NA	NA	NA	NA	NA	NA	NA	**0.18**	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Iron	0.3 [2]	NA	NA	NA	< 0.1	< 0.1	NA	NA	**1.9**	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Manganese	0.05 [2]	NA	NA	NA	NA	NA	NA	NA	**0.052**	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron	NS	NA	NA	NA	< 0.05	< 0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferric Iron (calculation)	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alkalinity by USEPA Method SM 2320B-2011 (mg/L)																		
Alkalinity	NS	NA	NA	NA	< 20	< 20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride, Nitrate, Nitrite, and Sulfate by USEPA Method 300.																		
Chloride	250 [2]	**2.8**	NA	**6**	NA	NA	NA	NA	**28**	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate	10	NA	NA	NA	**1.2 B//**	**1.2**	NA	NA	**0.17**	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite	1	NA	NA	NA	< 0.02	< 0.02	NA	NA	**0.015 J//**	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250 [2]	NA	NA	NA	**7.4**	< 1	NA	NA	**0.58 J//**	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 3-3
Shallow Monitoring Well Sample Results
Site Wide Groundwater Monitoring Event
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Main Building				Pole Winder Building			Dickert Property									
Sample ID		**TMW-29**	**TMW-30**	**TMW-31**	**MW-22**	**TMW-24**	**TMW-25**	**TMW-33**	**MW-10**	**MW-11**	**MW-11-PDB**	**MW-12**	**MW-12-PDB**	**MW-13**	**MW-14**	**MW-14-PDB**	**MW-15**	**MW-16**
Laboratory ID	USEPA MCL	XC01066-003	XC01061-001	XC01066-004	XB24099-017	XB28047-002	XB28047-004	XB28047-003	XC08061-004	XC02133-005	XC02133-006	XC02133-001	XC02133-002	XB24099-002	XC02133-003	XC02133-004	XB22075-005	XB22075-002
Date Collected		03/01/22	03/01/22	03/01/22	02/24/22	02/28/22	02/28/22	02/28/22	03/08/22	03/02/22	03/02/22	03/02/22	03/02/22	02/22/22	03/02/22	03/02/22	02/22/22	02/22/22
Sulfide by USEPA Method SM 4500-S2 F-2011 (mg/L)																		
Sulfide	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Gases by USEPA Method AM20GAX (ug/L)																		
Ethane	NS	NA	NA	NA	< 10	< 10	NA	NA	< 10	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methane	NS	NA	NA	NA	**2.7 J//**	< 10	NA	NA	**2600**	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Dioxide	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethene	NS	NA	NA	NA	< 10	< 10	NA	NA	**2.8 J//**	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon by USEPA Method SM 5310C-2014 (m																		
TOC	NS	NA	NA	NA	< 1	< 1	NA	NA	**920**	NA	NA	NA	NA	NA	NA	NA	NA	NA
Microbial																		
Dehalococcoides	NS	NA	NA	NA	< 0.5	NA	< 0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobacter spp	NS	NA	NA	NA	**110**	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAV1 Vinyl Chloride Reductase	NS	NA	NA	NA	< 0.5	NA	< 0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tceA Reductase	NS	NA	NA	NA	< 0.5	NA	< 0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride Reductase	NS	NA	NA	NA	< 0.5	NA	< 0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1 DCA Reductase	NS	NA	NA	NA	< 4.9	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2 DCA Reductase	NS	NA	NA	NA	< 4.9	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cerA Reductase	NS	NA	NA	NA	< 4.9	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform Reductase	NS	NA	NA	NA	< 4.9	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobacter DCM	NS	NA	NA	NA	**< 4.9**	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobium chlorocoercia	NS	NA	NA	NA	**38.8**	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalogenimonas spp	NS	NA	NA	NA	< 4.9	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Desulfitobacterium spp	NS	NA	NA	NA	**546**	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Desulfuromonas spp	NS	NA	NA	NA	< 4.9	NA	**5.2**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichloromethane Dehalogenase	NS	NA	NA	NA	< 4.9	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Epoxyalkane Transferase	NS	NA	NA	NA	**135**	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethene Monooxygenase	NS	NA	NA	NA	**273**	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanogens	NS	NA	NA	NA	**0.5 J**	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCE Reductase 1	NS	NA	NA	NA	< 4.9	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCE Reductase 2	NS	NA	NA	NA	< 4.9	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol Hydroxylase	NS	NA	NA	NA	**77.4**	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Soluble Methane Monooxygenase	NS	NA	NA	NA	**124**	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate Reducing Bacteria	NS	NA	NA	NA	**2250**	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Dioxygenase	NS	NA	NA	NA	< 4.9	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Monooxygenase	NS	NA	NA	NA	< 4.9	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Monooxygenase 2	NS	NA	NA	NA	**414**	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Eubacteria	NS	NA	NA	NA	**19400**	NA	**5390**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-DCE Reductase	NS	NA	NA	NA	< 4.9	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorobenzene Dioxygenase	NS	NA	NA	NA	< 4.9	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Parameters																		
pH	NS	4.49	4.81	4.62	4.40	4.57	5.05	4.51	NA	4.86	NA	4.85	NA	5.82	4.86	NA	5.72	4.90
Specific Conductivity (uS/cm)	NS	37.75	56.38	63.22	131.87	0.06	0.04	0.05	NA	80.76	NA	83.63	NA	0.06	79.67	NA	0.06	750.85
Temperature (Celsius)	NS	21.31	21.30	24.25	22.09	22.00	22.00	22.00	NA	17.29	NA	14.36	NA	16.10	14.22	NA	14.70	15.69
Turbidity (NTU)	NS	276.76	126.55	1.02	1.19	8.20	3.59	2.96	NA	2.92	NA	30.72	NA	11.30	55.50	NA	221.00	0.11
Dissolved oxygen (mg/L)	NS	8.01	6.36	5.17	6.87	1.58	4.37	2.18	NA	0.42	NA	2.61	NA	1.80	1.92	NA	0.53	4.80
ORP (mV)	NS	539.10	514.80	869.10	525.90	67.50	80.10	67.90	NA	467.20	NA	546.50	NA	218.70	531.20	NA	210.40	425.60

Notes:
-a - Indicates a field duplicate sample.
MCL - Maximum Contaminant Level (USEPA, April 2012)
NS - No Standard
USEPA - United States Environmental Protection Agency
Bold font indicates the analyte was detected.
Bold outline indicates an exceedance of the USEPA MCL.

Table 3-3
Shallow Monitoring Well Sample Results
Site Wide Groundwater Monitoring Event
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Dickert Property				Folk Property		Chapman Property	Boazman Property		Ringer Property	Shealy Property				
Sample ID		**MW-17**	**MW-18**	**MW-28**	**MW-29**	**MW-26**	**MW-27**	**MW-19**	**MW-20**	**MW-20-PDB**	**MW-21**	**MW-23**	**MW-24**	**MW-25**		**MW-25-PDB**
Laboratory ID	USEPA MCL	XB22075-003	XB22075-010	XB24099-001	XB22075-009	XB24099-004	XB24099-003	XB24099-006	XC08059-002	XC08059-001	XB24099-009	XB22002-003	XB22002-004	XC02133-007	XC02133-011 (Dup)	XC02133-008
Date Collected		02/22/22	02/22/22	02/22/22	02/22/22	02/23/22	02/23/22	02/23/22	03/07/22	03/07/22	02/23/22	02/21/22	02/21/22	03/02/22	03/02/22	03/02/22
Volatile Organic Compounds by USEPA Method 8260B (µg/L)																
1,1,1-Trichloroethane	200	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,1,2-Trichloroethane	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethene	7	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2,4-Trichlorobenzene	70	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dibromo-3-chloropropane (DBCP)	0.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dibromoethane (EDB)	0.05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichlorobenzene	600	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloroethane	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloropropane	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichlorobenzene	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,4-Dichlorobenzene	75	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**1.6**	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
2-Hexanone	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-pentanone	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Acetone	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	**4.8**	**J/J/C**	< 10	< 10	< 10	< 10	**7.4**	**J/**
Benzene	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane (Methyl bromide)	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbon tetrachloride	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	100	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**1.2**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane (Methyl chloride)	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,2-Dichloroethene	70	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,3-Dichloropropene	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Cyclohexane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	700	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Isopropylbenzene	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methyl acetate	NS	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Methyl tertiary butyl ether (MTBE)	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methylcyclohexane	NS	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Methylene chloride	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Styrene	100	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	1000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,2-Dichloroethene	100	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,3-Dichloropropene	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene (TCE)	5	**8.6**	**27**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**4.2**	**4.7**	**3.1**	
Trichlorofluoromethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes (total)	10000	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Metals by USEPA Method 6010 and SM 3500-Fe B-2011 (mg/L)																
Iron	0.3 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.05 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Iron	0.3 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Manganese	0.05 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferric Iron (calculation)	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alkalinity by USEPA Method SM 2320B-2011 (mg/L)																
Alkalinity	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride, Nitrate, Nitrite, and Sulfate by USEPA Method 300.																
Chloride	250 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 3-3
Shallow Monitoring Well Sample Results
Site Wide Groundwater Monitoring Event
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Dickert Property				Folk Property		Chapman Property	Boazman Property		Ringer Property	Shealy Property				
Sample ID		**MW-17**	**MW-18**	**MW-28**	**MW-29**	**MW-26**	**MW-27**	**MW-19**	**MW-20**	**MW-20-PDB**	**MW-21**	**MW-23**	**MW-24**	**MW-25**		**MW-25-PDB**
Laboratory ID	USEPA MCL	XB22075-003	XB22075-010	XB24099-001	XB22075-009	XB24099-004	XB24099-003	XB24099-006	XC08059-002	XC08059-001	XB24099-009	XB22002-003	XB22002-004	XC02133-007	XC02133-011 (Dup)	XC02133-008
Date Collected		02/22/22	02/22/22	02/22/22	02/22/22	02/23/22	02/23/22	02/23/22	03/07/22	03/07/22	02/23/22	02/21/22	02/21/22	03/02/22	03/02/22	03/02/22
Sulfide by USEPA Method SM 4500-S2 F-2011 (mg/L)																
Sulfide	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Gases by USEPA Method AM20GAX (ug/L)																
Ethane	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methane	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Dioxide	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethene	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon by USEPA Method SM 5310C-2014 (m																
TOC	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Microbial																
Dehalococcoides	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobacter spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAV1 Vinyl Chloride Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tceA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1 DCA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2 DCA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cerA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobacter DCM	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobium chlorocoercia	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalogenimonas spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Desulfitobacterium spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Desulfuromonas spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichloromethane Dehalogenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Epoxyalkane Transferase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethene Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanogens	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCE Reductase 1	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCE Reductase 2	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol Hydroxylase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Soluble Methane Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate Reducing Bacteria	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Dioxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Monooxygenase 2	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Eubacteria	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-DCE Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorobenzene Dioxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Parameters																
pH	NS	5.20	5.16	6.00	5.94	5.62	6.62	5.92	NA	NA	4.79	4.68	4.49	4.58	NA	NA
Specific Conductivity (uS/cm)	NS	127.06	60.35	0.05	0.07	112.44	0.08	0.07	NA	NA	94.82	29.94	80.03	72.08	NA	NA
Temperature (Celsius)	NS	16.04	17.80	16.80	17.10	16.02	16.30	13.20	NA	NA	17.18	19.03	18.67	19.72	NA	NA
Turbidity (NTU)	NS	0.73	0.00	3.95	>1100	267.77	15.40	793.00	NA	NA	1.80	0.03	8.58	82.13	NA	NA
Dissolved oxygen (mg/L)	NS	1.29	5.63	2.39	0.42	1.96	3.70	0.24	NA	NA	0.42	7.55	6.33	3.28	NA	NA
ORP (mV)	NS	413.00	505.20	#####	141.00	434.70	62.30	-1.00	NA	NA	470.00	448.00	433.20	538.80	NA	NA

Notes:
-a - Indicates a field duplicate sample.
MCL - Maximum Contaminant Level (USEPA, April 2012)
NS - No Standard
USEPA - United States Environmental Protection Agency
Bold font indicates the analyte was detected.
Bold outline indicates an exceedance of the USEPA MCL.

Table 3-4
Intermediate Monitoring Well Sample Results
Site Wide Groundwater Monitoring Event
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Facility										Dickert Property		Chapman Property	Boazman Property		Ringer Property	Shealy Property
Sample ID		MW-2I	MW-2i-PDB	MW-3I		MW-5I	MW-5i-PDB	MW-6I	MW-7I	MW-7i-PDB	MW-9I	MW-10I	MW-12I	MW-19I	MW-20I	MW-20i-PDB	MW-21I	MW24I
Laboratory ID	USEPA MCL	XC04096-012	XC04096-011	XB24099-005	XB24099-012 (Dup)	XC03052-006	XC03052-005	XB24099-013	XC03052-002	XC03052-001	XB24099-016	XC08061-002	XB22075-006	XB24099-010	XC04096-008	XC04096-007	XB24099-008	XB22002-002
Date Collected		03/04/22	03/04/22	02/23/22	02/23/22	03/03/22	03/03/22	02/24/22	03/03/22	03/03/22	02/24/22	03/08/22	02/22/22	02/23/22	03/04/22	03/04/22	02/23/22	02/21/22
Volatile Organic Compounds by USEPA Method 8260B (µg/L)																		
1,1,1-Trichloroethane	200	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	< 1	< 1	< 1	< 1	< 5	< 5	< 1	< 5	< 5	< 10	< 5	< 1	< 1	< 1	< 1	< 1	< 1
1,1,2-Trichloroethane	5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethene	7	< 0.5	< 0.5	< 0.5	**0.41 J//**	< 2.5	< 2.5	< 0.5	**3.8**	**4.2**	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2,4-Trichlorobenzene	70	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dibromo-3-chloropropane (DBCP)	0.2	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dibromoethane (EDB)	0.05	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichlorobenzene	600	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloroethane	5	< 0.5	< 0.5	< 0.5	< 0.5	**4.2**	**4.5**	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloropropane	5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichlorobenzene	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,4-Dichlorobenzene	75	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	NS	< 10	< 10	< 10	< 10	< 50	< 50	< 10	< 50	< 50	< 100	< 50	< 10	< 10	< 10	< 10	< 10	< 10
2-Hexanone	NS	< 10	< 10	< 10	< 10	< 50	< 50	< 10	< 50	< 50	< 100	< 50	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-pentanone	NS	< 10	< 10	< 10	< 10	< 50	< 50	< 10	< 50	< 50	< 100	< 50	< 10	< 10	< 10	< 10	< 10	< 10
Acetone	NS	< 10	**21**	< 10	< 10	< 50	< 50	< 10	< 50	< 50	< 100	< 50	< 10	< 10	< 10	**5.5 J//**	< 10	< 10
Benzene	5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane (Methyl bromide)	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbon tetrachloride	5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	100	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane (Methyl chloride)	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,2-Dichloroethene	70	< 0.5	< 0.5	**33**	**35**	**2.2 J//**	< 2.5	**0.86**	**84**	**100**	**43**	**690**	**1.2**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,3-Dichloropropene	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Cyclohexane	NS	< 0.5	**0.81**	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	700	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Isopropylbenzene	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methyl acetate	NS	< 1	< 1	< 1	< 1	< 5	< 5	< 1	< 5	< 5	< 10	< 5	< 1	< 1	< 1	< 1	< 1	< 1
Methyl tertiary butyl ether (MTBE)	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methylcyclohexane	NS	< 5	< 5	< 5	< 5	< 25	< 25	< 5	< 25	< 25	< 50	< 25	< 5	< 5	< 5	< 5	< 5	< 5
Methylene chloride	5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Styrene	100	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	5	< 0.5	< 0.5	**0.41 J//**	**0.49 J//**	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	1000	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,2-Dichloroethene	100	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,3-Dichloropropene	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene (TCE)	5	**41**	**18**	**12**	**13**	**610**	**550**	**15**	**300**	**280**	**850**	**50**	**0.5**	< 0.5	**33**	**40**	< 0.5	< 0.5
Trichlorofluoromethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	2	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes (total)	10000	< 1	< 1	< 1	< 1	< 5	< 5	< 1	< 5	< 5	< 10	< 5	< 1	< 1	< 1	< 1	< 1	< 1
Metals by USEPA Method 6010 and SM 3500-Fe B-2011 (mg/L)																		
Iron	0.3 [2]	NA	NA	NA	NA	< 0.1	NA	**0.25**	**0.23**	NA	**4.6**	**12**	NA	NA	**5.4**	NA	NA	NA
Manganese	0.05 [2]	NA	NA	NA	NA	**0.055**	NA	NA	**0.11**	NA	NA	**0.98**	NA	NA	**0.1**	NA	NA	NA
Dissolved Iron	0.3 [2]	NA	NA	NA	NA	**0.046 J//**	NA	< 0.1	**0.061 J//**	NA	< 0.1	**11**	NA	NA	**0.06 J//**	NA	NA	NA
Dissolved Manganese	0.05 [2]	NA	NA	NA	NA	**0.052**	NA	NA	**0.11**	NA	NA	**1**	NA	NA	**0.0063 J//**	NA	NA	NA
Ferrous Iron	NS	NA	NA	NA	NA	< 0.05	NA	< 0.05	< 0.05	NA	**2.7**	NA	NA	NA	**0.057**	NA	NA	NA
Ferric Iron (calculation)	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alkalinity by USEPA Method SM 2320B-2011 (mg/L)																		
Alkalinity	NS	NA	NA	NA	NA	**30**	NA	25	**23**	NA	28	NA	NA	NA	< 20	NA	NA	NA
Chloride, Nitrate, Nitrite, and Sulfate by USEPA Method 300.0 (mg/L)																		
Chloride	250 [2]	NA	NA	NA	NA	**32**	NA	NA	**5.7**	NA	NA	**8.2**	NA	NA	NA	NA	NA	NA
Nitrate	10	NA	NA	NA	NA	**1.1**	NA	**0.2 B//**	**0.28**	NA	**0.9 B//**	< 0.02	NA	NA	**0.4 B//**	NA	NA	NA
Nitrite	1	NA	NA	NA	NA	< 0.02	NA	< 0.02	**0.013 J//**	NA	< 0.02	< 0.02	NA	NA	< 0.02	NA	NA	NA
Sulfate	250 [2]	NA	NA	NA	NA	**0.3 J//**	NA	< 1	**1**	NA	**1.8**	< 1	NA	NA	**1.4**	NA	NA	NA

Table 3-4
Intermediate Monitoring Well Sample Results
Site Wide Groundwater Monitoring Event
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Facility										Dickert Property		Chapman Property	Boazman Property		Ringer Property	Shealy Property
Sample ID		MW-2I	MW-2i-PDB	MW-3I		MW-5I	MW-5i-PDB	MW-6I	MW-7I	MW-7i-PDB	MW-9I	MW-10I	MW-12I	MW-19I	MW-20I	MW-20i-PDB	MW-21I	MW24I
Laboratory ID	USEPA MCL	XC04096-012	XC04096-011	XB24099-005	XB24099-012 (Dup)	XC03052-006	XC03052-005	XB24099-013	XC03052-002	XC03052-001	XB24099-016	XC08061-002	XB22075-006	XB24099-010	XC04096-008	XC04096-007	XB24099-008	XB22002-002
Date Collected		03/04/22	03/04/22	02/23/22	02/23/22	03/03/22	03/03/22	02/24/22	03/03/22	03/03/22	02/24/22	03/08/22	02/22/22	02/23/22	03/04/22	03/04/22	02/23/22	02/21/22
Sulfide by USEPA Method SM 4500-S2 F-2011 (mg/L)																		
Sulfide	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Gases by USEPA Method AM20GAX (ug/L)																		
Ethane	NS	NA	NA	NA	NA	< 10	NA	< 10	< 10	NA	< 10	< 10	NA	NA	< 10	NA	NA	NA
Methane	NS	NA	NA	NA	NA	**2.5 BJ**	NA	**4.7 J**	**80 B**	NA	**2.9 J**	**1400**	NA	NA	< 10	NA	NA	NA
Carbon Dioxide	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethene	NS	NA	NA	NA	NA	< 10	NA	< 10	< 10	NA	< 10	< 10	NA	NA	< 10	NA	NA	NA
Total Organic Carbon by USEPA Method SM 5310C-2014 (mg/L)																		
TOC	NS	NA	NA	NA	NA	< 1	NA	**2.5**	< 1	NA	< 1	**16**	NA	NA	< 1	NA	NA	NA
Microbial																		
Dehalococcoides	NS	NA	NA	NA	NA	< 0.5	NA	**0.2**	**3.7**	NA	< 2.4	NA	NA	NA	**2.1**	NA	NA	NA
Dehalobacter spp	NS	NA	NA	NA	NA	**1110**	NA	**5250**	< 4.5	NA	< 23.8	NA	NA	NA	**60.1**	NA	NA	NA
BAV1 Vinyl Chloride Reductase	NS	NA	NA	NA	NA	< 0.5	NA	< 0.5	< 0.5	NA	< 2.4	NA	NA	NA	**0.1 J**	NA	NA	NA
tceA Reductase	NS	NA	NA	NA	NA	< 0.5	NA	< 0.5	< 0.5	NA	< 2.4	NA	NA	NA	< 0.5	NA	NA	NA
Vinyl chloride Reductase	NS	NA	NA	NA	NA	**0.2 J**	NA	< 0.5	0.1 J	NA	< 2.4	NA	NA	NA	< 0.5	NA	NA	NA
1,1 DCA Reductase	NS	NA	NA	NA	NA	< 4.8	NA	< 4.8	< 4.5	NA	< 23.8	NA	NA	NA	< 4.9	NA	NA	NA
1,2 DCA Reductase	NS	NA	NA	NA	NA	< 4.8	NA	< 4.8	< 4.5	NA	< 23.8	NA	NA	NA	< 4.9	NA	NA	NA
cerA Reductase	NS	NA	NA	NA	NA	< 4.8	NA	< 4.8	< 4.5	NA	< 23.8	NA	NA	NA	< 4.9	NA	NA	NA
Chloroform Reductase	NS	NA	NA	NA	NA	< 4.8	NA	< 4.8	< 4.5	NA	< 23.8	NA	NA	NA	< 4.9	NA	NA	NA
Dehalobacter DCM	NS	NA	NA	NA	NA	< 4.8	NA	< 4.8	< 4.5	NA	< 23.8	NA	NA	NA	< 4.9	NA	NA	NA
Dehalobium chlorocoercia	NS	NA	NA	NA	NA	< 4.8	NA	**833**	< 4.5	NA	< 23.8	NA	NA	NA	< 4.9	NA	NA	NA
Dehalogenimonas spp	NS	NA	NA	NA	NA	< 4.8	NA	< 4.8	< 4.5	NA	< 23.8	NA	NA	NA	< 4.9	NA	NA	NA
Desulfitobacterium spp	NS	NA	NA	NA	NA	< 4.8	NA	**6410**	< 4.5	NA	< 23.8	NA	NA	NA	**11900**	NA	NA	NA
Desulfuromonas spp	NS	NA	NA	NA	NA	< 4.8	NA	< 4.8	< 4.5	NA	< 23.8	NA	NA	NA	**5**	NA	NA	NA
Dichloromethane Dehalogenase	NS	NA	NA	NA	NA	< 4.8	NA	< 4.8	< 4.5	NA	< 23.8	NA	NA	NA	< 4.9	NA	NA	NA
Epoxyalkane Transferase	NS	NA	NA	NA	NA	**6790**	NA	**436**	< 4.5	NA	< 23.8	NA	NA	NA	**5060**	NA	NA	NA
Ethene Monooxygenase	NS	NA	NA	NA	NA	**1610**	NA	< 4.8	< 4.5	NA	< 23.8	NA	NA	NA	**2340**	NA	NA	NA
Methanogens	NS	NA	NA	NA	NA	**1 J**	NA	**87.3**	**0.8 J**	NA	< 23.8	NA	NA	NA	**0.4 J**	NA	NA	NA
PCE Reductase 1	NS	NA	NA	NA	NA	< 4.8	NA	< 4.8	< 4.5	NA	< 23.8	NA	NA	NA	< 4.9	NA	NA	NA
PCE Reductase 2	NS	NA	NA	NA	NA	< 4.8	NA	< 4.8	< 4.5	NA	< 23.8	NA	NA	NA	< 4.9	NA	NA	NA
Phenol Hydroxylase	NS	NA	NA	NA	NA	**138**	NA	**150**	< 4.5	NA	< 23.8	NA	NA	NA	**3150**	NA	NA	NA
Soluble Methane Monooxygenase	NS	NA	NA	NA	NA	**16.1**	NA	< 4.8	< 4.5	NA	< 23.8	NA	NA	NA	**132**	NA	NA	NA
Sulfate Reducing Bacteria	NS	NA	NA	NA	NA	**1200**	NA	**1790**	**489**	NA	< 23.8	NA	NA	NA	**1850**	NA	NA	NA
Toluene Dioxygenase	NS	NA	NA	NA	NA	< 4.8	NA	**22.4**	< 4.5	NA	< 23.8	NA	NA	NA	< 4.9	NA	NA	NA
Toluene Monooxygenase	NS	NA	NA	NA	NA	**9**	NA	**5.4**	**179**	NA	< 23.8	NA	NA	NA	**6**	NA	NA	NA
Toluene Monooxygenase 2	NS	NA	NA	NA	NA	**238**	NA	**238**	< 4.5	NA	< 23.8	NA	NA	NA	**2450**	NA	NA	NA
Total Eubacteria	NS	NA	NA	NA	NA	**103000**	NA	**60700**	**24600**	NA	**38 I**	NA	NA	NA	**478000**	NA	NA	NA
trans-1,2-DCE Reductase	NS	NA	NA	NA	NA	< 4.8	NA	< 4.8	< 4.5	NA	< 23.8	NA	NA	NA	< 4.9	NA	NA	NA
Trichlorobenzene Dioxygenase	NS	NA	NA	NA	NA	< 4.8	NA	< 4.8	< 4.5	NA	< 23.8	NA	NA	NA	< 4.9	NA	NA	NA
Field Parameters																		
pH	NS	5.42	NA	5.14	NA	5.62	NA	4.81	4.77	NA	5.96	NA	6.47	6.41	5.56	NA	5.35	6.15
Specific Conductivity (uS/cm)	NS	118.09	NA	171.90	NA	223.07	NA	66.02	77.68	NA	0.05	NA	261.40	0.08	0.05	NA	106.88	203.50
Temperature (Celsius)	NS	19.66	NA	18.53	NA	20.41	NA	19.43	20.03	NA	20.00	NA	16.96	17.20	18.60	NA	17.57	18.69
Turbidity (NTU)	NS	12.62	NA	0.00	NA	1.54	NA	0.63	9.26	NA	90.40	NA	57.81	37.70	5.17	NA	0.00	0.29
Dissolved oxygen (mg/L)	NS	2.41	NA	0.26	NA	2.93	NA	1.28	0.21	NA	1.81	NA	0.24	3.55	3.67	NA	2.62	0.31
ORP (mV)	NS	425.2	NA	317.0	NA	460.4	NA	497.9	442.0	NA	13.0	NA	232.6	47.7	88.2	NA	478.1	88.9

Notes:
-a - Indicates a field duplicate sample.
MCL - Maximum Contaminant Level (USEPA, April 2012)
NS - No Standard
USEPA - United States Environmental Protection Agency
Bold font indicates the analyte was detected.
Bold outline indicates an exceedance of the USEPA MCL.
* Vertical profile sampling interval

Table 3-5
Bedrock Monitoring Well Sample Results
Site Wide Groundwater Monitoring Event
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Facility							Dickert Property				Chapman Property	Ringer Property			Shealy Property		
Sample ID		MW-2D	MW-3D	MW-6D		MW-7D		MW 9D	MW12D	MW-12D-PDB	MW-17D	MW-18D	MW19D	RDW-1	RDW-1-PDB	RDW-2	SDW-1	SDW 2	SDW-3
Laboratory ID	USEPA MCL	XB25085-005	XB25085-002	XC04096-009	XC04096-010 (Dup)	XB25085-006	XB25085-007 (Dup)	XB24099-018	XC08059-004	XC08059-003	XB22075-004	XB22075-007	XB24099-011	XC04096-006	XC04096-005	XB25085-001	XB22075-001	XB22075-008	XB22002-001
Date Collected		02/25/22	02/25/22	03/04/22	03/04/22	02/25/22	02/25/22	02/24/22	03/08/22	03/08/22	02/22/22	02/22/22	02/23/22	03/04/22	03/04/22	02/25/22	02/1/22	02/22/22	02/1/22
Volatile Organic Compounds by USEPA Method 8260B (µg/L)																			
1,1,1-Trichloroethane	200	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,1,2-Trichloroethane	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethene	7	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.46 J//**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2,4-Trichlorobenzene	70	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dibromo-3-chloropropane (DBCP)	0.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dibromoethane (EDB)	0.05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichlorobenzene	600	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloroethane	5	< 0.5	< 0.5	**0.58**	**0.63**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloropropane	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichlorobenzene	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,4-Dichlorobenzene	75	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	**2.2 J//**	< 10	< 10	< 10	< 10	< 10	< 10	< 10
2-Hexanone	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-pentanone	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Acetone	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	**9.8 J//**	< 10	**21 /B/T**	< 10	**9.6 J//**	**6.1 J//**	**4.9 J//**	< 10	**4.2 J/B/T**	< 10
Benzene	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane (Methyl bromide)	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbon tetrachloride	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	100	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.5**	< 0.5
Chloromethane (Methyl chloride)	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,2-Dichloroethene	70	< 0.5	**36**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**10**	**10**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**1.3**	< 0.5	< 0.5
cis-1,3-Dichloropropene	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Cyclohexane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.51**	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	700	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Isopropylbenzene	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methyl acetate	NS	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Methyl tertiary butyl ether (MTBE)	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methylcyclohexane	NS	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Methylene chloride	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Styrene	100	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	1000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.46 J//**	< 0.5
trans-1,2-Dichloroethene	100	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,3-Dichloropropene	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	5	< 0.5	**24**	**160**	**160**	< 0.5	< 0.5	**3.6**	**53**	**70**	< 0.5	**19**	**3.3**	**10**	**9.1**	< 0.5	**25**	< 0.5	< 0.5
Trichlorofluoromethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes (total)	10000	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Metals by USEPA Method 6010 and SM 3500-Fe B-2011 (mg/L)																			
Iron	0.3 [2]	NA	NA	**0.15**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.05 [2]	NA	NA	**0.0019 J//**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Iron	0.3 [2]	NA	NA	**0.059 J//**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Manganese	0.05 [2]	NA	NA	< 0.015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron	NS	NA	NA	< 0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferric Iron (calculation)	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alkalinity by USEPA Method SM 2320B-2011 (mg/L)																			
Alkalinity	NS	NA	NA	**100**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride, Nitrate, Nitrite, and Sulfate by USEPA Method 300.0 (mg/L)																			
Chloride	250 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate	10	NA	NA	**0.9 B//**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite	1	NA	NA	< 0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250 [2]	NA	NA	**2.2**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 3-5
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Site Wide Groundwater Monitoring Event
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Facility							Dickert Property				Chapman Property	Ringer Property			Shealy Property		
Sample ID		MW-2D	MW-3D	MW-6D		MW-7D		MW 9D	MW12D	MW-12D-PDB	MW-17D	MW-18D	MW19D	RDW-1	RDW-1-PDB	RDW-2	SDW-1	SDW 2	SDW-3
Laboratory ID	USEPA MCL	XB25085-005	XB25085-002	XC04096-009	XC04096-010 (Dup)	XB25085-006	XB25085-007 (Dup)	XB24099-018	XC08059-004	XC08059-003	XB22075-004	XB22075-007	XB24099-011	XC04096-006	XC04096-005	XB25085-001	XB22075-001	XB22075-008	XB22002-001
Date Collected		02/2/5/22	02/5/22	03/04/22	03/04/22	02/5/22	02/5/22	02/24/22	03/08/22	03/08/22	02/22/22	02/22/22	02/23/22	03/04/22	03/04/22	02/5/22	02/1/22	02/22/22	02/1/22
Sulfide by USEPA Method SM 4500-S2 F-2011 (mg/L)																			
Sulfide	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Gases by USEPA Method AM20GAX (ug/L)																			
Ethane	NS	NA	NA	< 10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methane	NS	NA	NA	**2.5** J//	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Dioxide	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethene	NS	NA	NA	< 10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon by USEPA Method SM 5310C-2014 (mg/L)																			
TOC	NS	NA	NA	< 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Microbial																			
Dehalococcoides	NS	NA	NA	< 0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobacter spp	NS	NA	NA	< 4.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAV1 Vinyl Chloride Reductase	NS	NA	NA	< 0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tceA Reductase	NS	NA	NA	< 0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride Reductase	NS	NA	NA	< 0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1 DCA Reductase	NS	NA	NA	< 4.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2 DCA Reductase	NS	NA	NA	**10.2**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cenA Reductase	NS	NA	NA	< 4.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform Reductase	NS	NA	NA	< 4.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobacter DCM	NS	NA	NA	< 4.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobium chlorocoercia	NS	NA	NA	**258**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalogenimonas spp	NS	NA	NA	< 4.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Desulfitobacterium spp	NS	NA	NA	**45.8**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Desulfuromonas spp	NS	NA	NA	**80.4**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichloromethane Dehalogenase	NS	NA	NA	< 4.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Epoxyalkane Transferase	NS	NA	NA	**169**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethene Monooxygenase	NS	NA	NA	**45.7**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanogens	NS	NA	NA	**0.6** J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCE Reductase 1	NS	NA	NA	< 4.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCE Reductase 2	NS	NA	NA	< 4.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol Hydroxylase	NS	NA	NA	**2350**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Soluble Methane Monooxygenase	NS	NA	NA	< 4.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate Reducing Bacteria	NS	NA	NA	< 4.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Dioxygenase	NS	NA	NA	< 4.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Monooxygenase	NS	NA	NA	**5.7**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Monooxygenase 2	NS	NA	NA	**570**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Eubacteria	NS	NA	NA	**398000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-DCE Reductase	NS	NA	NA	< 4.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorobenzene Dioxygenase	NS	NA	NA	< 4.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Parameters																			
pH	NS	10.39	7.27	10.67	NA	7.06	NA	7.07	NA	NA	5.52	10.80	8.14	12.11	NA	6.72	5.80	7.19	7.61
Specific Conductivity (uS/cm)	NS	0.15	0.25	0.22	NA	0.11	NA	0.11	NA	NA	0.06	3704.00	0.22	0.84	NA	0.11	0.08	2140.00	217.00
Temperature (Celsius)	NS	23.10	19.60	18.90	NA	19.00	NA	20.20	NA	NA	22.60	17.71	16.90	15.50	NA	17.60	17.60	19.50	17.90
Turbidity (NTU)	NS	0.59	14.80	1.36	NA	14.80	NA	44.80	NA	NA	1.27	0.00	2.90	58.20	NA	15.00	20.80	106.00	15.20
Dissolved oxygen (mg/L)	NS	4.92	1.73	2.28	NA	0.16	NA	2.85	NA	NA	1.67	7.71	0.18	0.34	NA	0.16	3.57	0.41	0.21
ORP (mV)	NS	-53.90	15.50	-91.30	NA	-97.20	NA	1.30	NA	NA	224.60	71.80	-137.30	-146.00	NA	#####	178.60	20.40	79.00

Notes:
-a - Indicates a field duplicate sample.
MCL - Maximum Contaminant Level (USEPA, April 2012)
NS - No Standard
USEPA - United States Environmental Protection Agency
Bold font indicates the analyte was detected.
Bold outline indicates an exceedance of the USEPA MCL.
* Vertical profile sampling interval

Table 3-6A
Conventional Sampling vs Passive Diffusion Bag Results - Shallow Wells
Site Wide Groundwater Monitoring Event
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

Sample ID		MW-1	MW-1-PDB	MW-7	MW-7-PDB	MW-8	MW-8-PDB	MW-9	MW-9-PDB	MW-11	MW-11-PDB
Laboratory ID	USEPA	XC02133-010	XC02133-009	XC03052-004	XC03052-003	XC04096-002	XC04096-001	XC04096-004	XC04096-003	XC02133-005	XC02133-006
Date Collected	MCL	03/02/22	03/02/22	03/03/22	03/03/22	03/04/22	03/04/22	03/04/22	03/04/22	03/02/22	03/02/22
Volatile Organic Compounds by USEPA Method 8260B (µg/L)											
1,1,1-Trichloroethane	200	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	< 1	< 1	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1
1,1,2-Trichloroethane	5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethane	NS	< 0.5	< 0.5	**0.55**	**0.43** J//	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethene	7	< 0.5	< 0.5	**1.1**	**0.84**	**2.2** J//	**2.7**	< 0.5	< 0.5	< 0.5	< 0.5
1,2,4-Trichlorobenzene	70	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dibromo-3-chloropropane (DBCP)	0.2	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dibromoethane (EDB)	0.05	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichlorobenzene	600	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloroethane	5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloropropane	5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichlorobenzene	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
1,4-Dichlorobenzene	75	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	NS	< 10	< 10	< 10	< 10	**23** J//	< 50	< 10	< 10	< 10	< 10
2-Hexanone	NS	< 10	< 10	< 10	< 10	< 50	< 50	< 10	< 10	< 10	< 10
4-Methyl-2-pentanone	NS	< 10	< 10	< 10	< 10	< 50	< 50	< 10	< 10	< 10	< 10
Acetone	NS	< 10	**4.7** J//	< 10	**6.2** J//	< 50	< 50	**4.5** J//	< 10	< 10	**9.2** J//
Benzene	5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane (Methyl bromide)	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbon tetrachloride	5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	100	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane (Methyl chloride)	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,2-Dichloroethene	70	< 0.5	< 0.5	**48**	**38**	**76**	**83**	**11**	**11**	< 0.5	< 0.5
cis-1,3-Dichloropropene	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
Cyclohexane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	700	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
Isopropylbenzene	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
Methyl acetate	NS	< 1	< 1	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1
Methyl tertiary butyl ether (MTBE)	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
Methylcyclohexane	NS	< 5	< 5	< 5	< 5	< 25	< 25	< 5	< 5	< 5	< 5
Methylene chloride	5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
Styrene	100	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	**2.2** J//	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	1000	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,2-Dichloroethene	100	< 0.5	< 0.5	**0.45** J//	< 0.5	**3.7**	**4.4**	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,3-Dichloropropene	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene (TCE)	5	< 0.5	< 0.5	**22**	**17**	**530**	**600**	**69**	**73**	< 0.5	< 0.5
Trichlorofluoromethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	2	< 0.5	< 0.5	**1.2**	**0.87**	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes (total)	10000	< 1	< 1	< 1	< 1	< 5	< 5	< 1	< 1	< 1	< 1

Table 3-6A
Conventional Sampling vs Passive Diffusion Bag Results - Sh
Site Wide Groundwater Monitoring Event
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Main Building								
Sample ID		**MW-12**	**MW-12-PDB**	**MW-14**	**MW-14-PDB**	**MW-20**	**MW-20-PDB**	**MW-25**		**MW-25-PDB**
Laboratory ID	USEPA	XC02133-001	XC02133-002	XC02133-003	XC02133-004	XC08059-002	XC08059-001	XC02133-007	XC02133-011 (Dup)	XC02133-008
Date Collected	MCL	03/02/22	03/02/22	03/02/22	03/02/22	03/07/22	03/07/22	03/02/22	03/02/22	03/02/22
Volatile Organic Compounds by USEPA Method 8260B (µg/L)										
1,1,1-Trichloroethane	200	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,1,2-Trichloroethane	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethane	NS	**0.47 J//**	**0.46 J//**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethene	7	**0.61**	**0.68**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2,4-Trichlorobenzene	70	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dibromo-3-chloropropane (DBCP)	0.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dibromoethane (EDB)	0.05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichlorobenzene	600	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloroethane	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloropropane	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichlorobenzene	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,4-Dichlorobenzene	75	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
2-Hexanone	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-pentanone	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Acetone	NS	< 10	**10**	< 10	**6.9 J//**	**4.8 J/J/C**	**30**	< 10	< 10	**7.4 J//**
Benzene	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane (Methyl bromide)	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbon tetrachloride	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	100	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane (Methyl chloride)	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,2-Dichloroethene	70	**29**	**30**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,3-Dichloropropene	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Cyclohexane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	700	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Isopropylbenzene	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methyl acetate	NS	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Methyl tertiary butyl ether (MTBE)	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methylcyclohexane	NS	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Methylene chloride	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Styrene	100	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	1000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,2-Dichloroethene	100	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,3-Dichloropropene	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene (TCE)	5	**47**	**54**	**100**	**100**	< 0.5	< 0.5	**4.2**	**4.7**	**3.1**
Trichlorofluoromethane	NS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes (total)	10000	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1

Table 3-6B
Conventional Sampling vs Passive Diffusion Bag Results - Inermediate Wells
Site Wide Groundwater Monitoring Event
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

Sample ID		MW-2I	MW-2i-PDB	MW-5I	MW-5i-PDB	MW-7i	MW-7i-PDB	MW-20I	MW-20i-PDB
Laboratory ID	USEPA	XC04096-012	XC04096-011	XC03052-006	XC03052-005	XC03052-002	XC03052-001	XC04096-008	XC04096-007
Date Collected	MCL	03/04/22	03/04/22	03/03/22	03/03/22	03/03/22	03/03/22	03/04/22	03/04/22
Volatile Organic Compounds by USEPA Method 8260B (µg/L)									
1,1,1-Trichloroethane	200	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	NS	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	< 1	< 1	< 5	< 5	< 5	< 5	< 1	< 1
1,1,2-Trichloroethane	5	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
1,1-Dichloroethane	NS	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
1,1-Dichloroethene	7	< 0.5	< 0.5	< 2.5	< 2.5	**3.8**	**4.2**	< 0.5	< 0.5
1,2,4-Trichlorobenzene	70	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
1,2-Dibromo-3-chloropropane (DBCP)	0.2	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
1,2-Dibromoethane (EDB)	0.05	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
1,2-Dichlorobenzene	600	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
1,2-Dichloroethane	5	< 0.5	< 0.5	**4.2**	**4.5**	< 2.5	< 2.5	< 0.5	< 0.5
1,2-Dichloropropane	5	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
1,3-Dichlorobenzene	NS	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
1,4-Dichlorobenzene	75	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
2-Butanone (MEK)	NS	< 10	< 10	< 50	< 50	< 50	< 50	< 10	< 10
2-Hexanone	NS	< 10	< 10	< 50	< 50	< 50	< 50	< 10	< 10
4-Methyl-2-pentanone	NS	< 10	< 10	< 50	< 50	< 50	< 50	< 10	< 10
Acetone	NS	< 10	**21**	< 50	< 50	< 50	< 50	< 10	**5.5** J//
Benzene	5	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
Bromodichloromethane	80 [1]	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
Bromoform	80 [1]	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
Bromomethane (Methyl bromide)	NS	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
Carbon disulfide	NS	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
Carbon tetrachloride	5	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
Chlorobenzene	100	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
Chloroethane	NS	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
Chloroform	80 [1]	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
Chloromethane (Methyl chloride)	NS	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
cis-1,2-Dichloroethene	70	< 0.5	< 0.5	**2.2** J//	< 2.5	**84**	**100**	< 0.5	< 0.5
cis-1,3-Dichloropropene	NS	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
Cyclohexane	NS	< 0.5	**0.81**	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
Dibromochloromethane	80 [1]	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
Dichlorodifluoromethane	NS	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
Ethylbenzene	700	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
Isopropylbenzene	NS	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
Methyl acetate	NS	< 1	< 1	< 5	< 5	< 5	< 5	< 1	< 1
Methyl tertiary butyl ether (MTBE)	NS	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
Methylcyclohexane	NS	< 5	< 5	< 25	< 25	< 25	< 25	< 5	< 5
Methylene chloride	5	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
Styrene	100	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
Tetrachloroethene	5	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
Toluene	1000	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
trans-1,2-Dichloroethene	100	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
trans-1,3-Dichloropropene	NS	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
Trichloroethene (TCE)	5	**41**	**18**	**610**	**550**	**300**	**280**	**33**	**40**
Trichlorofluoromethane	NS	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
Vinyl chloride	2	< 0.5	< 0.5	< 2.5	< 2.5	< 2.5	< 2.5	< 0.5	< 0.5
Xylenes (total)	10000	< 1	< 1	< 5	< 5	< 5	< 5	< 1	< 1
Metals by USEPA Method 6010 and SM 3500-Fe B-2011 (mg/L)									
Iron	0.3 [2]	NA	NA	< 0.1	NA	**0.23**	NA	**5.4**	NA
Manganese	0.05 [2]	NA	NA	**0.055**	NA	**0.11**	NA	**0.1**	NA
Dissolved Iron	0.3 [2]	NA	NA	**0.046** J//	NA	**0.061** J//	NA	**0.06** J//	NA
Dissolved Manganese	0.05 [2]	NA	NA	**0.052**	NA	**0.11**	NA	**0.0063** J//	NA
Ferrous Iron	NS	NA	NA	< 0.05	NA	< 0.05	NA	**0.057**	NA
Ferric Iron (calculation)	NS	NA	NA	NA	NA	NA	NA	NA	NA
Alkalinity by USEPA Method SM 2320B-2011 (mg/L)									
Alkalinity	NS	NA	NA	**30**	NA	**23**	NA	< 20	NA
Chloride, Nitrate, Nitrite, and Sulfate by USEPA Method 300.0 (mg/L)									
Chloride	250 [2]	NA	NA	**32**	NA	**5.7**	NA	NA	NA
Nitrate	10	NA	NA	**1.1**	NA	**0.28**	NA	**0.4** B//	NA
Nitrite	1	NA	NA	< 0.02	NA	**0.013** J//	NA	< 0.02	NA
Sulfate	250 [2]	NA	NA	**0.3** J//	NA	**1**	NA	**1.4**	NA
Sulfide by USEPA Method SM 4500-S2 F-2011 (mg/L)									
Sulfide	NS	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Gases by USEPA Method AM20GAX (ug/L)									
Ethane	NS	NA	NA	< 10	NA	< 10	NA	< 10	NA
Methane	NS	NA	NA	**2.5** BJ//	NA	**80** B//	NA	< 10	NA
Carbon Dioxide	NS	NA	NA	NA	NA	NA	NA	NA	NA
Ethene	NS	NA	NA	< 10	NA	< 10	NA	< 10	NA
Total Organic Carbon by USEPA Method SM 5310C-2014 (mg/L)									
TOC	NS	NA	NA	< 1	NA	< 1	NA	< 1	NA
Microbial									
Dehalococcoides	NS	NA	NA	< 0.5	NA	**3.7**	NA	**2.1**	NA
Dehalobacter spp	NS	NA	NA	**1110**	NA	< 4.5	NA	**60.1**	NA
BAV1 Vinyl Chloride Reductase	NS	NA	NA	< 0.5	NA	< 0.5	NA	**0.1** J	NA
tceA Reductase	NS	NA	NA	< 0.5	NA	< 0.5	NA	< 0.5	NA
Vinyl chloride Reductase	NS	NA	NA	**0.2** J	NA	0.1 J	NA	< 0.5	NA
1,1 DCA Reductase	NS	NA	NA	< 4.8	NA	< 4.5	NA	< 4.9	NA
1,2 DCA Reductase	NS	NA	NA	< 4.8	NA	< 4.5	NA	< 4.9	NA
cerA Reductase	NS	NA	NA	< 4.8	NA	< 4.5	NA	< 4.9	NA
Chloroform Reductase	NS	NA	NA	< 4.8	NA	< 4.5	NA	< 4.9	NA
Dehalobacter DCM	NS	NA	NA	< 4.8	NA	< 4.5	NA	< 4.9	NA
Dehalobium chlorocoercia	NS	NA	NA	< 4.8	NA	< 4.5	NA	< 4.9	NA
Dehalogenimonas spp	NS	NA	NA	< 4.8	NA	< 4.5	NA	< 4.9	NA
Desulfitobacterium spp	NS	NA	NA	< 4.8	NA	< 4.5	NA	**11900**	NA
Desulfuromonas spp	NS	NA	NA	< 4.8	NA	< 4.5	NA	**5**	NA
Dichloromethane Dehalogenase	NS	NA	NA	< 4.8	NA	< 4.5	NA	< 4.9	NA
Epoxyalkane Transferase	NS	NA	NA	**6790**	NA	< 4.5	NA	**5060**	NA
Ethene Monooxygenase	NS	NA	NA	**1610**	NA	< 4.5	NA	**2340**	NA
Methanogens	NS	NA	NA	**1** J	NA	**0.8** J	NA	**0.4** J	NA
PCE Reductase 1	NS	NA	NA	< 4.8	NA	< 4.5	NA	< 4.9	NA
PCE Reductase 2	NS	NA	NA	< 4.8	NA	< 4.5	NA	< 4.9	NA
Phenol Hydroxylase	NS	NA	NA	**138**	NA	< 4.5	NA	**3150**	NA
Soluble Methane Monooxygenase	NS	NA	NA	**16.1**	NA	< 4.5	NA	**132**	NA
Sulfate Reducing Bacteria	NS	NA	NA	**1200**	NA	**489**	NA	**1850**	NA
Toluene Dioxygenase	NS	NA	NA	< 4.8	NA	< 4.5	NA	< 4.9	NA
Toluene Monooxygenase	NS	NA	NA	**9**	NA	**179**	NA	**6**	NA
Toluene Monooxygenase 2	NS	NA	NA	**238**	NA	< 4.5	NA	**2450**	NA
Total Eubacteria	NS	NA	NA	**103000**	NA	**24600**	NA	**478000**	NA
trans-1,2-DCE Reductase	NS	NA	NA	< 4.8	NA	< 4.5	NA	< 4.9	NA
Trichlorobenzene Dioxygenase	NS	NA	NA	< 4.8	NA	< 4.5	NA	< 4.9	NA

Notes:
-a - Indicates a field duplicate sample.
MCL - Maximum Contaminant Level (USEPA, April 2012)
NS - No Standard
USEPA - United States Environmental Protection Agency
Bold font indicates the analyte was detected.
Bold outline indicates an exceedance of the USEPA MCL.
* Vertical profile sampling interval

Table 3-6C
Conventional Sampling vs Passive Diffusion Bag Results - Bedrock Wells
Site Wide Groundwater Monitoring Event
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

Sample ID		MW-12D	MW-12D-PDB	RDW-1	RDW-1-PDB
Laboratory ID	USEPA	XC08059-004	XC08059-003	XC04096-006	XC04096-005
Date Collected	MCL	03/08/22	03/08/22	03/04/22	03/04/22
Volatile Organic Compounds by USEPA Method 8260B (µg/L)					
1,1,1-Trichloroethane	200	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	NS	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	< 1	< 1	< 1	< 1
1,1,2-Trichloroethane	5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethane	NS	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethene	7	< 0.5	**0.46 J//**	< 0.5	< 0.5
1,2,4-Trichlorobenzene	70	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dibromo-3-chloropropane (DBCP)	0.2	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dibromoethane (EDB)	0.05	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichlorobenzene	600	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloroethane	5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloropropane	5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichlorobenzene	NS	< 0.5	< 0.5	< 0.5	< 0.5
1,4-Dichlorobenzene	75	< 0.5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	NS	< 10	< 10	< 10	< 10
2-Hexanone	NS	< 10	< 10	< 10	< 10
4-Methyl-2-pentanone	NS	< 10	< 10	< 10	< 10
Acetone	NS	< 10	**9.8 J//**	**9.6 J//**	**6.1 J//**
Benzene	5	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane (Methyl bromide)	NS	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	NS	< 0.5	< 0.5	< 0.5	< 0.5
Carbon tetrachloride	5	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	100	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	NS	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane (Methyl chloride)	NS	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,2-Dichloroethene	70	**10**	**10**	< 0.5	< 0.5
cis-1,3-Dichloropropene	NS	< 0.5	< 0.5	< 0.5	< 0.5
Cyclohexane	NS	< 0.5	< 0.5	< 0.5	**0.51**
Dibromochloromethane	80 [1]	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	NS	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	700	< 0.5	< 0.5	< 0.5	< 0.5
Isopropylbenzene	NS	< 0.5	< 0.5	< 0.5	< 0.5
Methyl acetate	NS	< 1	< 1	< 1	< 1
Methyl tertiary butyl ether (MTBE)	NS	< 0.5	< 0.5	< 0.5	< 0.5
Methylcyclohexane	NS	< 5	< 5	< 5	< 5
Methylene chloride	5	< 0.5	< 0.5	< 0.5	< 0.5
Styrene	100	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	5	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	1000	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,2-Dichloroethene	100	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,3-Dichloropropene	NS	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	5	**53**	**70**	**10**	**9.1**
Trichlorofluoromethane	NS	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	2	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes (total)	10000	< 1	< 1	< 1	< 1
Metals by USEPA Method 6010 and SM 3500-Fe B-2011 (mg/L)					
Iron	0.3 [2]	NA	NA	NA	NA
Manganese	0.05 [2]	NA	NA	NA	NA
Dissolved Iron	0.3 [2]	NA	NA	NA	NA
Dissolved Manganese	0.05 [2]	NA	NA	NA	NA
Ferrous Iron	NS	NA	NA	NA	NA
Ferric Iron (calculation)	NS	NA	NA	NA	NA
Alkalinity by USEPA Method SM 2320B-2011 (mg/L)					
Alkalinity	NS	NA	NA	NA	NA
Chloride, Nitrate, Nitrite, and Sulfate by USEPA Method 300.0 (mg/L)					
Chloride	250 [2]	NA	NA	NA	NA
Nitrate	10	NA	NA	NA	NA
Nitrite	1	NA	NA	NA	NA
Sulfate	250 [2]	NA	NA	NA	NA
Sulfide by USEPA Method SM 4500-S2 F-2011 (mg/L)					
Sulfide	NS	NA	NA	NA	NA
Dissolved Gases by USEPA Method AM20GAX (ug/L)					
Ethane	NS	NA	NA	NA	NA
Methane	NS	NA	NA	NA	NA
Carbon Dioxide	NS	NA	NA	NA	NA
Ethene	NS	NA	NA	NA	NA
Total Organic Carbon by USEPA Method SM 5310C-2014 (mg/L)					
TOC	NS	NA	NA	NA	NA

Table 3-6C
Conventional Sampling vs Passive Diffusion Bag Results - Bedrock Wells
Site Wide Groundwater Monitoring Event
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

Sample ID		**MW-12D**	**MW-12D-PDB**	**RDW-1**	**RDW-1-PDB**
Laboratory ID	USEPA	XC08059-004	XC08059-003	XC04096-006	XC04096-005
Date Collected	MCL	03/08/22	03/08/22	03/04/22	03/04/22
Microbial					
Dehalococcoides	NS	NA	NA	NA	NA
Dehalobacter spp	NS	NA	NA	NA	NA
BAV1 Vinyl Chloride Reductase	NS	NA	NA	NA	NA
tceA Reductase	NS	NA	NA	NA	NA
Vinyl chloride Reductase	NS	NA	NA	NA	NA
1,1 DCA Reductase	NS	NA	NA	NA	NA
1,2 DCA Reductase	NS	NA	NA	NA	NA
cerA Reductase	NS	NA	NA	NA	NA
Chloroform Reductase	NS	NA	NA	NA	NA
Dehalobacter DCM	NS	NA	NA	NA	NA
Dehalobium chlorocoercia	NS	NA	NA	NA	NA
Dehalogenimonas spp	NS	NA	NA	NA	NA
Desulfitobacterium spp	NS	NA	NA	NA	NA
Desulfuromonas spp	NS	NA	NA	NA	NA
Dichloromethane Dehalogenase	NS	NA	NA	NA	NA
Epoxyalkane Transferase	NS	NA	NA	NA	NA
Ethene Monooxygenase	NS	NA	NA	NA	NA
Methanogens	NS	NA	NA	NA	NA
PCE Reductase 1	NS	NA	NA	NA	NA
PCE Reductase 2	NS	NA	NA	NA	NA
Phenol Hydroxylase	NS	NA	NA	NA	NA
Soluble Methane Monooxygenase	NS	NA	NA	NA	NA
Sulfate Reducing Bacteria	NS	NA	NA	NA	NA
Toluene Dioxygenase	NS	NA	NA	NA	NA
Toluene Monooxygenase	NS	NA	NA	NA	NA
Toluene Monooxygenase 2	NS	NA	NA	NA	NA
Total Eubacteria	NS	NA	NA	NA	NA
trans-1,2-DCE Reductase	NS	NA	NA	NA	NA
Trichlorobenzene Dioxygenase	NS	NA	NA	NA	NA

Notes:
-a - Indicates a field duplicate sample.
MCL - Maximum Contaminant Level (USEPA, April 2012)
NS - No Standard
USEPA - United States Environmental Protection Agency
Bold font indicates the analyte was detected.
Bold outline indicates an exceedance of the USEPA MCL.
* Vertical profile sampling interval

Table 3-7
Comparison of VOC Results for Low Flow and PDBs
Site Wide Groundwater Monitoring
Shakespeare Composite Structures
Newberry, South Carolina

Well ID	Parameter	Low Flow Conc	PDB conc	Relative Percent Difference*
MW-1	TCE	ND	ND	0
	Cis-1,2	ND	ND	0
	VC	ND	ND	0
MW7	TCE	22	17	-25.6
	Cis-1,2	48	38	-23.3
	VC	1.2	0.87	-31.9
MW-8	TCE	530	600	12.4
	Cis-1,2	76	83	8.8
	VC	ND	ND	0
MW-9	TCE	69	79	13.5
	Cis-1,2	11	11	0
	VC	ND	ND	0
MW11	TCE	ND	ND	0
	Cis-1,2	ND	ND	0
	VC	ND	ND	0
MW12	TCE	47	54	13.9
	Cis- 1, 2	29	30	3.4
	VC	ND	ND	0
MW-14	TCE	100	100	0
	Cis-1,2	ND	ND	0
	VC	ND	ND	0
MW-20	TCE	ND	ND	0
	Cis-1,2	ND	ND	0
	VC	ND	ND	0
MW-25	TCE	4.2	3.1	-30.1
	Cis-1,2	ND	ND	0
	VC	ND	ND	0
MW-2I	TCE	41	18	-77.97
	Cis-1,2	ND	ND	0
	VC	ND	ND	0
MW-5I	TCE	610	550	-10.3
	Cis-1,2	2.2	0	-200
	VC	ND	ND	0
MW-7I	TCE	300	280	-6.9
	Cis-1,2	84	100	17.4
	VC	ND	ND	0
MW-20I	TCE	33	40	19.2
	Cis-1,2	ND	ND	0
	VC	ND	ND	0
MW-12D	TCE	53	70	27.6
	Cis-1,2	10	10	0
	VC	ND	ND	0
RDW-1	TCE	10	9.1	-9.4
	Cis-1,2	ND	ND	0
	VC	ND	ND	0

* - Positive value means PDB concentration higher than conventional; Negative value is opposite.
ND - Constituent not detected (below laboratory detection limit)

Summary for TCE	
Percent Difference Groupings	Frequency (Number of Wells in Category)
0 (non-detect)	4
0.1 thru 15%	6
15.1 - 30%	3
> 30%	2

Summary for Cis-1,2 DCE	
Percent Difference Groupings	Frequency (Number of Wells in Category)
0 (non-detect)	10
0.1 thru 15%	2
15.1 - 30%	2
> 30%	1

Summary for VC	
Percent Difference Groupings	Frequency (Number of Wells in Category)
0 (non-detect)	14
0.1 thru 15%	0
15.1 - 30%	0
> 30%	1

Table 4-1
TCE Plume Volumetric Calculations
2022 Site Wide Groundwater Monitoring Report Report
Shakespeare Composite Structures Site
Newberry, South Carolina

ID	density	total soil volume (cubic feet)	Total Soil Mass (kg)	Chemical Volume (cu feet)	Chemical Mass (kg)	Molar Mass	average concentration (ug/L)	date	Date
TCE-5 ug/L	1.46E+00	6.73E+08	3.52E+10	7.31E+00	2.07E+02	1.58E+00	43.50	2022	Feb-22

Appendix A

Groundwater Monitoring Field Forms – February and March 2022

AECOM

Well ID: MW-19

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 8/23/22 Time: Start 1025 am/pm
Project No: 60675505 Finish 1145 am/pm
Site Location: Newberry, SC
Weather Conds: Rain / 60° Collector(s): Justin Butler

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 14.48 c. Length of Water Column 13.65 (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 0.83 d. Calculated System Volume (see back) 2.22 GAL

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A103315
	HACH	2100Q	19120C082318

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1032	Initial	13.8	5.92	0.072	0.40	31.5	37.8	270	1.53	Clear/NA
1037	1.35	13.6	5.91	0.071	0.21	24.1	57.6		2.29	Clear/NA
1042	2.70	13.3	5.91	0.070	0.20	19.6	56.8		2.93	Clear/NA
1047	4.05	13.0	5.91	0.070	0.20	14.6	35.5		3.50	Clear/NA
1052	5.40	13.0	5.92	0.070	0.22	14.5	45.7		3.98	Clear/NA
1057	6.75	12.9	5.91	0.070	0.20	10.9	100.0		4.28	Clear/NA
1102	8.10	13.0	5.90	0.069	0.22	6.3	178.0	↓	4.51	Cloudy/NA

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☑	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Low Flow / Reverse

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-19	40mL	3	HCL	TCL VOC	1145

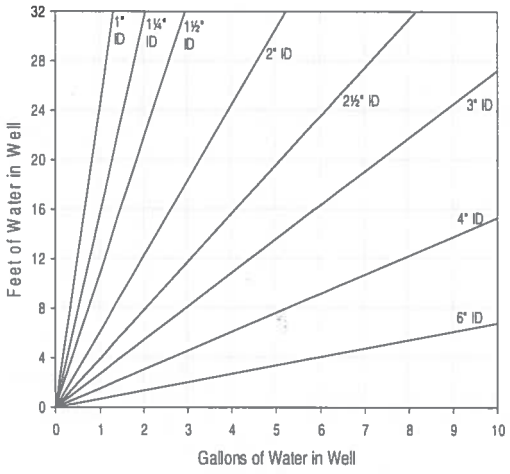
Comments

Signature Date 8/23/22

2/2

MW-19

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1107	9.45	12.8	5.90	0.069	0.21	2.4	219.0	270	4.58	Cloudy/NA
1112	10.80	12.9	5.90	0.068	0.21	1.4	245.0		4.64	Cloudy/NA
1117	12.15	12.8	5.91	0.068	0.21	-0.6	293.0		4.64	Cloudy/NA
1122	13.50	12.9	5.90	0.068	0.21	-1.1	366.0		4.64	Cloudy/NA
1127	14.85	13.2	5.90	0.068	0.20	-2.0	488.0		4.64	Cloudy/NA
1132	16.20	13.1	5.90	0.068	0.21	-1.9	585.0		4.64	Cloudy/NA
1137	17.55	13.0	5.90	0.068	0.26	-1.8	691.0		4.64	Cloudy/NA
1142	18.90	13.2	5.92	0.069	0.24	-1.0	793.0		4.64	Cloudy/NA

AECOM

Well ID: MW-19I

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2/23/22 Time: Start 1240 am/pm
Project No: 60675505 Finish 1545 am/pm
Site Location: Newberry, SC
Weather Conds: Cloudy 63 Collector(s): Justin Butler

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 22.54 c. Length of Water Column 19.37 (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 3.17 d. Calculated System Volume (see back) 3.15 GAL

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A10 3315
	HACH	2100Q	19120C0 82318

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1251	Initial	16.2	6.48	0.078	5.06	34.9	20.7	174	4.13	Clear/NA
1256	0.87	16.3	6.46	0.077	4.87	45.3	17.8		5.71	Clear/NA
1301	1.74	16.5	6.48	0.077	4.84	50.6	13.1		7.28	Clear/NA
1306	2.61	16.4	6.42	0.077	4.80	53.1	13.6		8.76	Clear/NA
1311	3.48	16.4	6.43	0.077	4.73	54.1	12.9		10.24	Clear/NA
1316	4.35	16.3	6.44	0.077	4.69	53.4	12.5		11.62	Clear/NA
1321	5.22	16.7	6.44	0.077	4.74	54.2	12.6	↓	12.99	Clear/NA

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☑	☐
Have parameters stabilized	☐	☑	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Low Flow / Reverse

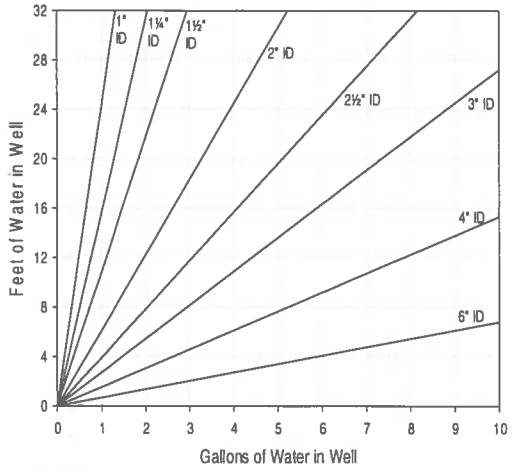
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-19I	40mL	3	HCL	TCL VOC	1545

Comments

Signature Date 2/23/22

212
MW-19I

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1326	6.09	16.5	6.44	0.077	4.54	52.9	12.4	174	14.43	Clear/NA
1331	6.96	16.5	6.43	0.077	4.29	52.5	12.3	↓	15.36	Clear/NA
1336	7.83	16.7	6.43	0.077	4.37	51.2	13.7		16.95	Clear/NA
1341	8.70	16.7	6.43	0.077	4.29	51.0	14.3		18.03	Clear/NA
1346	9.57	16.9	6.41	0.077	3.99	49.2	16.6		19.62	Clear/NA
1351	10.44	17.2	6.41	0.076	3.55	47.7	37.7		20.99	Clear/NA
1356	11.31	—	—	—	—	—	—	↓	DRY	~~Clear/NA~~ 9/5

AECOM

Well ID: MW-19D

Low Flow Ground Water Sample Collection Record

Client: Signify North America | Date: 2/23/22 | Time: Start 1420 am/pm | Finish 1530 am/pm
Project No: 60675505
Site Location: Newberry, SC
Weather Conds: Cloudy 64° | Collector(s): Justin Butler

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 162.52 c. Length of Water Column 159.7 (a-b) | Casing Diameter/Material 2" / PVC

b. Water Table Depth 2.82 d. Calculated System Volume (see back) 26.03 GAL

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A10.3315
	HACH	2100 Q	19120C0082318

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1427	Initial	16.9	8.66	0.288	0.24	-92.2	291	630	2.94	Cloud, / NA
1432	3.15	17.0	8.67	0.291	0.26	-113.3	30.7	↓	2.94	Clear / NA
1437	6.30	16.9	8.58	0.280	0.25	-132.8	12.1	↓	2.94	Clear / NA
1442	9.45	16.8	8.40	0.258	0.24	-137.7	7.62	↓	2.94	Clear / NA
1447	12.60	17.0	8.23	0.232	0.22	-134.9	5.11	↓	2.94	Clear / NA
1452	15.75	16.9	8.16	0.228	0.19	-137.2	3.80	↓	2.94	Clear / NA
1457	18.90	16.9	8.14	0.223	0.18	-137.3	2.90	↓	2.94	Clear / NA

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Low Flow

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-19D	40mL	3	HCL	TCL VOC	1500
MW-19D-MS	40mL	3	HCL	TCL VOC	1500
MW-19D-MSD	40mL	3	HCL	TCL VOC	1500

Comments

Signature Justin Butler Date 2/23/22

AECOM

Well ID: MW-20I

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 3/4/22 Time: Start ~~1055~~ 1050 am/pm
Project No: 60675505 Finish 1215 am/pm
Site Location: Newberry, SC
Weather Conds: clear Collector(s): Justin Butler

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 53.48 c. Length of Water Column 49.55 (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 3.93 d. Calculated System Volume (see back) 8.08 GAL

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A103315
	HACH	2100 Q	19120C088318

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1123	Initial	18.1	5.66	0.052	3.66	85.9	8.06	316	4.10	clear/NA
1128	1.58	18.2	5.61	0.049	3.68	86.5	5.86		4.10	clear/NA
1133	3.16	18.3	5.59	0.048	3.31	87.4	5.74		4.60	clear/NA
1138	4.74	18.6	5.58	0.047	3.57	88.0	5.51		4.10	clear/NA
1143	6.32	18.4	5.60	0.046	3.60	88.1	5.39		4.10	clear/NA
1148	7.90	18.5	5.54	0.045	3.62	88.3	5.28		4.10	clear/NA
1153	9.48	18.6	5.56	0.045	3.67	88.2	5.17		4.10	clear/NA

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Low Flow / Reverse

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-20I-POB	40mL	3	HCL	TCL VOC	1050
MW-20I	40mL	3	HCL	TCL VOC	1155
MW-20I	40mL	2	HCL	Diss Gases	1155
MW-20I	40mL	2	HCL	Ferrous Iron	1155
MW-20I	250mL	1	NONE	NO_3/NO_2/SO_4/Alk	1155
MW-20I	250mL	1	H_2SO_4	TOC	1155
MW-20I	250mL	1	NONE	Diss Metals Fe	1155
MW-20I	250mL	1	HNO_3	Metals Fe	1155
MW-20I	1 L	1	NONE	Quant Array Chlor	1155

Comments MW-20I

Signature [signature] Date 3/4/22

AECOM

Well ID: MW-21

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2-23-22 Time: Start 1506 am/pm
Project No: 60675505 Finish 1546 am/pm
Site Location: Newberry, SC
Weather Conds: CLOUDY, 70 Collector(s): JAMES LEAPHART

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 22.44 c. Length of Water Column 13.24 (a-b)

Casing Diameter/Material 2" / PVC

b. Water Table Depth 9.20 d. Calculated System Volume (see back) 2.16

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	INSITU	TROLL 600	B08958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1508	0	17.60	4.67	98.11	2.29	489.7	169.95	120	9.27	CLOUDY / NO
1513	0.60	17.17	4.74	97.61	0.90	470.7	9.13	120	9.27	CLEAR "
1518	1.20	17.21	4.77	97.16	0.66	469.8	4.14	120	9.28	" "
1523	1.80	17.28	4.87	96.03	0.52	469.3	4.07	120	9.28	" "
1528	2.40	17.26	4.79	95.43	0.46	469.0	4.62	120	9.28	" "
1533	3.00	17.18	4.79	94.82	0.42	470.0	1.80	120	9.28	" "

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: PERISTALTIC / SODA STRAW

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-21	40 ml VOA	3	HCL	TCL VOC's	1535

Comments

Signature J. Leaphart Date 2-23-22

AECOM

Well ID: MW 21i

Low Flow Ground Water Sample Collection Record

Client: Signify North America | Date: 2-23-22 | Time: Start 1353 am/pm | Finish 1430 am/pm
Project No: 60675505
Site Location: Newberry, SC
Weather Conds: CLOUDY, 68 | Collector(s): JAMES LEAPHART

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 55.10 c. Length of Water Column 36.08 (a-b)

Casing Diameter/Material 2" | PVC

b. Water Table Depth 19.02 d. Calculated System Volume (see back) 5.88

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	±1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1354	0	17.91	5.25	106.95	3.95	476.6	0.22	130	19.24	CLEAR/NO
1359	0.65	17.76	5.24	107.00	2.92	473.9	0	130	19.62	" "
1404	1.15	17.70	5.32	107.02	2.84	475.1	0	100	20.00	" "
1409	1.65	17.65	5.27	106.90	2.73	476.0	0	100	20.26	" "
1414	2.15	17.63	5.27	106.82	2.70	476.8	0	100	20.43	" "
1419	2.65	17.57	5.35	106.88	2.62	478.1	0	100	20.58	" "

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: PERISTALTIC | SODA STRAW

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-21i	40ml VOA	3	HCL	TCL VOC's	1420

Comments

Signature [signature] Date 2-23-22

AECOM

Well ID: MW-22

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2-24-22 Time: Start 1331 am/pm
Project No: 60675505 Finish 1430 am/pm
Site Location: Newberry, SC
Weather Conds: P. Cloudy, 79° Collector(s): James Leaphart

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 26.10 c. Length of Water Column 14.0 (a-b) Casing Diameter/Material 2" / PVC

b. Water Table Depth 12.10 d. Calculated System Volume (see back) 2.28

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1332	0	23.15	4.36	129.92	7.14	490.3	3.37	150	12.82	CLEAR / NO
1337	0.75	22.06	4.42	132.48	6.97	515.9	0.88	100	13.30	" "
1342	1.25	22.27	4.43	132.39	6.96	519.3	0.72	100	13.58	" "
1347	1.75	22.06	4.44	132.06	6.90	523.4	1.84	100	13.72	" "
1352	2.25	22.09	4.40	131.87	6.87	525.9	1.19	100	13.80	" "

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: PERISTALTIC / SODA STRAW - VOCs

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-22	40 ml VOA	3	HCL	TCL VOCs	1355
	40 ml VOA	2/2	HCL / HCL	DISS GAS / Fe^{2+}	
	250 ml Poly	1/1	NONE / H_2SO_4	NO_3, NO_2, SO_4, ALK / TOC	
	250 ml Poly	1/1	HNO_3 / NONE	Fe / DISS. Fe	
	1 Liter Poly	1	NONE		

Comments

Signature Date 2-24-22

AECOM

Well ID: MW-23 / 24

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2-21-22 Time: Start 1428 am/pm
Project No: 60675505 Finish 1500 am/pm
Site Location: Newberry, SC
Weather Conds: P. cloudy, 64° Collector(s): James Leadbetter

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 30.39 c. Length of Water Column 18.69 (a-b) Casing Diameter/Material 2" / PVC

b. Water Table Depth 11.70 d. Calculated System Volume (see back) 3.05

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	±1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1429	0	19.31	4.94	33.44	7.71	341.7	0.20	140	11.85	CLEAR / NO
1434	0.70	18.99	4.74	30.53	7.64	416.1	0	140	11.90	" "
1439	1.40	18.97	4.79	30.21	7.61	432.4	0.07	140	11.92	" "
1444	2.10	18.98	4.74	30.05	7.59	441.5	0	140	11.93	" "
1449	2.80	19.03	4.68	29.94	7.55	448.0	0.03	140	11.93	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: PERISTALTIC / SODA STRAW

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-24 23	40 mL VOA	3	HCL	TCL VOC's	1450

Comments

Signature Date 2-21-22

AECOM

Well ID: MW-24

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2-21-22 Time: Start 1516 am/pm
Project No: 60675505 Finish 1601 am/pm
Site Location: Newberry, SC
Weather Conds: Mostly Cloudy 64° Collector(s): James Leightner

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 25.25 c. Length of Water Column 7.7 (a-b) Casing Diameter/Material 2" / PVC

b. Water Table Depth 17.55 d. Calculated System Volume (see back) 1.26

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	Troll 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1517	0	19.26	4.41	86.11	6.61	422.9	118.27	120	17.73	Cloudy / No
1522	0.60	18.80	4.46	80.98	6.40	425.5	58.96	120	17.74	" "
1527	1.20	18.69	4.47	80.00	6.36	427.9	26.21	120	17.74	Clear "
1532	1.80	18.65	4.50	77.92	6.34	431.2	15.26	120	17.74	" "
1537	2.40	18.69	4.49	79.79	6.33	432.1	12.61	120	17.74	" "
1542	3.00	18.67	4.49	80.03	6.33	433.2	8.58	120	17.74	" "

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Peristaltic / Soda Straw

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-24	40 ml VOA	3	HCL	TCL VOC's	1545

Comments

Signature Date 2-21-22

AECOM

Well ID: MW-24i

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2-21-22 Time: Start 1337 am/pm
Project No: 60675505 Finish 1418 am/pm
Site Location: Newberry, SC
Weather Conds: P. Cloudy, 64° Collector(s): James Leaphart

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 38.43 c. Length of Water Column 24.03 (a-b)

Casing Diameter/Material 2" / PVC

b. Water Table Depth 14.40 d. Calculated System Volume (see back) 3.92

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make: INSITU Model: TROLL 600 Serial Number: 808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1339	0	18.15	6.54	404.80	1.98	61.9	5.01	150	14.82	CLEAR / NO
1344	0.75	18.54	7.05	383.51	0.38	-29.9	0.82	150	15.40	" "
1349	1.50	18.61	6.56	259.38	0.25	7.0	3.59	150	16.00	" "
1354	2.25	18.57	6.24	218.42	0.32	61.3	0.07	100	16.12	" "
1359	2.75	18.73	6.22	213.93	0.29	74.6	0	100	16.25	" "
1404	3.25	18.80	6.21	211.26	0.30	81.4	0.22	100	16.33	" "
1409	3.75	18.69	6.15	203.50	0.31	88.9	0.29	100	16.38	" "

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Peristaltic / Soda Straw

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-24i	40 mL VOA	3	HCL	TCL VOCs	1410

Comments

Signature: J Leaphart Date: 2-21-22

AECOM

Well ID: MW-25

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 3-2-22 Time: Start 1237 am/pm
Project No: 60675505 Finish 1405 am/pm
Site Location: Newberry, SC
Weather Conds: CLEAR, 72° Collector(s): JAMES LEIGHTON

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 27.60 c. Length of Water Column 14.65 (a-b) Casing Diameter/Material 2" / PVC

b. Water Table Depth 12.95 d. Calculated System Volume (see back) 2.39

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor	
1238	0	19.64	4.38	72.92	4.37	569.5	515.26	100	13.02	LT. TAN	NO
1243	0.50	19.24	4.33	72.83	4.03	565.5	436.19	90	13.40	"	"
1248	0.95	19.55	4.48	72.92	4.03	558.3	309.95	90	13.44	"	"
1253	1.40	19.54	4.53	72.72	3.78	551.5	292.37	90	13.46	"	"
1258	1.95	19.62	4.47	72.69	3.58	548.0	249.09	90	13.47	CLOUDY	"
1303	2.40	19.67	4.56	72.62	3.47	548.3	161.13	90	13.47	"	"
1308	2.85	19.60	4.49	72.47	3.43	543.4	148.41	90	13.47	"	"

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: PERISTALTIC

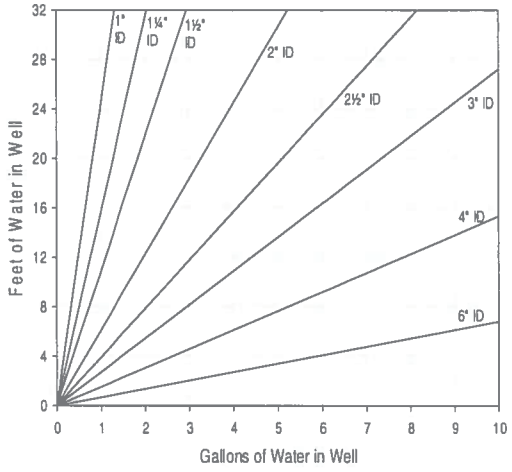
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-25-	40 ml VOA	3	HCL	TCL VOC's	1355
DUP-03	40 ml VOA	3	HCL	TCL VOC's	—
MW-25-PDB	40 ml VOA	3	HCL	TCL VOC's	1225

Comments

Signature Date 3-2-22

MW-25

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor	
1313	3.30	19.64	4.52	72.37	3.44	543.5	178.49	90	13.47	CLOUDY	NO
1318	3.75	19.57	4.51	72.39	3.46	542.6	184.27	90	13.47	"	"
1323	4.20	19.67	4.62	72.27	3.37	541.2	162.39	90	13.48	"	"
1328	4.65	19.59	4.62	72.19	3.29	539.8	93.87	90	13.50	"	"
1333	5.10	19.59	4.63	72.13	3.21	539.9	89.45	90	13.51	"	"
1338	5.55	19.70	4.64	72.13	3.29	538.8	109.88	90	13.52	"	"
1343	6.00	19.64	4.66	71.99	3.34	540.9	104.89	90	13.52	"	"
1348	6.45	19.67	4.60	71.96	3.25	534.7	76.03	90	13.53	"	"
1353	6.90	19.72	4.58	72.08	3.28	538.8	82.13	90	13.54	"	"

AECOM

Well ID: MW-26

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2-23-22 Time: Start 0909 am/pm
Project No: 60675505 Finish 1015 am/pm
Site Location: Newberry, SC
Weather Conds: Cloudy, 58° Collector(s): James Leaphart

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 24.50 c. Length of Water Column 18.05 (a-b) Casing Diameter/Material 3/4" / PVC

b. Water Table Depth 6.45 d. Calculated System Volume (see back) 0.42

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0910	0	16.03	5.77	132.12	2.65	357.5	43.82	100	—	CLEAR / NO
0915	0.50	15.92	5.49	115.27	2.02	406.7	1080	100	—	TAN "
0920	1.00	15.91	5.59	113.64	2.16	419.2	910.36	90	—	" "
0925	1.45	15.87	5.64	112.72	1.99	422.1	480.45	90	—	" "
0930	1.90	15.91	5.66	113.95	2.25	427.0	342.99	90	—	" "
0935	2.35	15.93	5.67	112.53	2.09	428.6	231.96	90	—	" "
0940	2.80	15.95	5.66	112.60	2.04	430.4	215.16	90	—	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: PERISTALTIC / SODA STRAW

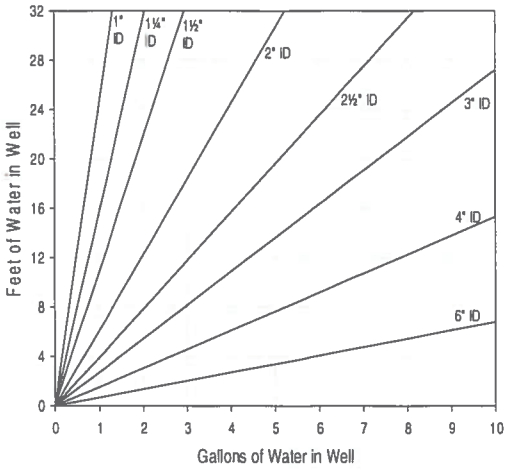
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-26	40 ml VOA	3	HCL	TCL VOC's	1005

Comments

Signature: James Leaphart Date: 2-23-22

MW-26
PAGE 2 OF 2

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
0945	3.25	15.97	5.66	112.62	2.01	432.2	210.16	90	—	
0950	3.70	16.04	5.66	112.45	1.98	432.0	242.14	90	—	
0955	4.15	16.02	5.67	112.30	1.96	432.2	252.17	90	—	
1000	4.60	16.02	5.62	112.44	1.96	434.7	267.77	90	—	

AECOM

Well ID: MW-27

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2/23/22 Time: Start 0900 am/pm
Project No: 60675505 Finish 0935 am/pm
Site Location: Newberry, SC
Weather Conds: Cloudy, 60's Collector(s): Justin Butler

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 29.65 c. Length of Water Column _____ (a-b)

Casing Diameter/Material 3/4" PVC

b. Water Table Depth 3.83 d. Calculated System Volume (see back) _____

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A103315
	HACH	2100 Q	19120C0 82318

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0900	Initial	15.9	6.68	0.124	3.51	121.2	266	302	NA	Cloudy/NA
0905	1.51	16.1	6.63	0.089	3.61	75.3	62.0		NA	Cloudy/NA
0910	3.02	16.2	6.63	0.082	3.72	65.8	16.4		NA	Clear/NA
0915	4.53	16.3	6.62	0.077	3.68	63.8	14.1		NA	Clear/NA
0920	6.04	16.3	6.62	0.076	3.71	62.7	12.5		NA	Clear/NA
0925	7.55	16.3	6.62	0.076	3.70	62.3	15.4		NA	Clear/NA

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Low Flow / Reverse

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-27	40mL	3	HCL	TCL VOC	0930

Comments water Level diameter too large for tubing also

Signature _____ Date 2/23/22

AECOM

Well ID: MW-28

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2/22/22 Time: Start 1440 am/pm
Project No: 60675505 Finish 1520 am/pm
Site Location: Newberry, SC
Weather Conds: Partly Cloudy 72° Collector(s): Justin Butler

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 23.39 c. Length of Water Column 19.34 (a-b)

Casing Diameter/Material 3/4" PVC

b. Water Table Depth 4.05 d. Calculated System Volume (see back) 0.44

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A103515
	HACH	2100Q	19120C082318

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1447	Emitted	16.9	6.05	0.051	2.71	173.8	273	226	NA	Cloudy/NA
1452	1.13	16.9	6.04	0.051	2.56	180.4	50.7		NA	Clear/NA
1457	2.26	16.8	6.03	0.051	2.59	185.3	46.3		NA	Clear/NA
1502	3.39	16.9	5.99	0.051	2.46	191.5	13.1		NA	Clear/NA
1507	4.52	16.7	6.00	0.051	2.42	194.5	5.49		NA	Clear/NA
1512	5.65	16.8	6.00	0.050	2.39	196.3	3.95		NA	Clear/NA

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Low Flow / Reverse

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-28	40mL	3	HCL	TCL VOC	1515

Comments water level diameter too large for tubing in well also

Signature [signature] Date 2/22/22

AECOM

Well ID: MW-29

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2/22/22 Time: Start 1345 am/pm
Project No: 60675505 Finish 1430 am/pm
Site Location: Newberry, SC
Weather Conds: Cloudy 71° Collector(s): Justin Butler

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 23.45 c. Length of Water Column 14.46 (a-b)

Casing Diameter/Material 3/4" PVC

b. Water Table Depth 8.99 d. Calculated System Volume (see back) 0.33 GAL

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A103815
	HACH	2100 Q	19120C0 82818

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1354	Initial	16.9	5.95	0.078	0.87	191.3	886	190	NA	Cloudy/NA
1359	0.95	16.8	5.97	0.076	0.80	169.6	>1100		NA	Cloudy/NA
1404	1.90	16.9	5.97	0.075	0.56	147.4	>1100		NA	Cloudy/NA
1409	2.85	17.0	5.96	0.074	0.50	145.7	>1100		NA	Cloudy/NA
1414	3.80	17.0	5.94	0.072	0.43	148.0	>1100		NA	Cloudy/NA
1419	4.75	17.0	5.94	0.073	0.41	146.0	>1100		NA	Cloudy/NA
1424	5.70	17.1	5.94	0.073	0.42	141.0	>1100	↓	NA	Cloudy/NA

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☑	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Low Flow/Reverse

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-29	40ML	3	HCL	TCLP VOC	1425

Comments water level diameter too large for tubing in well also

Signature [signature] Date 2/22/22

AECOM

Well ID: MW-9I

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2/24/22 Time: Start 1040 am/pm
Project No: 60675505 Finish 1705 am/pm
Site Location: Newberry, SC
Weather Conds: Clear 66 Collector(s): Justin Butler

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 45.48 c. Length of Water Column 28.93 (a-b)
Casing Diameter/Material 2" PVC
b. Water Table Depth 16.55 d. Calculated System Volume (see back) 4.72 GAL

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A103315
	HACH	2100 Q	19120C082318

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1049	Initial	19.5	5.91	0.049	2.93	15.7	2.19	190	17.32	Clear/NA
1054	1.58095	19.6	5.91	0.049	2.72	16.7	3.78		17.71	Clear/NA
1059	3.16190	19.5	5.92	0.050	2.51	16.4	4.41		18.09	Clear/NA
1104	4.74285	19.5	5.93	0.050	2.45	15.9	7.68		18.18	Clear/NA
1109	6.32380	19.8	5.92	0.050	2.35	15.9	9.29		18.27	Clear/NA
1114	7.9047.5	19.9	5.93	0.051	2.20	16.8	11.1		18.32	Clear/NA
1119	9.485.70	20.0	5.92	0.051	2.13	16.2	13.2		18.36	Clear/NA

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☑	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

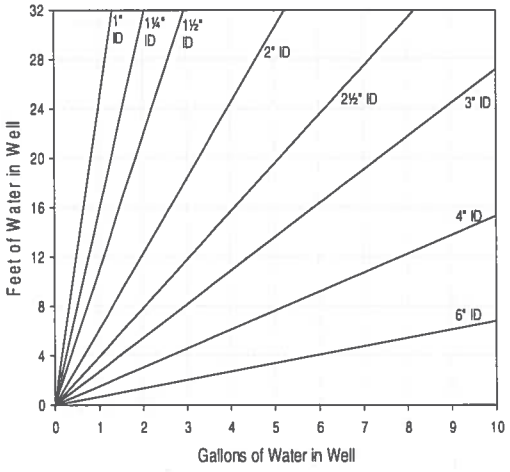
3. SAMPLE COLLECTION: Method: Low Flow/Reverse

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-9I	40 mL	3	HCL	TCL VOC	
MW-9I	40 mL	3	HCL	Diss Gases	
MW-9I	40 mL	2	HCL	Ferrous Iron	
MW-9I	250 mL	1	None	$NO_3/NO_2/SO_4$/Alk	
MW-9I	250 mL	1	H_2SO_4	TOC	
Comments		4			
MW-9I	250 mL	1	None	Diss Metals Fe	
MW-9I	250 mL	1	HNO_3	Metals Fe	
MW-9D	1L	1	None	PCB	

Signature Date 2/24/22

MW-9I

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1124	6.65	19.7	5.96	0.052	2.06	15.8	19.6	190	18.39	Clear/NA
1129	7.60	19.6	5.93	0.052	2.08	14.9	25.9	↓	18.41	Clear/NA
1134	8.55	19.9	5.94	0.053	1.87	12.9	50.6	↓	18.44	Clear/NA
1139	9.50	20.0	5.96	0.054	1.81	13.0	90.4	↓	18.46	Cloudy/NA

AECOM

Well ID: MW-9D

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2/24/22 Time: Start 1320 am/pm
Project No: 60675505 Finish 1545 am/pm
Site Location: Newberry, SC
Weather Conds: Partly Cloudy 77° Collector(s): Justin Butler

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 154.10 c. Length of Water Column 140.89 (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 13.21 d. Calculated System Volume (see back) 22.97 GAL

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	ProPlus	19A103315
	HACH	2100 Q	19120C082318

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1337	Initial	20.2	8.01	0.133	2.65	-33.5	71100	244	16.27	Cloudy/NA
1342	1.22	20.1	7.77	0.129	2.28	-35.4	781		17.20	Cloudy/NA
1347	2.44	20.9	7.75	0.124	1.92	-32.4	891		18.13	Cloudy/NA
1352	3.66	20.5	7.81	0.131	2.09	-33.4	387		18.98	Cloudy/NA
1357	4.88	21.3	7.89	0.131	1.82	-31.9	509		19.83	Cloudy/NA
1402	6.10	21.2	7.86	0.131	1.91	-30.2	597		19.90	Cloudy/NA
1407	7.32	21.0	7.97	0.133	1.75	-35.6	71100	↓	19.91	Cloudy/NA

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Low Flow

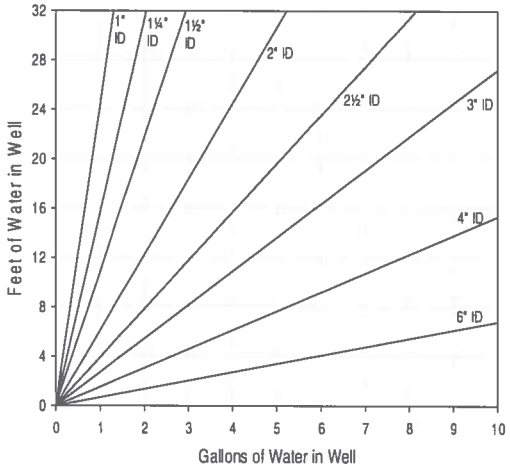
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-9D	40mL	3	HCL	TCL VOC	1505

Comments

Signature Date 2/24/22

2/2
MW-9D

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1417	8.54	21.2	8.08	0.132	1.56	-39.0	>1100	244	19.91	Cloudy/NA
1417	9.76	20.3	8.00	0.131	1.63	-37.8	>1100		19.92	Cloudy/NA
1422	10.98	20.4	7.87	0.129	1.74	-34.8	>1100		19.92	Cloudy/NA
1427	12.20	20.8	7.72	0.126	1.94	-28.7	764		19.92	Cloudy/NA
1432	13.42	20.2	7.57	0.123	2.15	-25.1	591		19.92	Cloudy/NA
1437	14.64	20.1	7.46	0.121	2.35	-21.4	414		19.92	Cloudy/NA
1442	15.86	20.3	7.35	0.118	2.50	-13.1	282		19.92	Cloudy/NA
1447	17.08	20.2	7.28	0.116	269	-11.3	202		19.92	Cloudy/NA
1452	18.30	20.2	7.22	0.114	2.66	-7.6	138		19.92	Clear/NA
1457	19.52	20.1	7.17	0.113	2.71	-4.5	101		19.92	Clear/NA
1502	20.74	20.1	7.13	0.111	2.76	-2.1	77.3	↓	19.92	Clear/NA
1507	21.96	20.1	7.10	0.109	2.81	-0.2	52.9		19.92	Clear/NA
1512	23.18	20.2	7.07	0.108	2.85	1.3	44.8		19.92	Clear/NA

AECOM

Well ID: MW-11

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 3-2-22 Time: Start 1109 am/pm
Project No: 60675505 Finish 1147 am/pm
Site Location: Newberry, SC
Weather Conds: CLEAR, 64 Collector(s): JAMES LEADHART

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 29.65 c. Length of Water Column 15.85 (a-b)

Casing Diameter/Material 2" / PVC

b. Water Table Depth 13.80 d. Calculated System Volume (see back) 2.58

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808458

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor	
1111	0	17.90	4.80	80.58	1.68	510.6	32.76	110	14.15	CLEAR	NO
1116	0.55	17.45	4.89	80.77	0.81	508.0	7.40	90	14.47	"	"
1121	1.00	17.54	4.85	80.69	0.59	487.1	4.20	90	14.87	"	"
1126	1.45	17.38	4.87	80.70	0.49	477.6	2.88	90	15.07	"	"
1131	1.90	17.29	4.89	80.72	0.46	472.4	3.12	90	15.22	"	"
1136	2.35	17.29	4.86	80.76	0.42	467.2	2.92	90	15.43	"	"

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: PERISTALTIC / SODA STRAW + PDB

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-11	40 ml VOA	3	HCL	TCL VOC's	1140
MW-11-PDB	40 ml VOA	3	HCL	TCL VOC's	1100

Comments

Signature [signature] Date 3-2-22

AECOM

Well ID: MW-12

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 3-2-22 Time: Start 0850 am/pm
Project No: 60675505 Finish 0935 am/pm
Site Location: Newberry, SC
Weather Conds: CLEAR, 43° Collector(s): JAMES LEIGHTY

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 30.85 c. Length of Water Column 24.88 (a-b)

Casing Diameter/Material 2" / PVC

b. Water Table Depth 5.97 d. Calculated System Volume (see back) 4.06

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	±1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0851	0	13.79	4.71	83.35	3.94	600.6	57.68	120	6.23	CLEAR / NO
0856	0.60	13.92	4.74	83.37	2.88	589.4	35.43	100	6.51	" "
0901	1.10	14.12	4.78	83.49	2.80	569.5	37.20	100	6.57	" "
0906	1.60	14.15	4.92	83.50	2.78	560.0	41.24	100	6.60	" "
0911	2.10	14.27	4.85	83.62	2.64	551.1	38.25	100	6.60	" "
0916	2.60	14.36	4.85	83.63	2.61	546.5	30.72	100	6.61	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☑
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: PERISTALTIC / SODA STRAW + PDB

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-12	40 ml VOA	3	HCL	TCL VOC's	0920
MW-12-PDB	40 ml VOA	3	HCL	TCL VOC's	0840

Comments

Signature [signature] Date 3-2-22

AECOM

Well ID: MW-12i

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2.22.22 Time: Start 1025 am/pm
Project No: 60675505 Finish 1155 am/pm
Site Location: Newberry, SC
Weather Conds: P.Cloudy, 65° Collector(s): James Leaphart

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 46.55 c. Length of Water Column 42.37 (a-b)

Casing Diameter/Material 2" | PVC

b. Water Table Depth 4.18 d. Calculated System Volume (see back) 6.91

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make: INSITU Model: TROLL 600 Serial Number: 868958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor	
1027	0	15.66	6.68	274.79	1.50	336.2	249.65	140	4.29	CLOUDY	NO
1032	0.70	15.50	6.96	277.00	0.86	318.0	280.15	100	4.29	"	"
1037	1.20	15.60	6.93	277.08	0.54	304.9	230.22	100	4.29	"	"
1042	1.70	15.61	6.90	276.94	0.35	291.3	200.16	100	4.29	"	"
1047	2.20	16.00	7.02	277.53	0.40	320.9	182.15	100	4.29	"	"
1052	2.70	16.10	6.92	276.85	0.43	299.1	171.12	100	4.29	"	"
1057	3.20	16.46	6.87	276.30	0.36	290.0	154.05	90	4.29	"	"

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: PERISTALTIC / SODA STRAWS

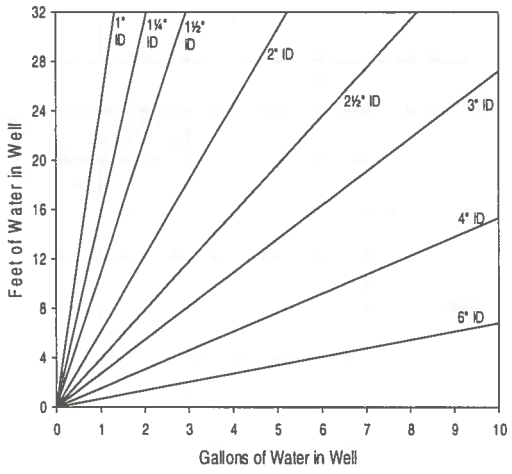
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-12i	40 ml VOA	3	HCL	TCL VOC's	1145

Comments

Signature: James Leaphart Date: 2-22-22

MW-12i

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1102	3.65	16.54	6.82	275.12	0.35	283.0	148.89	90	4.29	cloudy / no
1107	4.10	16.85	6.70	272.82	0.31	269.8	121.16	90	4.29	" "
1112	4.55	17.18	6.69	272.41	0.46	283.1	98.25	90	4.29	" "
1117	5.00	17.03	6.68	271.78	0.49	273.0	81.34	90	4.29	" "
1122	5.45	16.84	6.62	269.77	0.40	263.2	78.42	90	4.29	" "
1127	5.90	16.91	6.61	268.31	0.38	255.4	68.33	90	4.29	" "
1132	6.35	16.70	6.50	263.05	0.34	247.5	60.32	90	4.29	" "
1137	6.80	16.91	6.47	260.58	0.27	238.6	54.39	90	4.29	" "
1142	7.25	16.96	6.47	261.40	0.24	232.6	57.81	90	4.29	" "

AECOM

Well ID: MW-13

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2/22/22 Time: Start 1530 am/pm
Project No: 60675505 Finish 1615 am/pm
Site Location: Newberry, SC
Weather Conds: Partly Cloudy 72° Collector(s): Justin Butler

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 24.73 c. Length of Water Column 22.42 (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 2.31 d. Calculated System Volume (see back) 3.65 GAL

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A103315
	HACH	2100 Q	19120C082318

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1544	Initial	16.4	5.82	0.065	1.85	209.3	37.1	302	3.28	Clear/NA
1549	1.51	16.3	5.81	0.065	1.84	213.3	26.2		3.29	Clear/NA
1554	3.02	16.2	5.81	0.064	1.83	214.7	17.4		3.29	Clear/NA
1559	4.53	16.2	5.82	0.064	1.83	216.4	14.1		3.31	Clear/NA
1604	6.04	16.4	5.83	0.064	1.81	217.8	11.1		3.34	Clear/NA
1609	7.55	16.1	5.82	0.064	1.80	218.7	11.3		3.36	Clear/NA

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Low Flow/Reverse

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-13	40mL	3	HCL	TLC VOC	1610

Comments

Signature Date 2/22/22

AECOM

Well ID: MW-14

Low Flow Ground Water Sample Collection Record

Client: Signify North America | Date: 3-2-22 | Time: Start 1002 am/pm
Project No: 60675505 | Finish 1045 am/pm
Site Location: Newberry, SC
Weather Conds: CLEAR, 59° | Collector(s): James LEDBETTER

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 19.70 c. Length of Water Column 17.36 (a-b)

Casing Diameter/Material 2" / PVC

b. Water Table Depth 2.34 d. Calculated System Volume (see back) 2.83

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	±1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1003	0	~~37.00~~ 13.61	4.66	78.93	2.82	559.8	280.6	100	2.53	CLOUDY / NO
1008	0.50	13.72	4.72	79.10	2.29	544.7	100.99	100	2.58	" "
1013	1.00	13.81	4.73	79.58	2.15	538.7	97.60	100	2.61	" "
1018	1.50	13.94	4.76	79.62	2.05	539.1	74.81	100	2.63	" "
1023	2.00	14.07	4.79	79.57	1.97	534.3	66.80	100	2.64	" "
1028	2.50	14.17	4.86	79.72	1.93	530.8	52.62	100	2.65	" "
1033	3.00	14.22	4.86	79.67	1.92	531.2	55.50	100	2.65	" "

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: PERISTALTIC / SODA STRAW + PDB

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-14	40 ml VOA	3	HCL	TCL VOC's	1035
MW-14-PDB	40 ml VOA	3	HCL	TCL VOC's	0955

Comments

Signature J. Ledbetter Date 3-2-22

AECOM

Well ID: MW-15

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2/22/22 Time: Start 1010 am/pm
Project No: 60675505 Finish 1135 am/pm
Site Location: Newberry, SC
Weather Conds: Cloudy 60° Collector(s): Justin Butler

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 11.30 c. Length of Water Column 8.59 (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 2.71 d. Calculated System Volume (see back) 1.40

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A103315
	HACH	2100 Q	19120C082318

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1023	Initial	13.5	6.05	0.055	4.13	145.0	412	262	4.35	Cloudy/NA
1028	1.31	13.3	6.02	0.055	3.57	158.1	373		4.72	Cloudy/NA
1033	2.62	13.1	5.94	0.056	3.19	170.1	298		5.17	Cloudy/NA
1038	3.93	13.3	5.93	0.056	2.87	179.5	288		5.57	Cloudy/NA
1043	5.24	13.4	5.89	0.056	2.59	185.0	273		5.84	Cloudy/NA
1048	6.55	13.6	5.84	0.057	1.96	193.3	243		6.19	Cloudy/NA
1053	7.86	13.7	5.82	0.057	1.52	197.8	225	↓	6.45	Cloudy/NA

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☑	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

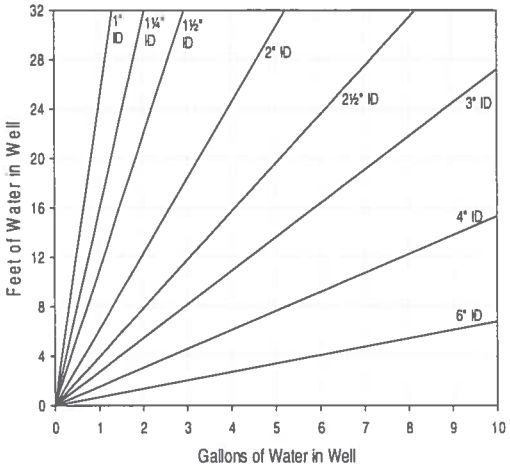
3. SAMPLE COLLECTION: Method: Low Flow / Reverse

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-15	40mL	3	HCL	TCL VOC	1130

Comments

Signature [signature] Date 2/22/22

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1058	9.17	13.7	5.81	0.057	1.31	199.4	230	262	6.66	cloudy /NA
1103	10.48	13.9	5.79	0.057	1.06	201.7	238	↓	6.86	cloudy /NA
1108	11.79	14.0	5.77	0.058	0.89	204.7	253	↓	7.08	cloudy /NA
1113	13.1	14.1	5.75	0.058	0.82	206.6	271	↓	7.28	cloudy /NA
1118	14.41	14.3	5.73	0.058	0.69	207.8	258	↓	7.35	cloudy /NA
1123	15.72	14.7	5.71	0.059	0.57	209.4	234	↓	7.41	cloudy /NA
1128	17.03	14.7	5.72	0.059	0.53	210.4	221	↓	7.46	cloudy /NA

AECOM

Well ID: MW-16

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2-22-22 Time: Start 0852 am/pm
Project No: 60675505 Finish 0923 am/pm
Site Location: Newberry, SC
Weather Conds: P.Cloudy, 57° Collector(s): James Leonhardt

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 19.68 c. Length of Water Column 12.72 (a-b) Casing Diameter/Material 2" / PVC

b. Water Table Depth 6.96 d. Calculated System Volume (see back) 2.07

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0853	0	15.90	4.71	725.53	5.08	412.3	30.27	140	7.25	CLEAR / NO
0858	0.70	15.64	4.81	731.69	4.77	426.3	7.24	140	7.31	" "
0903	1.40	15.61	4.87	737.19	4.77	419.9	0.72	140	7.34	" "
0908	2.10	15.63	4.86	741.35	4.76	419.4	0.77	140	7.35	" "
0913	2.80	15.69	4.90	750.85	4.80	425.6	0.11	140	7.35	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Peristaltic / Soda Straw

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-16	40ml VOA	3	HCL	TCL VOC's	0915

Comments

Signature Date 2-22-22

AECOM

Well ID: MW-17

Low Flow Ground Water Sample Collection Record

Client: Signify North America | Date: 2-22-22 | Time: Start 0938 am/pm | Finish 1007 am/pm
Project No: 60675505
Site Location: Newberry, SC
Weather Conds: P. CLOUDY, 61° | Collector(s): JAMES LEIGHTY

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 29.70 c. Length of Water Column 24.39 (a-b)

Casing Diameter/Material 2" / PVC

b. Water Table Depth 5.31 d. Calculated System Volume (see back) 3.98

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0939	0	15.61	5.35	138.24	2.48	408.7	30.81	150	5.47	CLEAR / NO
0944	0.75	15.84	5.28	128.45	1.56	416.5	5.36	150	5.48	" "
0949	1.50	15.93	5.26	127.68	1.40	417.4	1.91	150	5.48	" "
0954	2.25	15.96	5.26	127.39	1.30	412.7	0.13	150	5.49	" "
0959	3.00	16.04	5.20	127.06	1.29	413.0	0.73	150	5.49	" "

(JL)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: PERISTALTIC / SODA STRAW

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-17	40ml VOA	3	HCL	TCL VOC's	1000

Comments

Signature J Leighty Date 2-22-22

AECOM

Well ID: MW-17D

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2/22/22 Time: Start 0930 am/pm
Project No: 60675505 Finish 1005 am/pm
Site Location: Newberry, SC
Weather Conds: Cloudy 60° Collector(s): Justin Butler

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 46.99 c. Length of Water Column 38.85 (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 8.14 d. Calculated System Volume (see back) 6.33

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A103315
	HACH	2100 Q	19120C082318

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0932	Initial	22.6	5.54	0.067	1.93	220.2	1.24	302	8.57	Clear/NA
0937	1.51	22.8	5.53	0.061	1.80	225.6	1.78	↓	8.61	Clear/NA
0942	3.02	22.6	5.52	0.059	1.73	226.7	2.24	↓	8.64	Clear/NA
0947	4.53	22.6	5.54	0.058	1.73	226.4	1.69	↓	8.64	Clear/NA
0952	6.04	22.5	5.53	0.058	1.70	225.7	1.51	↓	8.64	Clear/NA
0957	7.55	22.6	5.52	0.058	1.67	224.6	1.27	↓	8.64	Clear/NA

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Low Flow / Reverse

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-17D	40mL	3	HCL	VOC	1000

Comments

Signature [signature] Date 2/22/22

AECOM

Well ID: MW-18

Low Flow Ground Water Sample Collection Record

Client: Signify North America | Date: 2-22-22 | Time: Start 1413 am/pm
Project No: 60675505 | Finish 1458 am/pm
Site Location: Newberry, SC
Weather Conds: P.Cloudy, 73° | Collector(s): James Leadhart

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 21.05 c. Length of Water Column 14.67 (a-b)

Casing Diameter/Material 2" / PVC

b. Water Table Depth 6.38 d. Calculated System Volume (see back) 2.39

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1415	0	18.60	7.22	94.93	6.16	394.1	9.19	140	6.54	CLEAR / NO
1420	0.70	17.84	4.84	62.24	5.79	494.8	1.14	140	6.57	" "
1425	1.40	17.77	4.75	60.65	5.64	505.4	0.68	140	6.58	" "
1430	2.10	17.70	4.86	60.50	5.63	504.1	0.57	140	6.58	" "
1435	2.80	17.67	5.04	60.51	5.64	502.9	0.05	140	6.59	" "
1440	3.50	17.79	5.12	60.56	5.64	503.8	0	140	6.59	" "
1445	4.20	17.80	5.16	60.35	5.63	505.2	0	140	6.60	" "

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Peristaltic / Soda Straw

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-18	40 ml VOA	3	HCl	TCL VOC's	1450

Comments

Signature [signature] Date 2-22-22

AECOM

Well ID: MW-18D

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2-22-22 Time: Start 1317 am/pm
Project No: 60675505 Finish 1355 am/pm
Site Location: Newberry, SC
Weather Conds: P. Cloudy, 72° Collector(s): James Leaphart

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 65.50 c. Length of Water Column 58.95 (a-b)

b. Water Table Depth 6.55 d. Calculated System Volume (see back) 9.61

Casing Diameter/Material: 2" / PVC

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1318	0	18.63	11.63	3638	7.93	56.0	0.72	150	6.90	CLEAR
1323	0.75	17.83	11.87	3700	7.84	58.2	0	150	7.67	"
1328	1.50	17.64	11.85	3705	7.80	64.3	0	100	8.36	"
1333	2.00	17.45	11.83	3708	7.76	70.0	0	100	9.10	"
1338	2.50	17.66	11.81	3704	7.73	70.5	0	100	9.85	"
1343	3.00	17.71	11.80	3704	7.71	71.8	0	100	10.54	"

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: PERISTALTIC / SODA STRAW

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-18D	40ml VOA	3	HCL	TCL VOCs	1345

Comments

Signature [signature] Date 2-22-22

AECOM

Well ID: TMW-21

Low Flow Ground Water Sample Collection Record

Client: Signify North America | Date: 2-28-22 | Time: Start 1332 am/pm
Project No: 60675505 | Finish 1420 am/pm
Site Location: Newberry, SC
Weather Conds: CLEAR, 55° | Collector(s): James Leathart

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 28.17 c. Length of Water Column 9.77 (a-b)

Casing Diameter/Material 1" / PVC

b. Water Table Depth 18.40 d. Calculated System Volume (see back) 0.40

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make: INSITU | Model: TROLL 600 | Serial Number: 808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1334	0	23.63	4.45	50.15	1.81	404.7	7.34	100	19.25	CLEAR / NO
1339	0.50	21.31	4.40	45.97	0.94	423.0	21.77	90	19.30	" "
1344	1.00	20.82	4.47	45.51	0.67	426.1	14.72	90	19.32	" "
1349	1.45	20.66	4.46	45.24	0.53	424.9	7.73	90	19.34	" "
1354	1.90	20.57	4.39	44.94	0.49	424.0	3.42	90	19.35	" "
~~1359~~	~~2.35~~		~~4.44~~		~~0.43~~	~~4~~	~~5.~~	~~90~~	~~19.35~~	" "

(JL)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: PERISTALTIC / SODA STRAW - VOC'S

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
TMW-21	40 ml VOA	3	HCL	TCL VOC's	1355
	40ml VOA	2 / 2	HCL / HCL	DISS. GAS / Fe^{2+}	
	250 ml Poly	1 / 1	NONE / H_2SO_4	NO_3, NO_2, SO_4, ALK / TOC	
	250 ml Poly	1 / 1	HNO_3 / NONE	Fe / DISS Fe	
	1 LITER Poly	1	NONE	QUANTARIZOY CHLOR	

Comments

Signature: James Leathart Date: 2-28-22

AECOM

Well ID: TMW-22

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2-28-22 Time: Start 1449 am/pm
Project No: 60675505 Finish 1558 am/pm
Site Location: Newberry, SC
Weather Conds: CLEAR, 61° Collector(s): JAMES LEMPHERS

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 28.00 c. Length of Water Column 10.51 (a-b) Casing Diameter/Material 1" / PVC

b. Water Table Depth 17.49 d. Calculated System Volume (see back) 0.43

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	±1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1451	0	21.82	4.50	37.24	1.97	465.6	37.08	100	18.50	CLEAR / NO
1456	0.50	22.08	4.40	37.22	1.05	468.1	82.61	90	18.50	" "
1501	1.00	22.13	4.51	36.50	0.72	468.3	74.80	90	18.50	" "
1506	1.45	22.15	4.44	36.83	0.62	473.4	38.89	90	18.51	" "
1511	1.90	22.17	4.50	37.34	0.55	476.4	15.70	90	18.50	" "
1516	2.35	22.17	4.44	37.32	0.49	478.0	5.36	90	18.50	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: PERISTALTIC / SODA STRAW – VOC's

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
TMW-22	40 ml VOA	3	HCL	TCL VOC's	1520
	40 ml VOA	2 / 2	HCL / HCL	Diss. Gas / Fe 2+	
	250 ml Poly	1 / 1	None / H_2SO_4	NO_3, NO_2, SO_4, ALK / TOC	
	250 ml Poly	1 / 1	HNO_3 / None	Fe / Diss Fe	
	1 Liter Poly	1	NONE	QUANT ARRAY CHLOR	

Comments

Signature Date 2-28-22

AECOM

Well ID: TMW-23

Low Flow Ground Water Sample Collection Record

Client: Signify North America | Date: 3-1-22 | Time: Start 0946 am/pm | Finish 1028 am/pm
Project No: 60675505
Site Location: Newberry, SC
Weather Conds: CLEAR, 44° | Collector(s): James Leaphart

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 25.85 c. Length of Water Column 9.30 (a-b) Casing Diameter/Material 1" / PVC

b. Water Table Depth 16.55 d. Calculated System Volume (see back) 0.38

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0948	0	21.75	4.19	38.55	4.53	534.1	150.18	90	17.14	CLOUDY / NO
0953	0.45	22.54	4.28	38.67	3.82	532.0	155.16	90	17.28	" "
0958	0.90	22.67	4.30	38.30	3.51	531.3	168.49	90	17.24	" "
1003	1.35	22.80	4.27	37.47	2.95	527.0	100.02	90	17.20	" "
1008	1.80	22.94	4.27	37.14	2.62	525.8	29.89	90	17.20	" "
1013	2.25	22.99	4.20	36.93	2.41	521.9	2.08	90	17.18	" "
1018	2.70	23.01	4.19	36.93	2.38	523.1	2.55	90	17.18	" "

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: PERISTALTIC / SODA STRAW

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
TMW-23	40 ml VOA	3	HCL	TCL VOC's	1020

Comments

Signature J Leaphart Date 3-1-22

AECOM

Well ID: TMW-24

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2/28/22 Time: Start 1045 am/pm
Project No: 60675505 Finish 1210 am/pm
Site Location: Newberry, SC
Weather Conds: Clear Collector(s): Justin Butler

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 24.86 c. Length of Water Column 6.37 (a-b)

Casing Diameter/Material 1" PVC

b. Water Table Depth 18.49 d. Calculated System Volume (see back) 0.26 GAL

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A103815
	HACH	2100 Q	19120C082318

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1051	Initial	22.1	4.56	0.060	2.18	134.7	298	168	19.84	Cloudy/NA
1056	0.84	22.2	4.56	0.060	1.79	118.2	196		19.84	Cloudy/NA
1101	1.68	22.2	4.56	0.059	1.81	107.6	150 500		19.84	Cloudy/NA
1106	2.52	22.2	4.56	0.058	1.89	98.1	~~500~~ 155 1100		19.84	Cloudy/NA
1111	3.36	22.2	4.57	0.057	1.83	93.3	~~2100~~ 100		19.84	Cloudy/NA
1116	4.20	22.1	4.57	0.058	1.73	85.9	146		19.84	Cloudy/NA
1121	5.04	22.1	4.57	0.058	164	78.8	47.4	↓	19.84	Clear/NA

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Low Flow / Reverse

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
TMW-24	40mL	3	HCL	TCL VOC	1140
TMW-24	40mL	2	HCL	Diss Gases	1140
TMW-24	40mL	2	HCL	Ferrous Iron	1140
TMW-24	250mL	1	None	$NO_3/NO_2/SO_4$/Alk	1140
TMW-24	250mL	1	H_2SO_4	TOC	1140
TMW-24	250mL	1	None	Diss Metals Fe	1140
TMW-24	250mL	1	HNO_3	Metals Fe	1140
TMW-24	1L	1	None	Quanti-Tray Chlor	1140

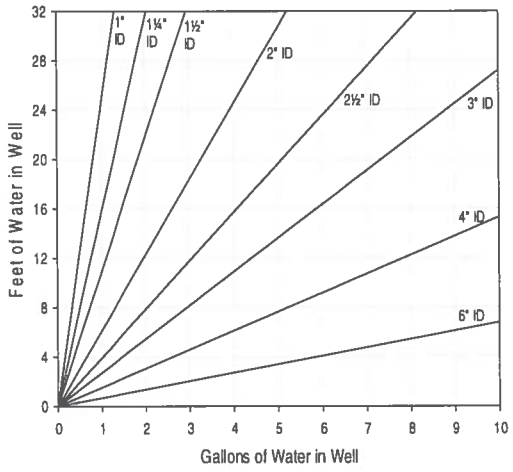
Comments

Signature _____ Date _____

2/2

TMW-24

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1126	5.88	22.0	4.58	0.058	1.59	74.2	20.2	168	19.84	Clear/NA
1131	6.72	21.9	4.58	0.058	1.54	71.1	16.6	↓	19.84	Clear/NA
1136	7.56	22.0	4.57	0.058	1.58	67.5	8.20	↓	19.84	Clear/NA

AECOM

Well ID: TMW-25

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2/28/22 Time: Start 1440 am/pm
Project No: 60675505 Finish 1530 am/pm
Site Location: Newberry, SC
Weather Conds: clear 63° Collector(s): Justin Butler

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 24.92 c. Length of Water Column _____ (a-b)

Casing Diameter/Material 1" PVC

b. Water Table Depth 16.58 d. Calculated System Volume (see back) _____

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A10 3315
	HACH	2100 Q	19120CD 3315

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1447	Initial	21.8	5.42	0.053	2.48	67.6	48.5		16.71	clear/NA
1452		21.9	5.32	0.048	2.81	51.7	52.6		16.71	clear/NA
1457		21.9	5.25	0.046	3.34	55.3	41.0		16.71	clear/NA
1502		21.9	5.20	0.043	3.89	63.7	21.3		16.71	clear/NA
1507		22.0	5.08	0.043	4.33	71.5	6.97		16.71	clear/NA
1512		21.9	5.06	0.042	4.29	75.7	5.37		16.71	clear/NA
1517		22.0	5.05	0.042	4.37	80.1	3.59		16.71	clear/NA

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

_____

3. SAMPLE COLLECTION: Method: Low Flow / Reverse

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
TMW-25	40ML	3	HCL	TCL VOC	1520

Comments _____

Signature _____ Date 2/28/22

AECOM

Well ID: TMW-29

Low Flow Ground Water Sample Collection Record

Client: Signify North America | Date: 3-1-22 | Time: Start 1040 am/pm | Finish 1125 am/pm
Project No: 60675505
Site Location: Newberry, SC
Weather Conds: CLOUDY | Collector(s): JAMES LEADHART

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 12.78 c. Length of Water Column 1.18 (a-b)

Casing Diameter/Material 1" / PVC

b. Water Table Depth 11.60 d. Calculated System Volume (see back) 0.048

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1047	0	21.31	4.49	37.75	8.01	539.1	276.76	50	DRY	CLEAR/NO

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☐	☒	☐
Have parameters stabilized	☐	☒	☐

(continued on back)

If no or N/A - Explain below.

WELL DRY @ 1 VOL.

3. SAMPLE COLLECTION: Method: PERISTALTIC

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
TMW-29	40 ml VOA	3	HCL	TCL VOC's	1055
	250ml POLY	1	NONE	F&C TDS	
	250ml POLY	1	NONE	CHLORIDE	

Comments

Signature [signature] Date 3-1-22

AECOM

Well ID: TMW-30

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 3-1-22 Time: Start 0908 am/pm
Project No: 60675505 Finish 0938 am/pm
Site Location: Newberry, SC
Weather Conds: CLEAR, 43° Collector(s): JAMES LEIGHTY

1. **WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 25.07 c. Length of Water Column 10.9 (a-b) Casing Diameter/Material 1" | PVC

b. Water Table Depth 14.17 d. Calculated System Volume (see back) 0.45

2. **WELL PURGE DATA**

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0910	0	19.25	4.84	59.20	6.95	489.3	133.90	100	14.60	CLOUDY / NO
0915	0.50	20.90	4.82	57.21	6.52	505.7	130.16	90	14.56	" "
0920	0.95	21.01	4.81	56.62	6.41	510.9	129.85	90	14.51	" "
0925	1.40	21.30	4.81	56.38	6.36	514.8	126.55	90	14.55	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. **SAMPLE COLLECTION:** Method: PERISTALTIC / SODA STRAW

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
TMW-30	40 ml VOA	3	HCL	TCL VOC's	0930

Comments: OPERATOR NEEDS TO WORK IN THIS AREA ASAP.

Signature: [signature] Date: 3-1-22

AECOM

Well ID: TMW-31

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 3-1-22 Time: Start 1133 am/pm
Project No: 60675505 Finish 1210 am/pm
Site Location: Newberry, SC
Weather Conds: CLEAR, 57° Collector(s): JAMES LEAVELLE

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 21.65 c. Length of Water Column 10.01 (a-b)

Casing Diameter/Material 1" / PVC

b. Water Table Depth 11.64 d. Calculated System Volume (see back) 0.41

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1135	0	23.75	4.87	92.57	7.07	805.0	98.78	100	12.14	LIGHT PURPLE
1140	0.50	23.92	4.76	73.45	6.38	856.0	29.38	100	12.18	"
1145	1.00	24.09	4.65	64.85	5.55	858.5	30.53	100	12.20	"
1150	1.50	24.16	4.55	63.56	5.33	862.8	5.95	100	12.21	"
1155	2.00	24.25	4.62	63.22	5.17	869.1	1.02	100	12.22	"

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: PERISTALTIC / SODA STRAW - VOC'S

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
TMW-31	40 ml VOA	3	HCL	TCL VOC'S	1200
	250 ml POLY	1	NONE	~~FOR~~ TDS	
	250 ml POLY	1	NONE	CHLORIDE	

Comments

Signature [signature] Date 3-1-22

AECOM

Well ID: TMW-33

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2/28/22 Time: Start 1310 am/pm
Project No: 60675505 Finish 1400 am/pm
Site Location: Newberry, SC
Weather Conds: clear 62° Collector(s): Justin Butler

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 25.01 c. Length of Water Column 7.3 (a-b) Casing Diameter/Material 1" PVC

b. Water Table Depth 17.71 d. Calculated System Volume (see back) 0.30 GAL

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A10 3315
	HACH	2100 Q	191200082318

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1319	Initial	22.0	4.52	0.054	3.08	67.4	32.7	126	18.68	clear/NA
1324	0.63	22.0	4.51	0.054	2.52	59.6	9.83	↓	18.17	clear/NA
1329	1.26	22.0	4.52	0.053	2.61	63.4	11.50		19.23	clear/NA
1334	1.89	22.1	4.52	0.053	2.37	66.7	5.25		19.32	clear/NA
1339	2.52	22.0	4.52	0.054	2.28	67.1	4.63		19.35	clear/NA
1344	3.15	22.0	4.52	0.053	2.22	67.7	3.08		19.35	clear/NA
1349	3.78	22.0	4.51	0.054	2.18	67.9	2.96	↓		

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Low Flow / Reverse

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
TMW-33	40mL	3	HCL	TCL VOC	1350

Comments

Signature Justin Butler Date 2/28/22

AECOM

Well ID: MW-1

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 3.2.22 Time: Start 1427 am/pm
Project No: 60675505 Finish 1505 am/pm
Site Location: Newberry, SC
Weather Conds: CLEAR, 73° Collector(s): JAMES LEADHART

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 14.25 c. Length of Water Column 4.20 (a-b) Casing Diameter/Material 2" | PVC

b. Water Table Depth 10.05 d. Calculated System Volume (see back) 0.68

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1429	0	21.22	4.36	37.61	3.64	560.1	89.52	100	10.11	CLOUDY / NO
1434	0.50	20.17	4.51	37.52	3.31	555.1	11.55	100	10.14	CLEAR "
1439	1.00	20.00	4.52	37.70	3.44	557.8	1.61	100	10.17	" "
1444	1.50	19.90	4.54	37.69	3.57	559.8	0.02	100	10.18	" "
1449	2.00	19.91	4.52	37.77	3.62	559.5	0.01	100	10.18	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☑
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: PERISTALTIC | SODA STRAW + PDB

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-2	40 ml VOA	3	HCL	TCL VOC's	1450
MW-2-PDB	40 ml VOA	3	HCL	TCL VOC's	1420

Comments

Signature Date 3-2-22

AECOM

Well ID: MW-2

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 3-1-22 Time: Start 1413 am/pm
Project No: 60675505 Finish 1445 am/pm
Site Location: Newberry, SC
Weather Conds: CLEAR, 63° Collector(s): JAMES LEMPHART

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 24.76 c. Length of Water Column 17.59 (a-b) Casing Diameter/Material 2" / PVC

b. Water Table Depth 7.17 d. Calculated System Volume (see back) 2.87

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1414	0	19.73	5.14	25.58	8.46	880.7	15.40	120	7.31	CLEAR / NO
1419	0.60	19.46	4.65	21.74	8.36	844.3	0	100	7.50	" "
1424	1.10	19.57	4.59	21.72	8.28	835.6	0.15	100	7.50	" "
1429	1.60	19.52	4.66	21.68	8.35	827.0	0.07	100	7.50	" "
1434	2.10	19.61	4.63	21.74	8.30	821.6	0.05	100	7.51	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: PERISTALTIC / SODA STRAW - VOCs

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-2	40 ml VOA	3	HCL	TCL VOCs	1435
	250 ml POLY	1	NONE	TDS	
	250 ml POLY	1	NONE	CHLORIDE	

Comments

Signature Date 3-1-22

AECOM

Well ID: MW-2i

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 3-4-22 Time: Start 1346 am/pm
Project No: 60675505 Finish 1505 am/pm
Site Location: Newberry, SC
Weather Conds: Collector(s): JAMES LEIGHART

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 44.84 c. Length of Water Column 34.34 (a-b)

Casing Diameter/Material 2" / PVC

b. Water Table Depth 10.50 d. Calculated System Volume (see back) 5.60

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1348	0	22.13	5.59	136.32	2.28	466.8	92.75	100	10.53	CLEAR/NO
1353	0.50	20.67	5.71	150.99	2.18	430.3	84.79	100	10.90	" "
1358	1.00	20.20	5.71	145.59	1.79	420.5	76.54	100	11.19	" "
1403	1.50	19.84	5.60	141.59	1.57	410.7	55.19	100	11.42	" "
1408	2.00	19.65	5.58	140.48	1.49	410.5	45.33	100	11.78	" "
1413	2.50	19.67	5.65	140.10	1.46	404.0	40.21	100	12.19	" "
1418	3.00	19.73	5.48	124.67	1.81	407.4	36.96	100	12.41	" "

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: PERISTALTIC / SODA STRAW + PDB

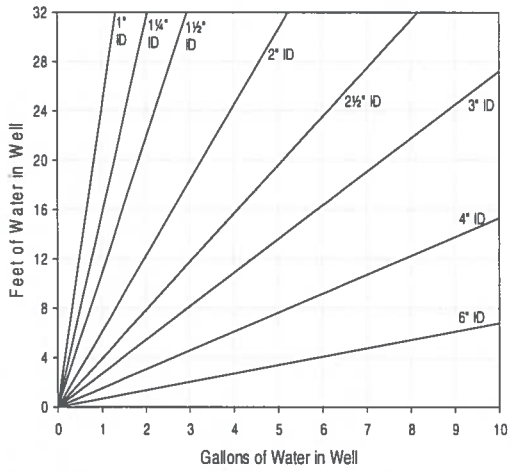
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-2i	40 ml VOA	3	HCL	TCL VOCs	1440
MW-2i-MS	"	"	"	"	"
MW-2i-MSD	"	"	"	"	"
MW-2i-PDB	"	"	"	"	1335

Comments

Signature Date 3-4-22

MW-2i

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor	
1423	3.50	19.75	5.44	119.22	2.22	421.1	19.63	100	12.50	CLEAR	NO
1428	4.00	19.79	5.42	119.46	2.06	420.5	21.75	100	12.55	"	"
1433	4.50	19.73	5.51	119.31	2.05	421.9	20.97	100	12.61	"	"
1438	5.00	19.66	5.42	118.09	2.41	425.2	12.62	100	12.70	"	"

AECOM

Well ID: MW-2D

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2/25/22 Time: Start 1230 am/pm
Project No: 60675505 Finish 1355 am/pm
Site Location: Newberry, SC
Weather Conds: Partly Cloudy 70 Collector(s): Justin Butler

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 85.80 c. Length of Water Column 77.31 (a-b)

Casing Diameter/Material 4" PVC

b. Water Table Depth 8.49 d. Calculated System Volume (see back) 50.47 GAL

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
YSI	Pro Plus	19A103315
HACH	2100 Q	19120C082315

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1242	Initial	22.8	10.47	0.145	5.63	-48.3	3.23	630	9.47	Clear/NA
1247	3.15	21.5	10.49	0.149	6.00	-48.6	2.17		10.66	Clear/NA
1252	6.30	21.2	10.51	0.150	5.94	-49.9	1.48		11.86	Clear/NA
1257	9.45	22.4	10.50	0.147	5.17	-50.4	1.00		12.90	Clear/NA
1302	12.60	22.0	10.48	0.151	5.91	-49.4	0.88		13.94	Clear/NA
1307	15.75	22.6	10.48	0.150	5.41	-54.4	0.68		14.77	Clear/NA
1312	18.90	22.4	10.46	0.151	5.86	-55.3	0.79	✓	15.66	Clear/NA

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Low Flow

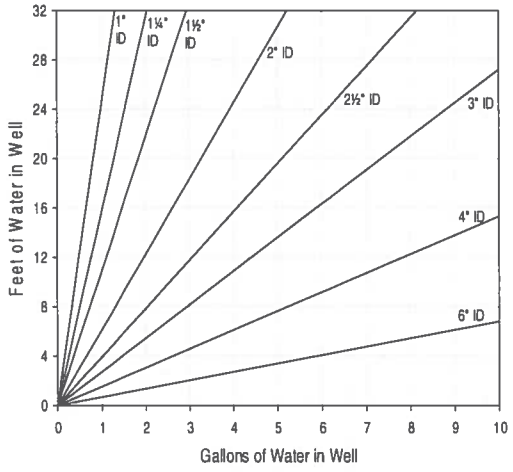
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-2D	40mL	3	HCL	TCL VOC	1335

Comments

Signature Date 2/25/22

MW-2D

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1317	22.05	22.6	10.45	0.148	5.55	-52.0	0.68	630	16.67	Clear/NA
1322	25.20	22.8	10.43	0.149	4.81	-51.8	0.64	↓	17.74	Clear/NA
1327	28.35	22.9	10.41	0.148	4.85	-51.5	0.58	↓	17.70	Clear/NA
1332	31.50	23.1	10.39	0.148	4.92	-53.9	0.59	↓	17.85	Clear/NA

AECOM

Well ID: MW-3

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2-23-22 Time: Start 1250 am/pm
Project No: 60675505 Finish 1325 am/pm
Site Location: Newberry, SC
Weather Conds: Cloudy, 64° Collector(s): James Leppart

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 24.77 c. Length of Water Column 12.28 (a-b)

Casing Diameter/Material 2" / PVC

b. Water Table Depth 12.49 d. Calculated System Volume (see back) 2.0

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1251	0	18.43	4.57	104.96	2.01	468.7	0.02	120	11.18	CLEAR / NO
1256	0.60	18.70	4.76	103.20	0.99	446.8	0	120	11.41	" "
1301	1.10	18.77	4.80	103.18	0.89	441.5	0	100	11.41	" "
1306	1.60	18.94	4.80	103.30	0.76	436.5	0	100	11.41	" "
1311	2.10	19.03	4.81	103.11	0.71	433.6	0	100	11.41	" "
1316	2.60	19.01	4.80	103.27	0.69	433.6	0	100	11.41	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☑
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Peristaltic / Soda Straw

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-3	40 ml VOA	3	HCL	TCL VOC's	1320

Comments

Signature: James Leppart Date: 2-23-22

AECOM

Well ID: MW-31

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2-23-22 Time: Start 1041 am/pm
Project No: 60675505 Finish 1130 am/pm
Site Location: Newberry, SC
Weather Conds: CLOUDY, 61° Collector(s): JAMES LEADHART

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 55.10 c. Length of Water Column 43.81 (a-b) Casing Diameter/Material 2" / PVC

b. Water Table Depth 11.29 d. Calculated System Volume (see back) 7.14

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	868958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1042	0	18.	6.55	214.32	5.41	438.0	20.46	140	11.73	CLEAR / NO
1047	0.70	18.48	5.18	172.56	0.91	380.7	1.32	100	11.86	" "
1052	1.20	18.61	5.17	171.82	0.51	341.7	0	100	11.93	" "
1057	1.70	18.46	5.15	171.70	0.37	331.5	0	100	11.96	" "
1102	2.20	18.47	5.19	171.60	0.28	325.7	0	100	11.98	" "
1107	2.70	18.48	5.16	171.79	0.26	320.8	0	100	11.99	" "
1112	3.20	18.53	5.14	171.90	0.26	317.0	0	100	12.00	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: PERISTALTIC / SODA STRAW

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-31	40ml VOA	3	HCL	TCL VOC's	1115
DUP-01	40ml VOA	3	HCL	TCL VOC's	—

Comments

Signature [signature] Date 2-23-22

AECOM

Well ID: MW-3D

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2/25/22 Time: Start 1030 am/pm
Project No: 60675505 Finish 1145 am/pm
Site Location: Newberry, SC
Weather Conds: Partly Cloudy 62° Collector(s): Justin Butler

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 105.02 c. Length of Water Column 93.61 (a-b)

Casing Diameter/Material 4" PVC

b. Water Table Depth 11.41 d. Calculated System Volume (see back) 61.11 GAL

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A103315
	HACH	2100Q	19120C082318

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1049	~~Initial~~ 2.73 ~~Purged~~	19.3	7.38	0.253	1.93	-2.0	42.4	694	12.73	Clear/NA
1054	6.67 3.94	19.6	7.39	0.253	1.91	-2.8	36.8		13.76	Clear/NA
1059	10.4 6.84	19.0	7.36	0.252	1.74	-2.1	24.1		14.79	Clear/NA
1104	14.18 10.44	19.1	7.31	0.249	1.77	6.8	21.8		15.55	Clear/NA
1109	17.96 13.38	19.2	7.29	0.248	1.71	10.3	18.1		16.31	Clear/NA
1114	21.74 17.32	19.3	7.27	0.247	1.67	14.6	16.3		16.61	Clear/NA
1119	25.52 20.96	19.6	7.27	0.247	1.73	15.5	14.8		16.75	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Low Flow

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-3D	40mL	3	HCL	TCL VOC	1120
MW-3D-MS	40mL	3	HCL	TCL VOC	1120
MW-3D-MSD	40mL	3	HCL	TCL VOC	1120

Comments

Signature Date 2/25/22

AECOM

Well ID: MW-4

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2-28-22 Time: Start 1028 am/pm
Project No: 60675505 Finish 1110 am/pm
Site Location: Newberry, SC
Weather Conds: CLEAR, 50° Collector(s): JAMES LEADBETTER

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 25.15 c. Length of Water Column 8.58 (a-b) Casing Diameter/Material 2" / PVC

b. Water Table Depth 16.57 d. Calculated System Volume (see back) 1.40

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1030	0	17.37	5.33	268.16	1.35	240.1	2.07	140	16.65	CLEAR/NO
1035	0.70	18.85	5.36	267.59	0.86	210.1	0.22	140	16.75	" "
1040	1.40	19.20	5.36	267.85	0.84	201.6	0.75	120	16.75	" "
1045	2.00	18.98	5.37	268.21	0.88	194.8	0.09	120	16.75	" "
1050	2.60	18.96	5.37	268.20	0.81	190.2	0.05	120	16.75	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: PERISTALTIC / SODA STRAW

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-4	40ml VOA	3	HCL	TCL VOC's	1055

Comments

Signature Date 2-28-22

AECOM

Well ID: MW-5

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2/24/22 Time: Start 0915 am/pm
Project No: 60675505 Finish 1025 am/pm
Site Location: Newberry, SC
Weather Conds: Clear 65° Collector(s): Justin Butler

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 25.61 c. Length of Water Column 9.35 (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 16.26 d. Calculated System Volume (see back) 1.52 GAL

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A10.3315
	HACH	2100 Q	19120C082318

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0924	Initial	19.1	5.29	0.078	2.25	77.0	3.17	190	16.40	Clear NA
0929	0.95	19.2	5.29	0.067	2.26	69.3	2.19		16.41	Clear NA
0934	1.90	19.2	5.28	0.065	2.20	65.6	1.18		16.41	Clear NA
0939	2.85	19.2	5.28	0.065	2.21	63.2	1.31		16.42	Clear NA
0944	3.80	19.2	5.27	0.064	2.30	60.7	1.48		16.42	Clear NA
0949	4.75	19.3	5.27	0.064	2.24	66.2	1.29		16.43	Clear NA
0954	5.70	19.4	5.28	0.063	2.21	57.8	1.28	↓	16.43	Clear NA

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Low Flow / Reverse

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-5	40 mL	3	HCL	TCL VOC	0955
MW-5	40 mL	2	HCL	Diss Gases	0955
MW-5	40 mL	2	HCL	Ferrous Iron	0955
MW-5	250 mL	1	None	$NO_3/NO_2/SO_4$/Alk	0955
MW-5	250 mL	1	H_2SO_4	TOC	0955
MW-5	250 mL	1	None	Diss Metals Fe	0955
MW-5	1 L	1	HNO3 None	Metals Fe	0955
				QuadArray chlor	

Comments

Signature Date 2/24/22

AECOM

Well ID: MW-5i

Low Flow Ground Water Sample Collection Record

Client: Signify North America | Date: 3.3.22 | Time: Start 1304 am/pm
Project No: 60675505 | Finish 1430 am/pm
Site Location: Newberry, SC
Weather Conds: CLEAR, 79° | Collector(s): JAMES LEIGHTY

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 55.38 c. Length of Water Column 38.74 (a-b)

b. Water Table Depth 16.64 d. Calculated System Volume (see back) 6.31

Casing Diameter/Material 2" / PVC

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1305	0	22.25	5.48	148.46	4.75	471.8	1.92	120	16.88	CLEAR / NO
1310	0.60	21.24	5.54	150.02	4.13	481.4	0.29	120	16.97	" "
1315	1.20	20.76	5.61	150.65	3.65	494.9	0	120	16.98	" "
1320	1.80	20.85	5.52	152.23	3.46	474.0	0.27	120	16.99	" "
1325	2.40	20.71	5.59	194.92	3.38	454.9	0	120	17.00	" "
1330	3.00	20.39	5.60	218.63	3.28	478.7	0.09	120	17.00	" "
1335	3.60	20.59	5.60	225.11	2.90	491.4	0	120	17.01	" "

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: PERISTALTIC / SOLA STRAW + PDB

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-5i	40ml VOA	3	HCL	TCL VOC's	1355
	40ml VOA	2 / 2	HCL / HCL	DISS. GAS / Fe 2+	
	250ml POLY	1 / 1	HNO3 / NONE	Fe, Mn / DISS. Fe, Mn	
	250ml POLY	1 / 1	NONE / H2SO4	NH3, NO2, SO4 / ALK / TOC	
	1 LITER POLY	1	NONE	QUANTAB CHLOR	
Comments					
MW-5i-PDB	40ml VOA	3	HCL	TCL VOC's	1300

• PDB WAS IN TOP OF WATER COLUMN

Signature [signature] Date 3-3-22

Purge Volume Calculation

MW-5i

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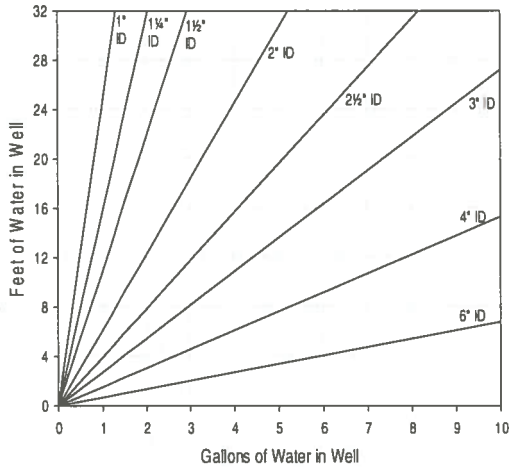


Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1340	4.20	20.50	5.56	220.71	2.86	463.9	1.40	120	17.02	CLEAR / NO
1345	4.80	20.68	5.56	216.89	3.06	455.1	0	120	17.02	" "
1350	5.60	20.41	5.62	223.07	2.93	460.4	1.54	120	17.03	" "

AECOM

Well ID: MW-6

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2-24-22 Time: Start 1027 am/pm
Project No: 60675505 Finish 1131 am/pm
Site Location: Newberry, SC
Weather Conds: CLEAR, 64°70° Collector(s): JAMES LEAPHART

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 25.38 c. Length of Water Column 7.43 (a-b) Casing Diameter/Material 2" / PVC

b. Water Table Depth 17.95 d. Calculated System Volume (see back) 1.21

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used: Make: INSITU Model: TROLL 600 Serial Number: 808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1029	0	20.91	4.37	48.72	1.06	416.8	41.85	140	18.14	CLEAR / NO
1034	0.70	20.05	4.49	53.57	0.47	392.2	13.48	140	18.15	" "
1039	1.40	19.97	4.58	59.67	0.31	370.8	2.23	140	18.15	" "
1044	2.10	19.91	4.62	62.68	0.27	357.9	3.65	140	18.16	" "
1049	2.80	19.89	4.67	67.92	0.24	344.1	3.36	140	18.16	" "
1054	3.50	19.90	4.69	68.19	0.26	341.6	0.18	140	18.16	" "
1059	4.20	19.96	4.72	69.27	0.29	340.3	0.36	140	18.16	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: PERISTALTIC / SODA STRAW - VOC's

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-6	40 ml VOA	3	HCL	TCL VOC's	1100
	40 ml VOA	2 / 2	HCL / HCL	DISS GAS / Fe 2+	
	250 ml POLY	1 / 1	NONE / H2SO4	NO3 NO2, SO4 ALK / TOC	
	250 ml POLY	1 / 1	HNO3 / NONE	'Fe / DISS. Fe	
	1 LITER POLY	1	NONE		

Comments

Signature: J A Leaphart Date: 2-24-22

AECOM

Well ID: MW-6i

Low Flow Ground Water Sample Collection Record

Client: Signify North America | Date: 2-24-22 | Time: Start 0918 am/pm
Project No: 60675505 | Finish 1015 am/pm
Site Location: Newberry, SC
Weather Conds: P. Cloudy, 63° | Collector(s): James Leaphart

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 50.17 c. Length of Water Column 32.57 (a-b)

Casing Diameter/Material 2" / PVC

b. Water Table Depth 17.60 d. Calculated System Volume (see back) 5.31

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	±1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0920	0	19.27	4.76	67.24	3.02	515.5	38.43	120	17.75	CLEAR / NO
0925	0.60	19.44	4.76	65.68	1.66	506.6	6.22	120	17.87	" "
0930	1.20	19.38	4.82	65.62	1.49	502.9	4.32	120	17.88	" "
0935	1.80	19.29	4.87	65.83	1.34	498.5	2.81	120	17.88	" "
0940	2.40	19.43	4.81	66.02	1.28	497.9	0.63	120	17.89	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Peristaltic / Soda Straw - VOCs

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-6i	40 ml VOA	3	HCL	TCL VOCs	0945
	40 ml VOA	2/2	HCL / HCL	Diss. Gas / Fe 2+	
	250 ml Poly	1/1	NONE / H2SO4	NO3, NO2, SO4, ALK / TOC	
	250 ml Poly	1/1	HNO3 / NONE	Fe / Diss. Fe	
	1 Liter Poly	1	NONE		

Comments
FB-01 Collected @ 1008 (2) TCL VOCs

Signature James Leaphart Date 2-24-22

1/2

AECOM

Well ID: MW 6D

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 3/4/22 Time: Start 1320 am/pm
Project No: 60675505 Finish _____ am/pm
Site Location: Newberry, SC
Weather Conds: Clear 64 Collector(s): Justin Betters

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 105.12 c. Length of Water Column 88.67 (a-b)

Casing Diameter/Material 4" PVC

b. Water Table Depth 16.25 d. Calculated System Volume (see back) 58.01 GAL

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A103315
	HACH	2100Q	19120C082318

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1341	Initial	19.3	10.65	0.220	3.88	89.1	8.53	546	17.98	Clear/NA
1346	2.73	19.0	10.67	0.221	2.38	-12.7	6.11		18.50	Clear/NA
1351	5.46	18.8	10.68	0.221	2.32	-42.5	2.72		19.00	Clear/NA
1356	8.19	19.1	10.67	0.221	2.36	-68.1	2.49		19.73	Clear/NA
1401	10.92	19.1	10.67	0.222	2.23	-75.9	2.52		20.45	Clear/NA
1406	13.65	19.2	10.67	0.223	2.47	-82.1	2.36	↓	21.40	Clear/NA
1411	16.38	19.0	10.67	0.222	2.16	-86.5	2.17		22.05	

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Low Flow

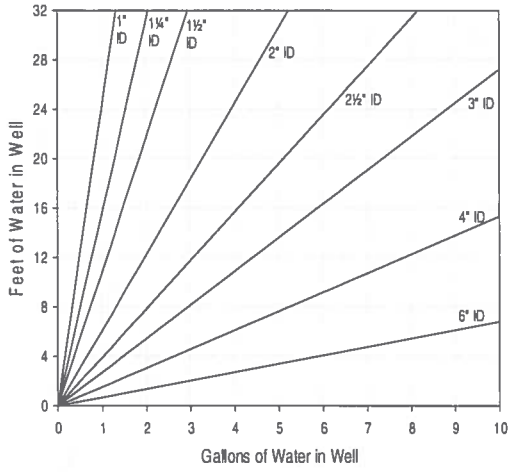
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-6D	40 mL	3	HCL	TCL VOC	1430
MW-6D	40mL	2	HCL	Diss Gases	1430
MW-6D	40mL	2	HCL	Ferrous Iron	1430
MW-6D	250mL	1	None	NO_2/NO_3/Soy/Alk	1430
MW-6D	250mL	1	H_2SO_4	TOC	1430
Comments: MW-6D	250mL	1	None	Diss Metals Fe	1430
MW-6D	250mL	1	HNO_3	Metals Fe	1430
MW-6D	1L	1	none	Quant Array Chlor	1430
DUP-04	40mL	3	HCL	TCL VOC	

Signature _____ Date _____

2/2

MW-6D

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1416	19.11	19.2	10.66	0.223	2.45	-88.6	4.73	546	23.07	Clear/NA
1421	21.84	19.1	10.66	0.222	2.27	-90.6	1.57	↓	23.89	Clear/NA
1426	24.57	19.9	10.67	0.222	2.28	-91.3	1.36	↓	24.21	Clear/NA

AECOM

Well ID: MW-7

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 3.3.22 Time: Start 1108 am/pm
Project No: 60675505 Finish 1211 am/pm
Site Location: Newberry, SC
Weather Conds: CLEAR, 72° Collector(s): James Leaphart

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 25.30 c. Length of Water Column 9.95 (a-b) Casing Diameter/Material 2" / PVC

b. Water Table Depth 15.35 d. Calculated System Volume (see back) 1.62

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1110	0	24.35	3.96	91.02	1.85	566.8	50.29	110	15.45	CLEAR / NO
1115	0.55	21.04	4.11	92.75	0.65	628.1	37.68	110	15.47	" "
1120	1.10	21.26	4.24	92.71	0.51	644.5	44.18	110	15.48	" "
1125	1.65	20.61	4.29	91.62	0.41	641.5	25.10	110	15.49	" "
1130	2.20	20.83	4.29	91.15	0.86	643.5	25.35	110	15.50	" "
1135	2.75	20.80	4.33	89.27	0.74	645.2	22.26	110	15.50	" "
1140	3.30	20.73	4.37	92.00	0.43	642.4	12.28	110	15.52	" "

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

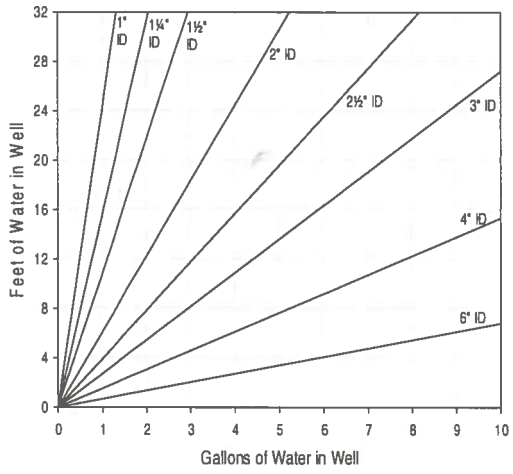
3. SAMPLE COLLECTION: Method: PERISTALTIC / SODA STRAW + PDB

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-7	40 ml VOA	3	HCL	TCL VOC's	1155
	40 ml VOA	2 / 2	HCL / HCL	DISS GAS / Fe 2+	
	250ml Poly	1 / 1	HNO_3 / NONE	Fe, Mn / DISS Fe, Mn	
	250ml Poly	1 / 1	NONE / H_2SO_4	NO_3, NO_2, Sol. ALK / TOC	
	1 LITER Poly	1	NONE	QUANTAIRRAY CHLOR	
Comments					
MW-7	40 ml VOA	3	HCL	TCL VOC's	1100

Signature: James Leaphart Date: 3-3-22

MW-7
PAGE 2 OF 2

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1145	3.85	20.65	4.40	89.98	0.29	636.2	10.15	110	15.54	CLEAR / NO
1150	4.40	20.74	4.32	91.60	0.30	642.6	12.29	110	15.55	" "

AECOM

Well ID: MW-7i

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 3-3-22 Time: Start 0904 am/pm
Project No: 60675505 Finish 1054 am/pm
Site Location: Newberry, SC
Weather Conds: CLEAR, 57° Collector(s): JAMES LEAPHART

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 45.00 c. Length of Water Column 29.40 (a-b)

b. Water Table Depth 15.60 d. Calculated System Volume (see back) 4.79

Casing Diameter/Material: 2" / PVC

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	±1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0906	0	17.43	4.50	74.12	2.85	497.2	45.33	120	15.73	CLEAR / NO
0911	0.60	17.70	4.67	73.41	0.80	468.1	67.41	100	15.82	" "
0916	1.10	17.83	4.70	73.02	1.04	473.2	188.12	90	15.82	CLOUDY "
0921	1.55	18.01	4.70	73.41	0.60	464.9	208.36	90	15.82	" "
0926	2.00	18.56	4.73	73.72	0.51	452.1	133.91	90	15.82	CLEAR "
0931	2.45	18.97	4.74	73.74	0.43	446.6	130.22	90	15.82	" "
0936	2.90	19.25	4.72	74.41	0.32	451.2	125.33	90	15.82	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

(continued on back)

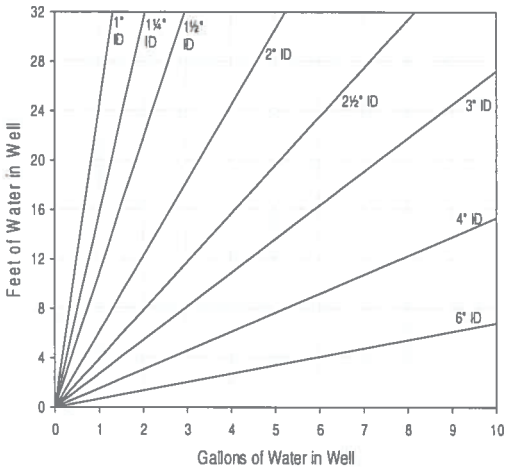
3. SAMPLE COLLECTION: Method: PERISTALTIC / SODA STRAW + PDB

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-7i	40 ml VOA	3	HCL	TCL VOC's	1030
	40 ml VOA	2 / 2	HCL / HCL	DISS GAS / Fe^{2+}	
	250 ml POLY	1 / 1	HNO_3 / NONE	Fe / DISS Fe	
	250 ml POLY	1 / 1	NONE / H_2SO_4	NO_3, NO_2, SO_4, ALK / TOC	
	1 LITER POLY	1	NONE	QUANTABRAY CHLOR	
Comments					
MW-7i-PDB	40 ml VOA	3	HCL	TCL VOC's	0845

Signature: [signature] Date: 3-3-22

MW-7i
PAGE 2 OF 2

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV) (JL) 4479	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
0941	3.35	19.42	4.72	74.93	0.30	~~48.08~~	128.08	90	15.82	CLEAR / NO
0946	3.80	19.63	4.73	75.32	0.29	444.1	91.89	90	15.82	" "
0951	4.25	19.61	4.70	75.56	0.26	442.6	80.61	90	15.82	" "
0956	4.70	19.61	4.67	75.74	0.24	440.4	60.92	90	15.82	" "
1001	5.15	19.70	4.74	76.12	0.22	442.5	51.98	90	15.83	" "
1006	5.60	19.77	4.75	76.48	0.23	443.3	49.31	90	15.83	" "
1011	6.05	19.82	4.76	76.54	0.24	439.9	34.73	90	15.84	" "
1016	6.50	19.89	4.68	77.08	0.23	440.0	23.06	90	15.85	" "
1021	6.95	20.01	4.68	77.21	0.23	438.2	18.51	90	15.85	" "
1026	7.40	20.03	4.77	77.68	0.21	442.0	9.26	90	15.86	" "

AECOM

Well ID: MW-7D

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2/25/22 Time: Start 1425 am/pm
Project No: 60675505 Finish 1600 am/pm
Site Location: Newberry, SC
Weather Conds: Cloudy 71° Collector(s): Justin Butler

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 95.90 c. Length of Water Column 80.28 (a-b) Casing Diameter/Material 4" PVC

b. Water Table Depth 15.62 d. Calculated System Volume (see back) 52.84 GAL

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A103315
	HACH	2100Q	19120C082318

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1434	Initial	18.6	7.51	0.129	0.13	-70.7	350	408	16.68	Cloudy/NA
1439	2.04	18.7	7.39	0.123	0.15	-88.2	237		17.45	Cloudy/NA
1444	4.08	18.9	7.38	0.124	0.17	-89.8	196		18.21	Clear/NA
1449	6.12	19.7	7.35	0.123	0.18	-89.2	119		18.69	Clear/NA
1454	8.16	19.6	7.32	0.123	0.21	-90.1	113		18.93	Clear/NA
1459	10.20	19.2	7.31	0.124	0.20	-91.3	176		19.69	Clear/NA
1504	12.24	19.1	7.22	0.120	0.18	-94.4	150		20.54	Clear/NA

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Low Flow

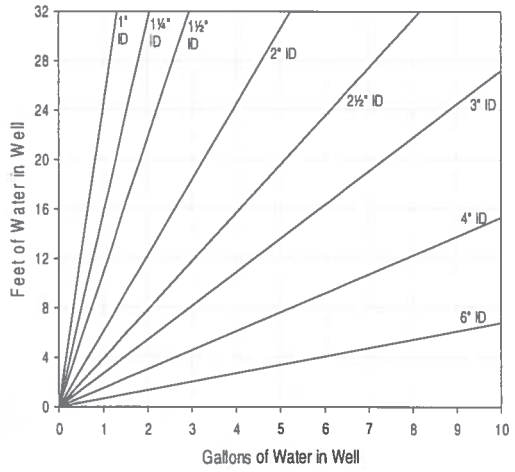
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-7D	40mL	3	HCL	TCL VOC	1540
DUP-02	40mL	3	HCL	TCL VOC	

Comments

Signature Date 2/25/22

Purge Volume Calculation

MW-7D
2 of 2



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1509	14.28	19.2	7.11	0.116	0.13	-98.7	76.5	408	21.62	Clear/NA
1514	16.32	19.1	7.09	0.114	0.15	-97.9	44.7	|	22.25	Clear/NA
1519	18.36	19.3	7.09	0.114	0.16	-98.0	30.3	|	22.48	Clear/NA
1524	20.40	19.1	7.08	0.114	0.17	-98.2	24.9	|	22.86	Clear/NA
1529	22.44	19.0	7.09	0.115	0.18	-94.0	31.0	|	22.37	Clear/NA
1534	24.48	18.9	7.07	0.112	0.18	-96.7	17.7	|	23.90	Clear/NA
1539	26.52	19.0	7.06	0.111	0.16	-92.2	14.8	↓	24.20	Clear/NA

AECOM

Well ID: MW-8

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 3-4-22 Time: Start 1054 am/pm
Project No: 60675505 Finish 1240 am/pm
Site Location: Newberry, SC
Weather Conds: CLEAR, 54° Collector(s): JAMES LEIGHTY

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 25.22 c. Length of Water Column 9.22 (a-b) Casing Diameter/Material 2" / PVC

b. Water Table Depth 16.00 d. Calculated System Volume (see back) 1.50

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1055	0	17.97	4.02	50.27	1.97	600.4	33.82	100	16.06	CLEAR / NO
1100	0.50	18.95	4.17	50.49	0.61	635.1	33.23	100	16.10	" "
1105	1.00	18.73	4.20	50.41	0.47	646.5	69.35	100	16.12	" "
1110	1.50	18.97	4.17	50.45	0.39	656.2	42.15	100	16.14	" "
1115	2.00	18.89	4.19	50.44	0.44	653.7	45.26	100	16.12	" "
1120	2.50	18.88	4.26	50.53	0.41	654.8	44.84	100	16.10	" "
1125	3.00	19.02	4.20	50.58	0.35	657.0	46.17	100	16.10	" "

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☒	☐	☐
Have parameters stabilized	☒	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: PERISTALTIC / ~~SODA~~ STRAW + PDB

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-8	40ml VOA	3	HCL	TCL VOC's	1130
	40ml VOA	2 / 2	HCL / HCL	DISS. GAS / Fe 2+	
	250ml POLY	1 / 1	HNO3 / NONE	Fe, Mn / DISS. Fe, Mn	
	250ml POLY	1 / 1	NONE / H2SO4	NO3, NO2, SO4, ALK / TOC	
	1 LITER POLY	1	NONE	QUANTAB/RAY CHLOR	
Comments					
MW-8-PDB	40ml VOA	3	HCL	TCL VOC's	1045

Signature [signature] Date 3-4-22

AECOM

Well ID: MW-9

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 3-4-22 Time: Start 0923 am/pm
Project No: 60675505 Finish 1035 am/pm
Site Location: Newberry, SC
Weather Conds: CLEAR, 54° Collector(s): James Leaphart

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 25.58 c. Length of Water Column 9.88 (a-b) Casing Diameter/Material 2" / PVC

b. Water Table Depth 15.70 d. Calculated System Volume (see back) 1.61

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
INSITU	TROLL 600	808958

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0925	0	16.58	4.16	53.92	1.93	543.5	57.20	120	15.80	CLEAR / NO
0930	0.60	17.12	4.17	49.73	0.85	620.3	29.62	120	15.85	" "
0935	1.20	17.37	4.21	49.71	0.63	667.5	28.88	100	15.86	" "
0940	1.70	17.01	4.16	49.73	0.61	682.9	31.19	100	15.85	" "
0945	2.20	16.94	4.18	49.83	0.58	688.7	27.79	100	15.85	" "
0950	2.70	17.19	4.28	49.88	0.57	690.6	25.38	100	15.85	" "
0955	3.20	17.30	4.29	49.94	0.53	691.7	17.01	100	15.85	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☒
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: PERISTALTIC / SODA STRAW + PDB

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-9	40 ml VOA	3	HCL	TCL VOCs	1000
	40 ml VOA	2 / 2	HCL / HCL	Diss. Gas / Fe 2+	
	250 ml Poly	1 / 1	NONE / H_2SO_4	NO_3, NO_2, SO_4, ALK / TOC	
	250 ml Poly	1 / 1	HNO_3 / NONE	Fe, Mn / Diss. Fe, Mn	
	1 LITER Poly	1	NONE	QUANTARAY CHEM	
MW-9-PDB	40 ml VOA	3	HCL	TCL VOC's	0910

Comments

Signature: James Leaphart Date: 3-4-22

AECOM

Well ID: RDW-1

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 3/4/22 Time: Start 0935 am/pm
Project No: 60675505 Finish 1040 am/pm
Site Location: Newberry, SC
Weather Conds: clear 53 Collector(s): Justin Butler

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 84.18 c. Length of Water Column 83.58 (a-b) Casing Diameter/Material 6" /PVC

b. Water Table Depth 0.60 d. Calculated System Volume (see back) 122.76 GAL

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A03315
	HACH	2100Q	191206082318

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0947	Initial	15.8	12.17	0.99	0.29	-100.4	237	630	1.35	Cloudy/NA
0952	3.15	15.8	12.16	0.96	0.32	-116.7	206		1.62	Cloudy/NA
0957	6.30	15.6	12.15	0.93	0.34	-129.0	178		1.88	Cloudy/NA
1002	9.45	16.0	12.12	0.88	0.32	-133.0	138		2.29	Clear/NA
1007	12.60	15.8	12.12	0.87	0.32	-136.8	107.0		2.70	Clear/NA
1012	15.75	15.7	12.11	0.85	0.33	-139.5	87.5		2.99	Clear/NA
1017	18.90	15.5	12.11	0.84	0.34	-146.0	58.2		3.20	Clear/NA

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Low Flow

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RDW-1-PDB	40ML	3	HCL	TCL VOC	0915
RDW-1	40ML	3	HCL	TCL VOC	1020

Comments

Signature Date 3/4/22

AECOM

Well ID: RDW-2

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2/25/22 Time: Start 0850 am/pm
Project No: 60675505 Finish 1020 am/pm
Site Location: Newberry, SC
Weather Conds: Clear 60 Collector(s): Justin Butler

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 69.70 c. Length of Water Column 52.55 (a-b)

Casing Diameter/Material 6" PVC

b. Water Table Depth 17.15 d. Calculated System Volume (see back) 77.19 GAL

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A103315
	HACH	2100 Q	19120C082318

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0903	Initial	17.2	6.71	0.111	0.19	-51.0	61.4	412	18.40	Clear/NA
0908	2.06	17.2	6.74	0.112	0.17	-77.1	55.6		18.55	Clear/NA
0913	4.12	17.2	6.76	0.112	0.16	-90.1	48.7		18.70	Clear/NA
0918	6.18	17.2	6.77	0.112	0.18	-102.7	49.0		18.93	Clear/NA
0923	8.24	17.2	6.82	0.115	0.19	-109.8	45.6		19.15	Clear/NA
0928	10.3	17.2	6.86	0.116	0.20	-117.6	45.0		19.36	Clear/NA
0933	12.36	17.2	6.87	0.117	0.21	-120.7	44.3	↓	19.56	Clear/NA

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Low Flow

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RDW-2	40mL	3	HCL	TCL VOC	1000

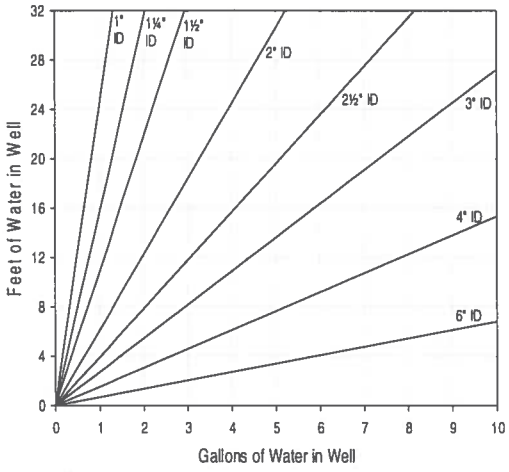
Comments

Signature Date 2/25/22

2/2

RDW.2

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
0938	14.42	17.4	6.78	0.114	0.13	-129.7	32.6	412	19.98	clear/NA
0943	16.48	17.5	6.74	0.109	0.13	-132.7	18.5	↓	20.40	clear/NA
0948	18.54	17.5	6.71	0.108	0.14	-134.0	19.3		20.66	clear/NA
0953	20.60	17.5	6.71	0.108	0.13	-135.8	15.9		20.88	clear/NA
0958	22.66	17.6	6.72	0.109	0.16	-136.5	15.0	↓	21.02	clear/NA

AECOM

Well ID: SDW-1

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2/21/22 Time: Start 1540 am/pm
Project No: 60675505 Finish 1655 am/pm
Site Location: Newberry, SC
Weather Conds: Cloudy 64° Collector(s): Justin Butler, Mason Jobe

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 85.94 c. Length of Water Column 65.86 (a-b)

Casing Diameter/Material 6", PVC

b. Water Table Depth 20.08 d. Calculated System Volume (see back) 96.16 GAL

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	ProPlus	19A103315
	HACH	2100Q	19120C082318

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1608	9.46	17.6	5.77	0.075	3.55	163.7	275.0	566	20.32	cloudy/NA
1613	12.29	17.7	5.75	0.074	3.56	167.7	252.0	↓	20.32	cloudy/NA
1618	15.12	17.9	5.73	0.073	3.52	172.7	151.0		20.32	cloudy/NA
1623	17.95	17.7	5.79	0.077	3.57	175.4	59.0		20.32	clear/NA
1628	20.78	17.7	5.79	0.078	3.53	176.0	49.3		20.32	clear/NA
1633	23.61	17.6	5.80	0.079	3.57	177.7	25.2		20.32	clear/NA
1638	26.44	17.6	5.80	0.079	3.57	178.6	20.8	↓	20.32	clear/NA

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: Low Flow

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
SDW-1	40mL	3	HCL	TCL VOC	1640

Comments

Signature Date 2/21/22

AECOM

Well ID: SDW1-2

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2/21/22 Time: Start 1340 am/pm
Project No: 60675505 Finish 1300 am/pm 2/22/22
Site Location: Newberry, SC
Weather Conds: Partly Cloudy 64° Collector(s): Justin Butler, Mason Jobe

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 88.69 c. Length of Water Column 59.69 (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 29.00 d. Calculated System Volume (see back) 9.73 GAL

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A10831
	HACH	2100 Q	1912000 82318

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1406	7.57	18.6	7.28	2200	0.17	75.2	6.73	504	45.90	Clear/NA
1411	10.09	18.6	7.28	2200	0.19	74.5	5.41		51.20	Clear/NA
1416	12.61	18.6	7.28	2200	0.18	69.7	5.27		52.64	Clear/NA
1421	15.13	18.8	7.28	2190	0.19	67.4	4.24		56.58	Clear/NA
1426	17.65	18.8	7.27	2190	0.19	63.5	4.82		60.30	Clear/NA
1431	20.17	19.1	7.26	2190	0.21	59.3	4.33		62.54	Clear/NA
1436	22.69	19.3	7.24	2170	0.20	57.6	4.49	↓	64.98	Clear NA

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☑	☐
Have parameters stabilized	☐	☑	☐

If no or N/A - Explain below.

well Dry, recharge and grab sample

3. SAMPLE COLLECTION: Method: Low Flow

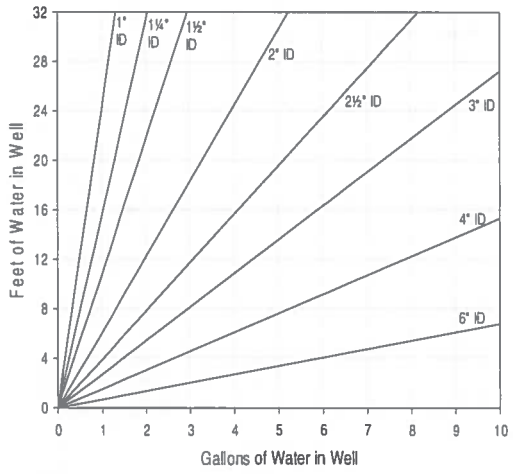
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
SDW-2	40 mL	3	HCL	TCL VOC	1300 (2/22/22

Comments

Signature Date 2/21/22

BDW-2 2/2

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
1441	25.21	19.1	7.21	2170	0.25	54.4	497	504	69.68	Clear/NA
1446	27.73	19.5	7.16	2140	0.35	57.4	4.53		75.54	Clear/NA
1451	30.25	19.5	7.11	2110	0.48	61.3	5.23		76.98	Clear/NA
1456	32.77	19.5	7.10	2100	0.54	62.0	6.51		82.03	Clear/NA
1501	35.29	19.5	7.19	2090	0.59	61.7	6.25		84.15	Clear/NA
1506	37.81	19.5	7.19	2140	0.41	20.4	106.0	↓	85.51	Clear/NA
1511									DRY	

AECOM

Well ID: SDW-3

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 2/21/22 Time: Start 1150 am/pm
Project No: 60675505 Finish 1250 am/pm
Site Location: Newberry, SC
Weather Conds: Clear 61 Collector(s): Justin Butler, Mason Jobe

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 100.47 c. Length of Water Column 92.58 (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 7.89 d. Calculated System Volume (see back) 15.09 GAL

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A101335
	HACH	2100 Q	19120C082318

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1205	9.46	17.9	7.62	218	0.28	127.8	3.66	566	12.57	clear/NA
1210	12.29	18.0	7.61	217	0.25	114.6	10.11	↓	12.81	clear/NA
1215	15.12	18.0	7.61	217	0.25	100.6	17.1		13.15	clear/NA
1220	17.95	18.0	7.61	217	0.25	94.0	22.4		12.97	clear/NA
1225	20.78	17.9	7.61	217	0.19	89.0	20.3		12.78	clear/NA
1230	23.61	18.0	7.61	217	0.21	82.7	16.0		12.71	clear/NA
1235	26.44	17.9	7.61	217	0.21	79.0	15.2	↓	12.70	clear/NA

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Low Flow

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
SDW3	40mL	3	HCL	TCL VOC	1240

Comments

Signature Date 2/21/22

AECOM

Well ID: MW-12D

Low Flow Ground Water Sample Collection Record

Client: Signify Date: 3/8/22 Time: Start 1135 am/pm
Project No: ~~60635197~~ - 60675805 Finish 1222 am/pm
Site Location: Shakespeare-Newberry, SC
Weather Conds: Partly Cloudy 65° Collector(s): Justin Butler

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 81.45 c. Length of Water Column 76.33 (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 5.12 d. Calculated System Volume (see back) 12.44 GAL

2. WELL PURGE DATA

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A103315
	HACH	2100 Q	19120CD82318

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1141	Initial	15.8	6.22	0.091	4.36	60.8	266	190	5.22	Cloudy/NA
1146	0.95	15.8	6.20	0.089	4.74	60.7	721		5.22	Cloudy/NA
1151	1.90	16.0	6.19	0.092	4.41	65.7	71100		5.22	Cloudy/NA
1156	2.85	15.9	6.21	0.094	4.29	67.5	71100		5.22	Cloudy/NA
1201	3.80	16.0	6.21	0.093	4.19	69.1	71100		5.22	Cloudy/NA
1206	4.75	16.1	6.18	0.089	4.10	72.3	71100		5.22	Cloudy/NA
1211	5.70	16.2	6.14	0.086	4.14	76.6	71100	↓	5.22	Cloudy/NA

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☑	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Low Flow/Reverser

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-12D-DUP	40ML	2	HCL	TCL VOC	1130
MW-12D	40ML	3	HCL	TCL VOC	1215

Comments

Signature Date 3/8/22

AECOM

Well ID: MW-20D

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 3/7/22 Time: Start 1515 am/pm
Project No: 60675505 Finish 1615 am/pm
Site Location: Newberry, SC
Weather Conds: Cloudy 78 Collector(s): Josh Butler

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 35.0 c. Length of Water Column 31.37 (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 3.63 d. Calculated System Volume (see back) 5.11 GAL

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A103215
	HACH	Micro 2100Q	19120C082818

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1541	Initial	18.8	5.39	0.092	1.22	143.2	26	226	4.42	clear/NA
1546	1.13	18.9	5.43	0.086	1.25	133.0	161		4.42	cloudy/NA
1551	2.26	19.9	5.41	0.088	1.06	123.3	308		4.39	cloudy/NA
1556	3.39	18.4	5.41	0.087	0.95	112.6	276		4.39	cloudy/NA
1601	4.52	18.6	5.39	0.087	1.00	113.5	264		4.41	cloudy/NA
1606	5.65	18.5	5.39	0.087	1.04	112.5	285		4.43	cloudy/NA

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

(continued on back)

3. SAMPLE COLLECTION: Method: _____

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-20-PDB	40mL	3	HCL	TCL VOC	1520
MW-20D	40mL	3	HCL	TCL VOC	1610

Comments _____

Signature _____ Date 3/7/22

AECOM

Well ID: MW-10

Low Flow Ground Water Sample Collection Record

Client: Signify | Date: 3/8/22 | Time: Start 1355 am/pm | Finish 1450 am/pm
Project No: 60635197
Site Location: Shakespeare-Newberry, SC
Weather Conds: Partly Cloudy 69D | Collector(s): Justin Bitter

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length ——— c. Length of Water Column ——— (a-b)

b. Water Table Depth ——— d. Calculated System Volume (see back) ———

Casing Diameter/Material: 2"/PVC

2. WELL PURGE DATA

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	±1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A10.3315
	HACH	2100 Q	19120600823 18

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1404	1.89	17.7	10.04	0.567	0.71	-52.2	71100	190	14.55	white/NA
1409	2.84	17.4	9.97	0.559	0.41	-65.2	71100		15.00	white/NA
1414	3.79	17.3	9.87	0.545	0.38	-73.0	71100		15.53	white/NA
1419	4.74	17.4	10.02	0.541	0.37	-85.3	71100		18.86	white/NA
1424	5.69	17.4	9.92	0.509	0.35	-91.0	71100		16.18	white/NA
1429	6.64	17.6	9.87	0.499	0.29	-95.7	71100		16.28	white/NA
1434	7.59	17.6	9.85	0.488	0.30	-100.4	71100		16.38	white/NA

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☐	☑	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Low Flow/Reverse

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-10	40mL	3	HCL	TCL VOC	1435
MW-10	40mL	2	HCL	MEE RSK175	1435
MW-10	250mL	1	HNO_3	Fe+Mn	1435
MW-10	250mL	1	NONE	Fe+Mn unfiltered	1435
MW-10	250mL	1	None	Anion -	1435
MW-10	250mL	1	H_2SO_4	TOC	1435
MW-10	1L	1	NONE	DHC, DHB,	1435

Comments

Signature [signature] Date 3/8/22

AECOM

Well ID: MW-10I

Low Flow Ground Water Sample Collection Record

Client: Signify | Date: 3/8/22 | Time: Start 1025 am/pm | Finish 1120 am/pm
Project No: 60635197
Site Location: Shakespeare-Newberry, SC
Weather Conds: Partly Cloudy 63 | Collector(s): Justin Butler

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length ——— c. Length of Water Column ——— (a-b)

Casing Diameter/Material: 2" PVC

b. Water Table Depth 60.63 d. Calculated System Volume (see back) ———

2. WELL PURGE DATA

a. Purge Method: low Flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A102315
	HACH	2100Q	19120C052318

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1037	1.89	17.0	4.66	0.094	0.28	44.7	71100		11.45	white/NA
1042		17.4	4.62	0.102	0.27	56.4	71100		11.45	white/NA
1047		17.3	4.92	0.110	0.23	61.3	492		11.45	white/NA
1052		17.1	5.38	0.111	0.21	29.1	140		11.45	white/NA
1057		17.3	6.00	0.118	0.16	-50.2	74.4		11.45	clear/NA
1102		17.2	6.06	0.119	0.14	-62.8	78.4		11.45	clear/NA
1107		17.2	6.08	0.120	0.14	-70.9	70.8		11.45	clear/NA

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Low Flow/Reverse

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
MW-10I	40mL	3	HCL	TLL VOC	1110
MW-10I	40mL	2	HCL	MEE RSK175	1110
MW-10I	250mL	1	HNO3	Fe+Mn	1110
MW-10I	250mL	1	None	Fe, Mn (colloidal)	1110
MW-10I	250mL	1	None	Anion -	1110
MW-10I	250mL	1	H2SO4	TOC	1110
MW-10I	1L	1	None	PHC, PHBE	1110

Comments

Signature [signature] Date 3/8/22

AECOM

Well ID: ERD-OBSW-1

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 3/8/22 Time: Start 1250 am/pm
Project No: ~~60675505~~ 60635197 Finish 1350 am/pm
Site Location: Newberry, SC
Weather Conds: Partly Cloudy 67° Collector(s): Justin Butler

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length ——— c. Length of Water Column ——— (a-b)

Casing Diameter/Material: 2" PVC

b. Water Table Depth 11.20 d. Calculated System Volume (see back) ———

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A103315
	HACH	2100 Q	19120C082318

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1300	1.89	17.6	5.63	0.332	1.66	115.6	225	190	13.11	Cloudy/NA
1305	2.84	17.7	5.68	0.335	1.15	94.3	179		13.22	Cloudy/NA
1310	3.79	17.8	5.73	0.340	1.06	86.3	134		13.33	Cloudy/NA
1315	4.74	17.9	5.78	0.345	0.93	77.0	151		13.35	Cloudy/NA
1320	5.69	17.9	5.80	0.349	0.88	70.0	160		13.37	Cloudy/NA
1325	6.64	17.8	5.82	0.351	0.85	61.8	156		13.38	Cloudy/NA
1330	7.59	18.0	5.82	0.352	0.87	52.3	150	↓	13.39	Cloudy/NA

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Low Flow/Reverse

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
ERD-OBSW-1	40 mL	3	HCL	TCL VOC	1335
ERD-OBSW-1	40 mL	2	HCL	MEE RSK 175	1335
ERD-OBSW-1	250 mL	1	HNO_3	Fe+Mn	1335
ERD-OBSW-1	250 mL	1	None	Fe+Mn (unfiltered)	1335
ERD-OBSW-1	250 mL	1	None	Anion -	1335
ERD-OBSW-1	250 mL	1	H_2SO_4	TOC	1335
ERD-OBSW-1	1 L	1	None	DHL, DHB+	1335

Comments

Signature [signature] Date 3/8/22

1/2

AECOM

Well ID: ERD-OBSW-1I

Low Flow Ground Water Sample Collection Record

Client: Signify North America Date: 3/8/22 Time: Start 0900 am/pm
Project No: ~~60675505~~ 60635197 Finish 1035 am/pm
Site Location: Newberry, SC
Weather Conds: Partly Cloudy 60 Collector(s): Justin Butler

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length — c. Length of Water Column — (a-b)

Casing Diameter/Material: 2" PVC

b. Water Table Depth 10.58 d. Calculated System Volume (see back) —

2. WELL PURGE DATA

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

- Temperature	3%	-D.O.	10%
- pH	± 1.0 unit	- ORP	± 10mV
- Sp. Cond.	3%	- Drawdown	< 0.3'

c. Field Testing Equipment used:

	Make	Model	Serial Number
	YSI	Pro Plus	19A103315
	HACH	2100Q	19120C083315

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0921	3.78	16.8	9.48	0.380	0.56	135.4	>1100	168	13.08	white/NA
0926	4.62	17.1	9.73	0.397	0.33	32.3	>1100		13.17	white/NA
0931	5.46	17.1	9.94	0.457	0.25	-24.5	>1100		13.25	white/NA
0936	6.30	17.0	9.91	0.509	0.24	-76.6	>1100		13.28	white/NA
0941	7.14	17.2	9.87	0.540	0.20	-228.6	>1100		13.28	white/NA
0946	7.98	17.0	9.69	0.551	0.14	-435.6	~~>1100~~ 298		13.28	white/NA
0951	8.82	17.0	9.67	0.544	0.12	-470.6	282		13.28	white/NA

(continued on back)

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☑	☐	☐
Has required turbidity been reached	☑	☐	☐
Have parameters stabilized	☑	☐	☐

If no or N/A - Explain below.

3. SAMPLE COLLECTION: Method: Low Flow / Reverse

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
ERD-OBSW-1I	40mL	3	HCL	TCL VOC	1010
ERD-OBSW-1I	40mL	2	HCL	MEE-RSK175	1010
ERD-OBSW-1I	250mL	1	HNO_3	Metals Fe+Mn	1010
ERD-OBSW-1I	250mL	1	None	Fe + Mn (unfiltered)	1010
ERD-OBSW-1I	250mL	1	None	Anion -	1010
ERD-OBSW-1I	250mL	1	H_2SO_4	TOC	1010
ERD-OBSW-1I	1L	1	None	DHL, DHBL	1010

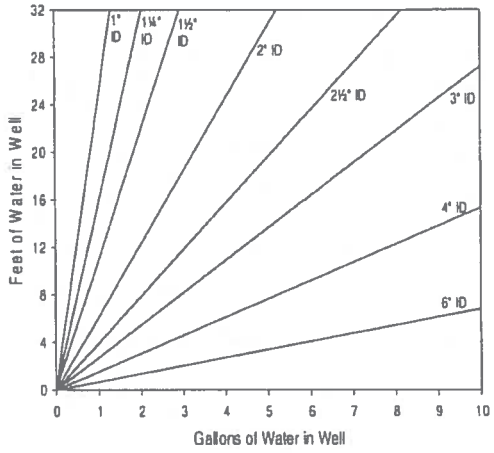
Comments

Signature [signature] Date 3/8/22

2/2

ERD-OBSW/
-1I

Purge Volume Calculation



Volume / Linear Ft. of Pipe		
ID (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178
2.5	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (24 hr)	Volume Removed (Liters)	Temp (°C)	pH	Spec. Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (ft)	Color/Odor
0956	9.66	17.0	9.59	0.536	0.13	510.8	176	168	13.28	white/NA
1001	10.50	17.1	9.58	0.529	0.11	556.9	171	↓	13.28	white/NA
1006	11.34	17.1	9.56	0.523	0.12	579.7	161	↓	13.25	white/NA

AECOM

DAILY REPORT

PROJECT NUMBER: 60675055 DATE: 3.7.22 REPORT NUMBER:

PROJECT & LOCATION: Valmont / Newberry

CLIENT: Signify North America AECOM FIELD REPRESENTATIVE: [signature]

SUBCONTRACTOR: AECOM

SUBCONTRACTOR PERSONNEL ON SITE: [illegible] Joseph

BRIEF SUMMARY OF WORK PERFORMED: Water levels

START TIME	STOP TIME	DESCRIPTION OF ACTIVTIES: REMARKS	Time		Time	
1019		MW-10 - 11.13	1108	SDW-1 - 20.08	1434	TMW-33 172
1017		MW-10I - 10.63	1104	SDW-2 - 85.67	1348	OBS-1 11.08
1005		MW-11 - 13.36	1038	SDW-3 - 07.84		
0958		MW-12 - 05.95	~~1111~~	MW-1 - 1500 - 10.02		
1000		MW-12I - 04.12	~~1111~~	MW-2 1353 - 07.11		
1001		MW-12D - 05.12	~~1111~~	MW-2I 1350 - 10.92		
0941		MW-13 - 02.81	~~1111~~	MW-2D 1351 - 09.48		
0946		MW-14 - 02.47	~~1111~~	MW-3 (148T) [illegible] 10.80		
0944		MW-15 - 02.78	1452	MW-3I - 11.15		
1012		MW-16 - 07.07	1453	MW-3D - 11.31		
1010		MW-17 - 05.39	1439	MW-4 - 16.40		
1025		MW-18D - 08.28	1415	MW-5 - 16.12		
1017		MW-18 - 06.51	1408	MW 5I - 16.60		
1021		MW-18D - 10.64	1400	MW-6 - 17.79		
0956		MW-26 - 06.51	1402	MW 6I - 17.42		
0954		MW-27 - 03.96	1403	MW-6D - 19.62		
0939		MW-28 - 04.12	1418	MW-7 - 1533		
0936		MW-29 - 09.11	1418	MW-7I - 15.50		
1016		OBS-1 ~~ESD~~ I - 10.58	1419	MW-7D - 15.49		
1018		OBS-1 ~~ESD~~ - 11.20	1442	MW-8 - 15.70		
1126		MW-19 - .40	1444	MW-9 - 15.47		
[illegible] 1123		MW-19I - 03.17	1445	MW-9I - 15.34		
1128		MW-19D - 03.44	1447	MW-9D - 1313		
1155		MW-20 - 03.63	1458	MW-22 - 1241		
1154		MW-20I [illegible] 35.58	1335	TMW-21 - 18.35		
1146		MW-21 - 09.40	1329	TMW-22 - 17.38		
1158		MW-21I - 18.70	1339	TMW-23 - 16.42		
1054		MW-23 - 17.51	1424	TMW-24 - 18.39		
1049		MW-24 - 11.67	1428	TMW-25 - 16.45		
1047		MW-24I - [illegible] 13.59	1341	TMW-29 - 11.57		
1112		MW-25 - 12.64	1314	TMW-30 - 14.10		
1158		RDW-1 - 03.80	1345	TMW-31 - 11.81		
1148		RDW-2 - 17.01		TMW-32 - Ø		

FIELD REPRESENTATIVES SIGNATURE: _____ DATE: _____

AECOM

FIELD INSTRUMENT CALIBRATION LOG

Project Name: Signify North America
Project Number: 60675505
Calibrated By: [illegible]
Signature: [illegible]

YSI 556 SN: 19A 10 3315
Turbidity Meter Model/SN: [illegible]
Additional Equipment SN:
Date: 3/7/22

Operation Notes:
1) Turn meter on in Run mode and allow to warm up 10 to 15 minutes prior to calibration.
2) Observe DO % for 2-3 minutes when meter is initially turned on. The unit should display decreasing values until it is stabilized near 100%.
3) If the meter does not stabilize at/near 100%, indicates the DO sensor requires maintenance.

These values should be keyed in when calibrating a water quality meter. Be sure to use the temperature of the standards, not ambient temperature, and be sure the temperature sensor is submerged in the solution.

Table 1: Calibration Values At Various Temperatures

Temp. C	pH 4	pH 7	pH 10	Conductivity	ORP
5	4.00	7.07	10.19	896.00	257.00
10	4.00	7.06	10.16	1020.00	250.50
15	4.00	7.04	10.10	1147.00	244.00
20	4.00	7.02	10.05	1278.00	237.50
25	4.00	7.01	10.01	1413.00	231.00
30	4.00	6.99	9.96	1548.00	224.50

mm Hg = millimeters of mercury. Note that the YSI 556 uses this information ONLY when the DO calibration is being done. After calibration is complete it no longer corrects for pressure change. Verify the meter is correct for your altitude when calibrating.

Table 2: Atmospheric Pressure / Altitude Table

Altitude feet (asl)	Pressure (mmHg)	Altitude feet (asl)	Pressure (mmHg)	Altitude feet (asl)	Pressure (mmHg)
0	760	1126	730	2290	699
278	752	1413	722	2587	692
558	745	1703	714	2887	684
841	737	1995	707	3190	676

Table 3: DO % Saturation Vs. Temperature

Temp C.	DO	Temp C.	DO	Temp C.	DO	Temp C.	DO	Temp C.	DO
15	10.084	20	9.092	25	8.263	30	7.559	35	6.950
16	9.870	21	8.915	26	8.113	31	7.430	36	6.837
17	9.665	22	8.743	27	7.968	32	7.305	37	6.727
18	9.467	23	8.578	28	7.827	33	7.183	38	6.620
19	9.276	24	8.418	29	7.691	34	7.065	39	6.515

YSI 556 Calibration

Parameter	Before Calibration	After Calibration	Time	Units
Barametric Pressure	741.5		1521	mmHg
Temperature (Saturated Air)	24.9			C
Temperature (Calibration Solution)	22.0	22.2		C
DO	7.52	8.26		mg/L
pH 7	6.59	7.02		SU
pH 4	3.59	4.00		SU
pH 10	10.02	10.05		SU
Specific Conductance	1.32	1.28		mS/cm
ORP	233.7	237.5		mV

MicroTPW Calibration

Calibrations performed 0.02, 10, and 1,000 NTU	Calibrations accepted: Yes No (circle one)

AECOM

FIELD INSTRUMENT CALIBRATION LOG

Project Name: Dignity North American
Project Number: 60675055
Calibrated By: Justin Butler
Signature:

YSI 556 SN: [redacted] 19A103715
Turbidity Meter Model/SN: 19178208 2318
Additional Equipment SN:
Date: 3/8/22

Operation Notes:
1) Turn meter on in Run mode and allow to warm up 10 to 15 minutes prior to calibration
2) Observe DO % for 2-3 minutes when meter is initially turned on. The unit should display decreasing values until it is stabilized near 100%.
3) If the meter does not stabilize at/near 100%, indicates the DO sensor requires maintenance

These values should be keyed in when calibrating a water quality meter Be sure to use the temperature of the standards, not ambient temperature and be sure the temperature sensor is submerged in the solution.

Table 1: Calibration Values At Various Temperatures

Temp. C	pH 4	pH 7	pH 10	Conductivity	ORP
5	4.00	7.07	10.19	896.00	257.00
10	4.00	7.06	10.16	1020 00	250.50
15	4.00	7.04	10.10	1147.00	244.00
20	4.00	7.02	10.05	1278.00	237.50
25	4.00	7.01	10.01	1413.00	231.00
30	4.00	6.99	9.96	1548 00	224.50

mm Hg = millimeters of mercury Note that the YSI 556 uses this information ONLY when the DO calibration is being done After calibration is complete it no longer corrects for pressure change. Verify the meter is correct for your altitude when calibrating

Table 2: Atmospheric Pressure / Altitude Table

Altitude feet (asl)	Pressure (mmHg)	Altitude feet (asl)	Pressure (mmHg)	Altitude feet (asl)	Pressure (mmHg)
0	760	1126	730	2290	699
278	752	1413	722	2587	692
558	745	1703	714	2887	684
841	737	1995	707	3190	676

Table 3: DO % Saturation Vs Temperature

Temp C.	DO	Temp C.	DO	Temp C	DO	Temp C.	DO	Temp C.	DO
15	10 084	20	9.092	25	8 263	30	7.559	35	6.950
16	9.870	21	8.915	26	8 113	31	7 430	36	6.837
17	9.665	22	8.743	27	7.968	32	7.305	37	6.727
18	9.467	23	8.578	28	7.827	33	7.183	38	6.620
19	9.276	24	8.418	29	7 691	34	7.065	39	6.515

YSI 556 Calibration

Parameter	Before Calibration	After Calibration	Time	Units
Barametric Pressure	749.0		0834	mmHg
Temperature (Saturated Air)	15.9	16.0	0852	C
Temperature (Calibration Solution)	17.9	17.2	0849	C
DO	7.79	9.87	0839	mg/L
pH 7	6.94	7.04	0840	SU
pH 4	4.19	4.00	0845	SU
pH 10	10.01	10.10	0846	SU
Specific Conductance	1.43	1.15	0837	mS/cm
ORP	243.9	244.0	0849	mV

MicroTPW Calibration

Calibrations performed 0 02, 10, and 1,000 NTU	Calibrations accepted	(Yes)	No
		(circle one)	

Appendix B
Data Validation Reports

DATA ASSESSMENT REPORT

Data assessment is a systematic process for reviewing a body of data against a predefined set of criteria to provide assurance that the data meet project analytical Data Quality Objective (DQO) requirements. The purpose of the data assessment process is to determine if and how the usability of the analytical data is affected by the overall analytical processes and sample collection and handling procedures. If specific analytical DQOs are not met, the data are qualified (i.e., data flags are assigned to sample results) in accordance with guidelines established by the United States Environmental Protection Agency (USEPA). Data assessment allows the data user to adequately determine if the data can be used for its intended purpose. The data acceptance criteria are established according to Standard Operating Procedures (SOPs) and Statements of Work (SOWs) provided to the contracted analytical laboratory. The assessment of data quality and usability involves five components, as described below.

1) **Field Sampling Check** is a process to ensure that all samples were collected, and the laboratory analyses were performed as stipulated in the applicable site-specific Work Plan or Field Sampling Plan (FSP). Inspection of sample preservation procedures, sample handling, analysis requested, sample description and ID, cooler receipt forms, holding time evaluation, and Chain of Custody procedures are all evaluated to ensure that the evidentiary nature of the samples and the resulting analytical data have not been compromised.

2) **Data Verification** is a process for determining the completeness, correctness, consistency, and compliance of a data package in accordance with requirements contained in the applicable SOW and/or contract-specific requirements. This is a review of the data package, electronic data deliverable (EDD), and invoice received from the contract laboratory to ensure that the contract required information is present and complete prior to data validation.

3) **Data Review** is a process of reviewing the primary quality control (QC) data provided by the laboratory and the results of any internal quality assurance (QA)/QC samples, such as field blanks, trip blanks, equipment blanks or ambient blanks, field split samples, and duplicate samples, to ascertain any effect the laboratory's procedures or the sample collection process has on the data.

4) **Data Evaluation** is a process to determine if the data meet project-specific analytical DQOs and contract requirements. This evaluation may involve a review of field sampling and sample management procedures, laboratory audits, Performance Evaluation (PE) sample results, and any other data quality indicators that are available.

5) **Data Validation** is a process to determine the accuracy and precision of analytical data generated and to identify any anomalies encountered. The validation process is performed in accordance with USEPA regional or national functional guidelines, project-specific guidelines, and compliance with the requirements of each analytical method. Two major components of data validation are

laboratory performance and matrix interferences. Evaluation of laboratory performance is a check for compliance for each analytical method to determine if the samples were analyzed within the prescribed acceptance criteria of the method. Evaluation of matrix interferences involves the analysis of surrogate spike recoveries, matrix spike recoveries, and duplicate sample results. Data not meeting project-specific analytical DQOs or the requirements of the analytical method are qualified with data flags according to referenced guidelines.

Data Assessment Procedures

AECOM performed independent QC checks of field and laboratory procedures that were used in collecting and analyzing the data. The QC checks verify that the data collected are of appropriate quality for the intended data use and that the analytical DQOs were met. The steps and guidelines followed during the data validation process were modeled on the *USEPA National Functional Guidelines for Organic Superfund Methods Data Review* (USEPA, January 2017). In addition, method-specific criteria set forth in the compendium of analytical methods found in the *Test Methods for Evaluation Solid Waste: Physical/Chemical Methods Compendium (SW-846*), *Update V* (USEPA, July 2014) are also evaluated during the validation process. This validation process has been adapted to meet the analytical DQO requirements for generation of definitive critical data.

Data Validation Results

The analytical data (see associated COCs) were collected from February 21, 2022 – March 8, 2022 for Shakespeare. The analytical data were validated according to the procedures outlined above. Where data flags have been applied to this data set, they are separated by a slash "/":

Volatile Organic Compounds by Method 8260D

In package XB22075, detections of acetone in any sample (excluding sample TB-02) were qualified "/B/T" due to the presence of the analyte in the associated trip blank sample.

In package XB24099, detections of acetone and styrene in any sample (excluding sample FB-01) were qualified "/B/F" due to the presence of the analyte in the associated field blank sample.

In package XC08059, detections of acetone associated with batch 34828 were flagged "/J/C" due to recovery above the established limit (168% > 50-150%). These qualifiers indicate the results are over-estimations and should be considered biased high.

In package XC08061, detections of acetone in any sample (excluding sample TB-10) were qualified "/B/T" due to the presence of the analyte in the associated trip blank sample.

In package XC08061, detections of acetone associated with batch 34980 were flagged "/J/C" due to recovery above the established limit (156% > 50-150%). These qualifiers indicate the results are over-estimations and should be considered biased high.

Data Summary and Usability

The QC excursions encountered during the validation of this data set did not result in the rejection of any data. Therefore, the data associated with this laboratory batch should be considered compliant and adequate for its intended use.

References

United States Environmental Protection Agency (USEPA), February 2014. *Test Methods for Evaluation Solid Waste: Physical/Chemical Methods Compendium (SW-846*), *Update V* (USEPA, July 2014).

United States Environmental Protection Agency (USEPA), January 2017. *USEPA National Functional Guidelines for Organic Superfund Methods Data Review.* Publication #EPA-540-R-2017-002.

Appendix C

Laboratory Analytical Reports for VOCs and Other Parameters

Report of Analysis

AECOM
101 Research Drive
Columbia, SC 29203
Attention: Scott Ross

Project Name: Signify Shakespeare Plant North America

Project Number: 60675505

Lot Number:**XB22002**

Date Completed:03/04/2022

03/09/2022 8:16 AM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
AECOM
Lot Number: XB22002

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

VOA 8260D
At analysis time, sample XB22002-005 (TB-01) had an air bubble > 6mm.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Sample Summary
AECOM
Lot Number: XB22002
Project Name: Signify Shakespeare Plant North America
Project Number: 60675505

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	SDW-3	Aqueous	02/21/2022 1240	02/21/2022
002	MW-24i	Aqueous	02/21/2022 1410	02/21/2022
003	MW-23	Aqueous	02/21/2022 1450	02/21/2022
004	MW-24	Aqueous	02/21/2022 1545	02/21/2022
005	TB-01	Aqueous	02/21/2022	02/21/2022

(5 samples)

Detection Summary

AECOM

Lot Number: XB22002

Project Name: Signify Shakespeare Plant North America

Project Number: 60675505

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
004	MW-24	Aqueous	1,4-Dichlorobenzene	8260D	1.6		ug/L	11
005	TB-01	Aqueous	Chloroform	8260D	1.3		ug/L	13
005	TB-01	Aqueous	Methylene chloride	8260D	1.7		ug/L	13

(3 detections)

Volatile Organic Compounds by GC/MS

Client: **AECOM** Laboratory ID: **XB22002-001**

Description: **SDW-3** Matrix: **Aqueous**

Date Sampled: **02/21/2022 1240** Project Name: **Signify Shakespeare Plant**

Date Received: **02/21/2022** Project Number: **60675505**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 1601	BWS		33608

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **AECOM** Laboratory ID: **XB22002-001**

Description: **SDW-3** Matrix: **Aqueous**

Date Sampled: **02/21/2022 1240** Project Name: **Signify Shakespeare Plant**

Date Received: **02/21/2022** Project Number: **60675505**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 1601	BWS		33608

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		88	70-130
1,2-Dichloroethane-d4		108	70-130
Toluene-d8		94	70-130

LOQ = Limit of Quantitation
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Volatile Organic Compounds by GC/MS

Client: **AECOM** Laboratory ID: **XB22002-002**

Description: **MW-24i** Matrix: **Aqueous**

Date Sampled: **02/21/2022 1410** Project Name: **Signify Shakespeare Plant**

Date Received: **02/21/2022** Project Number: **60675505**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 1626	BWS		33608

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

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Volatile Organic Compounds by GC/MS

Client: **AECOM** Laboratory ID: **XB22002-002**

Description: **MW-24i** Matrix: **Aqueous**

Date Sampled: **02/21/2022 1410** Project Name: **Signify Shakespeare Plant**

Date Received: **02/21/2022** Project Number: **60675505**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 1626	BWS		33608

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		90	70-130
1,2-Dichloroethane-d4		107	70-130
Toluene-d8		97	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
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Volatile Organic Compounds by GC/MS

Client: **AECOM** Laboratory ID: **XB22002-003**

Description: **MW-23** Matrix: **Aqueous**

Date Sampled: **02/21/2022 1450** Project Name: **Signify Shakespeare Plant**

Date Received: **02/21/2022** Project Number: **60675505**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 1651	BWS		33608

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
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E = Quantitation of compound exceeded the calibration range
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Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **AECOM** Laboratory ID: **XB22002-003**

Description: **MW-23** Matrix: **Aqueous**

Date Sampled: **02/21/2022 1450** Project Name: **Signify Shakespeare Plant**

Date Received: **02/21/2022** Project Number: **60675505**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 1651	BWS		33608

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		84	70-130
1,2-Dichloroethane-d4		107	70-130
Toluene-d8		93	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
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Volatile Organic Compounds by GC/MS

Client: **AECOM** Laboratory ID: **XB22002-004**

Description: **MW-24** Matrix: **Aqueous**

Date Sampled: **02/21/2022 1545** Project Name: **Signify Shakespeare Plant**

Date Received: **02/21/2022** Project Number: **60675505**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 1717	BWS		33608

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	**106-46-7**	**8260D**	**1.6**		**0.50**	**0.40**	**ug/L**	**1**
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **AECOM** Laboratory ID: **XB22002-004**

Description: **MW-24** Matrix: **Aqueous**

Date Sampled: **02/21/2022 1545** Project Name: **Signify Shakespeare Plant**

Date Received: **02/21/2022** Project Number: **60675505**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 1717	BWS		33608

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		91	70-130
1,2-Dichloroethane-d4		109	70-130
Toluene-d8		96	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
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S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: **AECOM** | Laboratory ID: **XB22002-005**

Description: **TB-01** | Matrix: **Aqueous**

Date Sampled: **02/21/2022** | Project Name: **Signify Shakespeare Plant**

Date Received: **02/21/2022** | Project Number: **60675505**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 1211	BWS		33608

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	**67-66-3**	**8260D**	**1.3**		**0.50**	**0.40**	**ug/L**	**1**
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	**75-09-2**	**8260D**	**1.7**		**0.50**	**0.40**	**ug/L**	**1**
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
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Volatile Organic Compounds by GC/MS

Client: **AECOM**		Laboratory ID: **XB22002-005**	
Description: **TB-01**		Matrix: **Aqueous**	
Date Sampled: **02/21/2022**	Project Name: **Signify Shakespeare Plant**		
Date Received: **02/21/2022**	Project Number: **60675505**		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 1211	BWS		33608

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		88	70-130
1,2-Dichloroethane-d4		102	70-130
Toluene-d8		94	70-130

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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QC Summary

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ33608-001
Batch: 33608
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	10	4.0	ug/L	03/03/2022 1004
Benzene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Bromodichloromethane	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Bromoform	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Bromomethane (Methyl bromide)	ND		1	0.50	0.40	ug/L	03/03/2022 1004
2-Butanone (MEK)	ND		1	10	2.0	ug/L	03/03/2022 1004
Carbon disulfide	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Carbon tetrachloride	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Chlorobenzene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Chloroethane	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Chloroform	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Chloromethane (Methyl chloride)	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Cyclohexane	ND		1	0.50	0.40	ug/L	03/03/2022 1004
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Dibromochloromethane	ND		1	0.50	0.40	ug/L	03/03/2022 1004
1,2-Dibromoethane (EDB)	ND		1	0.50	0.40	ug/L	03/03/2022 1004
1,2-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
1,3-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
1,4-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Dichlorodifluoromethane	ND		1	0.50	0.40	ug/L	03/03/2022 1004
1,1-Dichloroethane	ND		1	0.50	0.40	ug/L	03/03/2022 1004
1,2-Dichloroethane	ND		1	0.50	0.40	ug/L	03/03/2022 1004
1,1-Dichloroethene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
cis-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
trans-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
1,2-Dichloropropane	ND		1	0.50	0.40	ug/L	03/03/2022 1004
cis-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
trans-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Ethylbenzene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
2-Hexanone	ND		1	10	2.0	ug/L	03/03/2022 1004
Isopropylbenzene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Methyl acetate	ND		1	1.0	0.40	ug/L	03/03/2022 1004
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.40	ug/L	03/03/2022 1004
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	03/03/2022 1004
Methylcyclohexane	ND		1	5.0	0.40	ug/L	03/03/2022 1004
Methylene chloride	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Styrene	ND		1	0.50	0.41	ug/L	03/03/2022 1004
1,1,2,2-Tetrachloroethane	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Tetrachloroethene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Toluene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	03/03/2022 1004
1,2,4-Trichlorobenzene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
1,1,1-Trichloroethane	ND		1	0.50	0.40	ug/L	03/03/2022 1004
1,1,2-Trichloroethane	ND		1	0.50	0.40	ug/L	03/03/2022 1004

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ33608-001
Batch: 33608
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Trichlorofluoromethane	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Vinyl chloride	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Xylenes (total)	ND		1	1.0	0.40	ug/L	03/03/2022 1004

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		89	70-130
1,2-Dichloroethane-d4		102	70-130
Toluene-d8		96	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ33608-002
Batch: 33608
Analytical Method: 8260D
Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	130		1	129	60-140	03/03/2022 0915
Benzene	50	53		1	106	70-130	03/03/2022 0915
Bromodichloromethane	50	48		1	96	70-130	03/03/2022 0915
Bromoform	50	50		1	100	70-130	03/03/2022 0915
Bromomethane (Methyl bromide)	50	59		1	118	70-130	03/03/2022 0915
2-Butanone (MEK)	100	120		1	119	70-130	03/03/2022 0915
Carbon disulfide	50	57		1	114	70-130	03/03/2022 0915
Carbon tetrachloride	50	53		1	106	70-130	03/03/2022 0915
Chlorobenzene	50	52		1	104	70-130	03/03/2022 0915
Chloroethane	50	55		1	110	70-130	03/03/2022 0915
Chloroform	50	48		1	97	70-130	03/03/2022 0915
Chloromethane (Methyl chloride)	50	59		1	118	60-140	03/03/2022 0915
Cyclohexane	50	53		1	106	70-130	03/03/2022 0915
1,2-Dibromo-3-chloropropane (DBCP)	50	47		1	94	70-130	03/03/2022 0915
Dibromochloromethane	50	51		1	103	70-130	03/03/2022 0915
1,2-Dibromoethane (EDB)	50	52		1	103	70-130	03/03/2022 0915
1,2-Dichlorobenzene	50	53		1	106	70-130	03/03/2022 0915
1,3-Dichlorobenzene	50	54		1	108	70-130	03/03/2022 0915
1,4-Dichlorobenzene	50	51		1	101	70-130	03/03/2022 0915
Dichlorodifluoromethane	50	60		1	121	60-140	03/03/2022 0915
1,1-Dichloroethane	50	52		1	104	70-130	03/03/2022 0915
1,2-Dichloroethane	50	47		1	94	70-130	03/03/2022 0915
1,1-Dichloroethene	50	57		1	114	70-130	03/03/2022 0915
cis-1,2-Dichloroethene	50	54		1	107	70-130	03/03/2022 0915
trans-1,2-Dichloroethene	50	55		1	110	70-130	03/03/2022 0915
1,2-Dichloropropane	50	50		1	100	70-130	03/03/2022 0915
cis-1,3-Dichloropropene	50	52		1	104	70-130	03/03/2022 0915
trans-1,3-Dichloropropene	50	51		1	103	70-130	03/03/2022 0915
Ethylbenzene	50	57		1	114	70-130	03/03/2022 0915
2-Hexanone	100	98		1	98	70-130	03/03/2022 0915
Isopropylbenzene	50	50		1	101	70-130	03/03/2022 0915
Methyl acetate	50	48		1	96	70-130	03/03/2022 0915
Methyl tertiary butyl ether (MTBE)	50	55		1	110	70-130	03/03/2022 0915
4-Methyl-2-pentanone	100	86		1	86	70-130	03/03/2022 0915
Methylcyclohexane	50	63		1	127	70-130	03/03/2022 0915
Methylene chloride	50	49		1	97	70-130	03/03/2022 0915
Styrene	50	53		1	106	70-130	03/03/2022 0915
1,1,2,2-Tetrachloroethane	50	49		1	98	70-130	03/03/2022 0915
Tetrachloroethene	50	58		1	117	70-130	03/03/2022 0915
Toluene	50	58		1	115	70-130	03/03/2022 0915
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	62		1	123	70-130	03/03/2022 0915
1,2,4-Trichlorobenzene	50	56		1	112	70-130	03/03/2022 0915
1,1,1-Trichloroethane	50	54		1	108	70-130	03/03/2022 0915
1,1,2-Trichloroethane	50	50		1	100	70-130	03/03/2022 0915

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ33608-002
Batch: 33608
Analytical Method: 8260D
Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	52		1	104	70-130	03/03/2022 0915
Trichlorofluoromethane	50	60		1	121	70-130	03/03/2022 0915
Vinyl chloride	50	56		1	113	70-130	03/03/2022 0915
Xylenes (total)	100	110		1	106	70-130	03/03/2022 0915

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		107	70-130
1,2-Dichloroethane-d4		93	70-130
Toluene-d8		110	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Chain of Custody
and
Miscellaneous Documents

Pace Analytical®

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106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.pacelabs.com

Number 131660

Client: AECOM	Report to Contact: SCOTT ROSS	Telephone No. / E-mail: 803 2019662 SCOTT.ROSS@AECOM.COM	Quote No.
Address: 101 RESEARCH DR	Sampler's Signature:	Analysis (Attach list if more space is needed)	Page 1 of 1
City: COLUMBIA State: SC Zip Code:	Printed Name: JAMES LEMBART JUSTIN BUTLER		XB22002
Project Name: SIGNIFY NORTH AMERICA SHAKESPEARE PLANT			
Project No.: 60675505	P.O. No.		

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	# Days collected	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	No of Containers by Preservative Type: Unpres	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Field Filtered	TCLP VOC	Remarks / Cooler I.D.
SDW-3	2/21/22	1240	6	X						3				X	
MW-24i	2/21/22	1410	6	X						3				X	
MW-23	2/21/22	1450	6	X						3				X	
MW-24	2/21/22	1545	6	X						3				X	
TB-01	2-21-22			X						2				X	

Turn Around Time Required (Prior lab approval required for expedited TAT.)
☒ Standard ☐ Rush (Specify)

Sample Disposal
☐ Return to Client ☒ Disposal by Lab

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

QC Requirements (Specify)

	Date	Time
1. Relinquished by:	2-21-22	1737
2. Relinquished by:		
3. Relinquished by:		
4. Relinquished by:		

	Date	Time
1. Received by:		
2. Received by:		
3. Received by:	2/21/22	1737
4. Laboratory received by:	2/21/22	1737

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Circle) (Yes) No Ice Pack Receipt Temp 4.9 °C
Temp Blank ☒ Y ☐ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N2-01

PACE ANALYTICAL SERVICES, LLC

PaceAnalytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: Aecom Cooler Inspected by/date: METI / 02/22/2022 Lot #: XR22002

Means of receipt: ☑ Pace ☐ Client ☐ UPS ☐ FedEx ☐ Other:

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

4.9 / 4.9 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☑ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote #

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is ***no***) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: JRG2 Date: 02/22/2022

Comments:

Report of Analysis

AECOM
101 Research Drive
Columbia, SC 29203
Attention: Scott Ross

Project Name: Shakespeare Composite Structures

Project Number: 60675505

Lot Number:**XB22075**

Date Completed:03/07/2022

03/10/2022 9:30 PM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.

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Case Narrative
AECOM
Lot Number: XB22075

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

VOA 8260D
The continuing calibration verification (CCV) associated with analytical batch 33543 recovered outside acceptance criteria, low biased, for Acetone (-35%). An LOQ standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect, no corrective action was taken.

XB22075-001 (SDW-1) (Run 1)
XB22075-002 (MW-16) (Run 1)
XB22075-003 (MW-17) (Run 1)
XB22075-004 (MW-17D) (Run 1)
XB22075-005 (MW-15) (Run 1)

The initial calibration verification (ICV) associated with sample XB22075-007 (MW-18D) exceeded control criteria for Acetone (127). During initial analysis, the CCV and ICV exceeded control criteria for Acetone (29%,127%). Due to analyst error the sample was run on an instrument where Acetone exceeded upper control criteria. An unused vial was not available for another re-analysis. The data has been reported.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Sample Summary

AECOM

Lot Number: XB22075

Project Name: Shakespeare Composite Structures

Project Number: 60675505

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	SDW-1	Aqueous	02/21/2022 1640	02/22/2022
002	MW-16	Aqueous	02/22/2022 0915	02/22/2022
003	MW-17	Aqueous	02/22/2022 1000	02/22/2022
004	MW-17D	Aqueous	02/22/2022 1000	02/22/2022
005	MW-15	Aqueous	02/22/2022 1130	02/22/2022
006	MW-12i	Aqueous	02/22/2022 1145	02/22/2022
007	MW-18D	Aqueous	02/22/2022 1345	02/22/2022
008	SDW-2	Aqueous	02/22/2022 1300	02/22/2022
009	MW-29	Aqueous	02/22/2022 1425	02/22/2022
010	MW-18	Aqueous	02/22/2022 1450	02/22/2022
011	TB-02	Aqueous	02/22/2022	02/22/2022

(11 samples)

Detection Summary

AECOM

Lot Number: XB22075

Project Name: Shakespeare Composite Structures

Project Number: 60675505

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	SDW-1	Aqueous	cis-1,2-Dichloroethene	8260D	1.3		ug/L	5
001	SDW-1	Aqueous	Trichloroethene	8260D	25		ug/L	6
002	MW-16	Aqueous	Trichloroethene	8260D	48		ug/L	8
003	MW-17	Aqueous	Trichloroethene	8260D	8.6		ug/L	10
005	MW-15	Aqueous	Trichloroethene	8260D	3.3		ug/L	14
006	MW-12i	Aqueous	cis-1,2-Dichloroethene	8260D	1.2		ug/L	15
006	MW-12i	Aqueous	Trichloroethene	8260D	0.50		ug/L	16
007	MW-18D	Aqueous	Acetone	8260D	21		ug/L	17
007	MW-18D	Aqueous	2-Butanone (MEK)	8260D	2.2	J	ug/L	17
007	MW-18D	Aqueous	Trichloroethene	8260D	19		ug/L	18
008	SDW-2	Aqueous	Acetone	8260D	4.2	J	ug/L	19
008	SDW-2	Aqueous	Chloroform	8260D	0.50		ug/L	19
008	SDW-2	Aqueous	Toluene	8260D	0.46	J	ug/L	19
010	MW-18	Aqueous	Trichloroethene	8260D	27		ug/L	24
011	TB-02	Aqueous	Acetone	8260D	4.4	J	ug/L	25

(15 detections)

Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB22075-001
Description: SDW-1
Matrix: Aqueous
Date Sampled: 02/21/2022 1640
Project Name: Shakespeare Composite
Date Received: 02/22/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 0257	JWO		33543

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	1.3		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB22075-001
Description: SDW-1
Matrix: Aqueous
Date Sampled: 02/21/2022 1640
Project Name: Shakespeare Composite
Date Received: 02/22/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 0257	JWO		33543

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	25		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		86	70-130
1,2-Dichloroethane-d4		110	70-130
Toluene-d8		94	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB22075-002
Description: MW-16
Matrix: Aqueous
Date Sampled: 02/22/2022 0915
Project Name: Shakespeare Composite
Date Received: 02/22/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 0322	JWO		33543

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB22075-002
Description: MW-16
Matrix: Aqueous
Date Sampled: 02/22/2022 0915
Project Name: Shakespeare Composite
Date Received: 02/22/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 0322	JWO		33543

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	48		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		92	70-130
1,2-Dichloroethane-d4		112	70-130
Toluene-d8		100	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB22075-003
Description: MW-17
Matrix: Aqueous
Date Sampled: 02/22/2022 1000
Project Name: Shakespeare Composite
Date Received: 02/22/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 0347	JWO		33543

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
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H = Out of holding time
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB22075-003
Description: MW-17
Matrix: Aqueous
Date Sampled: 02/22/2022 1000
Project Name: Shakespeare Composite
Date Received: 02/22/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 0347	JWO		33543

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	8.6		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		90	70-130
1,2-Dichloroethane-d4		110	70-130
Toluene-d8		97	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB22075-004
Description: MW-17D
Matrix: Aqueous
Date Sampled: 02/22/2022 1000
Project Name: Shakespeare Composite
Date Received: 02/22/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 0412	JWO		33543

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
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Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB22075-004
Description: MW-17D
Matrix: Aqueous
Date Sampled: 02/22/2022 1000
Project Name: Shakespeare Composite
Date Received: 02/22/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 0412	JWO		33543

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		85	70-130
1,2-Dichloroethane-d4		110	70-130
Toluene-d8		96	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB22075-005
Description: MW-15
Matrix: Aqueous
Date Sampled: 02/22/2022 1130
Project Name: Shakespeare Composite
Date Received: 02/22/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 0437	JWO		33543

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB22075-005
Description: MW-15
Matrix: Aqueous
Date Sampled: 02/22/2022 1130
Project Name: Shakespeare Composite
Date Received: 02/22/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 0437	JWO		33543

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	3.3		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		84	70-130
1,2-Dichloroethane-d4		109	70-130
Toluene-d8		93	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
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N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB22075-006
Description: MW-12i
Matrix: Aqueous
Date Sampled: 02/22/2022 1145
Project Name: Shakespeare Composite
Date Received: 02/22/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 1353	BWS		33608

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	1.2		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
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Q = Surrogate failure
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB22075-006
Description: MW-12i
Matrix: Aqueous
Date Sampled: 02/22/2022 1145
Project Name: Shakespeare Composite
Date Received: 02/22/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 1353	BWS		33608

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	0.50		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		87	70-130
1,2-Dichloroethane-d4		102	70-130
Toluene-d8		94	70-130

LOQ = Limit of Quantitation
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB22075-007
Description: MW-18D
Matrix: Aqueous
Date Sampled: 02/22/2022 1345
Project Name: Shakespeare Composite
Date Received: 02/22/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 1418	BWS		33608
2	5030B	8260D	1	03/05/2022 0524	BBW		33841

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	21		10	4.0	ug/L	2
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	2.2	J	10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
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N = Recovery is out of criteria
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L = LCS/LCSD failure
H = Out of holding time
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S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB22075-007
Description: MW-18D
Matrix: Aqueous
Date Sampled: 02/22/2022 1345
Project Name: Shakespeare Composite
Date Received: 02/22/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 1418	BWS		33608
2	5030B	8260D	1	03/05/2022 0524	BBW		33841

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1
Trichloroethene	79-01-6	8260D	19		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		92	70-130		99	70-130
1,2-Dichloroethane-d4		102	70-130		104	70-130
Toluene-d8		95	70-130		105	70-130

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S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB22075-008
Description: SDW-2
Matrix: Aqueous
Date Sampled: 02/22/2022 1300
Project Name: Shakespeare Composite
Date Received: 02/22/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 1444	BWS		33608

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	4.2	J	10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.50		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	0.46	J	0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
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W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB22075-008
Description: SDW-2
Matrix: Aqueous
Date Sampled: 02/22/2022 1300
Project Name: Shakespeare Composite
Date Received: 02/22/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 1444	BWS		33608

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		90	70-130
1,2-Dichloroethane-d4		107	70-130
Toluene-d8		95	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB22075-009
Description: MW-29
Matrix: Aqueous
Date Sampled: 02/22/2022 1425
Project Name: Shakespeare Composite
Date Received: 02/22/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 1510	BWS		33608

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB22075-009
Description: MW-29
Matrix: Aqueous
Date Sampled: 02/22/2022 1425
Project Name: Shakespeare Composite
Date Received: 02/22/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 1510	BWS		33608

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		90	70-130
1,2-Dichloroethane-d4		105	70-130
Toluene-d8		97	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
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Q = Surrogate failure
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N = Recovery is out of criteria
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J = Estimated result < LOQ and ≥ DL
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H = Out of holding time
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB22075-010
Description: MW-18
Matrix: Aqueous
Date Sampled: 02/22/2022 1450
Project Name: Shakespeare Composite
Date Received: 02/22/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 1536	BWS		33608

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
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H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB22075-010
Description: MW-18
Matrix: Aqueous
Date Sampled: 02/22/2022 1450
Project Name: Shakespeare Composite
Date Received: 02/22/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 1536	BWS		33608

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	27		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		89	70-130
1,2-Dichloroethane-d4		107	70-130
Toluene-d8		96	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB22075-011
Description: TB-02
Matrix: Aqueous
Date Sampled: 02/22/2022
Project Name: Shakespeare Composite
Date Received: 02/22/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 1236	BWS		33608

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	4.4	J	10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM			Laboratory ID: XB22075-011
Description: TB-02			Matrix: Aqueous
Date Sampled: 02/22/2022	Project Name: Shakespeare Composite		
Date Received: 02/22/2022	Project Number: 60675505		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/03/2022 1236	BWS		33608

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		94	70-130
1,2-Dichloroethane-d4		102	70-130
Toluene-d8		99	70-130

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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QC Summary

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ33543-001
Batch: 33543
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	10	4.0	ug/L	03/02/2022 2120
Benzene	ND		1	0.50	0.40	ug/L	03/02/2022 2120
Bromodichloromethane	ND		1	0.50	0.40	ug/L	03/02/2022 2120
Bromoform	ND		1	0.50	0.40	ug/L	03/02/2022 2120
Bromomethane (Methyl bromide)	ND		1	0.50	0.40	ug/L	03/02/2022 2120
2-Butanone (MEK)	ND		1	10	2.0	ug/L	03/02/2022 2120
Carbon disulfide	ND		1	0.50	0.40	ug/L	03/02/2022 2120
Carbon tetrachloride	ND		1	0.50	0.40	ug/L	03/02/2022 2120
Chlorobenzene	ND		1	0.50	0.40	ug/L	03/02/2022 2120
Chloroethane	ND		1	0.50	0.40	ug/L	03/02/2022 2120
Chloroform	ND		1	0.50	0.40	ug/L	03/02/2022 2120
Chloromethane (Methyl chloride)	ND		1	0.50	0.40	ug/L	03/02/2022 2120
Cyclohexane	ND		1	0.50	0.40	ug/L	03/02/2022 2120
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.50	0.40	ug/L	03/02/2022 2120
Dibromochloromethane	ND		1	0.50	0.40	ug/L	03/02/2022 2120
1,2-Dibromoethane (EDB)	ND		1	0.50	0.40	ug/L	03/02/2022 2120
1,2-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/02/2022 2120
1,3-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/02/2022 2120
1,4-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/02/2022 2120
Dichlorodifluoromethane	ND		1	0.50	0.40	ug/L	03/02/2022 2120
1,1-Dichloroethane	ND		1	0.50	0.40	ug/L	03/02/2022 2120
1,2-Dichloroethane	ND		1	0.50	0.40	ug/L	03/02/2022 2120
1,1-Dichloroethene	ND		1	0.50	0.40	ug/L	03/02/2022 2120
cis-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/02/2022 2120
trans-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/02/2022 2120
1,2-Dichloropropane	ND		1	0.50	0.40	ug/L	03/02/2022 2120
cis-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/02/2022 2120
trans-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/02/2022 2120
Ethylbenzene	ND		1	0.50	0.40	ug/L	03/02/2022 2120
2-Hexanone	ND		1	10	2.0	ug/L	03/02/2022 2120
Isopropylbenzene	ND		1	0.50	0.40	ug/L	03/02/2022 2120
Methyl acetate	ND		1	1.0	0.40	ug/L	03/02/2022 2120
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.40	ug/L	03/02/2022 2120
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	03/02/2022 2120
Methylcyclohexane	ND		1	5.0	0.40	ug/L	03/02/2022 2120
Methylene chloride	ND		1	0.50	0.40	ug/L	03/02/2022 2120
Styrene	ND		1	0.50	0.41	ug/L	03/02/2022 2120
1,1,2,2-Tetrachloroethane	ND		1	0.50	0.40	ug/L	03/02/2022 2120
Tetrachloroethene	ND		1	0.50	0.40	ug/L	03/02/2022 2120
Toluene	ND		1	0.50	0.40	ug/L	03/02/2022 2120
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	03/02/2022 2120
1,2,4-Trichlorobenzene	ND		1	0.50	0.40	ug/L	03/02/2022 2120
1,1,1-Trichloroethane	ND		1	0.50	0.40	ug/L	03/02/2022 2120
1,1,2-Trichloroethane	ND		1	0.50	0.40	ug/L	03/02/2022 2120

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ33543-001
Batch: 33543
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.50	0.40	ug/L	03/02/2022 2120
Trichlorofluoromethane	ND		1	0.50	0.40	ug/L	03/02/2022 2120
Vinyl chloride	ND		1	0.50	0.40	ug/L	03/02/2022 2120
Xylenes (total)	ND		1	1.0	0.40	ug/L	03/02/2022 2120

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		92	70-130
1,2-Dichloroethane-d4		107	70-130
Toluene-d8		98	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ33543-002
Batch: 33543
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	65		1	65	60-140	03/02/2022 2015
Benzene	50	49		1	97	70-130	03/02/2022 2015
Bromodichloromethane	50	44		1	88	70-130	03/02/2022 2015
Bromoform	50	46		1	93	70-130	03/02/2022 2015
Bromomethane (Methyl bromide)	50	56		1	112	70-130	03/02/2022 2015
2-Butanone (MEK)	100	87		1	87	70-130	03/02/2022 2015
Carbon disulfide	50	49		1	97	70-130	03/02/2022 2015
Carbon tetrachloride	50	47		1	94	70-130	03/02/2022 2015
Chlorobenzene	50	48		1	96	70-130	03/02/2022 2015
Chloroethane	50	51		1	102	70-130	03/02/2022 2015
Chloroform	50	44		1	89	70-130	03/02/2022 2015
Chloromethane (Methyl chloride)	50	56		1	112	60-140	03/02/2022 2015
Cyclohexane	50	46		1	93	70-130	03/02/2022 2015
1,2-Dibromo-3-chloropropane (DBCP)	50	45		1	90	70-130	03/02/2022 2015
Dibromochloromethane	50	47		1	93	70-130	03/02/2022 2015
1,2-Dibromoethane (EDB)	50	49		1	98	70-130	03/02/2022 2015
1,2-Dichlorobenzene	50	50		1	100	70-130	03/02/2022 2015
1,3-Dichlorobenzene	50	51		1	101	70-130	03/02/2022 2015
1,4-Dichlorobenzene	50	48		1	97	70-130	03/02/2022 2015
Dichlorodifluoromethane	50	54		1	108	60-140	03/02/2022 2015
1,1-Dichloroethane	50	47		1	94	70-130	03/02/2022 2015
1,2-Dichloroethane	50	43		1	87	70-130	03/02/2022 2015
1,1-Dichloroethene	50	49		1	99	70-130	03/02/2022 2015
cis-1,2-Dichloroethene	50	48		1	97	70-130	03/02/2022 2015
trans-1,2-Dichloroethene	50	49		1	98	70-130	03/02/2022 2015
1,2-Dichloropropane	50	47		1	93	70-130	03/02/2022 2015
cis-1,3-Dichloropropene	50	49		1	99	70-130	03/02/2022 2015
trans-1,3-Dichloropropene	50	49		1	98	70-130	03/02/2022 2015
Ethylbenzene	50	52		1	105	70-130	03/02/2022 2015
2-Hexanone	100	84		1	84	70-130	03/02/2022 2015
Isopropylbenzene	50	46		1	92	70-130	03/02/2022 2015
Methyl acetate	50	44		1	88	70-130	03/02/2022 2015
Methyl tertiary butyl ether (MTBE)	50	49		1	97	70-130	03/02/2022 2015
4-Methyl-2-pentanone	100	87		1	87	70-130	03/02/2022 2015
Methylcyclohexane	50	56		1	111	70-130	03/02/2022 2015
Methylene chloride	50	45		1	89	70-130	03/02/2022 2015
Styrene	50	49		1	98	70-130	03/02/2022 2015
1,1,2,2-Tetrachloroethane	50	48		1	96	70-130	03/02/2022 2015
Tetrachloroethene	50	52		1	104	70-130	03/02/2022 2015
Toluene	50	53		1	106	70-130	03/02/2022 2015
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	53		1	107	70-130	03/02/2022 2015
1,2,4-Trichlorobenzene	50	51		1	101	70-130	03/02/2022 2015
1,1,1-Trichloroethane	50	48		1	97	70-130	03/02/2022 2015
1,1,2-Trichloroethane	50	47		1	94	70-130	03/02/2022 2015

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ33543-002
Batch: 33543
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	47		1	94	70-130	03/02/2022 2015
Trichlorofluoromethane	50	56		1	112	70-130	03/02/2022 2015
Vinyl chloride	50	53		1	105	70-130	03/02/2022 2015
Xylenes (total)	100	97		1	97	70-130	03/02/2022 2015

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		101	70-130
1,2-Dichloroethane-d4		87	70-130
Toluene-d8		100	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ33608-001
Batch: 33608
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	10	4.0	ug/L	03/03/2022 1004
Benzene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Bromodichloromethane	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Bromoform	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Bromomethane (Methyl bromide)	ND		1	0.50	0.40	ug/L	03/03/2022 1004
2-Butanone (MEK)	ND		1	10	2.0	ug/L	03/03/2022 1004
Carbon disulfide	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Carbon tetrachloride	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Chlorobenzene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Chloroethane	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Chloroform	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Chloromethane (Methyl chloride)	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Cyclohexane	ND		1	0.50	0.40	ug/L	03/03/2022 1004
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Dibromochloromethane	ND		1	0.50	0.40	ug/L	03/03/2022 1004
1,2-Dibromoethane (EDB)	ND		1	0.50	0.40	ug/L	03/03/2022 1004
1,2-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
1,3-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
1,4-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Dichlorodifluoromethane	ND		1	0.50	0.40	ug/L	03/03/2022 1004
1,1-Dichloroethane	ND		1	0.50	0.40	ug/L	03/03/2022 1004
1,2-Dichloroethane	ND		1	0.50	0.40	ug/L	03/03/2022 1004
1,1-Dichloroethene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
cis-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
trans-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
1,2-Dichloropropane	ND		1	0.50	0.40	ug/L	03/03/2022 1004
cis-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
trans-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Ethylbenzene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
2-Hexanone	ND		1	10	2.0	ug/L	03/03/2022 1004
Isopropylbenzene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Methyl acetate	ND		1	1.0	0.40	ug/L	03/03/2022 1004
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.40	ug/L	03/03/2022 1004
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	03/03/2022 1004
Methylcyclohexane	ND		1	5.0	0.40	ug/L	03/03/2022 1004
Methylene chloride	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Styrene	ND		1	0.50	0.41	ug/L	03/03/2022 1004
1,1,2,2-Tetrachloroethane	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Tetrachloroethene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Toluene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	03/03/2022 1004
1,2,4-Trichlorobenzene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
1,1,1-Trichloroethane	ND		1	0.50	0.40	ug/L	03/03/2022 1004
1,1,2-Trichloroethane	ND		1	0.50	0.40	ug/L	03/03/2022 1004

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ33608-001
Batch: 33608
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Trichlorofluoromethane	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Vinyl chloride	ND		1	0.50	0.40	ug/L	03/03/2022 1004
Xylenes (total)	ND		1	1.0	0.40	ug/L	03/03/2022 1004

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		89	70-130
1,2-Dichloroethane-d4		102	70-130
Toluene-d8		96	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
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P = The RPD between two GC columns exceeds 40%
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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ33608-002
Batch: 33608
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	130		1	129	60-140	03/03/2022 0915
Benzene	50	53		1	106	70-130	03/03/2022 0915
Bromodichloromethane	50	48		1	96	70-130	03/03/2022 0915
Bromoform	50	50		1	100	70-130	03/03/2022 0915
Bromomethane (Methyl bromide)	50	59		1	118	70-130	03/03/2022 0915
2-Butanone (MEK)	100	120		1	119	70-130	03/03/2022 0915
Carbon disulfide	50	57		1	114	70-130	03/03/2022 0915
Carbon tetrachloride	50	53		1	106	70-130	03/03/2022 0915
Chlorobenzene	50	52		1	104	70-130	03/03/2022 0915
Chloroethane	50	55		1	110	70-130	03/03/2022 0915
Chloroform	50	48		1	97	70-130	03/03/2022 0915
Chloromethane (Methyl chloride)	50	59		1	118	60-140	03/03/2022 0915
Cyclohexane	50	53		1	106	70-130	03/03/2022 0915
1,2-Dibromo-3-chloropropane (DBCP)	50	47		1	94	70-130	03/03/2022 0915
Dibromochloromethane	50	51		1	103	70-130	03/03/2022 0915
1,2-Dibromoethane (EDB)	50	52		1	103	70-130	03/03/2022 0915
1,2-Dichlorobenzene	50	53		1	106	70-130	03/03/2022 0915
1,3-Dichlorobenzene	50	54		1	108	70-130	03/03/2022 0915
1,4-Dichlorobenzene	50	51		1	101	70-130	03/03/2022 0915
Dichlorodifluoromethane	50	60		1	121	60-140	03/03/2022 0915
1,1-Dichloroethane	50	52		1	104	70-130	03/03/2022 0915
1,2-Dichloroethane	50	47		1	94	70-130	03/03/2022 0915
1,1-Dichloroethene	50	57		1	114	70-130	03/03/2022 0915
cis-1,2-Dichloroethene	50	54		1	107	70-130	03/03/2022 0915
trans-1,2-Dichloroethene	50	55		1	110	70-130	03/03/2022 0915
1,2-Dichloropropane	50	50		1	100	70-130	03/03/2022 0915
cis-1,3-Dichloropropene	50	52		1	104	70-130	03/03/2022 0915
trans-1,3-Dichloropropene	50	51		1	103	70-130	03/03/2022 0915
Ethylbenzene	50	57		1	114	70-130	03/03/2022 0915
2-Hexanone	100	98		1	98	70-130	03/03/2022 0915
Isopropylbenzene	50	50		1	101	70-130	03/03/2022 0915
Methyl acetate	50	48		1	96	70-130	03/03/2022 0915
Methyl tertiary butyl ether (MTBE)	50	55		1	110	70-130	03/03/2022 0915
4-Methyl-2-pentanone	100	86		1	86	70-130	03/03/2022 0915
Methylcyclohexane	50	63		1	127	70-130	03/03/2022 0915
Methylene chloride	50	49		1	97	70-130	03/03/2022 0915
Styrene	50	53		1	106	70-130	03/03/2022 0915
1,1,2,2-Tetrachloroethane	50	49		1	98	70-130	03/03/2022 0915
Tetrachloroethene	50	58		1	117	70-130	03/03/2022 0915
Toluene	50	58		1	115	70-130	03/03/2022 0915
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	62		1	123	70-130	03/03/2022 0915
1,2,4-Trichlorobenzene	50	56		1	112	70-130	03/03/2022 0915
1,1,1-Trichloroethane	50	54		1	108	70-130	03/03/2022 0915
1,1,2-Trichloroethane	50	50		1	100	70-130	03/03/2022 0915

LOQ = Limit of Quantitation
DL = Detection Limit
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P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ33608-002
Batch: 33608
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	52		1	104	70-130	03/03/2022 0915
Trichlorofluoromethane	50	60		1	121	70-130	03/03/2022 0915
Vinyl chloride	50	56		1	113	70-130	03/03/2022 0915
Xylenes (total)	100	110		1	106	70-130	03/03/2022 0915

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		107	70-130
1,2-Dichloroethane-d4		93	70-130
Toluene-d8		110	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
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+ = RPD is out of criteria

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

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ33841-001
Batch: 33841
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	10	4.0	ug/L	03/04/2022 2125

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		99	70-130
1,2-Dichloroethane-d4		98	70-130
Toluene-d8		104	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ33841-002
Batch: 33841
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	100		1	103	60-140	03/04/2022 2022

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		97	70-130
1,2-Dichloroethane-d4		86	70-130
Toluene-d8		94	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Chain of Custody
and
Miscellaneous Documents

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)
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CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log In Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: AECOM	Billing Information:
Address: 101 RESEARCH DR	
Report To: SCOTT ROSS	Email To: SCOTT.ROSS@AECOM.COM
Copy To:	Site Collection Info/Address:
Customer Project Name/Number: 60675505 SHAKESPEARE COMPOSITE STRUCTURES	State: SC / County/City: NEWBERRY / Time Zone Collected: [ ] PT [ ] MT [ ] CT [X] ET
Phone: 803 201 9662 Email:	Site/Facility ID #: / Compliance Monitoring? [ ] Yes [X] No
Collected By (print): JAMES LEBRUN, JUSTIN BUTLER	Purchase Order #: / Quote #: / DW PWS ID #: / DW Location Code:
Collected By (signature):	Turnaround Date Required: / Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) / Field Filtered (if applicable): [ ] Yes [X] No / Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Cbns	TCL VOC's	Lab Profile/Line:
SDW-1	GW	G	2-21-22	1640				3	X	
MW-16	GW	G	2-22-22	0915				3	X	
MW-17	GW	G		1000				3	X	
MW-17D	GW	G		1000				3	X	
MW-15	GW	G		1130				3	X	
MW-12I	GW	G		1145				3	X	
MW-18D	GW	G		1345				3	X	
SDW-2	GW	G		1300				3	X	
MW-29	GW	G		1300	1425			3	X	
MW-18	GW	G		1450				3	X	

Container Preservative Type **: HCl

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (E) Unpreserved, (O) Other

Analyses

Lab Project Manager:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples Received on Ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in Holding Time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips:			
Sample pH Acceptable	Y	N	NA
pH Strips:			
Sulfide Present	Y	N	NA
Lead Acetate Strips:			

LAB USE ONLY:
Lab Sample # / Comments:

XB22075
CSD

Customer Remarks / Special Conditions / Possible Hazards: TB-02 TCL VOC's (2)

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2683673

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y (N) NA
Therm ID#: 5
Cooler 1 Temp Upon Receipt: 4.2 oC
Cooler 1 Therm Corr. Factor: 0 oC
Cooler 1 Corrected Temp: 4.2 oC
Comments:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: of:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
AECOM	2-22-22 1613		
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature) PACE	Date/Time: 2-22-22 1613

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Pace Analytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: AECOM Cooler Inspected by/date: CBP / 02/22/2022 Lot #: XB22078

Means of receipt: ☐ Pace ☑ Client ☐ UPS ☐ FedEx ☐ Other: ____

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

4.2 / 4.2 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? ____
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☒ No	☑ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote # ____

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is ***no***) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: CBP Date: 02/22/2022

Comments:

Report of Analysis

AECOM
101 Research Drive
Columbia, SC 29203
Attention: Scott Ross

Project Name: Shakespeare Composite Structures

Project Number: 60675505

Lot Number:**XB24099**

Date Completed:03/16/2022

03/22/2022 1:54 PM
Approved and released by:
Project Manager II: **Cathy S. Dover**

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
AECOM
Lot Number: XB24099

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

VOA 8260D
The MS/MSD for batch 34017 and parent sample XB24099-015 (MW-6), recovered outside the lower control limit for Acetone. The associated LCS passed acceptance criteria.

Nitrate 300.0
The method blank for analytical batch 33763 contained nitrate greater than the DL, but < LOQ. The associated sample(s), XB24099-013 (MW-6i), XB24099-014 (MW-5), XB24099-016 (MW-9) and XB24099-017 (MW-22), contained detections nitrate at concentrations greater than 10X the value found in the method blank; therefore sample results are not impacted. The data has been reported for these three associated samples: XB24099-013 (MW-6i), XB24099-014 (MW-5), XB24099-016 (MW-9) and XB24099-017 (MW-22).

Sample XB24099-015 (MW-6) was also associated with the failing method blank in batch 33763. Since the sample's result was not 10 times greater than the hit in the blank, the sample was reanalyzed. The reanalysis was performed outside of the analytical holding time. Since the data is consistent for the original Run 1 and the reanalysis Run 2; the data from Run 1 has been reported.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Sample Summary

AECOM

Lot Number: XB24099

Project Name: Shakespeare Composite Structures

Project Number: 60675505

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	MW-28	Aqueous	02/22/2022 1515	02/24/2022
002	MW-13	Aqueous	02/22/2022 1610	02/24/2022
003	MW-27	Aqueous	02/23/2022 0930	02/24/2022
004	MW-26	Aqueous	02/23/2022 1005	02/24/2022
005	MW-3i	Aqueous	02/23/2022 1115	02/24/2022
006	MW-19	Aqueous	02/23/2022 1145	02/24/2022
007	MW-3	Aqueous	02/23/2022 1320	02/24/2022
008	MW-21i	Aqueous	02/23/2022 1420	02/24/2022
009	MW-21	Aqueous	02/23/2022 1535	02/24/2022
010	MW-19i	Aqueous	02/23/2022 1545	02/24/2022
011	MW-19D	Aqueous	02/23/2022 1500	02/24/2022
012	Dup-01	Aqueous	02/23/2022	02/24/2022
013	MW-6i	Aqueous	02/24/2022 0945	02/24/2022
014	MW-5	Aqueous	02/24/2022 0955	02/24/2022
015	MW-6	Aqueous	02/24/2022 1100	02/24/2022
016	MW-9	Aqueous	02/24/2022 1140	02/24/2022
017	MW-22	Aqueous	02/24/2022 1355	02/24/2022
018	MW-9D	Aqueous	02/24/2022 1515	02/24/2022
019	FB-01	Aqueous	02/24/2022 1008	02/24/2022
020	TB-03	Aqueous	02/23/2022	02/24/2022

(20 samples)

Detection Summary

AECOM

Lot Number: XB24099

Project Name: Shakespeare Composite Structures

Project Number: 60675505

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
002	MW-13	Aqueous	cis-1,2-Dichloroethene	8260D	3.1		ug/L	8
002	MW-13	Aqueous	Trichloroethene	8260D	70		ug/L	9
003	MW-27	Aqueous	Chloroform	8260D	1.2		ug/L	10
005	MW-3i	Aqueous	cis-1,2-Dichloroethene	8260D	33		ug/L	14
005	MW-3i	Aqueous	Tetrachloroethene	8260D	0.41	J	ug/L	14
005	MW-3i	Aqueous	Trichloroethene	8260D	12		ug/L	15
011	MW-19D	Aqueous	Trichloroethene	8260D	3.3		ug/L	27
012	Dup-01	Aqueous	1,1-Dichloroethene	8260D	0.41	J	ug/L	28
012	Dup-01	Aqueous	cis-1,2-Dichloroethene	8260D	35		ug/L	28
012	Dup-01	Aqueous	Tetrachloroethene	8260D	0.49	J	ug/L	28
012	Dup-01	Aqueous	Trichloroethene	8260D	13		ug/L	29
013	MW-6i	Aqueous	Alkalinity @ pH 4.5 su	SM 2320B-	25		mg CaCO3/L	30
013	MW-6i	Aqueous	Nitrate - N	300.0	0.20	B	mg/L	30
013	MW-6i	Aqueous	TOC	SM 5310C-	2.5		mg/L	30
013	MW-6i	Aqueous	cis-1,2-Dichloroethene	8260D	0.86		ug/L	31
013	MW-6i	Aqueous	Trichloroethene	8260D	15		ug/L	32
013	MW-6i	Aqueous	Methane	RSK - 175	4.7	J	ug/L	33
013	MW-6i	Aqueous	Iron	6010D	0.25		mg/L	35
014	MW-5	Aqueous	Nitrate - N	300.0	2.3	B	mg/L	36
014	MW-5	Aqueous	TOC	SM 5310C-	1.6		mg/L	36
014	MW-5	Aqueous	Acetone	8260D	4.0	J	ug/L	37
014	MW-5	Aqueous	Chloroform	8260D	1.1		ug/L	37
014	MW-5	Aqueous	1,2-Dichloroethane	8260D	1.1		ug/L	37
014	MW-5	Aqueous	cis-1,2-Dichloroethene	8260D	0.58		ug/L	37
014	MW-5	Aqueous	Trichloroethene	8260D	240		ug/L	38
014	MW-5	Aqueous	Methane	RSK - 175	5.6	J	ug/L	39
014	MW-5	Aqueous	Iron	6010D	0.052	J	mg/L	41
015	MW-6	Aqueous	Ferrous Iron	SM 3500-Fe B-	5.7		mg/L	42
015	MW-6	Aqueous	Nitrate - N	300.0	0.053	B	mg/L	42
015	MW-6	Aqueous	Nitrite - N	300.0	0.015	J	mg/L	42
015	MW-6	Aqueous	Sulfate	300.0	1.9		mg/L	42
015	MW-6	Aqueous	TOC	SM 5310C-	1.4		mg/L	42
015	MW-6	Aqueous	cis-1,2-Dichloroethene	8260D	220		ug/L	43
015	MW-6	Aqueous	trans-1,2-Dichloroethene	8260D	7.8		ug/L	43
015	MW-6	Aqueous	Styrene	8260D	2.5		ug/L	43
015	MW-6	Aqueous	Tetrachloroethene	8260D	2.7		ug/L	43
015	MW-6	Aqueous	Trichloroethene	8260D	330	S	ug/L	44
015	MW-6	Aqueous	Vinyl chloride	8260D	2.0	J	ug/L	44
015	MW-6	Aqueous	Methane	RSK - 175	790		ug/L	45
015	MW-6	Aqueous	Dissolved Iron	6010D	5.9		mg/L	46
015	MW-6	Aqueous	Iron	6010D	5.7		mg/L	47
016	MW-9	Aqueous	Alkalinity @ pH 4.5 su	SM 2320B-	28		mg CaCO3/L	48
016	MW-9	Aqueous	Ferrous Iron	SM 3500-Fe B-	2.7		mg/L	48

Detection Summary (Continued)

Lot Number: XB24099

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
016	MW-9	Aqueous	Nitrate - N	300.0	0.90	B	mg/L	48
016	MW-9	Aqueous	Sulfate	300.0	1.8		mg/L	48
016	MW-9	Aqueous	cis-1,2-Dichloroethene	8260D	43		ug/L	49
016	MW-9	Aqueous	Trichloroethene	8260D	850		ug/L	50
016	MW-9	Aqueous	Methane	RSK - 175	2.9	J	ug/L	51
016	MW-9	Aqueous	Iron	6010D	4.6		mg/L	53
017	MW-22	Aqueous	Nitrate - N	300.0	1.2	B	mg/L	54
017	MW-22	Aqueous	Sulfate	300.0	7.4		mg/L	54
017	MW-22	Aqueous	Methane	RSK - 175	2.7	J	ug/L	57
018	MW-9D	Aqueous	Trichloroethene	8260D	3.6		ug/L	61
019	FB-01	Aqueous	Acetone	8260D	9.6	J	ug/L	62
019	FB-01	Aqueous	Styrene	8260D	1.6		ug/L	62
020	TB-03	Aqueous	1,2,4-Trichlorobenzene	8260D	0.41	J	ug/L	64

(56 detections)

Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-001
Description: MW-28
Matrix: Aqueous
Date Sampled: 02/22/2022 1515
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/06/2022 1842	JM1		33906

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM			Laboratory ID: XB24099-001
Description: MW-28			Matrix: Aqueous
Date Sampled: 02/22/2022 1515		Project Name: Shakespeare Composite	
Date Received: 02/24/2022		Project Number: 60675505	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/06/2022 1842	JM1		33906

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		94	70-130
1,2-Dichloroethane-d4		100	70-130
Toluene-d8		102	70-130

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-002
Description: MW-13
Matrix: Aqueous
Date Sampled: 02/22/2022 1610
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/06/2022 1907	JM1		33906

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	3.1		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
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H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-002
Description: MW-13
Matrix: Aqueous
Date Sampled: 02/22/2022 1610
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/06/2022 1907	JM1		33906

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	70		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		98	70-130
1,2-Dichloroethane-d4		102	70-130
Toluene-d8		107	70-130

LOQ = Limit of Quantitation
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-003
Description: MW-27
Matrix: Aqueous
Date Sampled: 02/23/2022 0930
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/06/2022 1931	JM1		33906

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	1.2		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-003
Description: MW-27
Matrix: Aqueous
Date Sampled: 02/23/2022 0930
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/06/2022 1931	JM1		33906

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		95	70-130
1,2-Dichloroethane-d4		100	70-130
Toluene-d8		103	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-004
Description: MW-26
Matrix: Aqueous
Date Sampled: 02/23/2022 1005
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/06/2022 1956	JM1		33906

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
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E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
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H = Out of holding time
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S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-004
Description: MW-26
Matrix: Aqueous
Date Sampled: 02/23/2022 1005
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/06/2022 1956	JM1		33906

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		97	70-130
1,2-Dichloroethane-d4		102	70-130
Toluene-d8		104	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-005
Description: MW-3i
Matrix: Aqueous
Date Sampled: 02/23/2022 1115
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/06/2022 2020	JM1		33906

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	33		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.41	J	0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-005
Description: MW-3i
Matrix: Aqueous
Date Sampled: 02/23/2022 1115
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/06/2022 2020	JM1		33906

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	12		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		92	70-130
1,2-Dichloroethane-d4		97	70-130
Toluene-d8		101	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-006
Description: MW-19
Matrix: Aqueous
Date Sampled: 02/23/2022 1145
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/06/2022 2045	JM1		33906

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-006
Description: MW-19
Matrix: Aqueous
Date Sampled: 02/23/2022 1145
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/06/2022 2045	JM1		33906

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		96	70-130
1,2-Dichloroethane-d4		100	70-130
Toluene-d8		105	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-007
Description: MW-3
Matrix: Aqueous
Date Sampled: 02/23/2022 1320
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/07/2022 1437	JMM2		34000

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-007
Description: MW-3
Matrix: Aqueous
Date Sampled: 02/23/2022 1320
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/07/2022 1437	JMM2		34000

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		107	70-130
1,2-Dichloroethane-d4		96	70-130
Toluene-d8		93	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-008
Description: MW-21i
Matrix: Aqueous
Date Sampled: 02/23/2022 1420
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/07/2022 1500	JMM2		34000

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-008
Description: MW-21i
Matrix: Aqueous
Date Sampled: 02/23/2022 1420
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/07/2022 1500	JMM2		34000

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		108	70-130
1,2-Dichloroethane-d4		96	70-130
Toluene-d8		95	70-130

LOQ = Limit of Quantitation
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-009
Description: MW-21
Matrix: Aqueous
Date Sampled: 02/23/2022 1535
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/07/2022 1523	JMM2		34000

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-009
Description: MW-21
Matrix: Aqueous
Date Sampled: 02/23/2022 1535
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/07/2022 1523	JMM2		34000

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		112	70-130
1,2-Dichloroethane-d4		95	70-130
Toluene-d8		94	70-130

LOQ = Limit of Quantitation
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N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-010
Description: MW-19i
Matrix: Aqueous
Date Sampled: 02/23/2022 1545
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/07/2022 1545	JMM2		34000

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
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N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-010
Description: MW-19i
Matrix: Aqueous
Date Sampled: 02/23/2022 1545
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/07/2022 1545	JMM2		34000

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		104	70-130
1,2-Dichloroethane-d4		95	70-130
Toluene-d8		91	70-130

LOQ = Limit of Quantitation
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ND = Not detected at or above the DL
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P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
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S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-011
Description: MW-19D
Matrix: Aqueous
Date Sampled: 02/23/2022 1500
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/07/2022 1608	JMM2		34000

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-011
Description: MW-19D
Matrix: Aqueous
Date Sampled: 02/23/2022 1500
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/07/2022 1608	JMM2		34000

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	3.3		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		109	70-130
1,2-Dichloroethane-d4		96	70-130
Toluene-d8		93	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-012
Description: Dup-01
Matrix: Aqueous
Date Sampled: 02/23/2022
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/07/2022 1630	JMM2		34000

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.41	J	0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	35		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.49	J	0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-012
Description: Dup-01
Matrix: Aqueous
Date Sampled: 02/23/2022
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/07/2022 1630	JMM2		34000

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	13		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		113	70-130
1,2-Dichloroethane-d4		97	70-130
Toluene-d8		93	70-130

LOQ = Limit of Quantitation
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E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
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H = Out of holding time
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Inorganic non-metals

Client: AECOM
Laboratory ID: XB24099-013
Description: MW-6i
Matrix: Aqueous
Date Sampled: 02/24/2022 0945
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity @) SM 2320B-2011	1	03/03/2022 0130	TAD		33659
1		(Ferrous Iron) SM 3500-Fe B-2011	1	02/25/2022 0044	TAD		33146
1		(Nitrate - N) 300.0	1	02/25/2022 1840	AAB		33763
1		(Nitrite - N) 300.0	1	02/25/2022 1840	AAB		33760
1		(Sulfate) 300.0	1	02/25/2022 1840	AAB		33759
1		(TOC) SM 5310C-2014	1	03/04/2022 1159	DMA		33752

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity @ pH 4.5 su		SM 2320B-2011	25		20	20	mg CaCO3/L	1
Ferrous Iron		SM 3500-Fe B-2	ND		0.050	0.050	mg/L	1
Nitrate - N		300.0	0.20	B	0.020	0.0050	mg/L	1
Nitrite - N		300.0	ND		0.020	0.0050	mg/L	1
Sulfate		300.0	ND		1.0	0.25	mg/L	1
TOC		SM 5310C-2014	2.5		1.0	1.0	mg/L	1

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P = The RPD between two GC columns exceeds 40%
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W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-013
Description: MW-6i
Matrix: Aqueous
Date Sampled: 02/24/2022 0945
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/07/2022 1922	JM1		34017

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.86		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

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H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-013
Description: MW-6i
Matrix: Aqueous
Date Sampled: 02/24/2022 0945
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/07/2022 1922	JM1		34017

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	15		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		94	70-130
1,2-Dichloroethane-d4		111	70-130
Toluene-d8		106	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Dissolved Gases

Client: AECOM
Laboratory ID: XB24099-013
Description: MW-6i
Matrix: Aqueous
Date Sampled: 02/24/2022 0945
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	03/02/2022 1325	JM1		33463

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	4.7	J	10	2.5	ug/L	1

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ICP-AES Metals

Client: AECOM			Laboratory ID: XB24099-013
Description: MW-6i			Matrix: Aqueous
Date Sampled: 02/24/2022 0945		Project Name: Shakespeare Composite	
Date Received: 02/24/2022		Project Number: 60675505	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/06/2022 0009	KSH2	03/03/2022 1017	33057

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Dissolved Iron	7439-89-6	6010D	ND		0.10	0.040	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Metals

Client: AECOM
Laboratory ID: XB24099-013
Description: MW-6i
Matrix: Aqueous
Date Sampled: 02/24/2022 0945
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/04/2022 0457	KSH2	02/26/2022 0715	33013

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Iron	7439-89-6	6010D	0.25		0.10	0.040	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Inorganic non-metals

Client: AECOM
Laboratory ID: XB24099-014
Description: MW-5
Matrix: Aqueous
Date Sampled: 02/24/2022 0955
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity @) SM 2320B-2011	1	03/03/2022 0138	TAD		33659
1		(Ferrous Iron) SM 3500-Fe B-2011	1	02/25/2022 0048	TAD		33146
1		(Nitrate - N) 300.0	1	02/25/2022 1859	AAB		33763
1		(Nitrite - N) 300.0	1	02/25/2022 1859	AAB		33760
1		(Sulfate) 300.0	1	02/25/2022 1859	AAB		33759
1		(TOC) SM 5310C-2014	1	03/04/2022 1213	DMA		33752

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity @ pH 4.5 su		SM 2320B-2011	ND		20	20	mg CaCO3/L	1
Ferrous Iron		SM 3500-Fe B-2	ND		0.050	0.050	mg/L	1
Nitrate - N		300.0	2.3	B	0.020	0.0050	mg/L	1
Nitrite - N		300.0	ND		0.020	0.0050	mg/L	1
Sulfate		300.0	ND		1.0	0.25	mg/L	1
TOC		SM 5310C-2014	1.6		1.0	1.0	mg/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-014
Description: MW-5
Matrix: Aqueous
Date Sampled: 02/24/2022 0955
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/07/2022 2013	JM1		34017
2	5030B	8260D	5	03/09/2022 0233	JWO		34182

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	4.0	J	10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	1.1		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	1.1		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.58		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-014
Description: MW-5
Matrix: Aqueous
Date Sampled: 02/24/2022 0955
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/07/2022 2013	JM1		34017
2	5030B	8260D	5	03/09/2022 0233	JWO		34182

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1
Trichloroethene	79-01-6	8260D	240		2.5	2.0	ug/L	2
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		92	70-130		88	70-130
1,2-Dichloroethane-d4		108	70-130		119	70-130
Toluene-d8		105	70-130		105	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Dissolved Gases

Client: AECOM
Laboratory ID: XB24099-014
Description: MW-5
Matrix: Aqueous
Date Sampled: 02/24/2022 0955
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	03/02/2022 1341	JM1		33463

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	5.6	J	10	2.5	ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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ICP-AES Metals

Client: AECOM
Laboratory ID: XB24099-014
Description: MW-5
Matrix: Aqueous
Date Sampled: 02/24/2022 0955
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/06/2022 0040	KSH2	03/03/2022 1017	33057

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Dissolved Iron	7439-89-6	6010D	ND		0.10	0.040	mg/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Metals

Client: AECOM
Laboratory ID: XB24099-014
Description: MW-5
Matrix: Aqueous
Date Sampled: 02/24/2022 0955
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/04/2022 0506	KSH2	02/26/2022 0715	33013

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Iron	7439-89-6	6010D	0.052	J	0.10	0.040	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Inorganic non-metals

Client: AECOM
Laboratory ID: XB24099-015
Description: MW-6
Matrix: Aqueous
Date Sampled: 02/24/2022 1100
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity @) SM 2320B-2011	1	03/03/2022 0146	TAD		33659
1		(Ferrous Iron) SM 3500-Fe B-2011	2	02/25/2022 0049	TAD		33146
1		(Nitrate - N) 300.0	1	02/25/2022 1918	AAB		33763
1		(Nitrite - N) 300.0	1	02/25/2022 1918	AAB		33760
1		(Sulfate) 300.0	1	02/25/2022 1918	AAB		33759
1		(TOC) SM 5310C-2014	1	03/04/2022 1226	DMA		33752

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity @ pH 4.5 su		SM 2320B-2011	ND		20	20	mg CaCO3/L	1
Ferrous Iron		SM 3500-Fe B-2	5.7		0.10	0.10	mg/L	1
Nitrate - N		300.0	0.053	B	0.020	0.0050	mg/L	1
Nitrite - N		300.0	0.015	J	0.020	0.0050	mg/L	1
Sulfate		300.0	1.9		1.0	0.25	mg/L	1
TOC		SM 5310C-2014	1.4		1.0	1.0	mg/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-015
Description: MW-6
Matrix: Aqueous
Date Sampled: 02/24/2022 1100
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	5	03/07/2022 1948	JM1		34017

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND	S	50	20	ug/L	1
Benzene	71-43-2	8260D	ND		2.5	2.0	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		2.5	2.0	ug/L	1
Bromoform	75-25-2	8260D	ND		2.5	2.0	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.5	2.0	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		50	10	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		2.5	2.0	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		2.5	2.0	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		2.5	2.0	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.5	2.0	ug/L	1
Chloroform	67-66-3	8260D	ND		2.5	2.0	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		2.5	2.0	ug/L	1
Cyclohexane	110-82-7	8260D	ND		2.5	2.0	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		2.5	2.0	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		2.5	2.0	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		2.5	2.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		2.5	2.0	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		2.5	2.0	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		2.5	2.0	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.5	2.0	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		2.5	2.0	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		2.5	2.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		2.5	2.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	220		2.5	2.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	7.8		2.5	2.0	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		2.5	2.0	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		2.5	2.0	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		2.5	2.0	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		2.5	2.0	ug/L	1
2-Hexanone	591-78-6	8260D	ND		50	10	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		2.5	2.0	ug/L	1
Methyl acetate	79-20-9	8260D	ND		5.0	2.0	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		2.5	2.0	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		50	10	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		25	2.0	ug/L	1
Methylene chloride	75-09-2	8260D	ND		2.5	2.0	ug/L	1
Styrene	100-42-5	8260D	2.5		2.5	2.1	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		2.5	2.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	2.7		2.5	2.0	ug/L	1
Toluene	108-88-3	8260D	ND		2.5	2.0	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		5.0	2.1	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		2.5	2.0	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		2.5	2.0	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		2.5	2.0	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-015
Description: MW-6
Matrix: Aqueous
Date Sampled: 02/24/2022 1100
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	5	03/07/2022 1948	JM1		34017

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	330	S	2.5	2.0	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		2.5	2.0	ug/L	1
Vinyl chloride	75-01-4	8260D	2.0	J	2.5	2.0	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		5.0	2.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		93	70-130
1,2-Dichloroethane-d4		106	70-130
Toluene-d8		106	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Dissolved Gases

Client: AECOM
Laboratory ID: XB24099-015
Description: MW-6
Matrix: Aqueous
Date Sampled: 02/24/2022 1100
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	03/02/2022 1357	JM1		33463

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	790		10	2.5	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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ICP-AES Metals

Client: AECOM
Laboratory ID: XB24099-015
Description: MW-6
Matrix: Aqueous
Date Sampled: 02/24/2022 1100
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/06/2022 0044	KSH2	03/03/2022 1017	33057

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Dissolved Iron	7439-89-6	6010D	5.9		0.10	0.040	mg/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Metals

Client: AECOM
Laboratory ID: XB24099-015
Description: MW-6
Matrix: Aqueous
Date Sampled: 02/24/2022 1100
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/04/2022 0510	KSH2	02/26/2022 0715	33013

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Iron	7439-89-6	6010D	5.7		0.10	0.040	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Inorganic non-metals

Client: AECOM
Laboratory ID: XB24099-016
Description: MW-9
Matrix: Aqueous
Date Sampled: 02/24/2022 1140
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity @) SM 2320B-2011	1	03/03/2022 0152	TAD		33659
1		(Ferrous Iron) SM 3500-Fe B-2011	1	02/25/2022 0049	TAD		33146
1		(Nitrate - N) 300.0	1	02/25/2022 1937	AAB		33763
1		(Nitrite - N) 300.0	1	02/25/2022 1937	AAB		33760
1		(Sulfate) 300.0	1	02/25/2022 1937	AAB		33759
1		(TOC) SM 5310C-2014	1	03/04/2022 1305	DMA		33752

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity @ pH 4.5 su		SM 2320B-2011	28		20	20	mg CaCO3/L	1
Ferrous Iron		SM 3500-Fe B-2	2.7		0.050	0.050	mg/L	1
Nitrate - N		300.0	0.90	B	0.020	0.0050	mg/L	1
Nitrite - N		300.0	ND		0.020	0.0050	mg/L	1
Sulfate		300.0	1.8		1.0	0.25	mg/L	1
TOC		SM 5310C-2014	ND		1.0	1.0	mg/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-016
Description: MW-9
Matrix: Aqueous
Date Sampled: 02/24/2022 1140
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	10	03/08/2022 0706	JWO		34041

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		100	40	ug/L	1
Benzene	71-43-2	8260D	ND		5.0	4.0	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		5.0	4.0	ug/L	1
Bromoform	75-25-2	8260D	ND		5.0	4.0	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		5.0	4.0	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		100	20	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		5.0	4.0	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		5.0	4.0	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		5.0	4.0	ug/L	1
Chloroethane	75-00-3	8260D	ND		5.0	4.0	ug/L	1
Chloroform	67-66-3	8260D	ND		5.0	4.0	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		5.0	4.0	ug/L	1
Cyclohexane	110-82-7	8260D	ND		5.0	4.0	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		5.0	4.0	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		5.0	4.0	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		5.0	4.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		5.0	4.0	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		5.0	4.0	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		5.0	4.0	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		5.0	4.0	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		5.0	4.0	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		5.0	4.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		5.0	4.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	43		5.0	4.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		5.0	4.0	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		5.0	4.0	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		5.0	4.0	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		5.0	4.0	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		5.0	4.0	ug/L	1
2-Hexanone	591-78-6	8260D	ND		100	20	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		5.0	4.0	ug/L	1
Methyl acetate	79-20-9	8260D	ND		10	4.0	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		5.0	4.0	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		100	20	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		50	4.0	ug/L	1
Methylene chloride	75-09-2	8260D	ND		5.0	4.0	ug/L	1
Styrene	100-42-5	8260D	ND		5.0	4.1	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		5.0	4.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		5.0	4.0	ug/L	1
Toluene	108-88-3	8260D	ND		5.0	4.0	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		10	4.2	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		5.0	4.0	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		5.0	4.0	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		5.0	4.0	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-016
Description: MW-9
Matrix: Aqueous
Date Sampled: 02/24/2022 1140
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	10	03/08/2022 0706	JWO		34041

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	850		5.0	4.0	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		5.0	4.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		5.0	4.0	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		10	4.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		88	70-130
1,2-Dichloroethane-d4		113	70-130
Toluene-d8		103	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
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S = MS/MSD failure

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Dissolved Gases

Client: AECOM
Laboratory ID: XB24099-016
Description: MW-9
Matrix: Aqueous
Date Sampled: 02/24/2022 1140
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	03/02/2022 1413	JM1		33463

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	2.9	J	10	2.5	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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ICP-AES Metals

Client: AECOM			Laboratory ID: XB24099-016
Description: MW-9			Matrix: Aqueous
Date Sampled: 02/24/2022 1140		Project Name: Shakespeare Composite	
Date Received: 02/24/2022		Project Number: 60675505	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/06/2022 0048	KSH2	03/03/2022 1017	33057

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Dissolved Iron	7439-89-6	6010D	ND		0.10	0.040	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Metals

Client: AECOM
Laboratory ID: XB24099-016
Description: MW-9
Matrix: Aqueous
Date Sampled: 02/24/2022 1140
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/04/2022 0515	KSH2	02/26/2022 0715	33013

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Iron	7439-89-6	6010D	4.6		0.10	0.040	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Inorganic non-metals

Client: AECOM
Laboratory ID: XB24099-017
Description: MW-22
Matrix: Aqueous
Date Sampled: 02/24/2022 1355
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity @) SM 2320B-2011	1	03/03/2022 0157	TAD		33659
1		(Ferrous Iron) SM 3500-Fe B-2011	1	02/25/2022 0050	TAD		33146
1		(Nitrate - N) 300.0	1	02/25/2022 1956	AAB		33763
1		(Nitrite - N) 300.0	1	02/25/2022 1956	AAB		33760
1		(Sulfate) 300.0	1	02/25/2022 1956	AAB		33759
1		(TOC) SM 5310C-2014	1	03/04/2022 1344	DMA		33752

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity @ pH 4.5 su		SM 2320B-2011	ND		20	20	mg CaCO3/L	1
Ferrous Iron		SM 3500-Fe B-2	ND		0.050	0.050	mg/L	1
Nitrate - N		300.0	1.2	B	0.020	0.0050	mg/L	1
Nitrite - N		300.0	ND		0.020	0.0050	mg/L	1
Sulfate		300.0	7.4		1.0	0.25	mg/L	1
TOC		SM 5310C-2014	ND		1.0	1.0	mg/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-017
Description: MW-22
Matrix: Aqueous
Date Sampled: 02/24/2022 1355
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/08/2022 0257	JWO		34041

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-017
Description: MW-22
Matrix: Aqueous
Date Sampled: 02/24/2022 1355
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/08/2022 0257	JWO		34041

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		88	70-130
1,2-Dichloroethane-d4		108	70-130
Toluene-d8		102	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Dissolved Gases

Client: AECOM
Laboratory ID: XB24099-017
Description: MW-22
Matrix: Aqueous
Date Sampled: 02/24/2022 1355
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	03/02/2022 1429	JM1		33463

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	2.7	J	10	2.5	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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ICP-AES Metals

Client: AECOM			Laboratory ID: XB24099-017
Description: MW-22			Matrix: Aqueous
Date Sampled: 02/24/2022 1355		Project Name: Shakespeare Composite	
Date Received: 02/24/2022		Project Number: 60675505	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/06/2022 0053	KSH2	03/03/2022 1017	33057

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Dissolved Iron	7439-89-6	6010D	ND		0.10	0.040	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Metals

Client: AECOM
Laboratory ID: XB24099-017
Description: MW-22
Matrix: Aqueous
Date Sampled: 02/24/2022 1355
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/04/2022 0537	KSH2	02/26/2022 0715	33013

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Iron	7439-89-6	6010D	ND		0.10	0.040	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-018
Description: MW-9D
Matrix: Aqueous
Date Sampled: 02/24/2022 1515
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/08/2022 0322	JWO		34041

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-018
Description: MW-9D
Matrix: Aqueous
Date Sampled: 02/24/2022 1515
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/08/2022 0322	JWO		34041

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	3.6		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		92	70-130
1,2-Dichloroethane-d4		113	70-130
Toluene-d8		105	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-019
Description: FB-01
Matrix: Aqueous
Date Sampled: 02/24/2022 1008
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/08/2022 0027	JWO		34041

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	9.6	J	10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	1.6		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
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DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-019
Description: FB-01
Matrix: Aqueous
Date Sampled: 02/24/2022 1008
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/08/2022 0027	JWO		34041

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		90	70-130
1,2-Dichloroethane-d4		109	70-130
Toluene-d8		103	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-020
Description: TB-03
Matrix: Aqueous
Date Sampled: 02/23/2022
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/07/2022 1352	JMM2		34000

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	0.41	J	0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB24099-020
Description: TB-03
Matrix: Aqueous
Date Sampled: 02/23/2022
Project Name: Shakespeare Composite
Date Received: 02/24/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/07/2022 1352	JMM2		34000

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		105	70-130
1,2-Dichloroethane-d4		98	70-130
Toluene-d8		92	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
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QC Summary

Inorganic non-metals - MB

Sample ID: XQ33146-001
Batch: 33146
Analytical Method: SM 3500-Fe B-2011
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Ferrous Iron	ND		1	0.050	0.050	mg/L	02/25/2022 0023

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ33146-002
Batch: 33146
Analytical Method: SM 3500-Fe B-2011
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Ferrous Iron	1.0	0.93		1	93	90-110	02/25/2022 0027

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MS

Sample ID: XB24099-013MS
Batch: 33146
Analytical Method: SM 3500-Fe B-2011
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Ferrous Iron	ND	1.0	0.83		1	83	70-130	02/25/2022 0044

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MSD

Sample ID: XB24099-013MD
Batch: 33146
Analytical Method: SM 3500-Fe B-2011
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Ferrous Iron	ND	1.0	0.87		1	87	4.6	70-130	20	02/25/2022 0046

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ33659-002
Batch: 33659
Analytical Method: SM 2320B-2011

Matrix: Aqueous

Parameter	Spike Amount (mg CaCO3/L)	Result (mg CaCO3/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Alkalinity @ pH 4.5 su	100	110		1	105	90-110	03/03/2022 0046

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MB

Sample ID: XQ33752-001
Batch: 33752
Analytical Method: SM 5310C-2014

Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
TOC	ND		1	1.0	1.0	mg/L	03/04/2022 1120

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ33752-002
Batch: 33752
Analytical Method: SM 5310C-2014
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
TOC	20	19		1	95	90-110	03/04/2022 1133

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Sample ID: XB24099-015MS
Batch: 33752
Analytical Method: SM 5310C-2014
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
TOC	1.4	50	48		1	94	70-130	03/04/2022 1239

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MSD

Sample ID: XB24099-015MD
Batch: 33752
Analytical Method: SM 5310C-2014

Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
TOC	1.4	50	47		1	91	2.9	70-130	20	03/04/2022 1252

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MB

Sample ID: XQ33759-001
Batch: 33759
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Sulfate	ND		1	1.0	0.25	mg/L	02/25/2022 1106

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ33759-002
Batch: 33759
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Sulfate	20	20		1	102	90-110	02/25/2022 1144

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MB

Sample ID: XQ33760-001
Batch: 33760
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Nitrite - N	ND		1	0.020	0.0050	mg/L	02/25/2022 1106

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ33760-002
Batch: 33760
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Nitrite - N	0.80	0.80		1	100	90-110	02/25/2022 1144

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MB

Sample ID: XQ33763-001
Batch: 33763
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Nitrate - N	0.013	J	1	0.020	0.0050	mg/L	02/25/2022 1106

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ33763-002
Batch: 33763
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Nitrate - N	0.80	0.84		1	105	90-110	02/25/2022 1144

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ33906-001
Batch: 33906
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	10	4.0	ug/L	03/06/2022 1306
Benzene	ND		1	0.50	0.40	ug/L	03/06/2022 1306
Bromodichloromethane	ND		1	0.50	0.40	ug/L	03/06/2022 1306
Bromoform	ND		1	0.50	0.40	ug/L	03/06/2022 1306
Bromomethane (Methyl bromide)	ND		1	0.50	0.40	ug/L	03/06/2022 1306
2-Butanone (MEK)	ND		1	10	2.0	ug/L	03/06/2022 1306
Carbon disulfide	ND		1	0.50	0.40	ug/L	03/06/2022 1306
Carbon tetrachloride	ND		1	0.50	0.40	ug/L	03/06/2022 1306
Chlorobenzene	ND		1	0.50	0.40	ug/L	03/06/2022 1306
Chloroethane	ND		1	0.50	0.40	ug/L	03/06/2022 1306
Chloroform	ND		1	0.50	0.40	ug/L	03/06/2022 1306
Chloromethane (Methyl chloride)	ND		1	0.50	0.40	ug/L	03/06/2022 1306
Cyclohexane	ND		1	0.50	0.40	ug/L	03/06/2022 1306
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.50	0.40	ug/L	03/06/2022 1306
Dibromochloromethane	ND		1	0.50	0.40	ug/L	03/06/2022 1306
1,2-Dibromoethane (EDB)	ND		1	0.50	0.40	ug/L	03/06/2022 1306
1,2-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/06/2022 1306
1,3-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/06/2022 1306
1,4-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/06/2022 1306
Dichlorodifluoromethane	ND		1	0.50	0.40	ug/L	03/06/2022 1306
1,1-Dichloroethane	ND		1	0.50	0.40	ug/L	03/06/2022 1306
1,2-Dichloroethane	ND		1	0.50	0.40	ug/L	03/06/2022 1306
1,1-Dichloroethene	ND		1	0.50	0.40	ug/L	03/06/2022 1306
cis-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/06/2022 1306
trans-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/06/2022 1306
1,2-Dichloropropane	ND		1	0.50	0.40	ug/L	03/06/2022 1306
cis-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/06/2022 1306
trans-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/06/2022 1306
Ethylbenzene	ND		1	0.50	0.40	ug/L	03/06/2022 1306
2-Hexanone	ND		1	10	2.0	ug/L	03/06/2022 1306
Isopropylbenzene	ND		1	0.50	0.40	ug/L	03/06/2022 1306
Methyl acetate	ND		1	1.0	0.40	ug/L	03/06/2022 1306
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.40	ug/L	03/06/2022 1306
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	03/06/2022 1306
Methylcyclohexane	ND		1	5.0	0.40	ug/L	03/06/2022 1306
Methylene chloride	ND		1	0.50	0.40	ug/L	03/06/2022 1306
Styrene	ND		1	0.50	0.41	ug/L	03/06/2022 1306
1,1,2,2-Tetrachloroethane	ND		1	0.50	0.40	ug/L	03/06/2022 1306
Tetrachloroethene	ND		1	0.50	0.40	ug/L	03/06/2022 1306
Toluene	ND		1	0.50	0.40	ug/L	03/06/2022 1306
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	03/06/2022 1306
1,2,4-Trichlorobenzene	ND		1	0.50	0.40	ug/L	03/06/2022 1306
1,1,1-Trichloroethane	ND		1	0.50	0.40	ug/L	03/06/2022 1306
1,1,2-Trichloroethane	ND		1	0.50	0.40	ug/L	03/06/2022 1306

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ33906-001
Batch: 33906
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.50	0.40	ug/L	03/06/2022 1306
Trichlorofluoromethane	ND		1	0.50	0.40	ug/L	03/06/2022 1306
Vinyl chloride	ND		1	0.50	0.40	ug/L	03/06/2022 1306
Xylenes (total)	ND		1	1.0	0.40	ug/L	03/06/2022 1306

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		96	70-130
1,2-Dichloroethane-d4		94	70-130
Toluene-d8		101	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ33906-002
Batch: 33906
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	120		1	125	60-140	03/06/2022 1217
Benzene	50	48		1	96	70-130	03/06/2022 1217
Bromodichloromethane	50	45		1	90	70-130	03/06/2022 1217
Bromoform	50	48		1	97	70-130	03/06/2022 1217
Bromomethane (Methyl bromide)	50	44		1	87	70-130	03/06/2022 1217
2-Butanone (MEK)	100	120		1	122	70-130	03/06/2022 1217
Carbon disulfide	50	48		1	95	70-130	03/06/2022 1217
Carbon tetrachloride	50	39		1	77	70-130	03/06/2022 1217
Chlorobenzene	50	47		1	93	70-130	03/06/2022 1217
Chloroethane	50	52		1	105	70-130	03/06/2022 1217
Chloroform	50	43		1	85	70-130	03/06/2022 1217
Chloromethane (Methyl chloride)	50	47		1	93	60-140	03/06/2022 1217
Cyclohexane	50	40		1	81	70-130	03/06/2022 1217
1,2-Dibromo-3-chloropropane (DBCP)	50	47		1	95	70-130	03/06/2022 1217
Dibromochloromethane	50	48		1	96	70-130	03/06/2022 1217
1,2-Dibromoethane (EDB)	50	51		1	101	70-130	03/06/2022 1217
1,2-Dichlorobenzene	50	46		1	93	70-130	03/06/2022 1217
1,3-Dichlorobenzene	50	46		1	92	70-130	03/06/2022 1217
1,4-Dichlorobenzene	50	44		1	88	70-130	03/06/2022 1217
Dichlorodifluoromethane	50	46		1	92	60-140	03/06/2022 1217
1,1-Dichloroethane	50	47		1	93	70-130	03/06/2022 1217
1,2-Dichloroethane	50	43		1	86	70-130	03/06/2022 1217
1,1-Dichloroethene	50	46		1	91	70-130	03/06/2022 1217
cis-1,2-Dichloroethene	50	47		1	93	70-130	03/06/2022 1217
trans-1,2-Dichloroethene	50	45		1	91	70-130	03/06/2022 1217
1,2-Dichloropropane	50	49		1	97	70-130	03/06/2022 1217
cis-1,3-Dichloropropene	50	51		1	102	70-130	03/06/2022 1217
trans-1,3-Dichloropropene	50	50		1	99	70-130	03/06/2022 1217
Ethylbenzene	50	49		1	98	70-130	03/06/2022 1217
2-Hexanone	100	100		1	101	70-130	03/06/2022 1217
Isopropylbenzene	50	45		1	90	70-130	03/06/2022 1217
Methyl acetate	50	54		1	108	70-130	03/06/2022 1217
Methyl tertiary butyl ether (MTBE)	50	50		1	100	70-130	03/06/2022 1217
4-Methyl-2-pentanone	100	93		1	93	70-130	03/06/2022 1217
Methylcyclohexane	50	40		1	79	70-130	03/06/2022 1217
Methylene chloride	50	45		1	90	70-130	03/06/2022 1217
Styrene	50	54		1	108	70-130	03/06/2022 1217
1,1,2,2-Tetrachloroethane	50	50		1	100	70-130	03/06/2022 1217
Tetrachloroethene	50	46		1	91	70-130	03/06/2022 1217
Toluene	50	49		1	97	70-130	03/06/2022 1217
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	40		1	79	70-130	03/06/2022 1217
1,2,4-Trichlorobenzene	50	44		1	87	70-130	03/06/2022 1217
1,1,1-Trichloroethane	50	43		1	86	70-130	03/06/2022 1217
1,1,2-Trichloroethane	50	51		1	101	70-130	03/06/2022 1217

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ33906-002
Batch: 33906
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	43		1	85	70-130	03/06/2022 1217
Trichlorofluoromethane	50	44		1	88	70-130	03/06/2022 1217
Vinyl chloride	50	46		1	92	70-130	03/06/2022 1217
Xylenes (total)	100	99		1	99	70-130	03/06/2022 1217

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		100	70-130
1,2-Dichloroethane-d4		86	70-130
Toluene-d8		96	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34000-001
Batch: 34000
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	10	4.0	ug/L	03/07/2022 1218
Benzene	ND		1	0.50	0.40	ug/L	03/07/2022 1218
Bromodichloromethane	ND		1	0.50	0.40	ug/L	03/07/2022 1218
Bromoform	ND		1	0.50	0.40	ug/L	03/07/2022 1218
Bromomethane (Methyl bromide)	ND		1	0.50	0.40	ug/L	03/07/2022 1218
2-Butanone (MEK)	ND		1	10	2.0	ug/L	03/07/2022 1218
Carbon disulfide	ND		1	0.50	0.40	ug/L	03/07/2022 1218
Carbon tetrachloride	ND		1	0.50	0.40	ug/L	03/07/2022 1218
Chlorobenzene	ND		1	0.50	0.40	ug/L	03/07/2022 1218
Chloroethane	ND		1	0.50	0.40	ug/L	03/07/2022 1218
Chloroform	ND		1	0.50	0.40	ug/L	03/07/2022 1218
Chloromethane (Methyl chloride)	ND		1	0.50	0.40	ug/L	03/07/2022 1218
Cyclohexane	ND		1	0.50	0.40	ug/L	03/07/2022 1218
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.50	0.40	ug/L	03/07/2022 1218
Dibromochloromethane	ND		1	0.50	0.40	ug/L	03/07/2022 1218
1,2-Dibromoethane (EDB)	ND		1	0.50	0.40	ug/L	03/07/2022 1218
1,2-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/07/2022 1218
1,3-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/07/2022 1218
1,4-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/07/2022 1218
Dichlorodifluoromethane	ND		1	0.50	0.40	ug/L	03/07/2022 1218
1,1-Dichloroethane	ND		1	0.50	0.40	ug/L	03/07/2022 1218
1,2-Dichloroethane	ND		1	0.50	0.40	ug/L	03/07/2022 1218
1,1-Dichloroethene	ND		1	0.50	0.40	ug/L	03/07/2022 1218
cis-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/07/2022 1218
trans-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/07/2022 1218
1,2-Dichloropropane	ND		1	0.50	0.40	ug/L	03/07/2022 1218
cis-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/07/2022 1218
trans-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/07/2022 1218
Ethylbenzene	ND		1	0.50	0.40	ug/L	03/07/2022 1218
2-Hexanone	ND		1	10	2.0	ug/L	03/07/2022 1218
Isopropylbenzene	ND		1	0.50	0.40	ug/L	03/07/2022 1218
Methyl acetate	ND		1	1.0	0.40	ug/L	03/07/2022 1218
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.40	ug/L	03/07/2022 1218
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	03/07/2022 1218
Methylcyclohexane	ND		1	5.0	0.40	ug/L	03/07/2022 1218
Methylene chloride	ND		1	0.50	0.40	ug/L	03/07/2022 1218
Styrene	ND		1	0.50	0.41	ug/L	03/07/2022 1218
1,1,2,2-Tetrachloroethane	ND		1	0.50	0.40	ug/L	03/07/2022 1218
Tetrachloroethene	ND		1	0.50	0.40	ug/L	03/07/2022 1218
Toluene	ND		1	0.50	0.40	ug/L	03/07/2022 1218
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	03/07/2022 1218
1,2,4-Trichlorobenzene	ND		1	0.50	0.40	ug/L	03/07/2022 1218
1,1,1-Trichloroethane	ND		1	0.50	0.40	ug/L	03/07/2022 1218
1,1,2-Trichloroethane	ND		1	0.50	0.40	ug/L	03/07/2022 1218

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34000-001
Batch: 34000
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.50	0.40	ug/L	03/07/2022 1218
Trichlorofluoromethane	ND		1	0.50	0.40	ug/L	03/07/2022 1218
Vinyl chloride	ND		1	0.50	0.40	ug/L	03/07/2022 1218
Xylenes (total)	ND		1	1.0	0.40	ug/L	03/07/2022 1218

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		112	70-130
1,2-Dichloroethane-d4		93	70-130
Toluene-d8		96	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34000-002
Batch: 34000
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	120		1	117	60-140	03/07/2022 1109
Benzene	50	50		1	100	70-130	03/07/2022 1109
Bromodichloromethane	50	50		1	99	70-130	03/07/2022 1109
Bromoform	50	51		1	103	70-130	03/07/2022 1109
Bromomethane (Methyl bromide)	50	50		1	100	70-130	03/07/2022 1109
2-Butanone (MEK)	100	110		1	106	70-130	03/07/2022 1109
Carbon disulfide	50	51		1	101	70-130	03/07/2022 1109
Carbon tetrachloride	50	53		1	107	70-130	03/07/2022 1109
Chlorobenzene	50	49		1	98	70-130	03/07/2022 1109
Chloroethane	50	49		1	97	70-130	03/07/2022 1109
Chloroform	50	49		1	98	70-130	03/07/2022 1109
Chloromethane (Methyl chloride)	50	48		1	95	60-140	03/07/2022 1109
Cyclohexane	50	55		1	109	70-130	03/07/2022 1109
1,2-Dibromo-3-chloropropane (DBCP)	50	48		1	97	70-130	03/07/2022 1109
Dibromochloromethane	50	49		1	97	70-130	03/07/2022 1109
1,2-Dibromoethane (EDB)	50	48		1	95	70-130	03/07/2022 1109
1,2-Dichlorobenzene	50	49		1	98	70-130	03/07/2022 1109
1,3-Dichlorobenzene	50	49		1	98	70-130	03/07/2022 1109
1,4-Dichlorobenzene	50	48		1	96	70-130	03/07/2022 1109
Dichlorodifluoromethane	50	52		1	104	60-140	03/07/2022 1109
1,1-Dichloroethane	50	49		1	98	70-130	03/07/2022 1109
1,2-Dichloroethane	50	48		1	96	70-130	03/07/2022 1109
1,1-Dichloroethene	50	51		1	102	70-130	03/07/2022 1109
cis-1,2-Dichloroethene	50	50		1	99	70-130	03/07/2022 1109
trans-1,2-Dichloroethene	50	49		1	99	70-130	03/07/2022 1109
1,2-Dichloropropane	50	47		1	94	70-130	03/07/2022 1109
cis-1,3-Dichloropropene	50	51		1	101	70-130	03/07/2022 1109
trans-1,3-Dichloropropene	50	50		1	100	70-130	03/07/2022 1109
Ethylbenzene	50	50		1	100	70-130	03/07/2022 1109
2-Hexanone	100	95		1	95	70-130	03/07/2022 1109
Isopropylbenzene	50	51		1	101	70-130	03/07/2022 1109
Methyl acetate	50	47		1	94	70-130	03/07/2022 1109
Methyl tertiary butyl ether (MTBE)	50	49		1	99	70-130	03/07/2022 1109
4-Methyl-2-pentanone	100	96		1	96	70-130	03/07/2022 1109
Methylcyclohexane	50	52		1	105	70-130	03/07/2022 1109
Methylene chloride	50	47		1	94	70-130	03/07/2022 1109
Styrene	50	50		1	100	70-130	03/07/2022 1109
1,1,2,2-Tetrachloroethane	50	47		1	94	70-130	03/07/2022 1109
Tetrachloroethene	50	51		1	102	70-130	03/07/2022 1109
Toluene	50	50		1	99	70-130	03/07/2022 1109
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	52		1	105	70-130	03/07/2022 1109
1,2,4-Trichlorobenzene	50	49		1	97	70-130	03/07/2022 1109
1,1,1-Trichloroethane	50	50		1	101	70-130	03/07/2022 1109
1,1,2-Trichloroethane	50	47		1	94	70-130	03/07/2022 1109

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34000-002
Batch: 34000
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	50		1	99	70-130	03/07/2022 1109
Trichlorofluoromethane	50	52		1	104	70-130	03/07/2022 1109
Vinyl chloride	50	51		1	101	70-130	03/07/2022 1109
Xylenes (total)	100	100		1	102	70-130	03/07/2022 1109

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		101	70-130
1,2-Dichloroethane-d4		97	70-130
Toluene-d8		97	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MS

Sample ID: XB24099-011MS
Batch: 34000
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	ND	100	86		1	86	60-140	03/07/2022 2129
Benzene	ND	50	49		1	98	70-130	03/07/2022 2129
Bromodichloromethane	ND	50	46		1	93	70-130	03/07/2022 2129
Bromoform	ND	50	44		1	87	70-130	03/07/2022 2129
Bromomethane (Methyl bromide)	ND	50	48		1	95	70-130	03/07/2022 2129
2-Butanone (MEK)	ND	100	88		1	88	70-130	03/07/2022 2129
Carbon disulfide	ND	50	46		1	93	70-130	03/07/2022 2129
Carbon tetrachloride	ND	50	50		1	100	70-130	03/07/2022 2129
Chlorobenzene	ND	50	49		1	98	70-130	03/07/2022 2129
Chloroethane	ND	50	46		1	92	70-130	03/07/2022 2129
Chloroform	ND	50	47		1	94	70-130	03/07/2022 2129
Chloromethane (Methyl chloride)	ND	50	44		1	88	60-140	03/07/2022 2129
Cyclohexane	ND	50	53		1	105	70-130	03/07/2022 2129
1,2-Dibromo-3-chloropropane (DBCP)	ND	50	43		1	86	70-130	03/07/2022 2129
Dibromochloromethane	ND	50	44		1	88	70-130	03/07/2022 2129
1,2-Dibromoethane (EDB)	ND	50	46		1	92	70-130	03/07/2022 2129
1,2-Dichlorobenzene	ND	50	48		1	97	70-130	03/07/2022 2129
1,3-Dichlorobenzene	ND	50	49		1	99	70-130	03/07/2022 2129
1,4-Dichlorobenzene	ND	50	48		1	97	70-130	03/07/2022 2129
Dichlorodifluoromethane	ND	50	51		1	103	60-140	03/07/2022 2129
1,1-Dichloroethane	ND	50	46		1	93	70-130	03/07/2022 2129
1,2-Dichloroethane	ND	50	48		1	96	70-130	03/07/2022 2129
1,1-Dichloroethene	ND	50	50		1	99	70-130	03/07/2022 2129
cis-1,2-Dichloroethene	ND	50	47		1	94	70-130	03/07/2022 2129
trans-1,2-Dichloroethene	ND	50	47		1	94	70-130	03/07/2022 2129
1,2-Dichloropropane	ND	50	45		1	90	70-130	03/07/2022 2129
cis-1,3-Dichloropropene	ND	50	45		1	91	70-130	03/07/2022 2129
trans-1,3-Dichloropropene	ND	50	44		1	88	70-130	03/07/2022 2129
Ethylbenzene	ND	50	50		1	100	70-130	03/07/2022 2129
2-Hexanone	ND	100	91		1	91	70-130	03/07/2022 2129
Isopropylbenzene	ND	50	51		1	103	70-130	03/07/2022 2129
Methyl acetate	ND	50	36		1	72	70-130	03/07/2022 2129
Methyl tertiary butyl ether (MTBE)	ND	50	45		1	90	70-130	03/07/2022 2129
4-Methyl-2-pentanone	ND	100	90		1	90	70-130	03/07/2022 2129
Methylcyclohexane	ND	50	51		1	103	70-130	03/07/2022 2129
Methylene chloride	ND	50	44		1	88	70-130	03/07/2022 2129
Styrene	ND	50	49		1	99	70-130	03/07/2022 2129
1,1,2,2-Tetrachloroethane	ND	50	45		1	90	70-130	03/07/2022 2129
Tetrachloroethene	ND	50	52		1	103	70-130	03/07/2022 2129
Toluene	ND	50	49		1	98	70-130	03/07/2022 2129
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	51		1	101	70-130	03/07/2022 2129
1,2,4-Trichlorobenzene	ND	50	47		1	95	70-130	03/07/2022 2129
1,1,1-Trichloroethane	ND	50	50		1	100	70-130	03/07/2022 2129
1,1,2-Trichloroethane	ND	50	46		1	92	70-130	03/07/2022 2129

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MS

Sample ID: XB24099-011MS
Batch: 34000
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	3.3	50	53		1	99	70-130	03/07/2022 2129
Trichlorofluoromethane	ND	50	52		1	105	70-130	03/07/2022 2129
Vinyl chloride	ND	50	48		1	96	70-130	03/07/2022 2129
Xylenes (total)	ND	100	100		1	101	70-130	03/07/2022 2129

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		103	70-130
1,2-Dichloroethane-d4		96	70-130
Toluene-d8		98	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XB24099-011MD
Batch: 34000
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acetone	ND	100	88		1	88	2.3	60-140	20	03/07/2022 2152
Benzene	ND	50	53		1	106	7.5	70-130	20	03/07/2022 2152
Bromodichloromethane	ND	50	50		1	100	7.9	70-130	20	03/07/2022 2152
Bromoform	ND	50	45		1	90	3.2	70-130	20	03/07/2022 2152
Bromomethane (Methyl bromide)	ND	50	52		1	104	8.6	70-130	20	03/07/2022 2152
2-Butanone (MEK)	ND	100	89		1	89	0.94	70-130	20	03/07/2022 2152
Carbon disulfide	ND	50	49		1	98	5.1	70-130	20	03/07/2022 2152
Carbon tetrachloride	ND	50	55		1	110	9.0	70-130	20	03/07/2022 2152
Chlorobenzene	ND	50	52		1	105	6.7	70-130	20	03/07/2022 2152
Chloroethane	ND	50	50		1	100	8.0	70-130	20	03/07/2022 2152
Chloroform	ND	50	51		1	102	8.6	70-130	20	03/07/2022 2152
Chloromethane (Methyl chloride)	ND	50	48		1	96	9.0	60-140	20	03/07/2022 2152
Cyclohexane	ND	50	57		1	114	8.0	70-130	20	03/07/2022 2152
1,2-Dibromo-3-chloropropane (DBCP)	ND	50	45		1	89	3.9	70-130	20	03/07/2022 2152
Dibromochloromethane	ND	50	47		1	93	5.3	70-130	20	03/07/2022 2152
1,2-Dibromoethane (EDB)	ND	50	50		1	99	7.4	70-130	20	03/07/2022 2152
1,2-Dichlorobenzene	ND	50	51		1	103	5.7	70-130	20	03/07/2022 2152
1,3-Dichlorobenzene	ND	50	52		1	104	5.1	70-130	20	03/07/2022 2152
1,4-Dichlorobenzene	ND	50	51		1	103	6.1	70-130	20	03/07/2022 2152
Dichlorodifluoromethane	ND	50	55		1	110	6.7	60-140	20	03/07/2022 2152
1,1-Dichloroethane	ND	50	50		1	101	8.4	70-130	20	03/07/2022 2152
1,2-Dichloroethane	ND	50	52		1	104	8.3	70-130	20	03/07/2022 2152
1,1-Dichloroethene	ND	50	54		1	109	9.2	70-130	20	03/07/2022 2152
cis-1,2-Dichloroethene	ND	50	51		1	102	7.8	70-130	20	03/07/2022 2152
trans-1,2-Dichloroethene	ND	50	51		1	102	8.0	70-130	20	03/07/2022 2152
1,2-Dichloropropane	ND	50	49		1	97	8.3	70-130	20	03/07/2022 2152
cis-1,3-Dichloropropene	ND	50	49		1	98	7.4	70-130	20	03/07/2022 2152
trans-1,3-Dichloropropene	ND	50	47		1	94	6.2	70-130	20	03/07/2022 2152
Ethylbenzene	ND	50	54		1	108	8.3	70-130	20	03/07/2022 2152
2-Hexanone	ND	100	96		1	96	5.7	70-130	20	03/07/2022 2152
Isopropylbenzene	ND	50	55		1	109	6.1	70-130	20	03/07/2022 2152
Methyl acetate	ND	50	38		1	77	6.1	70-130	20	03/07/2022 2152
Methyl tertiary butyl ether (MTBE)	ND	50	49		1	98	8.5	70-130	20	03/07/2022 2152
4-Methyl-2-pentanone	ND	100	95		1	95	5.8	70-130	20	03/07/2022 2152
Methylcyclohexane	ND	50	55		1	110	6.5	70-130	20	03/07/2022 2152
Methylene chloride	ND	50	47		1	95	7.2	70-130	20	03/07/2022 2152
Styrene	ND	50	53		1	107	7.9	70-130	20	03/07/2022 2152
1,1,2,2-Tetrachloroethane	ND	50	47		1	94	4.6	70-130	20	03/07/2022 2152
Tetrachloroethene	ND	50	55		1	111	7.2	70-130	20	03/07/2022 2152
Toluene	ND	50	53		1	106	7.8	70-130	20	03/07/2022 2152
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	55		1	110	8.7	70-130	20	03/07/2022 2152
1,2,4-Trichlorobenzene	ND	50	49		1	99	4.1	70-130	20	03/07/2022 2152
1,1,1-Trichloroethane	ND	50	55		1	109	9.0	70-130	20	03/07/2022 2152
1,1,2-Trichloroethane	ND	50	50		1	99	8.2	70-130	20	03/07/2022 2152

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XB24099-011MD
Batch: 34000
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Trichloroethene	3.3	50	57		1	108	8.1	70-130	20	03/07/2022 2152
Trichlorofluoromethane	ND	50	57		1	114	8.1	70-130	20	03/07/2022 2152
Vinyl chloride	ND	50	52		1	104	8.4	70-130	20	03/07/2022 2152
Xylenes (total)	ND	100	110		1	108	7.4	70-130	20	03/07/2022 2152

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		110	70-130
1,2-Dichloroethane-d4		105	70-130
Toluene-d8		105	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34017-001
Batch: 34017
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	10	4.0	ug/L	03/07/2022 1042
Benzene	ND		1	0.50	0.40	ug/L	03/07/2022 1042
Bromodichloromethane	ND		1	0.50	0.40	ug/L	03/07/2022 1042
Bromoform	ND		1	0.50	0.40	ug/L	03/07/2022 1042
Bromomethane (Methyl bromide)	ND		1	0.50	0.40	ug/L	03/07/2022 1042
2-Butanone (MEK)	ND		1	10	2.0	ug/L	03/07/2022 1042
Carbon disulfide	ND		1	0.50	0.40	ug/L	03/07/2022 1042
Carbon tetrachloride	ND		1	0.50	0.40	ug/L	03/07/2022 1042
Chlorobenzene	ND		1	0.50	0.40	ug/L	03/07/2022 1042
Chloroethane	ND		1	0.50	0.40	ug/L	03/07/2022 1042
Chloroform	ND		1	0.50	0.40	ug/L	03/07/2022 1042
Chloromethane (Methyl chloride)	ND		1	0.50	0.40	ug/L	03/07/2022 1042
Cyclohexane	ND		1	0.50	0.40	ug/L	03/07/2022 1042
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.50	0.40	ug/L	03/07/2022 1042
Dibromochloromethane	ND		1	0.50	0.40	ug/L	03/07/2022 1042
1,2-Dibromoethane (EDB)	ND		1	0.50	0.40	ug/L	03/07/2022 1042
1,2-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/07/2022 1042
1,3-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/07/2022 1042
1,4-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/07/2022 1042
Dichlorodifluoromethane	ND		1	0.50	0.40	ug/L	03/07/2022 1042
1,1-Dichloroethane	ND		1	0.50	0.40	ug/L	03/07/2022 1042
1,2-Dichloroethane	ND		1	0.50	0.40	ug/L	03/07/2022 1042
1,1-Dichloroethene	ND		1	0.50	0.40	ug/L	03/07/2022 1042
cis-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/07/2022 1042
trans-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/07/2022 1042
1,2-Dichloropropane	ND		1	0.50	0.40	ug/L	03/07/2022 1042
cis-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/07/2022 1042
trans-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/07/2022 1042
Ethylbenzene	ND		1	0.50	0.40	ug/L	03/07/2022 1042
2-Hexanone	ND		1	10	2.0	ug/L	03/07/2022 1042
Isopropylbenzene	ND		1	0.50	0.40	ug/L	03/07/2022 1042
Methyl acetate	ND		1	1.0	0.40	ug/L	03/07/2022 1042
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.40	ug/L	03/07/2022 1042
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	03/07/2022 1042
Methylcyclohexane	ND		1	5.0	0.40	ug/L	03/07/2022 1042
Methylene chloride	ND		1	0.50	0.40	ug/L	03/07/2022 1042
Styrene	ND		1	0.50	0.41	ug/L	03/07/2022 1042
1,1,2,2-Tetrachloroethane	ND		1	0.50	0.40	ug/L	03/07/2022 1042
Tetrachloroethene	ND		1	0.50	0.40	ug/L	03/07/2022 1042
Toluene	ND		1	0.50	0.40	ug/L	03/07/2022 1042
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	03/07/2022 1042
1,2,4-Trichlorobenzene	ND		1	0.50	0.40	ug/L	03/07/2022 1042
1,1,1-Trichloroethane	ND		1	0.50	0.40	ug/L	03/07/2022 1042
1,1,2-Trichloroethane	ND		1	0.50	0.40	ug/L	03/07/2022 1042

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34017-001
Batch: 34017
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.50	0.40	ug/L	03/07/2022 1042
Trichlorofluoromethane	ND		1	0.50	0.40	ug/L	03/07/2022 1042
Vinyl chloride	ND		1	0.50	0.40	ug/L	03/07/2022 1042
Xylenes (total)	ND		1	1.0	0.40	ug/L	03/07/2022 1042

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		94	70-130
1,2-Dichloroethane-d4		111	70-130
Toluene-d8		105	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34017-002
Batch: 34017
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	62		1	62	60-140	03/07/2022 0953
Benzene	50	52		1	104	70-130	03/07/2022 0953
Bromodichloromethane	50	48		1	95	70-130	03/07/2022 0953
Bromoform	50	50		1	100	70-130	03/07/2022 0953
Bromomethane (Methyl bromide)	50	57		1	113	70-130	03/07/2022 0953
2-Butanone (MEK)	100	80		1	80	70-130	03/07/2022 0953
Carbon disulfide	50	52		1	105	70-130	03/07/2022 0953
Carbon tetrachloride	50	48		1	95	70-130	03/07/2022 0953
Chlorobenzene	50	50		1	101	70-130	03/07/2022 0953
Chloroethane	50	53		1	107	70-130	03/07/2022 0953
Chloroform	50	47		1	94	70-130	03/07/2022 0953
Chloromethane (Methyl chloride)	50	59		1	119	60-140	03/07/2022 0953
Cyclohexane	50	45		1	90	70-130	03/07/2022 0953
1,2-Dibromo-3-chloropropane (DBCP)	50	48		1	95	70-130	03/07/2022 0953
Dibromochloromethane	50	50		1	100	70-130	03/07/2022 0953
1,2-Dibromoethane (EDB)	50	50		1	100	70-130	03/07/2022 0953
1,2-Dichlorobenzene	50	52		1	104	70-130	03/07/2022 0953
1,3-Dichlorobenzene	50	52		1	104	70-130	03/07/2022 0953
1,4-Dichlorobenzene	50	49		1	98	70-130	03/07/2022 0953
Dichlorodifluoromethane	50	49		1	98	60-140	03/07/2022 0953
1,1-Dichloroethane	50	50		1	101	70-130	03/07/2022 0953
1,2-Dichloroethane	50	47		1	94	70-130	03/07/2022 0953
1,1-Dichloroethene	50	52		1	104	70-130	03/07/2022 0953
cis-1,2-Dichloroethene	50	51		1	101	70-130	03/07/2022 0953
trans-1,2-Dichloroethene	50	52		1	104	70-130	03/07/2022 0953
1,2-Dichloropropane	50	50		1	100	70-130	03/07/2022 0953
cis-1,3-Dichloropropene	50	51		1	103	70-130	03/07/2022 0953
trans-1,3-Dichloropropene	50	51		1	101	70-130	03/07/2022 0953
Ethylbenzene	50	53		1	107	70-130	03/07/2022 0953
2-Hexanone	100	83		1	83	70-130	03/07/2022 0953
Isopropylbenzene	50	48		1	95	70-130	03/07/2022 0953
Methyl acetate	50	49		1	98	70-130	03/07/2022 0953
Methyl tertiary butyl ether (MTBE)	50	53		1	106	70-130	03/07/2022 0953
4-Methyl-2-pentanone	100	87		1	87	70-130	03/07/2022 0953
Methylcyclohexane	50	51		1	102	70-130	03/07/2022 0953
Methylene chloride	50	47		1	94	70-130	03/07/2022 0953
Styrene	50	51		1	102	70-130	03/07/2022 0953
1,1,2,2-Tetrachloroethane	50	50		1	100	70-130	03/07/2022 0953
Tetrachloroethene	50	54		1	107	70-130	03/07/2022 0953
Toluene	50	55		1	110	70-130	03/07/2022 0953
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	49		1	99	70-130	03/07/2022 0953
1,2,4-Trichlorobenzene	50	54		1	108	70-130	03/07/2022 0953
1,1,1-Trichloroethane	50	51		1	102	70-130	03/07/2022 0953
1,1,2-Trichloroethane	50	50		1	99	70-130	03/07/2022 0953

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34017-002
Batch: 34017
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	49		1	98	70-130	03/07/2022 0953
Trichlorofluoromethane	50	52		1	103	70-130	03/07/2022 0953
Vinyl chloride	50	52		1	105	70-130	03/07/2022 0953
Xylenes (total)	100	100		1	100	70-130	03/07/2022 0953

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		103	70-130
1,2-Dichloroethane-d4		94	70-130
Toluene-d8		106	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MS

Sample ID: XB24099-015MS
Batch: 34017
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	ND	500	280	N	5	55	60-140	03/07/2022 2038
Benzene	ND	250	250		5	98	70-130	03/07/2022 2038
Bromodichloromethane	ND	250	220		5	90	70-130	03/07/2022 2038
Bromoform	ND	250	250		5	99	70-130	03/07/2022 2038
Bromomethane (Methyl bromide)	ND	250	250		5	100	70-130	03/07/2022 2038
2-Butanone (MEK)	ND	500	410		5	82	70-130	03/07/2022 2038
Carbon disulfide	ND	250	230		5	93	70-130	03/07/2022 2038
Carbon tetrachloride	ND	250	210		5	84	70-130	03/07/2022 2038
Chlorobenzene	ND	250	250		5	98	70-130	03/07/2022 2038
Chloroethane	ND	250	220		5	88	70-130	03/07/2022 2038
Chloroform	ND	250	210		5	84	70-130	03/07/2022 2038
Chloromethane (Methyl chloride)	ND	250	240		5	97	60-140	03/07/2022 2038
Cyclohexane	ND	250	180		5	71	70-130	03/07/2022 2038
1,2-Dibromo-3-chloropropane (DBCP)	ND	250	210		5	84	70-130	03/07/2022 2038
Dibromochloromethane	ND	250	240		5	98	70-130	03/07/2022 2038
1,2-Dibromoethane (EDB)	ND	250	250		5	101	70-130	03/07/2022 2038
1,2-Dichlorobenzene	ND	250	250		5	99	70-130	03/07/2022 2038
1,3-Dichlorobenzene	ND	250	250		5	101	70-130	03/07/2022 2038
1,4-Dichlorobenzene	ND	250	240		5	95	70-130	03/07/2022 2038
Dichlorodifluoromethane	ND	250	190		5	78	60-140	03/07/2022 2038
1,1-Dichloroethane	ND	250	220		5	89	70-130	03/07/2022 2038
1,2-Dichloroethane	ND	250	210		5	86	70-130	03/07/2022 2038
1,1-Dichloroethene	ND	250	230		5	92	70-130	03/07/2022 2038
cis-1,2-Dichloroethene	220	250	400		5	74	70-130	03/07/2022 2038
trans-1,2-Dichloroethene	7.8	250	240		5	93	70-130	03/07/2022 2038
1,2-Dichloropropane	ND	250	240		5	96	70-130	03/07/2022 2038
cis-1,3-Dichloropropene	ND	250	230		5	92	70-130	03/07/2022 2038
trans-1,3-Dichloropropene	ND	250	240		5	97	70-130	03/07/2022 2038
Ethylbenzene	ND	250	270		5	107	70-130	03/07/2022 2038
2-Hexanone	ND	500	440		5	89	70-130	03/07/2022 2038
Isopropylbenzene	ND	250	220		5	89	70-130	03/07/2022 2038
Methyl acetate	ND	250	210		5	83	70-130	03/07/2022 2038
Methyl tertiary butyl ether (MTBE)	ND	250	230		5	90	70-130	03/07/2022 2038
4-Methyl-2-pentanone	ND	500	420		5	84	70-130	03/07/2022 2038
Methylcyclohexane	ND	250	230		5	94	70-130	03/07/2022 2038
Methylene chloride	ND	250	210		5	84	70-130	03/07/2022 2038
Styrene	2.5	250	250		5	100	70-130	03/07/2022 2038
1,1,2,2-Tetrachloroethane	ND	250	230		5	94	70-130	03/07/2022 2038
Tetrachloroethene	2.7	250	270		5	107	70-130	03/07/2022 2038
Toluene	ND	250	270		5	107	70-130	03/07/2022 2038
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	250	220		5	89	70-130	03/07/2022 2038
1,2,4-Trichlorobenzene	ND	250	240		5	94	70-130	03/07/2022 2038
1,1,1-Trichloroethane	ND	250	230		5	90	70-130	03/07/2022 2038
1,1,2-Trichloroethane	ND	250	250		5	100	70-130	03/07/2022 2038

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MS

Sample ID: XB24099-015MS
Batch: 34017
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	330	250	470	N	5	58	70-130	03/07/2022 2038
Trichlorofluoromethane	ND	250	220		5	87	70-130	03/07/2022 2038
Vinyl chloride	2.0	250	220		5	88	70-130	03/07/2022 2038
Xylenes (total)	ND	500	480		5	96	70-130	03/07/2022 2038

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		99	70-130
1,2-Dichloroethane-d4		86	70-130
Toluene-d8		101	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XB24099-015MD
Batch: 34017
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acetone	ND	500	270	N	5	54	3.6	60-140	20	03/07/2022 2103
Benzene	ND	250	250		5	99	0.47	70-130	20	03/07/2022 2103
Bromodichloromethane	ND	250	220		5	89	1.1	70-130	20	03/07/2022 2103
Bromoform	ND	250	250		5	99	0.54	70-130	20	03/07/2022 2103
Bromomethane (Methyl bromide)	ND	250	250		5	100	0.21	70-130	20	03/07/2022 2103
2-Butanone (MEK)	ND	500	400		5	79	4.3	70-130	20	03/07/2022 2103
Carbon disulfide	ND	250	230		5	94	1.0	70-130	20	03/07/2022 2103
Carbon tetrachloride	ND	250	220		5	88	4.5	70-130	20	03/07/2022 2103
Chlorobenzene	ND	250	250		5	98	0.12	70-130	20	03/07/2022 2103
Chloroethane	ND	250	220		5	90	2.0	70-130	20	03/07/2022 2103
Chloroform	ND	250	210		5	83	0.39	70-130	20	03/07/2022 2103
Chloromethane (Methyl chloride)	ND	250	240		5	97	0.36	60-140	20	03/07/2022 2103
Cyclohexane	ND	250	180		5	73	2.7	70-130	20	03/07/2022 2103
1,2-Dibromo-3-chloropropane (DBCP)	ND	250	210		5	85	0.49	70-130	20	03/07/2022 2103
Dibromochloromethane	ND	250	240		5	96	2.2	70-130	20	03/07/2022 2103
1,2-Dibromoethane (EDB)	ND	250	250		5	100	1.2	70-130	20	03/07/2022 2103
1,2-Dichlorobenzene	ND	250	250		5	98	0.56	70-130	20	03/07/2022 2103
1,3-Dichlorobenzene	ND	250	250		5	100	0.37	70-130	20	03/07/2022 2103
1,4-Dichlorobenzene	ND	250	240		5	96	0.50	70-130	20	03/07/2022 2103
Dichlorodifluoromethane	ND	250	210		5	82	5.2	60-140	20	03/07/2022 2103
1,1-Dichloroethane	ND	250	210		5	86	3.4	70-130	20	03/07/2022 2103
1,2-Dichloroethane	ND	250	220		5	87	1.9	70-130	20	03/07/2022 2103
1,1-Dichloroethene	ND	250	230		5	93	1.6	70-130	20	03/07/2022 2103
cis-1,2-Dichloroethene	220	250	400		5	72	1.0	70-130	20	03/07/2022 2103
trans-1,2-Dichloroethene	7.8	250	240		5	93	0.39	70-130	20	03/07/2022 2103
1,2-Dichloropropane	ND	250	240		5	94	1.4	70-130	20	03/07/2022 2103
cis-1,3-Dichloropropene	ND	250	230		5	91	0.23	70-130	20	03/07/2022 2103
trans-1,3-Dichloropropene	ND	250	240		5	97	0.80	70-130	20	03/07/2022 2103
Ethylbenzene	ND	250	270		5	108	0.29	70-130	20	03/07/2022 2103
2-Hexanone	ND	500	430		5	86	2.9	70-130	20	03/07/2022 2103
Isopropylbenzene	ND	250	230		5	90	1.8	70-130	20	03/07/2022 2103
Methyl acetate	ND	250	210		5	83	0.64	70-130	20	03/07/2022 2103
Methyl tertiary butyl ether (MTBE)	ND	250	220		5	88	2.2	70-130	20	03/07/2022 2103
4-Methyl-2-pentanone	ND	500	410		5	81	3.9	70-130	20	03/07/2022 2103
Methylcyclohexane	ND	250	230		5	94	0.23	70-130	20	03/07/2022 2103
Methylene chloride	ND	250	210		5	85	0.91	70-130	20	03/07/2022 2103
Styrene	2.5	250	250		5	101	1.0	70-130	20	03/07/2022 2103
1,1,2,2-Tetrachloroethane	ND	250	230		5	92	1.3	70-130	20	03/07/2022 2103
Tetrachloroethene	2.7	250	270		5	108	1.3	70-130	20	03/07/2022 2103
Toluene	ND	250	270		5	107	0.013	70-130	20	03/07/2022 2103
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	250	220		5	90	0.69	70-130	20	03/07/2022 2103
1,2,4-Trichlorobenzene	ND	250	240		5	97	2.4	70-130	20	03/07/2022 2103
1,1,1-Trichloroethane	ND	250	230		5	91	1.2	70-130	20	03/07/2022 2103
1,1,2-Trichloroethane	ND	250	250		5	98	1.5	70-130	20	03/07/2022 2103

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XB24099-015MD
Batch: 34017
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Trichloroethene	330	250	480	N	5	60	1.2	70-130	20	03/07/2022 2103
Trichlorofluoromethane	ND	250	220		5	89	2.2	70-130	20	03/07/2022 2103
Vinyl chloride	2.0	250	220		5	88	0.69	70-130	20	03/07/2022 2103
Xylenes (total)	ND	500	490		5	98	1.6	70-130	20	03/07/2022 2103

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		98	70-130
1,2-Dichloroethane-d4		87	70-130
Toluene-d8		101	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34041-001
Batch: 34041
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	10	4.0	ug/L	03/07/2022 2253
Benzene	ND		1	0.50	0.40	ug/L	03/07/2022 2253
Bromodichloromethane	ND		1	0.50	0.40	ug/L	03/07/2022 2253
Bromoform	ND		1	0.50	0.40	ug/L	03/07/2022 2253
Bromomethane (Methyl bromide)	ND		1	0.50	0.40	ug/L	03/07/2022 2253
2-Butanone (MEK)	ND		1	10	2.0	ug/L	03/07/2022 2253
Carbon disulfide	ND		1	0.50	0.40	ug/L	03/07/2022 2253
Carbon tetrachloride	ND		1	0.50	0.40	ug/L	03/07/2022 2253
Chlorobenzene	ND		1	0.50	0.40	ug/L	03/07/2022 2253
Chloroethane	ND		1	0.50	0.40	ug/L	03/07/2022 2253
Chloroform	ND		1	0.50	0.40	ug/L	03/07/2022 2253
Chloromethane (Methyl chloride)	ND		1	0.50	0.40	ug/L	03/07/2022 2253
Cyclohexane	ND		1	0.50	0.40	ug/L	03/07/2022 2253
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.50	0.40	ug/L	03/07/2022 2253
Dibromochloromethane	ND		1	0.50	0.40	ug/L	03/07/2022 2253
1,2-Dibromoethane (EDB)	ND		1	0.50	0.40	ug/L	03/07/2022 2253
1,2-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/07/2022 2253
1,3-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/07/2022 2253
1,4-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/07/2022 2253
Dichlorodifluoromethane	ND		1	0.50	0.40	ug/L	03/07/2022 2253
1,1-Dichloroethane	ND		1	0.50	0.40	ug/L	03/07/2022 2253
1,2-Dichloroethane	ND		1	0.50	0.40	ug/L	03/07/2022 2253
1,1-Dichloroethene	ND		1	0.50	0.40	ug/L	03/07/2022 2253
cis-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/07/2022 2253
trans-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/07/2022 2253
1,2-Dichloropropane	ND		1	0.50	0.40	ug/L	03/07/2022 2253
cis-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/07/2022 2253
trans-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/07/2022 2253
Ethylbenzene	ND		1	0.50	0.40	ug/L	03/07/2022 2253
2-Hexanone	ND		1	10	2.0	ug/L	03/07/2022 2253
Isopropylbenzene	ND		1	0.50	0.40	ug/L	03/07/2022 2253
Methyl acetate	ND		1	1.0	0.40	ug/L	03/07/2022 2253
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.40	ug/L	03/07/2022 2253
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	03/07/2022 2253
Methylcyclohexane	ND		1	5.0	0.40	ug/L	03/07/2022 2253
Methylene chloride	ND		1	0.50	0.40	ug/L	03/07/2022 2253
Styrene	ND		1	0.50	0.41	ug/L	03/07/2022 2253
1,1,2,2-Tetrachloroethane	ND		1	0.50	0.40	ug/L	03/07/2022 2253
Tetrachloroethene	ND		1	0.50	0.40	ug/L	03/07/2022 2253
Toluene	ND		1	0.50	0.40	ug/L	03/07/2022 2253
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	03/07/2022 2253
1,2,4-Trichlorobenzene	ND		1	0.50	0.40	ug/L	03/07/2022 2253
1,1,1-Trichloroethane	ND		1	0.50	0.40	ug/L	03/07/2022 2253
1,1,2-Trichloroethane	ND		1	0.50	0.40	ug/L	03/07/2022 2253

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34041-001
Batch: 34041
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.50	0.40	ug/L	03/07/2022 2253
Trichlorofluoromethane	ND		1	0.50	0.40	ug/L	03/07/2022 2253
Vinyl chloride	ND		1	0.50	0.40	ug/L	03/07/2022 2253
Xylenes (total)	ND		1	1.0	0.40	ug/L	03/07/2022 2253

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		92	70-130
1,2-Dichloroethane-d4		102	70-130
Toluene-d8		107	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34041-002
Batch: 34041
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	60		1	60	60-140	03/07/2022 2143
Benzene	50	47		1	94	70-130	03/07/2022 2143
Bromodichloromethane	50	41		1	81	70-130	03/07/2022 2143
Bromoform	50	44		1	88	70-130	03/07/2022 2143
Bromomethane (Methyl bromide)	50	50		1	99	70-130	03/07/2022 2143
2-Butanone (MEK)	100	88		1	88	70-130	03/07/2022 2143
Carbon disulfide	50	46		1	91	70-130	03/07/2022 2143
Carbon tetrachloride	50	44		1	89	70-130	03/07/2022 2143
Chlorobenzene	50	48		1	96	70-130	03/07/2022 2143
Chloroethane	50	44		1	88	70-130	03/07/2022 2143
Chloroform	50	41		1	82	70-130	03/07/2022 2143
Chloromethane (Methyl chloride)	50	48		1	96	60-140	03/07/2022 2143
Cyclohexane	50	47		1	93	70-130	03/07/2022 2143
1,2-Dibromo-3-chloropropane (DBCP)	50	44		1	87	70-130	03/07/2022 2143
Dibromochloromethane	50	44		1	88	70-130	03/07/2022 2143
1,2-Dibromoethane (EDB)	50	47		1	94	70-130	03/07/2022 2143
1,2-Dichlorobenzene	50	51		1	102	70-130	03/07/2022 2143
1,3-Dichlorobenzene	50	53		1	106	70-130	03/07/2022 2143
1,4-Dichlorobenzene	50	49		1	98	70-130	03/07/2022 2143
Dichlorodifluoromethane	50	47		1	94	60-140	03/07/2022 2143
1,1-Dichloroethane	50	43		1	87	70-130	03/07/2022 2143
1,2-Dichloroethane	50	42		1	84	70-130	03/07/2022 2143
1,1-Dichloroethene	50	47		1	94	70-130	03/07/2022 2143
cis-1,2-Dichloroethene	50	47		1	95	70-130	03/07/2022 2143
trans-1,2-Dichloroethene	50	47		1	93	70-130	03/07/2022 2143
1,2-Dichloropropane	50	45		1	89	70-130	03/07/2022 2143
cis-1,3-Dichloropropene	50	48		1	97	70-130	03/07/2022 2143
trans-1,3-Dichloropropene	50	49		1	98	70-130	03/07/2022 2143
Ethylbenzene	50	54		1	108	70-130	03/07/2022 2143
2-Hexanone	100	86		1	86	70-130	03/07/2022 2143
Isopropylbenzene	50	47		1	94	70-130	03/07/2022 2143
Methyl acetate	50	41		1	82	70-130	03/07/2022 2143
Methyl tertiary butyl ether (MTBE)	50	48		1	97	70-130	03/07/2022 2143
4-Methyl-2-pentanone	100	86		1	86	70-130	03/07/2022 2143
Methylcyclohexane	50	59		1	118	70-130	03/07/2022 2143
Methylene chloride	50	41		1	81	70-130	03/07/2022 2143
Styrene	50	48		1	96	70-130	03/07/2022 2143
1,1,2,2-Tetrachloroethane	50	47		1	94	70-130	03/07/2022 2143
Tetrachloroethene	50	53		1	105	70-130	03/07/2022 2143
Toluene	50	52		1	104	70-130	03/07/2022 2143
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	51		1	101	70-130	03/07/2022 2143
1,2,4-Trichlorobenzene	50	58		1	116	70-130	03/07/2022 2143
1,1,1-Trichloroethane	50	46		1	93	70-130	03/07/2022 2143
1,1,2-Trichloroethane	50	45		1	89	70-130	03/07/2022 2143

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34041-002
Batch: 34041
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	46		1	93	70-130	03/07/2022 2143
Trichlorofluoromethane	50	48		1	96	70-130	03/07/2022 2143
Vinyl chloride	50	46		1	93	70-130	03/07/2022 2143
Xylenes (total)	100	100		1	100	70-130	03/07/2022 2143

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		98	70-130
1,2-Dichloroethane-d4		84	70-130
Toluene-d8		99	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34182-001
Batch: 34182
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.50	0.40	ug/L	03/08/2022 2057

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		92	70-130
1,2-Dichloroethane-d4		105	70-130
Toluene-d8		105	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34182-002
Batch: 34182
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	46		1	92	70-130	03/08/2022 1956

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		97	70-130
1,2-Dichloroethane-d4		81	70-130
Toluene-d8		101	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Dissolved Gases - MB

Sample ID: XQ33463-001
Batch: 33463
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Ethane	ND		1	10	2.5	ug/L	03/02/2022 1117
Ethene	ND		1	10	2.5	ug/L	03/02/2022 1117
Methane	ND		1	10	2.5	ug/L	03/02/2022 1117

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Dissolved Gases - LCS

Sample ID: XQ33463-002
Batch: 33463
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Ethane	550	580		1	104	70-130	03/02/2022 1016
Ethene	520	550		1	106	70-130	03/02/2022 1016
Methane	300	320		1	108	70-130	03/02/2022 1016

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Dissolved Gases - LCSD

Sample ID: XQ33463-003
Batch: 33463
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Ethane	550	560		1	102	2.3	70-130	30	03/02/2022 1030
Ethene	520	530		1	104	2.2	70-130	30	03/02/2022 1030
Methane	300	310		1	105	2.1	70-130	30	03/02/2022 1030

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Metals - MB

Sample ID: XQ33013-001
Batch: 33013
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 02/26/2022 0715

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Iron	ND		1	0.10	0.040	mg/L	03/04/2022 0430

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Metals - LCS

Sample ID: XQ33013-002
Batch: 33013
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 02/26/2022 0715

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Iron	20	18		1	90	80-120	03/04/2022 0435

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Metals - MS

Sample ID: XB24099-016MS
Batch: 33013
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 02/26/2022 0715

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Iron	4.6	20	26		1	106	75-125	03/04/2022 0519

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Metals - MSD

Sample ID: XB24099-016MD
Batch: 33013
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 02/26/2022 0715

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Iron	4.6	20	25		1	104	0.83	75-125	20	03/04/2022 0524

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

ICP-AES Metals - MB

Sample ID: XQ33057-001
Batch: 33057
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/03/2022 1017

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Dissolved Iron	ND		1	0.10	0.040	mg/L	03/06/2022 0000

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

ICP-AES Metals - LCS

Sample ID: XQ33057-002
Batch: 33057
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/03/2022 1017

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Dissolved Iron	20	20		1	98	80-120	03/06/2022 0005

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

ICP-AES Metals - MS

Sample ID: XB24099-013MS
Batch: 33057
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/03/2022 1017

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Dissolved Iron	ND	20	20		1	98	75-125	03/06/2022 0013

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

ICP-AES Metals - MSD

Sample ID: XB24099-013MD
Batch: 33057
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/03/2022 1017

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Dissolved Iron	ND	20	20		1	100	1.3	75-125	20	03/06/2022 0027

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Chain of Custody
and
Miscellaneous Documents

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-In Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: AECOM	Billing Information:
Address: 101 RESEARCH DR Cola.	
Report To: SCOTT ROSS	Email To:
Copy To:	Site Collection Info/Address:
Customer Project Name/Number: SHAKESPEARE COMPOSITE STRUCTURE	State: County/City: SC / NEWBERRY Time Zone Collected: [ ] PT [ ] MT [ ] CT [X] ET
Phone: Email: SCOTT.ROSS@AECOM.COM	Site/Facility ID #: Compliance Monitoring? [ ] Yes [X] No
Collected By (print): JAMES HEWLETT JUSTIN BUTLER	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: STANDARD Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [X] No Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (b), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Cnts	TCL VOC's
MW-28	GW	GRAB	2-22-22	1515				3	X
MW-13			2-22-22	1610				3	X
MW-27			2-23-22	0930				3	X
MW-26				1005				3	X
MW-31				1115				3	X
MW-19				1145				3	X
MW-3				1320				3	X
MW-21i				1420				3	X
MW-21				1535				3	X
MW-19i				1545				3	X

Container Preservative Type **: 3

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Analyses

Lab Project Manager:

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips:	
Sample pH Acceptable	Y N NA
pH Strips:	
Sulfide Present	Y N NA
Lead Acetate Strips:	

LAB USE ONLY:
Lab Sample # / Comments:

XB24099

GAD

Customer Remarks / Special Conditions / Possible Hazards:
FB-01 @ 1008 (2) TCL VOC's
TB-03 — (2) TCL VOC's

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2683671

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: (Y) N NA
Therm ID#:
Cooler 1 Temp Upon Receipt: 2.7 oC
Cooler 1 Therm Corr. Factor: oC
Cooler 1 Corrected Temp: oC
Comments:

Relinquished by/Company: (Signature)	Date/Time: 2-24-22/1700	Received by/Company: (Signature)	Date/Time:	MTJL LAB USE ONLY
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Table #: Acctnum: Template: Prelogin: PM: PB:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time: 2/24/22 1700	

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 2 of: 2

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106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

CHAIN-OF-CUSTODY Analytical Request Document

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Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-In Number Here

XB24099

ALL SHADED AREAS are for LAB USE ONLY

Company:	AECOM
Address:	701 RESEARCH DR. C/A.
Report To:	SCOTT ROSS
Copy To:	
Customer Project Name/Number:	SHAKESPEARE COMPOSITE STRUCTURES
Phone: / Email:	SCOTT.ROSS@AECOM.COM
Collected By (print):	JAMES CRAWFORD, JUSTIN BUTLER
Collected By (signature):	
Sample Disposal:	[X] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:
Billing Information:	
Email To:	
Site Collection Info/Address:	
State: / County/City: / Time Zone Collected:	SC / NEWBERRY [ ] PT [ ] MT [ ] CT [X] ET
Site/Facility ID #:	
Purchase Order #: / Quote #:	
Turnaround Date Required:	STANDARD
Rush:	[ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply)
Compliance Monitoring?	[ ] Yes [X] No
DW PWS ID #: / DW Location Code:	
Immediately Packed on Ice:	[X] Yes [ ] No
Field Filtered (if applicable):	[ ] Yes [X] No
Analyses:	

Container Preservative Type **: 3 3 3 5 2 1 5

Lab Project Manager: CSD

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Cnts	TCL VOC's	Dissolved Gases	Ferrous Iron	NO3, NO2, Sol. AUS	TOC	Total (Pb)	Dissolved (Pb)	Lab Profile/Line:
MW-19D	GW	GRAB	2-23-22	1500				3	X							
MW-19D-MS				1500				3	X							
MW-19D-MSD				1500				3	X							
DUP-01				—				3	X							
MW-6i			2-24-22	0945				11	X	X	X	X	X	X	X	
MW-5				0955				11	X	X	X	X	X	X	X	
MW-6				1100				11	X	X	X	X	X	X	X	
MW-9				1140				11	X	X	X	X	X	X	X	
MW-22				1355				11	X	X	X	X	X	X	X	
MW-9D				1515				3	X							

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips:	
Sample pH Acceptable	Y N NA
pH Strips:	
Sulfide Present	Y N NA
Lead Acetate Strips:	

LAB USE ONLY:
Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards:

Type of ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2683672

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#:
Cooler 1 Temp Upon Receipt: 2.7 oC
Cooler 1 Therm Corr. Factor: oC
Cooler 1 Corrected Temp: oC
Comments:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 1 of: 2

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
AECOM	2-24-22/1700		
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
			2/24/22 1700

MTJL LAB USE ONLY

Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

Pace Analytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCO_

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: Aecom Cooler Inspected by/date: JRG2 / 02/24/2022 Lot #: XB24099

Means of receipt: ☑ Pace ☐ Client ☐ UPS ☐ FedEx ☐ Other: _____

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: 21-852 Chlorine Strip ID: NA Tested by: KDRW

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

2.7 / 2.7 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? _____
☑ Yes	☐ No		13. Was adequate sample volume available?
☐ Yes	☑ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☑ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☑ Yes	☐ No	☐ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote # _____

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA _____ were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H_2SO_4, HNO_3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA _____ were received with bubbles >6 mm in diameter.

Samples(s) NA _____ were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: KDRW Date: 02/24/2022

Comments:

Report of Analysis

AECOM
101 Research Drive
Columbia, SC 29203
Attention: Scott Ross

Project Name: Shakespeare Composite Structures

Project Number: 60675505

Lot Number:**XB25085**

Date Completed:03/10/2022

03/22/2022 2:06 PM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
AECOM
Lot Number: XB25085

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Sample Summary

AECOM

Lot Number: XB25085

Project Name: Shakespeare Composite Structures

Project Number: 60675505

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	RDW-2	Aqueous	02/25/2022 1000	02/25/2022
002	MW-3D	Aqueous	02/25/2022 1120	02/25/2022
005	MW-2D	Aqueous	02/25/2022 1335	02/25/2022
006	MW-7D	Aqueous	02/25/2022 1540	02/25/2022
007	DUP-02	Aqueous	02/25/2022	02/25/2022
008	TB-04	Aqueous	02/25/2022	02/25/2022

(6 samples)

Detection Summary

AECOM

Lot Number: XB25085

Project Name: Shakespeare Composite Structures

Project Number: 60675505

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	RDW-2	Aqueous	Acetone	8260D	4.9	J	ug/L	5
002	MW-3D	Aqueous	cis-1,2-Dichloroethene	8260D	36		ug/L	7
002	MW-3D	Aqueous	Trichloroethene	8260D	24		ug/L	8

(3 detections)

Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB25085-001
Description: RDW-2
Matrix: Aqueous
Date Sampled: 02/25/2022 1000
Project Name: Shakespeare Composite
Date Received: 02/25/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/09/2022 0447	BBW		34179

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	4.9	J	10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

Volatile Organic Compounds by GC/MS

Client: AECOM			Laboratory ID: XB25085-001
Description: RDW-2			Matrix: Aqueous
Date Sampled: 02/25/2022 1000		Project Name: Shakespeare Composite	
Date Received: 02/25/2022		Project Number: 60675505	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/09/2022 0447	BBW		34179

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		108	70-130
1,2-Dichloroethane-d4		112	70-130
Toluene-d8		107	70-130

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB25085-002
Description: MW-3D
Matrix: Aqueous
Date Sampled: 02/25/2022 1120
Project Name: Shakespeare Composite
Date Received: 02/25/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/09/2022 0510	BBW		34179

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	36		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB25085-002
Description: MW-3D
Matrix: Aqueous
Date Sampled: 02/25/2022 1120
Project Name: Shakespeare Composite
Date Received: 02/25/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/09/2022 0510	BBW		34179

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	24		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		114	70-130
1,2-Dichloroethane-d4		114	70-130
Toluene-d8		109	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB25085-005
Description: MW-2D
Matrix: Aqueous
Date Sampled: 02/25/2022 1335
Project Name: Shakespeare Composite
Date Received: 02/25/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/09/2022 0533	BBW		34179

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB25085-005
Description: MW-2D
Matrix: Aqueous
Date Sampled: 02/25/2022 1335
Project Name: Shakespeare Composite
Date Received: 02/25/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/09/2022 0533	BBW		34179

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		109	70-130
1,2-Dichloroethane-d4		113	70-130
Toluene-d8		107	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB25085-006
Description: MW-7D
Matrix: Aqueous
Date Sampled: 02/25/2022 1540
Project Name: Shakespeare Composite
Date Received: 02/25/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/09/2022 0557	BBW		34179

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB25085-006
Description: MW-7D
Matrix: Aqueous
Date Sampled: 02/25/2022 1540
Project Name: Shakespeare Composite
Date Received: 02/25/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/09/2022 0557	BBW		34179

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		110	70-130
1,2-Dichloroethane-d4		112	70-130
Toluene-d8		108	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Description: DUP-02
Date Sampled: 02/25/2022
Date Received: 02/25/2022
Laboratory ID: XB25085-007
Matrix: Aqueous
Project Name: Shakespeare Composite
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/09/2022 0620	BBW		34179

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM			Laboratory ID: XB25085-007
Description: DUP-02			Matrix: Aqueous
Date Sampled: 02/25/2022	Project Name: Shakespeare Composite		
Date Received: 02/25/2022	Project Number: 60675505		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/09/2022 0620	BBW		34179

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		109	70-130
1,2-Dichloroethane-d4		114	70-130
Toluene-d8		106	70-130

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB25085-008
Description: TB-04
Matrix: Aqueous
Date Sampled: 02/25/2022
Project Name: Shakespeare Composite
Date Received: 02/25/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/09/2022 0008	BBW		34179

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB25085-008
Description: TB-04
Matrix: Aqueous
Date Sampled: 02/25/2022
Project Name: Shakespeare Composite
Date Received: 02/25/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/09/2022 0008	BBW		34179

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		111	70-130
1,2-Dichloroethane-d4		109	70-130
Toluene-d8		106	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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QC Summary

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34179-001
Batch: 34179
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	10	4.0	ug/L	03/08/2022 2126
Benzene	ND		1	0.50	0.40	ug/L	03/08/2022 2126
Bromodichloromethane	ND		1	0.50	0.40	ug/L	03/08/2022 2126
Bromoform	ND		1	0.50	0.40	ug/L	03/08/2022 2126
Bromomethane (Methyl bromide)	ND		1	0.50	0.40	ug/L	03/08/2022 2126
2-Butanone (MEK)	ND		1	10	2.0	ug/L	03/08/2022 2126
Carbon disulfide	ND		1	0.50	0.40	ug/L	03/08/2022 2126
Carbon tetrachloride	ND		1	0.50	0.40	ug/L	03/08/2022 2126
Chlorobenzene	ND		1	0.50	0.40	ug/L	03/08/2022 2126
Chloroethane	ND		1	0.50	0.40	ug/L	03/08/2022 2126
Chloroform	ND		1	0.50	0.40	ug/L	03/08/2022 2126
Chloromethane (Methyl chloride)	ND		1	0.50	0.40	ug/L	03/08/2022 2126
Cyclohexane	ND		1	0.50	0.40	ug/L	03/08/2022 2126
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.50	0.40	ug/L	03/08/2022 2126
Dibromochloromethane	ND		1	0.50	0.40	ug/L	03/08/2022 2126
1,2-Dibromoethane (EDB)	ND		1	0.50	0.40	ug/L	03/08/2022 2126
1,2-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/08/2022 2126
1,3-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/08/2022 2126
1,4-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/08/2022 2126
Dichlorodifluoromethane	ND		1	0.50	0.40	ug/L	03/08/2022 2126
1,1-Dichloroethane	ND		1	0.50	0.40	ug/L	03/08/2022 2126
1,2-Dichloroethane	ND		1	0.50	0.40	ug/L	03/08/2022 2126
1,1-Dichloroethene	ND		1	0.50	0.40	ug/L	03/08/2022 2126
cis-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/08/2022 2126
trans-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/08/2022 2126
1,2-Dichloropropane	ND		1	0.50	0.40	ug/L	03/08/2022 2126
cis-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/08/2022 2126
trans-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/08/2022 2126
Ethylbenzene	ND		1	0.50	0.40	ug/L	03/08/2022 2126
2-Hexanone	ND		1	10	2.0	ug/L	03/08/2022 2126
Isopropylbenzene	ND		1	0.50	0.40	ug/L	03/08/2022 2126
Methyl acetate	ND		1	1.0	0.40	ug/L	03/08/2022 2126
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.40	ug/L	03/08/2022 2126
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	03/08/2022 2126
Methylcyclohexane	ND		1	5.0	0.40	ug/L	03/08/2022 2126
Methylene chloride	ND		1	0.50	0.40	ug/L	03/08/2022 2126
Styrene	ND		1	0.50	0.41	ug/L	03/08/2022 2126
1,1,2,2-Tetrachloroethane	ND		1	0.50	0.40	ug/L	03/08/2022 2126
Tetrachloroethene	ND		1	0.50	0.40	ug/L	03/08/2022 2126
Toluene	ND		1	0.50	0.40	ug/L	03/08/2022 2126
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	03/08/2022 2126
1,2,4-Trichlorobenzene	ND		1	0.50	0.40	ug/L	03/08/2022 2126
1,1,1-Trichloroethane	ND		1	0.50	0.40	ug/L	03/08/2022 2126
1,1,2-Trichloroethane	ND		1	0.50	0.40	ug/L	03/08/2022 2126

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34179-001
Batch: 34179
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.50	0.40	ug/L	03/08/2022 2126
Trichlorofluoromethane	ND		1	0.50	0.40	ug/L	03/08/2022 2126
Vinyl chloride	ND		1	0.50	0.40	ug/L	03/08/2022 2126
Xylenes (total)	ND		1	1.0	0.40	ug/L	03/08/2022 2126

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		111	70-130
1,2-Dichloroethane-d4		109	70-130
Toluene-d8		107	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34179-002
Batch: 34179
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	95		1	95	60-140	03/08/2022 1953
Benzene	50	44		1	88	70-130	03/08/2022 1953
Bromodichloromethane	50	44		1	88	70-130	03/08/2022 1953
Bromoform	50	44		1	87	70-130	03/08/2022 1953
Bromomethane (Methyl bromide)	50	39		1	79	70-130	03/08/2022 1953
2-Butanone (MEK)	100	98		1	98	70-130	03/08/2022 1953
Carbon disulfide	50	40		1	80	70-130	03/08/2022 1953
Carbon tetrachloride	50	43		1	85	70-130	03/08/2022 1953
Chlorobenzene	50	46		1	91	70-130	03/08/2022 1953
Chloroethane	50	39		1	77	70-130	03/08/2022 1953
Chloroform	50	42		1	85	70-130	03/08/2022 1953
Chloromethane (Methyl chloride)	50	38		1	75	60-140	03/08/2022 1953
Cyclohexane	50	44		1	87	70-130	03/08/2022 1953
1,2-Dibromo-3-chloropropane (DBCP)	50	44		1	87	70-130	03/08/2022 1953
Dibromochloromethane	50	43		1	87	70-130	03/08/2022 1953
1,2-Dibromoethane (EDB)	50	46		1	92	70-130	03/08/2022 1953
1,2-Dichlorobenzene	50	47		1	95	70-130	03/08/2022 1953
1,3-Dichlorobenzene	50	47		1	94	70-130	03/08/2022 1953
1,4-Dichlorobenzene	50	46		1	93	70-130	03/08/2022 1953
Dichlorodifluoromethane	50	42		1	83	60-140	03/08/2022 1953
1,1-Dichloroethane	50	41		1	81	70-130	03/08/2022 1953
1,2-Dichloroethane	50	46		1	92	70-130	03/08/2022 1953
1,1-Dichloroethene	50	41		1	82	70-130	03/08/2022 1953
cis-1,2-Dichloroethene	50	42		1	84	70-130	03/08/2022 1953
trans-1,2-Dichloroethene	50	41		1	81	70-130	03/08/2022 1953
1,2-Dichloropropane	50	42		1	84	70-130	03/08/2022 1953
cis-1,3-Dichloropropene	50	44		1	89	70-130	03/08/2022 1953
trans-1,3-Dichloropropene	50	45		1	90	70-130	03/08/2022 1953
Ethylbenzene	50	46		1	92	70-130	03/08/2022 1953
2-Hexanone	100	95		1	95	70-130	03/08/2022 1953
Isopropylbenzene	50	46		1	93	70-130	03/08/2022 1953
Methyl acetate	50	44		1	88	70-130	03/08/2022 1953
Methyl tertiary butyl ether (MTBE)	50	43		1	87	70-130	03/08/2022 1953
4-Methyl-2-pentanone	100	93		1	93	70-130	03/08/2022 1953
Methylcyclohexane	50	44		1	88	70-130	03/08/2022 1953
Methylene chloride	50	40		1	80	70-130	03/08/2022 1953
Styrene	50	46		1	93	70-130	03/08/2022 1953
1,1,2,2-Tetrachloroethane	50	45		1	90	70-130	03/08/2022 1953
Tetrachloroethene	50	46		1	93	70-130	03/08/2022 1953
Toluene	50	45		1	91	70-130	03/08/2022 1953
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	42		1	85	70-130	03/08/2022 1953
1,2,4-Trichlorobenzene	50	48		1	97	70-130	03/08/2022 1953
1,1,1-Trichloroethane	50	43		1	86	70-130	03/08/2022 1953
1,1,2-Trichloroethane	50	46		1	92	70-130	03/08/2022 1953

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34179-002
Batch: 34179
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	44		1	87	70-130	03/08/2022 1953
Trichlorofluoromethane	50	42		1	84	70-130	03/08/2022 1953
Vinyl chloride	50	39		1	77	70-130	03/08/2022 1953
Xylenes (total)	100	93		1	93	70-130	03/08/2022 1953

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		97	70-130
1,2-Dichloroethane-d4		95	70-130
Toluene-d8		92	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MS

Sample ID: XB25085-002MS
Batch: 34179
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	ND	100	100		1	102	60-140	03/09/2022 0644
Benzene	ND	50	52		1	104	70-130	03/09/2022 0644
Bromodichloromethane	ND	50	48		1	96	70-130	03/09/2022 0644
Bromoform	ND	50	42		1	85	70-130	03/09/2022 0644
Bromomethane (Methyl bromide)	ND	100	97		1	97	70-130	03/09/2022 0644
2-Butanone (MEK)	ND	100	99		1	99	70-130	03/09/2022 0644
Carbon disulfide	ND	50	48		1	96	70-130	03/09/2022 0644
Carbon tetrachloride	ND	50	53		1	105	70-130	03/09/2022 0644
Chlorobenzene	ND	50	51		1	102	70-130	03/09/2022 0644
Chloroethane	ND	100	93		1	93	70-130	03/09/2022 0644
Chloroform	ND	50	50		1	99	70-130	03/09/2022 0644
Chloromethane (Methyl chloride)	ND	100	88		1	88	60-140	03/09/2022 0644
Cyclohexane	ND	50	56		1	113	70-130	03/09/2022 0644
1,2-Dibromo-3-chloropropane (DBCP)	ND	50	44		1	88	70-130	03/09/2022 0644
Dibromochloromethane	ND	50	44		1	88	70-130	03/09/2022 0644
1,2-Dibromoethane (EDB)	ND	50	49		1	98	70-130	03/09/2022 0644
1,2-Dichlorobenzene	ND	50	51		1	102	70-130	03/09/2022 0644
1,3-Dichlorobenzene	ND	50	51		1	103	70-130	03/09/2022 0644
1,4-Dichlorobenzene	ND	50	50		1	101	70-130	03/09/2022 0644
Dichlorodifluoromethane	ND	100	93		1	93	60-140	03/09/2022 0644
1,1-Dichloroethane	ND	50	49		1	98	70-130	03/09/2022 0644
1,2-Dichloroethane	ND	50	51		1	102	70-130	03/09/2022 0644
1,1-Dichloroethene	ND	50	52		1	105	70-130	03/09/2022 0644
cis-1,2-Dichloroethene	36	50	83		1	94	70-130	03/09/2022 0644
trans-1,2-Dichloroethene	ND	50	50		1	101	70-130	03/09/2022 0644
1,2-Dichloropropane	ND	50	48		1	95	70-130	03/09/2022 0644
cis-1,3-Dichloropropene	ND	50	46		1	92	70-130	03/09/2022 0644
trans-1,3-Dichloropropene	ND	50	45		1	90	70-130	03/09/2022 0644
Ethylbenzene	ND	50	53		1	106	70-130	03/09/2022 0644
2-Hexanone	ND	100	100		1	100	70-130	03/09/2022 0644
Isopropylbenzene	ND	50	54		1	107	70-130	03/09/2022 0644
Methyl acetate	ND	50	40		1	79	70-130	03/09/2022 0644
Methyl tertiary butyl ether (MTBE)	ND	50	49		1	97	70-130	03/09/2022 0644
4-Methyl-2-pentanone	ND	100	97		1	97	70-130	03/09/2022 0644
Methylcyclohexane	ND	50	54		1	108	70-130	03/09/2022 0644
Methylene chloride	ND	50	48		1	96	70-130	03/09/2022 0644
Styrene	ND	50	50		1	100	70-130	03/09/2022 0644
1,1,2,2-Tetrachloroethane	ND	50	47		1	95	70-130	03/09/2022 0644
Tetrachloroethene	ND	50	54		1	109	70-130	03/09/2022 0644
Toluene	ND	50	52		1	104	70-130	03/09/2022 0644
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	53		1	106	70-130	03/09/2022 0644
1,2,4-Trichlorobenzene	ND	50	50		1	100	70-130	03/09/2022 0644
1,1,1-Trichloroethane	ND	50	53		1	106	70-130	03/09/2022 0644
1,1,2-Trichloroethane	ND	50	48		1	96	70-130	03/09/2022 0644

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MS

Sample ID: XB25085-002MS
Batch: 34179
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	24	50	75		1	102	70-130	03/09/2022 0644
Trichlorofluoromethane	ND	100	110		1	108	70-130	03/09/2022 0644
Vinyl chloride	ND	100	93		1	93	70-130	03/09/2022 0644
Xylenes (total)	ND	100	110		1	106	70-130	03/09/2022 0644

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene	N	4.7	70-130
1,2-Dichloroethane-d4	N	0.85	70-130
Toluene-d8	N	1.7	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XB25085-002MD
Batch: 34179
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acetone	ND	100	100		1	100	2.0	60-140	20	03/09/2022 0707
Benzene	ND	50	53		1	107	2.9	70-130	20	03/09/2022 0707
Bromodichloromethane	ND	50	49		1	97	1.4	70-130	20	03/09/2022 0707
Bromoform	ND	50	42		1	84	0.27	70-130	20	03/09/2022 0707
Bromomethane (Methyl bromide)	ND	100	99		1	99	2.3	70-130	20	03/09/2022 0707
2-Butanone (MEK)	ND	100	100		1	105	5.8	70-130	20	03/09/2022 0707
Carbon disulfide	ND	50	50		1	100	4.1	70-130	20	03/09/2022 0707
Carbon tetrachloride	ND	50	56		1	111	5.7	70-130	20	03/09/2022 0707
Chlorobenzene	ND	50	52		1	103	0.78	70-130	20	03/09/2022 0707
Chloroethane	ND	100	96		1	96	2.4	70-130	20	03/09/2022 0707
Chloroform	ND	50	52		1	104	5.0	70-130	20	03/09/2022 0707
Chloromethane (Methyl chloride)	ND	100	91		1	91	3.4	60-140	20	03/09/2022 0707
Cyclohexane	ND	50	58		1	116	3.0	70-130	20	03/09/2022 0707
1,2-Dibromo-3-chloropropane (DBCP)	ND	50	44		1	87	0.24	70-130	20	03/09/2022 0707
Dibromochloromethane	ND	50	45		1	89	0.73	70-130	20	03/09/2022 0707
1,2-Dibromoethane (EDB)	ND	50	49		1	98	0.0080	70-130	20	03/09/2022 0707
1,2-Dichlorobenzene	ND	50	50		1	100	2.9	70-130	20	03/09/2022 0707
1,3-Dichlorobenzene	ND	50	50		1	100	2.5	70-130	20	03/09/2022 0707
1,4-Dichlorobenzene	ND	50	49		1	97	3.8	70-130	20	03/09/2022 0707
Dichlorodifluoromethane	ND	100	96		1	96	2.8	60-140	20	03/09/2022 0707
1,1-Dichloroethane	ND	50	51		1	103	4.3	70-130	20	03/09/2022 0707
1,2-Dichloroethane	ND	50	52		1	105	2.2	70-130	20	03/09/2022 0707
1,1-Dichloroethene	ND	50	55		1	110	4.7	70-130	20	03/09/2022 0707
cis-1,2-Dichloroethene	36	50	86		1	101	4.6	70-130	20	03/09/2022 0707
trans-1,2-Dichloroethene	ND	50	51		1	103	2.0	70-130	20	03/09/2022 0707
1,2-Dichloropropane	ND	50	48		1	97	1.5	70-130	20	03/09/2022 0707
cis-1,3-Dichloropropene	ND	50	48		1	95	3.4	70-130	20	03/09/2022 0707
trans-1,3-Dichloropropene	ND	50	46		1	91	1.5	70-130	20	03/09/2022 0707
Ethylbenzene	ND	50	53		1	106	0.68	70-130	20	03/09/2022 0707
2-Hexanone	ND	100	99		1	99	0.55	70-130	20	03/09/2022 0707
Isopropylbenzene	ND	50	54		1	108	0.74	70-130	20	03/09/2022 0707
Methyl acetate	ND	50	41		1	82	3.8	70-130	20	03/09/2022 0707
Methyl tertiary butyl ether (MTBE)	ND	50	50		1	100	2.3	70-130	20	03/09/2022 0707
4-Methyl-2-pentanone	ND	100	100		1	100	2.6	70-130	20	03/09/2022 0707
Methylcyclohexane	ND	50	56		1	111	2.9	70-130	20	03/09/2022 0707
Methylene chloride	ND	50	49		1	99	3.0	70-130	20	03/09/2022 0707
Styrene	ND	50	51		1	101	1.4	70-130	20	03/09/2022 0707
1,1,2,2-Tetrachloroethane	ND	50	46		1	91	3.6	70-130	20	03/09/2022 0707
Tetrachloroethene	ND	50	55		1	110	1.6	70-130	20	03/09/2022 0707
Toluene	ND	50	52		1	105	0.60	70-130	20	03/09/2022 0707
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	55		1	109	3.4	70-130	20	03/09/2022 0707
1,2,4-Trichlorobenzene	ND	50	49		1	99	1.5	70-130	20	03/09/2022 0707
1,1,1-Trichloroethane	ND	50	55		1	110	3.9	70-130	20	03/09/2022 0707
1,1,2-Trichloroethane	ND	50	49		1	97	0.98	70-130	20	03/09/2022 0707

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XB25085-002MD
Batch: 34179
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Trichloroethene	24	50	77		1	105	2.1	70-130	20	03/09/2022 0707
Trichlorofluoromethane	ND	100	110		1	112	4.1	70-130	20	03/09/2022 0707
Vinyl chloride	ND	100	97		1	97	4.5	70-130	20	03/09/2022 0707
Xylenes (total)	ND	100	110		1	106	0.31	70-130	20	03/09/2022 0707

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene	N	4.3	70-130
1,2-Dichloroethane-d4	N	0.66	70-130
Toluene-d8	N	1.4	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Chain of Custody
and
Miscellaneous Documents

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: AECOM	Billing Information:
Address: 101 Research Dr. Cola	
Report To: Scott Ross	Email To:
Copy To:	Site Collection Info/Address:
Customer Project Name/Number: Shakespeare Composite Structure	State: SC / Newberry County/City: Time Zone Collected: [ ] PT [ ] MT [ ] CT [X] ET
Phone: Email: Scott.Ross@aecom.com	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Justin Butler	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Standard Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [X] No Analysis:

Container Preservative Type **: 3

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Lab Project Manager:

Analyses: TCL VOC's

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips:	
Sample pH Acceptable	Y N NA
pH Strips:	
Sulfide Present	Y N NA
Lead Acetate Strips:	

LAB USE ONLY:
Lab Sample # / Comments:

XB25085
GSD

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns
RDW-2	GW	G	2/25/22	1000				X
MW-3D	GW	G	2/25/22	1130				X
MW-3D-MS	GW	G	2/25/22	1120				X
MW-3D-MSD	GW	G	2/25/22	1120				X
MW-2D	GW	G	2/25/22	1325				X
MW-7D	GW	G	2/25/22	1540				X
DUP-02	GW	G	2/25/22	—				X
TB-04								X

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2683668

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: 5
Cooler 1 Temp Upon Receipt: 2.6 oC
Cooler 1 Therm Corr. Factor: 0 oC
Cooler 1 Corrected Temp: 2.6 oC
Comments:

Relinquished by/Company: (Signature)	Date/Time: 2/25/22 1738	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature) PACE	Date/Time: 2/25/22 1738

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: (Y) N NA
(HCl) MeOH TSP Other

Non Conformance(s): YES / NO

Page: 1 of: 1

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

Client: AECOM Cooler Inspected by/date: kdrw / 02/25/2022 Lot #: XB25085

Means of receipt: ☐ Pace ☑ Client ☐ UPS ☐ FedEx ☐ Other: _____

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

2.6 / 2.5 °C NA / NA °C NA / NA °C NA / NA °C Secondary 2/22/22

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? _____
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☑ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☑ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☑ Yes	☐ No	☐ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☑ Yes	☐ No		21. Was the quote number listed on the container label? If yes, Quote # 24900

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.

Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: kdrw Date: 02/25/2022

Comments:

Report of Analysis

AECOM
101 Research Drive
Columbia, SC 29203
Attention: Scott Ross

Project Name: Shakespeare Composite Structures

Project Number: 60675505

Lot Number:**XB28047**

Date Completed:03/16/2022

03/22/2022 2:10 PM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
AECOM
Lot Number: XB28047

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

Ferrous Iron
Reanalysis of sample XB28047-002 (TMW-24) was performed marginally outside of the analytical holding time. This sample was analyzed prior to expiration, however the sample value was obtained prior to the calibration results. The results obtained prior to calibration were verified with results obtained after calibration and both results have been reported.

Nitrate 300.0
The LOQ check standard recovery associated with analytical batch 33701 is outside the acceptance criteria for the following analytes: Sulfate, Nitrate. The LOQ check recovered outside the +/- 50% window allowed in the SOP, with 170% recovery for Sulfate and 153% recovery for Nitrate. The associated samples (XB28047-002 (TMW-24), XB28047-005 (TMW-21) and XB28047-006 (TMW-22)) yielded results above the LOQ for Nitrate, and were reanalyzed for confirmation.

The laboratory control sample (LCS) for analytical batch 33704 exceeded acceptance criteria for Nitrate. Nitrate was biased high and the following samples were affected: XB28047-002 (TMW-24), XB28047-005 (TMW-21) and XB28047-006 (TMW-22). The samples were reanalyzed for confirmation.

Reanalysis of the following samples was performed outside of the analytical holding time: XB28047-002 (TMW-24), XB28047-005 (TMW-21) and XB28047-006 (TMW-22). Reanalysis confirms the initial analysis; therefore, the in holding time analysis has been reported.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Sample Summary

AECOM

Lot Number: XB28047

Project Name: Shakespeare Composite Structures

Project Number: 60675505

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	MW-4	Aqueous	02/28/2022 1055	02/28/2022
002	TMW-24	Aqueous	02/28/2022 1140	02/28/2022
003	TMW-33	Aqueous	02/28/2022 1350	02/28/2022
004	TMW-25	Aqueous	02/28/2022 1520	02/28/2022
005	TMW-21	Aqueous	02/28/2022 1355	02/28/2022
006	TMW-22	Aqueous	02/28/2022 1520	02/28/2022
007	TB-04	Aqueous	02/28/2022	02/28/2022

(7 samples)

Detection Summary

AECOM

Lot Number: XB28047

Project Name: Shakespeare Composite Structures

Project Number: 60675505

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	MW-4	Aqueous	Acetone	8260D	4.8	J	ug/L	6
001	MW-4	Aqueous	Benzene	8260D	0.60		ug/L	6
001	MW-4	Aqueous	cis-1,2-Dichloroethene	8260D	5.1		ug/L	6
002	TMW-24	Aqueous	Nitrate - N	300.0	1.2	L	mg/L	8
002	TMW-24	Aqueous	Acetone	8260D	29		ug/L	9
002	TMW-24	Aqueous	cis-1,2-Dichloroethene	8260D	1.3		ug/L	9
002	TMW-24	Aqueous	Styrene	8260D	22		ug/L	9
002	TMW-24	Aqueous	Trichloroethene	8260D	70		ug/L	10
002	TMW-24	Aqueous	Iron	6010D	0.15		mg/L	13
003	TMW-33	Aqueous	Acetone	8260D	34		ug/L	14
003	TMW-33	Aqueous	cis-1,2-Dichloroethene	8260D	0.74		ug/L	14
003	TMW-33	Aqueous	Styrene	8260D	10		ug/L	14
003	TMW-33	Aqueous	Trichloroethene	8260D	20		ug/L	15
004	TMW-25	Aqueous	Acetone	8260D	5.0	J	ug/L	16
004	TMW-25	Aqueous	Styrene	8260D	4.8		ug/L	16
004	TMW-25	Aqueous	Trichloroethene	8260D	45		ug/L	17
005	TMW-21	Aqueous	Ferrous Iron	SM 3500-Fe B-	0.089		mg/L	18
005	TMW-21	Aqueous	Nitrate - N	300.0	0.37	L	mg/L	18
005	TMW-21	Aqueous	Nitrite - N	300.0	0.011	J	mg/L	18
005	TMW-21	Aqueous	Acetone	8260D	100		ug/L	19
005	TMW-21	Aqueous	2-Butanone (MEK)	8260D	8.0	J	ug/L	19
005	TMW-21	Aqueous	Chloroform	8260D	1.3		ug/L	19
005	TMW-21	Aqueous	1,1-Dichloroethene	8260D	3.9		ug/L	19
005	TMW-21	Aqueous	cis-1,2-Dichloroethene	8260D	130		ug/L	19
005	TMW-21	Aqueous	trans-1,2-Dichloroethene	8260D	5.1		ug/L	19
005	TMW-21	Aqueous	Styrene	8260D	56		ug/L	19
005	TMW-21	Aqueous	Tetrachloroethene	8260D	1.1		ug/L	19
005	TMW-21	Aqueous	Trichloroethene	8260D	260		ug/L	20
005	TMW-21	Aqueous	Vinyl chloride	8260D	0.89		ug/L	20
005	TMW-21	Aqueous	Methane	RSK - 175	280		ug/L	21
006	TMW-22	Aqueous	Nitrate - N	300.0	0.026	L	mg/L	24
006	TMW-22	Aqueous	Acetone	8260D	38		ug/L	25
006	TMW-22	Aqueous	2-Butanone (MEK)	8260D	2.8	J	ug/L	25
006	TMW-22	Aqueous	Chloroform	8260D	0.87		ug/L	25
006	TMW-22	Aqueous	1,1-Dichloroethene	8260D	3.1		ug/L	25
006	TMW-22	Aqueous	cis-1,2-Dichloroethene	8260D	49		ug/L	25
006	TMW-22	Aqueous	trans-1,2-Dichloroethene	8260D	2.2		ug/L	25
006	TMW-22	Aqueous	Styrene	8260D	31		ug/L	25
006	TMW-22	Aqueous	Tetrachloroethene	8260D	0.95		ug/L	25
006	TMW-22	Aqueous	Trichloroethene	8260D	220		ug/L	26
006	TMW-22	Aqueous	Vinyl chloride	8260D	0.40	J	ug/L	26
006	TMW-22	Aqueous	Methane	RSK - 175	120		ug/L	27

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page

(42 detections)

Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB28047-001
Description: MW-4
Matrix: Aqueous
Date Sampled: 02/28/2022 1055
Project Name: Shakespeare Composite
Date Received: 02/28/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/10/2022 1323	SDC		34386

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	4.8	J	10	4.0	ug/L	1
Benzene	71-43-2	8260D	0.60		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	5.1		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB28047-001
Description: MW-4
Matrix: Aqueous
Date Sampled: 02/28/2022 1055
Project Name: Shakespeare Composite
Date Received: 02/28/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/10/2022 1323	SDC		34386

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		109	70-130
1,2-Dichloroethane-d4		117	70-130
Toluene-d8		106	70-130

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Inorganic non-metals

Client: AECOM
Laboratory ID: XB28047-002
Description: TMW-24
Matrix: Aqueous
Date Sampled: 02/28/2022 1140
Project Name: Shakespeare Composite
Date Received: 02/28/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity @) SM 2320B-2011	1	03/03/2022 0354	TAD		33661
1		(Ferrous Iron) SM 3500-Fe B-2011	1	03/01/2022 1125	MSG		33333
2		(Ferrous Iron) SM 3500-Fe B-2011	1	03/01/2022 1226	MSG		33333
1		(Nitrate - N) 300.0	1	03/01/2022 2350	MSG		33704
1		(Nitrite - N) 300.0	1	03/01/2022 2350	MSG		33710
1		(Sulfate) 300.0	1	03/01/2022 2350	MSG		33701
1		(TOC) SM 5310C-2014	1	03/12/2022 1800	DMA		34637

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity @ pH 4.5 su		SM 2320B-2011	ND		20	20	mg CaCO3/L	1
Nitrate - N		300.0	1.2	L	0.020	0.0050	mg/L	1
Ferrous Iron		SM 3500-Fe B-2	ND		0.050	0.050	mg/L	1
Nitrite - N		300.0	ND		0.020	0.0050	mg/L	1
Ferrous Iron		SM 3500-Fe B-2	ND	H	0.050	0.050	mg/L	2
Sulfate		300.0	ND		1.0	0.25	mg/L	1
TOC		SM 5310C-2014	ND		1.0	1.0	mg/L	1

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB28047-002
Description: TMW-24
Matrix: Aqueous
Date Sampled: 02/28/2022 1140
Project Name: Shakespeare Composite
Date Received: 02/28/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/10/2022 1345	SDC		34386

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	29		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	1.3		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	22		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
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N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
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S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB28047-002
Description: TMW-24
Matrix: Aqueous
Date Sampled: 02/28/2022 1140
Project Name: Shakespeare Composite
Date Received: 02/28/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/10/2022 1345	SDC		34386

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	70		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		110	70-130
1,2-Dichloroethane-d4		114	70-130
Toluene-d8		109	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
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H = Out of holding time
W = Reported on wet weight basis
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Dissolved Gases

Client: AECOM
Laboratory ID: XB28047-002
Description: TMW-24
Matrix: Aqueous
Date Sampled: 02/28/2022 1140
Project Name: Shakespeare Composite
Date Received: 02/28/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	03/02/2022 1445	JM1		33463

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	ND		10	2.5	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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ICP-AES Metals

Client: AECOM			Laboratory ID: XB28047-002
Description: TMW-24			Matrix: Aqueous
Date Sampled: 02/28/2022 1140		Project Name: Shakespeare Composite	
Date Received: 02/28/2022		Project Number: 60675505	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	3005A	6010D	1	03/08/2022 1059	JMH	03/04/2022 0920	33615

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Dissolved Iron	7439-89-6	6010D	ND		0.10	0.040	mg/L	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Metals

Client: AECOM
Laboratory ID: XB28047-002
Description: TMW-24
Matrix: Aqueous
Date Sampled: 02/28/2022 1140
Project Name: Shakespeare Composite
Date Received: 02/28/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/07/2022 1607	JMH	03/03/2022 0126	33554

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Iron	7439-89-6	6010D	0.15		0.10	0.040	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB28047-003
Description: TMW-33
Matrix: Aqueous
Date Sampled: 02/28/2022 1350
Project Name: Shakespeare Composite
Date Received: 02/28/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/10/2022 1408	SDC		34386

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	34		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	0.74		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	10		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
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DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB28047-003
Description: TMW-33
Matrix: Aqueous
Date Sampled: 02/28/2022 1350
Project Name: Shakespeare Composite
Date Received: 02/28/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/10/2022 1408	SDC		34386

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	20		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		112	70-130
1,2-Dichloroethane-d4		116	70-130
Toluene-d8		110	70-130

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB28047-004
Description: TMW-25
Matrix: Aqueous
Date Sampled: 02/28/2022 1520
Project Name: Shakespeare Composite
Date Received: 02/28/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/10/2022 1430	SDC		34386

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	5.0	J	10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	4.8		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
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Q = Surrogate failure
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S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB28047-004
Description: TMW-25
Matrix: Aqueous
Date Sampled: 02/28/2022 1520
Project Name: Shakespeare Composite
Date Received: 02/28/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/10/2022 1430	SDC		34386

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	45		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		107	70-130
1,2-Dichloroethane-d4		115	70-130
Toluene-d8		106	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Inorganic non-metals

Client: AECOM			Laboratory ID: XB28047-005
Description: TMW-21			Matrix: Aqueous
Date Sampled: 02/28/2022 1355		Project Name: Shakespeare Composite	
Date Received: 02/28/2022		Project Number: 60675505	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity @) SM 2320B-2011	1	03/03/2022 0359	TAD		33661
1		(Ferrous Iron) SM 3500-Fe B-2011	1	03/01/2022 1227	MSG		33333
1		(Nitrate - N) 300.0	1	03/02/2022 0009	MSG		33704
1		(Nitrite - N) 300.0	1	03/02/2022 0009	MSG		33710
1		(Sulfate) 300.0	1	03/02/2022 0009	MSG		33701
1		(TOC) SM 5310C-2014	1	03/12/2022 1812	DMA		34637

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity @ pH 4.5 su		SM 2320B-2011	ND		20	20	mg CaCO3/L	1
Ferrous Iron		SM 3500-Fe B-2	0.089		0.050	0.050	mg/L	1
Nitrate - N		300.0	0.37	L	0.020	0.0050	mg/L	1
Nitrite - N		300.0	0.011	J	0.020	0.0050	mg/L	1
Sulfate		300.0	ND		1.0	0.25	mg/L	1
TOC		SM 5310C-2014	ND		1.0	1.0	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB28047-005
Description: TMW-21
Matrix: Aqueous
Date Sampled: 02/28/2022 1355
Project Name: Shakespeare Composite
Date Received: 02/28/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/10/2022 1453	SDC		34386
2	5030B	8260D	5	03/12/2022 0418	JWO		34604

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	100		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	8.0	J	10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	1.3		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	3.9		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	130		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	5.1		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	56		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	1.1		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM			Laboratory ID: XB28047-005
Description: TMW-21			Matrix: Aqueous
Date Sampled: 02/28/2022 1355		Project Name: Shakespeare Composite	
Date Received: 02/28/2022		Project Number: 60675505	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/10/2022 1453	SDC		34386
2	5030B	8260D	5	03/12/2022 0418	JWO		34604

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1
Trichloroethene	79-01-6	8260D	260		2.5	2.0	ug/L	2
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.89		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Run 1 Q	Run 1 % Recovery	Run 1 Acceptance Limits	Run 2 Q	Run 2 % Recovery	Run 2 Acceptance Limits
Bromofluorobenzene		110	70-130		90	70-130
1,2-Dichloroethane-d4		114	70-130		121	70-130
Toluene-d8		106	70-130		105	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Dissolved Gases

Client: AECOM
Laboratory ID: XB28047-005
Description: TMW-21
Matrix: Aqueous
Date Sampled: 02/28/2022 1355
Project Name: Shakespeare Composite
Date Received: 02/28/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	03/02/2022 1500	JM1		33463

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	280		10	2.5	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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ICP-AES Metals

Client: AECOM			Laboratory ID: XB28047-005
Description: TMW-21			Matrix: Aqueous
Date Sampled: 02/28/2022 1355		Project Name: Shakespeare Composite	
Date Received: 02/28/2022		Project Number: 60675505	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	3005A	6010D	1	03/08/2022 1121	JMH	03/04/2022 0920	33615

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Dissolved Iron	7439-89-6	6010D	ND		0.10	0.040	mg/L	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Metals

Client: AECOM
Laboratory ID: XB28047-005
Description: TMW-21
Matrix: Aqueous
Date Sampled: 02/28/2022 1355
Project Name: Shakespeare Composite
Date Received: 02/28/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/07/2022 1629	JMH	03/03/2022 0126	33554

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Iron	7439-89-6	6010D	ND		0.10	0.040	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Inorganic non-metals

Client: AECOM
Laboratory ID: XB28047-006
Description: TMW-22
Matrix: Aqueous
Date Sampled: 02/28/2022 1520
Project Name: Shakespeare Composite
Date Received: 02/28/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity @) SM 2320B-2011	1	03/03/2022 0406	TAD		33661
1		(Ferrous Iron) SM 3500-Fe B-2011	1	03/01/2022 1228	MSG		33333
1		(Nitrate - N) 300.0	1	03/02/2022 0028	MSG		33704
1		(Nitrite - N) 300.0	1	03/02/2022 0028	MSG		33710
1		(Sulfate) 300.0	1	03/02/2022 0028	MSG		33701
1		(TOC) SM 5310C-2014	1	03/12/2022 1826	DMA		34637

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity @ pH 4.5 su		SM 2320B-2011	ND		20	20	mg CaCO3/L	1
Ferrous Iron		SM 3500-Fe B-2	ND		0.050	0.050	mg/L	1
Nitrate - N		300.0	0.026	L	0.020	0.0050	mg/L	1
Nitrite - N		300.0	ND		0.020	0.0050	mg/L	1
Sulfate		300.0	ND		1.0	0.25	mg/L	1
TOC		SM 5310C-2014	ND		1.0	1.0	mg/L	1

LOQ = Limit of Quantitation
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Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB28047-006
Description: TMW-22
Matrix: Aqueous
Date Sampled: 02/28/2022 1520
Project Name: Shakespeare Composite
Date Received: 02/28/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/10/2022 1516	SDC		34386
2	5030B	8260D	5	03/12/2022 0443	JWO		34604

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	38		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	2.8	J	10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	0.87		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	3.1		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	49		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	2.2		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	31		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	0.95		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB28047-006
Description: TMW-22
Matrix: Aqueous
Date Sampled: 02/28/2022 1520
Project Name: Shakespeare Composite
Date Received: 02/28/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/10/2022 1516	SDC		34386
2	5030B	8260D	5	03/12/2022 0443	JWO		34604

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1
Trichloroethene	79-01-6	8260D	220		2.5	2.0	ug/L	2
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.40	J	0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		113	70-130		91	70-130
1,2-Dichloroethane-d4		117	70-130		120	70-130
Toluene-d8		110	70-130		107	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Dissolved Gases

Client: AECOM
Laboratory ID: XB28047-006
Description: TMW-22
Matrix: Aqueous
Date Sampled: 02/28/2022 1520
Project Name: Shakespeare Composite
Date Received: 02/28/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	03/02/2022 1516	JM1		33463

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	120		10	2.5	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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ICP-AES Metals

Client: AECOM			Laboratory ID: XB28047-006
Description: TMW-22			Matrix: Aqueous
Date Sampled: 02/28/2022 1520		Project Name: Shakespeare Composite	
Date Received: 02/28/2022		Project Number: 60675505	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	3005A	6010D	1	03/08/2022 1125	JMH	03/04/2022 0920	33615

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Dissolved Iron	7439-89-6	6010D	ND		0.10	0.040	mg/L	2

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Metals

Client: AECOM
Laboratory ID: XB28047-006
Description: TMW-22
Matrix: Aqueous
Date Sampled: 02/28/2022 1520
Project Name: Shakespeare Composite
Date Received: 02/28/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/07/2022 1633	JMH	03/03/2022 0126	33554

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Iron	7439-89-6	6010D	ND		0.10	0.040	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB28047-007
Description: TB-04
Matrix: Aqueous
Date Sampled: 02/28/2022
Project Name: Shakespeare Composite
Date Received: 02/28/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/10/2022 1151	SDC		34386

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XB28047-007
Description: TB-04
Matrix: Aqueous
Date Sampled: 02/28/2022
Project Name: Shakespeare Composite
Date Received: 02/28/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/10/2022 1151	SDC		34386

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		106	70-130
1,2-Dichloroethane-d4		117	70-130
Toluene-d8		109	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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QC Summary

Inorganic non-metals - MB

Sample ID: XQ33333-001
Batch: 33333
Analytical Method: SM 3500-Fe B-2011

Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Ferrous Iron	ND		1	0.050	0.050	mg/L	03/01/2022 1218

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ33333-002
Batch: 33333
Analytical Method: SM 3500-Fe B-2011
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Ferrous Iron	1.0	0.97		1	97	90-110	03/01/2022 1223

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCSD

Sample ID: XQ33333-003
Batch: 33333
Analytical Method: SM 3500-Fe B-2011
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Ferrous Iron	1.0	1.0		1	103	5.8	90-110	20	03/01/2022 1224

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MS

Sample ID: XB28047-006MS
Batch: 33333
Analytical Method: SM 3500-Fe B-2011
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Ferrous Iron	ND	1.0	1.0		1	101	70-130	03/01/2022 1231

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Sample ID: XB28047-006MD
Batch: 33333
Analytical Method: SM 3500-Fe B-2011
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Ferrous Iron	ND	1.0	1.0		1	100	1.6	70-130	20	03/01/2022 1232

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ33661-002
Batch: 33661
Analytical Method: SM 2320B-2011

Matrix: Aqueous

Parameter	Spike Amount (mg CaCO3/L)	Result (mg CaCO3/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Alkalinity @ pH 4.5 su	100	110		1	106	90-110	03/03/2022 0312

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MB

Sample ID: XQ33701-001
Batch: 33701
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Sulfate	ND		1	1.0	0.25	mg/L	03/01/2022 2234

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ33701-002
Batch: 33701
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Sulfate	20	21		1	103	90-110	03/01/2022 2331

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MS

Sample ID: XB28047-006MS
Batch: 33701
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Sulfate	ND	10	10		1	102	90-110	03/02/2022 0047

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MSD

Sample ID: XB28047-006MD
Batch: 33701
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Sulfate	ND	10	10		1	104	2.6	90-110	20	03/02/2022 0106

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MB

Sample ID: XQ33704-001
Batch: 33704
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Nitrate - N	ND		1	0.020	0.0050	mg/L	03/01/2022 2234

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ33704-002
Batch: 33704
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Nitrate - N	0.80	0.94	N	1	117	90-110	03/01/2022 2331

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MS

Sample ID: XB28047-006MS
Batch: 33704
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Nitrate - N	0.026	0.40	0.42		1	98	90-110	03/02/2022 0047

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MSD

Sample ID: XB28047-006MD
Batch: 33704
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Nitrate - N	0.026	0.40	0.43		1	100	2.3	90-110	20	03/02/2022 0106

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MB

Sample ID: XQ33710-001
Batch: 33710
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Nitrite - N	ND		1	0.020	0.0050	mg/L	03/01/2022 2234

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ33710-002
Batch: 33710
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Nitrite - N	0.80	0.77		1	96	90-110	03/01/2022 2331

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MS

Sample ID: XB28047-006MS
Batch: 33710
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Nitrite - N	ND	0.40	0.38		1	96	90-110	03/02/2022 0047

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MSD

Sample ID: XB28047-006MD
Batch: 33710
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Nitrite - N	ND	0.40	0.39		1	96	0.70	90-110	20	03/02/2022 0106

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MB

Sample ID: XQ34637-001
Batch: 34637
Analytical Method: SM 5310C-2014

Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
TOC	ND		1	1.0	1.0	mg/L	03/12/2022 1721

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ34637-002
Batch: 34637
Analytical Method: SM 5310C-2014
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
TOC	20	19		1	94	90-110	03/12/2022 1734

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MS

Sample ID: XB28047-006MS
Batch: 34637
Analytical Method: SM 5310C-2014

Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
TOC	ND	50	48		1	96	70-130	03/12/2022 1839

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MSD

Sample ID: XB28047-006MD
Batch: 34637
Analytical Method: SM 5310C-2014
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
TOC	ND	50	48		1	96	0.44	70-130	20	03/12/2022 1852

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34386-001
Batch: 34386
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	10	4.0	ug/L	03/10/2022 1021
Benzene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Bromodichloromethane	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Bromoform	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Bromomethane (Methyl bromide)	ND		1	0.50	0.40	ug/L	03/10/2022 1021
2-Butanone (MEK)	ND		1	10	2.0	ug/L	03/10/2022 1021
Carbon disulfide	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Carbon tetrachloride	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Chlorobenzene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Chloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Chloroform	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Chloromethane (Methyl chloride)	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Cyclohexane	ND		1	0.50	0.40	ug/L	03/10/2022 1021
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Dibromochloromethane	ND		1	0.50	0.40	ug/L	03/10/2022 1021
1,2-Dibromoethane (EDB)	ND		1	0.50	0.40	ug/L	03/10/2022 1021
1,2-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
1,3-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
1,4-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Dichlorodifluoromethane	ND		1	0.50	0.40	ug/L	03/10/2022 1021
1,1-Dichloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 1021
1,2-Dichloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 1021
1,1-Dichloroethene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
cis-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
trans-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
1,2-Dichloropropane	ND		1	0.50	0.40	ug/L	03/10/2022 1021
cis-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
trans-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Ethylbenzene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
2-Hexanone	ND		1	10	2.0	ug/L	03/10/2022 1021
Isopropylbenzene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Methyl acetate	ND		1	1.0	0.40	ug/L	03/10/2022 1021
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.40	ug/L	03/10/2022 1021
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	03/10/2022 1021
Methylcyclohexane	ND		1	5.0	0.40	ug/L	03/10/2022 1021
Methylene chloride	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Styrene	ND		1	0.50	0.41	ug/L	03/10/2022 1021
1,1,2,2-Tetrachloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Tetrachloroethene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Toluene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	03/10/2022 1021
1,2,4-Trichlorobenzene	0.47	J	1	0.50	0.40	ug/L	03/10/2022 1021
1,1,1-Trichloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 1021
1,1,2-Trichloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 1021

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34386-001
Batch: 34386
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Trichlorofluoromethane	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Vinyl chloride	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Xylenes (total)	ND		1	1.0	0.40	ug/L	03/10/2022 1021

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		107	70-130
1,2-Dichloroethane-d4		116	70-130
Toluene-d8		107	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34386-002
Batch: 34386
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	94		1	94	60-140	03/10/2022 0915
Benzene	50	48		1	95	70-130	03/10/2022 0915
Bromodichloromethane	50	44		1	89	70-130	03/10/2022 0915
Bromoform	50	40		1	80	70-130	03/10/2022 0915
Bromomethane (Methyl bromide)	50	47		1	94	70-130	03/10/2022 0915
2-Butanone (MEK)	100	92		1	92	70-130	03/10/2022 0915
Carbon disulfide	50	49		1	98	70-130	03/10/2022 0915
Carbon tetrachloride	50	48		1	95	70-130	03/10/2022 0915
Chlorobenzene	50	46		1	92	70-130	03/10/2022 0915
Chloroethane	50	46		1	92	70-130	03/10/2022 0915
Chloroform	50	47		1	94	70-130	03/10/2022 0915
Chloromethane (Methyl chloride)	50	43		1	86	60-140	03/10/2022 0915
Cyclohexane	50	52		1	105	70-130	03/10/2022 0915
1,2-Dibromo-3-chloropropane (DBCP)	50	42		1	83	70-130	03/10/2022 0915
Dibromochloromethane	50	42		1	84	70-130	03/10/2022 0915
1,2-Dibromoethane (EDB)	50	45		1	90	70-130	03/10/2022 0915
1,2-Dichlorobenzene	50	45		1	90	70-130	03/10/2022 0915
1,3-Dichlorobenzene	50	45		1	91	70-130	03/10/2022 0915
1,4-Dichlorobenzene	50	45		1	90	70-130	03/10/2022 0915
Dichlorodifluoromethane	50	47		1	95	60-140	03/10/2022 0915
1,1-Dichloroethane	50	47		1	94	70-130	03/10/2022 0915
1,2-Dichloroethane	50	48		1	97	70-130	03/10/2022 0915
1,1-Dichloroethene	50	48		1	97	70-130	03/10/2022 0915
cis-1,2-Dichloroethene	50	46		1	93	70-130	03/10/2022 0915
trans-1,2-Dichloroethene	50	46		1	92	70-130	03/10/2022 0915
1,2-Dichloropropane	50	44		1	88	70-130	03/10/2022 0915
cis-1,3-Dichloropropene	50	46		1	92	70-130	03/10/2022 0915
trans-1,3-Dichloropropene	50	46		1	91	70-130	03/10/2022 0915
Ethylbenzene	50	46		1	92	70-130	03/10/2022 0915
2-Hexanone	100	91		1	91	70-130	03/10/2022 0915
Isopropylbenzene	50	45		1	90	70-130	03/10/2022 0915
Methyl acetate	50	47		1	94	70-130	03/10/2022 0915
Methyl tertiary butyl ether (MTBE)	50	46		1	92	70-130	03/10/2022 0915
4-Methyl-2-pentanone	100	91		1	91	70-130	03/10/2022 0915
Methylcyclohexane	50	49		1	97	70-130	03/10/2022 0915
Methylene chloride	50	46		1	92	70-130	03/10/2022 0915
Styrene	50	45		1	91	70-130	03/10/2022 0915
1,1,2,2-Tetrachloroethane	50	44		1	88	70-130	03/10/2022 0915
Tetrachloroethene	50	47		1	94	70-130	03/10/2022 0915
Toluene	50	47		1	94	70-130	03/10/2022 0915
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	50		1	100	70-130	03/10/2022 0915
1,2,4-Trichlorobenzene	50	45		1	90	70-130	03/10/2022 0915
1,1,1-Trichloroethane	50	47		1	94	70-130	03/10/2022 0915
1,1,2-Trichloroethane	50	46		1	91	70-130	03/10/2022 0915

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34386-002
Batch: 34386
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	46		1	92	70-130	03/10/2022 0915
Trichlorofluoromethane	50	50		1	99	70-130	03/10/2022 0915
Vinyl chloride	50	45		1	91	70-130	03/10/2022 0915
Xylenes (total)	100	92		1	92	70-130	03/10/2022 0915

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		98	70-130
1,2-Dichloroethane-d4		102	70-130
Toluene-d8		96	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34604-001
Batch: 34604
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.50	0.40	ug/L	03/11/2022 2135

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		92	70-130
1,2-Dichloroethane-d4		108	70-130
Toluene-d8		106	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34604-002
Batch: 34604
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	44		1	89	70-130	03/11/2022 2031

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		101	70-130
1,2-Dichloroethane-d4		88	70-130
Toluene-d8		107	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MS

Sample ID: XB28047-005MS
Batch: 34604
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	260	250	460		5	82	70-130	03/12/2022 0712

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		99	70-130
1,2-Dichloroethane-d4		91	70-130
Toluene-d8		107	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XB28047-005MD
Batch: 34604
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Trichloroethene	260	250	460		5	80	1.1	70-130	20	03/12/2022 0737

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		98	70-130
1,2-Dichloroethane-d4		90	70-130
Toluene-d8		104	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Dissolved Gases - MB

Sample ID: XQ33463-001
Batch: 33463
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Ethane	ND		1	10	2.5	ug/L	03/02/2022 1117
Ethene	ND		1	10	2.5	ug/L	03/02/2022 1117
Methane	ND		1	10	2.5	ug/L	03/02/2022 1117

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Dissolved Gases - LCS

Sample ID: XQ33463-002
Batch: 33463
Analytical Method: RSK - 175
Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Ethane	550	580		1	104	70-130	03/02/2022 1016
Ethene	520	550		1	106	70-130	03/02/2022 1016
Methane	300	320		1	108	70-130	03/02/2022 1016

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Dissolved Gases - LCSD

Sample ID: XQ33463-003
Batch: 33463
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Ethane	550	560		1	102	2.3	70-130	30	03/02/2022 1030
Ethene	520	530		1	104	2.2	70-130	30	03/02/2022 1030
Methane	300	310		1	105	2.1	70-130	30	03/02/2022 1030

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Metals - MB

Sample ID: XQ33554-001
Batch: 33554
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/03/2022 0126

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Iron	ND		1	0.10	0.040	mg/L	03/07/2022 1549

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Metals - LCS

Sample ID: XQ33554-002
Batch: 33554
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/03/2022 0126

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Iron	20	21		1	105	80-120	03/07/2022 1554

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Metals - MS

Sample ID: XB28047-002MS
Batch: 33554
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/03/2022 0126

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Iron	0.15	20	21		1	106	75-125	03/07/2022 1611

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Metals - MSD

Sample ID: XB28047-002MD
Batch: 33554
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/03/2022 0126

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Iron	0.15	20	21		1	106	0.66	75-125	20	03/07/2022 1616

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

ICP-AES Metals - MB

Sample ID: XQ33615-001
Batch: 33615
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/04/2022 0920

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Dissolved Iron	ND		1	0.10	0.040	mg/L	03/08/2022 1041

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

ICP-AES Metals - LCS

Sample ID: XQ33615-002
Batch: 33615
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/04/2022 0920

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Dissolved Iron	20	21		1	106	80-120	03/08/2022 1046

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

ICP-AES Metals - MS

Sample ID: XB28047-002MS
Batch: 33615
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/04/2022 0920

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Dissolved Iron	ND	20	21		1	107	75-125	03/08/2022 1103

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

ICP-AES Metals - MSD

Sample ID: XB28047-002MD
Batch: 33615
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/04/2022 0920

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Dissolved Iron	ND	20	21		1	106	1.2	75-125	20	03/08/2022 1108

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Chain of Custody
and
Miscellaneous Documents

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

SHEALY

Chain of Custody Record

SHEALY ENVIRONMENTAL SERVICES, INC.
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.shealylab.com

Number 105849

Client: AECOM	Report to Contact: Scott Ross	Telephone No. / E-mail: 803 201 9662 Scott.Ross@AECOM.com	Quote No.
Address: 101 RESEARCH DR	Sampler's Signature:	Analysis (Attach list if more space is needed)	Page 1 of 1
City: Columbia	State: SC	Zip Code: 29203	Printed Name: James Kaplan / Justin Butler
Project Name: SHAKESPEARE COMPOSITE STRUCTURES			
Project No.: 60675505	P.O. No.		

Sample ID / Description (Containers for each sample may be combined on one line.)	Date	Time	Grab/Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	No of Containers by Preservative Type: Unpres.	HNO3	H2SO4	HCl	NaOH	ZnAc/NaOH	TCL VOC's	Dissolved Gasses	Ferrous Iron	NO3, NO2, Sol'd NH3	TOC	Total Iron	Dissolved Iron
MW-4	2-28-22	1056	G	X						3			X						
TMW-24		1140	G	X			2	1	1	7			X	X	X	X	X	X	X
TMW-33		1350	G	X						3			X						
TMW-25		1520	G	X						3			X						
TMW-21		1355	G	X			2	1	1	7			X	X	X	X	X	X	X
TMW-22		1520	G	X			2	1	1	7			X	X	X	X	X	X	X
TB-04				X						2			X						

Turn Around Time Required (Prior lab approval required for expedited TAT.): ☒ Standard ☐ Rush (Specify)

Sample Disposal: ☐ Return to Client ☒ Disposal by Lab

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

QC Requirements (Specify):

	Date	Time
1. Relinquished by	2-28-22	1755
2. Relinquished by		
3. Relinquished by		
4. Relinquished by		

	Date	Time
1. Received by		
2. Received by		
3. Received by		
4. Laboratory received by	2/28/22	1755

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on ice (Circle) (Yes) No Ice Pack
Receipt Temp. 2.4 °C

XB28047
HKL
Remarks / Cooler I.D.

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: F-AD-133 Effective Date: 08-01-2014

Pace Analytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: AECOM

Cooler Inspected by/date: CBP / 02/28/2022 Lot #: XB28047

Means of receipt: ☐ Pace ☑ Client ☐ UPS ☐ FedEx ☐ Other:

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: 21-852 Chlorine Strip ID: NA Tested by: CBP

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

2.4 / 2.4 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 6 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☑ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☑ Yes	☐ No	☐ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☑ Yes	☐ No		21. Was the quote number listed on the container label? If yes, Quote # 34900

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA

Time of preservation NA . If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is ***no***) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA .

SR barcode labels applied by: CBP Date: 02/28/2022

Comments:

Report of Analysis

AECOM
101 Research Drive
Columbia, SC 29203
Attention: Scott Ross

Project Name: Shakespeare Composite Structures

Project Number: 60675505

Lot Number:**XC01061**

Date Completed:03/16/2022

03/22/2022 2:22 PM
Approved and released by:
Project Manager II: **Cathy S. Dover**

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
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Case Narrative
AECOM
Lot Number: XC01061

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

VOA 8260D
Sample XC01061-002 (TMW-23) was initially run at a 10x, but was slightly over diluted. There were no unused vials available fro a reanalysis, so a lower dilution was not possible. The data has been reported.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Sample Summary

AECOM

Lot Number: XC01061

Project Name: Shakespeare Composite Structures

Project Number: 60675505

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	TMW-30	Aqueous	03/01/2022 0930	03/01/2022
002	TMW-23	Aqueous	03/01/2022 1020	03/01/2022
007	TB-05	Aqueous	03/01/2022	03/01/2022

(3 samples)

Detection Summary

AECOM

Lot Number: XC01061

Project Name: Shakespeare Composite Structures

Project Number: 60675505

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	TMW-30	Aqueous	Acetone	8260D	12		ug/L	5
001	TMW-30	Aqueous	Chloroform	8260D	2.1		ug/L	5
001	TMW-30	Aqueous	Styrene	8260D	18		ug/L	5
001	TMW-30	Aqueous	Trichloroethene	8260D	20		ug/L	6
002	TMW-23	Aqueous	Chloroform	8260D	8.9		ug/L	7
002	TMW-23	Aqueous	Styrene	8260D	20		ug/L	7
002	TMW-23	Aqueous	Trichloroethene	8260D	420		ug/L	8

(7 detections)

Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC01061-001
Description: TMW-30
Matrix: Aqueous
Date Sampled: 03/01/2022 0930
Project Name: Shakespeare Composite
Date Received: 03/01/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/10/2022 1843	SDC		34386

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	12		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	2.1		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	18		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC01061-001
Description: TMW-30
Matrix: Aqueous
Date Sampled: 03/01/2022 0930
Project Name: Shakespeare Composite
Date Received: 03/01/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/10/2022 1843	SDC		34386

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	20		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		112	70-130
1,2-Dichloroethane-d4		117	70-130
Toluene-d8		108	70-130

LOQ = Limit of Quantitation
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC01061-002
Description: TMW-23
Matrix: Aqueous
Date Sampled: 03/01/2022 1020
Project Name: Shakespeare Composite
Date Received: 03/01/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	10	03/10/2022 1906	SDC		34386

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		100	40	ug/L	1
Benzene	71-43-2	8260D	ND		5.0	4.0	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		5.0	4.0	ug/L	1
Bromoform	75-25-2	8260D	ND		5.0	4.0	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		5.0	4.0	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		100	20	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		5.0	4.0	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		5.0	4.0	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		5.0	4.0	ug/L	1
Chloroethane	75-00-3	8260D	ND		5.0	4.0	ug/L	1
Chloroform	67-66-3	8260D	8.9		5.0	4.0	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		5.0	4.0	ug/L	1
Cyclohexane	110-82-7	8260D	ND		5.0	4.0	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		5.0	4.0	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		5.0	4.0	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		5.0	4.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		5.0	4.0	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		5.0	4.0	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		5.0	4.0	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		5.0	4.0	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		5.0	4.0	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		5.0	4.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		5.0	4.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		5.0	4.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		5.0	4.0	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		5.0	4.0	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		5.0	4.0	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		5.0	4.0	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		5.0	4.0	ug/L	1
2-Hexanone	591-78-6	8260D	ND		100	20	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		5.0	4.0	ug/L	1
Methyl acetate	79-20-9	8260D	ND		10	4.0	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		5.0	4.0	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		100	20	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		50	4.0	ug/L	1
Methylene chloride	75-09-2	8260D	ND		5.0	4.0	ug/L	1
Styrene	100-42-5	8260D	20		5.0	4.1	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		5.0	4.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		5.0	4.0	ug/L	1
Toluene	108-88-3	8260D	ND		5.0	4.0	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		10	4.2	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		5.0	4.0	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		5.0	4.0	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		5.0	4.0	ug/L	1

LOQ = Limit of Quantitation
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC01061-002
Description: TMW-23
Matrix: Aqueous
Date Sampled: 03/01/2022 1020
Project Name: Shakespeare Composite
Date Received: 03/01/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	10	03/10/2022 1906	SDC		34386

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	420		5.0	4.0	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		5.0	4.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		5.0	4.0	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		10	4.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		109	70-130
1,2-Dichloroethane-d4		118	70-130
Toluene-d8		106	70-130

LOQ = Limit of Quantitation
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC01061-007
Description: TB-05
Matrix: Aqueous
Date Sampled: 03/01/2022
Project Name: Shakespeare Composite
Date Received: 03/01/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/10/2022 2336	BBW		34466

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

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H = Out of holding time
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S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC01061-007
Description: TB-05
Matrix: Aqueous
Date Sampled: 03/01/2022
Project Name: Shakespeare Composite
Date Received: 03/01/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/10/2022 2336	BBW		34466

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		95	70-130
1,2-Dichloroethane-d4		110	70-130
Toluene-d8		108	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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QC Summary

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34386-001
Batch: 34386
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	10	4.0	ug/L	03/10/2022 1021
Benzene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Bromodichloromethane	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Bromoform	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Bromomethane (Methyl bromide)	ND		1	0.50	0.40	ug/L	03/10/2022 1021
2-Butanone (MEK)	ND		1	10	2.0	ug/L	03/10/2022 1021
Carbon disulfide	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Carbon tetrachloride	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Chlorobenzene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Chloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Chloroform	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Chloromethane (Methyl chloride)	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Cyclohexane	ND		1	0.50	0.40	ug/L	03/10/2022 1021
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Dibromochloromethane	ND		1	0.50	0.40	ug/L	03/10/2022 1021
1,2-Dibromoethane (EDB)	ND		1	0.50	0.40	ug/L	03/10/2022 1021
1,2-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
1,3-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
1,4-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Dichlorodifluoromethane	ND		1	0.50	0.40	ug/L	03/10/2022 1021
1,1-Dichloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 1021
1,2-Dichloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 1021
1,1-Dichloroethene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
cis-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
trans-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
1,2-Dichloropropane	ND		1	0.50	0.40	ug/L	03/10/2022 1021
cis-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
trans-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Ethylbenzene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
2-Hexanone	ND		1	10	2.0	ug/L	03/10/2022 1021
Isopropylbenzene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Methyl acetate	ND		1	1.0	0.40	ug/L	03/10/2022 1021
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.40	ug/L	03/10/2022 1021
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	03/10/2022 1021
Methylcyclohexane	ND		1	5.0	0.40	ug/L	03/10/2022 1021
Methylene chloride	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Styrene	ND		1	0.50	0.41	ug/L	03/10/2022 1021
1,1,2,2-Tetrachloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Tetrachloroethene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Toluene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	03/10/2022 1021
1,2,4-Trichlorobenzene	0.47	J	1	0.50	0.40	ug/L	03/10/2022 1021
1,1,1-Trichloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 1021
1,1,2-Trichloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 1021

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34386-001
Batch: 34386
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Trichlorofluoromethane	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Vinyl chloride	ND		1	0.50	0.40	ug/L	03/10/2022 1021
Xylenes (total)	ND		1	1.0	0.40	ug/L	03/10/2022 1021

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		107	70-130
1,2-Dichloroethane-d4		116	70-130
Toluene-d8		107	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34386-002
Batch: 34386
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	94		1	94	60-140	03/10/2022 0915
Benzene	50	48		1	95	70-130	03/10/2022 0915
Bromodichloromethane	50	44		1	89	70-130	03/10/2022 0915
Bromoform	50	40		1	80	70-130	03/10/2022 0915
Bromomethane (Methyl bromide)	50	47		1	94	70-130	03/10/2022 0915
2-Butanone (MEK)	100	92		1	92	70-130	03/10/2022 0915
Carbon disulfide	50	49		1	98	70-130	03/10/2022 0915
Carbon tetrachloride	50	48		1	95	70-130	03/10/2022 0915
Chlorobenzene	50	46		1	92	70-130	03/10/2022 0915
Chloroethane	50	46		1	92	70-130	03/10/2022 0915
Chloroform	50	47		1	94	70-130	03/10/2022 0915
Chloromethane (Methyl chloride)	50	43		1	86	60-140	03/10/2022 0915
Cyclohexane	50	52		1	105	70-130	03/10/2022 0915
1,2-Dibromo-3-chloropropane (DBCP)	50	42		1	83	70-130	03/10/2022 0915
Dibromochloromethane	50	42		1	84	70-130	03/10/2022 0915
1,2-Dibromoethane (EDB)	50	45		1	90	70-130	03/10/2022 0915
1,2-Dichlorobenzene	50	45		1	90	70-130	03/10/2022 0915
1,3-Dichlorobenzene	50	45		1	91	70-130	03/10/2022 0915
1,4-Dichlorobenzene	50	45		1	90	70-130	03/10/2022 0915
Dichlorodifluoromethane	50	47		1	95	60-140	03/10/2022 0915
1,1-Dichloroethane	50	47		1	94	70-130	03/10/2022 0915
1,2-Dichloroethane	50	48		1	97	70-130	03/10/2022 0915
1,1-Dichloroethene	50	48		1	97	70-130	03/10/2022 0915
cis-1,2-Dichloroethene	50	46		1	93	70-130	03/10/2022 0915
trans-1,2-Dichloroethene	50	46		1	92	70-130	03/10/2022 0915
1,2-Dichloropropane	50	44		1	88	70-130	03/10/2022 0915
cis-1,3-Dichloropropene	50	46		1	92	70-130	03/10/2022 0915
trans-1,3-Dichloropropene	50	46		1	91	70-130	03/10/2022 0915
Ethylbenzene	50	46		1	92	70-130	03/10/2022 0915
2-Hexanone	100	91		1	91	70-130	03/10/2022 0915
Isopropylbenzene	50	45		1	90	70-130	03/10/2022 0915
Methyl acetate	50	47		1	94	70-130	03/10/2022 0915
Methyl tertiary butyl ether (MTBE)	50	46		1	92	70-130	03/10/2022 0915
4-Methyl-2-pentanone	100	91		1	91	70-130	03/10/2022 0915
Methylcyclohexane	50	49		1	97	70-130	03/10/2022 0915
Methylene chloride	50	46		1	92	70-130	03/10/2022 0915
Styrene	50	45		1	91	70-130	03/10/2022 0915
1,1,2,2-Tetrachloroethane	50	44		1	88	70-130	03/10/2022 0915
Tetrachloroethene	50	47		1	94	70-130	03/10/2022 0915
Toluene	50	47		1	94	70-130	03/10/2022 0915
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	50		1	100	70-130	03/10/2022 0915
1,2,4-Trichlorobenzene	50	45		1	90	70-130	03/10/2022 0915
1,1,1-Trichloroethane	50	47		1	94	70-130	03/10/2022 0915
1,1,2-Trichloroethane	50	46		1	91	70-130	03/10/2022 0915

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34386-002
Batch: 34386
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	46		1	92	70-130	03/10/2022 0915
Trichlorofluoromethane	50	50		1	99	70-130	03/10/2022 0915
Vinyl chloride	50	45		1	91	70-130	03/10/2022 0915
Xylenes (total)	100	92		1	92	70-130	03/10/2022 0915

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		98	70-130
1,2-Dichloroethane-d4		102	70-130
Toluene-d8		96	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - MS

Sample ID: XC01061-002MS
Batch: 34386
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	ND	1000	1200		10	116	60-140	03/10/2022 1930
Benzene	ND	500	520		10	105	70-130	03/10/2022 1930
Bromodichloromethane	ND	500	470		10	95	70-130	03/10/2022 1930
Bromoform	ND	500	390		10	78	70-130	03/10/2022 1930
Bromomethane (Methyl bromide)	ND	500	480		10	97	70-130	03/10/2022 1930
2-Butanone (MEK)	ND	1000	1000		10	104	70-130	03/10/2022 1930
Carbon disulfide	ND	500	500		10	100	70-130	03/10/2022 1930
Carbon tetrachloride	ND	500	540		10	107	70-130	03/10/2022 1930
Chlorobenzene	ND	500	490		10	99	70-130	03/10/2022 1930
Chloroethane	ND	500	500		10	100	70-130	03/10/2022 1930
Chloroform	8.9	500	530		10	103	70-130	03/10/2022 1930
Chloromethane (Methyl chloride)	ND	500	510		10	102	60-140	03/10/2022 1930
Cyclohexane	ND	500	620		10	124	70-130	03/10/2022 1930
1,2-Dibromo-3-chloropropane (DBCP)	ND	500	420		10	85	70-130	03/10/2022 1930
Dibromochloromethane	ND	500	420		10	84	70-130	03/10/2022 1930
1,2-Dibromoethane (EDB)	ND	500	470		10	94	70-130	03/10/2022 1930
1,2-Dichlorobenzene	ND	500	480		10	97	70-130	03/10/2022 1930
1,3-Dichlorobenzene	ND	500	480		10	96	70-130	03/10/2022 1930
1,4-Dichlorobenzene	ND	500	470		10	94	70-130	03/10/2022 1930
Dichlorodifluoromethane	ND	500	530		10	105	60-140	03/10/2022 1930
1,1-Dichloroethane	ND	500	520		10	104	70-130	03/10/2022 1930
1,2-Dichloroethane	ND	500	530		10	105	70-130	03/10/2022 1930
1,1-Dichloroethene	ND	500	540		10	107	70-130	03/10/2022 1930
cis-1,2-Dichloroethene	ND	500	510		10	102	70-130	03/10/2022 1930
trans-1,2-Dichloroethene	ND	500	510		10	102	70-130	03/10/2022 1930
1,2-Dichloropropane	ND	500	490		10	97	70-130	03/10/2022 1930
cis-1,3-Dichloropropene	ND	500	470		10	93	70-130	03/10/2022 1930
trans-1,3-Dichloropropene	ND	500	450		10	89	70-130	03/10/2022 1930
Ethylbenzene	ND	500	510		10	101	70-130	03/10/2022 1930
2-Hexanone	ND	1000	990		10	99	70-130	03/10/2022 1930
Isopropylbenzene	ND	500	520		10	104	70-130	03/10/2022 1930
Methyl acetate	ND	500	490		10	99	70-130	03/10/2022 1930
Methyl tertiary butyl ether (MTBE)	ND	500	510		10	102	70-130	03/10/2022 1930
4-Methyl-2-pentanone	ND	1000	1000		10	100	70-130	03/10/2022 1930
Methylcyclohexane	ND	500	550		10	109	70-130	03/10/2022 1930
Methylene chloride	ND	500	500		10	99	70-130	03/10/2022 1930
Styrene	20	500	520		10	100	70-130	03/10/2022 1930
1,1,2,2-Tetrachloroethane	ND	500	460		10	92	70-130	03/10/2022 1930
Tetrachloroethene	ND	500	510		10	102	70-130	03/10/2022 1930
Toluene	ND	500	510		10	103	70-130	03/10/2022 1930
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	500	540		10	109	70-130	03/10/2022 1930
1,2,4-Trichlorobenzene	ND	500	460		10	92	70-130	03/10/2022 1930
1,1,1-Trichloroethane	ND	500	540		10	107	70-130	03/10/2022 1930
1,1,2-Trichloroethane	ND	500	470		10	94	70-130	03/10/2022 1930

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - MS

Sample ID: XC01061-002MS
Batch: 34386
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	420	500	940		10	104	70-130	03/10/2022 1930
Trichlorofluoromethane	ND	500	550		10	111	70-130	03/10/2022 1930
Vinyl chloride	ND	500	520		10	103	70-130	03/10/2022 1930
Xylenes (total)	ND	1000	1000		10	103	70-130	03/10/2022 1930

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		110	70-130
1,2-Dichloroethane-d4		110	70-130
Toluene-d8		104	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - MSD

Sample ID: XC01061-002MD
Batch: 34386
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acetone	ND	1000	1100		10	112	3.8	60-140	20	03/10/2022 1953
Benzene	ND	500	520		10	103	1.4	70-130	20	03/10/2022 1953
Bromodichloromethane	ND	500	470		10	94	1.3	70-130	20	03/10/2022 1953
Bromoform	ND	500	390		10	77	1.2	70-130	20	03/10/2022 1953
Bromomethane (Methyl bromide)	ND	500	490		10	98	1.0	70-130	20	03/10/2022 1953
2-Butanone (MEK)	ND	1000	1000		10	102	2.2	70-130	20	03/10/2022 1953
Carbon disulfide	ND	500	470		10	95	5.3	70-130	20	03/10/2022 1953
Carbon tetrachloride	ND	500	530		10	106	1.7	70-130	20	03/10/2022 1953
Chlorobenzene	ND	500	480		10	97	2.2	70-130	20	03/10/2022 1953
Chloroethane	ND	500	500		10	99	0.69	70-130	20	03/10/2022 1953
Chloroform	8.9	500	510		10	100	3.0	70-130	20	03/10/2022 1953
Chloromethane (Methyl chloride)	ND	500	490		10	99	3.2	60-140	20	03/10/2022 1953
Cyclohexane	ND	500	600		10	120	3.6	70-130	20	03/10/2022 1953
1,2-Dibromo-3-chloropropane (DBCP)	ND	500	420		10	84	1.3	70-130	20	03/10/2022 1953
Dibromochloromethane	ND	500	410		10	82	2.0	70-130	20	03/10/2022 1953
1,2-Dibromoethane (EDB)	ND	500	460		10	93	1.6	70-130	20	03/10/2022 1953
1,2-Dichlorobenzene	ND	500	470		10	94	2.7	70-130	20	03/10/2022 1953
1,3-Dichlorobenzene	ND	500	480		10	95	1.3	70-130	20	03/10/2022 1953
1,4-Dichlorobenzene	ND	500	470		10	94	0.62	70-130	20	03/10/2022 1953
Dichlorodifluoromethane	ND	500	520		10	104	1.4	60-140	20	03/10/2022 1953
1,1-Dichloroethane	ND	500	500		10	101	2.7	70-130	20	03/10/2022 1953
1,2-Dichloroethane	ND	500	510		10	103	2.7	70-130	20	03/10/2022 1953
1,1-Dichloroethene	ND	500	520		10	105	2.4	70-130	20	03/10/2022 1953
cis-1,2-Dichloroethene	ND	500	500		10	100	1.8	70-130	20	03/10/2022 1953
trans-1,2-Dichloroethene	ND	500	490		10	99	3.1	70-130	20	03/10/2022 1953
1,2-Dichloropropane	ND	500	470		10	94	2.8	70-130	20	03/10/2022 1953
cis-1,3-Dichloropropene	ND	500	460		10	93	0.31	70-130	20	03/10/2022 1953
trans-1,3-Dichloropropene	ND	500	440		10	88	0.97	70-130	20	03/10/2022 1953
Ethylbenzene	ND	500	500		10	99	1.9	70-130	20	03/10/2022 1953
2-Hexanone	ND	1000	980		10	98	0.26	70-130	20	03/10/2022 1953
Isopropylbenzene	ND	500	510		10	102	2.0	70-130	20	03/10/2022 1953
Methyl acetate	ND	500	480		10	96	2.4	70-130	20	03/10/2022 1953
Methyl tertiary butyl ether (MTBE)	ND	500	500		10	99	2.4	70-130	20	03/10/2022 1953
4-Methyl-2-pentanone	ND	1000	990		10	99	0.96	70-130	20	03/10/2022 1953
Methylcyclohexane	ND	500	530		10	106	2.9	70-130	20	03/10/2022 1953
Methylene chloride	ND	500	480		10	96	4.0	70-130	20	03/10/2022 1953
Styrene	20	500	500		10	97	2.6	70-130	20	03/10/2022 1953
1,1,2,2-Tetrachloroethane	ND	500	460		10	93	0.91	70-130	20	03/10/2022 1953
Tetrachloroethene	ND	500	490		10	99	2.9	70-130	20	03/10/2022 1953
Toluene	ND	500	500		10	100	2.9	70-130	20	03/10/2022 1953
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	500	530		10	107	2.0	70-130	20	03/10/2022 1953
1,2,4-Trichlorobenzene	ND	500	450		10	91	1.5	70-130	20	03/10/2022 1953
1,1,1-Trichloroethane	ND	500	530		10	106	1.2	70-130	20	03/10/2022 1953
1,1,2-Trichloroethane	ND	500	460		10	92	2.4	70-130	20	03/10/2022 1953

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XC01061-002MD
Batch: 34386
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Trichloroethene	420	500	910		10	97	3.7	70-130	20	03/10/2022 1953
Trichlorofluoromethane	ND	500	540		10	108	2.2	70-130	20	03/10/2022 1953
Vinyl chloride	ND	500	510		10	102	0.81	70-130	20	03/10/2022 1953
Xylenes (total)	ND	1000	1000		10	100	3.1	70-130	20	03/10/2022 1953

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		103	70-130
1,2-Dichloroethane-d4		105	70-130
Toluene-d8		100	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34466-001
Batch: 34466
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	10	4.0	ug/L	03/10/2022 2246
Benzene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Bromodichloromethane	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Bromoform	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Bromomethane (Methyl bromide)	ND		1	0.50	0.40	ug/L	03/10/2022 2246
2-Butanone (MEK)	ND		1	10	2.0	ug/L	03/10/2022 2246
Carbon disulfide	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Carbon tetrachloride	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Chlorobenzene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Chloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Chloroform	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Chloromethane (Methyl chloride)	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Cyclohexane	ND		1	0.50	0.40	ug/L	03/10/2022 2246
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Dibromochloromethane	ND		1	0.50	0.40	ug/L	03/10/2022 2246
1,2-Dibromoethane (EDB)	ND		1	0.50	0.40	ug/L	03/10/2022 2246
1,2-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
1,3-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
1,4-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Dichlorodifluoromethane	ND		1	0.50	0.40	ug/L	03/10/2022 2246
1,1-Dichloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 2246
1,2-Dichloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 2246
1,1-Dichloroethene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
cis-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
trans-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
1,2-Dichloropropane	ND		1	0.50	0.40	ug/L	03/10/2022 2246
cis-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
trans-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Ethylbenzene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
2-Hexanone	ND		1	10	2.0	ug/L	03/10/2022 2246
Isopropylbenzene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Methyl acetate	ND		1	1.0	0.40	ug/L	03/10/2022 2246
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.40	ug/L	03/10/2022 2246
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	03/10/2022 2246
Methylcyclohexane	ND		1	5.0	0.40	ug/L	03/10/2022 2246
Methylene chloride	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Styrene	ND		1	0.50	0.41	ug/L	03/10/2022 2246
1,1,2,2-Tetrachloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Tetrachloroethene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Toluene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	03/10/2022 2246
1,2,4-Trichlorobenzene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
1,1,1-Trichloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 2246
1,1,2-Trichloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 2246

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34466-001
Batch: 34466
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Trichlorofluoromethane	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Vinyl chloride	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Xylenes (total)	ND		1	1.0	0.40	ug/L	03/10/2022 2246

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		93	70-130
1,2-Dichloroethane-d4		108	70-130
Toluene-d8		107	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34466-002
Batch: 34466
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	65		1	65	60-140	03/10/2022 2145
Benzene	50	48		1	97	70-130	03/10/2022 2145
Bromodichloromethane	50	43		1	87	70-130	03/10/2022 2145
Bromoform	50	45		1	90	70-130	03/10/2022 2145
Bromomethane (Methyl bromide)	50	55		1	110	70-130	03/10/2022 2145
2-Butanone (MEK)	100	87		1	87	70-130	03/10/2022 2145
Carbon disulfide	50	50		1	101	70-130	03/10/2022 2145
Carbon tetrachloride	50	47		1	94	70-130	03/10/2022 2145
Chlorobenzene	50	48		1	97	70-130	03/10/2022 2145
Chloroethane	50	48		1	97	70-130	03/10/2022 2145
Chloroform	50	44		1	88	70-130	03/10/2022 2145
Chloromethane (Methyl chloride)	50	51		1	102	60-140	03/10/2022 2145
Cyclohexane	50	48		1	96	70-130	03/10/2022 2145
1,2-Dibromo-3-chloropropane (DBCP)	50	44		1	89	70-130	03/10/2022 2145
Dibromochloromethane	50	46		1	91	70-130	03/10/2022 2145
1,2-Dibromoethane (EDB)	50	49		1	98	70-130	03/10/2022 2145
1,2-Dichlorobenzene	50	49		1	99	70-130	03/10/2022 2145
1,3-Dichlorobenzene	50	50		1	99	70-130	03/10/2022 2145
1,4-Dichlorobenzene	50	47		1	94	70-130	03/10/2022 2145
Dichlorodifluoromethane	50	48		1	96	60-140	03/10/2022 2145
1,1-Dichloroethane	50	48		1	95	70-130	03/10/2022 2145
1,2-Dichloroethane	50	43		1	85	70-130	03/10/2022 2145
1,1-Dichloroethene	50	52		1	103	70-130	03/10/2022 2145
cis-1,2-Dichloroethene	50	49		1	97	70-130	03/10/2022 2145
trans-1,2-Dichloroethene	50	50		1	100	70-130	03/10/2022 2145
1,2-Dichloropropane	50	46		1	93	70-130	03/10/2022 2145
cis-1,3-Dichloropropene	50	49		1	97	70-130	03/10/2022 2145
trans-1,3-Dichloropropene	50	49		1	97	70-130	03/10/2022 2145
Ethylbenzene	50	53		1	106	70-130	03/10/2022 2145
2-Hexanone	100	88		1	88	70-130	03/10/2022 2145
Isopropylbenzene	50	46		1	92	70-130	03/10/2022 2145
Methyl acetate	50	44		1	89	70-130	03/10/2022 2145
Methyl tertiary butyl ether (MTBE)	50	50		1	101	70-130	03/10/2022 2145
4-Methyl-2-pentanone	100	85		1	85	70-130	03/10/2022 2145
Methylcyclohexane	50	57		1	114	70-130	03/10/2022 2145
Methylene chloride	50	44		1	88	70-130	03/10/2022 2145
Styrene	50	49		1	98	70-130	03/10/2022 2145
1,1,2,2-Tetrachloroethane	50	47		1	95	70-130	03/10/2022 2145
Tetrachloroethene	50	52		1	105	70-130	03/10/2022 2145
Toluene	50	53		1	107	70-130	03/10/2022 2145
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	54		1	108	70-130	03/10/2022 2145
1,2,4-Trichlorobenzene	50	50		1	100	70-130	03/10/2022 2145
1,1,1-Trichloroethane	50	49		1	98	70-130	03/10/2022 2145
1,1,2-Trichloroethane	50	47		1	94	70-130	03/10/2022 2145

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34466-002
Batch: 34466
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	47		1	94	70-130	03/10/2022 2145
Trichlorofluoromethane	50	52		1	104	70-130	03/10/2022 2145
Vinyl chloride	50	50		1	100	70-130	03/10/2022 2145
Xylenes (total)	100	97		1	97	70-130	03/10/2022 2145

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		104	70-130
1,2-Dichloroethane-d4		90	70-130
Toluene-d8		107	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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Chain of Custody

and

Miscellaneous Documents

SHEALY ENVIRONMENTAL SERVICES, INC.

106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.shealylab.com

Chain of Custody Record

Number 105853

Client AECOM	**Report to Contact** SCOTT ROSS	**Telephone No. / E-mail** 803 201 4662 SCOTT.ROSS@AECOM.COM	**Quote No.**
Address 101 RESEARCH DR	**Sampler's Signature** X [signature]	**Analysis (Attach list if more space is needed)**	**Page** 1 of 1
City COLUMBIA **State** SC **Zip Code** 29203	**Printed Name** JAMES LEAPHART		
Project Name SHAKESPEARE COMPOSITE STRUCTURES			
Project No. 60675505 **P.O. No.**			

Sample ID / Description (Containers for each sample may be combined on one line.)	Date	Time	Grab/Comp	Aqueous	Solid / Wipe / Liquid	Matrix	Unpres.	H2SO4	HNO3	HCl	NaOH	Na2S2O3	5035 Kit	No. of Containers by Preservative Type (24)	TCL VOC's	TDS	CHLORIDE	Remarks / Cooler I.D.
TMW-30	3-1-22	0930	G	X					3						X			
TMW-23		1020	G	X					3						X			
TMW-29		1055	G	X			2		3						X	X	X	
TMW-31		1200	G	X			2		3						X	X	X	
ISCO-OBSW-1		1345	G	X			2		3						X	X	X	
MW-2		1435	G	X			2		3						X	X	X	
TB-05		----		X					2						X			

XC01061
CSD

Turn Around Time Required (Prior lab approval required for expedited TAT.) ☑ Standard ☐ Rush (Specify)

Sample Disposal ☐ Return to Client ☑ Disposal by Lab

Possible Hazard Identification ☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by [signature]	3-1-22	1622	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by			4. Laboratory received by [signature]	3-1-22	1622

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on ice (Circle) (Yes) No Ice Pack

Receipt Temp. 2.3 °C

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: F-AD-133 Effective Date: 09-01-2014

PaceAnalytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: Accom Cooler Inspected by/date: KDRW / 03/01/2022 Lot #: XC01061

Means of receipt: ☐ Pace ☑ Client ☐ UPS ☐ FedEx ☐ Other:

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

2.3 / 2.3 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Boules IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one)
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☑ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote #

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is ***no***) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: KDRW Date: 03/01/2022

Comments:

Report of Analysis

AECOM
101 Research Drive
Columbia, SC 29203
Attention: Scott Ross

Project Name: Signify Shakespeare

Project Number: 60635197

Lot Number:**XC01066**

Date Completed:03/27/2022

03/31/2022 8:52 AM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
AECOM
Lot Number: XC01066

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

VOA 8260D
Sample XC01066-005 (ISCO-OBSW-1) was diluted due to the nature of the sample matrix. The LOQ has been elevated to reflect the dilution.

Chloride
Sample XC01066-005 (ISCO-OBSW-1) was diluted due to the nature of the sample matrix. The LOQ has been elevated to reflect the dilution.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Sample Summary

AECOM

Lot Number: XC01066

Project Name: Signify Shakespeare

Project Number: 60635197

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
003	TMW-29	Aqueous	03/01/2022 1055	03/01/2022
004	TMW-31	Aqueous	03/01/2022 1200	03/01/2022
005	ISCO-OBSW-1	Aqueous	03/01/2022 1345	03/01/2022
006	MW-2	Aqueous	03/01/2022 1435	03/01/2022

(4 samples)

Detection Summary

AECOM

Lot Number: XC01066

Project Name: Signify Shakespeare

Project Number: 60635197

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
003	TMW-29	Aqueous	Chloride	300.0	2.8		mg/L	5
003	TMW-29	Aqueous	TDS	SM 2540C-	51		mg/L	5
003	TMW-29	Aqueous	Acetone	8260D	7.9	J	ug/L	6
003	TMW-29	Aqueous	Styrene	8260D	120		ug/L	6
003	TMW-29	Aqueous	Trichloroethene	8260D	9.3		ug/L	7
004	TMW-31	Aqueous	Chloride	300.0	6.0		mg/L	8
004	TMW-31	Aqueous	TDS	SM 2540C-	65		mg/L	8
004	TMW-31	Aqueous	cis-1,2-Dichloroethene	8260D	3.0		ug/L	9
004	TMW-31	Aqueous	Trichloroethene	8260D	480		ug/L	10
005	ISCO-OBSW-1	Aqueous	TDS	SM 2540C-	260		mg/L	11
006	MW-2	Aqueous	Chloride	300.0	2.2		mg/L	14
006	MW-2	Aqueous	TDS	SM 2540C-	34		mg/L	14
006	MW-2	Aqueous	Styrene	8260D	5.1		ug/L	15

(13 detections)

Inorganic non-metals

Client: AECOM
Description: TMW-29
Date Sampled: 03/01/2022 1055
Date Received: 03/01/2022
Laboratory ID: XC01066-003
Matrix: Aqueous
Project Name: Signify Shakespeare
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Chloride) 300.0	1	03/23/2022 1404	CAW		35983
1		(TDS) SM 2540C-2015	1	03/08/2022 2144	TAD		34152

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Chloride		300.0	2.8		1.0	0.25	mg/L	1
TDS		SM 2540C-2015	51		25	25	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Description: TMW-29
Date Sampled: 03/01/2022 1055
Date Received: 03/01/2022
Laboratory ID: XC01066-003
Matrix: Aqueous
Project Name: Signify Shakespeare
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 0115	BBW		34466

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	7.9	J	10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	120		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
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L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC01066-003
Description: TMW-29
Matrix: Aqueous
Date Sampled: 03/01/2022 1055
Project Name: Signify Shakespeare
Date Received: 03/01/2022
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 0115	BBW		34466

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	9.3		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		107	70-130
1,2-Dichloroethane-d4		111	70-130
Toluene-d8		107	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Inorganic non-metals

Client: AECOM
Laboratory ID: XC01066-004
Description: TMW-31
Matrix: Aqueous
Date Sampled: 03/01/2022 1200
Project Name: Signify Shakespeare
Date Received: 03/01/2022
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Chloride) 300.0	1	03/23/2022 1423	CAW		35983
1		(TDS) SM 2540C-2015	1	03/08/2022 2144	TAD		34152

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Chloride		300.0	6.0		1.0	0.25	mg/L	1
TDS		SM 2540C-2015	65		25	25	mg/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
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H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC01066-004
Description: TMW-31
Matrix: Aqueous
Date Sampled: 03/01/2022 1200
Project Name: Signify Shakespeare
Date Received: 03/01/2022
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	5	03/12/2022 0532	JWO		34604

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		50	20	ug/L	1
Benzene	71-43-2	8260D	ND		2.5	2.0	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		2.5	2.0	ug/L	1
Bromoform	75-25-2	8260D	ND		2.5	2.0	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.5	2.0	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		50	10	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		2.5	2.0	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		2.5	2.0	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		2.5	2.0	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.5	2.0	ug/L	1
Chloroform	67-66-3	8260D	ND		2.5	2.0	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		2.5	2.0	ug/L	1
Cyclohexane	110-82-7	8260D	ND		2.5	2.0	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		2.5	2.0	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		2.5	2.0	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		2.5	2.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		2.5	2.0	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		2.5	2.0	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		2.5	2.0	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.5	2.0	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		2.5	2.0	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		2.5	2.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		2.5	2.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	3.0		2.5	2.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		2.5	2.0	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		2.5	2.0	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		2.5	2.0	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		2.5	2.0	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		2.5	2.0	ug/L	1
2-Hexanone	591-78-6	8260D	ND		50	10	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		2.5	2.0	ug/L	1
Methyl acetate	79-20-9	8260D	ND		5.0	2.0	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		2.5	2.0	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		50	10	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		25	2.0	ug/L	1
Methylene chloride	75-09-2	8260D	ND		2.5	2.0	ug/L	1
Styrene	100-42-5	8260D	ND		2.5	2.1	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		2.5	2.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		2.5	2.0	ug/L	1
Toluene	108-88-3	8260D	ND		2.5	2.0	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		5.0	2.1	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		2.5	2.0	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		2.5	2.0	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		2.5	2.0	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC01066-004
Description: TMW-31
Matrix: Aqueous
Date Sampled: 03/01/2022 1200
Project Name: Signify Shakespeare
Date Received: 03/01/2022
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	5	03/12/2022 0532	JWO		34604

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	480		2.5	2.0	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		2.5	2.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		2.5	2.0	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		5.0	2.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		87	70-130
1,2-Dichloroethane-d4		121	70-130
Toluene-d8		108	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Inorganic non-metals

Client: AECOM
Description: ISCO-OBSW-1
Date Sampled: 03/01/2022 1345
Date Received: 03/01/2022
Laboratory ID: XC01066-005
Matrix: Aqueous
Project Name: Signify Shakespeare
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Chloride) 300.0	100	03/24/2022 0047	CAW		35984
1		(TDS) SM 2540C-2015	1	03/08/2022 2144	TAD		34152

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Chloride		300.0	ND		100	25	mg/L	1
TDS		SM 2540C-2015	260		25	25	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC01066-005
Description: ISCO-OBSW-1
Matrix: Aqueous
Date Sampled: 03/01/2022 1345
Project Name: Signify Shakespeare
Date Received: 03/01/2022
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	20	03/13/2022 0507	BBW		34650

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		200	80	ug/L	2
Benzene	71-43-2	8260D	ND		10	8.0	ug/L	2
Bromodichloromethane	75-27-4	8260D	ND		10	8.0	ug/L	2
Bromoform	75-25-2	8260D	ND		10	8.0	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		10	8.0	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	ND		200	40	ug/L	2
Carbon disulfide	75-15-0	8260D	ND		10	8.0	ug/L	2
Carbon tetrachloride	56-23-5	8260D	ND		10	8.0	ug/L	2
Chlorobenzene	108-90-7	8260D	ND		10	8.0	ug/L	2
Chloroethane	75-00-3	8260D	ND		10	8.0	ug/L	2
Chloroform	67-66-3	8260D	ND		10	8.0	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		10	8.0	ug/L	2
Cyclohexane	110-82-7	8260D	ND		10	8.0	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		10	8.0	ug/L	2
Dibromochloromethane	124-48-1	8260D	ND		10	8.0	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		10	8.0	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	ND		10	8.0	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	ND		10	8.0	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	ND		10	8.0	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	ND		10	8.0	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	ND		10	8.0	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	ND		10	8.0	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	ND		10	8.0	ug/L	2
cis-1,2-Dichloroethene	156-59-2	8260D	ND		10	8.0	ug/L	2
trans-1,2-Dichloroethene	156-60-5	8260D	ND		10	8.0	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	ND		10	8.0	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		10	8.0	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		10	8.0	ug/L	2
Ethylbenzene	100-41-4	8260D	ND		10	8.0	ug/L	2
2-Hexanone	591-78-6	8260D	ND		200	40	ug/L	2
Isopropylbenzene	98-82-8	8260D	ND		10	8.0	ug/L	2
Methyl acetate	79-20-9	8260D	ND		20	8.0	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		10	8.0	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	ND		200	40	ug/L	2
Methylcyclohexane	108-87-2	8260D	ND		100	8.0	ug/L	2
Methylene chloride	75-09-2	8260D	ND		10	8.0	ug/L	2
Styrene	100-42-5	8260D	ND		10	8.2	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		10	8.0	ug/L	2
Tetrachloroethene	127-18-4	8260D	ND		10	8.0	ug/L	2
Toluene	108-88-3	8260D	ND		10	8.0	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		20	8.4	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		10	8.0	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	ND		10	8.0	ug/L	2
1,1,2-Trichloroethane	79-00-5	8260D	ND		10	8.0	ug/L	2

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC01066-005
Description: ISCO-OBSW-1
Matrix: Aqueous
Date Sampled: 03/01/2022 1345
Project Name: Signify Shakespeare
Date Received: 03/01/2022
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	20	03/13/2022 0507	BBW		34650

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		10	8.0	ug/L	2
Trichlorofluoromethane	75-69-4	8260D	ND		10	8.0	ug/L	2
Vinyl chloride	75-01-4	8260D	ND		10	8.0	ug/L	2
Xylenes (total)	1330-20-7	8260D	ND		20	8.0	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		108	70-130
1,2-Dichloroethane-d4		108	70-130
Toluene-d8		112	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Inorganic non-metals

Client: AECOM
Laboratory ID: XC01066-006
Description: MW-2
Matrix: Aqueous
Date Sampled: 03/01/2022 1435
Project Name: Signify Shakespeare
Date Received: 03/01/2022
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Chloride) 300.0	1	03/23/2022 1500	CAW		35983
1		(TDS) SM 2540C-2015	1	03/08/2022 2144	TAD		34152

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Chloride		300.0	2.2		1.0	0.25	mg/L	1
TDS		SM 2540C-2015	34		25	25	mg/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC01066-006
Description: MW-2
Matrix: Aqueous
Date Sampled: 03/01/2022 1435
Project Name: Signify Shakespeare
Date Received: 03/01/2022
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 0140	BBW		34466

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	5.1		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC01066-006
Description: MW-2
Matrix: Aqueous
Date Sampled: 03/01/2022 1435
Project Name: Signify Shakespeare
Date Received: 03/01/2022
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 0140	BBW		34466

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		95	70-130
1,2-Dichloroethane-d4		110	70-130
Toluene-d8		108	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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QC Summary

Inorganic non-metals - MB

Sample ID: XQ34152-001
Batch: 34152
Analytical Method: SM 2540C-2015
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
TDS	ND		1	25	25	mg/L	03/08/2022 2144

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ34152-002
Batch: 34152
Analytical Method: SM 2540C-2015

Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
TDS	50	49		1	98	90-110	03/08/2022 2144

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MB

Sample ID: XQ35983-001
Batch: 35983
Analytical Method: 300.0

Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Chloride	ND		1	1.0	0.25	mg/L	03/23/2022 1229

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - LCS

Sample ID: XQ35983-002
Batch: 35983
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Chloride	20	19		1	97	90-110	03/23/2022 1307

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MB

Sample ID: XQ35984-001
Batch: 35984
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Chloride	ND		1	1.0	0.25	mg/L	03/23/2022 2041

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - LCS

Sample ID: XQ35984-002
Batch: 35984
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Chloride	20	19		1	95	90-110	03/23/2022 2350

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34466-001
Batch: 34466
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	10	4.0	ug/L	03/10/2022 2246
Benzene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Bromodichloromethane	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Bromoform	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Bromomethane (Methyl bromide)	ND		1	0.50	0.40	ug/L	03/10/2022 2246
2-Butanone (MEK)	ND		1	10	2.0	ug/L	03/10/2022 2246
Carbon disulfide	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Carbon tetrachloride	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Chlorobenzene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Chloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Chloroform	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Chloromethane (Methyl chloride)	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Cyclohexane	ND		1	0.50	0.40	ug/L	03/10/2022 2246
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Dibromochloromethane	ND		1	0.50	0.40	ug/L	03/10/2022 2246
1,2-Dibromoethane (EDB)	ND		1	0.50	0.40	ug/L	03/10/2022 2246
1,2-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
1,3-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
1,4-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Dichlorodifluoromethane	ND		1	0.50	0.40	ug/L	03/10/2022 2246
1,1-Dichloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 2246
1,2-Dichloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 2246
1,1-Dichloroethene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
cis-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
trans-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
1,2-Dichloropropane	ND		1	0.50	0.40	ug/L	03/10/2022 2246
cis-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
trans-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Ethylbenzene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
2-Hexanone	ND		1	10	2.0	ug/L	03/10/2022 2246
Isopropylbenzene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Methyl acetate	ND		1	1.0	0.40	ug/L	03/10/2022 2246
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.40	ug/L	03/10/2022 2246
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	03/10/2022 2246
Methylcyclohexane	ND		1	5.0	0.40	ug/L	03/10/2022 2246
Methylene chloride	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Styrene	ND		1	0.50	0.41	ug/L	03/10/2022 2246
1,1,2,2-Tetrachloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Tetrachloroethene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Toluene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	03/10/2022 2246
1,2,4-Trichlorobenzene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
1,1,1-Trichloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 2246
1,1,2-Trichloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 2246

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34466-001
Batch: 34466
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Trichlorofluoromethane	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Vinyl chloride	ND		1	0.50	0.40	ug/L	03/10/2022 2246
Xylenes (total)	ND		1	1.0	0.40	ug/L	03/10/2022 2246

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		93	70-130
1,2-Dichloroethane-d4		108	70-130
Toluene-d8		107	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34466-002
Batch: 34466
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	65		1	65	60-140	03/10/2022 2145
Benzene	50	48		1	97	70-130	03/10/2022 2145
Bromodichloromethane	50	43		1	87	70-130	03/10/2022 2145
Bromoform	50	45		1	90	70-130	03/10/2022 2145
Bromomethane (Methyl bromide)	50	55		1	110	70-130	03/10/2022 2145
2-Butanone (MEK)	100	87		1	87	70-130	03/10/2022 2145
Carbon disulfide	50	50		1	101	70-130	03/10/2022 2145
Carbon tetrachloride	50	47		1	94	70-130	03/10/2022 2145
Chlorobenzene	50	48		1	97	70-130	03/10/2022 2145
Chloroethane	50	48		1	97	70-130	03/10/2022 2145
Chloroform	50	44		1	88	70-130	03/10/2022 2145
Chloromethane (Methyl chloride)	50	51		1	102	60-140	03/10/2022 2145
Cyclohexane	50	48		1	96	70-130	03/10/2022 2145
1,2-Dibromo-3-chloropropane (DBCP)	50	44		1	89	70-130	03/10/2022 2145
Dibromochloromethane	50	46		1	91	70-130	03/10/2022 2145
1,2-Dibromoethane (EDB)	50	49		1	98	70-130	03/10/2022 2145
1,2-Dichlorobenzene	50	49		1	99	70-130	03/10/2022 2145
1,3-Dichlorobenzene	50	50		1	99	70-130	03/10/2022 2145
1,4-Dichlorobenzene	50	47		1	94	70-130	03/10/2022 2145
Dichlorodifluoromethane	50	48		1	96	60-140	03/10/2022 2145
1,1-Dichloroethane	50	48		1	95	70-130	03/10/2022 2145
1,2-Dichloroethane	50	43		1	85	70-130	03/10/2022 2145
1,1-Dichloroethene	50	52		1	103	70-130	03/10/2022 2145
cis-1,2-Dichloroethene	50	49		1	97	70-130	03/10/2022 2145
trans-1,2-Dichloroethene	50	50		1	100	70-130	03/10/2022 2145
1,2-Dichloropropane	50	46		1	93	70-130	03/10/2022 2145
cis-1,3-Dichloropropene	50	49		1	97	70-130	03/10/2022 2145
trans-1,3-Dichloropropene	50	49		1	97	70-130	03/10/2022 2145
Ethylbenzene	50	53		1	106	70-130	03/10/2022 2145
2-Hexanone	100	88		1	88	70-130	03/10/2022 2145
Isopropylbenzene	50	46		1	92	70-130	03/10/2022 2145
Methyl acetate	50	44		1	89	70-130	03/10/2022 2145
Methyl tertiary butyl ether (MTBE)	50	50		1	101	70-130	03/10/2022 2145
4-Methyl-2-pentanone	100	85		1	85	70-130	03/10/2022 2145
Methylcyclohexane	50	57		1	114	70-130	03/10/2022 2145
Methylene chloride	50	44		1	88	70-130	03/10/2022 2145
Styrene	50	49		1	98	70-130	03/10/2022 2145
1,1,2,2-Tetrachloroethane	50	47		1	95	70-130	03/10/2022 2145
Tetrachloroethene	50	52		1	105	70-130	03/10/2022 2145
Toluene	50	53		1	107	70-130	03/10/2022 2145
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	54		1	108	70-130	03/10/2022 2145
1,2,4-Trichlorobenzene	50	50		1	100	70-130	03/10/2022 2145
1,1,1-Trichloroethane	50	49		1	98	70-130	03/10/2022 2145
1,1,2-Trichloroethane	50	47		1	94	70-130	03/10/2022 2145

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34466-002
Batch: 34466
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	47		1	94	70-130	03/10/2022 2145
Trichlorofluoromethane	50	52		1	104	70-130	03/10/2022 2145
Vinyl chloride	50	50		1	100	70-130	03/10/2022 2145
Xylenes (total)	100	97		1	97	70-130	03/10/2022 2145

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		104	70-130
1,2-Dichloroethane-d4		90	70-130
Toluene-d8		107	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34604-001
Batch: 34604
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	10	4.0	ug/L	03/11/2022 2135
Benzene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Bromodichloromethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Bromoform	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Bromomethane (Methyl bromide)	ND		1	0.50	0.40	ug/L	03/11/2022 2135
2-Butanone (MEK)	ND		1	10	2.0	ug/L	03/11/2022 2135
Carbon disulfide	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Carbon tetrachloride	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Chlorobenzene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Chloroethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Chloroform	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Chloromethane (Methyl chloride)	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Cyclohexane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Dibromochloromethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,2-Dibromoethane (EDB)	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,2-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,3-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,4-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Dichlorodifluoromethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,1-Dichloroethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,2-Dichloroethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,1-Dichloroethene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
cis-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
trans-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,2-Dichloropropane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
cis-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
trans-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Ethylbenzene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
2-Hexanone	ND		1	10	2.0	ug/L	03/11/2022 2135
Isopropylbenzene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Methyl acetate	ND		1	1.0	0.40	ug/L	03/11/2022 2135
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.40	ug/L	03/11/2022 2135
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	03/11/2022 2135
Methylcyclohexane	ND		1	5.0	0.40	ug/L	03/11/2022 2135
Methylene chloride	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Styrene	ND		1	0.50	0.41	ug/L	03/11/2022 2135
1,1,2,2-Tetrachloroethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Tetrachloroethene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Toluene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	03/11/2022 2135
1,2,4-Trichlorobenzene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,1,1-Trichloroethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,1,2-Trichloroethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34604-001
Batch: 34604
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Trichlorofluoromethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Vinyl chloride	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Xylenes (total)	ND		1	1.0	0.40	ug/L	03/11/2022 2135

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		92	70-130
1,2-Dichloroethane-d4		108	70-130
Toluene-d8		106	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
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N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34604-002
Batch: 34604
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	65		1	65	60-140	03/11/2022 2031
Benzene	50	45		1	91	70-130	03/11/2022 2031
Bromodichloromethane	50	41		1	82	70-130	03/11/2022 2031
Bromoform	50	46		1	91	70-130	03/11/2022 2031
Bromomethane (Methyl bromide)	50	47		1	94	70-130	03/11/2022 2031
2-Butanone (MEK)	100	79		1	79	70-130	03/11/2022 2031
Carbon disulfide	50	44		1	88	70-130	03/11/2022 2031
Carbon tetrachloride	50	42		1	84	70-130	03/11/2022 2031
Chlorobenzene	50	46		1	93	70-130	03/11/2022 2031
Chloroethane	50	43		1	85	70-130	03/11/2022 2031
Chloroform	50	39		1	78	70-130	03/11/2022 2031
Chloromethane (Methyl chloride)	50	45		1	90	60-140	03/11/2022 2031
Cyclohexane	50	41		1	82	70-130	03/11/2022 2031
1,2-Dibromo-3-chloropropane (DBCP)	50	40		1	80	70-130	03/11/2022 2031
Dibromochloromethane	50	45		1	91	70-130	03/11/2022 2031
1,2-Dibromoethane (EDB)	50	47		1	93	70-130	03/11/2022 2031
1,2-Dichlorobenzene	50	47		1	94	70-130	03/11/2022 2031
1,3-Dichlorobenzene	50	48		1	96	70-130	03/11/2022 2031
1,4-Dichlorobenzene	50	46		1	92	70-130	03/11/2022 2031
Dichlorodifluoromethane	50	40		1	80	60-140	03/11/2022 2031
1,1-Dichloroethane	50	41		1	83	70-130	03/11/2022 2031
1,2-Dichloroethane	50	40		1	80	70-130	03/11/2022 2031
1,1-Dichloroethene	50	44		1	88	70-130	03/11/2022 2031
cis-1,2-Dichloroethene	50	42		1	85	70-130	03/11/2022 2031
trans-1,2-Dichloroethene	50	44		1	87	70-130	03/11/2022 2031
1,2-Dichloropropane	50	44		1	89	70-130	03/11/2022 2031
cis-1,3-Dichloropropene	50	46		1	91	70-130	03/11/2022 2031
trans-1,3-Dichloropropene	50	46		1	92	70-130	03/11/2022 2031
Ethylbenzene	50	51		1	102	70-130	03/11/2022 2031
2-Hexanone	100	83		1	83	70-130	03/11/2022 2031
Isopropylbenzene	50	43		1	86	70-130	03/11/2022 2031
Methyl acetate	50	42		1	85	70-130	03/11/2022 2031
Methyl tertiary butyl ether (MTBE)	50	41		1	83	70-130	03/11/2022 2031
4-Methyl-2-pentanone	100	81		1	81	70-130	03/11/2022 2031
Methylcyclohexane	50	51		1	103	70-130	03/11/2022 2031
Methylene chloride	50	39		1	77	70-130	03/11/2022 2031
Styrene	50	48		1	95	70-130	03/11/2022 2031
1,1,2,2-Tetrachloroethane	50	46		1	92	70-130	03/11/2022 2031
Tetrachloroethene	50	52		1	104	70-130	03/11/2022 2031
Toluene	50	51		1	103	70-130	03/11/2022 2031
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	47		1	95	70-130	03/11/2022 2031
1,2,4-Trichlorobenzene	50	46		1	91	70-130	03/11/2022 2031
1,1,1-Trichloroethane	50	43		1	87	70-130	03/11/2022 2031
1,1,2-Trichloroethane	50	46		1	92	70-130	03/11/2022 2031

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34604-002
Batch: 34604
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	44		1	89	70-130	03/11/2022 2031
Trichlorofluoromethane	50	46		1	91	70-130	03/11/2022 2031
Vinyl chloride	50	44		1	87	70-130	03/11/2022 2031
Xylenes (total)	100	92		1	92	70-130	03/11/2022 2031

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		101	70-130
1,2-Dichloroethane-d4		88	70-130
Toluene-d8		107	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
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N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34650-001
Batch: 34650
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	10	4.0	ug/L	03/12/2022 1927
Benzene	ND		1	0.50	0.40	ug/L	03/12/2022 1927
Bromodichloromethane	ND		1	0.50	0.40	ug/L	03/12/2022 1927
Bromoform	ND		1	0.50	0.40	ug/L	03/12/2022 1927
Bromomethane (Methyl bromide)	ND		1	0.50	0.40	ug/L	03/12/2022 1927
2-Butanone (MEK)	ND		1	10	2.0	ug/L	03/12/2022 1927
Carbon disulfide	ND		1	0.50	0.40	ug/L	03/12/2022 1927
Carbon tetrachloride	ND		1	0.50	0.40	ug/L	03/12/2022 1927
Chlorobenzene	ND		1	0.50	0.40	ug/L	03/12/2022 1927
Chloroethane	ND		1	0.50	0.40	ug/L	03/12/2022 1927
Chloroform	ND		1	0.50	0.40	ug/L	03/12/2022 1927
Chloromethane (Methyl chloride)	ND		1	0.50	0.40	ug/L	03/12/2022 1927
Cyclohexane	ND		1	0.50	0.40	ug/L	03/12/2022 1927
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.50	0.40	ug/L	03/12/2022 1927
Dibromochloromethane	ND		1	0.50	0.40	ug/L	03/12/2022 1927
1,2-Dibromoethane (EDB)	ND		1	0.50	0.40	ug/L	03/12/2022 1927
1,2-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/12/2022 1927
1,3-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/12/2022 1927
1,4-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/12/2022 1927
Dichlorodifluoromethane	ND		1	0.50	0.40	ug/L	03/12/2022 1927
1,1-Dichloroethane	ND		1	0.50	0.40	ug/L	03/12/2022 1927
1,2-Dichloroethane	ND		1	0.50	0.40	ug/L	03/12/2022 1927
1,1-Dichloroethene	ND		1	0.50	0.40	ug/L	03/12/2022 1927
cis-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/12/2022 1927
trans-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/12/2022 1927
1,2-Dichloropropane	ND		1	0.50	0.40	ug/L	03/12/2022 1927
cis-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/12/2022 1927
trans-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/12/2022 1927
Ethylbenzene	ND		1	0.50	0.40	ug/L	03/12/2022 1927
2-Hexanone	ND		1	10	2.0	ug/L	03/12/2022 1927
Isopropylbenzene	ND		1	0.50	0.40	ug/L	03/12/2022 1927
Methyl acetate	ND		1	1.0	0.40	ug/L	03/12/2022 1927
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.40	ug/L	03/12/2022 1927
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	03/12/2022 1927
Methylcyclohexane	ND		1	5.0	0.40	ug/L	03/12/2022 1927
Methylene chloride	ND		1	0.50	0.40	ug/L	03/12/2022 1927
Styrene	ND		1	0.50	0.41	ug/L	03/12/2022 1927
1,1,2,2-Tetrachloroethane	ND		1	0.50	0.40	ug/L	03/12/2022 1927
Tetrachloroethene	ND		1	0.50	0.40	ug/L	03/12/2022 1927
Toluene	ND		1	0.50	0.40	ug/L	03/12/2022 1927
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	03/12/2022 1927
1,2,4-Trichlorobenzene	ND		1	0.50	0.40	ug/L	03/12/2022 1927
1,1,1-Trichloroethane	ND		1	0.50	0.40	ug/L	03/12/2022 1927
1,1,2-Trichloroethane	ND		1	0.50	0.40	ug/L	03/12/2022 1927

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34650-001
Batch: 34650
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.50	0.40	ug/L	03/12/2022 1927
Trichlorofluoromethane	ND		1	0.50	0.40	ug/L	03/12/2022 1927
Vinyl chloride	ND		1	0.50	0.40	ug/L	03/12/2022 1927
Xylenes (total)	ND		1	1.0	0.40	ug/L	03/12/2022 1927

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		109	70-130
1,2-Dichloroethane-d4		107	70-130
Toluene-d8		110	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34650-002
Batch: 34650
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	130		1	131	60-140	03/12/2022 1822
Benzene	50	47		1	95	70-130	03/12/2022 1822
Bromodichloromethane	50	47		1	94	70-130	03/12/2022 1822
Bromoform	50	50		1	101	70-130	03/12/2022 1822
Bromomethane (Methyl bromide)	50	50		1	99	70-130	03/12/2022 1822
2-Butanone (MEK)	100	110		1	113	70-130	03/12/2022 1822
Carbon disulfide	50	48		1	96	70-130	03/12/2022 1822
Carbon tetrachloride	50	48		1	97	70-130	03/12/2022 1822
Chlorobenzene	50	47		1	93	70-130	03/12/2022 1822
Chloroethane	50	55		1	110	70-130	03/12/2022 1822
Chloroform	50	48		1	96	70-130	03/12/2022 1822
Chloromethane (Methyl chloride)	50	48		1	95	60-140	03/12/2022 1822
Cyclohexane	50	47		1	94	70-130	03/12/2022 1822
1,2-Dibromo-3-chloropropane (DBCP)	50	48		1	97	70-130	03/12/2022 1822
Dibromochloromethane	50	49		1	98	70-130	03/12/2022 1822
1,2-Dibromoethane (EDB)	50	47		1	93	70-130	03/12/2022 1822
1,2-Dichlorobenzene	50	48		1	96	70-130	03/12/2022 1822
1,3-Dichlorobenzene	50	47		1	94	70-130	03/12/2022 1822
1,4-Dichlorobenzene	50	47		1	93	70-130	03/12/2022 1822
Dichlorodifluoromethane	50	52		1	103	60-140	03/12/2022 1822
1,1-Dichloroethane	50	47		1	94	70-130	03/12/2022 1822
1,2-Dichloroethane	50	49		1	98	70-130	03/12/2022 1822
1,1-Dichloroethene	50	50		1	100	70-130	03/12/2022 1822
cis-1,2-Dichloroethene	50	49		1	98	70-130	03/12/2022 1822
trans-1,2-Dichloroethene	50	47		1	94	70-130	03/12/2022 1822
1,2-Dichloropropane	50	47		1	95	70-130	03/12/2022 1822
cis-1,3-Dichloropropene	50	50		1	100	70-130	03/12/2022 1822
trans-1,3-Dichloropropene	50	49		1	98	70-130	03/12/2022 1822
Ethylbenzene	50	47		1	93	70-130	03/12/2022 1822
2-Hexanone	100	100		1	101	70-130	03/12/2022 1822
Isopropylbenzene	50	47		1	94	70-130	03/12/2022 1822
Methyl acetate	50	55		1	111	70-130	03/12/2022 1822
Methyl tertiary butyl ether (MTBE)	50	55		1	110	70-130	03/12/2022 1822
4-Methyl-2-pentanone	100	100		1	100	70-130	03/12/2022 1822
Methylcyclohexane	50	49		1	98	70-130	03/12/2022 1822
Methylene chloride	50	48		1	96	70-130	03/12/2022 1822
Styrene	50	48		1	96	70-130	03/12/2022 1822
1,1,2,2-Tetrachloroethane	50	47		1	94	70-130	03/12/2022 1822
Tetrachloroethene	50	46		1	92	70-130	03/12/2022 1822
Toluene	50	46		1	93	70-130	03/12/2022 1822
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	52		1	103	70-130	03/12/2022 1822
1,2,4-Trichlorobenzene	50	49		1	98	70-130	03/12/2022 1822
1,1,1-Trichloroethane	50	48		1	97	70-130	03/12/2022 1822
1,1,2-Trichloroethane	50	48		1	96	70-130	03/12/2022 1822

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34650-002
Batch: 34650
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	47		1	95	70-130	03/12/2022 1822
Trichlorofluoromethane	50	51		1	101	70-130	03/12/2022 1822
Vinyl chloride	50	52		1	104	70-130	03/12/2022 1822
Xylenes (total)	100	94		1	94	70-130	03/12/2022 1822

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		93	70-130
1,2-Dichloroethane-d4		95	70-130
Toluene-d8		93	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

Chain of Custody
and
Miscellaneous Documents

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

Chain of Custody Record

SHEALY ENVIRONMENTAL SERVICES, INC.
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.shealylab.com

Number 105853

Client: AECOM	Report to Contact: SCOTT ROSS	Telephone No. / E-mail: 803 201 4662 SCOTT.ROSS@AECOM.COM	Quote No.
Address: 101 RESEARCH DR	Sampler's Signature: X [signature]	Analysis (Attach list if more space is needed)	Page 1 of 1
City: COLUMBIA State: SC Zip Code: 29203	Printed Name: JAMES LEIGHTY		
Project Name: SHAKESPEARE COMPOSITE STRUCTURES			
Project No.: 60675505	P.O. No.		

Sample ID / Description (Containers for each sample may be combined on one line)	Date	Time	# Containers	Matrix: Aqueous	Matrix: Solid	Matrix: Other	No. of Containers by Preservative Type: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	TCL VOC's	TDS	CHLORIDE
TMW-30	3-1-22	0930	G	X					3				X		
TMW-23		1020	G	X					3				X		
TMW-29		1055	G	X			2		3				X	X	X
TMW-31		1200	G	X			2		3				X	X	X
ISCO-OBSW-1		1345	G	X			2		3				X	X	X
MW-2		1435	G	X			2		3				X	X	X
TB-05		—		X					2				X		

XC01061 CSD

XC01066 CSD

Turn Around Time Required (Prior lab approval required for expedited TAT.): X Standard ☐ Rush (Specify)

Sample Disposal: ☐ Return to Client X Disposal by Lab

Possible Hazard Identification: X Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by: [signature]	3-1-22	1622	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by			4. Laboratory received by: [signature]	3.1.22	1622

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Circle): (Yes) No Ice Pack
Receipt Temp: 2.3 °C

Pace Analytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: Accom Cooler Inspected by/date: KDRW / 03/01/2022 Lot #: XC01061

Means of receipt: ☐ Pace ☑ Client ☐ UPS ☐ FedEx ☐ Other:

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

2.3 / 2.3 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☑ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc...) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote #

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.

Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: KDRW Date: 03/01/2022

Comments:

Report of Analysis

AECOM
101 Research Drive
Columbia, SC 29203
Attention: Scott Ross

Project Name: Shakespeare Composite Structures

Project Number: 60675505

Lot Number:**XC02133**

Date Completed:03/14/2022

03/22/2022 2:25 PM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
AECOM
Lot Number: XC02133

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Sample Summary

AECOM

Lot Number: XC02133

Project Name: Shakespeare Composite Structures

Project Number: 60675505

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	MW-12	Aqueous	03/02/2022 0920	03/02/2022
002	MW-12-PDB	Aqueous	03/02/2022 0840	03/02/2022
003	MW-14	Aqueous	03/02/2022 1035	03/02/2022
004	MW-14-PDB	Aqueous	03/02/2022 0955	03/02/2022
005	MW-11	Aqueous	03/02/2022 1140	03/02/2022
006	MW-11-PDB	Aqueous	03/02/2022 1100	03/02/2022
007	MW-25	Aqueous	03/02/2022 1355	03/02/2022
008	MW-25-PDB	Aqueous	03/02/2022 1225	03/02/2022
009	MW-1-PDB	Aqueous	03/02/2022 1420	03/02/2022
010	MW-1	Aqueous	03/02/2022 1450	03/02/2022
011	Dup-03	Aqueous	03/02/2022	03/02/2022
012	TB-06	Aqueous	03/02/2022	03/02/2022

(12 samples)

Detection Summary

AECOM

Lot Number: XC02133

Project Name: Shakespeare Composite Structures

Project Number: 60675505

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	MW-12	Aqueous	1,1-Dichloroethane	8260D	0.47	J	ug/L	5
001	MW-12	Aqueous	1,1-Dichloroethene	8260D	0.61		ug/L	5
001	MW-12	Aqueous	cis-1,2-Dichloroethene	8260D	29		ug/L	5
001	MW-12	Aqueous	Trichloroethene	8260D	47		ug/L	6
002	MW-12-PDB	Aqueous	Acetone	8260D	10		ug/L	7
002	MW-12-PDB	Aqueous	1,1-Dichloroethane	8260D	0.46	J	ug/L	7
002	MW-12-PDB	Aqueous	1,1-Dichloroethene	8260D	0.68		ug/L	7
002	MW-12-PDB	Aqueous	cis-1,2-Dichloroethene	8260D	30		ug/L	7
002	MW-12-PDB	Aqueous	Trichloroethene	8260D	54		ug/L	8
003	MW-14	Aqueous	Trichloroethene	8260D	100		ug/L	10
004	MW-14-PDB	Aqueous	Acetone	8260D	6.9	J	ug/L	11
004	MW-14-PDB	Aqueous	Trichloroethene	8260D	100		ug/L	12
006	MW-11-PDB	Aqueous	Acetone	8260D	9.2	J	ug/L	15
007	MW-25	Aqueous	Trichloroethene	8260D	4.2		ug/L	18
008	MW-25-PDB	Aqueous	Acetone	8260D	7.4	J	ug/L	19
008	MW-25-PDB	Aqueous	Trichloroethene	8260D	3.1		ug/L	20
009	MW-1-PDB	Aqueous	Acetone	8260D	4.7	J	ug/L	21
011	Dup-03	Aqueous	Trichloroethene	8260D	4.7		ug/L	26

(18 detections)

Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC02133-001
Description: MW-12
Matrix: Aqueous
Date Sampled: 03/02/2022 0920
Project Name: Shakespeare Composite
Date Received: 03/02/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 0222	BBW		34469

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.47	J	0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.61		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	29		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC02133-001
Description: MW-12
Matrix: Aqueous
Date Sampled: 03/02/2022 0920
Project Name: Shakespeare Composite
Date Received: 03/02/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 0222	BBW		34469

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	47		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		108	70-130
1,2-Dichloroethane-d4		117	70-130
Toluene-d8		106	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC02133-002
Description: MW-12-PDB
Matrix: Aqueous
Date Sampled: 03/02/2022 0840
Project Name: Shakespeare Composite
Date Received: 03/02/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 0245	BBW		34469

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	10		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.46	J	0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.68		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	30		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC02133-002
Description: MW-12-PDB
Matrix: Aqueous
Date Sampled: 03/02/2022 0840
Project Name: Shakespeare Composite
Date Received: 03/02/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 0245	BBW		34469

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	54		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		108	70-130
1,2-Dichloroethane-d4		117	70-130
Toluene-d8		107	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC02133-003
Description: MW-14
Matrix: Aqueous
Date Sampled: 03/02/2022 1035
Project Name: Shakespeare Composite
Date Received: 03/02/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 0308	BBW		34469

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC02133-003
Description: MW-14
Matrix: Aqueous
Date Sampled: 03/02/2022 1035
Project Name: Shakespeare Composite
Date Received: 03/02/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 0308	BBW		34469

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	100		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		114	70-130
1,2-Dichloroethane-d4		117	70-130
Toluene-d8		110	70-130

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC02133-004
Description: MW-14-PDB
Matrix: Aqueous
Date Sampled: 03/02/2022 0955
Project Name: Shakespeare Composite
Date Received: 03/02/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 0332	BBW		34469

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	6.9	J	10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
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Q = Surrogate failure
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N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
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H = Out of holding time
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S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC02133-004
Description: MW-14-PDB
Matrix: Aqueous
Date Sampled: 03/02/2022 0955
Project Name: Shakespeare Composite
Date Received: 03/02/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 0332	BBW		34469

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	100		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		108	70-130
1,2-Dichloroethane-d4		116	70-130
Toluene-d8		105	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC02133-005
Description: MW-11
Matrix: Aqueous
Date Sampled: 03/02/2022 1140
Project Name: Shakespeare Composite
Date Received: 03/02/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 0355	BBW		34469

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC02133-005
Description: MW-11
Matrix: Aqueous
Date Sampled: 03/02/2022 1140
Project Name: Shakespeare Composite
Date Received: 03/02/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 0355	BBW		34469

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		114	70-130
1,2-Dichloroethane-d4		121	70-130
Toluene-d8		111	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC02133-006
Description: MW-11-PDB
Matrix: Aqueous
Date Sampled: 03/02/2022 1100
Project Name: Shakespeare Composite
Date Received: 03/02/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 0419	BBW		34469

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	9.2	J	10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
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H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC02133-006
Description: MW-11-PDB
Matrix: Aqueous
Date Sampled: 03/02/2022 1100
Project Name: Shakespeare Composite
Date Received: 03/02/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 0419	BBW		34469

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		108	70-130
1,2-Dichloroethane-d4		118	70-130
Toluene-d8		108	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
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S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC02133-007
Description: MW-25
Matrix: Aqueous
Date Sampled: 03/02/2022 1355
Project Name: Shakespeare Composite
Date Received: 03/02/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 0442	BBW		34469

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
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DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC02133-007
Description: MW-25
Matrix: Aqueous
Date Sampled: 03/02/2022 1355
Project Name: Shakespeare Composite
Date Received: 03/02/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 0442	BBW		34469

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	4.2		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		113	70-130
1,2-Dichloroethane-d4		116	70-130
Toluene-d8		108	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC02133-008
Description: MW-25-PDB
Matrix: Aqueous
Date Sampled: 03/02/2022 1225
Project Name: Shakespeare Composite
Date Received: 03/02/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 0505	BBW		34469

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	7.4	J	10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC02133-008
Description: MW-25-PDB
Matrix: Aqueous
Date Sampled: 03/02/2022 1225
Project Name: Shakespeare Composite
Date Received: 03/02/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 0505	BBW		34469

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	3.1		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		105	70-130
1,2-Dichloroethane-d4		115	70-130
Toluene-d8		107	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC02133-009
Description: MW-1-PDB
Matrix: Aqueous
Date Sampled: 03/02/2022 1420
Project Name: Shakespeare Composite
Date Received: 03/02/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 0528	BBW		34469

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	4.7	J	10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
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DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
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H = Out of holding time
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC02133-009
Description: MW-1-PDB
Matrix: Aqueous
Date Sampled: 03/02/2022 1420
Project Name: Shakespeare Composite
Date Received: 03/02/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 0528	BBW		34469

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		114	70-130
1,2-Dichloroethane-d4		117	70-130
Toluene-d8		109	70-130

LOQ = Limit of Quantitation
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ND = Not detected at or above the DL
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC02133-010
Description: MW-1
Matrix: Aqueous
Date Sampled: 03/02/2022 1450
Project Name: Shakespeare Composite
Date Received: 03/02/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 0552	BBW		34469

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
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Q = Surrogate failure
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N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
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L = LCS/LCSD failure
H = Out of holding time
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC02133-010
Description: MW-1
Matrix: Aqueous
Date Sampled: 03/02/2022 1450
Project Name: Shakespeare Composite
Date Received: 03/02/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 0552	BBW		34469

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		111	70-130
1,2-Dichloroethane-d4		119	70-130
Toluene-d8		110	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Description: Dup-03
Date Sampled: 03/02/2022
Date Received: 03/02/2022
Laboratory ID: XC02133-011
Matrix: Aqueous
Project Name: Shakespeare Composite
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 2320	JWO		34604

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
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N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC02133-011
Description: Dup-03
Matrix: Aqueous
Date Sampled: 03/02/2022
Project Name: Shakespeare Composite
Date Received: 03/02/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 2320	JWO		34604

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	4.7		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		88	70-130
1,2-Dichloroethane-d4		115	70-130
Toluene-d8		104	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Description: TB-06
Date Sampled: 03/02/2022
Date Received: 03/02/2022
Laboratory ID: XC02133-012
Matrix: Aqueous
Project Name: Shakespeare Composite
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 2255	JWO		34604

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC02133-012
Description: TB-06
Matrix: Aqueous
Date Sampled: 03/02/2022
Project Name: Shakespeare Composite
Date Received: 03/02/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 2255	JWO		34604

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		87	70-130
1,2-Dichloroethane-d4		116	70-130
Toluene-d8		105	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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QC Summary

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34469-001
Batch: 34469
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	10	4.0	ug/L	03/10/2022 2202
Benzene	ND		1	0.50	0.40	ug/L	03/10/2022 2202
Bromodichloromethane	ND		1	0.50	0.40	ug/L	03/10/2022 2202
Bromoform	ND		1	0.50	0.40	ug/L	03/10/2022 2202
Bromomethane (Methyl bromide)	ND		1	0.50	0.40	ug/L	03/10/2022 2202
2-Butanone (MEK)	ND		1	10	2.0	ug/L	03/10/2022 2202
Carbon disulfide	ND		1	0.50	0.40	ug/L	03/10/2022 2202
Carbon tetrachloride	ND		1	0.50	0.40	ug/L	03/10/2022 2202
Chlorobenzene	ND		1	0.50	0.40	ug/L	03/10/2022 2202
Chloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 2202
Chloroform	ND		1	0.50	0.40	ug/L	03/10/2022 2202
Chloromethane (Methyl chloride)	ND		1	0.50	0.40	ug/L	03/10/2022 2202
Cyclohexane	ND		1	0.50	0.40	ug/L	03/10/2022 2202
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.50	0.40	ug/L	03/10/2022 2202
Dibromochloromethane	ND		1	0.50	0.40	ug/L	03/10/2022 2202
1,2-Dibromoethane (EDB)	ND		1	0.50	0.40	ug/L	03/10/2022 2202
1,2-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/10/2022 2202
1,3-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/10/2022 2202
1,4-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/10/2022 2202
Dichlorodifluoromethane	ND		1	0.50	0.40	ug/L	03/10/2022 2202
1,1-Dichloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 2202
1,2-Dichloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 2202
1,1-Dichloroethene	ND		1	0.50	0.40	ug/L	03/10/2022 2202
cis-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/10/2022 2202
trans-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/10/2022 2202
1,2-Dichloropropane	ND		1	0.50	0.40	ug/L	03/10/2022 2202
cis-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/10/2022 2202
trans-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/10/2022 2202
Ethylbenzene	ND		1	0.50	0.40	ug/L	03/10/2022 2202
2-Hexanone	ND		1	10	2.0	ug/L	03/10/2022 2202
Isopropylbenzene	ND		1	0.50	0.40	ug/L	03/10/2022 2202
Methyl acetate	ND		1	1.0	0.40	ug/L	03/10/2022 2202
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.40	ug/L	03/10/2022 2202
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	03/10/2022 2202
Methylcyclohexane	ND		1	5.0	0.40	ug/L	03/10/2022 2202
Methylene chloride	ND		1	0.50	0.40	ug/L	03/10/2022 2202
Styrene	ND		1	0.50	0.41	ug/L	03/10/2022 2202
1,1,2,2-Tetrachloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 2202
Tetrachloroethene	ND		1	0.50	0.40	ug/L	03/10/2022 2202
Toluene	ND		1	0.50	0.40	ug/L	03/10/2022 2202
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	03/10/2022 2202
1,2,4-Trichlorobenzene	0.40	J	1	0.50	0.40	ug/L	03/10/2022 2202
1,1,1-Trichloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 2202
1,1,2-Trichloroethane	ND		1	0.50	0.40	ug/L	03/10/2022 2202

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34469-001
Batch: 34469
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.50	0.40	ug/L	03/10/2022 2202
Trichlorofluoromethane	ND		1	0.50	0.40	ug/L	03/10/2022 2202
Vinyl chloride	ND		1	0.50	0.40	ug/L	03/10/2022 2202
Xylenes (total)	ND		1	1.0	0.40	ug/L	03/10/2022 2202

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		108	70-130
1,2-Dichloroethane-d4		117	70-130
Toluene-d8		107	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34469-002
Batch: 34469
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	110		1	111	60-140	03/10/2022 2100
Benzene	50	47		1	94	70-130	03/10/2022 2100
Bromodichloromethane	50	44		1	88	70-130	03/10/2022 2100
Bromoform	50	39		1	78	70-130	03/10/2022 2100
Bromomethane (Methyl bromide)	50	44		1	88	70-130	03/10/2022 2100
2-Butanone (MEK)	100	100		1	102	70-130	03/10/2022 2100
Carbon disulfide	50	46		1	92	70-130	03/10/2022 2100
Carbon tetrachloride	50	46		1	93	70-130	03/10/2022 2100
Chlorobenzene	50	46		1	91	70-130	03/10/2022 2100
Chloroethane	50	44		1	89	70-130	03/10/2022 2100
Chloroform	50	46		1	92	70-130	03/10/2022 2100
Chloromethane (Methyl chloride)	50	44		1	89	60-140	03/10/2022 2100
Cyclohexane	50	52		1	103	70-130	03/10/2022 2100
1,2-Dibromo-3-chloropropane (DBCP)	50	41		1	82	70-130	03/10/2022 2100
Dibromochloromethane	50	41		1	82	70-130	03/10/2022 2100
1,2-Dibromoethane (EDB)	50	45		1	90	70-130	03/10/2022 2100
1,2-Dichlorobenzene	50	45		1	90	70-130	03/10/2022 2100
1,3-Dichlorobenzene	50	45		1	91	70-130	03/10/2022 2100
1,4-Dichlorobenzene	50	45		1	90	70-130	03/10/2022 2100
Dichlorodifluoromethane	50	44		1	89	60-140	03/10/2022 2100
1,1-Dichloroethane	50	46		1	92	70-130	03/10/2022 2100
1,2-Dichloroethane	50	49		1	99	70-130	03/10/2022 2100
1,1-Dichloroethene	50	45		1	91	70-130	03/10/2022 2100
cis-1,2-Dichloroethene	50	46		1	92	70-130	03/10/2022 2100
trans-1,2-Dichloroethene	50	44		1	89	70-130	03/10/2022 2100
1,2-Dichloropropane	50	44		1	89	70-130	03/10/2022 2100
cis-1,3-Dichloropropene	50	46		1	91	70-130	03/10/2022 2100
trans-1,3-Dichloropropene	50	45		1	90	70-130	03/10/2022 2100
Ethylbenzene	50	45		1	91	70-130	03/10/2022 2100
2-Hexanone	100	95		1	95	70-130	03/10/2022 2100
Isopropylbenzene	50	44		1	89	70-130	03/10/2022 2100
Methyl acetate	50	49		1	98	70-130	03/10/2022 2100
Methyl tertiary butyl ether (MTBE)	50	47		1	94	70-130	03/10/2022 2100
4-Methyl-2-pentanone	100	96		1	96	70-130	03/10/2022 2100
Methylcyclohexane	50	46		1	92	70-130	03/10/2022 2100
Methylene chloride	50	44		1	88	70-130	03/10/2022 2100
Styrene	50	45		1	90	70-130	03/10/2022 2100
1,1,2,2-Tetrachloroethane	50	46		1	93	70-130	03/10/2022 2100
Tetrachloroethene	50	45		1	91	70-130	03/10/2022 2100
Toluene	50	47		1	94	70-130	03/10/2022 2100
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	46		1	93	70-130	03/10/2022 2100
1,2,4-Trichlorobenzene	50	43		1	86	70-130	03/10/2022 2100
1,1,1-Trichloroethane	50	46		1	92	70-130	03/10/2022 2100
1,1,2-Trichloroethane	50	46		1	92	70-130	03/10/2022 2100

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34469-002
Batch: 34469
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	44		1	89	70-130	03/10/2022 2100
Trichlorofluoromethane	50	46		1	93	70-130	03/10/2022 2100
Vinyl chloride	50	45		1	90	70-130	03/10/2022 2100
Xylenes (total)	100	91		1	91	70-130	03/10/2022 2100

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		99	70-130
1,2-Dichloroethane-d4		103	70-130
Toluene-d8		97	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34604-001
Batch: 34604
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	10	4.0	ug/L	03/11/2022 2135
Benzene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Bromodichloromethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Bromoform	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Bromomethane (Methyl bromide)	ND		1	0.50	0.40	ug/L	03/11/2022 2135
2-Butanone (MEK)	ND		1	10	2.0	ug/L	03/11/2022 2135
Carbon disulfide	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Carbon tetrachloride	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Chlorobenzene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Chloroethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Chloroform	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Chloromethane (Methyl chloride)	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Cyclohexane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Dibromochloromethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,2-Dibromoethane (EDB)	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,2-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,3-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,4-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Dichlorodifluoromethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,1-Dichloroethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,2-Dichloroethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,1-Dichloroethene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
cis-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
trans-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,2-Dichloropropane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
cis-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
trans-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Ethylbenzene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
2-Hexanone	ND		1	10	2.0	ug/L	03/11/2022 2135
Isopropylbenzene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Methyl acetate	ND		1	1.0	0.40	ug/L	03/11/2022 2135
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.40	ug/L	03/11/2022 2135
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	03/11/2022 2135
Methylcyclohexane	ND		1	5.0	0.40	ug/L	03/11/2022 2135
Methylene chloride	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Styrene	ND		1	0.50	0.41	ug/L	03/11/2022 2135
1,1,2,2-Tetrachloroethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Tetrachloroethene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Toluene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	03/11/2022 2135
1,2,4-Trichlorobenzene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,1,1-Trichloroethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,1,2-Trichloroethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34604-001
Batch: 34604
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Trichlorofluoromethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Vinyl chloride	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Xylenes (total)	ND		1	1.0	0.40	ug/L	03/11/2022 2135

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		92	70-130
1,2-Dichloroethane-d4		108	70-130
Toluene-d8		106	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34604-002
Batch: 34604
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	65		1	65	60-140	03/11/2022 2031
Benzene	50	45		1	91	70-130	03/11/2022 2031
Bromodichloromethane	50	41		1	82	70-130	03/11/2022 2031
Bromoform	50	46		1	91	70-130	03/11/2022 2031
Bromomethane (Methyl bromide)	50	47		1	94	70-130	03/11/2022 2031
2-Butanone (MEK)	100	79		1	79	70-130	03/11/2022 2031
Carbon disulfide	50	44		1	88	70-130	03/11/2022 2031
Carbon tetrachloride	50	42		1	84	70-130	03/11/2022 2031
Chlorobenzene	50	46		1	93	70-130	03/11/2022 2031
Chloroethane	50	43		1	85	70-130	03/11/2022 2031
Chloroform	50	39		1	78	70-130	03/11/2022 2031
Chloromethane (Methyl chloride)	50	45		1	90	60-140	03/11/2022 2031
Cyclohexane	50	41		1	82	70-130	03/11/2022 2031
1,2-Dibromo-3-chloropropane (DBCP)	50	40		1	80	70-130	03/11/2022 2031
Dibromochloromethane	50	45		1	91	70-130	03/11/2022 2031
1,2-Dibromoethane (EDB)	50	47		1	93	70-130	03/11/2022 2031
1,2-Dichlorobenzene	50	47		1	94	70-130	03/11/2022 2031
1,3-Dichlorobenzene	50	48		1	96	70-130	03/11/2022 2031
1,4-Dichlorobenzene	50	46		1	92	70-130	03/11/2022 2031
Dichlorodifluoromethane	50	40		1	80	60-140	03/11/2022 2031
1,1-Dichloroethane	50	41		1	83	70-130	03/11/2022 2031
1,2-Dichloroethane	50	40		1	80	70-130	03/11/2022 2031
1,1-Dichloroethene	50	44		1	88	70-130	03/11/2022 2031
cis-1,2-Dichloroethene	50	42		1	85	70-130	03/11/2022 2031
trans-1,2-Dichloroethene	50	44		1	87	70-130	03/11/2022 2031
1,2-Dichloropropane	50	44		1	89	70-130	03/11/2022 2031
cis-1,3-Dichloropropene	50	46		1	91	70-130	03/11/2022 2031
trans-1,3-Dichloropropene	50	46		1	92	70-130	03/11/2022 2031
Ethylbenzene	50	51		1	102	70-130	03/11/2022 2031
2-Hexanone	100	83		1	83	70-130	03/11/2022 2031
Isopropylbenzene	50	43		1	86	70-130	03/11/2022 2031
Methyl acetate	50	42		1	85	70-130	03/11/2022 2031
Methyl tertiary butyl ether (MTBE)	50	41		1	83	70-130	03/11/2022 2031
4-Methyl-2-pentanone	100	81		1	81	70-130	03/11/2022 2031
Methylcyclohexane	50	51		1	103	70-130	03/11/2022 2031
Methylene chloride	50	39		1	77	70-130	03/11/2022 2031
Styrene	50	48		1	95	70-130	03/11/2022 2031
1,1,2,2-Tetrachloroethane	50	46		1	92	70-130	03/11/2022 2031
Tetrachloroethene	50	52		1	104	70-130	03/11/2022 2031
Toluene	50	51		1	103	70-130	03/11/2022 2031
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	47		1	95	70-130	03/11/2022 2031
1,2,4-Trichlorobenzene	50	46		1	91	70-130	03/11/2022 2031
1,1,1-Trichloroethane	50	43		1	87	70-130	03/11/2022 2031
1,1,2-Trichloroethane	50	46		1	92	70-130	03/11/2022 2031

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34604-002
Batch: 34604
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	44		1	89	70-130	03/11/2022 2031
Trichlorofluoromethane	50	46		1	91	70-130	03/11/2022 2031
Vinyl chloride	50	44		1	87	70-130	03/11/2022 2031
Xylenes (total)	100	92		1	92	70-130	03/11/2022 2031

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		101	70-130
1,2-Dichloroethane-d4		88	70-130
Toluene-d8		107	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Chain of Custody
and
Miscellaneous Documents

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-In Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: AECOM	Billing Information:
Address: 101 RESEARCH DR.	
Report To: SCOTT ROSS	Email To: SCOTT.ROSS@AECOM.COM
Copy To:	Site Collection Info/Address:
Customer Project Name/Number: SHAKESPEARE COMPOSITE STRUCTURES	State: SC / County/City: NEWBERRY / Time Zone Collected: [ ] PT [ ] MT [ ] CT [X] ET
Phone: / Email:	Site/Facility ID #: / Compliance Monitoring? [ ] Yes [X] No
Collected By (print): JAMES LEADBETTER	Purchase Order #: / Quote #: / DW PWS ID #: / DW Location Code:
Collected By (signature):	Turnaround Date Required: STANDARD / Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) / Field Filtered (if applicable): [ ] Yes [X] No / Analysis:

Container Preservative Type **: 3

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: TCL VOC's
MW-12	GW	G	3-2-22	0920				3	X
MW-12-PDB		G		0840				3	X
MW-14		G		1035				3	X
MW-14-PDB		G		0955				3	X
MW-11		G		1140				3	X
MW-11-PDB		G		1100				3	X
MW-25		G		1355				3	X
MW-25-PDB		G		1225				3	X
MW-1-PDB		G		1420				3	X
MW-1		G		1450				3	X

XC02133

CSD

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips:	
Sample pH Acceptable	Y N NA
pH Strips:	
Sulfide Present	Y N NA
Lead Acetate Strips:	

LAB USE ONLY:
Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2683670

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#:
Cooler 1 Temp Upon Receipt: 2.3 oC
Cooler 1 Therm Corr. Factor: ____ oC
Cooler 1 Corrected Temp: ____ oC
Comments:

Relinquished by/Company: (Signature)	Date/Time: 3-2-22 / 1625	Received by/Company: (Signature)	Date/Time:	MTJL LAB USE ONLY
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Table #: / Acctnum: / Template: / Prelogin: / PM: / PB:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time: 3/2/22 1625	

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 1 of: 2

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CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: AECOM	Billing Information:
Address: 101 RESEARCH DR.	
Report To: SCOTT ROSS	Email To: SCOTT.ROSS@AECOM.COM
Copy To:	Site Collection Info/Address:
Customer Project Name/Number: SHAKESPEARE COMPOSITE STRUCTURES	State: / County/City: Time Zone Collected: [ ] PT [ ] MT [ ] CT [ ] ET
Phone: Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [X] No
Collected By (print): JAMES LEPPLART	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: STANDARD Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [X] No Analysis:

Container Preservative Type **: 3

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (E) Unpreserved, (O) Other

Analyses: TCL VOCs

XC02133

CSD

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA – Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips:	
Sample pH Acceptable	Y N NA
pH Strips:	
Sulfide Present	Y N NA
Lead Acetate Strips:	

LAB USE ONLY:
Lab Sample # / Comments:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID (JL)	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	TCL VOCs
DUP-WS 03	GW	—	3-2-22	—				3	X
TB-06		—		—				2	X

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2683669

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#:
Cooler 1 Temp Upon Receipt: 2.9 oC
Cooler 1 Therm Corr. Factor: oC
Cooler 1 Corrected Temp: oC
Comments:

Relinquished by/Company: (Signature)	Date/Time: 3-2-22/1625	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time: 3/2/22 1625

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCl MeOH TSP Other

Non Conformance(s): YES / NO

Page: 2 of: 2

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Pace Analytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: AECOM Cooler Inspected by/date: CBP / 03/02/2022 Lot #: XC82133

Means of receipt: ☑ Pace ☐ Client ☐ UPS ☐ FedEx ☐ Other:

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

2.3 / 2.5 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☑ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (½"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote #

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H_2SO_4, HNO_3, HCl, NaOH using SR # NA. Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is ***no***) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: CBP Date: 03/02/2022

Comments:

Report of Analysis

AECOM
101 Research Drive
Columbia, SC 29203
Attention: Scott Ross

Project Name: Shakespeare Composite Structures

Project Number: 60675505

Lot Number:**XC03052**

Date Completed:03/30/2022

03/31/2022 9:12 PM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
AECOM
Lot Number: XC03052

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

VOA 8260D
The MS for batch 34520 and parent sample XC03052-006 (MW-5i), recovered outside control limits for Acetone, 2-Hexanone and 4-methyl-2-pentanone. The associated LCS and MSD passed recovery acceptance criteria.

RSK-175 MEE
The method blank associated with batch 34421 had Methane detected at a concentration that was above the DL but below the LOQ. All samples associated with this method blank that have detections for Methane have been flagged with a "B".

Dissolved Metals 6010D
The MS/MSD for batch 34234 and parent sample XC03052-002 (MW-7i), recovered outside the lower control limit for dissolved iron. The associated LCS passed acceptance criteria.

Nitrate 300.0
Sample XC03052-002 (MW-7i) was ran as the 21st sample following a LCS due to analyst error. Since this sample was used for the MS/MSD with consistent data and passing associated CCVs and CCBs, the data has been reported since the short holding time had expired.

The low level check standard associated with the original analysis for samples listed below and batch 33988 is outside the acceptance criteria for nitrate. All 3 samples were reanalyzed outside holding time and both runs have bee reported. Also, sample XC03052-004 (MW-7) contained matrix that interfered with the ability to determine the presence of nitrate.
XC03052-002 (MW-7i) (Run 1) (Analysis Batch 33988) Nitrate - N
XC03052-004 (MW-7) (Run 1) (Analysis Batch 33988) Nitrate - N
XC03052-006 (MW-5i) (Run 1) (Analysis Batch 33988) Nitrate - N

The method blank associated with batch 35411 had Nitrate detected at a concentration that was above the DL but below the LOQ. All samples associated with this method blank that have detections for Nitrate have been flagged with a "B".

Nitrite 300.0
The MS/MSD for batch 33985 and parent sample XC03052-002 (MW-7i), recovered outside control limits. The associated LCS passed acceptance criteria.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Sample Summary

AECOM

Lot Number: XC03052

Project Name: Shakespeare Composite Structures

Project Number: 60675505

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	MW-7i-PDB	Aqueous	03/03/2022 0845	03/03/2022
002	MW-7i	Aqueous	03/03/2022 1030	03/03/2022
003	MW-7-PDB	Aqueous	03/03/2022 1100	03/03/2022
004	MW-7	Aqueous	03/03/2022 1155	03/03/2022
005	MW-5i-PDB	Aqueous	03/03/2022 1300	03/03/2022
006	MW-5i	Aqueous	03/03/2022 1355	03/03/2022
007	TB-07	Aqueous	03/03/2022	03/03/2022

(7 samples)

Detection Summary

AECOM

Lot Number: XC03052

Project Name: Shakespeare Composite Structures

Project Number: 60675505

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	MW-7i-PDB	Aqueous	1,1-Dichloroethene	8260D	4.2		ug/L	6
001	MW-7i-PDB	Aqueous	cis-1,2-Dichloroethene	8260D	100		ug/L	6
001	MW-7i-PDB	Aqueous	Trichloroethene	8260D	280		ug/L	7
002	MW-7i	Aqueous	Alkalinity @ pH 4.5 su	SM 2320B-	23		mg CaCO3/L	8
002	MW-7i	Aqueous	Chloride	300.0	5.7		mg/L	8
002	MW-7i	Aqueous	Nitrate - N	300.0	0.28		mg/L	8
002	MW-7i	Aqueous	Nitrite - N	300.0	0.013	JS	mg/L	8
002	MW-7i	Aqueous	Sulfate	300.0	1.0		mg/L	8
002	MW-7i	Aqueous	1,1-Dichloroethene	8260D	3.8		ug/L	9
002	MW-7i	Aqueous	cis-1,2-Dichloroethene	8260D	84		ug/L	9
002	MW-7i	Aqueous	Trichloroethene	8260D	300		ug/L	10
002	MW-7i	Aqueous	Methane	RSK - 175	80	B	ug/L	11
002	MW-7i	Aqueous	Dissolved Iron	6010D	0.061	JS	mg/L	12
002	MW-7i	Aqueous	Dissolved Manganese	6010D	0.11		mg/L	12
002	MW-7i	Aqueous	Iron	6010D	0.23		mg/L	13
002	MW-7i	Aqueous	Manganese	6010D	0.11		mg/L	13
003	MW-7-PDB	Aqueous	Acetone	8260D	6.2	J	ug/L	14
003	MW-7-PDB	Aqueous	1,1-Dichloroethane	8260D	0.43	J	ug/L	14
003	MW-7-PDB	Aqueous	1,1-Dichloroethene	8260D	0.84		ug/L	14
003	MW-7-PDB	Aqueous	cis-1,2-Dichloroethene	8260D	38		ug/L	14
003	MW-7-PDB	Aqueous	Trichloroethene	8260D	17		ug/L	15
003	MW-7-PDB	Aqueous	Vinyl chloride	8260D	0.87		ug/L	15
004	MW-7	Aqueous	Chloride	300.0	14		mg/L	16
004	MW-7	Aqueous	Sulfate	300.0	0.66	J	mg/L	16
004	MW-7	Aqueous	Nitrate - N	300.0	0.015	BHJ	mg/L	16
004	MW-7	Aqueous	TOC	SM 5310C-	1.5		mg/L	16
004	MW-7	Aqueous	1,1-Dichloroethane	8260D	0.55		ug/L	17
004	MW-7	Aqueous	1,1-Dichloroethene	8260D	1.1		ug/L	17
004	MW-7	Aqueous	cis-1,2-Dichloroethene	8260D	48		ug/L	17
004	MW-7	Aqueous	trans-1,2-Dichloroethene	8260D	0.45	J	ug/L	17
004	MW-7	Aqueous	Trichloroethene	8260D	22		ug/L	18
004	MW-7	Aqueous	Vinyl chloride	8260D	1.2		ug/L	18
004	MW-7	Aqueous	Methane	RSK - 175	69	B	ug/L	19
004	MW-7	Aqueous	Dissolved Manganese	6010D	0.22		mg/L	20
004	MW-7	Aqueous	Iron	6010D	0.060	J	mg/L	21
004	MW-7	Aqueous	Manganese	6010D	0.23		mg/L	21
005	MW-5i-PDB	Aqueous	1,2-Dichloroethane	8260D	4.5		ug/L	22
005	MW-5i-PDB	Aqueous	Trichloroethene	8260D	550		ug/L	23
006	MW-5i	Aqueous	Alkalinity @ pH 4.5 su	SM 2320B-	30		mg CaCO3/L	24
006	MW-5i	Aqueous	Chloride	300.0	32		mg/L	24
006	MW-5i	Aqueous	Nitrate - N	300.0	1.1		mg/L	24
006	MW-5i	Aqueous	Sulfate	300.0	0.30	J	mg/L	24
006	MW-5i	Aqueous	1,2-Dichloroethane	8260D	4.2		ug/L	25

Detection Summary (Continued)

Lot Number: XC03052

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
006	MW-5i	Aqueous	cis-1,2-Dichloroethene	8260D	2.2	J	ug/L	25
006	MW-5i	Aqueous	Trichloroethene	8260D	610		ug/L	26
006	MW-5i	Aqueous	Methane	RSK - 175	2.5	BJ	ug/L	27
006	MW-5i	Aqueous	Dissolved Iron	6010D	0.046	J	mg/L	28
006	MW-5i	Aqueous	Dissolved Manganese	6010D	0.052		mg/L	28
006	MW-5i	Aqueous	Manganese	6010D	0.055		mg/L	29

(49 detections)

Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC03052-001
Description: MW-7i-PDB
Matrix: Aqueous
Date Sampled: 03/03/2022 0845
Project Name: Shakespeare Composite
Date Received: 03/03/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	5	03/11/2022 1724	BWS		34520

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		50	20	ug/L	1
Benzene	71-43-2	8260D	ND		2.5	2.0	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		2.5	2.0	ug/L	1
Bromoform	75-25-2	8260D	ND		2.5	2.0	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.5	2.0	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		50	10	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		2.5	2.0	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		2.5	2.0	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		2.5	2.0	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.5	2.0	ug/L	1
Chloroform	67-66-3	8260D	ND		2.5	2.0	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		2.5	2.0	ug/L	1
Cyclohexane	110-82-7	8260D	ND		2.5	2.0	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		2.5	2.0	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		2.5	2.0	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		2.5	2.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		2.5	2.0	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		2.5	2.0	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		2.5	2.0	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.5	2.0	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		2.5	2.0	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		2.5	2.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	4.2		2.5	2.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	100		2.5	2.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		2.5	2.0	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		2.5	2.0	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		2.5	2.0	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		2.5	2.0	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		2.5	2.0	ug/L	1
2-Hexanone	591-78-6	8260D	ND		50	10	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		2.5	2.0	ug/L	1
Methyl acetate	79-20-9	8260D	ND		5.0	2.0	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		2.5	2.0	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		50	10	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		25	2.0	ug/L	1
Methylene chloride	75-09-2	8260D	ND		2.5	2.0	ug/L	1
Styrene	100-42-5	8260D	ND		2.5	2.1	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		2.5	2.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		2.5	2.0	ug/L	1
Toluene	108-88-3	8260D	ND		2.5	2.0	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		5.0	2.1	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		2.5	2.0	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		2.5	2.0	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		2.5	2.0	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC03052-001
Description: MW-7i-PDB
Matrix: Aqueous
Date Sampled: 03/03/2022 0845
Project Name: Shakespeare Composite
Date Received: 03/03/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	5	03/11/2022 1724	BWS		34520

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	280		2.5	2.0	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		2.5	2.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		2.5	2.0	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		5.0	2.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		91	70-130
1,2-Dichloroethane-d4		117	70-130
Toluene-d8		107	70-130

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DL = Detection Limit
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ND = Not detected at or above the DL
N = Recovery is out of criteria
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Inorganic non-metals

Client: AECOM
Laboratory ID: XC03052-002
Description: MW-7i
Matrix: Aqueous
Date Sampled: 03/03/2022 1030
Project Name: Shakespeare Composite
Date Received: 03/03/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity @) SM 2320B-2011	1	03/06/2022 1642	TAD		33993
1		(Chloride) 300.0	1	03/04/2022 1620	YCB		33975
1		(Ferrous Iron) SM 3500-Fe B-2011	1	03/03/2022 2333	TAD		33727
1		(Nitrate - N) 300.0	1	03/04/2022 1620	YCB		33988
1		(Nitrite - N) 300.0	1	03/04/2022 1620	YCB		33985
1		(Sulfate) 300.0	1	03/04/2022 1620	YCB		33982
1		(TOC) SM 5310C-2014	1	03/12/2022 1905	DMA		34637

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity @ pH 4.5 su		SM 2320B-2011	23		20	20	mg CaCO3/L	1
Chloride		300.0	5.7		1.0	0.25	mg/L	1
Ferrous Iron		SM 3500-Fe B-2	ND		0.050	0.050	mg/L	1
Nitrate - N		300.0	0.28		0.020	0.0050	mg/L	1
Nitrite - N		300.0	0.013	JS	0.020	0.0050	mg/L	1
Sulfate		300.0	1.0		1.0	0.25	mg/L	1
TOC		SM 5310C-2014	ND		1.0	1.0	mg/L	1

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC03052-002
Description: MW-7i
Matrix: Aqueous
Date Sampled: 03/03/2022 1030
Project Name: Shakespeare Composite
Date Received: 03/03/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	5	03/11/2022 1749	BWS		34520

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		50	20	ug/L	1
Benzene	71-43-2	8260D	ND		2.5	2.0	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		2.5	2.0	ug/L	1
Bromoform	75-25-2	8260D	ND		2.5	2.0	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.5	2.0	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		50	10	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		2.5	2.0	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		2.5	2.0	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		2.5	2.0	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.5	2.0	ug/L	1
Chloroform	67-66-3	8260D	ND		2.5	2.0	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		2.5	2.0	ug/L	1
Cyclohexane	110-82-7	8260D	ND		2.5	2.0	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		2.5	2.0	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		2.5	2.0	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		2.5	2.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		2.5	2.0	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		2.5	2.0	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		2.5	2.0	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.5	2.0	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		2.5	2.0	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		2.5	2.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	3.8		2.5	2.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	84		2.5	2.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		2.5	2.0	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		2.5	2.0	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		2.5	2.0	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		2.5	2.0	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		2.5	2.0	ug/L	1
2-Hexanone	591-78-6	8260D	ND		50	10	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		2.5	2.0	ug/L	1
Methyl acetate	79-20-9	8260D	ND		5.0	2.0	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		2.5	2.0	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		50	10	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		25	2.0	ug/L	1
Methylene chloride	75-09-2	8260D	ND		2.5	2.0	ug/L	1
Styrene	100-42-5	8260D	ND		2.5	2.1	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		2.5	2.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		2.5	2.0	ug/L	1
Toluene	108-88-3	8260D	ND		2.5	2.0	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		5.0	2.1	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		2.5	2.0	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		2.5	2.0	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		2.5	2.0	ug/L	1

LOQ = Limit of Quantitation
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DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC03052-002
Description: MW-7i
Matrix: Aqueous
Date Sampled: 03/03/2022 1030
Project Name: Shakespeare Composite
Date Received: 03/03/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	5	03/11/2022 1749	BWS		34520

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	300		2.5	2.0	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		2.5	2.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		2.5	2.0	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		5.0	2.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		89	70-130
1,2-Dichloroethane-d4		117	70-130
Toluene-d8		107	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Dissolved Gases

Client: AECOM
Laboratory ID: XC03052-002
Description: MW-7i
Matrix: Aqueous
Date Sampled: 03/03/2022 1030
Project Name: Shakespeare Composite
Date Received: 03/03/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	03/10/2022 1647	JM1		34421

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	80	B	10	2.5	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
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Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
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J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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ICP-AES Metals

Client: AECOM
Laboratory ID: XC03052-002
Description: MW-7i
Matrix: Aqueous
Date Sampled: 03/03/2022 1030
Project Name: Shakespeare Composite
Date Received: 03/03/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/11/2022 2308	KSH2	03/10/2022 1012	34234
2	3005A	6010D	1	03/14/2022 1624	KSH2	03/10/2022 1012	34234

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Dissolved Iron	7439-89-6	6010D	0.061	JS	0.10	0.040	mg/L	2
Dissolved Manganese	7439-96-5	6010D	0.11		0.015	0.0019	mg/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
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Metals

Client: AECOM
Laboratory ID: XC03052-002
Description: MW-7i
Matrix: Aqueous
Date Sampled: 03/03/2022 1030
Project Name: Shakespeare Composite
Date Received: 03/03/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/11/2022 2056	KSH2	03/10/2022 1012	34232

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Iron	7439-89-6	6010D	0.23		0.10	0.040	mg/L	1
Manganese	7439-96-5	6010D	0.11		0.015	0.0019	mg/L	1

LOQ = Limit of Quantitation
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E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
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P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC03052-003
Description: MW-7-PDB
Matrix: Aqueous
Date Sampled: 03/03/2022 1100
Project Name: Shakespeare Composite
Date Received: 03/03/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 1520	BWS		34520

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	6.2	J	10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.43	J	0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.84		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	38		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
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H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC03052-003
Description: MW-7-PDB
Matrix: Aqueous
Date Sampled: 03/03/2022 1100
Project Name: Shakespeare Composite
Date Received: 03/03/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 1520	BWS		34520

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	17		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	0.87		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		88	70-130
1,2-Dichloroethane-d4		117	70-130
Toluene-d8		104	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
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Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
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Inorganic non-metals

Client: AECOM
Laboratory ID: XC03052-004
Description: MW-7
Matrix: Aqueous
Date Sampled: 03/03/2022 1155
Project Name: Shakespeare Composite
Date Received: 03/03/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity @) SM 2320B-2011	1	03/06/2022 1647	TAD		33993
1		(Chloride) 300.0	1	03/04/2022 1716	YCB		33975
1		(Ferrous Iron) SM 3500-Fe B-2011	1	03/03/2022 2334	TAD		33727
1		(Nitrate - N) 300.0	1	03/04/2022 1716	YCB		33988
2		(Nitrate - N) 300.0	1	03/18/2022 0737	CAW		35422
1		(Nitrite - N) 300.0	1	03/04/2022 1716	YCB		33985
1		(Sulfate) 300.0	1	03/04/2022 1716	YCB		33982
3		(TOC) SM 5310C-2014	1	03/28/2022 2029	DMA		36304

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity @ pH 4.5 su		SM 2320B-2011	ND		20	20	mg CaCO3/L	1
Chloride		300.0	14		1.0	0.25	mg/L	1
Ferrous Iron		SM 3500-Fe B-2	ND		0.050	0.050	mg/L	1
Nitrite - N		300.0	ND		0.020	0.0050	mg/L	1
Nitrate - N		300.0	ND		0.020	0.0050	mg/L	1
Sulfate		300.0	0.66	J	1.0	0.25	mg/L	1
Nitrate - N		300.0	0.015	BHJ	0.020	0.0050	mg/L	2
TOC		SM 5310C-2014	1.5		1.0	1.0	mg/L	3

LOQ = Limit of Quantitation
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC03052-004
Description: MW-7
Matrix: Aqueous
Date Sampled: 03/03/2022 1155
Project Name: Shakespeare Composite
Date Received: 03/03/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 1545	BWS		34520

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	0.55		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	1.1		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	48		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	0.45	J	0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
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DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC03052-004
Description: MW-7
Matrix: Aqueous
Date Sampled: 03/03/2022 1155
Project Name: Shakespeare Composite
Date Received: 03/03/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 1545	BWS		34520

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	22		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	1.2		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		93	70-130
1,2-Dichloroethane-d4		116	70-130
Toluene-d8		107	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
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S = MS/MSD failure

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Dissolved Gases

Client: AECOM
Laboratory ID: XC03052-004
Description: MW-7
Matrix: Aqueous
Date Sampled: 03/03/2022 1155
Project Name: Shakespeare Composite
Date Received: 03/03/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	03/10/2022 1703	JM1		34421

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	69	B	10	2.5	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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ICP-AES Metals

Client: AECOM
Laboratory ID: XC03052-004
Description: MW-7
Matrix: Aqueous
Date Sampled: 03/03/2022 1155
Project Name: Shakespeare Composite
Date Received: 03/03/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/11/2022 2339	KSH2	03/10/2022 1012	34234
2	3005A	6010D	1	03/14/2022 1646	KSH2	03/10/2022 1012	34234

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Dissolved Iron	7439-89-6	6010D	ND		0.10	0.040	mg/L	2
Dissolved Manganese	7439-96-5	6010D	0.22		0.015	0.0019	mg/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
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L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Metals

Client: AECOM
Laboratory ID: XC03052-004
Description: MW-7
Matrix: Aqueous
Date Sampled: 03/03/2022 1155
Project Name: Shakespeare Composite
Date Received: 03/03/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/11/2022 2118	KSH2	03/10/2022 1012	34232

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Iron	7439-89-6	6010D	0.060	J	0.10	0.040	mg/L	1
Manganese	7439-96-5	6010D	0.23		0.015	0.0019	mg/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC03052-005
Description: MW-5i-PDB
Matrix: Aqueous
Date Sampled: 03/03/2022 1300
Project Name: Shakespeare Composite
Date Received: 03/03/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	5	03/11/2022 1814	BWS		34520

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		50	20	ug/L	1
Benzene	71-43-2	8260D	ND		2.5	2.0	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		2.5	2.0	ug/L	1
Bromoform	75-25-2	8260D	ND		2.5	2.0	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.5	2.0	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		50	10	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		2.5	2.0	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		2.5	2.0	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		2.5	2.0	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.5	2.0	ug/L	1
Chloroform	67-66-3	8260D	ND		2.5	2.0	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		2.5	2.0	ug/L	1
Cyclohexane	110-82-7	8260D	ND		2.5	2.0	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		2.5	2.0	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		2.5	2.0	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		2.5	2.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		2.5	2.0	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		2.5	2.0	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		2.5	2.0	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.5	2.0	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		2.5	2.0	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	4.5		2.5	2.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		2.5	2.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		2.5	2.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		2.5	2.0	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		2.5	2.0	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		2.5	2.0	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		2.5	2.0	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		2.5	2.0	ug/L	1
2-Hexanone	591-78-6	8260D	ND		50	10	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		2.5	2.0	ug/L	1
Methyl acetate	79-20-9	8260D	ND		5.0	2.0	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		2.5	2.0	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		50	10	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		25	2.0	ug/L	1
Methylene chloride	75-09-2	8260D	ND		2.5	2.0	ug/L	1
Styrene	100-42-5	8260D	ND		2.5	2.1	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		2.5	2.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		2.5	2.0	ug/L	1
Toluene	108-88-3	8260D	ND		2.5	2.0	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		5.0	2.1	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		2.5	2.0	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		2.5	2.0	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		2.5	2.0	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC03052-005
Description: MW-5i-PDB
Matrix: Aqueous
Date Sampled: 03/03/2022 1300
Project Name: Shakespeare Composite
Date Received: 03/03/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	5	03/11/2022 1814	BWS		34520

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	550		2.5	2.0	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		2.5	2.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		2.5	2.0	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		5.0	2.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		90	70-130
1,2-Dichloroethane-d4		120	70-130
Toluene-d8		107	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
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Inorganic non-metals

Client: AECOM
Laboratory ID: XC03052-006
Description: MW-5i
Matrix: Aqueous
Date Sampled: 03/03/2022 1355
Project Name: Shakespeare Composite
Date Received: 03/03/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Alkalinity @) SM 2320B-2011	1	03/06/2022 1653	TAD		33993
1		(Chloride) 300.0	1	03/04/2022 1735	YCB		33975
1		(Ferrous Iron) SM 3500-Fe B-2011	1	03/03/2022 2336	TAD		33727
1		(Nitrate - N) 300.0	1	03/04/2022 1735	YCB		33988
1		(Nitrite - N) 300.0	1	03/04/2022 1735	YCB		33985
1		(Sulfate) 300.0	1	03/04/2022 1735	YCB		33982
1		(TOC) SM 5310C-2014	1	03/12/2022 1956	DMA		34637

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity @ pH 4.5 su		SM 2320B-2011	30		20	20	mg CaCO3/L	1
Chloride		300.0	32		1.0	0.25	mg/L	1
Ferrous Iron		SM 3500-Fe B-2	ND		0.050	0.050	mg/L	1
Nitrate - N		300.0	1.1		0.020	0.0050	mg/L	1
Nitrite - N		300.0	ND		0.020	0.0050	mg/L	1
Sulfate		300.0	0.30	J	1.0	0.25	mg/L	1
TOC		SM 5310C-2014	ND		1.0	1.0	mg/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
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ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC03052-006
Description: MW-5i
Matrix: Aqueous
Date Sampled: 03/03/2022 1355
Project Name: Shakespeare Composite
Date Received: 03/03/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	5	03/11/2022 1839	BWS		34520

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND	S	50	20	ug/L	1
Benzene	71-43-2	8260D	ND		2.5	2.0	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		2.5	2.0	ug/L	1
Bromoform	75-25-2	8260D	ND		2.5	2.0	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.5	2.0	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		50	10	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		2.5	2.0	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		2.5	2.0	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		2.5	2.0	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.5	2.0	ug/L	1
Chloroform	67-66-3	8260D	ND		2.5	2.0	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		2.5	2.0	ug/L	1
Cyclohexane	110-82-7	8260D	ND		2.5	2.0	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		2.5	2.0	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		2.5	2.0	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		2.5	2.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		2.5	2.0	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		2.5	2.0	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		2.5	2.0	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.5	2.0	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		2.5	2.0	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	4.2		2.5	2.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		2.5	2.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	2.2	J	2.5	2.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		2.5	2.0	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		2.5	2.0	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		2.5	2.0	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		2.5	2.0	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		2.5	2.0	ug/L	1
2-Hexanone	591-78-6	8260D	ND	S	50	10	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		2.5	2.0	ug/L	1
Methyl acetate	79-20-9	8260D	ND		5.0	2.0	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		2.5	2.0	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND	S	50	10	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		25	2.0	ug/L	1
Methylene chloride	75-09-2	8260D	ND		2.5	2.0	ug/L	1
Styrene	100-42-5	8260D	ND		2.5	2.1	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		2.5	2.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		2.5	2.0	ug/L	1
Toluene	108-88-3	8260D	ND		2.5	2.0	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		5.0	2.1	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		2.5	2.0	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		2.5	2.0	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		2.5	2.0	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC03052-006
Description: MW-5i
Matrix: Aqueous
Date Sampled: 03/03/2022 1355
Project Name: Shakespeare Composite
Date Received: 03/03/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	5	03/11/2022 1839	BWS		34520

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	610		2.5	2.0	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		2.5	2.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		2.5	2.0	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		5.0	2.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		92	70-130
1,2-Dichloroethane-d4		122	70-130
Toluene-d8		108	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Dissolved Gases

Client: AECOM
Laboratory ID: XC03052-006
Description: MW-5i
Matrix: Aqueous
Date Sampled: 03/03/2022 1355
Project Name: Shakespeare Composite
Date Received: 03/03/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	03/10/2022 1719	JM1		34421

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	2.5	BJ	10	2.5	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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ICP-AES Metals

Client: AECOM
Laboratory ID: XC03052-006
Description: MW-5i
Matrix: Aqueous
Date Sampled: 03/03/2022 1355
Project Name: Shakespeare Composite
Date Received: 03/03/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/11/2022 2343	KSH2	03/10/2022 1012	34234
2	3005A	6010D	1	03/14/2022 1651	KSH2	03/10/2022 1012	34234

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Dissolved Iron	7439-89-6	6010D	0.046	J	0.10	0.040	mg/L	2
Dissolved Manganese	7439-96-5	6010D	0.052		0.015	0.0019	mg/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Metals

Client: AECOM
Laboratory ID: XC03052-006
Description: MW-5i
Matrix: Aqueous
Date Sampled: 03/03/2022 1355
Project Name: Shakespeare Composite
Date Received: 03/03/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/11/2022 2123	KSH2	03/10/2022 1012	34232

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Iron	7439-89-6	6010D	ND		0.10	0.040	mg/L	1
Manganese	7439-96-5	6010D	0.055		0.015	0.0019	mg/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC03052-007
Description: TB-07
Matrix: Aqueous
Date Sampled: 03/03/2022
Project Name: Shakespeare Composite
Date Received: 03/03/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 1136	BWS		34520

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC03052-007
Description: TB-07
Matrix: Aqueous
Date Sampled: 03/03/2022
Project Name: Shakespeare Composite
Date Received: 03/03/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/11/2022 1136	BWS		34520

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		94	70-130
1,2-Dichloroethane-d4		107	70-130
Toluene-d8		106	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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QC Summary

Inorganic non-metals - MB

Sample ID: XQ33727-001
Batch: 33727
Analytical Method: SM 3500-Fe B-2011
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Ferrous Iron	ND		1	0.050	0.050	mg/L	03/03/2022 2331

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ33727-002
Batch: 33727
Analytical Method: SM 3500-Fe B-2011
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Ferrous Iron	1.0	1.1		1	105	90-110	03/03/2022 2331

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCSD

Sample ID: XQ33727-003
Batch: 33727
Analytical Method: SM 3500-Fe B-2011
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Ferrous Iron	1.0	1.1		1	105	0.00	90-110	20	03/03/2022 2332

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MS

Sample ID: XC03052-004MS
Batch: 33727
Analytical Method: SM 3500-Fe B-2011
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Ferrous Iron	ND	1.0	0.85		1	85	70-130	03/03/2022 2334

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MSD

Sample ID: XC03052-004MD
Batch: 33727
Analytical Method: SM 3500-Fe B-2011
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Ferrous Iron	ND	1.0	0.87		1	87	2.4	70-130	20	03/03/2022 2335

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MB

Sample ID: XQ33975-001
Batch: 33975
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Chloride	ND		1	1.0	0.25	mg/L	03/04/2022 1523

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ33975-002
Batch: 33975
Analytical Method: 300.0

Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Chloride	20	20		1	100	90-110	03/04/2022 1601

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MS

Sample ID: XC03052-002MS
Batch: 33975
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Chloride	5.7	10	15		1	98	90-110	03/04/2022 1639

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MSD

Sample ID: XC03052-002MD
Batch: 33975
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Chloride	5.7	10	16		1	100	1.4	90-110	20	03/04/2022 1657

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MB

Sample ID: XQ33982-001
Batch: 33982
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Sulfate	ND		1	1.0	0.25	mg/L	03/04/2022 1523

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ33982-002
Batch: 33982
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Sulfate	20	20		1	100	90-110	03/04/2022 1601

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MS

Sample ID: XC03052-002MS
Batch: 33982
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Sulfate	1.0	10	11		1	96	90-110	03/04/2022 1639

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MSD

Sample ID: XC03052-002MD
Batch: 33982
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Sulfate	1.0	10	11		1	98	2.6	90-110	20	03/04/2022 1657

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MB

Sample ID: XQ33985-001
Batch: 33985
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Nitrite - N	ND		1	0.020	0.0050	mg/L	03/04/2022 1523

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ33985-002
Batch: 33985
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Nitrite - N	0.80	0.80		1	100	90-110	03/04/2022 1601

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MS

Sample ID: XC03052-002MS
Batch: 33985
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Nitrite - N	0.013	0.80	0.40	N	1	48	90-110	03/04/2022 1639

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MSD

Sample ID: XC03052-002MD
Batch: 33985
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Nitrite - N	0.013	0.80	0.41	N	1	50	2.3	90-110	20	03/04/2022 1657

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MB

Sample ID: XQ33988-001
Batch: 33988
Analytical Method: 300.0

Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Nitrate - N	ND		1	0.020	0.0050	mg/L	03/04/2022 1523

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - LCS

Sample ID: XQ33988-002
Batch: 33988
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Nitrate - N	0.80	0.81		1	101	90-110	03/04/2022 1601

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MS

Sample ID: XC03052-002MS
Batch: 33988
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Nitrate - N	0.28	0.40	0.67		1	97	90-110	03/04/2022 1639

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MSD

Sample ID: XC03052-002MD
Batch: 33988
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Nitrate - N	0.28	0.40	0.68		1	100	1.5	90-110	20	03/04/2022 1657

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - LCS

Sample ID: XQ33993-002
Batch: 33993
Analytical Method: SM 2320B-2011

Matrix: Aqueous

Parameter	Spike Amount (mg CaCO3/L)	Result (mg CaCO3/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Alkalinity @ pH 4.5 su	100	110		1	110	90-110	03/06/2022 1617

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MB

Sample ID: XQ34637-001
Batch: 34637
Analytical Method: SM 5310C-2014

Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
TOC	ND		1	1.0	1.0	mg/L	03/12/2022 1721

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ34637-002
Batch: 34637
Analytical Method: SM 5310C-2014

Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
TOC	20	19		1	94	90-110	03/12/2022 1734

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MB

Sample ID: XQ35422-001
Batch: 35422
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Nitrate - N	0.0094	J	1	0.020	0.0050	mg/L	03/18/2022 0447

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ35422-002
Batch: 35422
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Nitrate - N	0.80	0.79		1	98	90-110	03/18/2022 0659

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MS

Sample ID: XC03052-002MS
Batch: 35422
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Nitrate - N	0.29	0.40	0.69		1	100	90-110	03/18/2022 0640

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MSD

Sample ID: XC03052-002MD
Batch: 35422
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Nitrate - N	0.29	0.40	0.68		1	99	0.71	90-110	20	03/18/2022 0718

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MB

Sample ID: XQ36304-001
Batch: 36304
Analytical Method: SM 5310C-2014
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
TOC	ND		1	1.0	1.0	mg/L	03/28/2022 2003

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ36304-002
Batch: 36304
Analytical Method: SM 5310C-2014
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
TOC	20	19		1	94	90-110	03/28/2022 2015

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MS

Sample ID: XC03052-004MS
Batch: 36304
Analytical Method: SM 5310C-2014
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
TOC	1.5	50	47		1	91	70-130	03/28/2022 2042

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MSD

Sample ID: XC03052-004MD
Batch: 36304
Analytical Method: SM 5310C-2014

Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
TOC	1.5	50	47		1	90	0.94	70-130	20	03/28/2022 2055

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34520-001
Batch: 34520
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	10	4.0	ug/L	03/11/2022 1010
Benzene	ND		1	0.50	0.40	ug/L	03/11/2022 1010
Bromodichloromethane	ND		1	0.50	0.40	ug/L	03/11/2022 1010
Bromoform	ND		1	0.50	0.40	ug/L	03/11/2022 1010
Bromomethane (Methyl bromide)	ND		1	0.50	0.40	ug/L	03/11/2022 1010
2-Butanone (MEK)	ND		1	10	2.0	ug/L	03/11/2022 1010
Carbon disulfide	ND		1	0.50	0.40	ug/L	03/11/2022 1010
Carbon tetrachloride	ND		1	0.50	0.40	ug/L	03/11/2022 1010
Chlorobenzene	ND		1	0.50	0.40	ug/L	03/11/2022 1010
Chloroethane	ND		1	0.50	0.40	ug/L	03/11/2022 1010
Chloroform	ND		1	0.50	0.40	ug/L	03/11/2022 1010
Chloromethane (Methyl chloride)	ND		1	0.50	0.40	ug/L	03/11/2022 1010
Cyclohexane	ND		1	0.50	0.40	ug/L	03/11/2022 1010
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.50	0.40	ug/L	03/11/2022 1010
Dibromochloromethane	ND		1	0.50	0.40	ug/L	03/11/2022 1010
1,2-Dibromoethane (EDB)	ND		1	0.50	0.40	ug/L	03/11/2022 1010
1,2-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/11/2022 1010
1,3-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/11/2022 1010
1,4-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/11/2022 1010
Dichlorodifluoromethane	ND		1	0.50	0.40	ug/L	03/11/2022 1010
1,1-Dichloroethane	ND		1	0.50	0.40	ug/L	03/11/2022 1010
1,2-Dichloroethane	ND		1	0.50	0.40	ug/L	03/11/2022 1010
1,1-Dichloroethene	ND		1	0.50	0.40	ug/L	03/11/2022 1010
cis-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/11/2022 1010
trans-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/11/2022 1010
1,2-Dichloropropane	ND		1	0.50	0.40	ug/L	03/11/2022 1010
cis-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/11/2022 1010
trans-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/11/2022 1010
Ethylbenzene	ND		1	0.50	0.40	ug/L	03/11/2022 1010
2-Hexanone	ND		1	10	2.0	ug/L	03/11/2022 1010
Isopropylbenzene	ND		1	0.50	0.40	ug/L	03/11/2022 1010
Methyl acetate	ND		1	1.0	0.40	ug/L	03/11/2022 1010
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.40	ug/L	03/11/2022 1010
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	03/11/2022 1010
Methylcyclohexane	ND		1	5.0	0.40	ug/L	03/11/2022 1010
Methylene chloride	ND		1	0.50	0.40	ug/L	03/11/2022 1010
Styrene	ND		1	0.50	0.41	ug/L	03/11/2022 1010
1,1,2,2-Tetrachloroethane	ND		1	0.50	0.40	ug/L	03/11/2022 1010
Tetrachloroethene	ND		1	0.50	0.40	ug/L	03/11/2022 1010
Toluene	ND		1	0.50	0.40	ug/L	03/11/2022 1010
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	03/11/2022 1010
1,2,4-Trichlorobenzene	ND		1	0.50	0.40	ug/L	03/11/2022 1010
1,1,1-Trichloroethane	ND		1	0.50	0.40	ug/L	03/11/2022 1010
1,1,2-Trichloroethane	ND		1	0.50	0.40	ug/L	03/11/2022 1010

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34520-001
Batch: 34520
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.50	0.40	ug/L	03/11/2022 1010
Trichlorofluoromethane	ND		1	0.50	0.40	ug/L	03/11/2022 1010
Vinyl chloride	ND		1	0.50	0.40	ug/L	03/11/2022 1010
Xylenes (total)	ND		1	1.0	0.40	ug/L	03/11/2022 1010

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		93	70-130
1,2-Dichloroethane-d4		103	70-130
Toluene-d8		103	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
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N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
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Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34520-002
Batch: 34520
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	120		1	124	60-140	03/11/2022 0920
Benzene	50	50		1	101	70-130	03/11/2022 0920
Bromodichloromethane	50	45		1	91	70-130	03/11/2022 0920
Bromoform	50	44		1	87	70-130	03/11/2022 0920
Bromomethane (Methyl bromide)	50	57		1	114	70-130	03/11/2022 0920
2-Butanone (MEK)	100	110		1	112	70-130	03/11/2022 0920
Carbon disulfide	50	53		1	106	70-130	03/11/2022 0920
Carbon tetrachloride	50	48		1	96	70-130	03/11/2022 0920
Chlorobenzene	50	48		1	97	70-130	03/11/2022 0920
Chloroethane	50	51		1	101	70-130	03/11/2022 0920
Chloroform	50	46		1	93	70-130	03/11/2022 0920
Chloromethane (Methyl chloride)	50	54		1	108	60-140	03/11/2022 0920
Cyclohexane	50	50		1	101	70-130	03/11/2022 0920
1,2-Dibromo-3-chloropropane (DBCP)	50	46		1	91	70-130	03/11/2022 0920
Dibromochloromethane	50	46		1	92	70-130	03/11/2022 0920
1,2-Dibromoethane (EDB)	50	48		1	96	70-130	03/11/2022 0920
1,2-Dichlorobenzene	50	49		1	99	70-130	03/11/2022 0920
1,3-Dichlorobenzene	50	49		1	99	70-130	03/11/2022 0920
1,4-Dichlorobenzene	50	47		1	94	70-130	03/11/2022 0920
Dichlorodifluoromethane	50	48		1	96	60-140	03/11/2022 0920
1,1-Dichloroethane	50	50		1	100	70-130	03/11/2022 0920
1,2-Dichloroethane	50	45		1	89	70-130	03/11/2022 0920
1,1-Dichloroethene	50	53		1	107	70-130	03/11/2022 0920
cis-1,2-Dichloroethene	50	51		1	102	70-130	03/11/2022 0920
trans-1,2-Dichloroethene	50	52		1	105	70-130	03/11/2022 0920
1,2-Dichloropropane	50	48		1	96	70-130	03/11/2022 0920
cis-1,3-Dichloropropene	50	50		1	100	70-130	03/11/2022 0920
trans-1,3-Dichloropropene	50	49		1	97	70-130	03/11/2022 0920
Ethylbenzene	50	53		1	106	70-130	03/11/2022 0920
2-Hexanone	100	95		1	95	70-130	03/11/2022 0920
Isopropylbenzene	50	47		1	94	70-130	03/11/2022 0920
Methyl acetate	50	46		1	92	70-130	03/11/2022 0920
Methyl tertiary butyl ether (MTBE)	50	52		1	105	70-130	03/11/2022 0920
4-Methyl-2-pentanone	100	87		1	87	70-130	03/11/2022 0920
Methylcyclohexane	50	58		1	117	70-130	03/11/2022 0920
Methylene chloride	50	46		1	92	70-130	03/11/2022 0920
Styrene	50	49		1	98	70-130	03/11/2022 0920
1,1,2,2-Tetrachloroethane	50	48		1	95	70-130	03/11/2022 0920
Tetrachloroethene	50	53		1	106	70-130	03/11/2022 0920
Toluene	50	54		1	108	70-130	03/11/2022 0920
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	57		1	114	70-130	03/11/2022 0920
1,2,4-Trichlorobenzene	50	52		1	105	70-130	03/11/2022 0920
1,1,1-Trichloroethane	50	51		1	102	70-130	03/11/2022 0920
1,1,2-Trichloroethane	50	47		1	94	70-130	03/11/2022 0920

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34520-002
Batch: 34520
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	48		1	96	70-130	03/11/2022 0920
Trichlorofluoromethane	50	54		1	109	70-130	03/11/2022 0920
Vinyl chloride	50	52		1	104	70-130	03/11/2022 0920
Xylenes (total)	100	98		1	98	70-130	03/11/2022 0920

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		104	70-130
1,2-Dichloroethane-d4		95	70-130
Toluene-d8		109	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - MS

Sample ID: XC03052-006MS
Batch: 34520
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	ND	500	290	N	5	59	60-140	03/11/2022 1903
Benzene	ND	250	250		5	99	70-130	03/11/2022 1903
Bromodichloromethane	ND	250	220		5	86	70-130	03/11/2022 1903
Bromoform	ND	250	200		5	82	70-130	03/11/2022 1903
Bromomethane (Methyl bromide)	ND	250	310		5	125	70-130	03/11/2022 1903
2-Butanone (MEK)	ND	500	350		5	70	70-130	03/11/2022 1903
Carbon disulfide	ND	250	270		5	109	70-130	03/11/2022 1903
Carbon tetrachloride	ND	250	250		5	99	70-130	03/11/2022 1903
Chlorobenzene	ND	250	230		5	92	70-130	03/11/2022 1903
Chloroethane	ND	250	280		5	112	70-130	03/11/2022 1903
Chloroform	ND	250	230		5	91	70-130	03/11/2022 1903
Chloromethane (Methyl chloride)	ND	250	300		5	118	60-140	03/11/2022 1903
Cyclohexane	ND	250	260		5	103	70-130	03/11/2022 1903
1,2-Dibromo-3-chloropropane (DBCP)	ND	250	180		5	74	70-130	03/11/2022 1903
Dibromochloromethane	ND	250	220		5	87	70-130	03/11/2022 1903
1,2-Dibromoethane (EDB)	ND	250	220		5	89	70-130	03/11/2022 1903
1,2-Dichlorobenzene	ND	250	230		5	92	70-130	03/11/2022 1903
1,3-Dichlorobenzene	ND	250	230		5	90	70-130	03/11/2022 1903
1,4-Dichlorobenzene	ND	250	220		5	86	70-130	03/11/2022 1903
Dichlorodifluoromethane	ND	250	270		5	109	60-140	03/11/2022 1903
1,1-Dichloroethane	ND	250	240		5	97	70-130	03/11/2022 1903
1,2-Dichloroethane	4.2	250	220		5	87	70-130	03/11/2022 1903
1,1-Dichloroethene	ND	250	270		5	109	70-130	03/11/2022 1903
cis-1,2-Dichloroethene	2.2	250	230		5	93	70-130	03/11/2022 1903
trans-1,2-Dichloroethene	ND	250	260		5	102	70-130	03/11/2022 1903
1,2-Dichloropropane	ND	250	230		5	94	70-130	03/11/2022 1903
cis-1,3-Dichloropropene	ND	250	200		5	81	70-130	03/11/2022 1903
trans-1,3-Dichloropropene	ND	250	210		5	82	70-130	03/11/2022 1903
Ethylbenzene	ND	250	250		5	99	70-130	03/11/2022 1903
2-Hexanone	ND	500	330	N	5	65	70-130	03/11/2022 1903
Isopropylbenzene	ND	250	220		5	86	70-130	03/11/2022 1903
Methyl acetate	ND	250	210		5	85	70-130	03/11/2022 1903
Methyl tertiary butyl ether (MTBE)	ND	250	230		5	93	70-130	03/11/2022 1903
4-Methyl-2-pentanone	ND	500	340	N	5	69	70-130	03/11/2022 1903
Methylcyclohexane	ND	250	290		5	116	70-130	03/11/2022 1903
Methylene chloride	ND	250	230		5	90	70-130	03/11/2022 1903
Styrene	ND	250	230		5	91	70-130	03/11/2022 1903
1,1,2,2-Tetrachloroethane	ND	250	210		5	84	70-130	03/11/2022 1903
Tetrachloroethene	ND	250	260		5	103	70-130	03/11/2022 1903
Toluene	ND	250	250		5	102	70-130	03/11/2022 1903
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	250	300		5	118	70-130	03/11/2022 1903
1,2,4-Trichlorobenzene	ND	250	210		5	86	70-130	03/11/2022 1903
1,1,1-Trichloroethane	ND	250	250		5	101	70-130	03/11/2022 1903
1,1,2-Trichloroethane	ND	250	220		5	89	70-130	03/11/2022 1903

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - MS

Sample ID: XC03052-006MS
Batch: 34520
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	610	250	800		5	78	70-130	03/11/2022 1903
Trichlorofluoromethane	ND	250	310		5	122	70-130	03/11/2022 1903
Vinyl chloride	ND	250	290		5	117	70-130	03/11/2022 1903
Xylenes (total)	ND	500	450		5	89	70-130	03/11/2022 1903

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		107	70-130
1,2-Dichloroethane-d4		102	70-130
Toluene-d8		114	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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Volatile Organic Compounds by GC/MS - MSD

Sample ID: XC03052-006MD
Batch: 34520
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acetone	ND	500	300		5	60	2.8	60-140	20	03/11/2022 1928
Benzene	ND	250	250		5	98	0.83	70-130	20	03/11/2022 1928
Bromodichloromethane	ND	250	210		5	85	1.9	70-130	20	03/11/2022 1928
Bromoform	ND	250	210		5	86	4.9	70-130	20	03/11/2022 1928
Bromomethane (Methyl bromide)	ND	250	290		5	114	8.7	70-130	20	03/11/2022 1928
2-Butanone (MEK)	ND	500	380		5	76	8.1	70-130	20	03/11/2022 1928
Carbon disulfide	ND	250	260		5	104	4.1	70-130	20	03/11/2022 1928
Carbon tetrachloride	ND	250	240		5	96	2.8	70-130	20	03/11/2022 1928
Chlorobenzene	ND	250	240		5	96	4.5	70-130	20	03/11/2022 1928
Chloroethane	ND	250	260		5	104	7.9	70-130	20	03/11/2022 1928
Chloroform	ND	250	220		5	87	4.8	70-130	20	03/11/2022 1928
Chloromethane (Methyl chloride)	ND	250	280		5	111	6.7	60-140	20	03/11/2022 1928
Cyclohexane	ND	250	240		5	96	7.5	70-130	20	03/11/2022 1928
1,2-Dibromo-3-chloropropane (DBCP)	ND	250	200		5	81	9.3	70-130	20	03/11/2022 1928
Dibromochloromethane	ND	250	230		5	91	5.0	70-130	20	03/11/2022 1928
1,2-Dibromoethane (EDB)	ND	250	240		5	95	6.7	70-130	20	03/11/2022 1928
1,2-Dichlorobenzene	ND	250	240		5	96	4.3	70-130	20	03/11/2022 1928
1,3-Dichlorobenzene	ND	250	240		5	97	7.5	70-130	20	03/11/2022 1928
1,4-Dichlorobenzene	ND	250	230		5	92	6.6	70-130	20	03/11/2022 1928
Dichlorodifluoromethane	ND	250	240		5	96	12	60-140	20	03/11/2022 1928
1,1-Dichloroethane	ND	250	230		5	94	3.8	70-130	20	03/11/2022 1928
1,2-Dichloroethane	4.2	250	210		5	82	4.9	70-130	20	03/11/2022 1928
1,1-Dichloroethene	ND	250	260		5	104	4.1	70-130	20	03/11/2022 1928
cis-1,2-Dichloroethene	2.2	250	230		5	92	0.64	70-130	20	03/11/2022 1928
trans-1,2-Dichloroethene	ND	250	240		5	98	4.4	70-130	20	03/11/2022 1928
1,2-Dichloropropane	ND	250	230		5	91	2.7	70-130	20	03/11/2022 1928
cis-1,3-Dichloropropene	ND	250	220		5	86	5.5	70-130	20	03/11/2022 1928
trans-1,3-Dichloropropene	ND	250	230		5	90	9.5	70-130	20	03/11/2022 1928
Ethylbenzene	ND	250	260		5	105	6.0	70-130	20	03/11/2022 1928
2-Hexanone	ND	500	400	+	5	80	21	70-130	20	03/11/2022 1928
Isopropylbenzene	ND	250	230		5	90	4.6	70-130	20	03/11/2022 1928
Methyl acetate	ND	250	210		5	85	0.39	70-130	20	03/11/2022 1928
Methyl tertiary butyl ether (MTBE)	ND	250	220		5	89	3.3	70-130	20	03/11/2022 1928
4-Methyl-2-pentanone	ND	500	370		5	75	8.7	70-130	20	03/11/2022 1928
Methylcyclohexane	ND	250	280		5	113	3.3	70-130	20	03/11/2022 1928
Methylene chloride	ND	250	220		5	87	3.8	70-130	20	03/11/2022 1928
Styrene	ND	250	240		5	97	6.6	70-130	20	03/11/2022 1928
1,1,2,2-Tetrachloroethane	ND	250	230		5	92	9.0	70-130	20	03/11/2022 1928
Tetrachloroethene	ND	250	270		5	109	5.5	70-130	20	03/11/2022 1928
Toluene	ND	250	270		5	108	5.5	70-130	20	03/11/2022 1928
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	250	270		5	108	8.4	70-130	20	03/11/2022 1928
1,2,4-Trichlorobenzene	ND	250	230		5	90	4.9	70-130	20	03/11/2022 1928
1,1,1-Trichloroethane	ND	250	240		5	97	4.5	70-130	20	03/11/2022 1928
1,1,2-Trichloroethane	ND	250	230		5	94	5.4	70-130	20	03/11/2022 1928

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XC03052-006MD
Batch: 34520
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Trichloroethene	610	250	790		5	72	1.9	70-130	20	03/11/2022 1928
Trichlorofluoromethane	ND	250	280		5	114	6.9	70-130	20	03/11/2022 1928
Vinyl chloride	ND	250	270		5	109	7.3	70-130	20	03/11/2022 1928
Xylenes (total)	ND	500	480		5	95	6.4	70-130	20	03/11/2022 1928

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		110	70-130
1,2-Dichloroethane-d4		97	70-130
Toluene-d8		116	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
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P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Dissolved Gases - MB

Sample ID: XQ34421-001
Batch: 34421
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Ethane	ND		1	10	2.5	ug/L	03/10/2022 1439
Ethene	ND		1	10	2.5	ug/L	03/10/2022 1439
Methane	2.5	J	1	10	2.5	ug/L	03/10/2022 1439

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Dissolved Gases - LCS

Sample ID: XQ34421-002
Batch: 34421
Analytical Method: RSK - 175
Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Ethane	550	530		1	96	70-130	03/10/2022 1353
Ethene	520	500		1	98	70-130	03/10/2022 1353
Methane	300	290		1	100	70-130	03/10/2022 1353

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Metals - MB

Sample ID: XQ34232-001
Batch: 34232
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/10/2022 1012

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Iron	ND		1	0.10	0.040	mg/L	03/11/2022 2039
Manganese	ND		1	0.015	0.0019	mg/L	03/11/2022 2039

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Metals - LCS

Sample ID: XQ34232-002
Batch: 34232
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/10/2022 1012

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Iron	20	18		1	91	80-120	03/11/2022 2043
Manganese	2.0	2.0		1	102	80-120	03/11/2022 2043

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Metals - MS

Sample ID: XC03052-002MS
Batch: 34232
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/10/2022 1012

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Iron	0.23	20	19		1	91	75-125	03/11/2022 2101
Manganese	0.11	2.0	2.2		1	106	75-125	03/11/2022 2101

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Metals - MSD

Sample ID: XC03052-002MD
Batch: 34232
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/10/2022 1012

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Iron	0.23	20	19		1	92	0.48	75-125	20	03/11/2022 2105
Manganese	0.11	2.0	2.2		1	104	1.8	75-125	20	03/11/2022 2105

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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ICP-AES Metals - MB

Sample ID: XQ34234-001
Batch: 34234
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/10/2022 1012

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Dissolved Iron	ND		1	0.10	0.040	mg/L	03/14/2022 1607
Dissolved Manganese	ND		1	0.015	0.0019	mg/L	03/11/2022 2300

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
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N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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ICP-AES Metals - LCS

Sample ID: XQ34234-002
Batch: 34234
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/10/2022 1012

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Dissolved Iron	20	22		1	108	80-120	03/14/2022 1620
Dissolved Manganese	2.0	2.1		1	103	80-120	03/11/2022 2304

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
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N = Recovery is out of criteria
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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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ICP-AES Metals - MS

Sample ID: XC03052-002MS
Batch: 34234
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/10/2022 1012

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Dissolved Iron	0.061	20	0.00	N	1	-0.31	75-125	03/15/2022 0000
Dissolved Manganese	0.11	2.0	2.1		1	101	75-125	03/11/2022 2313

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

ICP-AES Metals - MSD

Sample ID: XC03052-002MD
Batch: 34234
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/10/2022 1012

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Dissolved Iron	0.061	20	0.00	N	1	-0.31	0.00	75-125	20	03/15/2022 0000
Dissolved Manganese	0.11	2.0	2.2		1	103	2.6	75-125	20	03/11/2022 2317

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
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+ = RPD is out of criteria

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

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Chain of Custody
and
Miscellaneous Documents

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-In Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: AECOM	Billing Information:
Address: 101 RESEARCH DR.	
Report To: SCOTT ROSS	Email To: SCOTT.ROSS@AECOM.COM
Copy To:	Site Collection Info/Address:
Customer Project Name/Number: SHAKESPEARE COMPOSITE STRUCTURES	State: SC / County/City: NEWBERRY / Time Zone Collected: [ ] PT [ ] MT [ ] CT [X] ET
Phone: 803 201 9662 / Email:	Site/Facility ID #: / Compliance Monitoring? [ ] Yes [X] No
Collected By (print): JAMES LEIGHTON	Purchase Order #: / Quote #: / DW PWS ID #: / DW Location Code:
Collected By (signature):	Turnaround Date Required: STANDARD / Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) / Field Filtered (if applicable): [ ] Yes [X] No / Analysis:

Container Preservative Type **: 3 3 3 1 U U 2

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Lab Project Manager:

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips:	
Sample pH Acceptable	Y N NA
pH Strips:	
Sulfide Present	Y N NA
Lead Acetate Strips:	

LAB USE ONLY:
Lab Sample # / Comments:

XC03052

CSD

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	TCL VOC's	Diss Gases	Ferrous Iron, Mn (J)	Iron, Mn	Dissolved Iron, Mn	NO3, NO2, SO4, ALK	TOC				
MW-7i-PDB	GW	G	3.3.22	0845				3	X										
MW-7i				1030				11	X	X	X	X	X	X	X				
MW-7-PDB				1100				3	X										
MW-7				1155				11	X	X	X	X	X	X	X				
MW-5i-PDB				1300				3	X										
MW-5i				1355				11	X	X	X	X	X	X	X				
TB-07	V	V	V	—				2	X										

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2683667

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#:
Cooler 1 Temp Upon Receipt: 4.3 oC
Cooler 1 Therm Corr. Factor: ____ oC
Cooler 1 Corrected Temp: ____ oC
Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
JA Leighton / AECOM	3-3-22 /		
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature) Karen Williams	Date/Time: 3/3/22 1600

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y (N) NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 1 of: 1

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Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: Aecom Cooler Inspected by/date: KDRW / 03/03/2022 Lot #: XC030352

Means of receipt: ☐ Pace ☑ Client ☐ UPS ☐ FedEx ☐ Other:

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: 21-852 Chlorine Strip ID: NA Tested by: KDRW

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

4.3 / 4.3 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☑ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc...) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote #

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L. (If #19 is ***no***) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: KDRW Date: 03/03/2022

Comments:

Report of Analysis

AECOM
101 Research Drive
Columbia, SC 29203
Attention: Scott Ross

Project Name: Shakespeare Composite Structures

Project Number: 60675505

Lot Number:**XC04096**

Date Completed:03/30/2022

04/04/2022 12:11 AM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
AECOM
Lot Number: XC04096

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

Nitrate
The LCS associated with the sample, XC04096-002 (MW-8) Run 2, and its associated matrix spike were analyzed out of order. Because the sample is unspiked and the matrix spike contains targets at half the concentration of the LCS, it was determined that they ran in the order of XC03052-002, MS then LCS. The recoveries of the targets in the LCS and MS support the run order. Both runs have been reported since the Run 2 was outside the holding time.

The low level check standard recovery associated with analytical batch 33999 is outside the acceptance criteria for nitrate. The following samples were reanalyzed outside holding time: XC04096-002 (MW-8), XC04096-004 (MW-9), XC04096-008 (MW-20i), and XC04096-009 (MW-6D). Both runs have been reported.

Ferrous Iron
Samples XC04096-002 (MW-8) and XC04096-004 (MW-9), were analyzed right outside of the 24 hour holding time.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Sample Summary

AECOM

Lot Number: XC04096

Project Name: Shakespeare Composite Structures

Project Number: 60675505

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	MW-8-PDB	Aqueous	03/04/2022 1045	03/04/2022
002	MW-8	Aqueous	03/04/2022 1130	03/04/2022
003	MW-9-PDB	Aqueous	03/04/2022 0910	03/04/2022
004	MW-9	Aqueous	03/04/2022 1000	03/04/2022
005	RDW-1-PDB	Aqueous	03/04/2022 0915	03/04/2022
006	RDW-1	Aqueous	03/04/2022 1020	03/04/2022
007	MW-20i-PDB	Aqueous	03/04/2022 1050	03/04/2022
008	MW-20i	Aqueous	03/04/2022 1155	03/04/2022
009	MW-6D	Aqueous	03/04/2022 1430	03/04/2022
010	DUP-4	Aqueous	03/04/2022	03/04/2022
011	MW-2i-PDB	Aqueous	03/04/2022 1335	03/04/2022
012	MW-2i	Aqueous	03/04/2022 1440	03/04/2022
013	TB-08	Aqueous	03/04/2022	03/04/2022

(13 samples)

Detection Summary

AECOM

Lot Number: XC04096

Project Name: Shakespeare Composite Structures

Project Number: 60675505

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	MW-8-PDB	Aqueous	1,1-Dichloroethene	8260D	2.7		ug/L	6
001	MW-8-PDB	Aqueous	cis-1,2-Dichloroethene	8260D	83		ug/L	6
001	MW-8-PDB	Aqueous	trans-1,2-Dichloroethene	8260D	4.4		ug/L	6
001	MW-8-PDB	Aqueous	Tetrachloroethene	8260D	2.2	J	ug/L	6
001	MW-8-PDB	Aqueous	Trichloroethene	8260D	600		ug/L	7
002	MW-8	Aqueous	Ferrous Iron	SM 3500-Fe B-	0.051	H	mg/L	8
002	MW-8	Aqueous	Nitrite - N	300.0	0.036		mg/L	8
002	MW-8	Aqueous	Nitrate - N	300.0	0.053	B	mg/L	8
002	MW-8	Aqueous	Sulfate	300.0	0.55	J	mg/L	8
002	MW-8	Aqueous	TOC	SM 5310C-	1.8		mg/L	8
002	MW-8	Aqueous	2-Butanone (MEK)	8260D	23	J	ug/L	9
002	MW-8	Aqueous	1,1-Dichloroethene	8260D	2.2	J	ug/L	9
002	MW-8	Aqueous	cis-1,2-Dichloroethene	8260D	76		ug/L	9
002	MW-8	Aqueous	trans-1,2-Dichloroethene	8260D	3.7		ug/L	9
002	MW-8	Aqueous	Trichloroethene	8260D	530		ug/L	10
002	MW-8	Aqueous	Methane	RSK - 175	220		ug/L	11
002	MW-8	Aqueous	Dissolved Manganese	6010D	0.076		mg/L	12
002	MW-8	Aqueous	Iron	6010D	0.97		mg/L	13
002	MW-8	Aqueous	Manganese	6010D	0.080		mg/L	13
003	MW-9-PDB	Aqueous	cis-1,2-Dichloroethene	8260D	11		ug/L	14
003	MW-9-PDB	Aqueous	Trichloroethene	8260D	73		ug/L	15
004	MW-9	Aqueous	Nitrate - N	300.0	0.69	B	mg/L	16
004	MW-9	Aqueous	Sulfate	300.0	0.27	J	mg/L	16
004	MW-9	Aqueous	Acetone	8260D	4.5	J	ug/L	17
004	MW-9	Aqueous	cis-1,2-Dichloroethene	8260D	11		ug/L	17
004	MW-9	Aqueous	Trichloroethene	8260D	69		ug/L	18
004	MW-9	Aqueous	Methane	RSK - 175	4.2	J	ug/L	19
004	MW-9	Aqueous	Dissolved Manganese	6010D	0.043		mg/L	20
004	MW-9	Aqueous	Iron	6010D	0.30		mg/L	21
004	MW-9	Aqueous	Manganese	6010D	0.045		mg/L	21
005	RDW-1-PDB	Aqueous	Acetone	8260D	6.1	J	ug/L	22
005	RDW-1-PDB	Aqueous	Cyclohexane	8260D	0.51		ug/L	22
005	RDW-1-PDB	Aqueous	Trichloroethene	8260D	9.1		ug/L	23
006	RDW-1	Aqueous	Acetone	8260D	9.6	J	ug/L	24
006	RDW-1	Aqueous	Trichloroethene	8260D	10		ug/L	25
007	MW-20i-PDB	Aqueous	Acetone	8260D	5.5	J	ug/L	26
007	MW-20i-PDB	Aqueous	Trichloroethene	8260D	40		ug/L	27
008	MW-20i	Aqueous	Ferrous Iron	SM 3500-Fe B-	0.057		mg/L	28
008	MW-20i	Aqueous	Nitrate - N	300.0	0.40	B	mg/L	28
008	MW-20i	Aqueous	Sulfate	300.0	1.4		mg/L	28
008	MW-20i	Aqueous	Trichloroethene	8260D	33		ug/L	30
008	MW-20i	Aqueous	Dissolved Iron	6010D	0.060	J	mg/L	32
008	MW-20i	Aqueous	Dissolved Manganese	6010D	0.0063	J	mg/L	32

Detection Summary (Continued)

Lot Number: XC04096

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
008	MW-20i	Aqueous	Iron	6010D	5.4		mg/L	33
008	MW-20i	Aqueous	Manganese	6010D	0.10		mg/L	33
009	MW-6D	Aqueous	Alkalinity @ pH 4.5 su	SM 2320B-	100		mg CaCO3/L	34
009	MW-6D	Aqueous	Nitrate - N	300.0	0.90	B	mg/L	34
009	MW-6D	Aqueous	Sulfate	300.0	2.2		mg/L	34
009	MW-6D	Aqueous	1,2-Dichloroethane	8260D	0.58		ug/L	35
009	MW-6D	Aqueous	Trichloroethene	8260D	160		ug/L	36
009	MW-6D	Aqueous	Methane	RSK - 175	2.5	J	ug/L	37
009	MW-6D	Aqueous	Dissolved Iron	6010D	0.059	J	mg/L	38
009	MW-6D	Aqueous	Iron	6010D	0.15		mg/L	39
009	MW-6D	Aqueous	Manganese	6010D	0.0019	J	mg/L	39
010	DUP-4	Aqueous	1,2-Dichloroethane	8260D	0.63		ug/L	40
010	DUP-4	Aqueous	Trichloroethene	8260D	160		ug/L	41
011	MW-2i-PDB	Aqueous	Acetone	8260D	21		ug/L	42
011	MW-2i-PDB	Aqueous	Cyclohexane	8260D	0.81		ug/L	42
011	MW-2i-PDB	Aqueous	Trichloroethene	8260D	18		ug/L	43
012	MW-2i	Aqueous	Trichloroethene	8260D	41		ug/L	45

(60 detections)

Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC04096-001
Description: MW-8-PDB
Matrix: Aqueous
Date Sampled: 03/04/2022 1045
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	5	03/12/2022 0557	JWO		34604

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		50	20	ug/L	1
Benzene	71-43-2	8260D	ND		2.5	2.0	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		2.5	2.0	ug/L	1
Bromoform	75-25-2	8260D	ND		2.5	2.0	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.5	2.0	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		50	10	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		2.5	2.0	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		2.5	2.0	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		2.5	2.0	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.5	2.0	ug/L	1
Chloroform	67-66-3	8260D	ND		2.5	2.0	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		2.5	2.0	ug/L	1
Cyclohexane	110-82-7	8260D	ND		2.5	2.0	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		2.5	2.0	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		2.5	2.0	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		2.5	2.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		2.5	2.0	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		2.5	2.0	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		2.5	2.0	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.5	2.0	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		2.5	2.0	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		2.5	2.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	2.7		2.5	2.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	83		2.5	2.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	4.4		2.5	2.0	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		2.5	2.0	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		2.5	2.0	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		2.5	2.0	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		2.5	2.0	ug/L	1
2-Hexanone	591-78-6	8260D	ND		50	10	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		2.5	2.0	ug/L	1
Methyl acetate	79-20-9	8260D	ND		5.0	2.0	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		2.5	2.0	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		50	10	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		25	2.0	ug/L	1
Methylene chloride	75-09-2	8260D	ND		2.5	2.0	ug/L	1
Styrene	100-42-5	8260D	ND		2.5	2.1	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		2.5	2.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	2.2	J	2.5	2.0	ug/L	1
Toluene	108-88-3	8260D	ND		2.5	2.0	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		5.0	2.1	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		2.5	2.0	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		2.5	2.0	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		2.5	2.0	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC04096-001
Description: MW-8-PDB
Matrix: Aqueous
Date Sampled: 03/04/2022 1045
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	5	03/12/2022 0557	JWO		34604

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	600		2.5	2.0	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		2.5	2.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		2.5	2.0	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		5.0	2.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		88	70-130
1,2-Dichloroethane-d4		119	70-130
Toluene-d8		107	70-130

LOQ = Limit of Quantitation
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N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
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Inorganic non-metals

Client: AECOM
Laboratory ID: XC04096-002
Description: MW-8
Matrix: Aqueous
Date Sampled: 03/04/2022 1130
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2		(Alkalinity @) SM 2320B-2011	1	03/07/2022 2249	TAD		34036
1		(Ferrous Iron) SM 3500-Fe B-2011	1	03/05/2022 1144	TAD		34321
1		(Nitrate - N) 300.0	1	03/05/2022 1231	YCB		33999
2		(Nitrate - N) 300.0	1	03/18/2022 0853	CAW		35422
1		(Nitrite - N) 300.0	1	03/05/2022 1231	YCB		33996
1		(Sulfate) 300.0	1	03/05/2022 1231	YCB		33995
3		(TOC) SM 5310C-2014	1	03/28/2022 2108	DMA		36304

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity @ pH 4.5 su		SM 2320B-2011	ND		20	20	mg CaCO3/L	2
Ferrous Iron		SM 3500-Fe B-2	0.051	H	0.050	0.050	mg/L	1
Nitrite - N		300.0	0.036		0.020	0.0050	mg/L	1
Nitrate - N		300.0	0.053	B	0.020	0.0050	mg/L	1
Sulfate		300.0	0.55	J	1.0	0.25	mg/L	1
Nitrate - N		300.0	0.069	BH	0.020	0.0050	mg/L	2
TOC		SM 5310C-2014	1.8		1.0	1.0	mg/L	3

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P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
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H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC04096-002
Description: MW-8
Matrix: Aqueous
Date Sampled: 03/04/2022 1130
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	5	03/14/2022 1830	BWS		34734

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		50	20	ug/L	1
Benzene	71-43-2	8260D	ND		2.5	2.0	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		2.5	2.0	ug/L	1
Bromoform	75-25-2	8260D	ND		2.5	2.0	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.5	2.0	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	23	J	50	10	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		2.5	2.0	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		2.5	2.0	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		2.5	2.0	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.5	2.0	ug/L	1
Chloroform	67-66-3	8260D	ND		2.5	2.0	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		2.5	2.0	ug/L	1
Cyclohexane	110-82-7	8260D	ND		2.5	2.0	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		2.5	2.0	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		2.5	2.0	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		2.5	2.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		2.5	2.0	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		2.5	2.0	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		2.5	2.0	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.5	2.0	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		2.5	2.0	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		2.5	2.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	2.2	J	2.5	2.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	76		2.5	2.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	3.7		2.5	2.0	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		2.5	2.0	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		2.5	2.0	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		2.5	2.0	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		2.5	2.0	ug/L	1
2-Hexanone	591-78-6	8260D	ND		50	10	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		2.5	2.0	ug/L	1
Methyl acetate	79-20-9	8260D	ND		5.0	2.0	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		2.5	2.0	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		50	10	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		25	2.0	ug/L	1
Methylene chloride	75-09-2	8260D	ND		2.5	2.0	ug/L	1
Styrene	100-42-5	8260D	ND		2.5	2.1	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		2.5	2.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		2.5	2.0	ug/L	1
Toluene	108-88-3	8260D	ND		2.5	2.0	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		5.0	2.1	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		2.5	2.0	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		2.5	2.0	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		2.5	2.0	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
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Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC04096-002
Description: MW-8
Matrix: Aqueous
Date Sampled: 03/04/2022 1130
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	5	03/14/2022 1830	BWS		34734

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	530		2.5	2.0	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		2.5	2.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		2.5	2.0	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		5.0	2.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		88	70-130
1,2-Dichloroethane-d4		113	70-130
Toluene-d8		106	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
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Dissolved Gases

Client: AECOM
Laboratory ID: XC04096-002
Description: MW-8
Matrix: Aqueous
Date Sampled: 03/04/2022 1130
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	03/15/2022 1127	JM1		34890

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	220		10	2.5	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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ICP-AES Metals

Client: AECOM
Laboratory ID: XC04096-002
Description: MW-8
Matrix: Aqueous
Date Sampled: 03/04/2022 1130
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/11/2022 2348	KSH2	03/10/2022 1012	34234
2	3005A	6010D	1	03/14/2022 1655	KSH2	03/10/2022 1012	34234

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Dissolved Iron	7439-89-6	6010D	ND		0.10	0.040	mg/L	2
Dissolved Manganese	7439-96-5	6010D	0.076		0.015	0.0019	mg/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Metals

Client: AECOM
Laboratory ID: XC04096-002
Description: MW-8
Matrix: Aqueous
Date Sampled: 03/04/2022 1130
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/11/2022 2127	KSH2	03/10/2022 1012	34232

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Iron	7439-89-6	6010D	0.97		0.10	0.040	mg/L	1
Manganese	7439-96-5	6010D	0.080		0.015	0.0019	mg/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC04096-003
Description: MW-9-PDB
Matrix: Aqueous
Date Sampled: 03/04/2022 0910
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/14/2022 1327	BWS		34734

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	11		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC04096-003
Description: MW-9-PDB
Matrix: Aqueous
Date Sampled: 03/04/2022 0910
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/14/2022 1327	BWS		34734

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	73		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		90	70-130
1,2-Dichloroethane-d4		109	70-130
Toluene-d8		104	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
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Inorganic non-metals

Client: AECOM
Laboratory ID: XC04096-004
Description: MW-9
Matrix: Aqueous
Date Sampled: 03/04/2022 1000
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2		(Alkalinity @) SM 2320B-2011	1	03/07/2022 2255	TAD		34036
1		(Ferrous Iron) SM 3500-Fe B-2011	1	03/05/2022 1147	TAD		34321
1		(Nitrate - N) 300.0	1	03/05/2022 1327	YCB		33999
2		(Nitrate - N) 300.0	1	03/18/2022 0911	CAW		35422
1		(Nitrite - N) 300.0	1	03/05/2022 1327	YCB		33996
1		(Sulfate) 300.0	1	03/05/2022 1327	YCB		33995
1		(TOC) SM 5310C-2014	1	03/12/2022 2022	DMA		34637

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity @ pH 4.5 su		SM 2320B-2011	ND		20	20	mg CaCO3/L	2
Ferrous Iron		SM 3500-Fe B-2	ND	H	0.050	0.050	mg/L	1
Nitrite - N		300.0	ND		0.020	0.0050	mg/L	1
Nitrate - N		300.0	0.69	B	0.020	0.0050	mg/L	1
Sulfate		300.0	0.27	J	1.0	0.25	mg/L	1
Nitrate - N		300.0	0.69	BH	0.020	0.0050	mg/L	2
TOC		SM 5310C-2014	ND		1.0	1.0	mg/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
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S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC04096-004
Description: MW-9
Matrix: Aqueous
Date Sampled: 03/04/2022 1000
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/14/2022 1352	BWS		34734

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	4.5	J	10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	11		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC04096-004
Description: MW-9
Matrix: Aqueous
Date Sampled: 03/04/2022 1000
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/14/2022 1352	BWS		34734

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	69		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		91	70-130
1,2-Dichloroethane-d4		114	70-130
Toluene-d8		108	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Dissolved Gases

Client: AECOM
Laboratory ID: XC04096-004
Description: MW-9
Matrix: Aqueous
Date Sampled: 03/04/2022 1000
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	03/15/2022 1143	JM1		34890

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	4.2	J	10	2.5	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
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J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
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W = Reported on wet weight basis
S = MS/MSD failure

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ICP-AES Metals

Client: AECOM
Laboratory ID: XC04096-004
Description: MW-9
Matrix: Aqueous
Date Sampled: 03/04/2022 1000
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/11/2022 2352	KSH2	03/10/2022 1012	34234
2	3005A	6010D	1	03/14/2022 1659	KSH2	03/10/2022 1012	34234

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Dissolved Iron	7439-89-6	6010D	ND		0.10	0.040	mg/L	2
Dissolved Manganese	7439-96-5	6010D	0.043		0.015	0.0019	mg/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Metals

Client: AECOM
Laboratory ID: XC04096-004
Description: MW-9
Matrix: Aqueous
Date Sampled: 03/04/2022 1000
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/11/2022 2131	KSH2	03/10/2022 1012	34232

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Iron	7439-89-6	6010D	0.30		0.10	0.040	mg/L	1
Manganese	7439-96-5	6010D	0.045		0.015	0.0019	mg/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC04096-005
Description: RDW-1-PDB
Matrix: Aqueous
Date Sampled: 03/04/2022 0915
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/14/2022 1418	BWS		34734

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	6.1	J	10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	0.51		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC04096-005
Description: RDW-1-PDB
Matrix: Aqueous
Date Sampled: 03/04/2022 0915
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/14/2022 1418	BWS		34734

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	9.1		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		88	70-130
1,2-Dichloroethane-d4		109	70-130
Toluene-d8		104	70-130

LOQ = Limit of Quantitation
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC04096-006
Description: RDW-1
Matrix: Aqueous
Date Sampled: 03/04/2022 1020
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/14/2022 1443	BWS		34734

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	9.6	J	10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
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DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC04096-006
Description: RDW-1
Matrix: Aqueous
Date Sampled: 03/04/2022 1020
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/14/2022 1443	BWS		34734

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	10		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		90	70-130
1,2-Dichloroethane-d4		114	70-130
Toluene-d8		106	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
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Q = Surrogate failure
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC04096-007
Description: MW-20i-PDB
Matrix: Aqueous
Date Sampled: 03/04/2022 1050
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/14/2022 1508	BWS		34734

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	5.5	J	10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC04096-007
Description: MW-20i-PDB
Matrix: Aqueous
Date Sampled: 03/04/2022 1050
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/14/2022 1508	BWS		34734

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	40		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		90	70-130
1,2-Dichloroethane-d4		115	70-130
Toluene-d8		105	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Inorganic non-metals

Client: AECOM
Laboratory ID: XC04096-008
Description: MW-20i
Matrix: Aqueous
Date Sampled: 03/04/2022 1155
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2		(Alkalinity @) SM 2320B-2011	1	03/07/2022 2310	TAD		34036
1		(Ferrous Iron) SM 3500-Fe B-2011	1	03/05/2022 1148	TAD		34321
1		(Nitrate - N) 300.0	1	03/05/2022 1346	YCB		33999
2		(Nitrate - N) 300.0	1	03/18/2022 0930	CAW		35422
1		(Nitrite - N) 300.0	1	03/05/2022 1346	YCB		33996
1		(Sulfate) 300.0	1	03/05/2022 1346	YCB		33995
1		(TOC) SM 5310C-2014	1	03/12/2022 2035	DMA		34637

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity @ pH 4.5 su		SM 2320B-2011	ND		20	20	mg CaCO3/L	2
Ferrous Iron		SM 3500-Fe B-2	0.057		0.050	0.050	mg/L	1
Nitrite - N		300.0	ND		0.020	0.0050	mg/L	1
Nitrate - N		300.0	0.40	B	0.020	0.0050	mg/L	1
Sulfate		300.0	1.4		1.0	0.25	mg/L	1
Nitrate - N		300.0	0.40	BH	0.020	0.0050	mg/L	2
TOC		SM 5310C-2014	ND		1.0	1.0	mg/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
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W = Reported on wet weight basis
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC04096-008
Description: MW-20i
Matrix: Aqueous
Date Sampled: 03/04/2022 1155
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/14/2022 1534	BWS		34734

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
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L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC04096-008
Description: MW-20i
Matrix: Aqueous
Date Sampled: 03/04/2022 1155
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/14/2022 1534	BWS		34734

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	33		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		90	70-130
1,2-Dichloroethane-d4		116	70-130
Toluene-d8		106	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
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Dissolved Gases

Client: AECOM
Laboratory ID: XC04096-008
Description: MW-20i
Matrix: Aqueous
Date Sampled: 03/04/2022 1155
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	03/15/2022 1159	JM1		34890

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	ND		10	2.5	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
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ICP-AES Metals

Client: AECOM
Laboratory ID: XC04096-008
Description: MW-20i
Matrix: Aqueous
Date Sampled: 03/04/2022 1155
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/11/2022 2357	KSH2	03/10/2022 1012	34234
2	3005A	6010D	1	03/14/2022 1713	KSH2	03/10/2022 1012	34234

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Dissolved Iron	7439-89-6	6010D	0.060	J	0.10	0.040	mg/L	2
Dissolved Manganese	7439-96-5	6010D	0.0063	J	0.015	0.0019	mg/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
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S = MS/MSD failure

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Metals

Client: AECOM
Laboratory ID: XC04096-008
Description: MW-20i
Matrix: Aqueous
Date Sampled: 03/04/2022 1155
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/11/2022 2136	KSH2	03/10/2022 1012	34232

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Iron	7439-89-6	6010D	5.4		0.10	0.040	mg/L	1
Manganese	7439-96-5	6010D	0.10		0.015	0.0019	mg/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Inorganic non-metals

Client: AECOM			Laboratory ID: XC04096-009
Description: MW-6D			Matrix: Aqueous
Date Sampled: 03/04/2022 1430		Project Name: Shakespeare Composite	
Date Received: 03/04/2022		Project Number: 60675505	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2		(Alkalinity @) SM 2320B-2011	1	03/07/2022 2317	TAD		34036
1		(Ferrous Iron) SM 3500-Fe B-2011	1	03/05/2022 1149	TAD		34321
1		(Nitrate - N) 300.0	1	03/05/2022 1405	YCB		33999
2		(Nitrate - N) 300.0	1	03/18/2022 0949	CAW		35422
1		(Nitrite - N) 300.0	1	03/05/2022 1405	YCB		33996
1		(Sulfate) 300.0	1	03/05/2022 1405	YCB		33995
1		(TOC) SM 5310C-2014	1	03/12/2022 2048	DMA		34637

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Alkalinity @ pH 4.5 su		SM 2320B-2011	100		20	20	mg CaCO3/L	2
Ferrous Iron		SM 3500-Fe B-2	ND		0.050	0.050	mg/L	1
Nitrite - N		300.0	ND		0.020	0.0050	mg/L	1
Nitrate - N		300.0	0.90	B	0.020	0.0050	mg/L	1
Sulfate		300.0	2.2		1.0	0.25	mg/L	1
Nitrate - N		300.0	0.89	BH	0.020	0.0050	mg/L	2
TOC		SM 5310C-2014	ND		1.0	1.0	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC04096-009
Description: MW-6D
Matrix: Aqueous
Date Sampled: 03/04/2022 1430
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/14/2022 1559	BWS		34734

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.58		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC04096-009
Description: MW-6D
Matrix: Aqueous
Date Sampled: 03/04/2022 1430
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/14/2022 1559	BWS		34734

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	160		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		91	70-130
1,2-Dichloroethane-d4		111	70-130
Toluene-d8		107	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Dissolved Gases

Client: AECOM
Laboratory ID: XC04096-009
Description: MW-6D
Matrix: Aqueous
Date Sampled: 03/04/2022 1430
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	03/15/2022 1215	JM1		34890

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	2.5	J	10	2.5	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
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ICP-AES Metals

Client: AECOM
Laboratory ID: XC04096-009
Description: MW-6D
Matrix: Aqueous
Date Sampled: 03/04/2022 1430
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/12/2022 0001	KSH2	03/10/2022 1012	34234
2	3005A	6010D	1	03/14/2022 1717	KSH2	03/10/2022 1012	34234

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Dissolved Iron	7439-89-6	6010D	0.059	J	0.10	0.040	mg/L	2
Dissolved Manganese	7439-96-5	6010D	ND		0.015	0.0019	mg/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Metals

Client: AECOM
Laboratory ID: XC04096-009
Description: MW-6D
Matrix: Aqueous
Date Sampled: 03/04/2022 1430
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/11/2022 2149	KSH2	03/10/2022 1012	34232
2	3005A	6010D	1	03/14/2022 1841	KSH2	03/10/2022 1012	34232

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Iron	7439-89-6	6010D	0.15		0.10	0.040	mg/L	2
Manganese	7439-96-5	6010D	0.0019	J	0.015	0.0019	mg/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
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N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC04096-010
Description: DUP-4
Matrix: Aqueous
Date Sampled: 03/04/2022
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/14/2022 1625	BWS		34734

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.63		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
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Q = Surrogate failure
ND = Not detected at or above the DL
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Volatile Organic Compounds by GC/MS

Client: AECOM			Laboratory ID: XC04096-010
Description: DUP-4			Matrix: Aqueous
Date Sampled: 03/04/2022	Project Name: Shakespeare Composite		
Date Received: 03/04/2022	Project Number: 60675505		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/14/2022 1625	BWS		34734

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	160		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		91	70-130
1,2-Dichloroethane-d4		116	70-130
Toluene-d8		108	70-130

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC04096-011
Description: MW-2i-PDB
Matrix: Aqueous
Date Sampled: 03/04/2022 1335
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/14/2022 1650	BWS		34734
2	5030B	8260D	1	03/16/2022 0411	JWO		34984

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	21		10	4.0	ug/L	2
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	0.81		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
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H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC04096-011
Description: MW-2i-PDB
Matrix: Aqueous
Date Sampled: 03/04/2022 1335
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/14/2022 1650	BWS		34734
2	5030B	8260D	1	03/16/2022 0411	JWO		34984

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1
Trichloroethene	79-01-6	8260D	18		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		86	70-130		95	70-130
1,2-Dichloroethane-d4		111	70-130		100	70-130
Toluene-d8		103	70-130		107	70-130

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S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC04096-012
Description: MW-2i
Matrix: Aqueous
Date Sampled: 03/04/2022 1440
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	1	03/14/2022 1715	BWS		34734

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	2
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	2
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	2
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	2
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	2
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	2
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	2
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	2
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	2
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	2
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	2
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	2

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC04096-012
Description: MW-2i
Matrix: Aqueous
Date Sampled: 03/04/2022 1440
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	1	03/14/2022 1715	BWS		34734

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	41		0.50	0.40	ug/L	2
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	2
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		92	70-130
1,2-Dichloroethane-d4		116	70-130
Toluene-d8		106	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC04096-013
Description: TB-08
Matrix: Aqueous
Date Sampled: 03/04/2022
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/14/2022 1057	BWS		34734

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC04096-013
Description: TB-08
Matrix: Aqueous
Date Sampled: 03/04/2022
Project Name: Shakespeare Composite
Date Received: 03/04/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/14/2022 1057	BWS		34734

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		94	70-130
1,2-Dichloroethane-d4		112	70-130
Toluene-d8		108	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
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QC Summary

Inorganic non-metals - MB

Sample ID: XQ33995-001
Batch: 33995
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Sulfate	ND		1	1.0	0.25	mg/L	03/05/2022 1134

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ33995-002
Batch: 33995
Analytical Method: 300.0

Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Sulfate	20	20		1	98	90-110	03/05/2022 1212

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MS

Sample ID: XC04096-002MS
Batch: 33995
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Sulfate	0.55	10	10		1	98	90-110	03/05/2022 1250

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MSD

Sample ID: XC04096-002MD
Batch: 33995
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Sulfate	0.55	10	10		1	99	0.96	90-110	20	03/05/2022 1309

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MB

Sample ID: XQ33996-001
Batch: 33996
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Nitrite - N	ND		1	0.020	0.0050	mg/L	03/05/2022 1134

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ33996-002
Batch: 33996
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Nitrite - N	0.80	0.78		1	98	90-110	03/05/2022 1212

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MS

Sample ID: XC04096-002MS
Batch: 33996
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Nitrite - N	0.036	0.40	0.46		1	105	90-110	03/05/2022 1250

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MSD

Sample ID: XC04096-002MD
Batch: 33996
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Nitrite - N	0.036	0.40	0.45		1	104	0.44	90-110	20	03/05/2022 1309

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MB

Sample ID: XQ33999-001
Batch: 33999
Analytical Method: 300.0

Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Nitrate - N	0.0090	J	1	0.020	0.0050	mg/L	03/05/2022 1134

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - LCS

Sample ID: XQ33999-002
Batch: 33999
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Nitrate - N	0.80	0.80		1	100	90-110	03/05/2022 1212

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MS

Sample ID: XC04096-002MS
Batch: 33999
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Nitrate - N	0.053	0.40	0.45		1	98	90-110	03/05/2022 1250

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MSD

Sample ID: XC04096-002MD
Batch: 33999
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Nitrate - N	0.053	0.40	0.45		1	99	0.16	90-110	20	03/05/2022 1309

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - LCS

Sample ID: XQ34036-002
Batch: 34036
Analytical Method: SM 2320B-2011

Matrix: Aqueous

Parameter	Spike Amount (mg CaCO3/L)	Result (mg CaCO3/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Alkalinity @ pH 4.5 su	100	110		1	106	90-110	03/07/2022 2207

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MB

Sample ID: XQ34321-001
Batch: 34321
Analytical Method: SM 3500-Fe B-2011
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Ferrous Iron	ND		1	0.050	0.050	mg/L	03/05/2022 1134

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - LCS

Sample ID: XQ34321-002
Batch: 34321
Analytical Method: SM 3500-Fe B-2011
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Ferrous Iron	1.0	0.95		1	95	90-110	03/05/2022 1134

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCSD

Sample ID: XQ34321-003
Batch: 34321
Analytical Method: SM 3500-Fe B-2011
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Ferrous Iron	1.0	0.98		1	98	2.7	90-110	20	03/05/2022 1134

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MS

Sample ID: XC04096-002MS
Batch: 34321
Analytical Method: SM 3500-Fe B-2011
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Ferrous Iron	0.051	1.0	1.0		1	96	70-130	03/05/2022 1146

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MSD

Sample ID: XC04096-002MD
Batch: 34321
Analytical Method: SM 3500-Fe B-2011
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Ferrous Iron	0.051	1.0	1.1		1	108	11	70-130	20	03/05/2022 1147

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MB

Sample ID: XQ34637-001
Batch: 34637
Analytical Method: SM 5310C-2014

Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
TOC	ND		1	1.0	1.0	mg/L	03/12/2022 1721

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - LCS

Sample ID: XQ34637-002
Batch: 34637
Analytical Method: SM 5310C-2014

Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
TOC	20	19		1	94	90-110	03/12/2022 1734

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MB

Sample ID: XQ35422-001
Batch: 35422
Analytical Method: 300.0

Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Nitrate - N	0.0094	J	1	0.020	0.0050	mg/L	03/18/2022 0447

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - LCS

Sample ID: XQ35422-002
Batch: 35422
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Nitrate - N	0.80	0.79		1	98	90-110	03/18/2022 0659

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MB

Sample ID: XQ36304-001
Batch: 36304
Analytical Method: SM 5310C-2014
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
TOC	ND		1	1.0	1.0	mg/L	03/28/2022 2003

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - LCS

Sample ID: XQ36304-002
Batch: 36304
Analytical Method: SM 5310C-2014
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
TOC	20	19		1	94	90-110	03/28/2022 2015

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34604-001
Batch: 34604
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	10	4.0	ug/L	03/11/2022 2135
Benzene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Bromodichloromethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Bromoform	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Bromomethane (Methyl bromide)	ND		1	0.50	0.40	ug/L	03/11/2022 2135
2-Butanone (MEK)	ND		1	10	2.0	ug/L	03/11/2022 2135
Carbon disulfide	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Carbon tetrachloride	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Chlorobenzene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Chloroethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Chloroform	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Chloromethane (Methyl chloride)	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Cyclohexane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Dibromochloromethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,2-Dibromoethane (EDB)	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,2-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,3-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,4-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Dichlorodifluoromethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,1-Dichloroethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,2-Dichloroethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,1-Dichloroethene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
cis-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
trans-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,2-Dichloropropane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
cis-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
trans-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Ethylbenzene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
2-Hexanone	ND		1	10	2.0	ug/L	03/11/2022 2135
Isopropylbenzene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Methyl acetate	ND		1	1.0	0.40	ug/L	03/11/2022 2135
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.40	ug/L	03/11/2022 2135
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	03/11/2022 2135
Methylcyclohexane	ND		1	5.0	0.40	ug/L	03/11/2022 2135
Methylene chloride	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Styrene	ND		1	0.50	0.41	ug/L	03/11/2022 2135
1,1,2,2-Tetrachloroethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Tetrachloroethene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Toluene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	03/11/2022 2135
1,2,4-Trichlorobenzene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,1,1-Trichloroethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
1,1,2-Trichloroethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34604-001
Batch: 34604
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Trichlorofluoromethane	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Vinyl chloride	ND		1	0.50	0.40	ug/L	03/11/2022 2135
Xylenes (total)	ND		1	1.0	0.40	ug/L	03/11/2022 2135

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		92	70-130
1,2-Dichloroethane-d4		108	70-130
Toluene-d8		106	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34604-002
Batch: 34604
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	65		1	65	60-140	03/11/2022 2031
Benzene	50	45		1	91	70-130	03/11/2022 2031
Bromodichloromethane	50	41		1	82	70-130	03/11/2022 2031
Bromoform	50	46		1	91	70-130	03/11/2022 2031
Bromomethane (Methyl bromide)	50	47		1	94	70-130	03/11/2022 2031
2-Butanone (MEK)	100	79		1	79	70-130	03/11/2022 2031
Carbon disulfide	50	44		1	88	70-130	03/11/2022 2031
Carbon tetrachloride	50	42		1	84	70-130	03/11/2022 2031
Chlorobenzene	50	46		1	93	70-130	03/11/2022 2031
Chloroethane	50	43		1	85	70-130	03/11/2022 2031
Chloroform	50	39		1	78	70-130	03/11/2022 2031
Chloromethane (Methyl chloride)	50	45		1	90	60-140	03/11/2022 2031
Cyclohexane	50	41		1	82	70-130	03/11/2022 2031
1,2-Dibromo-3-chloropropane (DBCP)	50	40		1	80	70-130	03/11/2022 2031
Dibromochloromethane	50	45		1	91	70-130	03/11/2022 2031
1,2-Dibromoethane (EDB)	50	47		1	93	70-130	03/11/2022 2031
1,2-Dichlorobenzene	50	47		1	94	70-130	03/11/2022 2031
1,3-Dichlorobenzene	50	48		1	96	70-130	03/11/2022 2031
1,4-Dichlorobenzene	50	46		1	92	70-130	03/11/2022 2031
Dichlorodifluoromethane	50	40		1	80	60-140	03/11/2022 2031
1,1-Dichloroethane	50	41		1	83	70-130	03/11/2022 2031
1,2-Dichloroethane	50	40		1	80	70-130	03/11/2022 2031
1,1-Dichloroethene	50	44		1	88	70-130	03/11/2022 2031
cis-1,2-Dichloroethene	50	42		1	85	70-130	03/11/2022 2031
trans-1,2-Dichloroethene	50	44		1	87	70-130	03/11/2022 2031
1,2-Dichloropropane	50	44		1	89	70-130	03/11/2022 2031
cis-1,3-Dichloropropene	50	46		1	91	70-130	03/11/2022 2031
trans-1,3-Dichloropropene	50	46		1	92	70-130	03/11/2022 2031
Ethylbenzene	50	51		1	102	70-130	03/11/2022 2031
2-Hexanone	100	83		1	83	70-130	03/11/2022 2031
Isopropylbenzene	50	43		1	86	70-130	03/11/2022 2031
Methyl acetate	50	42		1	85	70-130	03/11/2022 2031
Methyl tertiary butyl ether (MTBE)	50	41		1	83	70-130	03/11/2022 2031
4-Methyl-2-pentanone	100	81		1	81	70-130	03/11/2022 2031
Methylcyclohexane	50	51		1	103	70-130	03/11/2022 2031
Methylene chloride	50	39		1	77	70-130	03/11/2022 2031
Styrene	50	48		1	95	70-130	03/11/2022 2031
1,1,2,2-Tetrachloroethane	50	46		1	92	70-130	03/11/2022 2031
Tetrachloroethene	50	52		1	104	70-130	03/11/2022 2031
Toluene	50	51		1	103	70-130	03/11/2022 2031
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	47		1	95	70-130	03/11/2022 2031
1,2,4-Trichlorobenzene	50	46		1	91	70-130	03/11/2022 2031
1,1,1-Trichloroethane	50	43		1	87	70-130	03/11/2022 2031
1,1,2-Trichloroethane	50	46		1	92	70-130	03/11/2022 2031

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34604-002
Batch: 34604
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	44		1	89	70-130	03/11/2022 2031
Trichlorofluoromethane	50	46		1	91	70-130	03/11/2022 2031
Vinyl chloride	50	44		1	87	70-130	03/11/2022 2031
Xylenes (total)	100	92		1	92	70-130	03/11/2022 2031

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		101	70-130
1,2-Dichloroethane-d4		88	70-130
Toluene-d8		107	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34734-001
Batch: 34734
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	10	4.0	ug/L	03/14/2022 0958
Benzene	ND		1	0.50	0.40	ug/L	03/14/2022 0958
Bromodichloromethane	ND		1	0.50	0.40	ug/L	03/14/2022 0958
Bromoform	ND		1	0.50	0.40	ug/L	03/14/2022 0958
Bromomethane (Methyl bromide)	ND		1	0.50	0.40	ug/L	03/14/2022 0958
2-Butanone (MEK)	ND		1	10	2.0	ug/L	03/14/2022 0958
Carbon disulfide	ND		1	0.50	0.40	ug/L	03/14/2022 0958
Carbon tetrachloride	ND		1	0.50	0.40	ug/L	03/14/2022 0958
Chlorobenzene	ND		1	0.50	0.40	ug/L	03/14/2022 0958
Chloroethane	ND		1	0.50	0.40	ug/L	03/14/2022 0958
Chloroform	ND		1	0.50	0.40	ug/L	03/14/2022 0958
Chloromethane (Methyl chloride)	ND		1	0.50	0.40	ug/L	03/14/2022 0958
Cyclohexane	ND		1	0.50	0.40	ug/L	03/14/2022 0958
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.50	0.40	ug/L	03/14/2022 0958
Dibromochloromethane	ND		1	0.50	0.40	ug/L	03/14/2022 0958
1,2-Dibromoethane (EDB)	ND		1	0.50	0.40	ug/L	03/14/2022 0958
1,2-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/14/2022 0958
1,3-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/14/2022 0958
1,4-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/14/2022 0958
Dichlorodifluoromethane	ND		1	0.50	0.40	ug/L	03/14/2022 0958
1,1-Dichloroethane	ND		1	0.50	0.40	ug/L	03/14/2022 0958
1,2-Dichloroethane	ND		1	0.50	0.40	ug/L	03/14/2022 0958
1,1-Dichloroethene	ND		1	0.50	0.40	ug/L	03/14/2022 0958
cis-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/14/2022 0958
trans-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/14/2022 0958
1,2-Dichloropropane	ND		1	0.50	0.40	ug/L	03/14/2022 0958
cis-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/14/2022 0958
trans-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/14/2022 0958
Ethylbenzene	ND		1	0.50	0.40	ug/L	03/14/2022 0958
2-Hexanone	ND		1	10	2.0	ug/L	03/14/2022 0958
Isopropylbenzene	ND		1	0.50	0.40	ug/L	03/14/2022 0958
Methyl acetate	ND		1	1.0	0.40	ug/L	03/14/2022 0958
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.40	ug/L	03/14/2022 0958
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	03/14/2022 0958
Methylcyclohexane	ND		1	5.0	0.40	ug/L	03/14/2022 0958
Methylene chloride	ND		1	0.50	0.40	ug/L	03/14/2022 0958
Styrene	ND		1	0.50	0.41	ug/L	03/14/2022 0958
1,1,2,2-Tetrachloroethane	ND		1	0.50	0.40	ug/L	03/14/2022 0958
Tetrachloroethene	ND		1	0.50	0.40	ug/L	03/14/2022 0958
Toluene	ND		1	0.50	0.40	ug/L	03/14/2022 0958
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	03/14/2022 0958
1,2,4-Trichlorobenzene	ND		1	0.50	0.40	ug/L	03/14/2022 0958
1,1,1-Trichloroethane	ND		1	0.50	0.40	ug/L	03/14/2022 0958
1,1,2-Trichloroethane	ND		1	0.50	0.40	ug/L	03/14/2022 0958

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34734-001
Batch: 34734
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.50	0.40	ug/L	03/14/2022 0958
Trichlorofluoromethane	ND		1	0.50	0.40	ug/L	03/14/2022 0958
Vinyl chloride	ND		1	0.50	0.40	ug/L	03/14/2022 0958
Xylenes (total)	ND		1	1.0	0.40	ug/L	03/14/2022 0958

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		95	70-130
1,2-Dichloroethane-d4		110	70-130
Toluene-d8		109	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34734-002
Batch: 34734
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	70		1	70	60-140	03/14/2022 0908
Benzene	50	48		1	95	70-130	03/14/2022 0908
Bromodichloromethane	50	44		1	88	70-130	03/14/2022 0908
Bromoform	50	45		1	91	70-130	03/14/2022 0908
Bromomethane (Methyl bromide)	50	56		1	111	70-130	03/14/2022 0908
2-Butanone (MEK)	100	85		1	85	70-130	03/14/2022 0908
Carbon disulfide	50	49		1	98	70-130	03/14/2022 0908
Carbon tetrachloride	50	44		1	87	70-130	03/14/2022 0908
Chlorobenzene	50	45		1	91	70-130	03/14/2022 0908
Chloroethane	50	49		1	98	70-130	03/14/2022 0908
Chloroform	50	45		1	89	70-130	03/14/2022 0908
Chloromethane (Methyl chloride)	50	52		1	103	60-140	03/14/2022 0908
Cyclohexane	50	46		1	91	70-130	03/14/2022 0908
1,2-Dibromo-3-chloropropane (DBCP)	50	45		1	90	70-130	03/14/2022 0908
Dibromochloromethane	50	46		1	92	70-130	03/14/2022 0908
1,2-Dibromoethane (EDB)	50	47		1	94	70-130	03/14/2022 0908
1,2-Dichlorobenzene	50	48		1	95	70-130	03/14/2022 0908
1,3-Dichlorobenzene	50	47		1	94	70-130	03/14/2022 0908
1,4-Dichlorobenzene	50	45		1	90	70-130	03/14/2022 0908
Dichlorodifluoromethane	50	41		1	83	60-140	03/14/2022 0908
1,1-Dichloroethane	50	48		1	96	70-130	03/14/2022 0908
1,2-Dichloroethane	50	44		1	88	70-130	03/14/2022 0908
1,1-Dichloroethene	50	48		1	97	70-130	03/14/2022 0908
cis-1,2-Dichloroethene	50	48		1	96	70-130	03/14/2022 0908
trans-1,2-Dichloroethene	50	49		1	98	70-130	03/14/2022 0908
1,2-Dichloropropane	50	47		1	93	70-130	03/14/2022 0908
cis-1,3-Dichloropropene	50	49		1	97	70-130	03/14/2022 0908
trans-1,3-Dichloropropene	50	48		1	96	70-130	03/14/2022 0908
Ethylbenzene	50	49		1	98	70-130	03/14/2022 0908
2-Hexanone	100	85		1	85	70-130	03/14/2022 0908
Isopropylbenzene	50	43		1	86	70-130	03/14/2022 0908
Methyl acetate	50	43		1	86	70-130	03/14/2022 0908
Methyl tertiary butyl ether (MTBE)	50	51		1	102	70-130	03/14/2022 0908
4-Methyl-2-pentanone	100	88		1	88	70-130	03/14/2022 0908
Methylcyclohexane	50	51		1	102	70-130	03/14/2022 0908
Methylene chloride	50	44		1	89	70-130	03/14/2022 0908
Styrene	50	46		1	92	70-130	03/14/2022 0908
1,1,2,2-Tetrachloroethane	50	47		1	94	70-130	03/14/2022 0908
Tetrachloroethene	50	48		1	95	70-130	03/14/2022 0908
Toluene	50	50		1	99	70-130	03/14/2022 0908
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	49		1	99	70-130	03/14/2022 0908
1,2,4-Trichlorobenzene	50	49		1	98	70-130	03/14/2022 0908
1,1,1-Trichloroethane	50	47		1	94	70-130	03/14/2022 0908
1,1,2-Trichloroethane	50	45		1	90	70-130	03/14/2022 0908

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34734-002
Batch: 34734
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	44		1	89	70-130	03/14/2022 0908
Trichlorofluoromethane	50	50		1	100	70-130	03/14/2022 0908
Vinyl chloride	50	49		1	99	70-130	03/14/2022 0908
Xylenes (total)	100	91		1	91	70-130	03/14/2022 0908

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		100	70-130
1,2-Dichloroethane-d4		92	70-130
Toluene-d8		103	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - MS

Sample ID: XC04096-012MS
Batch: 34734
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	ND	100	68		1	68	60-140	03/14/2022 1855
Benzene	ND	50	54		1	107	70-130	03/14/2022 1855
Bromodichloromethane	ND	50	47		1	95	70-130	03/14/2022 1855
Bromoform	ND	50	49		1	97	70-130	03/14/2022 1855
Bromomethane (Methyl bromide)	ND	50	52		1	104	70-130	03/14/2022 1855
2-Butanone (MEK)	ND	100	81		1	81	70-130	03/14/2022 1855
Carbon disulfide	ND	50	55		1	110	70-130	03/14/2022 1855
Carbon tetrachloride	ND	50	52		1	103	70-130	03/14/2022 1855
Chlorobenzene	ND	50	52		1	105	70-130	03/14/2022 1855
Chloroethane	ND	50	48		1	95	70-130	03/14/2022 1855
Chloroform	ND	50	47		1	93	70-130	03/14/2022 1855
Chloromethane (Methyl chloride)	ND	50	46		1	93	60-140	03/14/2022 1855
Cyclohexane	ND	50	53		1	107	70-130	03/14/2022 1855
1,2-Dibromo-3-chloropropane (DBCP)	ND	50	42		1	84	70-130	03/14/2022 1855
Dibromochloromethane	ND	50	50		1	99	70-130	03/14/2022 1855
1,2-Dibromoethane (EDB)	ND	50	51		1	102	70-130	03/14/2022 1855
1,2-Dichlorobenzene	ND	50	51		1	102	70-130	03/14/2022 1855
1,3-Dichlorobenzene	ND	50	52		1	104	70-130	03/14/2022 1855
1,4-Dichlorobenzene	ND	50	50		1	99	70-130	03/14/2022 1855
Dichlorodifluoromethane	ND	50	40		1	80	60-140	03/14/2022 1855
1,1-Dichloroethane	ND	50	50		1	100	70-130	03/14/2022 1855
1,2-Dichloroethane	ND	50	46		1	93	70-130	03/14/2022 1855
1,1-Dichloroethene	ND	50	55		1	110	70-130	03/14/2022 1855
cis-1,2-Dichloroethene	ND	50	49		1	98	70-130	03/14/2022 1855
trans-1,2-Dichloroethene	ND	50	53		1	107	70-130	03/14/2022 1855
1,2-Dichloropropane	ND	50	51		1	102	70-130	03/14/2022 1855
cis-1,3-Dichloropropene	ND	50	47		1	94	70-130	03/14/2022 1855
trans-1,3-Dichloropropene	ND	50	49		1	98	70-130	03/14/2022 1855
Ethylbenzene	ND	50	57		1	114	70-130	03/14/2022 1855
2-Hexanone	ND	100	85		1	85	70-130	03/14/2022 1855
Isopropylbenzene	ND	50	48		1	96	70-130	03/14/2022 1855
Methyl acetate	ND	50	42		1	84	70-130	03/14/2022 1855
Methyl tertiary butyl ether (MTBE)	ND	50	46		1	92	70-130	03/14/2022 1855
4-Methyl-2-pentanone	ND	100	89		1	89	70-130	03/14/2022 1855
Methylcyclohexane	ND	50	62		1	124	70-130	03/14/2022 1855
Methylene chloride	ND	50	46		1	92	70-130	03/14/2022 1855
Styrene	ND	50	53		1	107	70-130	03/14/2022 1855
1,1,2,2-Tetrachloroethane	ND	50	48		1	96	70-130	03/14/2022 1855
Tetrachloroethene	ND	50	59		1	118	70-130	03/14/2022 1855
Toluene	ND	50	58		1	116	70-130	03/14/2022 1855
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	59		1	118	70-130	03/14/2022 1855
1,2,4-Trichlorobenzene	ND	50	47		1	95	70-130	03/14/2022 1855
1,1,1-Trichloroethane	ND	50	52		1	105	70-130	03/14/2022 1855
1,1,2-Trichloroethane	ND	50	51		1	102	70-130	03/14/2022 1855

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MS

Sample ID: XC04096-012MS
Batch: 34734
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	41	50	91		1	100	70-130	03/14/2022 1855
Trichlorofluoromethane	ND	50	52		1	104	70-130	03/14/2022 1855
Vinyl chloride	ND	50	48		1	96	70-130	03/14/2022 1855
Xylenes (total)	ND	100	100		1	103	70-130	03/14/2022 1855

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		106	70-130
1,2-Dichloroethane-d4		94	70-130
Toluene-d8		111	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - MSD

Sample ID: XC04096-012MD
Batch: 34734
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acetone	ND	100	68		1	68	0.65	60-140	20	03/14/2022 1920
Benzene	ND	50	53		1	106	1.2	70-130	20	03/14/2022 1920
Bromodichloromethane	ND	50	46		1	93	2.4	70-130	20	03/14/2022 1920
Bromoform	ND	50	47		1	95	2.7	70-130	20	03/14/2022 1920
Bromomethane (Methyl bromide)	ND	50	51		1	101	3.0	70-130	20	03/14/2022 1920
2-Butanone (MEK)	ND	100	81		1	81	0.29	70-130	20	03/14/2022 1920
Carbon disulfide	ND	50	54		1	107	2.1	70-130	20	03/14/2022 1920
Carbon tetrachloride	ND	50	51		1	102	1.0	70-130	20	03/14/2022 1920
Chlorobenzene	ND	50	51		1	102	2.9	70-130	20	03/14/2022 1920
Chloroethane	ND	50	46		1	93	2.7	70-130	20	03/14/2022 1920
Chloroform	ND	50	47		1	94	0.30	70-130	20	03/14/2022 1920
Chloromethane (Methyl chloride)	ND	50	46		1	92	1.4	60-140	20	03/14/2022 1920
Cyclohexane	ND	50	52		1	103	3.0	70-130	20	03/14/2022 1920
1,2-Dibromo-3-chloropropane (DBCP)	ND	50	40		1	80	5.2	70-130	20	03/14/2022 1920
Dibromochloromethane	ND	50	49		1	98	0.89	70-130	20	03/14/2022 1920
1,2-Dibromoethane (EDB)	ND	50	50		1	101	1.3	70-130	20	03/14/2022 1920
1,2-Dichlorobenzene	ND	50	50		1	100	2.3	70-130	20	03/14/2022 1920
1,3-Dichlorobenzene	ND	50	51		1	102	1.9	70-130	20	03/14/2022 1920
1,4-Dichlorobenzene	ND	50	48		1	97	2.6	70-130	20	03/14/2022 1920
Dichlorodifluoromethane	ND	50	39		1	78	1.8	60-140	20	03/14/2022 1920
1,1-Dichloroethane	ND	50	49		1	97	2.4	70-130	20	03/14/2022 1920
1,2-Dichloroethane	ND	50	45		1	90	3.2	70-130	20	03/14/2022 1920
1,1-Dichloroethene	ND	50	55		1	110	0.83	70-130	20	03/14/2022 1920
cis-1,2-Dichloroethene	ND	50	50		1	101	2.3	70-130	20	03/14/2022 1920
trans-1,2-Dichloroethene	ND	50	53		1	106	0.29	70-130	20	03/14/2022 1920
1,2-Dichloropropane	ND	50	51		1	101	0.16	70-130	20	03/14/2022 1920
cis-1,3-Dichloropropene	ND	50	47		1	94	0.79	70-130	20	03/14/2022 1920
trans-1,3-Dichloropropene	ND	50	49		1	99	0.43	70-130	20	03/14/2022 1920
Ethylbenzene	ND	50	57		1	114	0.47	70-130	20	03/14/2022 1920
2-Hexanone	ND	100	85		1	85	0.36	70-130	20	03/14/2022 1920
Isopropylbenzene	ND	50	48		1	97	0.81	70-130	20	03/14/2022 1920
Methyl acetate	ND	50	41		1	83	0.95	70-130	20	03/14/2022 1920
Methyl tertiary butyl ether (MTBE)	ND	50	47		1	93	1.0	70-130	20	03/14/2022 1920
4-Methyl-2-pentanone	ND	100	85		1	85	4.1	70-130	20	03/14/2022 1920
Methylcyclohexane	ND	50	63		1	125	0.76	70-130	20	03/14/2022 1920
Methylene chloride	ND	50	45		1	90	2.1	70-130	20	03/14/2022 1920
Styrene	ND	50	52		1	105	1.8	70-130	20	03/14/2022 1920
1,1,2,2-Tetrachloroethane	ND	50	47		1	94	2.7	70-130	20	03/14/2022 1920
Tetrachloroethene	ND	50	58		1	116	2.3	70-130	20	03/14/2022 1920
Toluene	ND	50	57		1	114	1.8	70-130	20	03/14/2022 1920
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	58		1	116	2.2	70-130	20	03/14/2022 1920
1,2,4-Trichlorobenzene	ND	50	47		1	94	1.2	70-130	20	03/14/2022 1920
1,1,1-Trichloroethane	ND	50	51		1	102	3.0	70-130	20	03/14/2022 1920
1,1,2-Trichloroethane	ND	50	49		1	99	2.5	70-130	20	03/14/2022 1920

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - MSD

Sample ID: XC04096-012MD
Batch: 34734
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Trichloroethene	41	50	89		1	96	2.1	70-130	20	03/14/2022 1920
Trichlorofluoromethane	ND	50	51		1	103	0.59	70-130	20	03/14/2022 1920
Vinyl chloride	ND	50	46		1	92	3.9	70-130	20	03/14/2022 1920
Xylenes (total)	ND	100	100		1	102	0.95	70-130	20	03/14/2022 1920

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		105	70-130
1,2-Dichloroethane-d4		93	70-130
Toluene-d8		109	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34984-001
Batch: 34984
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	10	4.0	ug/L	03/15/2022 2242

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		96	70-130
1,2-Dichloroethane-d4		97	70-130
Toluene-d8		106	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34984-002
Batch: 34984
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	82		1	82	60-140	03/15/2022 2127

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		88	70-130
1,2-Dichloroethane-d4		90	70-130
Toluene-d8		91	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Dissolved Gases - MB

Sample ID: XQ34890-001
Batch: 34890
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Ethane	ND		1	10	2.5	ug/L	03/15/2022 1039
Ethene	ND		1	10	2.5	ug/L	03/15/2022 1039
Methane	ND		1	10	2.5	ug/L	03/15/2022 1039

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Dissolved Gases - LCS

Sample ID: XQ34890-002
Batch: 34890
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Ethane	550	580		1	106	70-130	03/15/2022 0954
Ethene	520	550		1	107	70-130	03/15/2022 0954
Methane	300	320		1	107	70-130	03/15/2022 0954

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Dissolved Gases - LCSD

Sample ID: XQ34890-003
Batch: 34890
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Ethane	550	580		1	105	0.70	70-130	30	03/15/2022 1008
Ethene	520	550		1	106	0.81	70-130	30	03/15/2022 1008
Methane	300	310		1	107	0.44	70-130	30	03/15/2022 1008

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Metals - MB

Sample ID: XQ34232-001
Batch: 34232
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/10/2022 1012

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Iron	ND		1	0.10	0.040	mg/L	03/11/2022 2039
Manganese	ND		1	0.015	0.0019	mg/L	03/11/2022 2039

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Metals - LCS

Sample ID: XQ34232-002
Batch: 34232
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/10/2022 1012

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Iron	20	18		1	91	80-120	03/11/2022 2043
Manganese	2.0	2.0		1	102	80-120	03/11/2022 2043

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

ICP-AES Metals - MB

Sample ID: XQ34234-001
Batch: 34234
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/10/2022 1012

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Dissolved Iron	ND		1	0.10	0.040	mg/L	03/14/2022 1607
Dissolved Manganese	ND		1	0.015	0.0019	mg/L	03/11/2022 2300

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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ICP-AES Metals - LCS

Sample ID: XQ34234-002
Batch: 34234
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/10/2022 1012

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Dissolved Iron	20	22		1	108	80-120	03/14/2022 1620
Dissolved Manganese	2.0	2.1		1	103	80-120	03/11/2022 2304

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Chain of Custody
and
Miscellaneous Documents

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www.shealylab.com

Chain of Custody Record

Number 098009

Client: AECOM	Report to Contact: Scott Ross	Telephone No. / E-mail: 803 201 4662 Scott.Ross@aecom.com	Quote No.
Address: 101 Research Dr	Sampler's Signature:	Analysis (Attach list if more space is needed)	Page 1 of 2
City: Columbia State: SC Zip Code: 29203	Printed Name: James Leathart Justin Bolles		
Project Name: Shakespeare Composite Structures			XC04096
Project No.: 60675505	P.O. No.		csp

Sample ID / Description (Containers for each sample may be combined on one line.)	Date	Time	Grab (G) / Composite (C)	Matrix: Aqueous	Matrix: Solid / Soil / Sediment	No of Containers by Preservative Type: Unpres.	H2SO4	HNO3	HCl	NaOH	Na2S2O3	TCL VOCs	Dissolved Gasses	Ferrous Iron	Iron, Mn	Dissolved: Iron, Mn	Alk, NO2, SO4	TSC	Remarks / Cooler I.D.
MW-8 - PDB	3-4-22	1045	G	X		1			3			X							
MW-8		1130	G	X		2	1	1	7			X	X	X	X	X	X	X	
MW-9 - PDB		0910	G	X					3			X							
MW-9		1000	G	X		2	1	1	7			X	X	X	X	X	X	X	
RDW-1 - PDB		0915	G	X					3			X							
RDW-1		1020	G	X					3			X							
MW-20i - PDB		1050	G	X					3			X							
MW-20i		1155	G	X		2	1	1	7			X	X	X	X	X	X	X	
MW-6D		1430	G	X		2	1	1	7			X	X	X	X	X	X	X	
Dup-04		—	G	X					3			X							

Turn Around Time Required (Prior lab approval required for expedited TAT.): ☒ Standard ☐ Rush (Specify)

Sample Disposal: ☐ Return to Client ☒ Disposal by Lab

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by	3-4-22	1655	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by			4. Laboratory received by	3-4-22	1655

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Circle) (Yes) No Ice Pack — Receipt Temp: 2.6 °C

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: F-AD-139 Effective Date: 08-01-2014

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Chain of Custody Record

Number 097984

Client: Accom	Report to Contact: Scott Ross	Telephone No. / E-mail: 803 201 7662 Scott.Ross@Accom.com	Quote No.
Address: 101 RESEARCH DR	Sampler's Signature:	Analysis (Attach list if more space is needed)	Page 2 of 2
City: Columbia State: SC Zip Code: 29203	Printed Name: James Leaphart Josh Bilko		
Project Name: SHAKESPEARE COMPOSITE STRUCTURES			XC04096 CSD
Project No.: 60675505	P.O. No.		

Sample ID / Description (Containers for each sample may be combined on one line)	Date	Time	G=Grab C=Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	No of Containers by Preservative Type: Unpres.	H2SO4	HNO3	HCl	NaOH	Na2S2O3	TCL VOCs	Remarks / Cooler I.D
MW-2i - PDS	3-4-22	1335	G	X						3			X	
MW-2i - MS		1440	G	X						3			X	
MW-2i - MSD		1440	G	X						3			X	
MW-2i		1440	G	X						3			X	
TB-08				X						2			X	

Turn Around Time Required (Prior lab approval required for expedited TAT.): [X] Standard [ ] Rush (Specify)

Sample Disposal: [ ] Return to Client [X] Disposal by Lab

Possible Hazard Identification: [X] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison [ ] Unknown

QC Requirements (Specify)

	Date	Time
1. Relinquished by:	3-4-22	1655
2. Relinquished by:		
3. Relinquished by:		
4. Relinquished by:		

	Date	Time
1. Received by:		
2. Received by:		
3. Received by:		
4. Laboratory received by: Karen McCamey	3.4.22	1655

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on ice (Circle) (Yes) No Ice Pack Receipt Temp 2.6 °C

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: F-AD-133 Effective Date: 08-01-2014

Pace Analytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: AECOM

Cooler Inspected by/date: KDRW / 03/04/2022

Lot #: XC04096

Means of receipt: ☑ Pace ☐ Client ☐ UPS ☐ FedEx ☐ Other:

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: 21-852 Chlorine Strip ID: NA Tested by: KDRW

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

2.6 / 2.6 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☑ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☑ Yes	☐ No	☐ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote #

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA. Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: CBP Date: 03/04/2022

Comments:

Report of Analysis

AECOM
101 Research Drive
Columbia, SC 29203
Attention: Scott Ross

Project Name: Shakespeare Composite Structures

Project Number: 60675505

Lot Number:**XC08059**

Date Completed:03/25/2022

04/04/2022 12:02 AM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
AECOM
Lot Number: XC08059

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

VOA 8260D

The laboratory control sample (LCS) for analytical batch 34828 exceeded acceptance criteria for the following analyte: Acetone (168%). This analyte was biased high and was not detected in the associated sample: XC08059-002 (MW-20).

The laboratory control sample (LCS) for analytical batch 34980 exceeded acceptance criteria for the following analyte: Acetone (156%) This analyte was biased high and was not detected in the associated samples: XC08059-003 (MW-12D-PDB), XC08059-004 (MW-12D), and XC08059-005 (TB-08).

During initial analysis the continuing calibration verification (CCV) associated with sample XC08059-001 (MW-20-PDB) for Acetone (68%) recovered above the upper control limit. As such, the sample result for Acetone may be biased high in the initial analysis. Re-analysis was performed out of a previously run headspace vial for Acetone. Both runs have been reported.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Sample Summary

AECOM

Lot Number: XC08059

Project Name: Shakespeare Composite Structures

Project Number: 60675505

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	MW-20-PDB	Aqueous	03/07/2022 1520	03/08/2022
002	MW-20	Aqueous	03/07/2022 1610	03/08/2022
003	MW-12D-PDB	Aqueous	03/08/2022 1130	03/08/2022
004	MW-12D	Aqueous	03/08/2022 1215	03/08/2022
005	TB-08	Aqueous	03/08/2022	03/08/2022

(5 samples)

Detection Summary

AECOM

Lot Number: XC08059

Project Name: Shakespeare Composite Structures

Project Number: 60675505

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	MW-20-PDB	Aqueous	Acetone	8260D	30		ug/L	7
002	MW-20	Aqueous	Acetone	8260D	4.8	JL	ug/L	9
003	MW-12D-PDB	Aqueous	Acetone	8260D	9.8	JL	ug/L	11
003	MW-12D-PDB	Aqueous	1,1-Dichloroethene	8260D	0.46	J	ug/L	11
003	MW-12D-PDB	Aqueous	cis-1,2-Dichloroethene	8260D	10		ug/L	11
003	MW-12D-PDB	Aqueous	Trichloroethene	8260D	70		ug/L	12
004	MW-12D	Aqueous	cis-1,2-Dichloroethene	8260D	10		ug/L	13
004	MW-12D	Aqueous	Trichloroethene	8260D	53		ug/L	14

(8 detections)

Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC08059-001
Description: MW-20-PDB
Matrix: Aqueous
Date Sampled: 03/07/2022 1520
Project Name: Shakespeare Composite
Date Received: 03/08/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/15/2022 0452	JWO		34828
2	5030B	8260D	1	03/21/2022 1615	BWS		35543

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	50	L	10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC08059-001
Description: MW-20-PDB
Matrix: Aqueous
Date Sampled: 03/07/2022 1520
Project Name: Shakespeare Composite
Date Received: 03/08/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/15/2022 0452	JWO		34828
2	5030B	8260D	1	03/21/2022 1615	BWS		35543

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		92	70-130		87	70-130
1,2-Dichloroethane-d4		102	70-130		119	70-130
Toluene-d8		92	70-130		103	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC08059-001
Description: MW-20-PDB
Matrix: Aqueous
Date Sampled: 03/07/2022 1520
Project Name: Shakespeare Composite
Date Received: 03/08/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/15/2022 0452	JWO		34828
2	5030B	8260D	1	03/21/2022 1615	BWS		35543

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	30		10	4.0	ug/L	2
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	2
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	2
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	2
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	2
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	2
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	2
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	2
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	2
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	2
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	2
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	2
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	2
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	2
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	2
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	2
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	2
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	2
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	2
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	2
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	2
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	2

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC08059-001
Description: MW-20-PDB
Matrix: Aqueous
Date Sampled: 03/07/2022 1520
Project Name: Shakespeare Composite
Date Received: 03/08/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/15/2022 0452	JWO		34828
2	5030B	8260D	1	03/21/2022 1615	BWS		35543

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	2
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	2
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	2
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	2
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	2

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		92	70-130		87	70-130
1,2-Dichloroethane-d4		102	70-130		119	70-130
Toluene-d8		92	70-130		103	70-130

LOQ = Limit of Quantitation
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC08059-002
Description: MW-20
Matrix: Aqueous
Date Sampled: 03/07/2022 1610
Project Name: Shakespeare Composite
Date Received: 03/08/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/15/2022 0515	JWO		34828

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	4.8	JL	10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC08059-002
Description: MW-20
Matrix: Aqueous
Date Sampled: 03/07/2022 1610
Project Name: Shakespeare Composite
Date Received: 03/08/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/15/2022 0515	JWO		34828

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		94	70-130
1,2-Dichloroethane-d4		102	70-130
Toluene-d8		94	70-130

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC08059-003
Description: MW-12D-PDB
Matrix: Aqueous
Date Sampled: 03/08/2022 1130
Project Name: Shakespeare Composite
Date Received: 03/08/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/16/2022 0308	JWO		34980
2	5030B	8260D	1	03/18/2022 2149	BBW		35438

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	9.8	JL	10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	0.46	J	0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	10		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC08059-003
Description: MW-12D-PDB
Matrix: Aqueous
Date Sampled: 03/08/2022 1130
Project Name: Shakespeare Composite
Date Received: 03/08/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/16/2022 0308	JWO		34980
2	5030B	8260D	1	03/18/2022 2149	BBW		35438

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1
Trichloroethene	79-01-6	8260D	70		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		89	70-130		81	70-130
1,2-Dichloroethane-d4		102	70-130		102	70-130
Toluene-d8		91	70-130		97	70-130

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E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
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N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC08059-004
Description: MW-12D
Matrix: Aqueous
Date Sampled: 03/08/2022 1215
Project Name: Shakespeare Composite
Date Received: 03/08/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/16/2022 0331	JWO		34980

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND	L	10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	10		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC08059-004
Description: MW-12D
Matrix: Aqueous
Date Sampled: 03/08/2022 1215
Project Name: Shakespeare Composite
Date Received: 03/08/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/16/2022 0331	JWO		34980

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	53		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		91	70-130
1,2-Dichloroethane-d4		103	70-130
Toluene-d8		93	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC08059-005
Description: TB-08
Matrix: Aqueous
Date Sampled: 03/08/2022
Project Name: Shakespeare Composite
Date Received: 03/08/2022
Project Number: 60675505

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/15/2022 2317	JWO		34980

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND	L	10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
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Volatile Organic Compounds by GC/MS

Client: AECOM			Laboratory ID: XC08059-005
Description: TB-08			Matrix: Aqueous
Date Sampled: 03/08/2022	Project Name: Shakespeare Composite		
Date Received: 03/08/2022	Project Number: 60675505		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/15/2022 2317	JWO		34980

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		93	70-130
1,2-Dichloroethane-d4		105	70-130
Toluene-d8		93	70-130

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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QC Summary

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34828-001
Batch: 34828
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	10	4.0	ug/L	03/14/2022 2336
Benzene	ND		1	0.50	0.40	ug/L	03/14/2022 2336
Bromodichloromethane	ND		1	0.50	0.40	ug/L	03/14/2022 2336
Bromoform	ND		1	0.50	0.40	ug/L	03/14/2022 2336
Bromomethane (Methyl bromide)	ND		1	0.50	0.40	ug/L	03/14/2022 2336
2-Butanone (MEK)	ND		1	10	2.0	ug/L	03/14/2022 2336
Carbon disulfide	ND		1	0.50	0.40	ug/L	03/14/2022 2336
Carbon tetrachloride	ND		1	0.50	0.40	ug/L	03/14/2022 2336
Chlorobenzene	ND		1	0.50	0.40	ug/L	03/14/2022 2336
Chloroethane	ND		1	0.50	0.40	ug/L	03/14/2022 2336
Chloroform	ND		1	0.50	0.40	ug/L	03/14/2022 2336
Chloromethane (Methyl chloride)	ND		1	0.50	0.40	ug/L	03/14/2022 2336
Cyclohexane	ND		1	0.50	0.40	ug/L	03/14/2022 2336
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.50	0.40	ug/L	03/14/2022 2336
Dibromochloromethane	ND		1	0.50	0.40	ug/L	03/14/2022 2336
1,2-Dibromoethane (EDB)	ND		1	0.50	0.40	ug/L	03/14/2022 2336
1,2-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/14/2022 2336
1,3-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/14/2022 2336
1,4-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/14/2022 2336
Dichlorodifluoromethane	ND		1	0.50	0.40	ug/L	03/14/2022 2336
1,1-Dichloroethane	ND		1	0.50	0.40	ug/L	03/14/2022 2336
1,2-Dichloroethane	ND		1	0.50	0.40	ug/L	03/14/2022 2336
1,1-Dichloroethene	ND		1	0.50	0.40	ug/L	03/14/2022 2336
cis-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/14/2022 2336
trans-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/14/2022 2336
1,2-Dichloropropane	ND		1	0.50	0.40	ug/L	03/14/2022 2336
cis-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/14/2022 2336
trans-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/14/2022 2336
Ethylbenzene	ND		1	0.50	0.40	ug/L	03/14/2022 2336
2-Hexanone	ND		1	10	2.0	ug/L	03/14/2022 2336
Isopropylbenzene	ND		1	0.50	0.40	ug/L	03/14/2022 2336
Methyl acetate	ND		1	1.0	0.40	ug/L	03/14/2022 2336
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.40	ug/L	03/14/2022 2336
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	03/14/2022 2336
Methylcyclohexane	ND		1	5.0	0.40	ug/L	03/14/2022 2336
Methylene chloride	ND		1	0.50	0.40	ug/L	03/14/2022 2336
Styrene	ND		1	0.50	0.41	ug/L	03/14/2022 2336
1,1,2,2-Tetrachloroethane	ND		1	0.50	0.40	ug/L	03/14/2022 2336
Tetrachloroethene	ND		1	0.50	0.40	ug/L	03/14/2022 2336
Toluene	ND		1	0.50	0.40	ug/L	03/14/2022 2336
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	03/14/2022 2336
1,2,4-Trichlorobenzene	ND		1	0.50	0.40	ug/L	03/14/2022 2336
1,1,1-Trichloroethane	ND		1	0.50	0.40	ug/L	03/14/2022 2336
1,1,2-Trichloroethane	ND		1	0.50	0.40	ug/L	03/14/2022 2336

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34828-001
Batch: 34828
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.50	0.40	ug/L	03/14/2022 2336
Trichlorofluoromethane	ND		1	0.50	0.40	ug/L	03/14/2022 2336
Vinyl chloride	ND		1	0.50	0.40	ug/L	03/14/2022 2336
Xylenes (total)	ND		1	1.0	0.40	ug/L	03/14/2022 2336

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		94	70-130
1,2-Dichloroethane-d4		103	70-130
Toluene-d8		96	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34828-002
Batch: 34828
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	170	N	1	168	60-140	03/14/2022 2100
Benzene	50	46		1	93	70-130	03/14/2022 2100
Bromodichloromethane	50	44		1	87	70-130	03/14/2022 2100
Bromoform	50	38		1	76	70-130	03/14/2022 2100
Bromomethane (Methyl bromide)	50	50		1	101	70-130	03/14/2022 2100
2-Butanone (MEK)	100	110		1	110	70-130	03/14/2022 2100
Carbon disulfide	50	48		1	95	70-130	03/14/2022 2100
Carbon tetrachloride	50	47		1	94	70-130	03/14/2022 2100
Chlorobenzene	50	43		1	86	70-130	03/14/2022 2100
Chloroethane	50	48		1	97	70-130	03/14/2022 2100
Chloroform	50	48		1	95	70-130	03/14/2022 2100
Chloromethane (Methyl chloride)	50	48		1	95	60-140	03/14/2022 2100
Cyclohexane	50	56		1	112	70-130	03/14/2022 2100
1,2-Dibromo-3-chloropropane (DBCP)	50	42		1	85	70-130	03/14/2022 2100
Dibromochloromethane	50	40		1	79	70-130	03/14/2022 2100
1,2-Dibromoethane (EDB)	50	42		1	84	70-130	03/14/2022 2100
1,2-Dichlorobenzene	50	44		1	87	70-130	03/14/2022 2100
1,3-Dichlorobenzene	50	43		1	85	70-130	03/14/2022 2100
1,4-Dichlorobenzene	50	42		1	84	70-130	03/14/2022 2100
Dichlorodifluoromethane	50	49		1	98	60-140	03/14/2022 2100
1,1-Dichloroethane	50	48		1	96	70-130	03/14/2022 2100
1,2-Dichloroethane	50	48		1	97	70-130	03/14/2022 2100
1,1-Dichloroethene	50	47		1	94	70-130	03/14/2022 2100
cis-1,2-Dichloroethene	50	47		1	94	70-130	03/14/2022 2100
trans-1,2-Dichloroethene	50	46		1	91	70-130	03/14/2022 2100
1,2-Dichloropropane	50	43		1	86	70-130	03/14/2022 2100
cis-1,3-Dichloropropene	50	45		1	90	70-130	03/14/2022 2100
trans-1,3-Dichloropropene	50	43		1	86	70-130	03/14/2022 2100
Ethylbenzene	50	44		1	87	70-130	03/14/2022 2100
2-Hexanone	100	84		1	84	70-130	03/14/2022 2100
Isopropylbenzene	50	45		1	89	70-130	03/14/2022 2100
Methyl acetate	50	51		1	101	70-130	03/14/2022 2100
Methyl tertiary butyl ether (MTBE)	50	49		1	99	70-130	03/14/2022 2100
4-Methyl-2-pentanone	100	94		1	94	70-130	03/14/2022 2100
Methylcyclohexane	50	45		1	89	70-130	03/14/2022 2100
Methylene chloride	50	46		1	91	70-130	03/14/2022 2100
Styrene	50	42		1	85	70-130	03/14/2022 2100
1,1,2,2-Tetrachloroethane	50	43		1	87	70-130	03/14/2022 2100
Tetrachloroethene	50	42		1	84	70-130	03/14/2022 2100
Toluene	50	44		1	88	70-130	03/14/2022 2100
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	47		1	94	70-130	03/14/2022 2100
1,2,4-Trichlorobenzene	50	41		1	83	70-130	03/14/2022 2100
1,1,1-Trichloroethane	50	47		1	94	70-130	03/14/2022 2100
1,1,2-Trichloroethane	50	42		1	85	70-130	03/14/2022 2100

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34828-002
Batch: 34828
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	43		1	86	70-130	03/14/2022 2100
Trichlorofluoromethane	50	49		1	99	70-130	03/14/2022 2100
Vinyl chloride	50	49		1	97	70-130	03/14/2022 2100
Xylenes (total)	100	88		1	88	70-130	03/14/2022 2100

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		89	70-130
1,2-Dichloroethane-d4		96	70-130
Toluene-d8		86	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34980-001
Batch: 34980
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	10	4.0	ug/L	03/15/2022 2147
Benzene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Bromodichloromethane	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Bromoform	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Bromomethane (Methyl bromide)	ND		1	0.50	0.40	ug/L	03/15/2022 2147
2-Butanone (MEK)	ND		1	10	2.0	ug/L	03/15/2022 2147
Carbon disulfide	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Carbon tetrachloride	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Chlorobenzene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Chloroethane	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Chloroform	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Chloromethane (Methyl chloride)	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Cyclohexane	ND		1	0.50	0.40	ug/L	03/15/2022 2147
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Dibromochloromethane	ND		1	0.50	0.40	ug/L	03/15/2022 2147
1,2-Dibromoethane (EDB)	ND		1	0.50	0.40	ug/L	03/15/2022 2147
1,2-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
1,3-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
1,4-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Dichlorodifluoromethane	ND		1	0.50	0.40	ug/L	03/15/2022 2147
1,1-Dichloroethane	ND		1	0.50	0.40	ug/L	03/15/2022 2147
1,2-Dichloroethane	ND		1	0.50	0.40	ug/L	03/15/2022 2147
1,1-Dichloroethene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
cis-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
trans-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
1,2-Dichloropropane	ND		1	0.50	0.40	ug/L	03/15/2022 2147
cis-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
trans-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Ethylbenzene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
2-Hexanone	ND		1	10	2.0	ug/L	03/15/2022 2147
Isopropylbenzene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Methyl acetate	ND		1	1.0	0.40	ug/L	03/15/2022 2147
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.40	ug/L	03/15/2022 2147
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	03/15/2022 2147
Methylcyclohexane	ND		1	5.0	0.40	ug/L	03/15/2022 2147
Methylene chloride	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Styrene	ND		1	0.50	0.41	ug/L	03/15/2022 2147
1,1,2,2-Tetrachloroethane	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Tetrachloroethene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Toluene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	03/15/2022 2147
1,2,4-Trichlorobenzene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
1,1,1-Trichloroethane	ND		1	0.50	0.40	ug/L	03/15/2022 2147
1,1,2-Trichloroethane	ND		1	0.50	0.40	ug/L	03/15/2022 2147

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34980-001
Batch: 34980
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Trichlorofluoromethane	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Vinyl chloride	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Xylenes (total)	ND		1	1.0	0.40	ug/L	03/15/2022 2147

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		89	70-130
1,2-Dichloroethane-d4		102	70-130
Toluene-d8		91	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34980-002
Batch: 34980
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	160	N	1	156	60-140	03/15/2022 2044
Benzene	50	53		1	106	70-130	03/15/2022 2044
Bromodichloromethane	50	50		1	99	70-130	03/15/2022 2044
Bromoform	50	42		1	84	70-130	03/15/2022 2044
Bromomethane (Methyl bromide)	50	50		1	100	70-130	03/15/2022 2044
2-Butanone (MEK)	100	120		1	123	70-130	03/15/2022 2044
Carbon disulfide	50	56		1	113	70-130	03/15/2022 2044
Carbon tetrachloride	50	53		1	107	70-130	03/15/2022 2044
Chlorobenzene	50	49		1	97	70-130	03/15/2022 2044
Chloroethane	50	50		1	99	70-130	03/15/2022 2044
Chloroform	50	54		1	109	70-130	03/15/2022 2044
Chloromethane (Methyl chloride)	50	48		1	96	60-140	03/15/2022 2044
Cyclohexane	50	63		1	127	70-130	03/15/2022 2044
1,2-Dibromo-3-chloropropane (DBCP)	50	48		1	95	70-130	03/15/2022 2044
Dibromochloromethane	50	44		1	88	70-130	03/15/2022 2044
1,2-Dibromoethane (EDB)	50	47		1	95	70-130	03/15/2022 2044
1,2-Dichlorobenzene	50	49		1	97	70-130	03/15/2022 2044
1,3-Dichlorobenzene	50	48		1	96	70-130	03/15/2022 2044
1,4-Dichlorobenzene	50	47		1	95	70-130	03/15/2022 2044
Dichlorodifluoromethane	50	49		1	98	60-140	03/15/2022 2044
1,1-Dichloroethane	50	55		1	110	70-130	03/15/2022 2044
1,2-Dichloroethane	50	55		1	111	70-130	03/15/2022 2044
1,1-Dichloroethene	50	55		1	109	70-130	03/15/2022 2044
cis-1,2-Dichloroethene	50	53		1	106	70-130	03/15/2022 2044
trans-1,2-Dichloroethene	50	52		1	105	70-130	03/15/2022 2044
1,2-Dichloropropane	50	50		1	101	70-130	03/15/2022 2044
cis-1,3-Dichloropropene	50	51		1	102	70-130	03/15/2022 2044
trans-1,3-Dichloropropene	50	48		1	97	70-130	03/15/2022 2044
Ethylbenzene	50	50		1	100	70-130	03/15/2022 2044
2-Hexanone	100	110		1	106	70-130	03/15/2022 2044
Isopropylbenzene	50	51		1	101	70-130	03/15/2022 2044
Methyl acetate	50	59		1	117	70-130	03/15/2022 2044
Methyl tertiary butyl ether (MTBE)	50	56		1	112	70-130	03/15/2022 2044
4-Methyl-2-pentanone	100	110		1	111	70-130	03/15/2022 2044
Methylcyclohexane	50	54		1	108	70-130	03/15/2022 2044
Methylene chloride	50	53		1	106	70-130	03/15/2022 2044
Styrene	50	49		1	98	70-130	03/15/2022 2044
1,1,2,2-Tetrachloroethane	50	49		1	98	70-130	03/15/2022 2044
Tetrachloroethene	50	48		1	96	70-130	03/15/2022 2044
Toluene	50	51		1	101	70-130	03/15/2022 2044
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	55		1	110	70-130	03/15/2022 2044
1,2,4-Trichlorobenzene	50	46		1	93	70-130	03/15/2022 2044
1,1,1-Trichloroethane	50	54		1	108	70-130	03/15/2022 2044
1,1,2-Trichloroethane	50	47		1	95	70-130	03/15/2022 2044

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34980-002
Batch: 34980
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	48		1	96	70-130	03/15/2022 2044
Trichlorofluoromethane	50	51		1	101	70-130	03/15/2022 2044
Vinyl chloride	50	50		1	100	70-130	03/15/2022 2044
Xylenes (total)	100	100		1	101	70-130	03/15/2022 2044

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		98	70-130
1,2-Dichloroethane-d4		103	70-130
Toluene-d8		93	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ35438-001
Batch: 35438
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Cyclohexane	ND		1	0.50	0.40	ug/L	03/18/2022 2059

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		81	70-130
1,2-Dichloroethane-d4		101	70-130
Toluene-d8		97	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ35438-002
Batch: 35438
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Cyclohexane	50	45		1	91	70-130	03/18/2022 1953

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		99	70-130
1,2-Dichloroethane-d4		85	70-130
Toluene-d8		101	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ35543-001
Batch: 35543
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	10	4.0	ug/L	03/21/2022 1011
Benzene	ND		1	0.50	0.40	ug/L	03/21/2022 1011
Bromodichloromethane	ND		1	0.50	0.40	ug/L	03/21/2022 1011
Bromoform	ND		1	0.50	0.40	ug/L	03/21/2022 1011
Bromomethane (Methyl bromide)	ND		1	0.50	0.40	ug/L	03/21/2022 1011
2-Butanone (MEK)	ND		1	10	2.0	ug/L	03/21/2022 1011
Carbon disulfide	ND		1	0.50	0.40	ug/L	03/21/2022 1011
Carbon tetrachloride	ND		1	0.50	0.40	ug/L	03/21/2022 1011
Chlorobenzene	ND		1	0.50	0.40	ug/L	03/21/2022 1011
Chloroethane	ND		1	0.50	0.40	ug/L	03/21/2022 1011
Chloroform	ND		1	0.50	0.40	ug/L	03/21/2022 1011
Chloromethane (Methyl chloride)	ND		1	0.50	0.40	ug/L	03/21/2022 1011
Cyclohexane	ND		1	0.50	0.40	ug/L	03/21/2022 1011
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.50	0.40	ug/L	03/21/2022 1011
Dibromochloromethane	ND		1	0.50	0.40	ug/L	03/21/2022 1011
1,2-Dibromoethane (EDB)	ND		1	0.50	0.40	ug/L	03/21/2022 1011
1,2-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/21/2022 1011
1,3-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/21/2022 1011
1,4-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/21/2022 1011
Dichlorodifluoromethane	ND		1	0.50	0.40	ug/L	03/21/2022 1011
1,1-Dichloroethane	ND		1	0.50	0.40	ug/L	03/21/2022 1011
1,2-Dichloroethane	ND		1	0.50	0.40	ug/L	03/21/2022 1011
1,1-Dichloroethene	ND		1	0.50	0.40	ug/L	03/21/2022 1011
cis-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/21/2022 1011
trans-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/21/2022 1011
1,2-Dichloropropane	ND		1	0.50	0.40	ug/L	03/21/2022 1011
cis-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/21/2022 1011
trans-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/21/2022 1011
Ethylbenzene	ND		1	0.50	0.40	ug/L	03/21/2022 1011
2-Hexanone	ND		1	10	2.0	ug/L	03/21/2022 1011
Isopropylbenzene	ND		1	0.50	0.40	ug/L	03/21/2022 1011
Methyl acetate	ND		1	1.0	0.40	ug/L	03/21/2022 1011
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.40	ug/L	03/21/2022 1011
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	03/21/2022 1011
Methylcyclohexane	ND		1	5.0	0.40	ug/L	03/21/2022 1011
Methylene chloride	ND		1	0.50	0.40	ug/L	03/21/2022 1011
Styrene	ND		1	0.50	0.41	ug/L	03/21/2022 1011
1,1,2,2-Tetrachloroethane	ND		1	0.50	0.40	ug/L	03/21/2022 1011
Tetrachloroethene	ND		1	0.50	0.40	ug/L	03/21/2022 1011
Toluene	ND		1	0.50	0.40	ug/L	03/21/2022 1011
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	03/21/2022 1011
1,2,4-Trichlorobenzene	ND		1	0.50	0.40	ug/L	03/21/2022 1011
1,1,1-Trichloroethane	ND		1	0.50	0.40	ug/L	03/21/2022 1011
1,1,2-Trichloroethane	ND		1	0.50	0.40	ug/L	03/21/2022 1011

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ35543-001
Batch: 35543
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.50	0.40	ug/L	03/21/2022 1011
Trichlorofluoromethane	ND		1	0.50	0.40	ug/L	03/21/2022 1011
Vinyl chloride	ND		1	0.50	0.40	ug/L	03/21/2022 1011
Xylenes (total)	ND		1	1.0	0.40	ug/L	03/21/2022 1011

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		82	70-130
1,2-Dichloroethane-d4		112	70-130
Toluene-d8		100	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ35543-002
Batch: 35543
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	96		1	96	60-140	03/21/2022 0922
Benzene	50	54		1	108	70-130	03/21/2022 0922
Bromodichloromethane	50	50		1	100	70-130	03/21/2022 0922
Bromoform	50	48		1	96	70-130	03/21/2022 0922
Bromomethane (Methyl bromide)	50	65		1	130	70-130	03/21/2022 0922
2-Butanone (MEK)	100	100		1	103	70-130	03/21/2022 0922
Carbon disulfide	50	51		1	102	70-130	03/21/2022 0922
Carbon tetrachloride	50	49		1	99	70-130	03/21/2022 0922
Chlorobenzene	50	51		1	103	70-130	03/21/2022 0922
Chloroethane	50	56		1	111	70-130	03/21/2022 0922
Chloroform	50	49		1	99	70-130	03/21/2022 0922
Chloromethane (Methyl chloride)	50	62		1	123	60-140	03/21/2022 0922
Cyclohexane	50	55		1	110	70-130	03/21/2022 0922
1,2-Dibromo-3-chloropropane (DBCP)	50	45		1	90	70-130	03/21/2022 0922
Dibromochloromethane	50	50		1	100	70-130	03/21/2022 0922
1,2-Dibromoethane (EDB)	50	53		1	106	70-130	03/21/2022 0922
1,2-Dichlorobenzene	50	52		1	103	70-130	03/21/2022 0922
1,3-Dichlorobenzene	50	52		1	104	70-130	03/21/2022 0922
1,4-Dichlorobenzene	50	50		1	100	70-130	03/21/2022 0922
Dichlorodifluoromethane	50	56		1	111	60-140	03/21/2022 0922
1,1-Dichloroethane	50	54		1	107	70-130	03/21/2022 0922
1,2-Dichloroethane	50	49		1	98	70-130	03/21/2022 0922
1,1-Dichloroethene	50	51		1	102	70-130	03/21/2022 0922
cis-1,2-Dichloroethene	50	52		1	104	70-130	03/21/2022 0922
trans-1,2-Dichloroethene	50	53		1	105	70-130	03/21/2022 0922
1,2-Dichloropropane	50	55		1	110	70-130	03/21/2022 0922
cis-1,3-Dichloropropene	50	52		1	105	70-130	03/21/2022 0922
trans-1,3-Dichloropropene	50	54		1	109	70-130	03/21/2022 0922
Ethylbenzene	50	57		1	114	70-130	03/21/2022 0922
2-Hexanone	100	110		1	107	70-130	03/21/2022 0922
Isopropylbenzene	50	48		1	97	70-130	03/21/2022 0922
Methyl acetate	50	55		1	109	70-130	03/21/2022 0922
Methyl tertiary butyl ether (MTBE)	50	53		1	107	70-130	03/21/2022 0922
4-Methyl-2-pentanone	100	110		1	107	70-130	03/21/2022 0922
Methylcyclohexane	50	59		1	117	70-130	03/21/2022 0922
Methylene chloride	50	47		1	94	70-130	03/21/2022 0922
Styrene	50	53		1	106	70-130	03/21/2022 0922
1,1,2,2-Tetrachloroethane	50	52		1	105	70-130	03/21/2022 0922
Tetrachloroethene	50	55		1	110	70-130	03/21/2022 0922
Toluene	50	57		1	115	70-130	03/21/2022 0922
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	56		1	112	70-130	03/21/2022 0922
1,2,4-Trichlorobenzene	50	48		1	97	70-130	03/21/2022 0922
1,1,1-Trichloroethane	50	53		1	106	70-130	03/21/2022 0922
1,1,2-Trichloroethane	50	52		1	104	70-130	03/21/2022 0922

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ35543-002
Batch: 35543
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	49		1	98	70-130	03/21/2022 0922
Trichlorofluoromethane	50	57		1	113	70-130	03/21/2022 0922
Vinyl chloride	50	59		1	118	70-130	03/21/2022 0922
Xylenes (total)	100	100		1	103	70-130	03/21/2022 0922

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		101	70-130
1,2-Dichloroethane-d4		95	70-130
Toluene-d8		105	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Chain of Custody

and

Miscellaneous Documents

Pace Analytical®

PACE ANALYTICAL SERVICES, LLC
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.pacelabs.com

Number 132114

Client: AECOM	Report to Contact: Scott Ross	Telephone No. / E-mail: scott.ross@aecom.com	Quote No.
Address: 101 Research Dr	Sampler's Signature: X	Analysis (Attach list if more space is needed)	Page 1 of 1
City: Columbia / State: SC / Zip Code: 29203	Printed Name: Justin Butler		XC08059 CSD
Project Name: Shakespeare Composite Structures			
Project No.: 60675505	P.O. No.		

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	Grab/Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	No. of Containers by Preservative Type: Unpres.	HNO3	H2SO4	HCl	NaOH	NaS2O3	Field Filtered	TCL VOC	Remarks / Cooler I.D.
MW-20-PDB	3/7/22	1520	6	X						2				X	
MW-20	3/7/22	1610	6	X						3				X	
MW-12D-PDB	3/8/22	1130	6	X						2				X	
MW-12D	3/8/22	1215	6	X						3				X	
TB-08				X						2				X	

Turn Around Time Required (Prior lab approval required for expedited TAT.): X Standard ☐ Rush (Specify)

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by	3/8/22	1635	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by			4. Laboratory received by	3.8.22	1635

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Circle) (Yes) No Ice Pack Receipt Temp 2.6°C Temp Blank ☐ Y ☐ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME009N2-01

PACE ANALYTICAL SERVICES, LLC

PaceAnalytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: AECOM Cooler Inspected by/date: KDRW / 3/8/2022 Lot #: XC08059

Means of receipt: ☑ Pace ☐ Client ☐ UPS ☐ FedEx ☐ Other:

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

2.8 / 2.8 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☐ Temperature Blank ☐ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☐ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☑ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc...) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote #

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA. Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: KDRW Date: 3/8/2022

Comments:

Report of Analysis

AECOM
101 Research Drive
Columbia, SC 29203
Attention: Scott Ross

Project Name: Signify Shakespeare

Project Number: 60635197

Lot Number:**XC08061**

Date Completed:03/30/2022

04/07/2022 9:27 AM
Approved and released by:
Project Manager II: **Cathy S. Dover**

The electronic signature above is the equivalent of a handwritten signature.

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
AECOM
Lot Number: XC08061

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18.

VOA 8260D
The laboratory control sample (LCS) for analytical batch 34980 exceeded acceptance criteria for Acetone (156%) This analyte was biased high and was not detected in the associated samples:XC08061-001 (ERD-OBSW-1I) and XC08061-002 (MW-10I). Associated samples XC08061-003 (ERD-OBSW-1) and XC08061-005 (TB-10) had a low level (J flagged) detect for acetone. The data has been reported.

Sample XC08061-004 (MW-10) was diluted due to the nature of the sample matrix. The LOQ has been elevated to reflect the dilution.

Nitrate 300.0
The LCS associated with the following samples was analyzed after the samples: XC08061-001 (ERD-OBSW-1I), XC08061-002 (MW-10I), XC08061-003 (ERD-OBSW-1) and XC08061-004 (MW-10). The SOP specifies that the QC must be analyzed before the samples. The samples were reanalyzed for confirmation.

Reanalysis of the following samples was performed outside of the analytical holding time: XC08061-001 (ERD-OBSW-1I), XC08061-002 (MW-10I), XC08061-003 (ERD-OBSW-1) and XC08061-004 (MW-10). Due to batch and instrument failures as well as matrix interference, all samples were reanalyzed outside of holding time. Samples XC08061-003 and XC08061-004 confirm original analysis and Run 1 has been reported. XC08061-001 and XC08061-002 contained significant matrix interference in the original analysis and the reanalysis was done within 24 hours outside holding time. Both runs have been reported for these two samples.

Nitrite 300.0
Samples XC08061-001 (ERD-OBSW-1I) and XC08061-002 (MW-10I) ran before the LOQ. Additionally, sample XC08061-001 contained a significant amount of matrix that interferes with the ability to determine the presence of nitrite. Because of this, XC08061-001 was reanalyzed outside of holding time and both runs have been reported.

Samples XC08061-001 (ERD-OBSW-1I), XC08061-002 (MW-10I), XC08061-003 (ERD-OBSW-1) and XC08061-004 (MW-10) ran before the LCS. The LCS is passing criteria. The data has been reported.

Reanalysis of the following samples was performed outside of the analytical holding time: XC08061-001 (ERD-OBSW-1I), XC08061-002 (MW-10I), XC08061-003 (ERD-OBSW-1) and XC08061-004 (MW-10). Due to batch and instrument failures as well as matrix interference, all samples were reanalyzed outside of holding time. Samples XC08061-002, XC08061-003 and XC08061-004 confirm original analysis is below the LOQ so the original Run 1 has been reported. XC08061-001 contained matrix in the original analysis and Run 2 was outside holding time; therefore, both runs have been reported.

TOC SM5310C
The continuing calibration blank (CCB) for analytical batch 34637 contained the analyte total organic carbon (TOC) greater than the SOP acceptance criteria. The associated sample, XC08061-001 (ERD-OBSW-1I), contained detections for this analyte at a concentration greater than 10X the value found in the CCB; therefore sample results are not impacted. The data has been reported.

The following samples were diluted due to the nature of the sample matrix: XC08061-002 (MW-10I), XC08061-003 (ERD-OBSW-1), and XC08061-004 (MW-10). The LOQ has been elevated to reflect the dilution.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

Sample Summary

AECOM

Lot Number: XC08061

Project Name: Signify Shakespeare

Project Number: 60635197

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	ERD-OBSW-1I	Aqueous	03/08/2022 1010	03/08/2022
002	MW-10I	Aqueous	03/08/2022 1110	03/08/2022
003	ERD-OBSW-1	Aqueous	03/08/2022 1335	03/08/2022
004	MW-10	Aqueous	03/08/2022 1435	03/08/2022
005	TB-10	Aqueous	03/08/2022	03/08/2022

(5 samples)

Detection Summary

AECOM

Lot Number: XC08061

Project Name: Signify Shakespeare

Project Number: 60635197

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	ERD-OBSW-1I	Aqueous	Chloride	300.0	10		mg/L	7
001	ERD-OBSW-1I	Aqueous	TOC	SM 5310C-	140		mg/L	7
001	ERD-OBSW-1I	Aqueous	2-Butanone (MEK)	8260D	22	J	ug/L	8
001	ERD-OBSW-1I	Aqueous	1,1-Dichloroethene	8260D	2.5		ug/L	8
001	ERD-OBSW-1I	Aqueous	cis-1,2-Dichloroethene	8260D	53		ug/L	8
001	ERD-OBSW-1I	Aqueous	trans-1,2-Dichloroethene	8260D	3.1		ug/L	8
001	ERD-OBSW-1I	Aqueous	Methyl acetate	8260D	3.7	J	ug/L	8
001	ERD-OBSW-1I	Aqueous	Trichloroethene	8260D	590		ug/L	9
001	ERD-OBSW-1I	Aqueous	Vinyl chloride	8260D	2.5		ug/L	9
001	ERD-OBSW-1I	Aqueous	Ethane	RSK - 175	5.7	J	ug/L	10
001	ERD-OBSW-1I	Aqueous	Ethene	RSK - 175	14		ug/L	10
001	ERD-OBSW-1I	Aqueous	Methane	RSK - 175	4500		ug/L	10
001	ERD-OBSW-1I	Aqueous	Dissolved Manganese	6010D	0.68		mg/L	11
001	ERD-OBSW-1I	Aqueous	Iron	6010D	5.0		mg/L	12
001	ERD-OBSW-1I	Aqueous	Manganese	6010D	1.7		mg/L	12
002	MW-10I	Aqueous	Chloride	300.0	8.2		mg/L	13
002	MW-10I	Aqueous	Nitrate - N	300.0	0.0099	HJ	mg/L	13
002	MW-10I	Aqueous	TOC	SM 5310C-	16		mg/L	13
002	MW-10I	Aqueous	cis-1,2-Dichloroethene	8260D	690		ug/L	14
002	MW-10I	Aqueous	Trichloroethene	8260D	50		ug/L	15
002	MW-10I	Aqueous	Methane	RSK - 175	1400		ug/L	16
002	MW-10I	Aqueous	Dissolved Iron	6010D	11		mg/L	17
002	MW-10I	Aqueous	Dissolved Manganese	6010D	1.0		mg/L	17
002	MW-10I	Aqueous	Iron	6010D	12		mg/L	18
002	MW-10I	Aqueous	Manganese	6010D	0.98		mg/L	18
003	ERD-OBSW-1	Aqueous	Chloride	300.0	94	S	mg/L	19
003	ERD-OBSW-1	Aqueous	Nitrate - N	300.0	0.24		mg/L	19
003	ERD-OBSW-1	Aqueous	Nitrite - N	300.0	0.012	J	mg/L	19
003	ERD-OBSW-1	Aqueous	TOC	SM 5310C-	21		mg/L	19
003	ERD-OBSW-1	Aqueous	Acetone	8260D	5.7	JL	ug/L	20
003	ERD-OBSW-1	Aqueous	1,2-Dichloroethane	8260D	0.82		ug/L	20
003	ERD-OBSW-1	Aqueous	cis-1,2-Dichloroethene	8260D	86		ug/L	20
003	ERD-OBSW-1	Aqueous	Methyl acetate	8260D	0.60	J	ug/L	20
003	ERD-OBSW-1	Aqueous	Trichloroethene	8260D	180		ug/L	21
003	ERD-OBSW-1	Aqueous	Methane	RSK - 175	150		ug/L	22
003	ERD-OBSW-1	Aqueous	Dissolved Manganese	6010D	0.064		mg/L	23
003	ERD-OBSW-1	Aqueous	Iron	6010D	3.4		mg/L	24
003	ERD-OBSW-1	Aqueous	Manganese	6010D	0.060		mg/L	24
004	MW-10	Aqueous	Chloride	300.0	28		mg/L	25
004	MW-10	Aqueous	Nitrate - N	300.0	0.17		mg/L	25
004	MW-10	Aqueous	Nitrite - N	300.0	0.015	J	mg/L	25
004	MW-10	Aqueous	Sulfate	300.0	0.58	J	mg/L	25
004	MW-10	Aqueous	TOC	SM 5310C-	920		mg/L	25

Detection Summary (Continued)

Lot Number: XC08061

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
004	MW-10	Aqueous	Trichloroethene	8260D	590		ug/L	27
004	MW-10	Aqueous	Ethene	RSK - 175	2.8	J	ug/L	28
004	MW-10	Aqueous	Methane	RSK - 175	2600		ug/L	28
004	MW-10	Aqueous	Dissolved Iron	6010D	1.9		mg/L	29
004	MW-10	Aqueous	Dissolved Manganese	6010D	0.052		mg/L	29
004	MW-10	Aqueous	Iron	6010D	5.9		mg/L	30
004	MW-10	Aqueous	Manganese	6010D	0.18		mg/L	30
005	TB-10	Aqueous	Acetone	8260D	4.0	JL	ug/L	31

(51 detections)

Inorganic non-metals

Client: AECOM
Description: ERD-OBSW-1I
Date Sampled: 03/08/2022 1010
Date Received: 03/08/2022
Laboratory ID: XC08061-001
Matrix: Aqueous
Project Name: Signify Shakespeare
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Chloride) 300.0	1	03/10/2022 2203	YCB		34642
1		(Nitrate - N) 300.0	1	03/10/2022 0545	YCB		34754
2		(Nitrate - N) 300.0	1	03/10/2022 2203	SLP		34948
1		(Nitrite - N) 300.0	1	03/10/2022 0545	YCB		34752
2		(Nitrite - N) 300.0	1	03/10/2022 2203	SLP		34946
1		(Sulfate) 300.0	1	03/10/2022 2203	YCB		34641
1		(TOC) SM 5310C-2014	5	03/12/2022 2101	DMA		34637

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Chloride		300.0	10		1.0	0.25	mg/L	1
Nitrate - N		300.0	ND		0.020	0.0050	mg/L	1
Sulfate		300.0	ND		1.0	0.25	mg/L	1
Nitrite - N		300.0	ND	B	0.020	0.0050	mg/L	1
Nitrate - N		300.0	ND	H	0.020	0.0050	mg/L	2
TOC		SM 5310C-2014	140		5.0	5.0	mg/L	1
Nitrite - N		300.0	ND	H	0.020	0.0050	mg/L	2

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

Volatile Organic Compounds by GC/MS

Client: AECOM			Laboratory ID: XC08061-001
Description: ERD-OBSW-1I			Matrix: Aqueous
Date Sampled: 03/08/2022 1010	Project Name: Signify Shakespeare		
Date Received: 03/08/2022	Project Number: 60635197		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	5	03/16/2022 0505	JWO		34980

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND	L	50	20	ug/L	1
Benzene	71-43-2	8260D	ND		2.5	2.0	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		2.5	2.0	ug/L	1
Bromoform	75-25-2	8260D	ND		2.5	2.0	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.5	2.0	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	22	J	50	10	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		2.5	2.0	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		2.5	2.0	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		2.5	2.0	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.5	2.0	ug/L	1
Chloroform	67-66-3	8260D	ND		2.5	2.0	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		2.5	2.0	ug/L	1
Cyclohexane	110-82-7	8260D	ND		2.5	2.0	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		2.5	2.0	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		2.5	2.0	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		2.5	2.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		2.5	2.0	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		2.5	2.0	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		2.5	2.0	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.5	2.0	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		2.5	2.0	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		2.5	2.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	2.5		2.5	2.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	53		2.5	2.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	3.1		2.5	2.0	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		2.5	2.0	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		2.5	2.0	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		2.5	2.0	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		2.5	2.0	ug/L	1
2-Hexanone	591-78-6	8260D	ND		50	10	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		2.5	2.0	ug/L	1
Methyl acetate	79-20-9	8260D	3.7	J	5.0	2.0	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		2.5	2.0	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		50	10	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		25	2.0	ug/L	1
Methylene chloride	75-09-2	8260D	ND		2.5	2.0	ug/L	1
Styrene	100-42-5	8260D	ND		2.5	2.1	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		2.5	2.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		2.5	2.0	ug/L	1
Toluene	108-88-3	8260D	ND		2.5	2.0	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		5.0	2.1	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		2.5	2.0	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		2.5	2.0	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		2.5	2.0	ug/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC08061-001
Description: ERD-OBSW-1I
Matrix: Aqueous
Date Sampled: 03/08/2022 1010
Project Name: Signify Shakespeare
Date Received: 03/08/2022
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	5	03/16/2022 0505	JWO		34980

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	590		2.5	2.0	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		2.5	2.0	ug/L	1
Vinyl chloride	75-01-4	8260D	2.5		2.5	2.0	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		5.0	2.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		93	70-130
1,2-Dichloroethane-d4		103	70-130
Toluene-d8		93	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Dissolved Gases

Client: AECOM
Laboratory ID: XC08061-001
Description: ERD-OBSW-1I
Matrix: Aqueous
Date Sampled: 03/08/2022 1010
Project Name: Signify Shakespeare
Date Received: 03/08/2022
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	03/15/2022 1621	JM1		34890
2		RSK - 175	5	03/21/2022 1235	JM1		35565

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	5.7	J	10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	14		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	4500		50	13	ug/L	2

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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ICP-AES Metals

Client: AECOM			Laboratory ID: XC08061-001
Description: ERD-OBSW-1I			Matrix: Aqueous
Date Sampled: 03/08/2022 1010	Project Name: Signify Shakespeare		
Date Received: 03/08/2022	Project Number: 60635197		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/18/2022 2219	KSH2	03/18/2022 0946	35213

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Dissolved Iron	7439-89-6	6010D	ND		0.10	0.040	mg/L	1
Dissolved Manganese	7439-96-5	6010D	0.68		0.015	0.0019	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Metals

Client: AECOM
Laboratory ID: XC08061-001
Description: ERD-OBSW-1I
Matrix: Aqueous
Date Sampled: 03/08/2022 1010
Project Name: Signify Shakespeare
Date Received: 03/08/2022
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/11/2022 2154	KSH2	03/10/2022 1012	34232
2	3005A	6010D	1	03/14/2022 1846	KSH2	03/10/2022 1012	34232

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Iron	7439-89-6	6010D	5.0		0.10	0.040	mg/L	2
Manganese	7439-96-5	6010D	1.7		0.015	0.0019	mg/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Inorganic non-metals

Client: AECOM
Description: MW-10I
Date Sampled: 03/08/2022 1110
Date Received: 03/08/2022
Laboratory ID: XC08061-002
Matrix: Aqueous
Project Name: Signify Shakespeare
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Chloride) 300.0	1	03/10/2022 2222	YCB		34642
1		(Nitrate - N) 300.0	1	03/10/2022 0603	YCB		34754
2		(Nitrate - N) 300.0	1	03/10/2022 2222	SLP		34948
1		(Nitrite - N) 300.0	1	03/10/2022 0603	YCB		34752
1		(Sulfate) 300.0	1	03/10/2022 2222	YCB		34641
3		(TOC) SM 5310C-2014	5	03/29/2022 0210	DMA		36304

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Chloride		300.0	8.2		1.0	0.25	mg/L	1
Nitrite - N		300.0	ND		0.020	0.0050	mg/L	1
Nitrate - N		300.0	ND		0.020	0.0050	mg/L	1
Sulfate		300.0	ND		1.0	0.25	mg/L	1
Nitrate - N		300.0	0.0099	HJ	0.020	0.0050	mg/L	2
TOC		SM 5310C-2014	16		5.0	5.0	mg/L	3

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC08061-002
Description: MW-10I
Matrix: Aqueous
Date Sampled: 03/08/2022 1110
Project Name: Signify Shakespeare
Date Received: 03/08/2022
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	5	03/16/2022 0528	JWO		34980

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND	L	50	20	ug/L	1
Benzene	71-43-2	8260D	ND		2.5	2.0	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		2.5	2.0	ug/L	1
Bromoform	75-25-2	8260D	ND	S	2.5	2.0	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		2.5	2.0	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		50	10	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		2.5	2.0	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		2.5	2.0	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		2.5	2.0	ug/L	1
Chloroethane	75-00-3	8260D	ND		2.5	2.0	ug/L	1
Chloroform	67-66-3	8260D	ND		2.5	2.0	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		2.5	2.0	ug/L	1
Cyclohexane	110-82-7	8260D	ND	S	2.5	2.0	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		2.5	2.0	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		2.5	2.0	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		2.5	2.0	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		2.5	2.0	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		2.5	2.0	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		2.5	2.0	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		2.5	2.0	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		2.5	2.0	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		2.5	2.0	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		2.5	2.0	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	690		2.5	2.0	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		2.5	2.0	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		2.5	2.0	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		2.5	2.0	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		2.5	2.0	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		2.5	2.0	ug/L	1
2-Hexanone	591-78-6	8260D	ND		50	10	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		2.5	2.0	ug/L	1
Methyl acetate	79-20-9	8260D	ND		5.0	2.0	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		2.5	2.0	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		50	10	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		25	2.0	ug/L	1
Methylene chloride	75-09-2	8260D	ND		2.5	2.0	ug/L	1
Styrene	100-42-5	8260D	ND		2.5	2.1	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		2.5	2.0	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		2.5	2.0	ug/L	1
Toluene	108-88-3	8260D	ND		2.5	2.0	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		5.0	2.1	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		2.5	2.0	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		2.5	2.0	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		2.5	2.0	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC08061-002
Description: MW-10I
Matrix: Aqueous
Date Sampled: 03/08/2022 1110
Project Name: Signify Shakespeare
Date Received: 03/08/2022
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	5	03/16/2022 0528	JWO		34980

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	50		2.5	2.0	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		2.5	2.0	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		2.5	2.0	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		5.0	2.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		96	70-130
1,2-Dichloroethane-d4		103	70-130
Toluene-d8		93	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Dissolved Gases

Client: AECOM
Laboratory ID: XC08061-002
Description: MW-10I
Matrix: Aqueous
Date Sampled: 03/08/2022 1110
Project Name: Signify Shakespeare
Date Received: 03/08/2022
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	03/15/2022 1637	JM1		34890

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	1400		10	2.5	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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ICP-AES Metals

Client: AECOM			Laboratory ID: XC08061-002
Description: MW-10I			Matrix: Aqueous
Date Sampled: 03/08/2022 1110	Project Name: Signify Shakespeare		
Date Received: 03/08/2022	Project Number: 60635197		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/18/2022 2250	KSH2	03/18/2022 0946	35213

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Dissolved Iron	7439-89-6	6010D	11		0.10	0.040	mg/L	1
Dissolved Manganese	7439-96-5	6010D	1.0		0.015	0.0019	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Metals

Client: AECOM
Laboratory ID: XC08061-002
Description: MW-10I
Matrix: Aqueous
Date Sampled: 03/08/2022 1110
Project Name: Signify Shakespeare
Date Received: 03/08/2022
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/11/2022 2158	KSH2	03/10/2022 1012	34232
2	3005A	6010D	1	03/14/2022 1859	KSH2	03/10/2022 1012	34232

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Iron	7439-89-6	6010D	12		0.10	0.040	mg/L	2
Manganese	7439-96-5	6010D	0.98		0.015	0.0019	mg/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Inorganic non-metals

Client: AECOM
Laboratory ID: XC08061-003
Description: ERD-OBSW-1
Matrix: Aqueous
Date Sampled: 03/08/2022 1335
Project Name: Signify Shakespeare
Date Received: 03/08/2022
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Chloride) 300.0	1	03/10/2022 2241	YCB		34642
1		(Nitrate - N) 300.0	1	03/10/2022 0719	YCB		34754
1		(Nitrite - N) 300.0	1	03/10/2022 0719	YCB		34752
1		(Sulfate) 300.0	1	03/10/2022 2241	YCB		34641
3		(TOC) SM 5310C-2014	10	03/29/2022 0223	DMA		36304

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Chloride		300.0	94	S	1.0	0.25	mg/L	1
Nitrate - N		300.0	0.24		0.020	0.0050	mg/L	1
Nitrite - N		300.0	0.012	J	0.020	0.0050	mg/L	1
Sulfate		300.0	ND		1.0	0.25	mg/L	1
TOC		SM 5310C-2014	21		10	10	mg/L	3

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC08061-003
Description: ERD-OBSW-1
Matrix: Aqueous
Date Sampled: 03/08/2022 1335
Project Name: Signify Shakespeare
Date Received: 03/08/2022
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/16/2022 0354	JWO		34980

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	5.7	JL	10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	0.82		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	86		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	0.60	J	1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC08061-003
Description: ERD-OBSW-1
Matrix: Aqueous
Date Sampled: 03/08/2022 1335
Project Name: Signify Shakespeare
Date Received: 03/08/2022
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/16/2022 0354	JWO		34980

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	180		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		94	70-130
1,2-Dichloroethane-d4		105	70-130
Toluene-d8		93	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Dissolved Gases

Client: AECOM
Laboratory ID: XC08061-003
Description: ERD-OBSW-1
Matrix: Aqueous
Date Sampled: 03/08/2022 1335
Project Name: Signify Shakespeare
Date Received: 03/08/2022
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	03/15/2022 1653	JM1		34890

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	ND		10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	150		10	2.5	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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ICP-AES Metals

Client: AECOM			Laboratory ID: XC08061-003
Description: ERD-OBSW-1			Matrix: Aqueous
Date Sampled: 03/08/2022 1335	Project Name: Signify Shakespeare		
Date Received: 03/08/2022	Project Number: 60635197		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/18/2022 2255	KSH2	03/18/2022 0946	35213

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Dissolved Iron	7439-89-6	6010D	ND		0.10	0.040	mg/L	1
Dissolved Manganese	7439-96-5	6010D	0.064		0.015	0.0019	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Metals

Client: AECOM
Laboratory ID: XC08061-003
Description: ERD-OBSW-1
Matrix: Aqueous
Date Sampled: 03/08/2022 1335
Project Name: Signify Shakespeare
Date Received: 03/08/2022
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/11/2022 2202	KSH2	03/10/2022 1012	34232
2	3005A	6010D	1	03/14/2022 1903	KSH2	03/10/2022 1012	34232

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Iron	7439-89-6	6010D	3.4		0.10	0.040	mg/L	2
Manganese	7439-96-5	6010D	0.060		0.015	0.0019	mg/L	1

LOQ = Limit of Quantitation
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E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
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Inorganic non-metals

Client: AECOM
Laboratory ID: XC08061-004
Description: MW-10
Matrix: Aqueous
Date Sampled: 03/08/2022 1435
Project Name: Signify Shakespeare
Date Received: 03/08/2022
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(Chloride) 300.0	1	03/10/2022 2338	YCB		34642
1		(Nitrate - N) 300.0	1	03/10/2022 0738	YCB		34754
1		(Nitrite - N) 300.0	1	03/10/2022 0738	YCB		34752
1		(Sulfate) 300.0	1	03/10/2022 2338	YCB		34641
3		(TOC) SM 5310C-2014	500	03/29/2022 0237	DMA		36304

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Chloride		300.0	28		1.0	0.25	mg/L	1
Nitrate - N		300.0	0.17		0.020	0.0050	mg/L	1
Nitrite - N		300.0	0.015	J	0.020	0.0050	mg/L	1
Sulfate		300.0	0.58	J	1.0	0.25	mg/L	1
TOC		SM 5310C-2014	920		500	500	mg/L	3

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC08061-004
Description: MW-10
Matrix: Aqueous
Date Sampled: 03/08/2022 1435
Project Name: Signify Shakespeare
Date Received: 03/08/2022
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	20	03/19/2022 0449	BBW		35438

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		200	80	ug/L	2
Benzene	71-43-2	8260D	ND		10	8.0	ug/L	2
Bromodichloromethane	75-27-4	8260D	ND		10	8.0	ug/L	2
Bromoform	75-25-2	8260D	ND		10	8.0	ug/L	2
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		10	8.0	ug/L	2
2-Butanone (MEK)	78-93-3	8260D	ND		200	40	ug/L	2
Carbon disulfide	75-15-0	8260D	ND		10	8.0	ug/L	2
Carbon tetrachloride	56-23-5	8260D	ND		10	8.0	ug/L	2
Chlorobenzene	108-90-7	8260D	ND		10	8.0	ug/L	2
Chloroethane	75-00-3	8260D	ND		10	8.0	ug/L	2
Chloroform	67-66-3	8260D	ND		10	8.0	ug/L	2
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		10	8.0	ug/L	2
Cyclohexane	110-82-7	8260D	ND		10	8.0	ug/L	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		10	8.0	ug/L	2
Dibromochloromethane	124-48-1	8260D	ND		10	8.0	ug/L	2
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		10	8.0	ug/L	2
1,2-Dichlorobenzene	95-50-1	8260D	ND		10	8.0	ug/L	2
1,3-Dichlorobenzene	541-73-1	8260D	ND		10	8.0	ug/L	2
1,4-Dichlorobenzene	106-46-7	8260D	ND		10	8.0	ug/L	2
Dichlorodifluoromethane	75-71-8	8260D	ND		10	8.0	ug/L	2
1,1-Dichloroethane	75-34-3	8260D	ND		10	8.0	ug/L	2
1,2-Dichloroethane	107-06-2	8260D	ND		10	8.0	ug/L	2
1,1-Dichloroethene	75-35-4	8260D	ND		10	8.0	ug/L	2
cis-1,2-Dichloroethene	156-59-2	8260D	ND		10	8.0	ug/L	2
trans-1,2-Dichloroethene	156-60-5	8260D	ND		10	8.0	ug/L	2
1,2-Dichloropropane	78-87-5	8260D	ND		10	8.0	ug/L	2
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		10	8.0	ug/L	2
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		10	8.0	ug/L	2
Ethylbenzene	100-41-4	8260D	ND		10	8.0	ug/L	2
2-Hexanone	591-78-6	8260D	ND		200	40	ug/L	2
Isopropylbenzene	98-82-8	8260D	ND		10	8.0	ug/L	2
Methyl acetate	79-20-9	8260D	ND		20	8.0	ug/L	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		10	8.0	ug/L	2
4-Methyl-2-pentanone	108-10-1	8260D	ND		200	40	ug/L	2
Methylcyclohexane	108-87-2	8260D	ND		100	8.0	ug/L	2
Methylene chloride	75-09-2	8260D	ND		10	8.0	ug/L	2
Styrene	100-42-5	8260D	ND		10	8.2	ug/L	2
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		10	8.0	ug/L	2
Tetrachloroethene	127-18-4	8260D	ND		10	8.0	ug/L	2
Toluene	108-88-3	8260D	ND		10	8.0	ug/L	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		20	8.4	ug/L	2
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		10	8.0	ug/L	2
1,1,1-Trichloroethane	71-55-6	8260D	ND		10	8.0	ug/L	2
1,1,2-Trichloroethane	79-00-5	8260D	ND		10	8.0	ug/L	2

LOQ = Limit of Quantitation
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W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC08061-004
Description: MW-10
Matrix: Aqueous
Date Sampled: 03/08/2022 1435
Project Name: Signify Shakespeare
Date Received: 03/08/2022
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	5030B	8260D	20	03/19/2022 0449	BBW		35438

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	590		10	8.0	ug/L	2
Trichlorofluoromethane	75-69-4	8260D	ND		10	8.0	ug/L	2
Vinyl chloride	75-01-4	8260D	ND		10	8.0	ug/L	2
Xylenes (total)	1330-20-7	8260D	ND		20	8.0	ug/L	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
Bromofluorobenzene		82	70-130
1,2-Dichloroethane-d4		103	70-130
Toluene-d8		96	70-130

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Dissolved Gases

Client: AECOM
Laboratory ID: XC08061-004
Description: MW-10
Matrix: Aqueous
Date Sampled: 03/08/2022 1435
Project Name: Signify Shakespeare
Date Received: 03/08/2022
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		RSK - 175	1	03/21/2022 1011	JM1		35565

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Ethane	74-84-0	RSK - 175	ND		10	2.5	ug/L	1
Ethene	74-85-1	RSK - 175	2.8	J	10	2.5	ug/L	1
Methane	74-82-8	RSK - 175	2600		10	2.5	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
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H = Out of holding time
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S = MS/MSD failure

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ICP-AES Metals

Client: AECOM			Laboratory ID: XC08061-004
Description: MW-10			Matrix: Aqueous
Date Sampled: 03/08/2022 1435		Project Name: Signify Shakespeare	
Date Received: 03/08/2022		Project Number: 60635197	

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/18/2022 2259	KSH2	03/18/2022 0946	35213

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Dissolved Iron	7439-89-6	6010D	1.9		0.10	0.040	mg/L	1
Dissolved Manganese	7439-96-5	6010D	0.052		0.015	0.0019	mg/L	1

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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Metals

Client: AECOM
Laboratory ID: XC08061-004
Description: MW-10
Matrix: Aqueous
Date Sampled: 03/08/2022 1435
Project Name: Signify Shakespeare
Date Received: 03/08/2022
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	03/11/2022 2207	KSH2	03/10/2022 1012	34232
2	3005A	6010D	1	03/14/2022 1908	KSH2	03/10/2022 1012	34232

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Iron	7439-89-6	6010D	5.9		0.10	0.040	mg/L	2
Manganese	7439-96-5	6010D	0.18		0.015	0.0019	mg/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM
Laboratory ID: XC08061-005
Description: TB-10
Matrix: Aqueous
Date Sampled: 03/08/2022
Project Name: Signify Shakespeare
Date Received: 03/08/2022
Project Number: 60635197

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/15/2022 2340	JWO		34980

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	4.0	JL	10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	ND		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	ND		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	ND		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	ND		0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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Volatile Organic Compounds by GC/MS

Client: AECOM			Laboratory ID: XC08061-005
Description: TB-10			Matrix: Aqueous
Date Sampled: 03/08/2022	Project Name: Signify Shakespeare		
Date Received: 03/08/2022	Project Number: 60635197		

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	03/15/2022 2340	JWO		34980

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	ND		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		91	70-130
1,2-Dichloroethane-d4		103	70-130
Toluene-d8		94	70-130

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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QC Summary

Inorganic non-metals - MB

Sample ID: XQ34637-001
Batch: 34637
Analytical Method: SM 5310C-2014

Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
TOC	ND		1	1.0	1.0	mg/L	03/12/2022 1721

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ34637-002
Batch: 34637
Analytical Method: SM 5310C-2014

Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
TOC	20	19		1	94	90-110	03/12/2022 1734

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MB

Sample ID: XQ34641-001
Batch: 34641
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Sulfate	ND		1	1.0	0.25	mg/L	03/10/2022 1701

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ34641-002
Batch: 34641
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Sulfate	20	20		1	98	90-110	03/10/2022 1739

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MS

Sample ID: XC08061-003MS
Batch: 34641
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Sulfate	ND	10	10		1	102	90-110	03/10/2022 2300

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MSD

Sample ID: XC08061-003MD
Batch: 34641
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Sulfate	ND	10	10		1	101	1.3	90-110	20	03/10/2022 2319

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MS

Sample ID: XC08061-004MS
Batch: 34641
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Sulfate	0.58	10	9.8		1	92	90-110	03/11/2022 0035

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MSD

Sample ID: XC08061-004MD
Batch: 34641
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Sulfate	0.58	10	9.9		1	94	1.3	90-110	20	03/11/2022 0054

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MB

Sample ID: XQ34642-001
Batch: 34642
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Chloride	ND		1	1.0	0.25	mg/L	03/10/2022 1701

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - LCS

Sample ID: XQ34642-002
Batch: 34642
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Chloride	20	20		1	99	90-110	03/10/2022 1739

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MS

Sample ID: XC08061-003MS
Batch: 34642
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Chloride	94	10	100	N	1	77	90-110	03/10/2022 2300

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MSD

Sample ID: XC08061-003MD
Batch: 34642
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Chloride	94	10	100	N	1	88	1.1	90-110	20	03/10/2022 2319

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MS

Sample ID: XC08061-004MS
Batch: 34642
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Chloride	28	10	37		1	91	90-110	03/11/2022 0035

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MSD

Sample ID: XC08061-004MD
Batch: 34642
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Chloride	28	10	38		1	96	1.2	90-110	20	03/11/2022 0054

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MB

Sample ID: XQ34752-001
Batch: 34752
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Nitrite - N	ND		1	0.020	0.0050	mg/L	03/10/2022 0332

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - LCS

Sample ID: XQ34752-002
Batch: 34752
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Nitrite - N	0.80	0.78		1	98	90-110	03/10/2022 0854

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MB

Sample ID: XQ34754-001
Batch: 34754
Analytical Method: 300.0

Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Nitrate - N	ND		1	0.020	0.0050	mg/L	03/10/2022 0332

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ34754-002
Batch: 34754
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Nitrate - N	0.80	0.81		1	102	90-110	03/10/2022 0854

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MB

Sample ID: XQ34946-001
Batch: 34946
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Nitrite - N	ND		1	0.020	0.0050	mg/L	03/10/2022 1701

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ34946-002
Batch: 34946
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Nitrite - N	0.80	0.76		1	95	90-110	03/10/2022 1739

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MS

Sample ID: XC08061-003MS
Batch: 34946
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Nitrite - N	0.012	0.40	0.42		1	101	90-110	03/10/2022 2300

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MSD

Sample ID: XC08061-003MD
Batch: 34946
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Nitrite - N	0.012	0.40	0.42		1	102	0.64	90-110	20	03/10/2022 2319

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MS

Sample ID: XC08061-004MS
Batch: 34946
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Nitrite - N	ND	0.40	0.40		1	100	90-110	03/11/2022 0035

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - MSD

Sample ID: XC08061-004MD
Batch: 34946
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Nitrite - N	ND	0.40	0.40		1	99	0.58	90-110	20	03/11/2022 0054

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MB

Sample ID: XQ34948-001
Batch: 34948
Analytical Method: 300.0

Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Nitrate - N	ND		1	0.020	0.0050	mg/L	03/10/2022 1701

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ34948-002
Batch: 34948
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Nitrate - N	0.80	0.81		1	101	90-110	03/10/2022 1739

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MS

Sample ID: XC08061-003MS
Batch: 34948
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Nitrate - N	0.23	0.40	0.61		1	95	90-110	03/10/2022 2300

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MSD

Sample ID: XC08061-003MD
Batch: 34948
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Nitrate - N	0.23	0.40	0.62		1	97	1.1	90-110	20	03/10/2022 2319

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MS

Sample ID: XC08061-004MS
Batch: 34948
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Nitrate - N	0.077	0.40	0.45		1	93	90-110	03/11/2022 0035

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MSD

Sample ID: XC08061-004MD
Batch: 34948
Analytical Method: 300.0
Matrix: Aqueous

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Nitrate - N	0.077	0.40	0.46		1	96	2.9	90-110	20	03/11/2022 0054

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Inorganic non-metals - MB

Sample ID: XQ36304-001
Batch: 36304
Analytical Method: SM 5310C-2014
Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
TOC	ND		1	1.0	1.0	mg/L	03/28/2022 2003

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Inorganic non-metals - LCS

Sample ID: XQ36304-002
Batch: 36304
Analytical Method: SM 5310C-2014
Matrix: Aqueous

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
TOC	20	19		1	94	90-110	03/28/2022 2015

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34980-001
Batch: 34980
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	10	4.0	ug/L	03/15/2022 2147
Benzene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Bromodichloromethane	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Bromoform	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Bromomethane (Methyl bromide)	ND		1	0.50	0.40	ug/L	03/15/2022 2147
2-Butanone (MEK)	ND		1	10	2.0	ug/L	03/15/2022 2147
Carbon disulfide	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Carbon tetrachloride	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Chlorobenzene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Chloroethane	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Chloroform	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Chloromethane (Methyl chloride)	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Cyclohexane	ND		1	0.50	0.40	ug/L	03/15/2022 2147
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Dibromochloromethane	ND		1	0.50	0.40	ug/L	03/15/2022 2147
1,2-Dibromoethane (EDB)	ND		1	0.50	0.40	ug/L	03/15/2022 2147
1,2-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
1,3-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
1,4-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Dichlorodifluoromethane	ND		1	0.50	0.40	ug/L	03/15/2022 2147
1,1-Dichloroethane	ND		1	0.50	0.40	ug/L	03/15/2022 2147
1,2-Dichloroethane	ND		1	0.50	0.40	ug/L	03/15/2022 2147
1,1-Dichloroethene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
cis-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
trans-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
1,2-Dichloropropane	ND		1	0.50	0.40	ug/L	03/15/2022 2147
cis-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
trans-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Ethylbenzene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
2-Hexanone	ND		1	10	2.0	ug/L	03/15/2022 2147
Isopropylbenzene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Methyl acetate	ND		1	1.0	0.40	ug/L	03/15/2022 2147
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.40	ug/L	03/15/2022 2147
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	03/15/2022 2147
Methylcyclohexane	ND		1	5.0	0.40	ug/L	03/15/2022 2147
Methylene chloride	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Styrene	ND		1	0.50	0.41	ug/L	03/15/2022 2147
1,1,2,2-Tetrachloroethane	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Tetrachloroethene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Toluene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	03/15/2022 2147
1,2,4-Trichlorobenzene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
1,1,1-Trichloroethane	ND		1	0.50	0.40	ug/L	03/15/2022 2147
1,1,2-Trichloroethane	ND		1	0.50	0.40	ug/L	03/15/2022 2147

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ34980-001
Batch: 34980
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Trichlorofluoromethane	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Vinyl chloride	ND		1	0.50	0.40	ug/L	03/15/2022 2147
Xylenes (total)	ND		1	1.0	0.40	ug/L	03/15/2022 2147

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		89	70-130
1,2-Dichloroethane-d4		102	70-130
Toluene-d8		91	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34980-002
Batch: 34980
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	160	N	1	156	60-140	03/15/2022 2044
Benzene	50	53		1	106	70-130	03/15/2022 2044
Bromodichloromethane	50	50		1	99	70-130	03/15/2022 2044
Bromoform	50	42		1	84	70-130	03/15/2022 2044
Bromomethane (Methyl bromide)	50	50		1	100	70-130	03/15/2022 2044
2-Butanone (MEK)	100	120		1	123	70-130	03/15/2022 2044
Carbon disulfide	50	56		1	113	70-130	03/15/2022 2044
Carbon tetrachloride	50	53		1	107	70-130	03/15/2022 2044
Chlorobenzene	50	49		1	97	70-130	03/15/2022 2044
Chloroethane	50	50		1	99	70-130	03/15/2022 2044
Chloroform	50	54		1	109	70-130	03/15/2022 2044
Chloromethane (Methyl chloride)	50	48		1	96	60-140	03/15/2022 2044
Cyclohexane	50	63		1	127	70-130	03/15/2022 2044
1,2-Dibromo-3-chloropropane (DBCP)	50	48		1	95	70-130	03/15/2022 2044
Dibromochloromethane	50	44		1	88	70-130	03/15/2022 2044
1,2-Dibromoethane (EDB)	50	47		1	95	70-130	03/15/2022 2044
1,2-Dichlorobenzene	50	49		1	97	70-130	03/15/2022 2044
1,3-Dichlorobenzene	50	48		1	96	70-130	03/15/2022 2044
1,4-Dichlorobenzene	50	47		1	95	70-130	03/15/2022 2044
Dichlorodifluoromethane	50	49		1	98	60-140	03/15/2022 2044
1,1-Dichloroethane	50	55		1	110	70-130	03/15/2022 2044
1,2-Dichloroethane	50	55		1	111	70-130	03/15/2022 2044
1,1-Dichloroethene	50	55		1	109	70-130	03/15/2022 2044
cis-1,2-Dichloroethene	50	53		1	106	70-130	03/15/2022 2044
trans-1,2-Dichloroethene	50	52		1	105	70-130	03/15/2022 2044
1,2-Dichloropropane	50	50		1	101	70-130	03/15/2022 2044
cis-1,3-Dichloropropene	50	51		1	102	70-130	03/15/2022 2044
trans-1,3-Dichloropropene	50	48		1	97	70-130	03/15/2022 2044
Ethylbenzene	50	50		1	100	70-130	03/15/2022 2044
2-Hexanone	100	110		1	106	70-130	03/15/2022 2044
Isopropylbenzene	50	51		1	101	70-130	03/15/2022 2044
Methyl acetate	50	59		1	117	70-130	03/15/2022 2044
Methyl tertiary butyl ether (MTBE)	50	56		1	112	70-130	03/15/2022 2044
4-Methyl-2-pentanone	100	110		1	111	70-130	03/15/2022 2044
Methylcyclohexane	50	54		1	108	70-130	03/15/2022 2044
Methylene chloride	50	53		1	106	70-130	03/15/2022 2044
Styrene	50	49		1	98	70-130	03/15/2022 2044
1,1,2,2-Tetrachloroethane	50	49		1	98	70-130	03/15/2022 2044
Tetrachloroethene	50	48		1	96	70-130	03/15/2022 2044
Toluene	50	51		1	101	70-130	03/15/2022 2044
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	55		1	110	70-130	03/15/2022 2044
1,2,4-Trichlorobenzene	50	46		1	93	70-130	03/15/2022 2044
1,1,1-Trichloroethane	50	54		1	108	70-130	03/15/2022 2044
1,1,2-Trichloroethane	50	47		1	95	70-130	03/15/2022 2044

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
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N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ34980-002
Batch: 34980
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	48		1	96	70-130	03/15/2022 2044
Trichlorofluoromethane	50	51		1	101	70-130	03/15/2022 2044
Vinyl chloride	50	50		1	100	70-130	03/15/2022 2044
Xylenes (total)	100	100		1	101	70-130	03/15/2022 2044

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		98	70-130
1,2-Dichloroethane-d4		103	70-130
Toluene-d8		93	70-130

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DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
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P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - MS

Sample ID: XC08061-002MS
Batch: 34980
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	ND	500	610		5	121	60-140	03/16/2022 0638
Benzene	ND	250	270		5	109	70-130	03/16/2022 0638
Bromodichloromethane	ND	250	230		5	93	70-130	03/16/2022 0638
Bromoform	ND	250	160	N	5	65	70-130	03/16/2022 0638
Bromomethane (Methyl bromide)	ND	250	220		5	87	70-130	03/16/2022 0638
2-Butanone (MEK)	ND	500	580		5	116	70-130	03/16/2022 0638
Carbon disulfide	ND	250	250		5	99	70-130	03/16/2022 0638
Carbon tetrachloride	ND	250	270		5	107	70-130	03/16/2022 0638
Chlorobenzene	ND	250	250		5	99	70-130	03/16/2022 0638
Chloroethane	ND	250	220		5	88	70-130	03/16/2022 0638
Chloroform	ND	250	270		5	108	70-130	03/16/2022 0638
Chloromethane (Methyl chloride)	ND	250	220		5	89	60-140	03/16/2022 0638
Cyclohexane	ND	250	330	N	5	131	70-130	03/16/2022 0638
1,2-Dibromo-3-chloropropane (DBCP)	ND	250	210		5	82	70-130	03/16/2022 0638
Dibromochloromethane	ND	250	190		5	77	70-130	03/16/2022 0638
1,2-Dibromoethane (EDB)	ND	250	230		5	93	70-130	03/16/2022 0638
1,2-Dichlorobenzene	ND	250	240		5	96	70-130	03/16/2022 0638
1,3-Dichlorobenzene	ND	250	240		5	97	70-130	03/16/2022 0638
1,4-Dichlorobenzene	ND	250	240		5	95	70-130	03/16/2022 0638
Dichlorodifluoromethane	ND	250	210		5	83	60-140	03/16/2022 0638
1,1-Dichloroethane	ND	250	270		5	110	70-130	03/16/2022 0638
1,2-Dichloroethane	ND	250	270		5	110	70-130	03/16/2022 0638
1,1-Dichloroethene	ND	250	270		5	108	70-130	03/16/2022 0638
cis-1,2-Dichloroethene	690	250	900		5	85	70-130	03/16/2022 0638
trans-1,2-Dichloroethene	ND	250	260		5	105	70-130	03/16/2022 0638
1,2-Dichloropropane	ND	250	250		5	101	70-130	03/16/2022 0638
cis-1,3-Dichloropropene	ND	250	240		5	96	70-130	03/16/2022 0638
trans-1,3-Dichloropropene	ND	250	230		5	90	70-130	03/16/2022 0638
Ethylbenzene	ND	250	250		5	102	70-130	03/16/2022 0638
2-Hexanone	ND	500	540		5	108	70-130	03/16/2022 0638
Isopropylbenzene	ND	250	260		5	103	70-130	03/16/2022 0638
Methyl acetate	ND	250	270		5	110	70-130	03/16/2022 0638
Methyl tertiary butyl ether (MTBE)	ND	250	270		5	106	70-130	03/16/2022 0638
4-Methyl-2-pentanone	ND	500	550		5	111	70-130	03/16/2022 0638
Methylcyclohexane	ND	250	280		5	112	70-130	03/16/2022 0638
Methylene chloride	ND	250	250		5	101	70-130	03/16/2022 0638
Styrene	ND	250	250		5	98	70-130	03/16/2022 0638
1,1,2,2-Tetrachloroethane	ND	250	240		5	97	70-130	03/16/2022 0638
Tetrachloroethene	ND	250	240		5	98	70-130	03/16/2022 0638
Toluene	ND	250	260		5	102	70-130	03/16/2022 0638
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	250	280		5	110	70-130	03/16/2022 0638
1,2,4-Trichlorobenzene	ND	250	210		5	83	70-130	03/16/2022 0638
1,1,1-Trichloroethane	ND	250	270		5	109	70-130	03/16/2022 0638
1,1,2-Trichloroethane	ND	250	240		5	95	70-130	03/16/2022 0638

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+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MS

Sample ID: XC08061-002MS
Batch: 34980
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	250	290		5	97	70-130	03/16/2022 0638
Trichlorofluoromethane	ND	250	230		5	93	70-130	03/16/2022 0638
Vinyl chloride	ND	250	240		5	95	70-130	03/16/2022 0638
Xylenes (total)	ND	500	510		5	102	70-130	03/16/2022 0638

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		96	70-130
1,2-Dichloroethane-d4		100	70-130
Toluene-d8		92	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
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N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
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Volatile Organic Compounds by GC/MS - MSD

Sample ID: XC08061-002MD
Batch: 34980
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acetone	ND	500	610		5	121	0.0021	60-140	20	03/16/2022 0701
Benzene	ND	250	270		5	110	0.63	70-130	20	03/16/2022 0701
Bromodichloromethane	ND	250	240		5	95	2.5	70-130	20	03/16/2022 0701
Bromoform	ND	250	160	N	5	65	0.71	70-130	20	03/16/2022 0701
Bromomethane (Methyl bromide)	ND	250	200		5	79	8.8	70-130	20	03/16/2022 0701
2-Butanone (MEK)	ND	500	590		5	117	1.2	70-130	20	03/16/2022 0701
Carbon disulfide	ND	250	250		5	101	2.6	70-130	20	03/16/2022 0701
Carbon tetrachloride	ND	250	280		5	110	2.7	70-130	20	03/16/2022 0701
Chlorobenzene	ND	250	250		5	99	0.25	70-130	20	03/16/2022 0701
Chloroethane	ND	250	200		5	81	9.1	70-130	20	03/16/2022 0701
Chloroform	ND	250	270		5	109	1.4	70-130	20	03/16/2022 0701
Chloromethane (Methyl chloride)	ND	250	210		5	83	6.9	60-140	20	03/16/2022 0701
Cyclohexane	ND	250	330	N	5	133	1.2	70-130	20	03/16/2022 0701
1,2-Dibromo-3-chloropropane (DBCP)	ND	250	210		5	82	0.10	70-130	20	03/16/2022 0701
Dibromochloromethane	ND	250	190		5	77	0.50	70-130	20	03/16/2022 0701
1,2-Dibromoethane (EDB)	ND	250	240		5	94	1.0	70-130	20	03/16/2022 0701
1,2-Dichlorobenzene	ND	250	230		5	94	2.0	70-130	20	03/16/2022 0701
1,3-Dichlorobenzene	ND	250	240		5	96	1.9	70-130	20	03/16/2022 0701
1,4-Dichlorobenzene	ND	250	230		5	94	1.5	70-130	20	03/16/2022 0701
Dichlorodifluoromethane	ND	250	190		5	77	6.5	60-140	20	03/16/2022 0701
1,1-Dichloroethane	ND	250	280		5	111	1.0	70-130	20	03/16/2022 0701
1,2-Dichloroethane	ND	250	280		5	110	0.42	70-130	20	03/16/2022 0701
1,1-Dichloroethene	ND	250	280		5	111	2.8	70-130	20	03/16/2022 0701
cis-1,2-Dichloroethene	690	250	910		5	90	1.4	70-130	20	03/16/2022 0701
trans-1,2-Dichloroethene	ND	250	270		5	108	2.8	70-130	20	03/16/2022 0701
1,2-Dichloropropane	ND	250	260		5	104	2.3	70-130	20	03/16/2022 0701
cis-1,3-Dichloropropene	ND	250	240		5	98	2.4	70-130	20	03/16/2022 0701
trans-1,3-Dichloropropene	ND	250	230		5	91	0.62	70-130	20	03/16/2022 0701
Ethylbenzene	ND	250	250		5	102	0.20	70-130	20	03/16/2022 0701
2-Hexanone	ND	500	540		5	108	0.17	70-130	20	03/16/2022 0701
Isopropylbenzene	ND	250	260		5	104	0.98	70-130	20	03/16/2022 0701
Methyl acetate	ND	250	280		5	112	2.6	70-130	20	03/16/2022 0701
Methyl tertiary butyl ether (MTBE)	ND	250	270		5	108	1.5	70-130	20	03/16/2022 0701
4-Methyl-2-pentanone	ND	500	550		5	110	0.28	70-130	20	03/16/2022 0701
Methylcyclohexane	ND	250	290		5	114	2.0	70-130	20	03/16/2022 0701
Methylene chloride	ND	250	260		5	103	1.5	70-130	20	03/16/2022 0701
Styrene	ND	250	240		5	98	0.64	70-130	20	03/16/2022 0701
1,1,2,2-Tetrachloroethane	ND	250	240		5	96	0.95	70-130	20	03/16/2022 0701
Tetrachloroethene	ND	250	250		5	99	1.6	70-130	20	03/16/2022 0701
Toluene	ND	250	260		5	103	0.90	70-130	20	03/16/2022 0701
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	250	280		5	113	2.6	70-130	20	03/16/2022 0701
1,2,4-Trichlorobenzene	ND	250	200		5	82	1.3	70-130	20	03/16/2022 0701
1,1,1-Trichloroethane	ND	250	280		5	111	2.1	70-130	20	03/16/2022 0701
1,1,2-Trichloroethane	ND	250	240		5	94	0.075	70-130	20	03/16/2022 0701

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MSD

Sample ID: XC08061-002MD
Batch: 34980
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Trichloroethene	50	250	300		5	99	1.5	70-130	20	03/16/2022 0701
Trichlorofluoromethane	ND	250	220		5	87	6.6	70-130	20	03/16/2022 0701
Vinyl chloride	ND	250	220		5	88	8.3	70-130	20	03/16/2022 0701
Xylenes (total)	ND	500	510		5	102	0.46	70-130	20	03/16/2022 0701

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		96	70-130
1,2-Dichloroethane-d4		100	70-130
Toluene-d8		92	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ35438-001
Batch: 35438
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	10	4.0	ug/L	03/18/2022 2059
Benzene	ND		1	0.50	0.40	ug/L	03/18/2022 2059
Bromodichloromethane	ND		1	0.50	0.40	ug/L	03/18/2022 2059
Bromoform	ND		1	0.50	0.40	ug/L	03/18/2022 2059
Bromomethane (Methyl bromide)	ND		1	0.50	0.40	ug/L	03/18/2022 2059
2-Butanone (MEK)	ND		1	10	2.0	ug/L	03/18/2022 2059
Carbon disulfide	ND		1	0.50	0.40	ug/L	03/18/2022 2059
Carbon tetrachloride	ND		1	0.50	0.40	ug/L	03/18/2022 2059
Chlorobenzene	ND		1	0.50	0.40	ug/L	03/18/2022 2059
Chloroethane	ND		1	0.50	0.40	ug/L	03/18/2022 2059
Chloroform	ND		1	0.50	0.40	ug/L	03/18/2022 2059
Chloromethane (Methyl chloride)	ND		1	0.50	0.40	ug/L	03/18/2022 2059
Cyclohexane	ND		1	0.50	0.40	ug/L	03/18/2022 2059
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.50	0.40	ug/L	03/18/2022 2059
Dibromochloromethane	ND		1	0.50	0.40	ug/L	03/18/2022 2059
1,2-Dibromoethane (EDB)	ND		1	0.50	0.40	ug/L	03/18/2022 2059
1,2-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/18/2022 2059
1,3-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/18/2022 2059
1,4-Dichlorobenzene	ND		1	0.50	0.40	ug/L	03/18/2022 2059
Dichlorodifluoromethane	ND		1	0.50	0.40	ug/L	03/18/2022 2059
1,1-Dichloroethane	ND		1	0.50	0.40	ug/L	03/18/2022 2059
1,2-Dichloroethane	ND		1	0.50	0.40	ug/L	03/18/2022 2059
1,1-Dichloroethene	ND		1	0.50	0.40	ug/L	03/18/2022 2059
cis-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/18/2022 2059
trans-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	03/18/2022 2059
1,2-Dichloropropane	ND		1	0.50	0.40	ug/L	03/18/2022 2059
cis-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/18/2022 2059
trans-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	03/18/2022 2059
Ethylbenzene	ND		1	0.50	0.40	ug/L	03/18/2022 2059
2-Hexanone	ND		1	10	2.0	ug/L	03/18/2022 2059
Isopropylbenzene	ND		1	0.50	0.40	ug/L	03/18/2022 2059
Methyl acetate	ND		1	1.0	0.40	ug/L	03/18/2022 2059
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.40	ug/L	03/18/2022 2059
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	03/18/2022 2059
Methylcyclohexane	ND		1	5.0	0.40	ug/L	03/18/2022 2059
Methylene chloride	ND		1	0.50	0.40	ug/L	03/18/2022 2059
Styrene	ND		1	0.50	0.41	ug/L	03/18/2022 2059
1,1,2,2-Tetrachloroethane	ND		1	0.50	0.40	ug/L	03/18/2022 2059
Tetrachloroethene	ND		1	0.50	0.40	ug/L	03/18/2022 2059
Toluene	ND		1	0.50	0.40	ug/L	03/18/2022 2059
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	03/18/2022 2059
1,2,4-Trichlorobenzene	ND		1	0.50	0.40	ug/L	03/18/2022 2059
1,1,1-Trichloroethane	ND		1	0.50	0.40	ug/L	03/18/2022 2059
1,1,2-Trichloroethane	ND		1	0.50	0.40	ug/L	03/18/2022 2059

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: XQ35438-001
Batch: 35438
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.50	0.40	ug/L	03/18/2022 2059
Trichlorofluoromethane	ND		1	0.50	0.40	ug/L	03/18/2022 2059
Vinyl chloride	ND		1	0.50	0.40	ug/L	03/18/2022 2059
Xylenes (total)	ND		1	1.0	0.40	ug/L	03/18/2022 2059

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		81	70-130
1,2-Dichloroethane-d4		101	70-130
Toluene-d8		97	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ35438-002
Batch: 35438
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	100		1	104	60-140	03/18/2022 1953
Benzene	50	49		1	97	70-130	03/18/2022 1953
Bromodichloromethane	50	44		1	88	70-130	03/18/2022 1953
Bromoform	50	48		1	96	70-130	03/18/2022 1953
Bromomethane (Methyl bromide)	50	52		1	105	70-130	03/18/2022 1953
2-Butanone (MEK)	100	100		1	102	70-130	03/18/2022 1953
Carbon disulfide	50	47		1	94	70-130	03/18/2022 1953
Carbon tetrachloride	50	44		1	88	70-130	03/18/2022 1953
Chlorobenzene	50	49		1	97	70-130	03/18/2022 1953
Chloroethane	50	46		1	92	70-130	03/18/2022 1953
Chloroform	50	41		1	83	70-130	03/18/2022 1953
Chloromethane (Methyl chloride)	50	47		1	94	60-140	03/18/2022 1953
Cyclohexane	50	45		1	91	70-130	03/18/2022 1953
1,2-Dibromo-3-chloropropane (DBCP)	50	41		1	83	70-130	03/18/2022 1953
Dibromochloromethane	50	47		1	95	70-130	03/18/2022 1953
1,2-Dibromoethane (EDB)	50	49		1	98	70-130	03/18/2022 1953
1,2-Dichlorobenzene	50	48		1	96	70-130	03/18/2022 1953
1,3-Dichlorobenzene	50	49		1	98	70-130	03/18/2022 1953
1,4-Dichlorobenzene	50	47		1	94	70-130	03/18/2022 1953
Dichlorodifluoromethane	50	50		1	100	60-140	03/18/2022 1953
1,1-Dichloroethane	50	44		1	88	70-130	03/18/2022 1953
1,2-Dichloroethane	50	42		1	84	70-130	03/18/2022 1953
1,1-Dichloroethene	50	48		1	95	70-130	03/18/2022 1953
cis-1,2-Dichloroethene	50	45		1	90	70-130	03/18/2022 1953
trans-1,2-Dichloroethene	50	47		1	94	70-130	03/18/2022 1953
1,2-Dichloropropane	50	47		1	95	70-130	03/18/2022 1953
cis-1,3-Dichloropropene	50	49		1	97	70-130	03/18/2022 1953
trans-1,3-Dichloropropene	50	47		1	95	70-130	03/18/2022 1953
Ethylbenzene	50	52		1	104	70-130	03/18/2022 1953
2-Hexanone	100	88		1	88	70-130	03/18/2022 1953
Isopropylbenzene	50	45		1	90	70-130	03/18/2022 1953
Methyl acetate	50	44		1	87	70-130	03/18/2022 1953
Methyl tertiary butyl ether (MTBE)	50	45		1	90	70-130	03/18/2022 1953
4-Methyl-2-pentanone	100	87		1	87	70-130	03/18/2022 1953
Methylcyclohexane	50	56		1	112	70-130	03/18/2022 1953
Methylene chloride	50	41		1	83	70-130	03/18/2022 1953
Styrene	50	50		1	99	70-130	03/18/2022 1953
1,1,2,2-Tetrachloroethane	50	46		1	91	70-130	03/18/2022 1953
Tetrachloroethene	50	54		1	108	70-130	03/18/2022 1953
Toluene	50	53		1	106	70-130	03/18/2022 1953
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	52		1	103	70-130	03/18/2022 1953
1,2,4-Trichlorobenzene	50	46		1	93	70-130	03/18/2022 1953
1,1,1-Trichloroethane	50	46		1	92	70-130	03/18/2022 1953
1,1,2-Trichloroethane	50	47		1	95	70-130	03/18/2022 1953

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: XQ35438-002
Batch: 35438
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	48		1	97	70-130	03/18/2022 1953
Trichlorofluoromethane	50	51		1	103	70-130	03/18/2022 1953
Vinyl chloride	50	47		1	93	70-130	03/18/2022 1953
Xylenes (total)	100	96		1	96	70-130	03/18/2022 1953

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		99	70-130
1,2-Dichloroethane-d4		85	70-130
Toluene-d8		101	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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Dissolved Gases - MB

Sample ID: XQ34890-001
Batch: 34890
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Ethane	ND		1	10	2.5	ug/L	03/15/2022 1039
Ethene	ND		1	10	2.5	ug/L	03/15/2022 1039
Methane	ND		1	10	2.5	ug/L	03/15/2022 1039

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Dissolved Gases - LCS

Sample ID: XQ34890-002
Batch: 34890
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Ethane	550	580		1	106	70-130	03/15/2022 0954
Ethene	520	550		1	107	70-130	03/15/2022 0954
Methane	300	320		1	107	70-130	03/15/2022 0954

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Dissolved Gases - LCSD

Sample ID: XQ34890-003
Batch: 34890
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Ethane	550	580		1	105	0.70	70-130	30	03/15/2022 1008
Ethene	520	550		1	106	0.81	70-130	30	03/15/2022 1008
Methane	300	310		1	107	0.44	70-130	30	03/15/2022 1008

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Dissolved Gases - MB

Sample ID: XQ35565-001
Batch: 35565
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Ethane	ND		1	10	2.5	ug/L	03/21/2022 0955
Ethene	ND		1	10	2.5	ug/L	03/21/2022 0955
Methane	ND		1	10	2.5	ug/L	03/21/2022 0955

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Dissolved Gases - LCS

Sample ID: XQ35565-002
Batch: 35565
Analytical Method: RSK - 175

Matrix: Aqueous

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Ethane	550	590		1	107	70-130	03/21/2022 0918
Ethene	520	560		1	108	70-130	03/21/2022 0918
Methane	300	310		1	107	70-130	03/21/2022 0918

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Metals - MB

Sample ID: XQ34232-001
Batch: 34232
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/10/2022 1012

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Iron	ND		1	0.10	0.040	mg/L	03/11/2022 2039
Manganese	ND		1	0.015	0.0019	mg/L	03/11/2022 2039

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Metals - LCS

Sample ID: XQ34232-002
Batch: 34232
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/10/2022 1012

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Iron	20	18		1	91	80-120	03/11/2022 2043
Manganese	2.0	2.0		1	102	80-120	03/11/2022 2043

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

ICP-AES Metals - MB

Sample ID: XQ35213-001
Batch: 35213
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/18/2022 0946

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Dissolved Iron	ND		1	0.10	0.040	mg/L	03/18/2022 2210
Dissolved Manganese	ND		1	0.015	0.0019	mg/L	03/18/2022 2210

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

ICP-AES Metals - LCS

Sample ID: XQ35213-002
Batch: 35213
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/18/2022 0946

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Dissolved Iron	20	21		1	104	80-120	03/18/2022 2215
Dissolved Manganese	2.0	2.1		1	105	80-120	03/18/2022 2215

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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ICP-AES Metals - MS

Sample ID: XC08061-001MS
Batch: 35213
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/18/2022 0946

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Dissolved Iron	ND	20	21		1	103	75-125	03/18/2022 2224
Dissolved Manganese	0.68	2.0	2.7		1	104	75-125	03/18/2022 2224

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

ICP-AES Metals - MSD

Sample ID: XC08061-001MD
Batch: 35213
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 03/18/2022 0946

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Dissolved Iron	ND	20	20		1	100	2.7	75-125	20	03/18/2022 2228
Dissolved Manganese	0.68	2.0	2.8		1	106	1.4	75-125	20	03/18/2022 2228

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Chain of Custody
and
Miscellaneous Documents

Pace Analytical®

PACE ANALYTICAL SERVICES, LLC
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www.pacelabs.com

Number 132115

Client	AECOM
Address	101 Research Dr.
City	Columbia
State	SC
Zip Code	29703
Project Name	Shakespeare Composite Structures
Project No.	60635197
P.O. No.	
Report to Contact	Scott Ross
Sampler's Signature	x [signature]
Printed Name	Justin Butler
Telephone No. / E-mail	Scott.Ross@AECOM.com
Quote No.	
Page	2 of 2

XC08061

CSD

Analysis (Attach list if more space is needed)

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	G=Grab C=Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous		No. of Containers by Preservative Type: Unpres	H2SO4	HNO3	HCl	NaOH	5035 Kit	Other	VOC 8260D	Diss Gases MEE-RSK175	Metals Fe+Mn 6010D	FF-Diss metals 6010D (Unfiltered)	Anion - NO2+NO3 353.2/SO4+Cl 300	TOC SM 5310C	Remarks / Cooler I.D.
ERD-OBSW-1I	3/8/22	1010	G	X				2	1	1	5				X	X	X	X	X	X	
MW-10I	3/8/22	1110	G	X				2	1	1	5				X	X	X	X	X	X	
ERD-OBSW-1	3/8/22	1335	G	X				2	1	1	5				X	X	X	X	X	X	
MW-10	3/8/22	1435	G	X				2	1	1	5				X	X	X	X	X	X	
TB-10				X							2				X						

Turn Around Time Required (Prior lab approval required for expedited TAT.) ☒ Standard ☐ Rush (Specify)

Sample Disposal ☐ Return to Client ☐ Disposal by Lab

Possible Hazard Identification ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by [signature]	3/8/22	1635	1. Received by		
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by			4. Laboratory received by [signature]	3.8.22	1635

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Circle) (Yes) No Ice Pack
Receipt Temp. 3.4 °C
Temp Blank ☐ Y ☐ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N2-01

PaceAnalytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: AECOM Cooler Inspected by/date: KDRW / 3/8/2022 Lot #: XC08061

Means of receipt: ☐ Pace ☑ Client ☐ UPS ☐ FedEx ☐ Other:

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

3.4 / 3.4 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☐ Temperature Blank ☐ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☐ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☑ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☑ Yes	☐ No	☐ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/pheno./625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote #

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.

Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is ***no***) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: KDRW Date: 3/8/2022

Comments:

Appendix D

Laboratory Analytical Reports for Microbial and Biogeochemical Parameters

10515 Research Drive
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Web: www.microbe.com

SITE LOGIC Report

QuantArray®-Chlor Study

Contact: Scott Ross
Phone: 803-201-9662
Address: AECOM
101 Research Dr
Columbia, SC 29203
Email: scott.ross@aecom.com

MI Identifier: 090TB

Report Date: 03/17/2022

Project: Shakespeare Composite Structures, 60675505.3
Comments:

The QuantArray®-Chlor Approach

Quantification of *Dehalococcoides*, the only known bacterial group capable of complete reductive dechlorination of PCE and TCE to ethene, has become an indispensable component of assessment, remedy selection, and performance monitoring at sites impacted by chlorinated solvents. While undeniably a key group of halorespiring bacteria, *Dehalococcoides* are not the only bacteria of interest in the subsurface because reductive dechlorination is not the only potential biodegradation pathway operative at contaminated sites, and chlorinated ethenes are not always the primary contaminants of concern. The QuantArray®-Chlor not only includes a variety of halorespiring bacteria (*Dehalococcoides*, *Dehalobacter*, *Dehalogenimonas*, etc.) to assess the potential for reductive dechlorination of chloroethenes, chloroethanes, chlorobenzenes, chlorophenols, and chloroform, but also provides quantification of functional genes involved in aerobic (co)metabolic pathways for biodegradation of chlorinated solvents and even competing biological processes. Thus, the QuantArray®-Chlor will give site managers the ability to simultaneously yet economically evaluate the potential for biodegradation of a spectrum of common chlorinated contaminants through a multitude of anaerobic and aerobic (co) metabolic pathways to give a much more clear and comprehensive view of contaminant biodegradation.

The QuantArray®-Chlor is used to quantify specific microorganisms and functional genes to evaluate the following:

Anaerobic Reductive Dechlorination	Quantification of important halorespiring bacteria (e.g. *Dehalococcoides*, *Dehalobacter*, *Dehalogenimonas*, *Desulfitobacterium* spp.) and key functional genes (e.g. vinyl chloride reductases, TCE reductase, chloroform reductase) responsible for reductive dechlorination of a broad spectrum of chlorinated solvents.
Aerobic Cometabolism	Several different types of bacteria including methanotrophs and some toluene/phenol utilizing bacteria can co-oxidize TCE, DCE, and vinyl chloride. The QuantArray®-Chlor quantifies functional genes like soluble methane monooxygenase encoding enzymes capable of co-oxidation of chlorinated ethenes.
Aerobic (Co)metabolism of Vinyl Chloride	Ethene oxidizing bacteria are capable of cometabolism of vinyl chloride. In some cases, ethenotrophs can also utilize vinyl chloride as a growth supporting substrate. The QuantArray®-Chlor targets key functional genes in ethene metabolism.

How do QuantArrays® work?

The QuantArray®-Chlor in many respects is a hybrid technology combining the highly parallel detection of microarrays with the accurate and precise quantification provided by qPCR into a single platform. The key to highly parallel qPCR reactions is the nanoliter fluidics platform for low volume, solution phase qPCR reactions.

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How are QuantArray® results reported?

One of the primary advantages of the QuantArray®-Chlor is the simultaneous quantification of a broad spectrum of different microorganisms and key functional genes involved in a variety of pathways for chlorinated hydrocarbon biodegradation. However, highly parallel quantification combined with the various metabolic and cometabolic capabilities of different target organisms can complicate data presentation. Therefore, in addition to Summary Tables, QuantArray® results will be presented as Microbial Population Summary and Comparison Figures to aid in data interpretation and subsequent evaluation of site management activities.

Types of Tables and Figures:

Microbial Population Summary	Figure presenting the concentrations of QuantArray®-Chlor target populations (e.g. *Dehalococcoides*) and functional genes (e.g. vinyl chloride reductase) relative to typically observed values.
Summary Tables	Tables of target population concentrations grouped by biodegradation pathway and contaminant type.
Comparison Figures	Depending on the project, sample results can be presented to compare changes over time or examine differences in microbial populations along a transect of the dissolved plume.

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Results

Table 1: Summary of the QuantArray®-Chlor results obtained for samples MW-6i, MW-5, MW-6, MW-9, and MW-22.

Sample Name Sample Date	MW-6i 02/24/2022	MW-5 02/24/2022	MW-6 02/24/2022	MW-9 02/24/2022	MW-22 02/24/2022
Reductive Dechlorination	cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Dehalococcoides (DHC)	**2.00E-01**	**5.00E-01**	**6.50E+00**	<2.40E+00	<5.00E-01
tceA Reductase (TCE)	<5.00E-01	<5.00E-01	<5.00E-01	<2.40E+00	<5.00E-01
BAV1 Vinyl Chloride Reductase (BVC)	<5.00E-01	<5.00E-01	<5.00E-01	<2.40E+00	<5.00E-01
Vinyl Chloride Reductase (VCR)	<5.00E-01	<5.00E-01	<5.00E-01	<2.40E+00	<5.00E-01
Dehalobacter spp. (DHBt)	**5.25E+03**	<4.90E+00	**2.00E+02**	<2.38E+01	**1.10E+02**
Dehalobacter DCM (DCM)	<4.80E+00	<4.90E+00	<4.80E+00	<2.38E+01	<4.90E+00
Dehalogenimonas spp. (DHG)	<4.80E+00	<4.90E+00	<4.80E+00	<2.38E+01	<4.90E+00
cerA Reductase (CER)	<4.80E+00	<4.90E+00	<4.80E+00	<2.38E+01	<4.90E+00
trans-1,2-DCE Reductase (TDR)	<4.80E+00	<4.90E+00	<4.80E+00	<2.38E+01	<4.90E+00
Desulfitobacterium spp. (DSB)	**6.41E+03**	**1.38E+01**	**4.47E+03**	<2.38E+01	**5.46E+02**
Dehalobium chlorocoercia (DECO)	**8.33E+02**	**3.84E+02**	**2.47E+03**	<2.38E+01	**3.88E+01**
Desulfuromonas spp. (DSM)	<4.80E+00	<4.90E+00	<4.80E+00	<2.38E+01	<4.90E+00
PCE Reductase (PCE-1)	<4.80E+00	<4.90E+00	<4.80E+00	<2.38E+01	<4.90E+00
PCE Reductase (PCE-2)	<4.80E+00	<4.90E+00	<4.80E+00	<2.38E+01	<4.90E+00
Chloroform Reductase (CFR)	<4.80E+00	<4.90E+00	<4.80E+00	<2.38E+01	<4.90E+00
1,1 DCA Reductase (DCA)	<4.80E+00	<4.90E+00	<4.80E+00	<2.38E+01	<4.90E+00
1,2 DCA Reductase (DCAR)	<4.80E+00	<4.90E+00	<4.80E+00	<2.38E+01	<4.90E+00
Aerobic (Co)Metabolic					
Soluble Methane Monooxygenase (SMMO)	<4.80E+00	<4.90E+00	**1.39E+02**	<2.38E+01	**1.24E+02**
Toluene Dioxygenase (TOD)	**2.24E+01**	**6.00E+00**	**2.22E+01**	<2.38E+01	<4.90E+00
Phenol Hydroxylase (PHE)	**1.50E+02**	<4.90E+00	**4.55E+01**	<2.38E+01	**7.74E+01**
Trichlorobenzene Dioxygenase (TCBO)	<4.80E+00	<4.90E+00	<4.80E+00	<2.38E+01	<4.90E+00
Toluene Monooxygenase 2 (RDEG)	**2.38E+02**	<4.90E+00	**2.08E+02**	<2.38E+01	**4.14E+02**
Toluene Monooxygenase (RMO)	**5.40E+00**	<4.90E+00	**3.22E+03**	<2.38E+01	<4.90E+00
Ethene Monooxygenase (EtnC)	<4.80E+00	<4.90E+00	<4.80E+00	<2.38E+01	**2.73E+02**
Epoxyalkane Transferase (EtnE)	**4.36E+02**	<4.90E+00	<4.80E+00	<2.38E+01	**1.35E+02**
Dichloromethane Dehalogenase (DCMA)	<4.80E+00	<4.90E+00	<4.80E+00	<2.38E+01	<4.90E+00
Other					
Total Eubacteria (EBAC)	**6.07E+04**	**5.67E+03**	**8.89E+04**	**3.80E+01 (I)**	**1.94E+04**
Sulfate Reducing Bacteria (APS)	**1.79E+03**	**4.74E+02**	**3.89E+04**	<2.38E+01	**2.25E+03**
Methanogens (MGN)	**8.73E+01**	**2.60E+00 (J)**	**1.41E+03**	<2.38E+01	**5.00E-01 (J)**

Legend:
NA = Not Analyzed
NS = Not Sampled
J = Estimated Gene Copies Below PQL but Above LQL
I = Inhibited
< = Result Not Detected

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Table 2: Summary of the QuantArray®-Chlor results obtained for samples TMW-24, TMW-21, TMW-22, MW-7i, and MW-7.

Sample Name Sample Date	TMW-24 02/28/2022	TMW-21 02/28/2022	TMW-22 02/28/2022	MW-7i 03/03/2022	MW-7 03/03/2022
Reductive Dechlorination	cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Dehalococcoides (DHC)	<5.00E-01	<5.00E-01	**7.00E-01**	**3.70E+00**	<5.00E-01
tceA Reductase (TCE)	<5.00E-01	<5.00E-01	<5.00E-01	<5.00E-01	<5.00E-01
BAV1 Vinyl Chloride Reductase (BVC)	<5.00E-01	<5.00E-01	<5.00E-01	<5.00E-01	<5.00E-01
Vinyl Chloride Reductase (VCR)	<5.00E-01	<5.00E-01	<5.00E-01	**1.00E-01 (J)**	<5.00E-01
Dehalobacter spp. (DHBt)	<4.90E+00	**9.64E+03**	<4.90E+00	<4.50E+00	<4.80E+00
Dehalobacter DCM (DCM)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	<4.80E+00
Dehalogenimonas spp. (DHG)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	<4.80E+00
cerA Reductase (CER)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	<4.80E+00
trans-1,2-DCE Reductase (TDR)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	<4.80E+00
Desulfitobacterium spp. (DSB)	<4.90E+00	**1.14E+04**	<4.90E+00	<4.50E+00	<4.80E+00
Dehalobium chlorocoercia (DECO)	<4.90E+00	**2.46E+02**	<4.90E+00	<4.50E+00	<4.80E+00
Desulfuromonas spp. (DSM)	**5.20E+00**	**1.41E+02**	<4.90E+00	<4.50E+00	<4.80E+00
PCE Reductase (PCE-1)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	<4.80E+00
PCE Reductase (PCE-2)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	<4.80E+00
Chloroform Reductase (CFR)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	<4.80E+00
1,1 DCA Reductase (DCA)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	<4.80E+00
1,2 DCA Reductase (DCAR)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	<4.80E+00
Aerobic (Co)Metabolic					
Soluble Methane Monooxygenase (SMMO)	<4.90E+00	**3.31E+02**	<4.90E+00	<4.50E+00	<4.80E+00
Toluene Dioxygenase (TOD)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	**3.00E-01 (J)**
Phenol Hydroxylase (PHE)	<4.90E+00	**2.76E+03**	**1.29E+02**	<4.50E+00	**2.70E+00 (J)**
Trichlorobenzene Dioxygenase (TCBO)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	<4.80E+00
Toluene Monooxygenase 2 (RDEG)	<4.90E+00	**2.53E+02**	**1.60E+00 (J)**	<4.50E+00	<4.80E+00
Toluene Monooxygenase (RMO)	<4.90E+00	<5.20E+00	<4.90E+00	**1.79E+02**	<4.80E+00
Ethene Monooxygenase (EtnC)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	<4.80E+00
Epoxyalkane Transferase (EtnE)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	<4.80E+00
Dichloromethane Dehalogenase (DCMA)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	<4.80E+00
Other					
Total Eubacteria (EBAC)	**5.39E+03**	**2.40E+06**	**6.99E+04**	**2.46E+04**	**5.85E+03**
Sulfate Reducing Bacteria (APS)	<4.90E+00	**7.69E+03**	**3.18E+03**	**4.89E+02**	**9.80E+00**
Methanogens (MGN)	<4.90E+00	<5.20E+00	<4.90E+00	**8.00E-01 (J)**	**1.40E+00 (J)**

Legend:

NA = Not Analyzed
NS = Not Sampled
J = Estimated Gene Copies Below PQL but Above LQL
I = Inhibited
< = Result Not Detected

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Table 3: Summary of the QuantArray®-Chlor results obtained for samples MW-5i, MW-8, MW-9 , MW-20i, and MW-6D.

Sample Name Sample Date	MW-5i 03/03/2022	MW-8 03/04/2022	MW-9 03/04/2022	MW-20i 03/04/2022	MW-6D 03/04/2022
Reductive Dechlorination	cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Dehalococcoides (DHC)	<5.00E-01	<5.00E-01	<5.00E-01	**2.10E+00**	<5.00E-01
tceA Reductase (TCE)	<5.00E-01	<5.00E-01	<5.00E-01	<5.00E-01	<5.00E-01
BAV1 Vinyl Chloride Reductase (BVC)	<5.00E-01	<5.00E-01	<5.00E-01	**1.00E-01 (J)**	<5.00E-01
Vinyl Chloride Reductase (VCR)	**2.00E-01 (J)**	<5.00E-01	<5.00E-01	<5.00E-01	<5.00E-01
Dehalobacter spp. (DHBt)	**1.11E+03**	<5.00E+00	<4.70E+00	**6.01E+01**	<4.60E+00
Dehalobacter DCM (DCM)	<4.80E+00	<5.00E+00	<4.70E+00	<4.90E+00	<4.60E+00
Dehalogenimonas spp. (DHG)	<4.80E+00	<5.00E+00	<4.70E+00	<4.90E+00	<4.60E+00
cerA Reductase (CER)	<4.80E+00	<5.00E+00	<4.70E+00	<4.90E+00	<4.60E+00
trans-1,2-DCE Reductase (TDR)	<4.80E+00	<5.00E+00	<4.70E+00	<4.90E+00	<4.60E+00
Desulfitobacterium spp. (DSB)	<4.80E+00	<5.00E+00	**1.33E+01**	**1.19E+04**	**4.58E+01**
Dehalobium chlorocoercia (DECO)	<4.80E+00	<5.00E+00	<4.70E+00	<4.90E+00	**2.58E+02**
Desulfuromonas spp. (DSM)	<4.80E+00	<5.00E+00	<4.70E+00	**5.00E+00**	**8.04E+01**
PCE Reductase (PCE-1)	<4.80E+00	<5.00E+00	<4.70E+00	<4.90E+00	<4.60E+00
PCE Reductase (PCE-2)	<4.80E+00	<5.00E+00	<4.70E+00	<4.90E+00	<4.60E+00
Chloroform Reductase (CFR)	<4.80E+00	<5.00E+00	<4.70E+00	<4.90E+00	<4.60E+00
1,1 DCA Reductase (DCA)	<4.80E+00	<5.00E+00	<4.70E+00	<4.90E+00	<4.60E+00
1,2 DCA Reductase (DCAR)	<4.80E+00	<5.00E+00	<4.70E+00	<4.90E+00	**1.02E+01**
Aerobic (Co)Metabolic					
Soluble Methane Monooxygenase (SMMO)	**1.61E+01**	<5.00E+00	<4.70E+00	**1.32E+02**	<4.60E+00
Toluene Dioxygenase (TOD)	<4.80E+00	<5.00E+00	<4.70E+00	<4.90E+00	<4.60E+00
Phenol Hydroxylase (PHE)	**1.38E+02**	<5.00E+00	**5.28E+02**	**3.15E+03**	**2.35E+03**
Trichlorobenzene Dioxygenase (TCBO)	<4.80E+00	<5.00E+00	<4.70E+00	<4.90E+00	<4.60E+00
Toluene Monooxygenase 2 (RDEG)	**2.38E+02**	<5.00E+00	**3.99E+01**	**2.45E+03**	**5.70E+02**
Toluene Monooxygenase (RMO)	**9.00E+00**	<5.00E+00	**4.43E+03**	**6.00E+00**	**5.70E+00**
Ethene Monooxygenase (EtnC)	**1.61E+03**	<5.00E+00	<4.70E+00	**2.34E+03**	**4.57E+01**
Epoxyalkane Transferase (EtnE)	**6.79E+03**	<5.00E+00	<4.70E+00	**5.06E+03**	**1.69E+02**
Dichloromethane Dehalogenase (DCMA)	<4.80E+00	<5.00E+00	<4.70E+00	<4.90E+00	<4.60E+00
Other					
Total Eubacteria (EBAC)	**1.03E+05**	**5.73E+02 (I)**	**3.26E+05**	**4.78E+05**	**3.98E+05**
Sulfate Reducing Bacteria (APS)	**1.20E+03**	<5.00E+00	<4.70E+00	**1.85E+03**	<4.60E+00
Methanogens (MGN)	**1.00E+00 (J)**	<5.00E+00	**1.50E+00 (J)**	**4.00E-01 (J)**	**6.00E-01 (J)**

Legend:

NA = Not Analyzed
NS = Not Sampled
J = Estimated Gene Copies Below PQL but Above LQL
I = Inhibited
< = Result Not Detected

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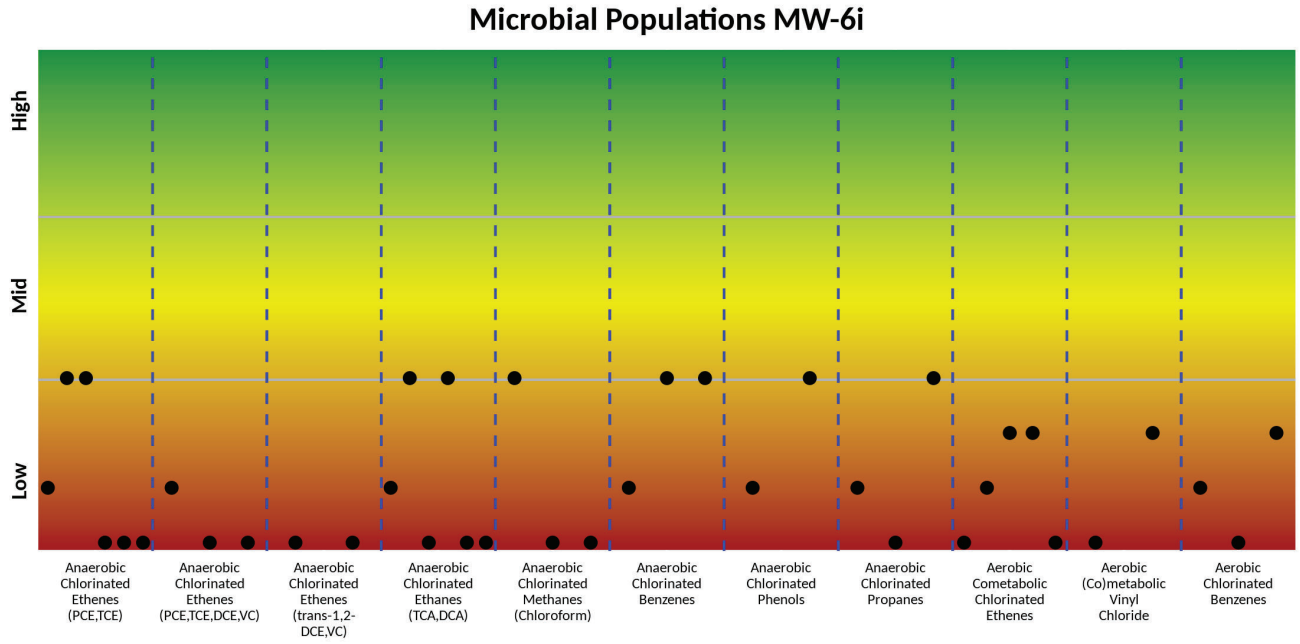

Figure 1: Microbial population summary to aid in evaluating potential pathways and biodegradation of specific contaminants.

Anaerobic - Reductive Dechlorination or Dichloroelimination		Aerobic - (Co)metabolism	
Chlorinated Ethenes (PCE, TCE)	DHC, DHBt, DSB, DSM, PCE-1, PCE-2	Chlorinated Ethenes (TCE,DCE,VC)	sMMO, TOD, PHE, RDEG, RMO
Chlorinated Ethenes (PCE, TCE, DCE, VC)	DHC, BVC, VCR	(Co)metabolic Vinyl Chloride	etnC, etnE
Chlorinated Ethenes (trans-1,2-DCE, VC)	TDR, CER	Chlorinated Benzenes	TOD, TCBO, PHE
Chlorinated Ethanes (TCA and 1,2-DCA)	DHC, DHBt, DHG, DSB[1], DCA, DCAR		
Chlorinated Methanes (Chloroform)	DHBt, DCM, CFR		
Chlorinated Benzenes	DHC, DHBt[2], DECO		
Chlorinated Phenols	DHC, DSB		
Chlorinated Propanes	DHC, DHG, DSB[1]		

[1] *Desulfitobacterium dichloroeliminans* DCA1. [2] Implicated in reductive dechlorination of dichlorobenzene and potentially chlorobenzene.

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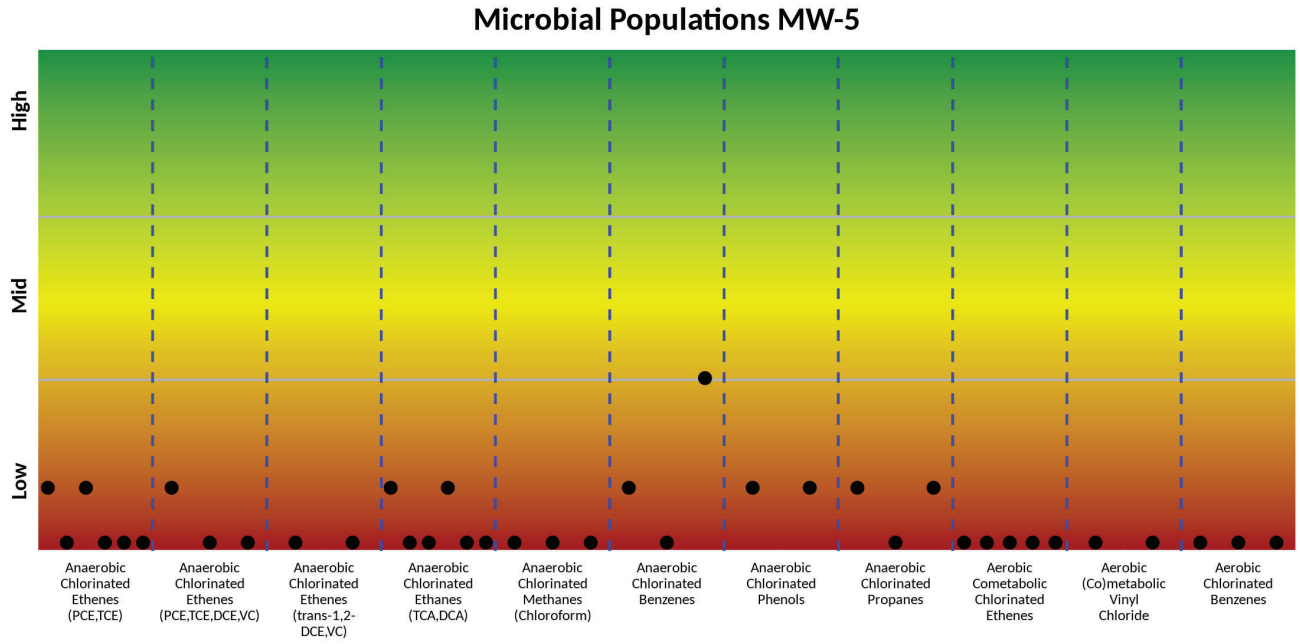

Figure 2: Microbial population summary to aid in evaluating potential pathways and biodegradation of specific contaminants.

Anaerobic - Reductive Dechlorination or Dichloroelimination		Aerobic - (Co)metabolism	
Chlorinated Ethenes (PCE, TCE)	DHC, DHBt, DSB, DSM, PCE-1, PCE-2	Chlorinated Ethenes (TCE,DCE,VC)	sMMO, TOD, PHE, RDEG, RMO
Chlorinated Ethenes (PCE, TCE, DCE, VC)	DHC, BVC, VCR	(Co)metabolic Vinyl Chloride	etnC, etnE
Chlorinated Ethenes (trans-1,2-DCE, VC)	TDR, CER	Chlorinated Benzenes	TOD, TCBO, PHE
Chlorinated Ethanes (TCA and 1,2-DCA)	DHC, DHBt, DHG, DSB[1], DCA, DCAR		
Chlorinated Methanes (Chloroform)	DHBt, DCM, CFR		
Chlorinated Benzenes	DHC, DHBt[2], DECO		
Chlorinated Phenols	DHC, DSB		
Chlorinated Propanes	DHC, DHG, DSB[1]		

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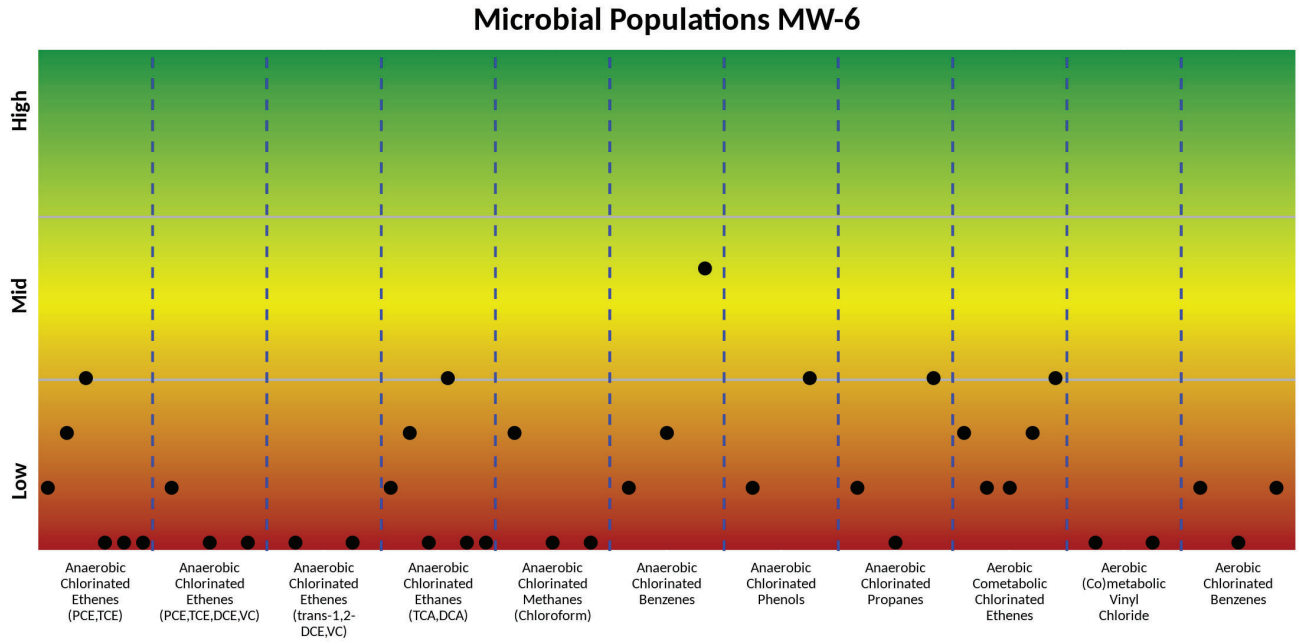

Figure 3: Microbial population summary to aid in evaluating potential pathways and biodegradation of specific contaminants.

Anaerobic - Reductive Dechlorination or Dichloroelimination		Aerobic - (Co)metabolism	
Chlorinated Ethenes (PCE, TCE)	DHC, DHBt, DSB, DSM, PCE-1, PCE-2	Chlorinated Ethenes (TCE,DCE,VC)	sMMO, TOD, PHE, RDEG, RMO
Chlorinated Ethenes (PCE, TCE, DCE, VC)	DHC, BVC, VCR	(Co)metabolic Vinyl Chloride	etnC, etnE
Chlorinated Ethenes (trans-1,2-DCE, VC)	TDR, CER	Chlorinated Benzenes	TOD, TCBO, PHE
Chlorinated Ethanes (TCA and 1,2-DCA)	DHC, DHBt, DHG, DSB[1], DCA, DCAR		
Chlorinated Methanes (Chloroform)	DHBt, DCM, CFR		
Chlorinated Benzenes	DHC, DHBt[2], DECO		
Chlorinated Phenols	DHC, DSB		
Chlorinated Propanes	DHC, DHG, DSB[1]		

[1] *Desulfitobacterium dichloroeliminans* DCA1. [2] Implicated in reductive dechlorination of dichlorobenzene and potentially chlorobenzene.

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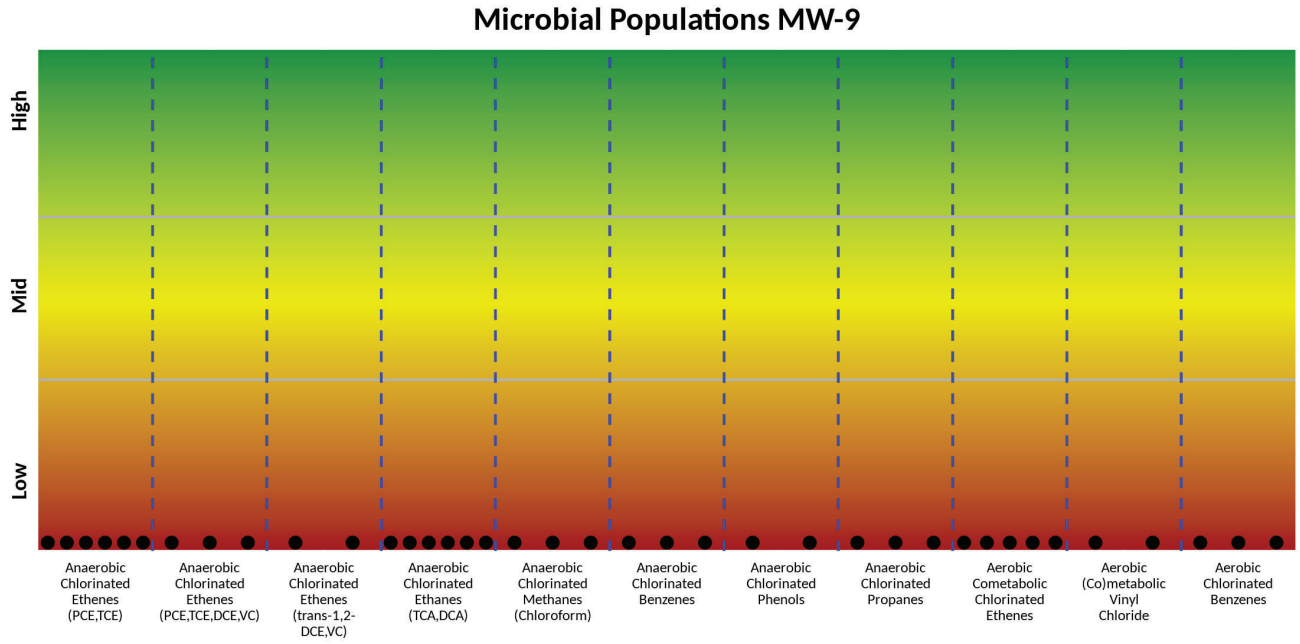

Figure 4: Microbial population summary to aid in evaluating potential pathways and biodegradation of specific contaminants.

Anaerobic - Reductive Dechlorination or Dichloroelimination		Aerobic - (Co)metabolism	
Chlorinated Ethenes (PCE, TCE)	DHC, DHBt, DSB, DSM, PCE-1, PCE-2	Chlorinated Ethenes (TCE,DCE,VC)	sMMO, TOD, PHE, RDEG, RMO
Chlorinated Ethenes (PCE, TCE, DCE, VC)	DHC, BVC, VCR	(Co)metabolic Vinyl Chloride	etnC, etnE
Chlorinated Ethenes (trans-1,2-DCE, VC)	TDR, CER	Chlorinated Benzenes	TOD, TCBO, PHE
Chlorinated Ethanes (TCA and 1,2-DCA)	DHC, DHBt, DHG, DSB[1], DCA, DCAR		
Chlorinated Methanes (Chloroform)	DHBt, DCM, CFR		
Chlorinated Benzenes	DHC, DHBt[2], DECO		
Chlorinated Phenols	DHC, DSB		
Chlorinated Propanes	DHC, DHG, DSB[1]		

[1] *Desulfitobacterium dichloroeliminans* DCA1. [2] Implicated in reductive dechlorination of dichlorobenzene and potentially chlorobenzene.

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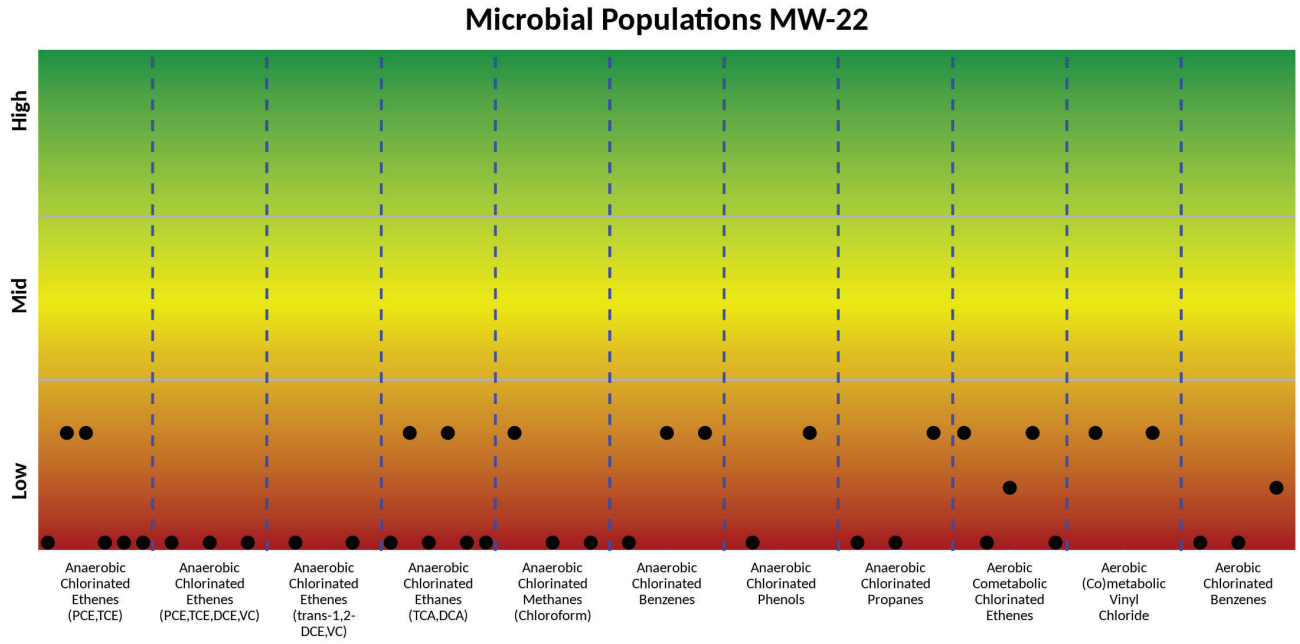

Figure 5: Microbial population summary to aid in evaluating potential pathways and biodegradation of specific contaminants.

Anaerobic - Reductive Dechlorination or Dichloroelimination		Aerobic - (Co)metabolism	
Chlorinated Ethenes (PCE, TCE)	DHC, DHBt, DSB, DSM, PCE-1, PCE-2	Chlorinated Ethenes (TCE,DCE,VC)	sMMO, TOD, PHE, RDEG, RMO
Chlorinated Ethenes (PCE, TCE, DCE, VC)	DHC, BVC, VCR	(Co)metabolic Vinyl Chloride	etnC, etnE
Chlorinated Ethenes (trans-1,2-DCE, VC)	TDR, CER	Chlorinated Benzenes	TOD, TCBO, PHE
Chlorinated Ethanes (TCA and 1,2-DCA)	DHC, DHBt, DHG, DSB[1], DCA, DCAR		
Chlorinated Methanes (Chloroform)	DHBt, DCM, CFR		
Chlorinated Benzenes	DHC, DHBt[2], DECO		
Chlorinated Phenols	DHC, DSB		
Chlorinated Propanes	DHC, DHG, DSB[1]		

[1] *Desulfitobacterium dichloroeliminans* DCA1. [2] Implicated in reductive dechlorination of dichlorobenzene and potentially chlorobenzene.

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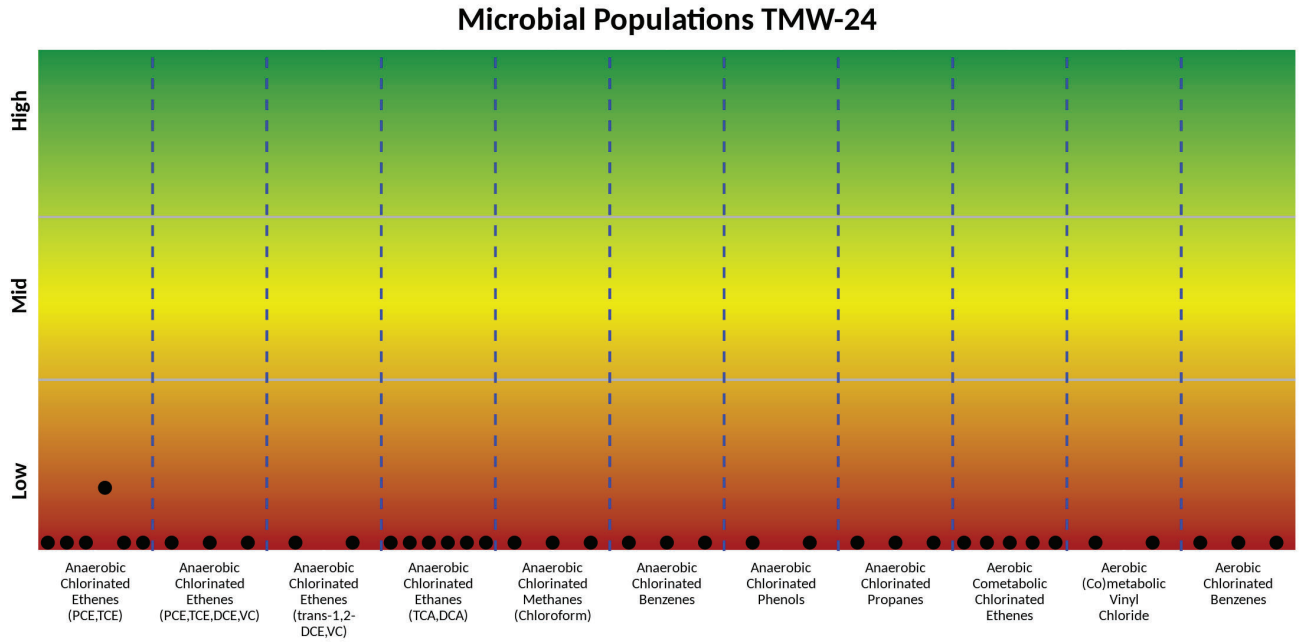

Figure 6: Microbial population summary to aid in evaluating potential pathways and biodegradation of specific contaminants.

Anaerobic - Reductive Dechlorination or Dichloroelimination		Aerobic - (Co)metabolism	
Chlorinated Ethenes (PCE, TCE)	DHC, DHBt, DSB, DSM, PCE-1, PCE-2	Chlorinated Ethenes (TCE,DCE,VC)	sMMO, TOD, PHE, RDEG, RMO
Chlorinated Ethenes (PCE, TCE, DCE, VC)	DHC, BVC, VCR	(Co)metabolic Vinyl Chloride	etnC, etnE
Chlorinated Ethenes (trans-1,2-DCE, VC)	TDR, CER	Chlorinated Benzenes	TOD, TCBO, PHE
Chlorinated Ethanes (TCA and 1,2-DCA)	DHC, DHBt, DHG, DSB[1], DCA, DCAR		
Chlorinated Methanes (Chloroform)	DHBt, DCM, CFR		
Chlorinated Benzenes	DHC, DHBt[2], DECO		
Chlorinated Phenols	DHC, DSB		
Chlorinated Propanes	DHC, DHG, DSB[1]		

[1] *Desulfitobacterium dichloroeliminans* DCA1. [2] Implicated in reductive dechlorination of dichlorobenzene and potentially chlorobenzene.

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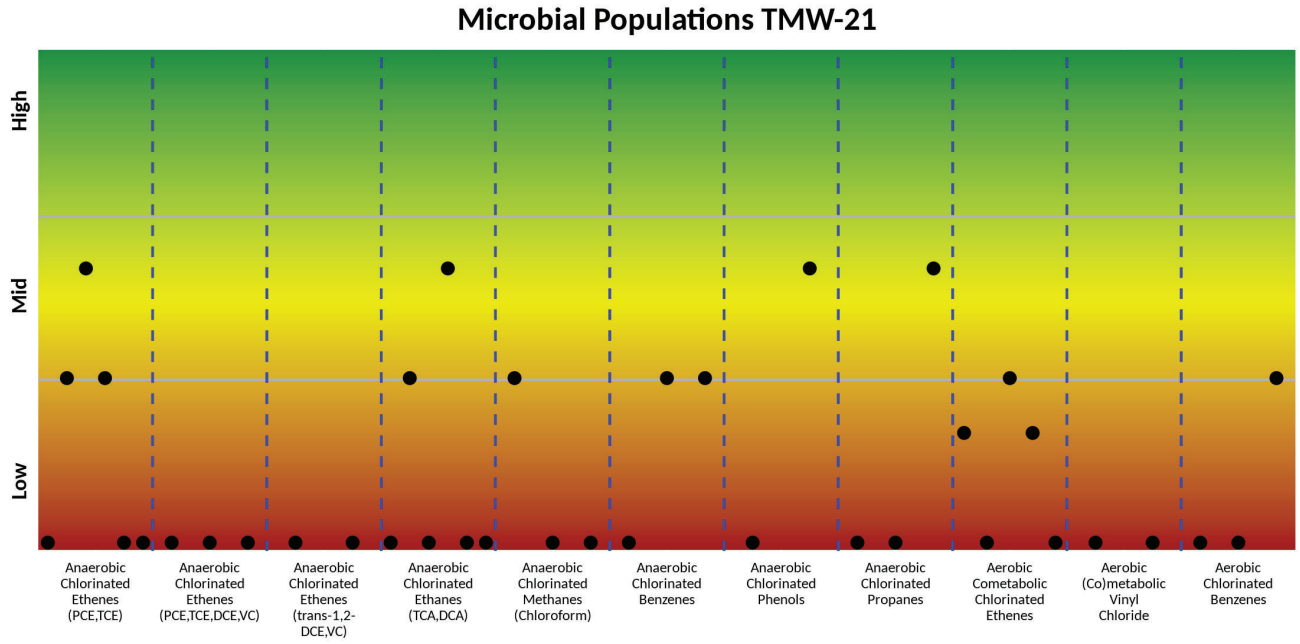

Figure 7: Microbial population summary to aid in evaluating potential pathways and biodegradation of specific contaminants.

Anaerobic - Reductive Dechlorination or Dichloroelimination		Aerobic - (Co)metabolism	
Chlorinated Ethenes (PCE, TCE)	DHC, DHBt, DSB, DSM, PCE-1, PCE-2	Chlorinated Ethenes (TCE,DCE,VC)	sMMO, TOD, PHE, RDEG, RMO
Chlorinated Ethenes (PCE, TCE, DCE, VC)	DHC, BVC, VCR	(Co)metabolic Vinyl Chloride	etnC, etnE
Chlorinated Ethenes (trans-1,2-DCE, VC)	TDR, CER	Chlorinated Benzenes	TOD, TCBO, PHE
Chlorinated Ethanes (TCA and 1,2-DCA)	DHC, DHBt, DHG, DSB[1], DCA, DCAR		
Chlorinated Methanes (Chloroform)	DHBt, DCM, CFR		
Chlorinated Benzenes	DHC, DHBt[2], DECO		
Chlorinated Phenols	DHC, DSB		
Chlorinated Propanes	DHC, DHG, DSB[1]		

[1] *Desulfitobacterium dichloroeliminans* DCA1. [2] Implicated in reductive dechlorination of dichlorobenzene and potentially chlorobenzene.

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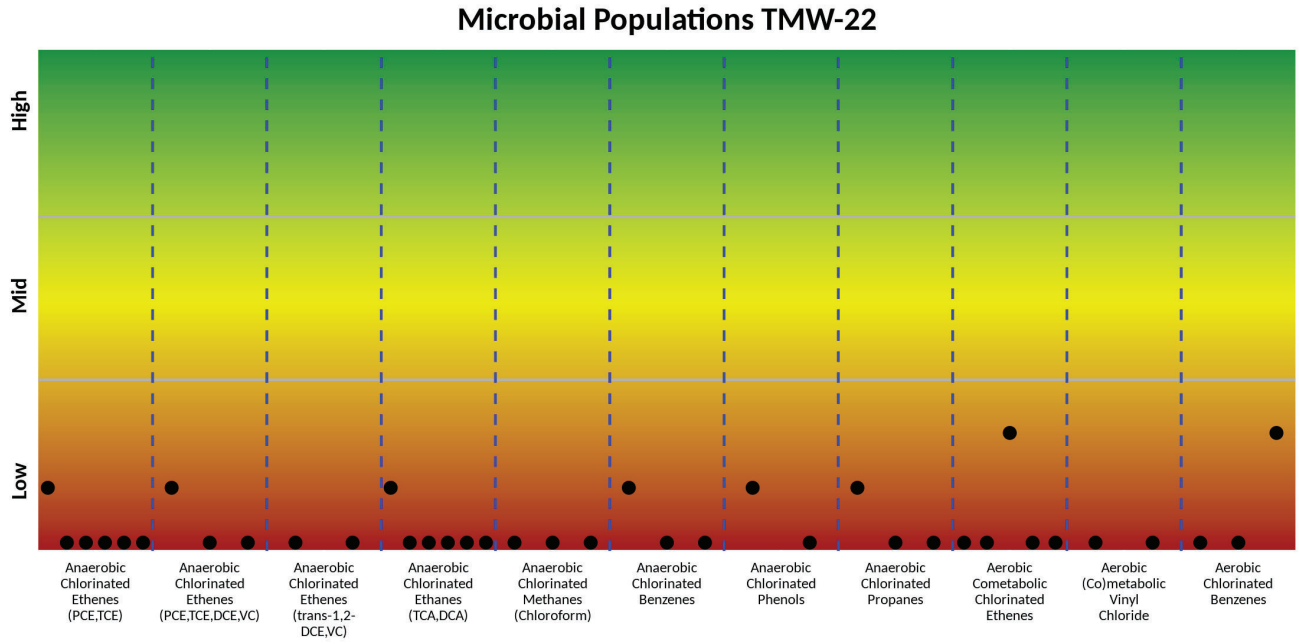

Figure 8: Microbial population summary to aid in evaluating potential pathways and biodegradation of specific contaminants.

Anaerobic - Reductive Dechlorination or Dichloroelimination		Aerobic - (Co)metabolism	
Chlorinated Ethenes (PCE, TCE)	DHC, DHBt, DSB, DSM, PCE-1, PCE-2	Chlorinated Ethenes (TCE,DCE,VC)	sMMO, TOD, PHE, RDEG, RMO
Chlorinated Ethenes (PCE, TCE, DCE, VC)	DHC, BVC, VCR	(Co)metabolic Vinyl Chloride	etnC, etnE
Chlorinated Ethenes (trans-1,2-DCE, VC)	TDR, CER	Chlorinated Benzenes	TOD, TCBO, PHE
Chlorinated Ethanes (TCA and 1,2-DCA)	DHC, DHBt, DHG, DSB[1], DCA, DCAR		
Chlorinated Methanes (Chloroform)	DHBt, DCM, CFR		
Chlorinated Benzenes	DHC, DHBt[2], DECO		
Chlorinated Phenols	DHC, DSB		
Chlorinated Propanes	DHC, DHG, DSB[1]		

[1] *Desulfitobacterium dichloroeliminans* DCA1. [2] Implicated in reductive dechlorination of dichlorobenzene and potentially chlorobenzene.

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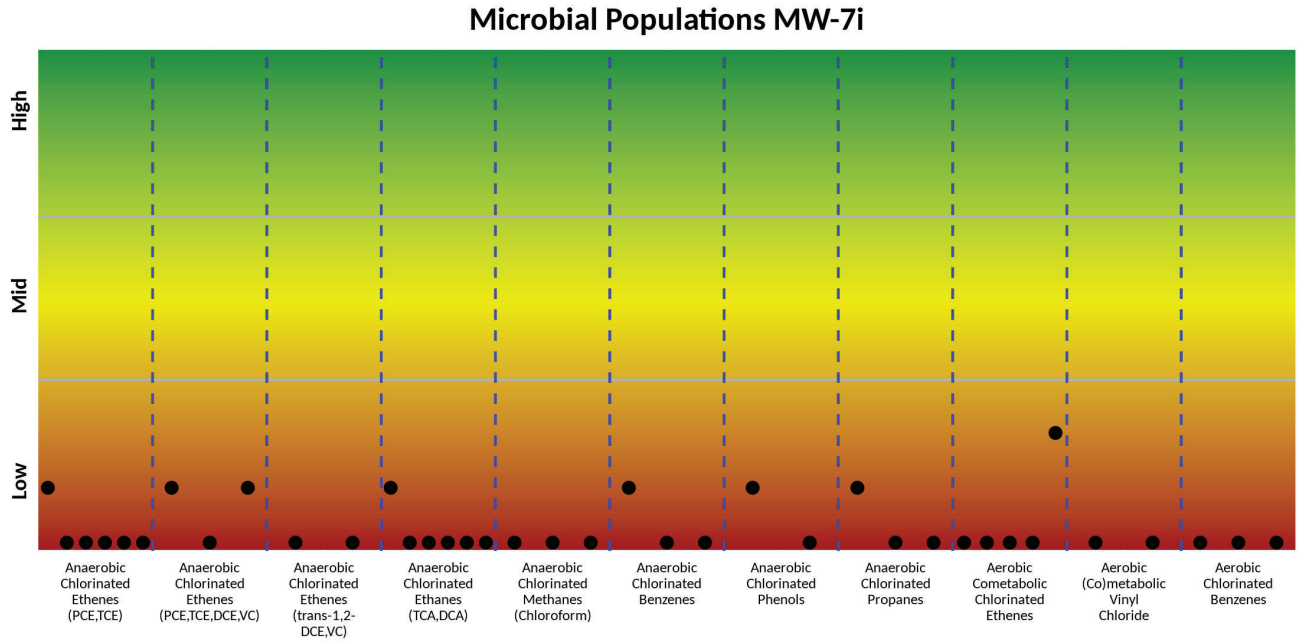

Figure 9: Microbial population summary to aid in evaluating potential pathways and biodegradation of specific contaminants.

Anaerobic - Reductive Dechlorination or Dichloroelimination		Aerobic - (Co)metabolism	
Chlorinated Ethenes (PCE, TCE)	DHC, DHBt, DSB, DSM, PCE-1, PCE-2	Chlorinated Ethenes (TCE,DCE,VC)	sMMO, TOD, PHE, RDEG, RMO
Chlorinated Ethenes (PCE, TCE, DCE, VC)	DHC, BVC, VCR	(Co)metabolic Vinyl Chloride	etnC, etnE
Chlorinated Ethenes (trans-1,2-DCE, VC)	TDR, CER	Chlorinated Benzenes	TOD, TCBO, PHE
Chlorinated Ethanes (TCA and 1,2-DCA)	DHC, DHBt, DHG, DSB[1], DCA, DCAR		
Chlorinated Methanes (Chloroform)	DHBt, DCM, CFR		
Chlorinated Benzenes	DHC, DHBt[2], DECO		
Chlorinated Phenols	DHC, DSB		
Chlorinated Propanes	DHC, DHG, DSB[1]		

[1] *Desulfitobacterium dichloroeliminans* DCA1. [2] Implicated in reductive dechlorination of dichlorobenzene and potentially chlorobenzene.

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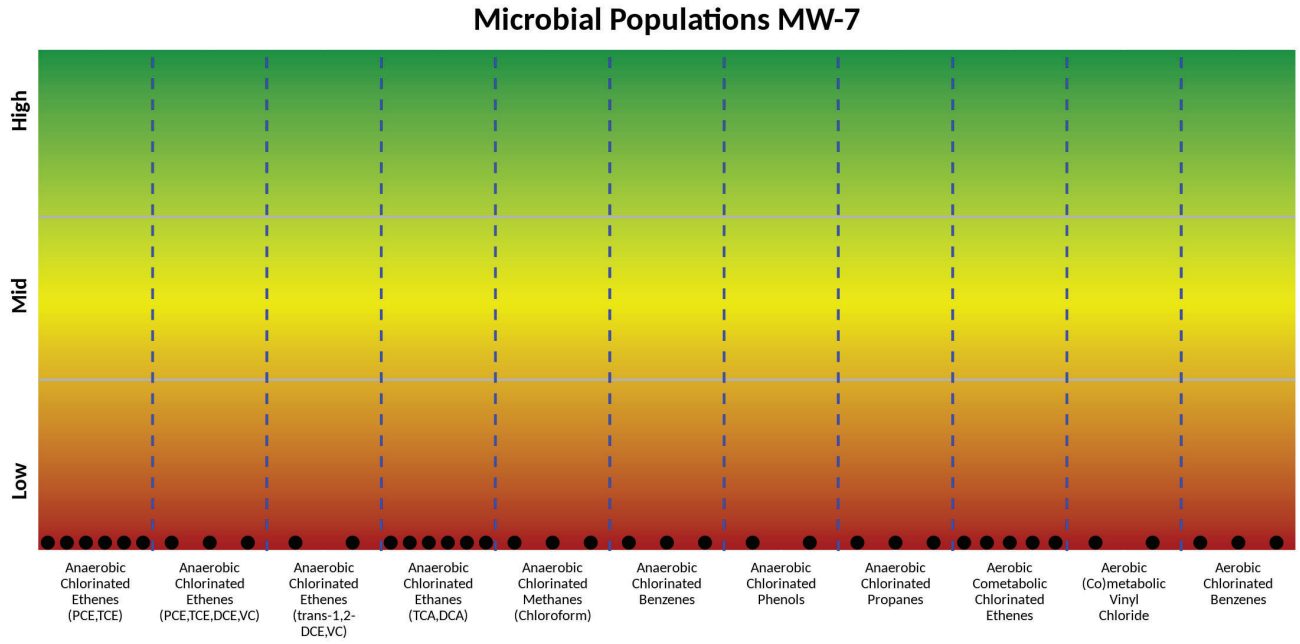

Figure 10: Microbial population summary to aid in evaluating potential pathways and biodegradation of specific contaminants.

Anaerobic - Reductive Dechlorination or Dichloroelimination		Aerobic - (Co)metabolism	
Chlorinated Ethenes (PCE, TCE)	DHC, DHBt, DSB, DSM, PCE-1, PCE-2	Chlorinated Ethenes (TCE,DCE,VC)	sMMO, TOD, PHE, RDEG, RMO
Chlorinated Ethenes (PCE, TCE, DCE, VC)	DHC, BVC, VCR	(Co)metabolic Vinyl Chloride	etnC, etnE
Chlorinated Ethenes (trans-1,2-DCE, VC)	TDR, CER	Chlorinated Benzenes	TOD, TCBO, PHE
Chlorinated Ethanes (TCA and 1,2-DCA)	DHC, DHBt, DHG, DSB[1], DCA, DCAR		
Chlorinated Methanes (Chloroform)	DHBt, DCM, CFR		
Chlorinated Benzenes	DHC, DHBt[2], DECO		
Chlorinated Phenols	DHC, DSB		
Chlorinated Propanes	DHC, DHG, DSB[1]		

[1] *Desulfitobacterium dichloroeliminans* DCA1. [2] Implicated in reductive dechlorination of dichlorobenzene and potentially chlorobenzene.

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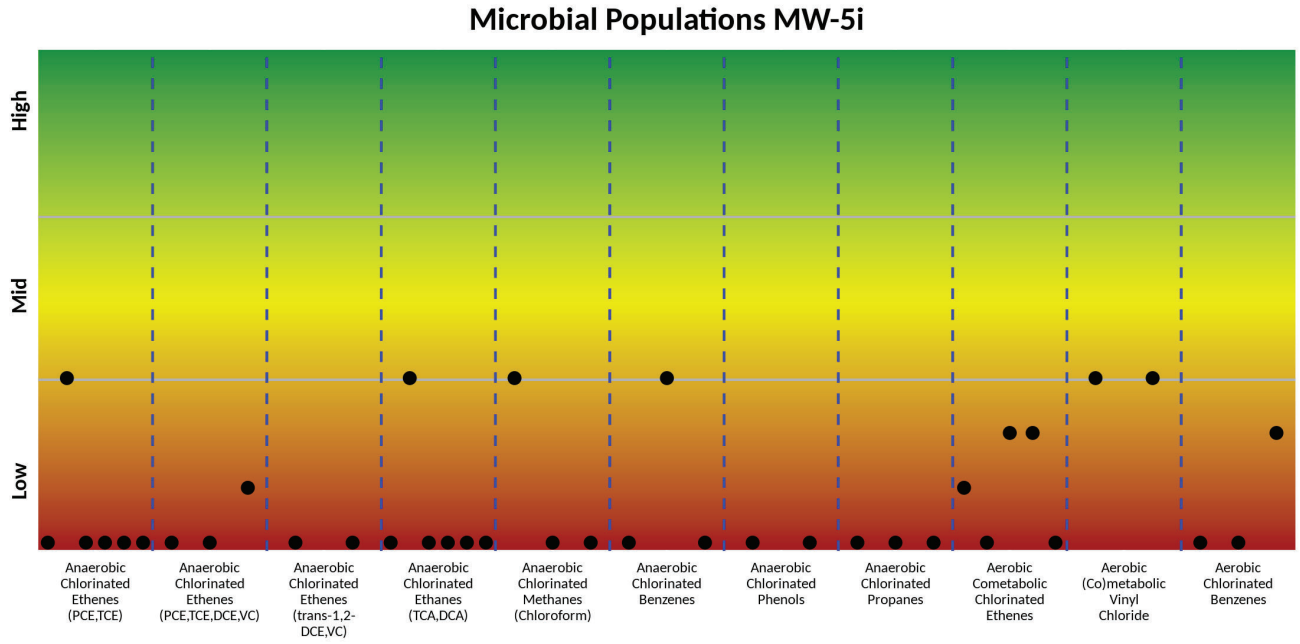

Figure 11: Microbial population summary to aid in evaluating potential pathways and biodegradation of specific contaminants.

Anaerobic - Reductive Dechlorination or Dichloroelimination		Aerobic - (Co)metabolism	
Chlorinated Ethenes (PCE, TCE)	DHC, DHBt, DSB, DSM, PCE-1, PCE-2	Chlorinated Ethenes (TCE,DCE,VC)	sMMO, TOD, PHE, RDEG, RMO
Chlorinated Ethenes (PCE, TCE, DCE, VC)	DHC, BVC, VCR	(Co)metabolic Vinyl Chloride	etnC, etnE
Chlorinated Ethenes (trans-1,2-DCE, VC)	TDR, CER	Chlorinated Benzenes	TOD, TCBO, PHE
Chlorinated Ethanes (TCA and 1,2-DCA)	DHC, DHBt, DHG, DSB[1], DCA, DCAR		
Chlorinated Methanes (Chloroform)	DHBt, DCM, CFR		
Chlorinated Benzenes	DHC, DHBt[2], DECO		
Chlorinated Phenols	DHC, DSB		
Chlorinated Propanes	DHC, DHG, DSB[1]		

[1] *Desulfitobacterium dichloroeliminans* DCA1. [2] Implicated in reductive dechlorination of dichlorobenzene and potentially chlorobenzene.

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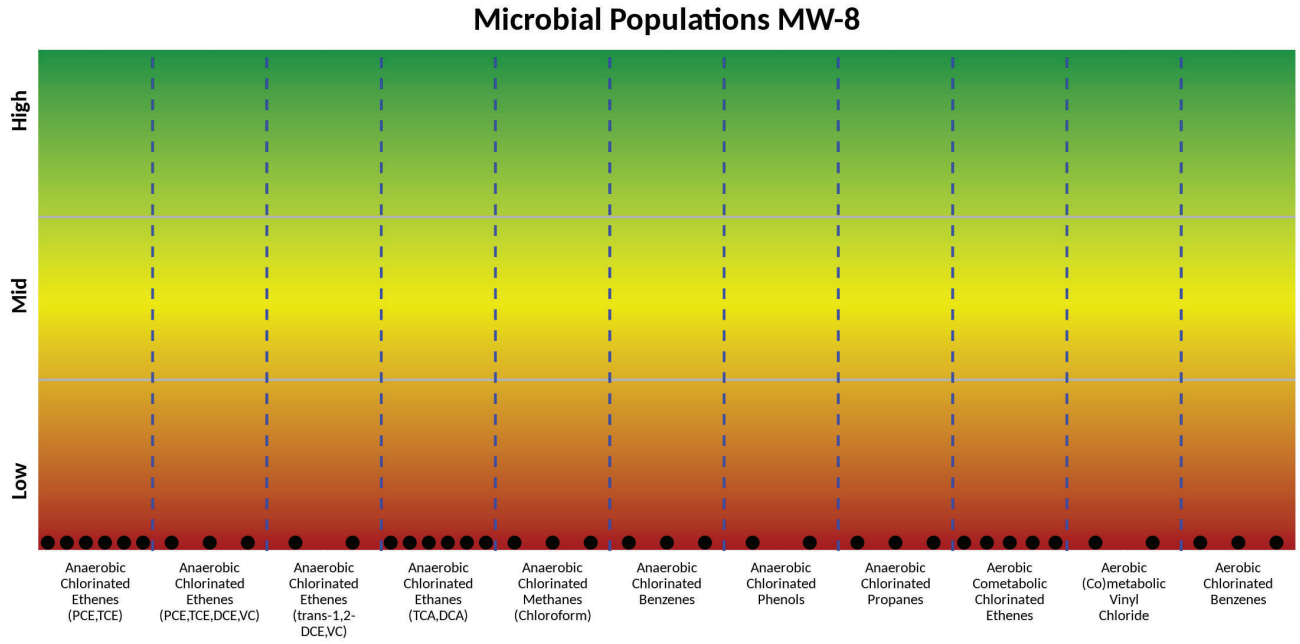

Figure 12: Microbial population summary to aid in evaluating potential pathways and biodegradation of specific contaminants.

Anaerobic - Reductive Dechlorination or Dichloroelimination		Aerobic - (Co)metabolism	
Chlorinated Ethenes (PCE, TCE)	DHC, DHBt, DSB, DSM, PCE-1, PCE-2	Chlorinated Ethenes (TCE,DCE,VC)	sMMO, TOD, PHE, RDEG, RMO
Chlorinated Ethenes (PCE, TCE, DCE, VC)	DHC, BVC, VCR	(Co)metabolic Vinyl Chloride	etnC, etnE
Chlorinated Ethenes (trans-1,2-DCE, VC)	TDR, CER	Chlorinated Benzenes	TOD, TCBO, PHE
Chlorinated Ethanes (TCA and 1,2-DCA)	DHC, DHBt, DHG, DSB[1], DCA, DCAR		
Chlorinated Methanes (Chloroform)	DHBt, DCM, CFR		
Chlorinated Benzenes	DHC, DHBt[2], DECO		
Chlorinated Phenols	DHC, DSB		
Chlorinated Propanes	DHC, DHG, DSB[1]		

[1] *Desulfitobacterium dichloroeliminans* DCA1. [2] Implicated in reductive dechlorination of dichlorobenzene and potentially chlorobenzene.

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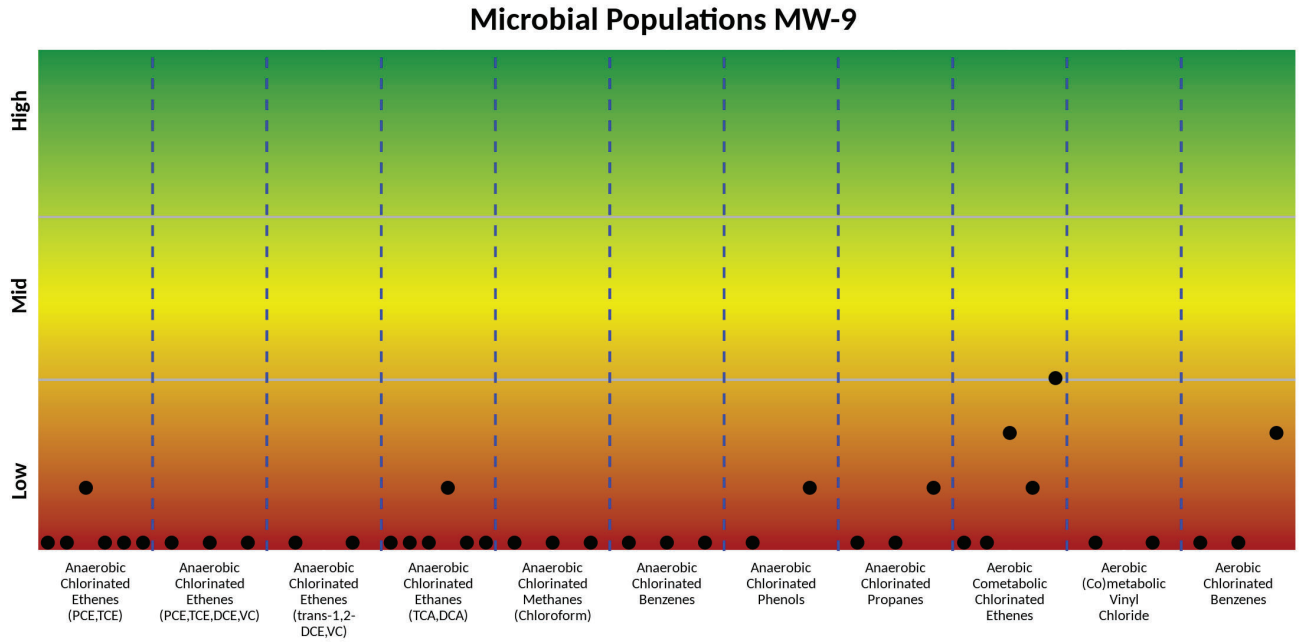

Figure 13: Microbial population summary to aid in evaluating potential pathways and biodegradation of specific contaminants.

Anaerobic - Reductive Dechlorination or Dichloroelimination		Aerobic - (Co)metabolism	
Chlorinated Ethenes (PCE, TCE)	DHC, DHBt, DSB, DSM, PCE-1, PCE-2	Chlorinated Ethenes (TCE,DCE,VC)	sMMO, TOD, PHE, RDEG, RMO
Chlorinated Ethenes (PCE, TCE, DCE, VC)	DHC, BVC, VCR	(Co)metabolic Vinyl Chloride	etnC, etnE
Chlorinated Ethenes (trans-1,2-DCE, VC)	TDR, CER	Chlorinated Benzenes	TOD, TCBO, PHE
Chlorinated Ethanes (TCA and 1,2-DCA)	DHC, DHBt, DHG, DSB[1], DCA, DCAR		
Chlorinated Methanes (Chloroform)	DHBt, DCM, CFR		
Chlorinated Benzenes	DHC, DHBt[2], DECO		
Chlorinated Phenols	DHC, DSB		
Chlorinated Propanes	DHC, DHG, DSB[1]		

[1] *Desulfitobacterium dichloroeliminans* DCA1. [2] Implicated in reductive dechlorination of dichlorobenzene and potentially chlorobenzene.

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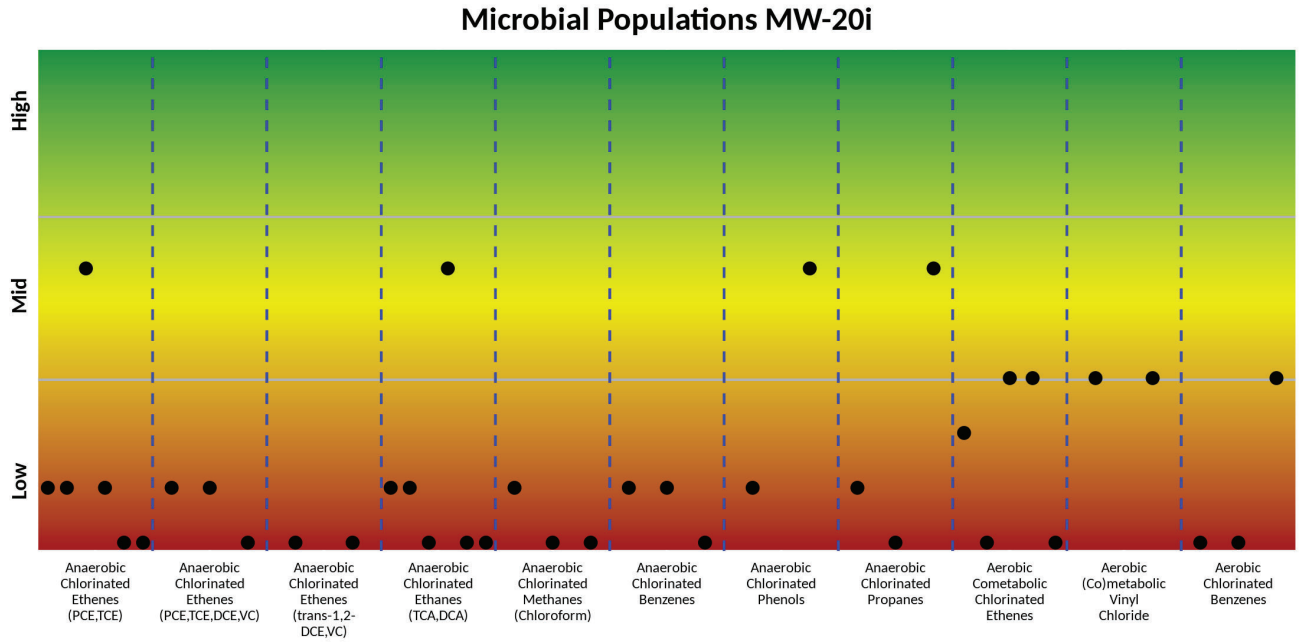

Figure 14: Microbial population summary to aid in evaluating potential pathways and biodegradation of specific contaminants.

Anaerobic - Reductive Dechlorination or Dichloroelimination		Aerobic - (Co)metabolism	
Chlorinated Ethenes (PCE, TCE)	DHC, DHBt, DSB, DSM, PCE-1, PCE-2	Chlorinated Ethenes (TCE,DCE,VC)	sMMO, TOD, PHE, RDEG, RMO
Chlorinated Ethenes (PCE, TCE, DCE, VC)	DHC, BVC, VCR	(Co)metabolic Vinyl Chloride	etnC, etnE
Chlorinated Ethenes (trans-1,2-DCE, VC)	TDR, CER	Chlorinated Benzenes	TOD, TCBO, PHE
Chlorinated Ethanes (TCA and 1,2-DCA)	DHC, DHBt, DHG, DSB[1], DCA, DCAR		
Chlorinated Methanes (Chloroform)	DHBt, DCM, CFR		
Chlorinated Benzenes	DHC, DHBt[2], DECO		
Chlorinated Phenols	DHC, DSB		
Chlorinated Propanes	DHC, DHG, DSB[1]		

[1] *Desulfitobacterium dichloroeliminans* DCA1. [2] Implicated in reductive dechlorination of dichlorobenzene and potentially chlorobenzene.

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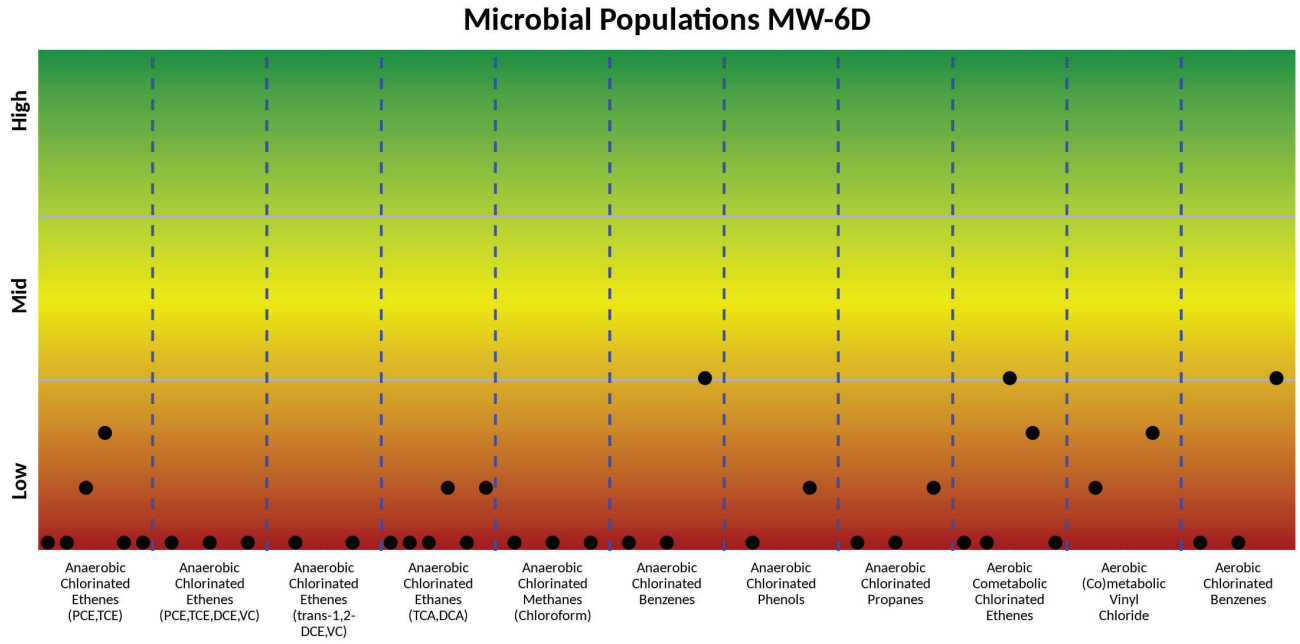

Figure 15: Microbial population summary to aid in evaluating potential pathways and biodegradation of specific contaminants.

Anaerobic - Reductive Dechlorination or Dichloroelimination		Aerobic - (Co)metabolism	
Chlorinated Ethenes (PCE, TCE)	DHC, DHBt, DSB, DSM, PCE-1, PCE-2	Chlorinated Ethenes (TCE,DCE,VC)	sMMO, TOD, PHE, RDEG, RMO
Chlorinated Ethenes (PCE, TCE, DCE, VC)	DHC, BVC, VCR	(Co)metabolic Vinyl Chloride	etnC, etnE
Chlorinated Ethenes (trans-1,2-DCE, VC)	TDR, CER	Chlorinated Benzenes	TOD, TCBO, PHE
Chlorinated Ethanes (TCA and 1,2-DCA)	DHC, DHBt, DHG, DSB[1], DCA, DCAR		
Chlorinated Methanes (Chloroform)	DHBt, DCM, CFR		
Chlorinated Benzenes	DHC, DHBt[2], DECO		
Chlorinated Phenols	DHC, DSB		
Chlorinated Propanes	DHC, DHG, DSB[1]		

[1] *Desulfitobacterium dichloroeliminans* DCA1. [2] Implicated in reductive dechlorination of dichlorobenzene and potentially chlorobenzene.

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Table 4: Summary of the QuantArray®-Chlor results for microorganisms responsible for reductive dechlorination for samples MW-6i, MW-5, MW-6, MW-9, and MW-22.

Sample Name Sample Date	MW-6i 02/24/2022	MW-5 02/24/2022	MW-6 02/24/2022	MW-9 02/24/2022	MW-22 02/24/2022
Reductive Dechlorination	cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Dehalococcoides (DHC)	**2.00E-01**	**5.00E-01**	**6.50E+00**	<2.40E+00	<5.00E-01
tceA Reductase (TCE)	<5.00E-01	<5.00E-01	<5.00E-01	<2.40E+00	<5.00E-01
BAV1 Vinyl Chloride Reductase (BVC)	<5.00E-01	<5.00E-01	<5.00E-01	<2.40E+00	<5.00E-01
Vinyl Chloride Reductase (VCR)	<5.00E-01	<5.00E-01	<5.00E-01	<2.40E+00	<5.00E-01
Dehalobacter spp. (DHBt)	**5.25E+03**	<4.90E+00	**2.00E+02**	<2.38E+01	**1.10E+02**
Dehalobacter DCM (DCM)	<4.80E+00	<4.90E+00	<4.80E+00	<2.38E+01	<4.90E+00
Dehalogenimonas spp. (DHG)	<4.80E+00	<4.90E+00	<4.80E+00	<2.38E+01	<4.90E+00
Desulfitobacterium spp. (DSB)	**6.41E+03**	**1.38E+01**	**4.47E+03**	<2.38E+01	**5.46E+02**
Dehalobium chlorocoercia (DECO)	**8.33E+02**	**3.84E+02**	**2.47E+03**	<2.38E+01	**3.88E+01**
Desulfuromonas spp. (DSM)	<4.80E+00	<4.90E+00	<4.80E+00	<2.38E+01	<4.90E+00

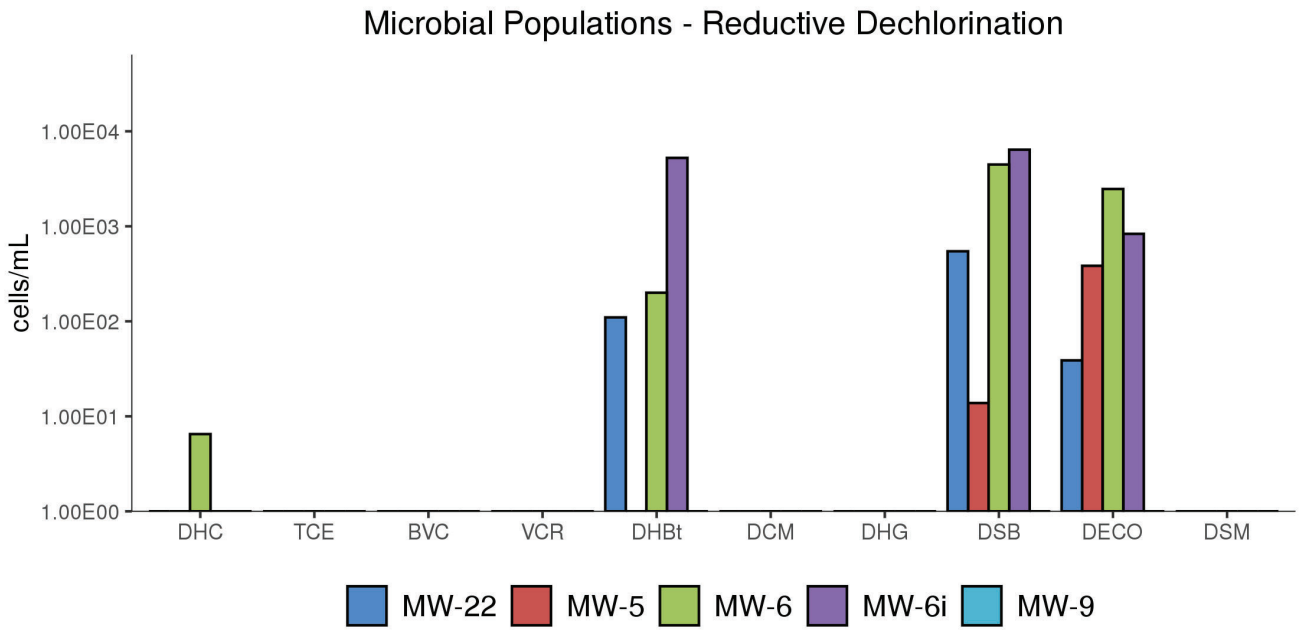

Figure 16: Comparison - microbial populations involved in reductive dechlorination.

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Table 5: Summary of the QuantArray®-Chlor results for microorganisms responsible for reductive dechlorination for samples MW-6i, MW-5, MW-6, MW-9, and MW-22.

Sample Name Sample Date	MW-6i 02/24/2022	MW-5 02/24/2022	MW-6 02/24/2022	MW-9 02/24/2022	MW-22 02/24/2022
Reductive Dechlorination	cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Chloroform Reductase (CFR)	<4.80E+00	<4.90E+00	<4.80E+00	<2.38E+01	<4.90E+00
1,1 DCA Reductase (DCA)	<4.80E+00	<4.90E+00	<4.80E+00	<2.38E+01	<4.90E+00
1,2 DCA Reductase (DCAR)	<4.80E+00	<4.90E+00	<4.80E+00	<2.38E+01	<4.90E+00
PCE Reductase (PCE-1)	<4.80E+00	<4.90E+00	<4.80E+00	<2.38E+01	<4.90E+00
PCE Reductase (PCE-2)	<4.80E+00	<4.90E+00	<4.80E+00	<2.38E+01	<4.90E+00
Dehalogenimonas trans-1,2-DCE Reductase (TDR)	<4.80E+00	<4.90E+00	<4.80E+00	<2.38E+01	<4.90E+00
Dehalogenimonas cerA Reductase (CER)	<4.80E+00	<4.90E+00	<4.80E+00	<2.38E+01	<4.90E+00

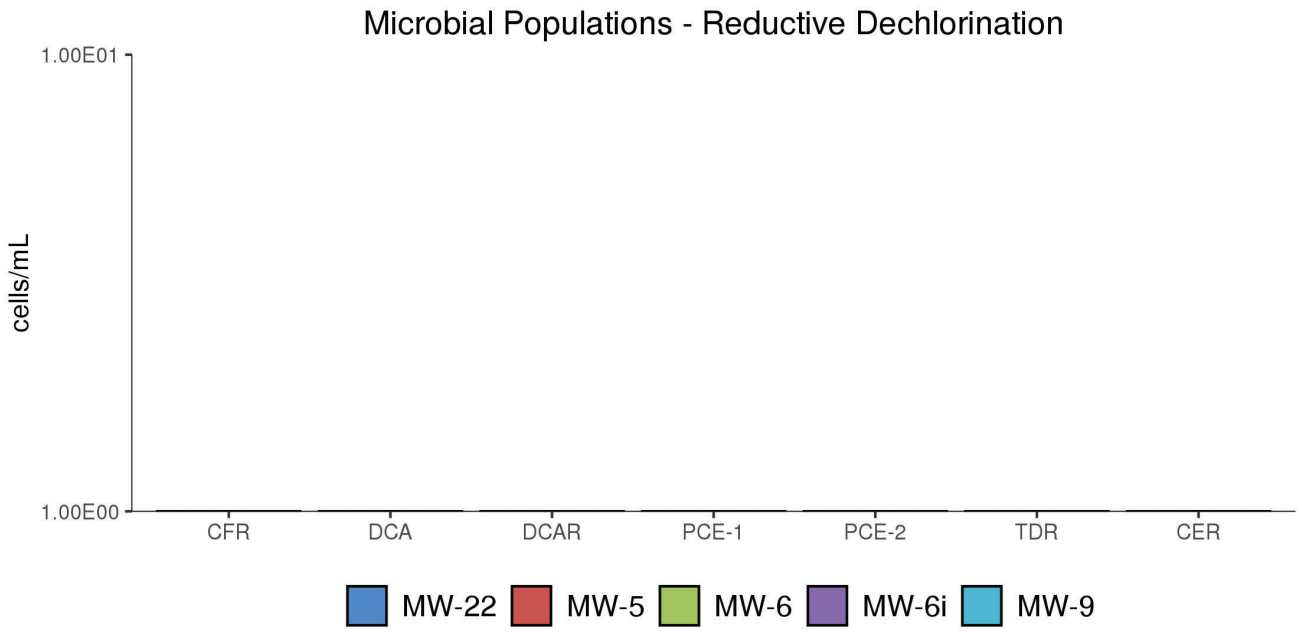

Figure 17: Comparison - microbial populations involved in reductive dechlorination.

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Table 6: Summary of the QuantArray®-Chlor results for microorganisms responsible for reductive dechlorination for samples TMW-24, TMW-21, TMW-22, MW-7i, and MW-7.

Sample Name Sample Date	TMW-24 02/28/2022	TMW-21 02/28/2022	TMW-22 02/28/2022	MW-7i 03/03/2022	MW-7 03/03/2022
Reductive Dechlorination	cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Dehalococcoides (DHC)	<5.00E-01	<5.00E-01	**7.00E-01**	**3.70E+00**	<5.00E-01
tceA Reductase (TCE)	<5.00E-01	<5.00E-01	<5.00E-01	<5.00E-01	<5.00E-01
BAV1 Vinyl Chloride Reductase (BVC)	<5.00E-01	<5.00E-01	<5.00E-01	<5.00E-01	<5.00E-01
Vinyl Chloride Reductase (VCR)	<5.00E-01	<5.00E-01	<5.00E-01	**1.00E-01 (J)**	<5.00E-01
Dehalobacter spp. (DHBt)	<4.90E+00	**9.64E+03**	<4.90E+00	<4.50E+00	<4.80E+00
Dehalobacter DCM (DCM)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	<4.80E+00
Dehalogenimonas spp. (DHG)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	<4.80E+00
Desulfitobacterium spp. (DSB)	<4.90E+00	**1.14E+04**	<4.90E+00	<4.50E+00	<4.80E+00
Dehalobium chlorocoercia (DECO)	<4.90E+00	**2.46E+02**	<4.90E+00	<4.50E+00	<4.80E+00
Desulfuromonas spp. (DSM)	**5.20E+00**	**1.41E+02**	<4.90E+00	<4.50E+00	<4.80E+00

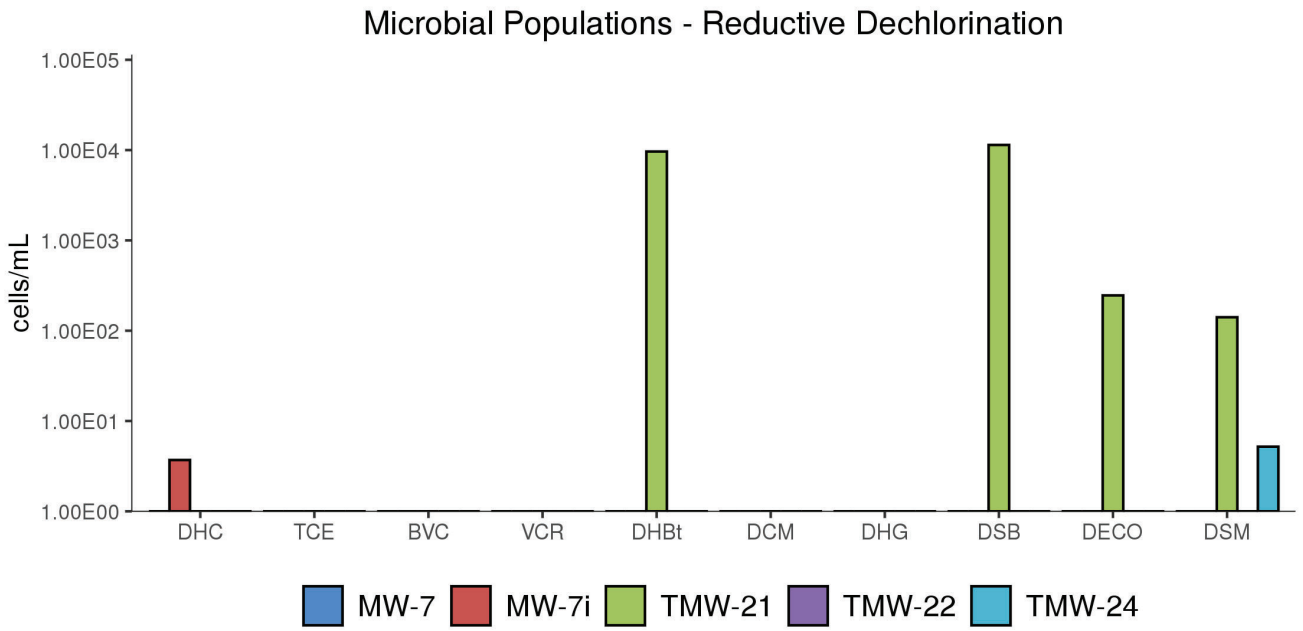

Figure 18: Comparison - microbial populations involved in reductive dechlorination.

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Table 7: Summary of the QuantArray®-Chlor results for microorganisms responsible for reductive dechlorination for samples TMW-24, TMW-21, TMW-22, MW-7i, and MW-7.

Sample Name Sample Date	TMW-24 02/28/2022	TMW-21 02/28/2022	TMW-22 02/28/2022	MW-7i 03/03/2022	MW-7 03/03/2022
Reductive Dechlorination	cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Chloroform Reductase (CFR)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	<4.80E+00
1,1 DCA Reductase (DCA)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	<4.80E+00
1,2 DCA Reductase (DCAR)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	<4.80E+00
PCE Reductase (PCE-1)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	<4.80E+00
PCE Reductase (PCE-2)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	<4.80E+00
Dehalogenimonas trans-1,2-DCE Reductase (TDR)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	<4.80E+00
Dehalogenimonas cerA Reductase (CER)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	<4.80E+00

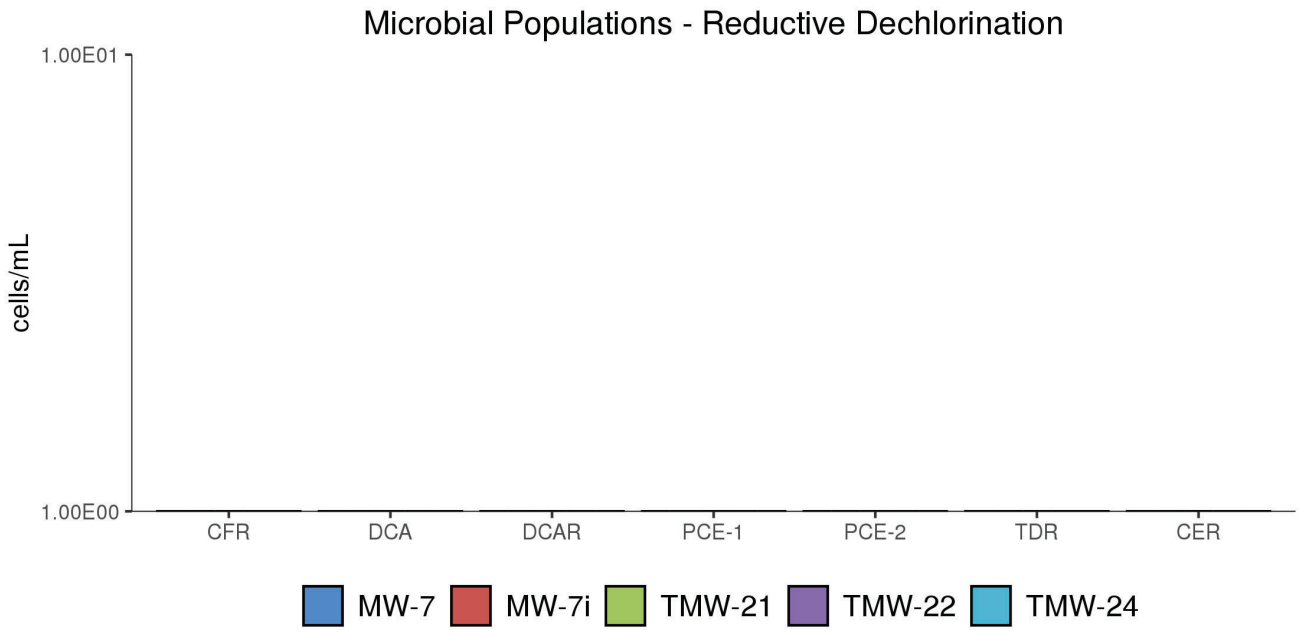

Figure 19: Comparison - microbial populations involved in reductive dechlorination.

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Table 8: Summary of the QuantArray®-Chlor results for microorganisms responsible for reductive dechlorination for samples MW-5i, MW-8, MW-9 , MW-20i, and MW-6D.

Sample Name Sample Date	MW-5i 03/03/2022	MW-8 03/04/2022	MW-9 03/04/2022	MW-20i 03/04/2022	MW-6D 03/04/2022
Reductive Dechlorination	cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Dehalococcoides (DHC)	<5.00E-01	<5.00E-01	<5.00E-01	**2.10E+00**	<5.00E-01
tceA Reductase (TCE)	<5.00E-01	<5.00E-01	<5.00E-01	<5.00E-01	<5.00E-01
BAV1 Vinyl Chloride Reductase (BVC)	<5.00E-01	<5.00E-01	<5.00E-01	**1.00E-01 (J)**	<5.00E-01
Vinyl Chloride Reductase (VCR)	**2.00E-01 (J)**	<5.00E-01	<5.00E-01	<5.00E-01	<5.00E-01
Dehalobacter spp. (DHBt)	**1.11E+03**	<5.00E+00	<4.70E+00	**6.01E+01**	<4.60E+00
Dehalobacter DCM (DCM)	<4.80E+00	<5.00E+00	<4.70E+00	<4.90E+00	<4.60E+00
Dehalogenimonas spp. (DHG)	<4.80E+00	<5.00E+00	<4.70E+00	<4.90E+00	<4.60E+00
Desulfitobacterium spp. (DSB)	<4.80E+00	<5.00E+00	**1.33E+01**	**1.19E+04**	**4.58E+01**
Dehalobium chlorocoercia (DECO)	<4.80E+00	<5.00E+00	<4.70E+00	<4.90E+00	**2.58E+02**
Desulfuromonas spp. (DSM)	<4.80E+00	<5.00E+00	<4.70E+00	**5.00E+00**	**8.04E+01**

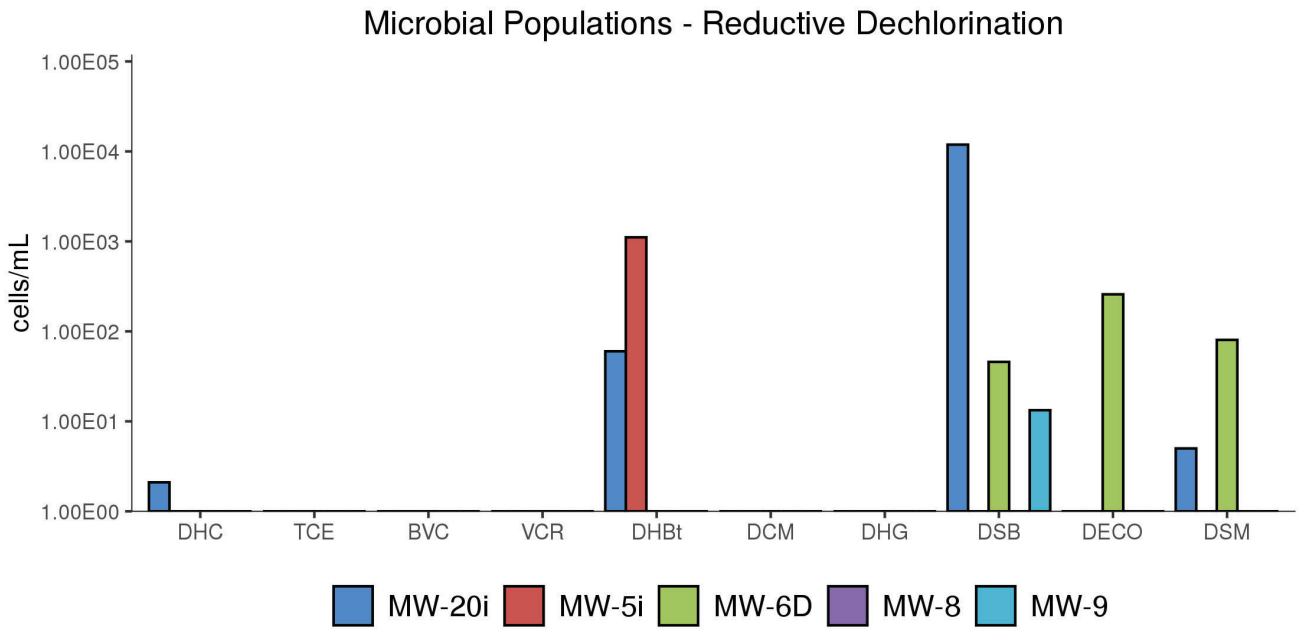

Figure 20: Comparison - microbial populations involved in reductive dechlorination.

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Table 9: Summary of the QuantArray®-Chlor results for microorganisms responsible for reductive dechlorination for samples MW-5i, MW-8, MW-9 , MW-20i, and MW-6D.

Sample Name Sample Date	MW-5i 03/03/2022	MW-8 03/04/2022	MW-9 03/04/2022	MW-20i 03/04/2022	MW-6D 03/04/2022
Reductive Dechlorination	cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Chloroform Reductase (CFR)	<4.80E+00	<5.00E+00	<4.70E+00	<4.90E+00	<4.60E+00
1,1 DCA Reductase (DCA)	<4.80E+00	<5.00E+00	<4.70E+00	<4.90E+00	<4.60E+00
1,2 DCA Reductase (DCAR)	<4.80E+00	<5.00E+00	<4.70E+00	<4.90E+00	**1.02E+01**
PCE Reductase (PCE-1)	<4.80E+00	<5.00E+00	<4.70E+00	<4.90E+00	<4.60E+00
PCE Reductase (PCE-2)	<4.80E+00	<5.00E+00	<4.70E+00	<4.90E+00	<4.60E+00
Dehalogenimonas trans-1,2-DCE Reductase (TDR)	<4.80E+00	<5.00E+00	<4.70E+00	<4.90E+00	<4.60E+00
Dehalogenimonas cerA Reductase (CER)	<4.80E+00	<5.00E+00	<4.70E+00	<4.90E+00	<4.60E+00

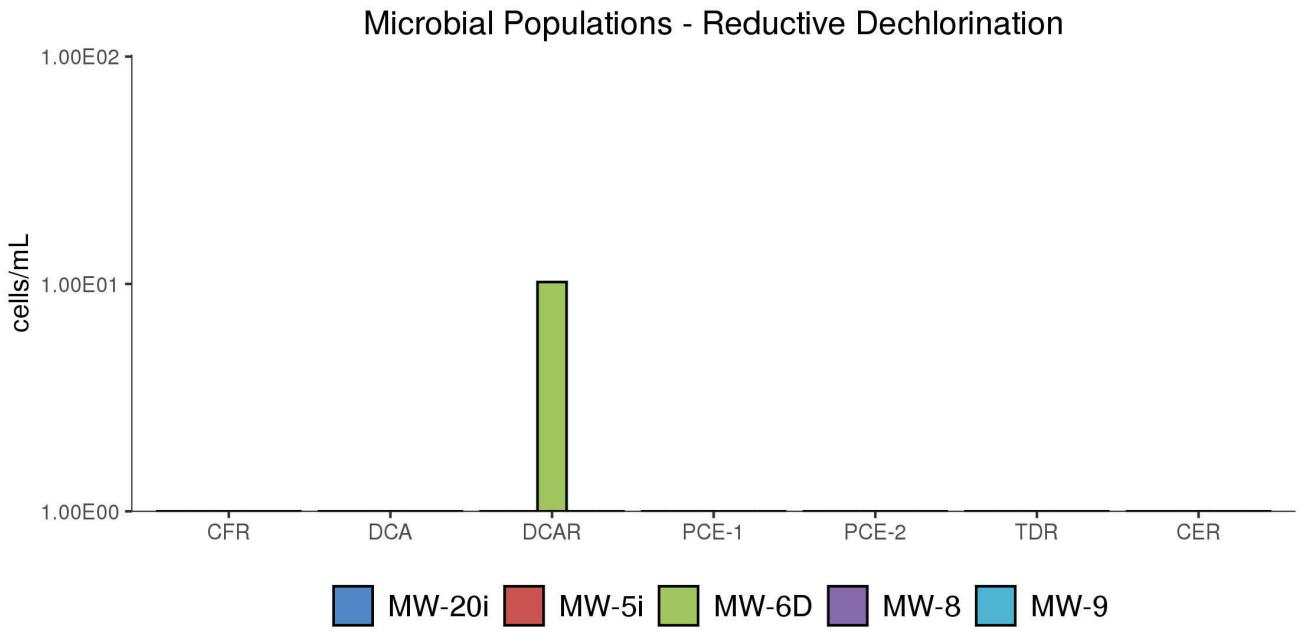

Figure 21: Comparison - microbial populations involved in reductive dechlorination.

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Table 10: Summary of the QuantArray®-Chlor results for microorganisms responsible for aerobic (co)metabolism for samples MW-6i, MW-5, MW-6, MW-9, and MW-22.

Sample Name Sample Date	MW-6i 02/24/2022	MW-5 02/24/2022	MW-6 02/24/2022	MW-9 02/24/2022	MW-22 02/24/2022
Aerobic (Co)Metabolic	cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Soluble Methane Monooxygenase (SMMO)	<4.80E+00	<4.90E+00	**1.39E+02**	<2.38E+01	**1.24E+02**
Toluene Dioxygenase (TOD)	**2.24E+01**	**6.00E+00**	**2.22E+01**	<2.38E+01	<4.90E+00
Phenol Hydroxylase (PHE)	**1.50E+02**	<4.90E+00	**4.55E+01**	<2.38E+01	**7.74E+01**
Trichlorobenzene Dioxygenase (TCBO)	<4.80E+00	<4.90E+00	<4.80E+00	<2.38E+01	<4.90E+00
Toluene Monooxygenase 2 (RDEG)	**2.38E+02**	<4.90E+00	**2.08E+02**	<2.38E+01	**4.14E+02**
Toluene Monooxygenase (RMO)	**5.40E+00**	<4.90E+00	**3.22E+03**	<2.38E+01	<4.90E+00
Ethene Monooxygenase (EtnC)	<4.80E+00	<4.90E+00	<4.80E+00	<2.38E+01	**2.73E+02**
Epoxyalkane Transferase (EtnE)	**4.36E+02**	<4.90E+00	<4.80E+00	<2.38E+01	**1.35E+02**
Dichloromethane Dehalogenase (DCMA)	<4.80E+00	<4.90E+00	<4.80E+00	<2.38E+01	<4.90E+00

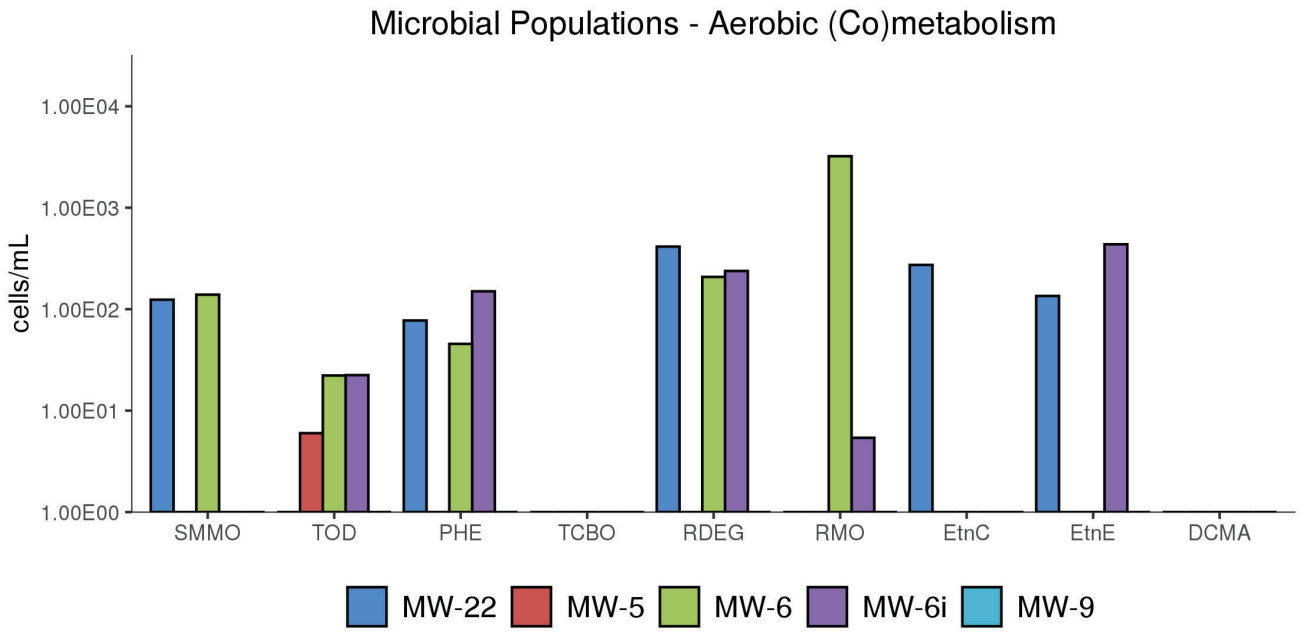

Figure 22: Comparison - microbial populations involved in aerobic (co)metabolism.

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Table 11: Summary of the QuantArray®-Chlor results for microorganisms responsible for aerobic (co)metabolism for samples TMW-24, TMW-21, TMW-22, MW-7i, and MW-7.

Sample Name Sample Date	TMW-24 02/28/2022	TMW-21 02/28/2022	TMW-22 02/28/2022	MW-7i 03/03/2022	MW-7 03/03/2022
Aerobic (Co)Metabolic	cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Soluble Methane Monooxygenase (SMMO)	<4.90E+00	**3.31E+02**	<4.90E+00	<4.50E+00	<4.80E+00
Toluene Dioxygenase (TOD)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	**3.00E-01 (J)**
Phenol Hydroxylase (PHE)	<4.90E+00	**2.76E+03**	**1.29E+02**	<4.50E+00	**2.70E+00 (J)**
Trichlorobenzene Dioxygenase (TCBO)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	<4.80E+00
Toluene Monooxygenase 2 (RDEG)	<4.90E+00	**2.53E+02**	**1.60E+00 (J)**	<4.50E+00	<4.80E+00
Toluene Monooxygenase (RMO)	<4.90E+00	<5.20E+00	<4.90E+00	**1.79E+02**	<4.80E+00
Ethene Monooxygenase (EtnC)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	<4.80E+00
Epoxyalkane Transferase (EtnE)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	<4.80E+00
Dichloromethane Dehalogenase (DCMA)	<4.90E+00	<5.20E+00	<4.90E+00	<4.50E+00	<4.80E+00

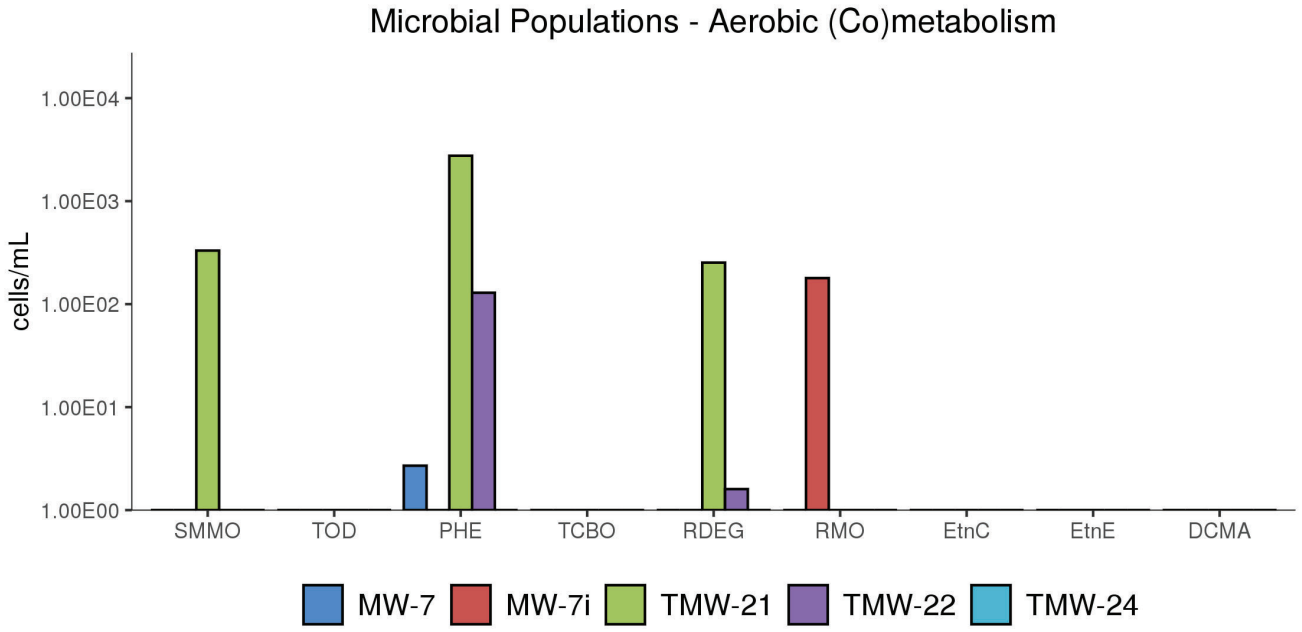

Figure 23: Comparison - microbial populations involved in aerobic (co)metabolism.

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Table 12: Summary of the QuantArray®-Chlor results for microorganisms responsible for aerobic (co)metabolism for samples MW-5i, MW-8, MW-9 , MW-20i, and MW-6D.

Sample Name Sample Date	MW-5i 03/03/2022	MW-8 03/04/2022	MW-9 03/04/2022	MW-20i 03/04/2022	MW-6D 03/04/2022
Aerobic (Co)Metabolic	cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Soluble Methane Monooxygenase (SMMO)	**1.61E+01**	<5.00E+00	<4.70E+00	**1.32E+02**	<4.60E+00
Toluene Dioxygenase (TOD)	<4.80E+00	<5.00E+00	<4.70E+00	<4.90E+00	<4.60E+00
Phenol Hydroxylase (PHE)	**1.38E+02**	<5.00E+00	**5.28E+02**	**3.15E+03**	**2.35E+03**
Trichlorobenzene Dioxygenase (TCBO)	<4.80E+00	<5.00E+00	<4.70E+00	<4.90E+00	<4.60E+00
Toluene Monooxygenase 2 (RDEG)	**2.38E+02**	<5.00E+00	**3.99E+01**	**2.45E+03**	**5.70E+02**
Toluene Monooxygenase (RMO)	**9.00E+00**	<5.00E+00	**4.43E+03**	**6.00E+00**	**5.70E+00**
Ethene Monooxygenase (EtnC)	**1.61E+03**	<5.00E+00	<4.70E+00	**2.34E+03**	**4.57E+01**
Epoxyalkane Transferase (EtnE)	**6.79E+03**	<5.00E+00	<4.70E+00	**5.06E+03**	**1.69E+02**
Dichloromethane Dehalogenase (DCMA)	<4.80E+00	<5.00E+00	<4.70E+00	<4.90E+00	<4.60E+00

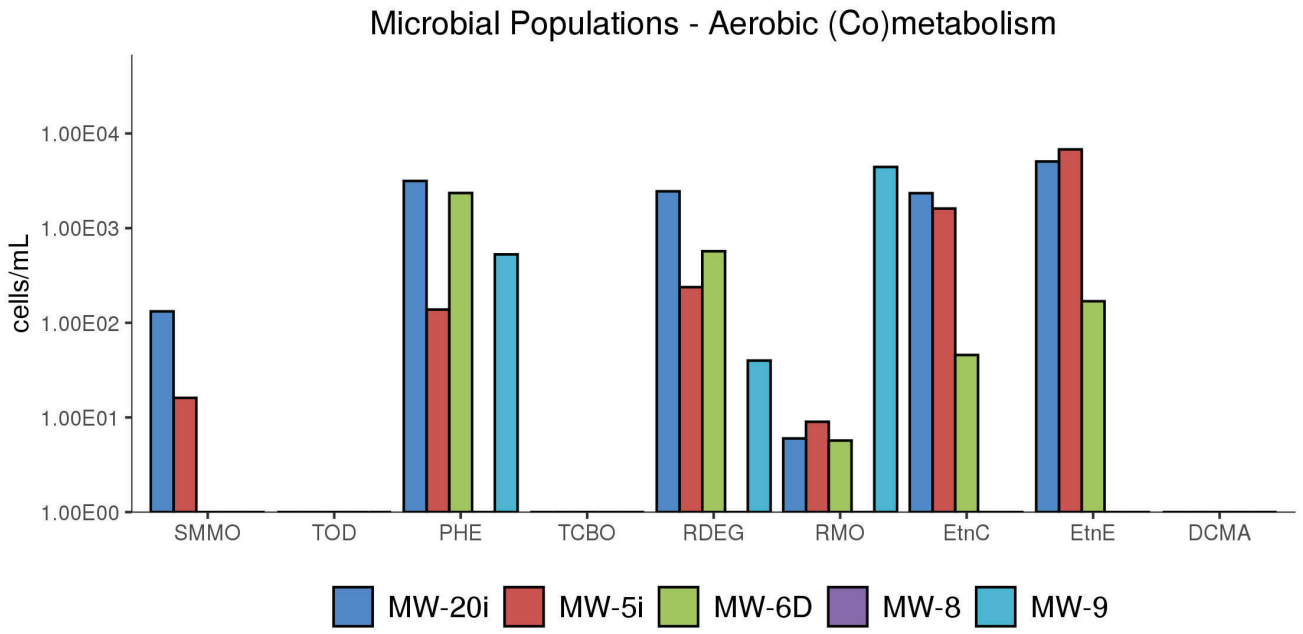

Figure 24: Comparison - microbial populations involved in aerobic (co)metabolism.

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Table 13: Summary of the QuantArray® results for total bacteria and other populations for samples MW-6i, MW-5, MW-6, MW-9, and MW-22.

Sample Name Sample Date	MW-6i 02/24/2022	MW-5 02/24/2022	MW-6 02/24/2022	MW-9 02/24/2022	MW-22 02/24/2022
Other	cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Total Eubacteria (EBAC)	**6.07E+04**	**5.67E+03**	**8.89E+04**	**3.80E+01 (I)**	**1.94E+04**
Sulfate Reducing Bacteria (APS)	**1.79E+03**	**4.74E+02**	**3.89E+04**	<2.38E+01	**2.25E+03**
Methanogens (MGN)	**8.73E+01**	**2.60E+00 (J)**	**1.41E+03**	<2.38E+01	**5.00E-01 (J)**

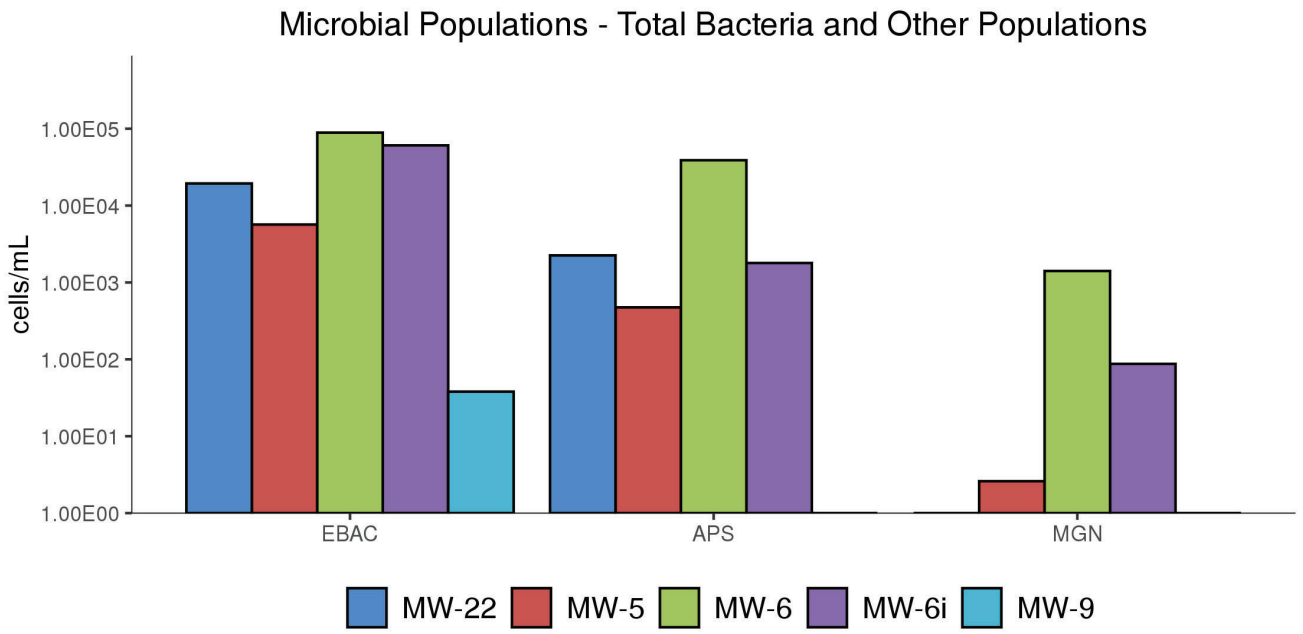

Figure 25: Comparison - microbial populations.

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Table 14: Summary of the QuantArray® results for total bacteria and other populations for samples TMW-24, TMW-21, TMW-22, MW-7i, and MW-7.

Sample Name Sample Date	TMW-24 02/28/2022	TMW-21 02/28/2022	TMW-22 02/28/2022	MW-7i 03/03/2022	MW-7 03/03/2022
Other	cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Total Eubacteria (EBAC)	**5.39E+03**	**2.40E+06**	**6.99E+04**	**2.46E+04**	**5.85E+03**
Sulfate Reducing Bacteria (APS)	<4.90E+00	**7.69E+03**	**3.18E+03**	**4.89E+02**	**9.80E+00**
Methanogens (MGN)	<4.90E+00	<5.20E+00	<4.90E+00	**8.00E-01 (J)**	**1.40E+00 (J)**

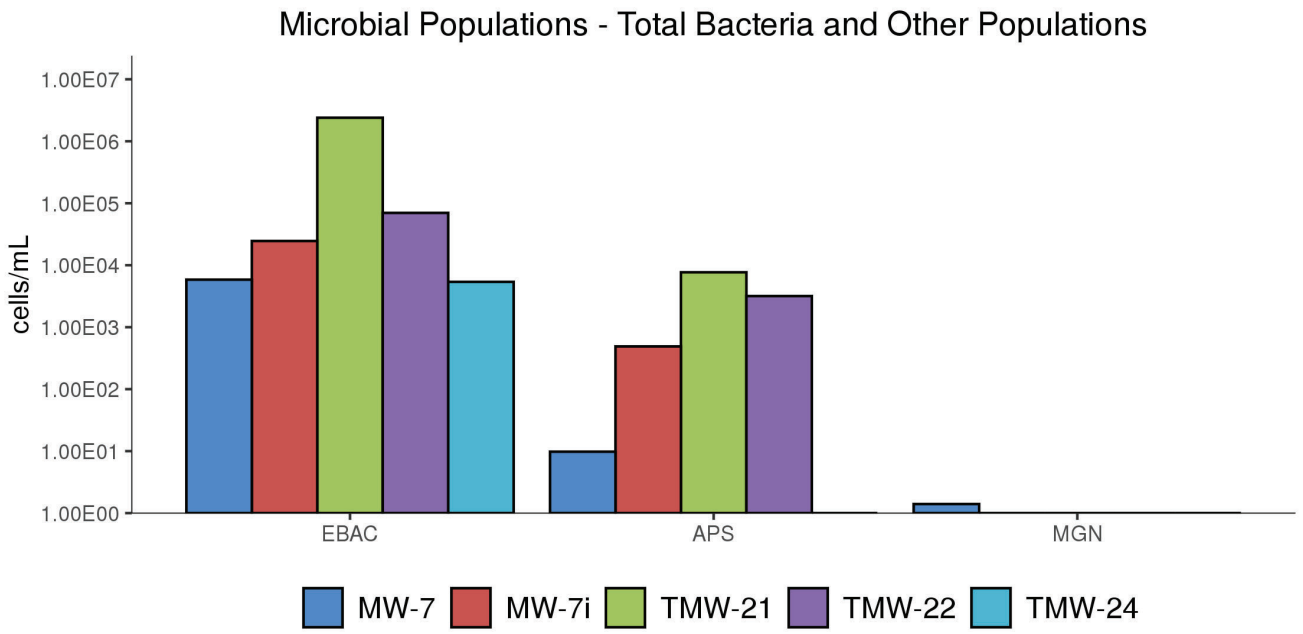

Figure 26: Comparison - microbial populations.

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Table 15: Summary of the QuantArray® results for total bacteria and other populations for samples MW-5i, MW-8, MW-9 , MW-20i, and MW-6D.

Sample Name Sample Date	MW-5i 03/03/2022	MW-8 03/04/2022	MW-9 03/04/2022	MW-20i 03/04/2022	MW-6D 03/04/2022
Other	cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Total Eubacteria (EBAC)	**1.03E+05**	**5.73E+02 (I)**	**3.26E+05**	**4.78E+05**	**3.98E+05**
Sulfate Reducing Bacteria (APS)	**1.20E+03**	<5.00E+00	<4.70E+00	**1.85E+03**	<4.60E+00
Methanogens (MGN)	**1.00E+00 (J)**	<5.00E+00	**1.50E+00 (J)**	**4.00E-01 (J)**	**6.00E-01 (J)**

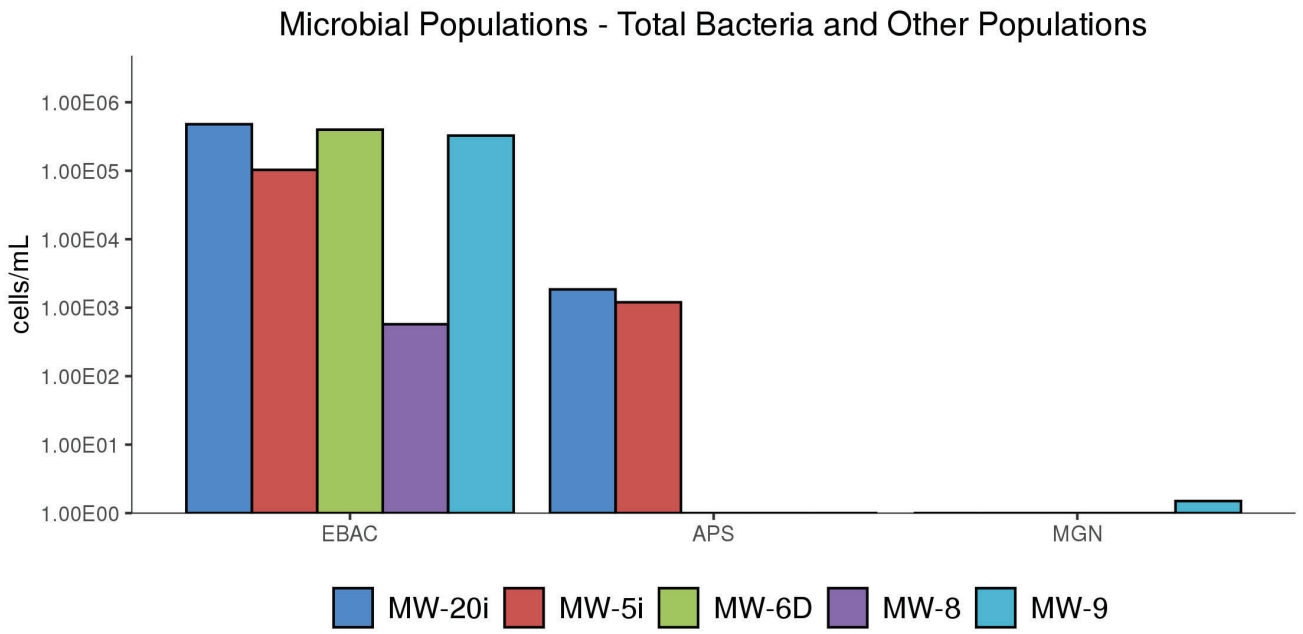

Figure 27: Comparison - microbial populations.

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Interpretation

The overall purpose of the QuantArray®-Chlor is to give site managers the ability to simultaneously yet economically evaluate the potential for biodegradation of a spectrum of common chlorinated contaminants through a multitude of anaerobic and aerobic (co)metabolic pathways in order to provide a clearer and more comprehensive view of contaminant biodegradation. The following discussion describes the interpretation of results in general terms and is meant to serve as a guide.

Reductive Dechlorination - Chlorinated Ethenes: While a number of bacterial cultures including *Dehalococcoides*, *Dehalobacter*, *Desulfitobacterium*, and *Desulfuromonas* spp. capable of utilizing PCE and TCE as growth-supporting electron acceptors have been isolated [1–5], *Dehalococcoides* may be the most important because they are the only bacterial group that has been isolated to date which is capable of complete reductive dechlorination of PCE to ethene [6]. In fact, the presence of *Dehalococcoides* has been associated with complete reductive dechlorination to ethene at sites across North America and Europe [7], and Lu et al. [8] have proposed using a *Dehalococcoides* concentration of 1×10^4 cells/mL as a screening criterion to identify sites where biological reductive dechlorination is predicted to proceed at "generally useful" rates.

At chlorinated ethene sites, any "stall" leading to the accumulation of daughter products, especially vinyl chloride, would be a substantial concern. While *Dehalococcoides* concentrations greater than 1×10^4 cells/mL correspond to ethene production and useful rates of dechlorination, the range of chlorinated ethenes degraded varies by strain within the *Dehalococcoides* genus [6, 9], and the presence of co-contaminants and competitors can have complex impacts on the halorespiring microbial community [10–15]. Therefore, QuantArray®-Chlor also provides quantification of a suite of reductive dehalogenase genes (PCE, TCE, BVC, VCR, CER, and TDR) to more definitively confirm the potential for reductive dechlorination of all chlorinated ethene compounds including vinyl chloride.

Perhaps most importantly, QuantArray®-Chlor quantifies TCE reductase (TCE) and both known vinyl chloride reductase genes (BVC, VCR) from *Dehalococcoides* to conclusively evaluate the potential for complete reductive dechlorination of chlorinated ethenes to nontoxic ethene [16–18]. In addition, the analysis also includes quantification of reductive dehalogenase genes from *Dehalogenimonas* spp. capable of reductive dechlorination of chlorinated ethenes. More specifically, these are the trans-1,2-DCE dehalogenase gene (TDR) from strain WBC-2 [19] and the vinyl chloride reductase gene (CER) from GP, the only known organisms other than *Dehalococcoides* capable of vinyl chloride reduction [20]. Finally, PCE reductase genes responsible for sequential reductive dechlorination of PCE to *cis*-DCE by *Sulfurospirillum* and *Geobacter* spp. are also quantified. In mixed cultures, evidence increasingly suggests that partial dechlorinators like *Sulfurospirillum* and *Geobacter* may be responsible for the majority of reductive dechlorination of PCE to TCE and *cis*-DCE while *Dehalococcoides* functions more as *cis*-DCE and vinyl chloride reducing specialists [10, 21].

Reductive Dechlorination - Chlorinated Ethanes: Under anaerobic conditions, chlorinated ethanes are susceptible to reductive dechlorination by several groups of halorespiring bacteria including *Dehalobacter*, *Dehalogenimonas*, and *Dehalococcoides*. While the reported range of chlorinated ethanes utilized varies by genus, species, and sometimes at the strain level, several general observations can be made regarding biodegradation pathways and daughter product formation. *Dehalobacter* spp. have been isolated that are capable of sequential reductive dechlorination of 1,1,1-TCA through 1,1-DCA to chloroethane [13]. Biodegradation of 1,1,2-TCA by several halorespiring bacteria including *Dehalobacter* and *Dehalogenimonas* spp. proceeds via dichloroelimination producing vinyl chloride [22–24]. Similarly, 1,2-DCA biodegradation by *Dehalobacter*, *Dehalogenimonas*, and *Dehalococcoides* occurs via dichloroelimination producing ethene. While not utilized by many *Desulfitobacterium* isolates, at least one strain, *Desulfitobacterium dichloroeliminans* strain DCA1, is also capable of dichloroelimination of 1,2-DCA [25]. The 1,2-dichloroethane reductive dehalogenase gene (DCAR) from members of *Desulfitobacterium* and *Dehalobacter* is known to dechlorinate 1,2-DCA to ethene, while the 1,1-dichloroethane reductive dehalogenase (DCA) targets the gene responsible for 1,1-DCA dechlorination in some strains of *Dehalobacter*. In addition to chloroform,chloroform reductase (CFR) has also been shown to be responsible for reductivedechlorination of 1,1,1-TCA [26].

Reductive Dechlorination - Chlorinated Methanes: Chloroform is a common co-contaminant at chlorinated solvent sites and can inhibit reductive dechlorination of chlorinated ethenes. Grostern et al. demonstrated that a *Dehalobacter* population was capable of reductive dechlorination of chloroform to produce dichloromethane [27]. The *cfrA* gene encodes the reductase which catalyzes this initial step in chloroform biodegradation [26]. Justicia-Leon et al. have since shown that dichloromethane can support growth of a distinct group of *Dehalobacter* strains via fermentation [28]. The *Dehalobacter* DCM assay targets the 16S rRNA gene of these strains.

Reductive Dechlorination - Chlorinated Benzenes: Chlorinated benzenes are an important class of industrial solvents and chemical intermediates in the production of drugs, dyes, herbicides, and insecticides. The physical-chemical properties of chlorinated benzenes as well as susceptibility to biodegradation are functions of their degree of chlorination and the positions of chlorine substituents. Under anaerobic conditions, reductive dechlorination of higher chlorinated benzenes including hexachlorobenzene (HCB),

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pentachlorobenzene (PeCB), tetrachlorobenzene (TeCB) isomers, and trichlorobenzene (TCB) isomers has been well documented [29], although biodegradation of individual compounds and isomers varies between isolates. For example, *Dehalococcoides* strain CBDB1 reductively dechlorinats HCB, PeCB, all three TeCB isomers, 1,2,3-TCB, and 1,2,4-TCB [9, 30]. *Dehalobium chlorocoercia* DF-1 has been shown to be capable of reductive dechlorination of HCB, PeCB, and 1,2,3,5-TeCB [31]. The dichlorobenzene (DCB) isomers and chlorobenzene (CB) were considered relatively recalcitrant under anaerobic conditions. However, new evidence has demonstrated reductive dechlorination of DCBs to CB and CB to benzene [32] with corresponding increases in concentrations of *Dehalobacter* spp. [33].

Reductive Dechlorination - Chlorinated Phenols: Pentachlorophenol (PCP) was one of the most widely used biocides in the U.S. and despite residential use restrictions, is still extensively used industrially as a wood preservative. Along with PCP, the tetrachlorophenol and trichlorophenol isomers were also used as fungicides in wood preserving formulations. 2,4-Dichlorophenol and 2,4,5-TCP were used as chemical intermediates in herbicide production (e.g. 2,4-D) and chlorophenols are known byproducts of chlorine bleaching in the pulp and paper industry. While the range of compounds utilized varies by strain, some *Dehalococcoides* isolates are capable of reductive dechlorination of PCP and other chlorinated phenols. For example, *Dehalococcoides* strain CBDB1 is capable of utilizing PCP, all three tetrachlorophenol (TeCP) congeners, all six trichlorophenol (TCP) congeners, and 2,3-dichlorophenol (2,3-DCP). PCP dechlorination by strain CBDB1 produces a mixture of 3,5-DCP, 3,4-DCP, 2,4-DCP, 3-CP, and 4-CP [34]. In the same study, however, *Dehalococcoides* strain 195 dechlorinated a more narrow spectrum of chlorophenols which included 2,3-DCP, 2,3,4-TCP, and 2,3,6-TCP, but no other TCPs or PCP. Similar to *Dehalococcoides*, some species and strains of *Desulfitobacterium* are capable of utilizing PCP and other chlorinated phenols. *Desulfitobacterium hafniense* PCP-1 is capable of reductive dechlorination of PCP to 3-CP [35]. However, the ability to biodegrade PCP is not universal among *Desulfitobacterium* isolates. *Desulfitobacterium* sp. strain PCE1 and *D. chlororespirans* strain Co23, for example, can utilize some TCP and DCP isomers, but not PCP for growth [2, 36].

Reductive Dechlorination - Chlorinated Propanes: *Dehalogenimonas* is a recently described bacterial genus of the phylum Chloroflexi which also includes the well-known chloroethene-respiring *Dehalococcoides* [23]. The *Dehalogenimonas* isolates characterized to date are also halorespiring bacteria, but utilize a rather unique range of chlorinated compounds as electron acceptors including chlorinated propanes (1,2,3-TCP and 1,2-DCP) and a variety of other vicinally chlorinated alkanes including 1,1,2,2-tetrachloroethane, 1,1,2-trichloroethane, and 1,2-dichloroethane [23].

Aerobic - Chlorinated Ethene Cometabolism: Under aerobic conditions, several different types of bacteria including methane-oxidizing bacteria (methanotrophs), and many benzene, toluene, ethylbenzene, xylene, and (BTEX)-utilizing bacteria can cometabolize or co-oxidize TCE, DCE, and vinyl chloride [37]. In general, cometabolism of chlorinated ethenes is mediated by monooxygenase enzymes with "relaxed' specificity that oxidize a primary (growth supporting) substrate (*e.g.* methane) and co-oxidize the chlorinated compound (*e.g.*TCE). QuantArray®-Chlor provides quantification of a suite of genes encoding oxygenase enzymes capable of co-oxidation of chlorinated ethenes including soluble methane monooxygenase (sMMO). Soluble methane monooxygenases co-oxidize a broad range of chlorinated compounds [38–41] including TCE, *cis*-DCE, and vinyl chloride. Furthermore, soluble methane monooxygenases are generally believed to support greater rates of aerobic cometabolism [40]. QuantArray®-Chlor also quantifies aromatic oxygenase genes encoding ring hydroxylating toluene monooxygenase genes (RMO, RDEG), toluene dioxygenase (TOD) and phenol hydroxylases (PHE) capable of TCE co-oxidation [42–46]. TCE or a degradation product has been shown to induce expression of toluene monooxygenases in some laboratory studies [43, 47] raising the possibility of TCE cometabolism with an alternative (non-aromatic) growth substrate. Moreover, while a number of additional factors must be considered, recent research under ESTCP Project 201584 has shown positive correlations between concentrations of monooxygenase genes (soluble methane monooxygenase, ring hydroxylating monooxygenases, and phenol hydroxylase) and the rate of TCE degradation [48].

Aerobic - Chlorinated Ethane Cometabolism: While less widely studied than cometabolism of chlorinated ethenes, some chlorinated ethanes are also susceptible to co-oxidation. As mentioned previously, soluble methane monooxygenases (sMMO) exhibit very relaxed specificity. In laboratory studies, sMMO has been shown to co-oxidize a number of chlorinated ethanes including 1,1,1-TCA and 1,2-DCA [38, 40].

Aerobic - Vinyl Chloride Cometabolism: Beginning in the early 1990s, numerous microcosm studies demonstrated aerobic oxidation of vinyl chloride under MNA conditions without the addition of exogenous primary substrates. Since then, strains of

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Mycobacterium, *Nocardioides*, *Pseudomonas*, *Ochrobactrum*, and *Ralstonia* species have been isolated which are capable of aerobic growth on both ethene and vinyl chloride (see Mattes et al. [49] for a review). The initial steps in the pathway are the monooxygenase (*etn*ABCD) catalyzed conversion of ethene and vinyl chloride to their respective epoxyalkanes (epoxyethane and chlorooxirane), followed by epoxyalkane:CoM transferase (*etn*E) mediated conjugation and breaking of the epoxide [50].

Aerobic - Chlorinated Benzenes: In general, chlorobenzenes with four or less chlorine groups are susceptible to aerobic biodegradation and can serve as growth-supporting substrates. Toluene dioxygenase (TOD) has a relatively relaxed substrate specificity and mediates the incorporation of both atoms of oxygen into the aromatic ring of benzene and substituted benzenes (toluene and chlorobenzene). Comparison of TOD levels in background and source zone samples from a CB-impacted site suggested that CBs promoted growth of TOD-containing bacteria [51]. In addition, aerobic biodegradation of some trichlorobenzene and even tetrachlorobenzene isomers is initiated by a group of related trichlorobenzene dioxygenase genes (TCBO). Finally, phenol hydroxylases catalyze the continued oxidation and in some cases, the initial oxidation of a variety of monoaromatic compounds. In an independent study, significant increases in numbers of bacteria containing PHE genes corresponded to increases in biodegradation of DCB isomers [51].

Aerobic - Chlorinated Methanes: Many aerobic methylotrophic bacteria, belonging to diverse genera (*Hyphomicrobium*, *Methylobacterium*, *Methylophilus*, *Pseudomonas*, *Paracoccus*, and *Alibacter*) have been isolated which are capable of utilizing dichloromethane (DCM) as a growth substrate. The DCM metabolic pathway in methylotrophic bacteria is initiated by a dichloromethane dehalogenase (DCMA) gene. DCMA is responsible for aerobic biodegradation of dichloromethane by methylotrophs by first producing formaldehyde which is then further oxidized [52]. As discussed in previous sections, soluble methane monooxygenase (sMMO) exhibits relaxed specificity and co-oxidizes a broad spectrum of chlorinated hydrocarbons. In addition to chlorinated ethenes, sMMO has been shown to co-oxidize chloroform in laboratory studies [38, 41].

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REPORT TO:
Name: SCOTT ROSS
Company: AECOM
Address: 101 RESEARCH DR
COLUMBIA, SC 29203
email: SCOTT.ROSS@AECOM.COM
Phone: 803 201 9662
Fax:

INVOICE TO: (For Invoices paid by a third party it is imperative that all information be provided)
Name: SAME
Company:
Address:
email:
Phone:
Fax:

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865-573-8188
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Project Manager: SCOTT ROSS
Project Name: SHAKESPEARE COMPOSITE STRUCTURES
Project No.: 60607505

Purchase Order No.
Subcontract No.
MI Quote No.

Please Check One:
☒ More samples to follow
☐ No Additional Samples

Report Type: ☒ Standard (default) ☐ Microbial Insights Level III raw data (15% surcharge) ☐ Microbial Insights Level IV (25% surcharge) ☐ Comprehensive Interpretive (15%) ☐ Historical Interpretive (35%)
EDD type: ☐ Microbial Insights Standard (default) ☐ All other available EDDs (5% surcharge) Specify EDD Type:

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Sample Information						Analyses				CENSUS: Please select the target organism/gene																				
MI ID (Laboratory Use Only)	Sample Name	Date Sampled	Time Sampled	Matrix	Total Number of Containers	PLFA	NGS	QuantArray Chlor	QuantArray Petro	DHC (Dehalococcoides)	DHC Functional genes (bvc, tce, vcr)	DHBt (Dehalobacter)	DHG (Dehalogenimonas)	DSM (Desulfuromonas)	DSB (Desulfitobacterium)	EBAC (Total)	SRB (Sulfate Reducing Bacteria-APS)	MGN (Methanogens)	MOB (Methanotrophs)	SMMO	DNF (Denitrifiers-nirS and nirK)	AMO (ammonia oxidizing bacteria)	PM1 (MTBE aerobic)	RMO (Toluene Monooxygenase)	RDEG (Toluene Monooxygenase)	PHE (Phenol Hydroxylase)	NAH (Napthalene-aerobic)	BSSA (Toluene/Xylene-Anaerobic)	add. qPCR:	RNA (Expression Option)*	Other:	Other:	Other:
090TB 1	MW-6i	2-24-22	0945	GW	1			X																								
2	MW-5	↓	0955	↓	1			X																								
3	MW-6		1100		1			X																								
4	MW-9		1140		1			X																								
5	MW-22		1355		1			X																								

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* additional cost and sample preservation are associated with RNA samples.

**Saturday delivery: See sampling protocol for alternate shipping address.

REPORT TO:

Name: Scott Ross
Company: AECOM
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email: Scott.Ross@AECOM.com
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Fax:

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Name: Jame
Company:
Address:
email:
Phone:
Fax:

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10515 Research Dr
Knoxville, TN 37932
865-573-8188
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Project Manager: Scott.Ross
Project Name: Shakespeare Composite Structures
Project No.: 60675505

Purchase Order No.
Subcontract No.
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Report Type: ☒ Standard (default) ☐ Microbial Insights Level III raw data (15% surcharge) ☐ Microbial Insights Level IV (25% surcharge) ☐ Comprehensive Interpretive (15%) ☐ Historical Interpretive (35%)

EDD type: ☐ Microbial Insights Standard (default) ☐ All other available EDDs (5% surcharge) Specify EDD Type:

Please contact us with any questions about the analyses or filling out the COC at (865) 573-8188 (9:00 am to 5:00 pm EST, M-F). After hours email: customerservice@microbe.com

Sample Information						Analyses				CENSUS: Please select the target organism/gene																				
MI ID (Laboratory Use Only)	Sample Name	Date Sampled	Time Sampled	Matrix	Total Number of Containers	PLFA	NGS	QuantArray Chlor	QuantArray Petro	DHC (Dehalococcoides)	DHC Functional genes (bvc, tce, vcr)	DHBt (Dehalobacter)	DHG (Dehalogenimonas)	DSM (Desulfuromonas)	DSB (Desulfitobacterium)	EBAC (Total)	SRB (Sulfate Reducing Bacteria-APS)	MGN (Methanogens)	MOB (Methanotrophs)	SMMO	DNF (Dentrifiers-nirS and nirK)	AMO (ammonia oxidizing bacteria)	PM1 (MTBE aerobic)	RMO (Toluene Monooxygenase)	RDEG (Toluene Monooxygenase)	PHE (Phenol Hydroxylase)	NAH (Napthalene-aerobic)	BSSA (Toluene/Xylene-Anaerobic)	add. qPCR:	RNA (Expression Option)*	Other:	Other:	Other:
090136	TMW-24	2.28.22	1140	GW	1			X																								
7	TMW-21	↓	1355	GW	1			X																								
8	TMW-22	↓	1520	GW	1			X																								

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Sample Information						Analyses				CENSUS: Please select the target organism/gene																						
MI ID (Laboratory Use Only)	Sample Name	Date Sampled	Time Sampled	Matrix	Total Number of Containers	PLFA	NGS	QuantArray Chlor	QuantArray Petro	DHC (Dehalococcoides)	DHC Functional genes (bvc, tce, vcr)	DHBt (Dehalobacter)	DHG (Dehalogenimonas)	DSM (Desulfuromonas)	DSB (Desulfitobacterium)	EBAC (Total)	SRB (Sulfate Reducing Bacteria-APS)	MGN (Methanogens)	MOB (Methanotrophs)	SMMO	DNF (Dentrifiers-nirS and nirK)	AMO (ammonia oxidizing bacteria)	PM1 (MTBE aerobic)	RMO (Toluene Monooxygenase)	RDEG (Toluene Monooxygenase)	PHE (Phenol Hydroxylase)	NAH (Napthalene-aerobic)	BSSA (Toluene/Xylene-Anaerobic)	add. qPCR:	RNA (Expression Option)*	Other:	Other:	Other:
090TB 9	MW-7i	3-3-22	1030	GW	1			x																								
10	MW-7	↓	1155	↓	1			x																								
11	MW-5i	↓	1355	↓	1			x																								

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Project Manager: SCOTT ROSS
Project Name: 606 75505
Project No.: SHAKESPEARE COMPOSITE STRUCTURES

Purchase Order No.
Subcontract No.
MI Quote No.

Please Check One:
☐ More samples to follow
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Report Type: ☑ Standard (default) ☐ Microbial Insights Level III raw data(15% surcharge) ☐ Microbial Insights Level IV (25% surcharge) ☐ Comprehensive Interpretive(15%) ☐ Historical Interpretive (35%)

EDD type: ☐ Microbial Insights Standard (default) ☐ All other available EDDs (5% surcharge) Specify EDD Type:

Please contact us with any questions about the analyses or filling out the COC at (865) 573-8188 (9:00 am to 5:00 pm EST, M-F). After hours email: customerservice@microbe.com

Sample Information						Analyses				CENSUS: Please select the target organism/gene																				
MI ID (Laboratory Use Only)	Sample Name	Date Sampled	Time Sampled	Matrix	Total Number of Containers	PLFA	NGS	QuantArray Chlor	QuantArray Petro	DHC (Dehalococcoides)	DHC Functional genes (bvc, tce, vcr)	DHBt (Dehalobacter)	DHG (Dehalogenimonas)	DSM (Desulfuromonas)	DSB (Desulfitobacterium)	EBAC (Total)	SRB (Sulfate Reducing Bacteria-APS)	MGN (Methanogens)	MOB (Methanotrophs)	SMMO	DNF (Denitrifiers-nirS and nirK)	AMO (ammonia oxidizing bacteria)	PM1 (MTBE aerobic)	RMO (Toluene Monooxygenase)	RDEG (Toluene Monooxygenase)	PHE (Phenol Hydroxylase)	NAH (Napthalene-aerobic)	BSSA (Toluene/Xylene-Anaerobic)	add. qPCR:	RNA (Expression Option)*	Other:	Other:	Other:
090TB 12	MW-8	3-4-22	1130	GW	1			X																								
13	MW-9	"	1000	"	1			X																								
14	MW-20i	"	1155	"	1			X																								
15	MW-6D	"	1430	"	1			X																								

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Received by: [signature] Date 3/5/22

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Failure to provide sufficient and/or correct information regarding reporting, invoicing & analyses requested information may result in delays for which MI will not be liable.

Appendix E

Bill of Lading and Material Manifests for Purge Water and Other IDW

A&D Environmental Services — Bill of Lading / Material Manifest

A&D Job No:	Generator ID Number	Page 1 of	Emergency Response Phone	Tracking Number
2301-0053		1	800-255-3924-MIS0007851	41776

Generator's Name and Mailing Address: Signify North America Corporation
937-241-1867
19845 US Hwy 73
Newberry, SC 29108

Generator's site address (if different from mailing address)

Generator's Phone

Transporter 1 [X] 2 [ ] Company Name: **A&D Environmental Services, Inc.** — US EPA ID No: **NCD986232221**

Transporter 1 [ ] 2 [ ] Company Name — US EPA ID No:

[X] Designated Facility
A&D Environmental Services, Inc.
2718 Uwharrie Road
Archdale, NC 27263
336-434-7750
NCD986232221

[ ] Designated Facility
A&D Environmental Services, Inc.
3149 Lear Drive
Burlington, NC 27215
336-229-0058
NCR000138628

[ ] Designated Facility (Please insert facility information below)

HM	Hazardous Materials Shipping Name and Description (if applicable)	No.	Type	QTY	Wt/Vol	Profile Number
	Non-Regulated Material (IDW-Liquids)	8	DM	3100	P	NC2022-0277
	Non-Regulated Material (IDW-Solids)	2	DM	600	P	NC2022-0280

	Petroleum Products for Recycle		No.	Type	QTY	Wt/Vol	Profile Number
X	NA1993, Diesel fuel, 3, III	EGR# 128					
X	NA 1993, Fuel oil (No. 1,2,4,5 or 6), 3, III	EGR# 128					
X	UN1203, Gasoline, 3, II	EGR# 128					
	USED OIL (Not a USDOT Hazardous Material)						
	Petroleum Contact Water (Not a USDOT Hazardous Material)						

Universal Waste Lamps, Batteries, Ballasts, and Electronics for Recycle

HM	No.	Type	Est. Wt.	Count	Shipping Name and Description (if applicable)		Common Name	Discrepancy
X					RQ, UN3506, Mercury contained in manufactured articles, 8 (6.1)	ERG# 172	Mercury Devices	
X					RQ, UN3432, Polychlorinated biphenyls, solid, 9, II	EGR# 171	TSCA Exempt PCB Lamp Ballasts	
X					UN2800, Batteries, wet non-spillable, 8	EGR# 154	Sealed Lead Acid Batteries	
X					UN2794, Batteries, wet, filled with acid, 8	EGR# 154	Lead Acid Batteries	
X					UN2795, Batteries, wet, filled with alkali, 8	EGR# 154	Wet NiCad Batteries	
X					UN3090, Lithium metal batteries, 9	EGR# 138	Lithium Metal Batteries	
X					UN3480, Lithium ion batteries, 9	EGR# 147	Lithium Ion Batteries	
					Batteries, dry, sealed n.o.s.		Alkaline Batteries	
					Batteries, dry, sealed n.o.s.		Dry NiCad Batteries	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164 (e)		Florescent lamps (4-Ft. and Under)	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164 (e)		Florescent lamps (Over 4-Ft.)	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164 (e)		Circular/U-tube lamps	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164 (e)		Compact Lamps	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164 (e)		Shielded Lamps	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164 (e)		HID/MV/UV Lamps	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164 (e)		Incandescent Lamps	
					Non-PCB Light Ballasts for Recycle (Not DOT-Regulated)		Non-PCB Light Ballasts/Capacitors	
					Electronic Equipment for Recycle (Not DOT-Regulated)		e-Waste	

Shipper's Certification: This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transport according to the applicable regulations of the Department of Transportation. I further certify that none of the materials described above are hazardous waste as defined by EPA 40CFR Part 261 or any applicable state law, and unless specifically identified above the materials contain less than 1,000 ppm total halogens and do not contain quantifiable levels (2ppm) of PCBs as defined by EPA 40 CFR Parts 279 and 761.

Shipper's/ Offeror's Printed/Typed Name	Signature	Month	Day	Year
JAMES LEAPHART (ON BEHALF OF SIGNIFY)		01	10	23

Transporter 1 Printed/Typed Name	Signature	Month	Day	Year
Timothy DeMarco		01	10	23

Transporter 2 Printed/Typed Name	Signature	Month	Day	Year

Discrepancy Indication / Additional Information:

Designated Facility Certification: I hereby acknowledge receipt of the materials covered by this manifest except for any discrepancy indicated above.

Printed/Typed Name	Signature	Month	Day	Year

DESIGNATED FACILITY TO GENERATOR

A&D Environmental Services — Bill of Lading / Material Manifest

A&D Job No:	Generator ID Number	Page 1 of	Emergency Response Phone	Tracking Number
2301-0129		1	800-255-3924-MIS0007951	41819

Generator's Name and Mailing Address: Signify North America Corp.
937-241-1867
19845 US Hwy 73
Newberry, SC 29108
Generator's Phone

Generator's site address (if different from mailing address)

Transporter 1 [X] 2 [ ] Company Name: A&D Environmental Services, Inc. — US EPA ID No: NCD986232221

Transporter 1 [ ] 2 [ ] Company Name: — US EPA ID No:

[X] Designated Facility
A&D Environmental Services, Inc.
2718 Uwharrie Road
Archdale, NC 27263
336-434-7750
NCD986232221

[ ] Designated Facility
A&D Environmental Services, Inc.
3149 Lear Drive
Burlington, NC 27215
336-229-0058
NCR000138628

[ ] Designated Facility (Please insert facility information below)

HM	Hazardous Materials Shipping Name and Description (if applicable)	No.	Type	QTY	Wt/Vol	Profile Number
	Non-Regulated Material (IDW-Solids)	01	DM	200	P	NC2022-0280
	Non-Regulated Empty Drums	02	Dm	100	P	NC2022-0250

	Petroleum Products for Recycle		No.	Type	QTY	Wt/Vol	Profile Number
X	NA1993, Diesel fuel, 3, III	EGR# 128					
X	NA 1993, Fuel oil (No. 1,2,4,5 or 6), 3, III	EGR# 128					
X	UN1203, Gasoline, 3, II	EGR# 128					
	USED OIL (Not a USDOT Hazardous Material)						
	Petroleum Contact Water (Not a USDOT Hazardous Material)						

Universal Waste Lamps, Batteries, Ballasts, and Electronics for Recycle

HM	No.	Type	Est. Wt.	Count	Shipping Name and Description (if applicable)		Common Name	Discrepancy
X					RQ, UN3506, Mercury contained in manufactured articles, 8 (6.1)	ERG# 172	Mercury Devices	
X					RQ, UN3432, Polychlorinated biphenyls, solid, 9, II	EGR# 171	TSCA Exempt PCB Lamp Ballasts	
X					UN2800, Batteries, wet non-spillable, 8	EGR# 154	Sealed Lead Acid Batteries	
X					UN2794, Batteries, wet, filled with acid, 8	EGR# 154	Lead Acid Batteries	
X					UN2795, Batteries, wet, filled with alkali, 8	EGR# 154	Wet NiCad Batteries	
X					UN3090, Lithium metal batteries, 9	EGR# 138	Lithium Metal Batteries	
X					UN3480, Lithium ion batteries, 9	EGR# 147	Lithium Ion Batteries	
					Batteries, dry, sealed n.o.s.		Alkaline Batteries	
					Batteries, dry, sealed n.o.s.		Dry NiCad Batteries	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164 (e)		Florescent lamps (4-Ft. and Under)	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164 (e)		Florescent lamps (Over 4-Ft.)	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164 (e)		Circular/U-tube lamps	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164 (e)		Compact Lamps	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164 (e)		Shielded Lamps	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164 (e)		HID/MV/UV Lamps	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164 (e)		Incandescent Lamps	
					Non-PCB Light Ballasts for Recycle (Not DOT-Regulated)		Non-PCB Light Ballasts/Capacitors	
					Electronic Equipment for Recycle (Not DOT-Regulated)		e-Waste	

Shipper's Certification: This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transport according to the applicable regulations of the Department of Transportation. I further certify that none of the materials described above are hazardous waste as defined by EPA 40CFR Part 261 or any applicable state law, and unless specifically identified above the materials contain less than 1,000 ppm total halogens and do not contain quantifiable levels (2ppm) of PCBs as defined by EPA 40 CFR Parts 279 and 761.

Shipper's/ Offeror's Printed/Typed Name	Signature	Month	Day	Year
James Lightfoot (on behalf of Signify)		1	24	23
Transporter 1 Printed/Typed Name	**Signature**	**Month**	**Day**	**Year**
Ricardo Muro	Ricardo Muro	1	24	23
Transporter 2 Printed/Typed Name	**Signature**	**Month**	**Day**	**Year**

Discrepancy Indication / Additional Information:

Designated Facility Certification: I hereby acknowledge receipt of the materials covered by this manifest except for any discrepancy indicated above.

Printed/Typed Name	Signature	Month	Day	Year

Report of Analysis

AECOM
101 Research Drive
Columbia, SC 29203
Attention: Scott Ross

Project Name: Shakespeare - Signify

Project Number: 60635197

Lot Number:**WH26123**

Date Completed:09/13/2021

09/14/2021 10:43 AM
Approved and released by:
Project Manager I: **Hannah K. Lucas**

The electronic signature above is the equivalent of a handwritten signature.

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
AECOM
Lot Number: WH26123

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

Where applicable, all soil sample results (including LOQ and DL if requested) are corrected for dry weight unless flagged with a "W" qualifier.

If you have any questions regarding this report please contact the Pace Project Manager listed on the cover page.

Semivolatiles
The method blank associated with batch 14073 had caprolactam detected at a concentration that was below ½ the LOQ. All samples associated with this method blank that have detections for caprolactam have been flagged with a “B” qualifier.

Sample Summary

AECOM

Lot Number: WH26123

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	Soil IDW	Solid	08/26/2021 1100	08/26/2021
002	Liquid IDW	Aqueous	08/26/2021 1120	08/26/2021

(2 samples)

Detection Summary

AECOM

Lot Number: WH26123

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	Soil IDW	Solid	Pyridine	8270E	0.010	J	mg/L	6
001	Soil IDW	Solid	Barium	6010D	0.52		mg/L	7
001	Soil IDW	Solid	Chromium	6010D	0.020	J	mg/L	7
002	Liquid IDW	Aqueous	Bromodichloromethane	8260D	1.0		ug/L	8
002	Liquid IDW	Aqueous	Carbon disulfide	8260D	2.7		ug/L	8
002	Liquid IDW	Aqueous	Chloroform	8260D	8.1		ug/L	8
002	Liquid IDW	Aqueous	Dibromochloromethane	8260D	0.41	J	ug/L	8
002	Liquid IDW	Aqueous	Methylene chloride	8260D	0.41	J	ug/L	8
002	Liquid IDW	Aqueous	Trichloroethene	8260D	100		ug/L	9
002	Liquid IDW	Aqueous	Aluminum	6010D	0.12	J	mg/L	12
002	Liquid IDW	Aqueous	Barium	6010D	0.044		mg/L	12
002	Liquid IDW	Aqueous	Calcium	6010D	5.9		mg/L	12
002	Liquid IDW	Aqueous	Iron	6010D	0.45		mg/L	12
002	Liquid IDW	Aqueous	Magnesium	6010D	1.0	J	mg/L	12
002	Liquid IDW	Aqueous	Manganese	6010D	0.18		mg/L	12
002	Liquid IDW	Aqueous	Potassium	6010D	3.4	J	mg/L	12
002	Liquid IDW	Aqueous	Sodium	6010D	16		mg/L	12
002	Liquid IDW	Aqueous	Zinc	6010D	0.012	J	mg/L	12

(18 detections)

TCLP Volatiles

Client: AECOM
Description: Soil IDW
Date Sampled: 08/26/2021 1100
Date Received: 08/26/2021

Laboratory ID: WH26123-001
Matrix: Solid

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Leachate Date
1	1311/5030B	8260D	10	09/10/2021 0244	JDF		14928	09/07/2021 1804

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Benzene	71-43-2	8260D	ND		0.050	0.0040	mg/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		0.10	0.020	mg/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.050	0.0040	mg/L	1
Chlorobenzene	108-90-7	8260D	ND		0.050	0.0040	mg/L	1
Chloroform	67-66-3	8260D	ND		0.050	0.0040	mg/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.050	0.0040	mg/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.050	0.0040	mg/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.050	0.0040	mg/L	1
Trichloroethene	79-01-6	8260D	ND		0.050	0.0040	mg/L	1
Vinyl chloride	75-01-4	8260D	ND		0.010	0.0040	mg/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		94	70-130
1,2-Dichloroethane-d4		96	70-130
Toluene-d8		97	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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TCLP Semivolatiles

Client: AECOM
Description: Soil IDW
Date Sampled: 08/26/2021 1100
Date Received: 08/26/2021

Laboratory ID: WH26123-001
Matrix: Solid

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Leachate Date
1	1311/3520C	8270E	1	09/10/2021 1935	SCD	09/08/2021 1830	14793	09/02/2021 0041

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
1,4-Dichlorobenzene	106-46-7	8270E	ND		0.040	0.0050	mg/L	1
2,4-Dinitrotoluene	121-14-2	8270E	ND		0.080	0.0050	mg/L	1
Hexachlorobenzene	118-74-1	8270E	ND		0.040	0.0050	mg/L	1
Hexachlorobutadiene	87-68-3	8270E	ND		0.040	0.0050	mg/L	1
Hexachloroethane	67-72-1	8270E	ND		0.040	0.010	mg/L	1
2-Methylphenol	95-48-7	8270E	ND		0.040	0.010	mg/L	1
3+4-Methylphenol	106-44-5	8270E	ND		0.040	0.015	mg/L	1
Nitrobenzene	98-95-3	8270E	ND		0.040	0.015	mg/L	1
Pentachlorophenol	87-86-5	8270E	ND		0.20	0.020	mg/L	1
Pyridine	110-86-1	8270E	0.010	J	0.040	0.0050	mg/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	ND		0.040	0.0050	mg/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	ND		0.040	0.0050	mg/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		75	37-129
2-Fluorophenol		46	24-127
Nitrobenzene-d5		75	38-127
Phenol-d5		69	28-128
Terphenyl-d14		87	10-148
2,4,6-Tribromophenol		82	41-144

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DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
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L = LCS/LCSD failure
S = MS/MSD failure

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TCLP Metals

Client: AECOM
Description: Soil IDW
Date Sampled: 08/26/2021 1100
Date Received: 08/26/2021

Laboratory ID: WH26123-001
Matrix: Solid

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Leachate Date
1	1311/3010A	6010D	1	09/03/2021 1054	JMH	09/03/2021 0121	14330	09/02/2021 0041
1	1311/7470A	7470A	1	09/03/2021 1833	CMS2	09/03/2021 1427	14392	09/02/2021 0041

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Arsenic	7440-38-2	6010D	ND		0.15	0.025	mg/L	1
Barium	7440-39-3	6010D	0.52		0.25	0.031	mg/L	1
Cadmium	7440-43-9	6010D	ND		0.050	0.0060	mg/L	1
Chromium	7440-47-3	6010D	0.020	J	0.10	0.013	mg/L	1
Lead	7439-92-1	6010D	ND		0.10	0.047	mg/L	1
Mercury	7439-97-6	7470A	ND		0.0020	0.00091	mg/L	1
Selenium	7782-49-2	6010D	ND		0.20	0.085	mg/L	1
Silver	7440-22-4	6010D	ND		0.10	0.021	mg/L	1

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E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
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Volatile Organic Compounds by GC/MS

Client: AECOM
Description: Liquid IDW
Date Sampled: 08/26/2021 1120
Date Received: 08/26/2021

Laboratory ID: WH26123-002
Matrix: Aqueous

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	09/03/2021 1744	ECB		15210

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acetone	67-64-1	8260D	ND		10	4.0	ug/L	1
Benzene	71-43-2	8260D	ND		0.50	0.40	ug/L	1
Bromodichloromethane	75-27-4	8260D	1.0		0.50	0.40	ug/L	1
Bromoform	75-25-2	8260D	ND		0.50	0.40	ug/L	1
Bromomethane (Methyl bromide)	74-83-9	8260D	ND		0.50	0.40	ug/L	1
2-Butanone (MEK)	78-93-3	8260D	ND		10	2.0	ug/L	1
Carbon disulfide	75-15-0	8260D	2.7		0.50	0.40	ug/L	1
Carbon tetrachloride	56-23-5	8260D	ND		0.50	0.40	ug/L	1
Chlorobenzene	108-90-7	8260D	ND		0.50	0.40	ug/L	1
Chloroethane	75-00-3	8260D	ND		0.50	0.40	ug/L	1
Chloroform	67-66-3	8260D	8.1		0.50	0.40	ug/L	1
Chloromethane (Methyl chloride)	74-87-3	8260D	ND		0.50	0.40	ug/L	1
Cyclohexane	110-82-7	8260D	ND		0.50	0.40	ug/L	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260D	ND		0.50	0.40	ug/L	1
Dibromochloromethane	124-48-1	8260D	0.41	J	0.50	0.40	ug/L	1
1,2-Dibromoethane (EDB)	106-93-4	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichlorobenzene	95-50-1	8260D	ND		0.50	0.40	ug/L	1
1,3-Dichlorobenzene	541-73-1	8260D	ND		0.50	0.40	ug/L	1
1,4-Dichlorobenzene	106-46-7	8260D	ND		0.50	0.40	ug/L	1
Dichlorodifluoromethane	75-71-8	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethane	75-34-3	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260D	ND		0.50	0.40	ug/L	1
1,1-Dichloroethene	75-35-4	8260D	ND		0.50	0.40	ug/L	1
cis-1,2-Dichloroethene	156-59-2	8260D	ND		0.50	0.40	ug/L	1
trans-1,2-Dichloroethene	156-60-5	8260D	ND		0.50	0.40	ug/L	1
1,2-Dichloropropane	78-87-5	8260D	ND		0.50	0.40	ug/L	1
cis-1,3-Dichloropropene	10061-01-5	8260D	ND		0.50	0.40	ug/L	1
trans-1,3-Dichloropropene	10061-02-6	8260D	ND		0.50	0.40	ug/L	1
Ethylbenzene	100-41-4	8260D	ND		0.50	0.40	ug/L	1
2-Hexanone	591-78-6	8260D	ND		10	2.0	ug/L	1
Isopropylbenzene	98-82-8	8260D	ND		0.50	0.40	ug/L	1
Methyl acetate	79-20-9	8260D	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260D	ND		0.50	0.40	ug/L	1
4-Methyl-2-pentanone	108-10-1	8260D	ND		10	2.0	ug/L	1
Methylcyclohexane	108-87-2	8260D	ND		5.0	0.40	ug/L	1
Methylene chloride	75-09-2	8260D	0.41	J	0.50	0.40	ug/L	1
Styrene	100-42-5	8260D	ND		0.50	0.41	ug/L	1
1,1,2,2-Tetrachloroethane	79-34-5	8260D	ND		0.50	0.40	ug/L	1
Tetrachloroethene	127-18-4	8260D	ND		0.50	0.40	ug/L	1
Toluene	108-88-3	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260D	ND		1.0	0.42	ug/L	1
1,2,4-Trichlorobenzene	120-82-1	8260D	ND		0.50	0.40	ug/L	1
1,1,1-Trichloroethane	71-55-6	8260D	ND		0.50	0.40	ug/L	1
1,1,2-Trichloroethane	79-00-5	8260D	ND		0.50	0.40	ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
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Volatile Organic Compounds by GC/MS

Client: AECOM
Description: Liquid IDW
Date Sampled: 08/26/2021 1120
Date Received: 08/26/2021

Laboratory ID: WH26123-002
Matrix: Aqueous

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260D	1	09/03/2021 1744	ECB		15210

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Trichloroethene	79-01-6	8260D	100		0.50	0.40	ug/L	1
Trichlorofluoromethane	75-69-4	8260D	ND		0.50	0.40	ug/L	1
Vinyl chloride	75-01-4	8260D	ND		0.50	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260D	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
Bromofluorobenzene		89	70-130
1,2-Dichloroethane-d4		106	70-130
Toluene-d8		98	70-130

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
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Semivolatile Organic Compounds by GC/MS

Client: AECOM
Description: Liquid IDW
Date Sampled: 08/26/2021 1120
Date Received: 08/26/2021

Laboratory ID: WH26123-002
Matrix: Aqueous

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	09/05/2021 2103	STM	09/01/2021 1328	14073

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Acenaphthene	83-32-9	8270E	ND		0.80	0.20	ug/L	1
Acenaphthylene	208-96-8	8270E	ND		0.80	0.20	ug/L	1
Acetophenone	98-86-2	8270E	ND		4.0	0.50	ug/L	1
Anthracene	120-12-7	8270E	ND		0.80	0.20	ug/L	1
Atrazine	1912-24-9	8270E	ND		4.0	0.50	ug/L	1
Benzaldehyde	100-52-7	8270E	ND		8.0	0.50	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	ND		0.80	0.20	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	ND		0.80	0.20	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	ND		0.80	0.20	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	ND		0.80	0.20	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	ND		0.80	0.20	ug/L	1
1,1'-Biphenyl	92-52-4	8270E	ND		4.0	0.50	ug/L	1
4-Bromophenyl phenyl ether	101-55-3	8270E	ND		4.0	0.50	ug/L	1
Butyl benzyl phthalate	85-68-7	8270E	ND		4.0	0.50	ug/L	1
Caprolactam	105-60-2	8270E	ND		8.0	1.0	ug/L	1
Carbazole	86-74-8	8270E	ND		4.0	0.50	ug/L	1
bis (2-Chloro-1-methylethyl) ether	108-60-1	8270E	ND		4.0	0.50	ug/L	1
4-Chloro-3-methyl phenol	59-50-7	8270E	ND		4.0	0.50	ug/L	1
4-Chloroaniline	106-47-8	8270E	ND		8.0	0.50	ug/L	1
bis(2-Chloroethoxy)methane	111-91-1	8270E	ND		4.0	0.50	ug/L	1
bis(2-Chloroethyl)ether	111-44-4	8270E	ND		4.0	0.50	ug/L	1
2-Chloronaphthalene	91-58-7	8270E	ND		4.0	0.50	ug/L	1
2-Chlorophenol	95-57-8	8270E	ND		4.0	0.50	ug/L	1
4-Chlorophenyl phenyl ether	7005-72-3	8270E	ND		4.0	0.50	ug/L	1
Chrysene	218-01-9	8270E	ND		0.80	0.20	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	ND		0.80	0.20	ug/L	1
Dibenzofuran	132-64-9	8270E	ND		4.0	0.50	ug/L	1
3,3'-Dichlorobenzidine	91-94-1	8270E	ND		4.0	1.8	ug/L	1
2,4-Dichlorophenol	120-83-2	8270E	ND		8.0	1.0	ug/L	1
Diethylphthalate	84-66-2	8270E	ND		4.0	0.50	ug/L	1
Dimethyl phthalate	131-11-3	8270E	ND		4.0	0.50	ug/L	1
2,4-Dimethylphenol	105-67-9	8270E	ND		4.0	1.0	ug/L	1
Di-n-butyl phthalate	84-74-2	8270E	ND		4.0	0.50	ug/L	1
4,6-Dinitro-2-methylphenol	534-52-1	8270E	ND		20	1.0	ug/L	1
2,4-Dinitrophenol	51-28-5	8270E	ND		20	1.0	ug/L	1
2,4-Dinitrotoluene	121-14-2	8270E	ND		8.0	0.50	ug/L	1
2,6-Dinitrotoluene	606-20-2	8270E	ND		8.0	0.50	ug/L	1
Di-n-octylphthalate	117-84-0	8270E	ND		4.0	0.50	ug/L	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270E	ND		4.0	0.50	ug/L	1
Fluoranthene	206-44-0	8270E	ND		0.80	0.20	ug/L	1
Fluorene	86-73-7	8270E	ND		0.80	0.20	ug/L	1
Hexachlorobenzene	118-74-1	8270E	ND		4.0	0.50	ug/L	1
Hexachlorobutadiene	87-68-3	8270E	ND		4.0	0.50	ug/L	1
Hexachlorocyclopentadiene	77-47-4	8270E	ND		20	2.0	ug/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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Semivolatile Organic Compounds by GC/MS

Client: AECOM
Description: Liquid IDW
Date Sampled: 08/26/2021 1120
Date Received: 08/26/2021

Laboratory ID: WH26123-002
Matrix: Aqueous

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270E	1	09/05/2021 2103	STM	09/01/2021 1328	14073

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Hexachloroethane	67-72-1	8270E	ND		4.0	1.0	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	ND		0.80	0.20	ug/L	1
Isophorone	78-59-1	8270E	ND		4.0	0.50	ug/L	1
2-Methylnaphthalene	91-57-6	8270E	ND		0.80	0.20	ug/L	1
2-Methylphenol	95-48-7	8270E	ND		4.0	1.0	ug/L	1
3+4-Methylphenol	106-44-5	8270E	ND		4.0	1.5	ug/L	1
Naphthalene	91-20-3	8270E	ND		0.80	0.20	ug/L	1
2-Nitroaniline	88-74-4	8270E	ND		8.0	0.50	ug/L	1
3-Nitroaniline	99-09-2	8270E	ND		8.0	1.0	ug/L	1
4-Nitroaniline	100-01-6	8270E	ND		8.0	1.5	ug/L	1
Nitrobenzene	98-95-3	8270E	ND		4.0	1.5	ug/L	1
2-Nitrophenol	88-75-5	8270E	ND		4.0	1.0	ug/L	1
4-Nitrophenol	100-02-7	8270E	ND		20	2.0	ug/L	1
N-Nitrosodi-n-propylamine	621-64-7	8270E	ND		4.0	0.50	ug/L	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270E	ND		4.0	0.50	ug/L	1
Pentachlorophenol	87-86-5	8270E	ND		20	2.0	ug/L	1
Phenanthrene	85-01-8	8270E	ND		0.80	0.20	ug/L	1
Phenol	108-95-2	8270E	ND		4.0	0.50	ug/L	1
Pyrene	129-00-0	8270E	ND		0.80	0.20	ug/L	1
2,4,5-Trichlorophenol	95-95-4	8270E	ND		4.0	0.50	ug/L	1
2,4,6-Trichlorophenol	88-06-2	8270E	ND		4.0	0.50	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		86	37-129
2-Fluorophenol		55	24-127
Nitrobenzene-d5		73	38-127
Phenol-d5		79	28-128
Terphenyl-d14		100	10-148
2,4,6-Tribromophenol		63	35-144

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E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
S = MS/MSD failure

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ICP-AES Metals

Client: AECOM
Description: Liquid IDW
Date Sampled: 08/26/2021 1120
Date Received: 08/26/2021

Laboratory ID: WH26123-002
Matrix: Aqueous

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010D	1	09/02/2021 2000	JMH	09/02/2021 0627	14155
2	3005A	6010D	1	09/03/2021 1211	JMH	09/02/2021 0627	14155

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
Aluminum	7429-90-5	6010D	0.12	J	0.40	0.10	mg/L	1
Antimony	7440-36-0	6010D	ND		0.020	0.0070	mg/L	1
Arsenic	7440-38-2	6010D	ND		0.015	0.0025	mg/L	1
Barium	7440-39-3	6010D	0.044		0.025	0.0031	mg/L	2
Beryllium	7440-41-7	6010D	ND		0.0050	0.00060	mg/L	1
Boron	7440-42-8	6010D	ND		0.050	0.020	mg/L	2
Cadmium	7440-43-9	6010D	ND		0.0050	0.00060	mg/L	1
Calcium	7440-70-2	6010D	5.9		5.0	0.63	mg/L	1
Chromium	7440-47-3	6010D	ND		0.010	0.0013	mg/L	1
Cobalt	7440-48-4	6010D	ND		0.025	0.0031	mg/L	1
Copper	7440-50-8	6010D	ND		0.010	0.0020	mg/L	1
Iron	7439-89-6	6010D	0.45		0.10	0.040	mg/L	1
Lead	7439-92-1	6010D	ND		0.010	0.0047	mg/L	1
Magnesium	7439-95-4	6010D	1.0	J	5.0	0.63	mg/L	1
Manganese	7439-96-5	6010D	0.18		0.015	0.0019	mg/L	1
Molybdenum	7439-98-7	6010D	ND		0.040	0.0050	mg/L	1
Nickel	7440-02-0	6010D	ND		0.040	0.0050	mg/L	2
Potassium	7440-09-7	6010D	3.4	J	5.0	0.63	mg/L	1
Selenium	7782-49-2	6010D	ND		0.020	0.0085	mg/L	1
Silver	7440-22-4	6010D	ND		0.010	0.0021	mg/L	1
Sodium	7440-23-5	6010D	16		5.0	0.63	mg/L	1
Thallium	7440-28-0	6010D	ND		0.050	0.0063	mg/L	1
Tin	7440-31-5	6010D	ND		0.050	0.0063	mg/L	1
Titanium	7440-32-6	6010D	ND		0.050	0.0063	mg/L	1
Vanadium	7440-62-2	6010D	ND		0.050	0.0063	mg/L	1
Zinc	7440-66-6	6010D	0.012	J	0.020	0.0025	mg/L	1

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
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QC Summary

TCLP Volatiles - MB

Sample ID: WQ14928-001
Batch: 14928
Analytical Method: 8260D

Matrix: Solid
Prep Method: 1311/5030B

Leachate Date: 09/07/2021 1804

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Benzene	ND		10	0.050	0.0040	mg/L	09/10/2021 0058
2-Butanone (MEK)	ND		10	0.10	0.020	mg/L	09/10/2021 0058
Carbon tetrachloride	ND		10	0.050	0.0040	mg/L	09/10/2021 0058
Chlorobenzene	ND		10	0.050	0.0040	mg/L	09/10/2021 0058
Chloroform	ND		10	0.050	0.0040	mg/L	09/10/2021 0058
1,2-Dichloroethane	ND		10	0.050	0.0040	mg/L	09/10/2021 0058
1,1-Dichloroethene	ND		10	0.050	0.0040	mg/L	09/10/2021 0058
Tetrachloroethene	ND		10	0.050	0.0040	mg/L	09/10/2021 0058
Trichloroethene	ND		10	0.050	0.0040	mg/L	09/10/2021 0058
Vinyl chloride	ND		10	0.010	0.0040	mg/L	09/10/2021 0058

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		95	70-130
1,2-Dichloroethane-d4		95	70-130
Toluene-d8		95	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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TCLP Volatiles - LCS

Sample ID: WQ14928-002
Batch: 14928
Analytical Method: 8260D

Matrix: Solid
Prep Method: 1311/5030B

Leachate Date: 09/07/2021 1804

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Benzene	0.50	0.48		10	96	70-130	09/09/2021 2229
2-Butanone (MEK)	1.0	0.86		10	86	70-130	09/09/2021 2229
Carbon tetrachloride	0.50	0.52		10	104	70-130	09/09/2021 2229
Chlorobenzene	0.50	0.47		10	95	70-130	09/09/2021 2229
Chloroform	0.50	0.47		10	95	70-130	09/09/2021 2229
1,2-Dichloroethane	0.50	0.46		10	93	70-130	09/09/2021 2229
1,1-Dichloroethene	0.50	0.51		10	102	70-130	09/09/2021 2229
Tetrachloroethene	0.50	0.50		10	101	70-130	09/09/2021 2229
Trichloroethene	0.50	0.50		10	99	70-130	09/09/2021 2229
Vinyl chloride	0.50	0.46		10	93	70-130	09/09/2021 2229

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		90	70-130
1,2-Dichloroethane-d4		86	70-130
Toluene-d8		90	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
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P = The RPD between two GC columns exceeds 40%
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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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Volatile Organic Compounds by GC/MS - MB

Sample ID: WQ15210-001
Batch: 15210
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acetone	ND		1	10	4.0	ug/L	09/03/2021 1201
Benzene	ND		1	0.50	0.40	ug/L	09/03/2021 1201
Bromodichloromethane	ND		1	0.50	0.40	ug/L	09/03/2021 1201
Bromoform	ND		1	0.50	0.40	ug/L	09/03/2021 1201
Bromomethane (Methyl bromide)	ND		1	0.50	0.40	ug/L	09/03/2021 1201
2-Butanone (MEK)	ND		1	10	2.0	ug/L	09/03/2021 1201
Carbon disulfide	ND		1	0.50	0.40	ug/L	09/03/2021 1201
Carbon tetrachloride	ND		1	0.50	0.40	ug/L	09/03/2021 1201
Chlorobenzene	ND		1	0.50	0.40	ug/L	09/03/2021 1201
Chloroethane	ND		1	0.50	0.40	ug/L	09/03/2021 1201
Chloroform	ND		1	0.50	0.40	ug/L	09/03/2021 1201
Chloromethane (Methyl chloride)	ND		1	0.50	0.40	ug/L	09/03/2021 1201
Cyclohexane	ND		1	0.50	0.40	ug/L	09/03/2021 1201
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	0.50	0.40	ug/L	09/03/2021 1201
Dibromochloromethane	ND		1	0.50	0.40	ug/L	09/03/2021 1201
1,2-Dibromoethane (EDB)	ND		1	0.50	0.40	ug/L	09/03/2021 1201
1,2-Dichlorobenzene	ND		1	0.50	0.40	ug/L	09/03/2021 1201
1,3-Dichlorobenzene	ND		1	0.50	0.40	ug/L	09/03/2021 1201
1,4-Dichlorobenzene	ND		1	0.50	0.40	ug/L	09/03/2021 1201
Dichlorodifluoromethane	ND		1	0.50	0.40	ug/L	09/03/2021 1201
1,1-Dichloroethane	ND		1	0.50	0.40	ug/L	09/03/2021 1201
1,2-Dichloroethane	ND		1	0.50	0.40	ug/L	09/03/2021 1201
1,1-Dichloroethene	ND		1	0.50	0.40	ug/L	09/03/2021 1201
cis-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	09/03/2021 1201
trans-1,2-Dichloroethene	ND		1	0.50	0.40	ug/L	09/03/2021 1201
1,2-Dichloropropane	ND		1	0.50	0.40	ug/L	09/03/2021 1201
cis-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	09/03/2021 1201
trans-1,3-Dichloropropene	ND		1	0.50	0.40	ug/L	09/03/2021 1201
Ethylbenzene	ND		1	0.50	0.40	ug/L	09/03/2021 1201
2-Hexanone	ND		1	10	2.0	ug/L	09/03/2021 1201
Isopropylbenzene	ND		1	0.50	0.40	ug/L	09/03/2021 1201
Methyl acetate	ND		1	1.0	0.40	ug/L	09/03/2021 1201
Methyl tertiary butyl ether (MTBE)	ND		1	0.50	0.40	ug/L	09/03/2021 1201
4-Methyl-2-pentanone	ND		1	10	2.0	ug/L	09/03/2021 1201
Methylcyclohexane	ND		1	5.0	0.40	ug/L	09/03/2021 1201
Methylene chloride	ND		1	0.50	0.40	ug/L	09/03/2021 1201
Styrene	ND		1	0.50	0.41	ug/L	09/03/2021 1201
1,1,2,2-Tetrachloroethane	ND		1	0.50	0.40	ug/L	09/03/2021 1201
Tetrachloroethene	ND		1	0.50	0.40	ug/L	09/03/2021 1201
Toluene	ND		1	0.50	0.40	ug/L	09/03/2021 1201
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		1	1.0	0.42	ug/L	09/03/2021 1201
1,2,4-Trichlorobenzene	ND		1	0.50	0.40	ug/L	09/03/2021 1201
1,1,1-Trichloroethane	ND		1	0.50	0.40	ug/L	09/03/2021 1201
1,1,2-Trichloroethane	ND		1	0.50	0.40	ug/L	09/03/2021 1201

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - MB

Sample ID: WQ15210-001
Batch: 15210
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Trichloroethene	ND		1	0.50	0.40	ug/L	09/03/2021 1201
Trichlorofluoromethane	ND		1	0.50	0.40	ug/L	09/03/2021 1201
Vinyl chloride	ND		1	0.50	0.40	ug/L	09/03/2021 1201
Xylenes (total)	ND		1	1.0	0.40	ug/L	09/03/2021 1201

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		92	70-130
1,2-Dichloroethane-d4		102	70-130
Toluene-d8		98	70-130

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Volatile Organic Compounds by GC/MS - LCS

Sample ID: WQ15210-002
Batch: 15210
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acetone	100	130		1	132	60-140	09/03/2021 1055
Benzene	50	47		1	94	70-130	09/03/2021 1055
Bromodichloromethane	50	46		1	93	70-130	09/03/2021 1055
Bromoform	50	46		1	93	70-130	09/03/2021 1055
Bromomethane (Methyl bromide)	50	47		1	94	70-130	09/03/2021 1055
2-Butanone (MEK)	100	110		1	108	70-130	09/03/2021 1055
Carbon disulfide	50	47		1	93	70-130	09/03/2021 1055
Carbon tetrachloride	50	47		1	94	70-130	09/03/2021 1055
Chlorobenzene	50	45		1	90	70-130	09/03/2021 1055
Chloroethane	50	46		1	91	70-130	09/03/2021 1055
Chloroform	50	46		1	92	70-130	09/03/2021 1055
Chloromethane (Methyl chloride)	50	50		1	99	60-140	09/03/2021 1055
Cyclohexane	50	48		1	96	70-130	09/03/2021 1055
1,2-Dibromo-3-chloropropane (DBCP)	50	46		1	92	70-130	09/03/2021 1055
Dibromochloromethane	50	48		1	96	70-130	09/03/2021 1055
1,2-Dibromoethane (EDB)	50	46		1	92	70-130	09/03/2021 1055
1,2-Dichlorobenzene	50	47		1	93	70-130	09/03/2021 1055
1,3-Dichlorobenzene	50	46		1	92	70-130	09/03/2021 1055
1,4-Dichlorobenzene	50	43		1	86	70-130	09/03/2021 1055
Dichlorodifluoromethane	50	49		1	98	60-140	09/03/2021 1055
1,1-Dichloroethane	50	46		1	93	70-130	09/03/2021 1055
1,2-Dichloroethane	50	45		1	90	70-130	09/03/2021 1055
1,1-Dichloroethene	50	50		1	99	70-130	09/03/2021 1055
cis-1,2-Dichloroethene	50	48		1	97	70-130	09/03/2021 1055
trans-1,2-Dichloroethene	50	48		1	97	70-130	09/03/2021 1055
1,2-Dichloropropane	50	44		1	89	70-130	09/03/2021 1055
cis-1,3-Dichloropropene	50	49		1	99	70-130	09/03/2021 1055
trans-1,3-Dichloropropene	50	49		1	99	70-130	09/03/2021 1055
Ethylbenzene	50	50		1	100	70-130	09/03/2021 1055
2-Hexanone	100	85		1	85	70-130	09/03/2021 1055
Isopropylbenzene	50	55		1	109	70-130	09/03/2021 1055
Methyl acetate	50	42		1	85	70-130	09/03/2021 1055
Methyl tertiary butyl ether (MTBE)	50	48		1	97	70-130	09/03/2021 1055
4-Methyl-2-pentanone	100	95		1	95	70-130	09/03/2021 1055
Methylcyclohexane	50	52		1	104	70-130	09/03/2021 1055
Methylene chloride	50	49		1	97	70-130	09/03/2021 1055
Styrene	50	47		1	95	70-130	09/03/2021 1055
1,1,2,2-Tetrachloroethane	50	42		1	85	70-130	09/03/2021 1055
Tetrachloroethene	50	48		1	96	70-130	09/03/2021 1055
Toluene	50	49		1	99	70-130	09/03/2021 1055
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	47		1	93	70-130	09/03/2021 1055
1,2,4-Trichlorobenzene	50	48		1	96	70-130	09/03/2021 1055
1,1,1-Trichloroethane	50	48		1	96	70-130	09/03/2021 1055
1,1,2-Trichloroethane	50	45		1	90	70-130	09/03/2021 1055

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Volatile Organic Compounds by GC/MS - LCS

Sample ID: WQ15210-002
Batch: 15210
Analytical Method: 8260D

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Trichloroethene	50	49		1	97	70-130	09/03/2021 1055
Trichlorofluoromethane	50	52		1	104	70-130	09/03/2021 1055
Vinyl chloride	50	47		1	94	70-130	09/03/2021 1055
Xylenes (total)	100	100		1	103	70-130	09/03/2021 1055

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		96	70-130
1,2-Dichloroethane-d4		91	70-130
Toluene-d8		93	70-130

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: WQ14073-001
Batch: 14073
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 09/01/2021 1328

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Acenaphthene	ND		1	0.80	0.20	ug/L	09/05/2021 2014
Acenaphthylene	ND		1	0.80	0.20	ug/L	09/05/2021 2014
Acetophenone	ND		1	4.0	0.50	ug/L	09/05/2021 2014
Anthracene	ND		1	0.80	0.20	ug/L	09/05/2021 2014
Atrazine	ND		1	4.0	0.50	ug/L	09/05/2021 2014
Benzaldehyde	ND		1	8.0	0.50	ug/L	09/05/2021 2014
Benzo(a)anthracene	ND		1	0.80	0.20	ug/L	09/05/2021 2014
Benzo(a)pyrene	ND		1	0.80	0.20	ug/L	09/05/2021 2014
Benzo(b)fluoranthene	ND		1	0.80	0.20	ug/L	09/05/2021 2014
Benzo(g,h,i)perylene	ND		1	0.80	0.20	ug/L	09/05/2021 2014
Benzo(k)fluoranthene	ND		1	0.80	0.20	ug/L	09/05/2021 2014
1,1'-Biphenyl	ND		1	4.0	0.50	ug/L	09/05/2021 2014
4-Bromophenyl phenyl ether	ND		1	4.0	0.50	ug/L	09/05/2021 2014
Butyl benzyl phthalate	ND		1	4.0	0.50	ug/L	09/05/2021 2014
Caprolactam	2.3	J	1	8.0	1.0	ug/L	09/05/2021 2014
Carbazole	ND		1	4.0	0.50	ug/L	09/05/2021 2014
bis (2-Chloro-1-methylethyl) ether	ND		1	4.0	0.50	ug/L	09/05/2021 2014
4-Chloro-3-methyl phenol	ND		1	4.0	0.50	ug/L	09/05/2021 2014
4-Chloroaniline	ND		1	8.0	0.50	ug/L	09/05/2021 2014
bis(2-Chloroethoxy)methane	ND		1	4.0	0.50	ug/L	09/05/2021 2014
bis(2-Chloroethyl)ether	ND		1	4.0	0.50	ug/L	09/05/2021 2014
2-Chloronaphthalene	ND		1	4.0	0.50	ug/L	09/05/2021 2014
2-Chlorophenol	ND		1	4.0	0.50	ug/L	09/05/2021 2014
4-Chlorophenyl phenyl ether	ND		1	4.0	0.50	ug/L	09/05/2021 2014
Chrysene	ND		1	0.80	0.20	ug/L	09/05/2021 2014
Dibenzo(a,h)anthracene	ND		1	0.80	0.20	ug/L	09/05/2021 2014
Dibenzofuran	ND		1	4.0	0.50	ug/L	09/05/2021 2014
3,3'-Dichlorobenzidine	ND		1	4.0	1.8	ug/L	09/05/2021 2014
2,4-Dichlorophenol	ND		1	8.0	1.0	ug/L	09/05/2021 2014
Diethylphthalate	ND		1	4.0	0.50	ug/L	09/05/2021 2014
Dimethyl phthalate	ND		1	4.0	0.50	ug/L	09/05/2021 2014
2,4-Dimethylphenol	ND		1	4.0	1.0	ug/L	09/05/2021 2014
Di-n-butyl phthalate	ND		1	4.0	0.50	ug/L	09/05/2021 2014
4,6-Dinitro-2-methylphenol	ND		1	20	1.0	ug/L	09/05/2021 2014
2,4-Dinitrophenol	ND		1	20	1.0	ug/L	09/05/2021 2014
2,4-Dinitrotoluene	ND		1	8.0	0.50	ug/L	09/05/2021 2014
2,6-Dinitrotoluene	ND		1	8.0	0.50	ug/L	09/05/2021 2014
Di-n-octylphthalate	ND		1	4.0	0.50	ug/L	09/05/2021 2014
bis(2-Ethylhexyl)phthalate	ND		1	4.0	0.50	ug/L	09/05/2021 2014
Fluoranthene	ND		1	0.80	0.20	ug/L	09/05/2021 2014
Fluorene	ND		1	0.80	0.20	ug/L	09/05/2021 2014
Hexachlorobenzene	ND		1	4.0	0.50	ug/L	09/05/2021 2014
Hexachlorobutadiene	ND		1	4.0	0.50	ug/L	09/05/2021 2014
Hexachlorocyclopentadiene	ND		1	20	2.0	ug/L	09/05/2021 2014

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Semivolatile Organic Compounds by GC/MS - MB

Sample ID: WQ14073-001
Batch: 14073
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 09/01/2021 1328

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Hexachloroethane	ND		1	4.0	1.0	ug/L	09/05/2021 2014
Indeno(1,2,3-c,d)pyrene	ND		1	0.80	0.20	ug/L	09/05/2021 2014
Isophorone	ND		1	4.0	0.50	ug/L	09/05/2021 2014
2-Methylnaphthalene	ND		1	0.80	0.20	ug/L	09/05/2021 2014
2-Methylphenol	ND		1	4.0	1.0	ug/L	09/05/2021 2014
3+4-Methylphenol	ND		1	4.0	1.5	ug/L	09/05/2021 2014
Naphthalene	ND		1	0.80	0.20	ug/L	09/05/2021 2014
2-Nitroaniline	ND		1	8.0	0.50	ug/L	09/05/2021 2014
3-Nitroaniline	ND		1	8.0	1.0	ug/L	09/05/2021 2014
4-Nitroaniline	ND		1	8.0	1.5	ug/L	09/05/2021 2014
Nitrobenzene	ND		1	4.0	1.5	ug/L	09/05/2021 2014
2-Nitrophenol	ND		1	4.0	1.0	ug/L	09/05/2021 2014
4-Nitrophenol	ND		1	20	2.0	ug/L	09/05/2021 2014
N-Nitrosodi-n-propylamine	ND		1	4.0	0.50	ug/L	09/05/2021 2014
N-Nitrosodiphenylamine (Diphenylamine)	ND		1	4.0	0.50	ug/L	09/05/2021 2014
Pentachlorophenol	ND		1	20	2.0	ug/L	09/05/2021 2014
Phenanthrene	ND		1	0.80	0.20	ug/L	09/05/2021 2014
Phenol	ND		1	4.0	0.50	ug/L	09/05/2021 2014
Pyrene	ND		1	0.80	0.20	ug/L	09/05/2021 2014
2,4,5-Trichlorophenol	ND		1	4.0	0.50	ug/L	09/05/2021 2014
2,4,6-Trichlorophenol	ND		1	4.0	0.50	ug/L	09/05/2021 2014

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		90	37-129
2-Fluorophenol		60	24-127
Nitrobenzene-d5		75	38-127
Phenol-d5		77	28-128
Terphenyl-d14		100	10-148
2,4,6-Tribromophenol		63	35-144

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: WQ14073-002
Batch: 14073
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 09/01/2021 1328

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acenaphthene	40	34		1	84	30-122	09/05/2021 2038
Acenaphthylene	40	37		1	93	30-130	09/05/2021 2038
Acetophenone	40	40		1	101	30-130	09/05/2021 2038
Anthracene	40	35		1	87	30-123	09/05/2021 2038
Atrazine	40	30		1	74	30-130	09/05/2021 2038
Benzaldehyde	40	21		1	52	20-115	09/05/2021 2038
Benzo(a)anthracene	40	34		1	85	40-125	09/05/2021 2038
Benzo(a)pyrene	40	35		1	87	40-128	09/05/2021 2038
Benzo(b)fluoranthene	40	37		1	93	30-130	09/05/2021 2038
Benzo(g,h,i)perylene	40	36		1	89	30-130	09/05/2021 2038
Benzo(k)fluoranthene	40	38		1	96	30-130	09/05/2021 2038
1,1'-Biphenyl	40	36		1	90	30-130	09/05/2021 2038
4-Bromophenyl phenyl ether	40	35		1	86	30-124	09/05/2021 2038
Butyl benzyl phthalate	40	37		1	92	30-130	09/05/2021 2038
Caprolactam	40	32		1	79	30-130	09/05/2021 2038
Carbazole	40	35		1	87	30-130	09/05/2021 2038
bis (2-Chloro-1-methylethyl) ether	40	39		1	97	30-130	09/05/2021 2038
4-Chloro-3-methyl phenol	40	39		1	97	30-123	09/05/2021 2038
4-Chloroaniline	40	34		1	86	12-157	09/05/2021 2038
bis(2-Chloroethoxy)methane	40	35		1	87	30-130	09/05/2021 2038
bis(2-Chloroethyl)ether	40	38		1	94	30-130	09/05/2021 2038
2-Chloronaphthalene	40	36		1	89	30-130	09/05/2021 2038
2-Chlorophenol	40	39		1	98	30-130	09/05/2021 2038
4-Chlorophenyl phenyl ether	40	34		1	86	30-121	09/05/2021 2038
Chrysene	40	36		1	90	30-130	09/05/2021 2038
Dibenzo(a,h)anthracene	40	36		1	90	30-130	09/05/2021 2038
Dibenzofuran	40	33		1	83	30-118	09/05/2021 2038
3,3'-Dichlorobenzidine	40	21		1	52	10-126	09/05/2021 2038
2,4-Dichlorophenol	40	34		1	84	30-121	09/05/2021 2038
Diethylphthalate	40	36		1	90	40-125	09/05/2021 2038
Dimethyl phthalate	40	36		1	91	40-127	09/05/2021 2038
2,4-Dimethylphenol	40	31		1	78	20-125	09/05/2021 2038
Di-n-butyl phthalate	40	35		1	87	40-127	09/05/2021 2038
4,6-Dinitro-2-methylphenol	40	33		1	83	30-130	09/05/2021 2038
2,4-Dinitrophenol	80	57		1	71	11-126	09/05/2021 2038
2,4-Dinitrotoluene	40	35		1	88	30-130	09/05/2021 2038
2,6-Dinitrotoluene	40	35		1	88	30-130	09/05/2021 2038
Di-n-octylphthalate	40	37		1	92	30-130	09/05/2021 2038
bis(2-Ethylhexyl)phthalate	40	38		1	96	30-130	09/05/2021 2038
Fluoranthene	40	34		1	85	40-128	09/05/2021 2038
Fluorene	40	33		1	83	30-124	09/05/2021 2038
Hexachlorobenzene	40	35		1	89	30-125	09/05/2021 2038
Hexachlorobutadiene	40	33		1	82	24-110	09/05/2021 2038
Hexachlorocyclopentadiene	200	99		1	49	22-122	09/05/2021 2038

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
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P = The RPD between two GC columns exceeds 40%
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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: WQ14073-002
Batch: 14073
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 09/01/2021 1328

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Hexachloroethane	40	36		1	91	30-130	09/05/2021 2038
Indeno(1,2,3-c,d)pyrene	40	34		1	86	30-130	09/05/2021 2038
Isophorone	40	32		1	81	30-130	09/05/2021 2038
2-Methylnaphthalene	40	36		1	89	40-132	09/05/2021 2038
2-Methylphenol	40	41		1	102	30-130	09/05/2021 2038
3+4-Methylphenol	40	41		1	102	30-130	09/05/2021 2038
Naphthalene	40	36		1	90	30-130	09/05/2021 2038
2-Nitroaniline	40	30		1	75	30-130	09/05/2021 2038
3-Nitroaniline	40	22		1	54	30-130	09/05/2021 2038
4-Nitroaniline	40	25		1	64	30-135	09/05/2021 2038
Nitrobenzene	40	35		1	87	30-130	09/05/2021 2038
2-Nitrophenol	40	37		1	91	30-130	09/05/2021 2038
4-Nitrophenol	80	67		1	84	30-130	09/05/2021 2038
N-Nitrosodi-n-propylamine	40	39		1	97	30-130	09/05/2021 2038
N-Nitrosodiphenylamine (Diphenylamine)	40	36		1	90	30-123	09/05/2021 2038
Pentachlorophenol	80	57		1	71	30-130	09/05/2021 2038
Phenanthrene	40	33		1	84	40-123	09/05/2021 2038
Phenol	40	39		1	97	30-130	09/05/2021 2038
Pyrene	40	37		1	92	40-126	09/05/2021 2038
2,4,5-Trichlorophenol	40	37		1	92	30-123	09/05/2021 2038
2,4,6-Trichlorophenol	40	37		1	93	30-130	09/05/2021 2038

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		92	37-129
2-Fluorophenol		93	24-127
Nitrobenzene-d5		82	38-127
Phenol-d5		103	28-128
Terphenyl-d14		95	10-148
2,4,6-Tribromophenol		79	35-144

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Semivolatile Organic Compounds by GC/MS - MS

Sample ID: WH26123-002MS
Batch: 14073
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 09/01/2021 1328

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Acenaphthene	ND	80	66		1	83	30-122	09/05/2021 2128
Acenaphthylene	ND	80	71		1	89	30-130	09/05/2021 2128
Acetophenone	ND	80	76		1	96	30-130	09/05/2021 2128
Anthracene	ND	80	69		1	86	30-123	09/05/2021 2128
Atrazine	ND	80	59		1	74	30-130	09/05/2021 2128
Benzaldehyde	ND	80	40		1	50	20-115	09/05/2021 2128
Benzo(a)anthracene	ND	80	67		1	84	40-125	09/05/2021 2128
Benzo(a)pyrene	ND	80	66		1	82	40-128	09/05/2021 2128
Benzo(b)fluoranthene	ND	80	72		1	90	30-130	09/05/2021 2128
Benzo(g,h,i)perylene	ND	80	70		1	87	30-130	09/05/2021 2128
Benzo(k)fluoranthene	ND	80	73		1	91	30-130	09/05/2021 2128
1,1'-Biphenyl	ND	80	71		1	89	30-130	09/05/2021 2128
4-Bromophenyl phenyl ether	ND	80	69		1	86	30-124	09/05/2021 2128
Butyl benzyl phthalate	ND	80	73		1	91	30-130	09/05/2021 2128
Caprolactam	ND	80	59		1	74	30-130	09/05/2021 2128
Carbazole	ND	80	68		1	85	30-130	09/05/2021 2128
bis (2-Chloro-1-methylethyl) ether	ND	80	77		1	97	30-130	09/05/2021 2128
4-Chloro-3-methyl phenol	ND	80	74		1	92	30-123	09/05/2021 2128
4-Chloroaniline	ND	80	65		1	81	10-130	09/05/2021 2128
bis(2-Chloroethoxy)methane	ND	80	67		1	84	30-130	09/05/2021 2128
bis(2-Chloroethyl)ether	ND	80	74		1	92	30-130	09/05/2021 2128
2-Chloronaphthalene	ND	80	72		1	89	30-130	09/05/2021 2128
2-Chlorophenol	ND	80	74		1	93	30-130	09/05/2021 2128
4-Chlorophenyl phenyl ether	ND	80	67		1	84	30-121	09/05/2021 2128
Chrysene	ND	80	71		1	88	30-130	09/05/2021 2128
Dibenzo(a,h)anthracene	ND	80	69		1	87	30-130	09/05/2021 2128
Dibenzofuran	ND	80	65		1	81	30-118	09/05/2021 2128
3,3'-Dichlorobenzidine	ND	80	41		1	51	10-126	09/05/2021 2128
2,4-Dichlorophenol	ND	80	64		1	81	30-121	09/05/2021 2128
Diethylphthalate	ND	80	70		1	88	40-125	09/05/2021 2128
Dimethyl phthalate	ND	80	70		1	88	40-127	09/05/2021 2128
2,4-Dimethylphenol	ND	80	72		1	89	20-125	09/05/2021 2128
Di-n-butyl phthalate	ND	80	69		1	86	40-127	09/05/2021 2128
4,6-Dinitro-2-methylphenol	ND	80	67		1	84	30-130	09/05/2021 2128
2,4-Dinitrophenol	ND	160	110		1	71	30-130	09/05/2021 2128
2,4-Dinitrotoluene	ND	80	70		1	88	30-130	09/05/2021 2128
2,6-Dinitrotoluene	ND	80	69		1	87	30-130	09/05/2021 2128
Di-n-octylphthalate	ND	80	70		1	88	30-130	09/05/2021 2128
bis(2-Ethylhexyl)phthalate	ND	80	74		1	92	70-131	09/05/2021 2128
Fluoranthene	ND	80	67		1	83	40-128	09/05/2021 2128
Fluorene	ND	80	65		1	82	30-124	09/05/2021 2128
Hexachlorobenzene	ND	80	69		1	87	30-125	09/05/2021 2128
Hexachlorobutadiene	ND	80	64		1	80	24-110	09/05/2021 2128
Hexachlorocyclopentadiene	ND	400	210		1	53	22-122	09/05/2021 2128

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Semivolatile Organic Compounds by GC/MS - MS

Sample ID: WH26123-002MS
Batch: 14073
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 09/01/2021 1328

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Hexachloroethane	ND	80	69		1	87	30-130	09/05/2021 2128
Indeno(1,2,3-c,d)pyrene	ND	80	67		1	83	30-130	09/05/2021 2128
Isophorone	ND	80	64		1	80	30-130	09/05/2021 2128
2-Methylnaphthalene	ND	80	69		1	87	40-132	09/05/2021 2128
2-Methylphenol	ND	80	79		1	98	30-130	09/05/2021 2128
3+4-Methylphenol	ND	80	80		1	99	30-130	09/05/2021 2128
Naphthalene	ND	80	69		1	86	30-130	09/05/2021 2128
2-Nitroaniline	ND	80	59		1	73	30-130	09/05/2021 2128
3-Nitroaniline	ND	80	43		1	54	30-130	09/05/2021 2128
4-Nitroaniline	ND	80	53		1	66	30-135	09/05/2021 2128
Nitrobenzene	ND	80	68		1	85	30-130	09/05/2021 2128
2-Nitrophenol	ND	80	71		1	88	30-130	09/05/2021 2128
4-Nitrophenol	ND	160	130		1	83	30-130	09/05/2021 2128
N-Nitrosodi-n-propylamine	ND	80	77		1	96	30-130	09/05/2021 2128
N-Nitrosodiphenylamine (Diphenylamine)	ND	80	70		1	88	30-123	09/05/2021 2128
Pentachlorophenol	ND	160	110		1	71	30-130	09/05/2021 2128
Phenanthrene	ND	80	66		1	83	40-123	09/05/2021 2128
Phenol	ND	80	75		1	94	30-130	09/05/2021 2128
Pyrene	ND	80	72		1	90	40-126	09/05/2021 2128
2,4,5-Trichlorophenol	ND	80	65		1	81	30-123	09/05/2021 2128
2,4,6-Trichlorophenol	ND	80	73		1	92	30-130	09/05/2021 2128

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		91	37-129
2-Fluorophenol		89	24-127
Nitrobenzene-d5		80	38-127
Phenol-d5		98	28-128
Terphenyl-d14		93	10-148
2,4,6-Tribromophenol		78	35-144

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Semivolatile Organic Compounds by GC/MS - MSD

Sample ID: WH26123-002MD
Batch: 14073
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 09/01/2021 1328

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Acenaphthene	ND	80	68		1	85	2.1	30-122	40	09/05/2021 2152
Acenaphthylene	ND	80	74		1	92	3.2	30-130	40	09/05/2021 2152
Acetophenone	ND	80	76		1	96	0.057	30-130	40	09/05/2021 2152
Anthracene	ND	80	70		1	88	2.1	30-123	40	09/05/2021 2152
Atrazine	ND	80	60		1	75	2.4	30-130	40	09/05/2021 2152
Benzaldehyde	ND	80	39		1	48	3.2	20-115	40	09/05/2021 2152
Benzo(a)anthracene	ND	80	68		1	86	2.1	40-125	40	09/05/2021 2152
Benzo(a)pyrene	ND	80	70		1	88	6.7	40-128	40	09/05/2021 2152
Benzo(b)fluoranthene	ND	80	75		1	94	4.5	30-130	40	09/05/2021 2152
Benzo(g,h,i)perylene	ND	80	72		1	90	3.2	30-130	40	09/05/2021 2152
Benzo(k)fluoranthene	ND	80	76		1	95	4.4	30-130	40	09/05/2021 2152
1,1'-Biphenyl	ND	80	71		1	89	0.0052	30-130	40	09/05/2021 2152
4-Bromophenyl phenyl ether	ND	80	71		1	89	3.3	30-124	40	09/05/2021 2152
Butyl benzyl phthalate	ND	80	74		1	92	0.81	30-130	40	09/05/2021 2152
Caprolactam	ND	80	61		1	76	2.7	30-130	40	09/05/2021 2152
Carbazole	ND	80	70		1	87	2.5	30-130	40	09/05/2021 2152
bis (2-Chloro-1-methylethyl) ether	ND	80	84		1	105	8.2	30-130	40	09/05/2021 2152
4-Chloro-3-methyl phenol	ND	80	74		1	92	0.24	30-123	40	09/05/2021 2152
4-Chloroaniline	ND	80	65		1	81	0.39	10-130	40	09/05/2021 2152
bis(2-Chloroethoxy)methane	ND	80	71		1	88	4.9	30-130	40	09/05/2021 2152
bis(2-Chloroethyl)ether	ND	80	82		1	103	11	30-130	40	09/05/2021 2152
2-Chloronaphthalene	ND	80	70		1	87	2.5	30-130	40	09/05/2021 2152
2-Chlorophenol	ND	80	75		1	94	0.93	30-130	40	09/05/2021 2152
4-Chlorophenyl phenyl ether	ND	80	67		1	84	0.66	30-121	40	09/05/2021 2152
Chrysene	ND	80	72		1	90	1.8	30-130	40	09/05/2021 2152
Dibenzo(a,h)anthracene	ND	80	72		1	90	3.6	30-130	40	09/05/2021 2152
Dibenzofuran	ND	80	65		1	81	0.70	30-118	40	09/05/2021 2152
3,3'-Dichlorobenzidine	ND	80	42		1	53	4.4	10-126	40	09/05/2021 2152
2,4-Dichlorophenol	ND	80	67		1	84	3.9	30-121	40	09/05/2021 2152
Diethylphthalate	ND	80	73		1	92	4.2	40-125	40	09/05/2021 2152
Dimethyl phthalate	ND	80	71		1	89	0.94	40-127	40	09/05/2021 2152
2,4-Dimethylphenol	ND	80	76		1	95	6.1	20-125	40	09/05/2021 2152
Di-n-butyl phthalate	ND	80	69		1	87	1.1	40-127	40	09/05/2021 2152
4,6-Dinitro-2-methylphenol	ND	80	70		1	87	4.0	30-130	40	09/05/2021 2152
2,4-Dinitrophenol	ND	160	120		1	73	2.7	30-130	40	09/05/2021 2152
2,4-Dinitrotoluene	ND	80	71		1	89	1.6	30-130	40	09/05/2021 2152
2,6-Dinitrotoluene	ND	80	70		1	87	0.51	30-130	40	09/05/2021 2152
Di-n-octylphthalate	ND	80	72		1	91	3.3	30-130	40	09/05/2021 2152
bis(2-Ethylhexyl)phthalate	ND	80	75		1	94	2.2	70-131	40	09/05/2021 2152
Fluoranthene	ND	80	69		1	87	4.3	40-128	40	09/05/2021 2152
Fluorene	ND	80	66		1	82	0.72	30-124	40	09/05/2021 2152
Hexachlorobenzene	ND	80	74		1	92	5.7	30-125	40	09/05/2021 2152
Hexachlorobutadiene	ND	80	67		1	83	4.5	24-110	40	09/05/2021 2152
Hexachlorocyclopentadiene	ND	400	230		1	57	8.0	22-122	40	09/05/2021 2152

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Semivolatile Organic Compounds by GC/MS - MSD

Sample ID: WH26123-002MD
Batch: 14073
Analytical Method: 8270E

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 09/01/2021 1328

Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Hexachloroethane	ND	80	69		1	87	0.34	30-130	40	09/05/2021 2152
Indeno(1,2,3-c,d)pyrene	ND	80	70		1	88	5.5	30-130	40	09/05/2021 2152
Isophorone	ND	80	68		1	85	6.8	30-130	40	09/05/2021 2152
2-Methylnaphthalene	ND	80	71		1	89	2.3	40-132	40	09/05/2021 2152
2-Methylphenol	ND	80	82		1	103	4.4	30-130	40	09/05/2021 2152
3+4-Methylphenol	ND	80	79		1	99	0.56	30-130	40	09/05/2021 2152
Naphthalene	ND	80	71		1	89	3.4	30-130	40	09/05/2021 2152
2-Nitroaniline	ND	80	61		1	76	3.4	30-130	40	09/05/2021 2152
3-Nitroaniline	ND	80	43		1	53	0.43	30-130	40	09/05/2021 2152
4-Nitroaniline	ND	80	52		1	65	2.3	30-135	40	09/05/2021 2152
Nitrobenzene	ND	80	74		1	92	8.9	30-130	40	09/05/2021 2152
2-Nitrophenol	ND	80	73		1	91	2.8	30-130	40	09/05/2021 2152
4-Nitrophenol	ND	160	140		1	87	5.1	30-130	40	09/05/2021 2152
N-Nitrosodi-n-propylamine	ND	80	84		1	104	8.7	30-130	40	09/05/2021 2152
N-Nitrosodiphenylamine (Diphenylamine)	ND	80	71		1	89	1.8	30-123	40	09/05/2021 2152
Pentachlorophenol	ND	160	120		1	74	3.4	30-130	40	09/05/2021 2152
Phenanthrene	ND	80	67		1	83	0.64	40-123	40	09/05/2021 2152
Phenol	ND	80	79		1	99	5.1	30-130	40	09/05/2021 2152
Pyrene	ND	80	74		1	92	2.3	40-126	40	09/05/2021 2152
2,4,5-Trichlorophenol	ND	80	67		1	83	3.0	30-123	40	09/05/2021 2152
2,4,6-Trichlorophenol	ND	80	73		1	91	0.14	30-130	40	09/05/2021 2152

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		92	37-129
2-Fluorophenol		88	24-127
Nitrobenzene-d5		86	38-127
Phenol-d5		104	28-128
Terphenyl-d14		94	10-148
2,4,6-Tribromophenol		83	35-144

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TCLP Semivolatiles - MB

Sample ID: WQ14793-001
Batch: 14793
Analytical Method: 8270E

Matrix: Solid
Prep Method: 1311/3520C
Prep Date: 09/08/2021 1830 Leachate Date: 09/02/2021 0041

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
1,4-Dichlorobenzene	ND		1	0.040	0.0050	mg/L	09/10/2021 1703
2,4-Dinitrotoluene	ND		1	0.080	0.0050	mg/L	09/10/2021 1703
Hexachlorobenzene	ND		1	0.040	0.0050	mg/L	09/10/2021 1703
Hexachlorobutadiene	ND		1	0.040	0.0050	mg/L	09/10/2021 1703
Hexachloroethane	ND		1	0.040	0.010	mg/L	09/10/2021 1703
2-Methylphenol	ND		1	0.040	0.010	mg/L	09/10/2021 1703
3+4-Methylphenol	ND		1	0.040	0.015	mg/L	09/10/2021 1703
Nitrobenzene	ND		1	0.040	0.015	mg/L	09/10/2021 1703
Pentachlorophenol	ND		1	0.20	0.020	mg/L	09/10/2021 1703
Pyridine	ND		1	0.040	0.0050	mg/L	09/10/2021 1703
2,4,5-Trichlorophenol	ND		1	0.040	0.0050	mg/L	09/10/2021 1703
2,4,6-Trichlorophenol	ND		1	0.040	0.0050	mg/L	09/10/2021 1703

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		76	37-129
2-Fluorophenol		47	24-127
Nitrobenzene-d5		81	38-127
Phenol-d5		71	28-128
Terphenyl-d14		67	10-148
2,4,6-Tribromophenol		78	41-144

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
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N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

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TCLP Semivolatiles - LCS

Sample ID: WQ14793-002
Batch: 14793
Analytical Method: 8270E

Matrix: Solid
Prep Method: 1311/3520C
Prep Date: 09/08/2021 1830 Leachate Date: 09/02/2021 0041

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
1,4-Dichlorobenzene	0.40	0.28		1	70	30-130	09/10/2021 1728
2,4-Dinitrotoluene	0.40	0.28		1	69	30-130	09/10/2021 1728
Hexachlorobenzene	0.40	0.31		1	78	30-130	09/10/2021 1728
Hexachlorobutadiene	0.40	0.24		1	61	30-130	09/10/2021 1728
Hexachloroethane	0.40	0.30		1	75	30-130	09/10/2021 1728
2-Methylphenol	0.40	0.36		1	91	30-130	09/10/2021 1728
3+4-Methylphenol	0.80	0.86		1	108	30-130	09/10/2021 1728
Nitrobenzene	0.40	0.33		1	81	30-130	09/10/2021 1728
Pentachlorophenol	0.40	0.33		1	82	30-130	09/10/2021 1728
Pyridine	0.40	0.45		1	112	30-130	09/10/2021 1728
2,4,5-Trichlorophenol	0.40	0.30		1	76	30-130	09/10/2021 1728
2,4,6-Trichlorophenol	0.40	0.28		1	71	30-130	09/10/2021 1728

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		75	37-129
2-Fluorophenol		43	24-127
Nitrobenzene-d5		83	38-127
Phenol-d5		77	28-128
Terphenyl-d14		83	10-148
2,4,6-Tribromophenol		74	41-144

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
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N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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ICP-AES Metals - MB

Sample ID: WQ14155-001
Batch: 14155
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 09/02/2021 0627

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Aluminum	ND		1	0.40	0.10	mg/L	09/02/2021 1508
Antimony	ND		1	0.020	0.0070	mg/L	09/02/2021 1508
Arsenic	ND		1	0.015	0.0025	mg/L	09/02/2021 1508
Barium	ND		1	0.025	0.0031	mg/L	09/03/2021 1204
Beryllium	ND		1	0.0050	0.00060	mg/L	09/02/2021 1508
Boron	ND		1	0.050	0.020	mg/L	09/02/2021 1508
Cadmium	ND		1	0.0050	0.00060	mg/L	09/02/2021 1508
Calcium	ND		1	5.0	0.63	mg/L	09/02/2021 1508
Chromium	ND		1	0.010	0.0013	mg/L	09/02/2021 1508
Cobalt	ND		1	0.025	0.0031	mg/L	09/02/2021 1508
Copper	ND		1	0.010	0.0020	mg/L	09/02/2021 1508
Iron	ND		1	0.10	0.040	mg/L	09/02/2021 1508
Lead	ND		1	0.010	0.0047	mg/L	09/02/2021 1508
Magnesium	ND		1	5.0	0.63	mg/L	09/02/2021 1508
Manganese	ND		1	0.015	0.0019	mg/L	09/02/2021 1508
Molybdenum	ND		1	0.040	0.0050	mg/L	09/02/2021 1508
Nickel	ND		1	0.040	0.0050	mg/L	09/02/2021 1508
Potassium	ND		1	5.0	0.63	mg/L	09/02/2021 1508
Selenium	ND		1	0.020	0.0085	mg/L	09/02/2021 1508
Silver	ND		1	0.010	0.0021	mg/L	09/02/2021 1508
Sodium	ND		1	5.0	0.63	mg/L	09/02/2021 1508
Thallium	ND		1	0.050	0.0063	mg/L	09/02/2021 1508
Tin	ND		1	0.050	0.0063	mg/L	09/02/2021 1508
Titanium	ND		1	0.050	0.0063	mg/L	09/02/2021 1508
Vanadium	ND		1	0.050	0.0063	mg/L	09/02/2021 1508
Zinc	ND		1	0.020	0.0025	mg/L	09/02/2021 1508

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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ICP-AES Metals - LCS

Sample ID: WQ14155-002
Batch: 14155
Analytical Method: 6010D

Matrix: Aqueous
Prep Method: 3005A
Prep Date: 09/02/2021 0627

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Aluminum	20	20		1	101	80-120	09/02/2021 1512
Antimony	0.40	0.35		1	88	80-120	09/02/2021 1512
Arsenic	0.40	0.39		1	97	80-120	09/02/2021 1512
Barium	2.0	2.0		1	98	80-120	09/03/2021 1208
Beryllium	2.0	2.0		1	99	80-120	09/02/2021 1512
Boron	0.40	0.35		1	88	80-120	09/02/2021 1512
Cadmium	0.40	0.36		1	90	80-120	09/02/2021 1512
Calcium	40	42		1	105	80-120	09/02/2021 1512
Chromium	2.0	2.0		1	100	80-120	09/02/2021 1512
Cobalt	2.0	1.9		1	95	80-120	09/02/2021 1512
Copper	2.0	2.0		1	98	80-120	09/02/2021 1512
Iron	20	21		1	105	80-120	09/02/2021 1512
Lead	0.40	0.37		1	93	80-120	09/02/2021 1512
Magnesium	40	41		1	102	80-120	09/02/2021 1512
Manganese	2.0	2.1		1	104	80-120	09/02/2021 1512
Molybdenum	2.0	1.8		1	92	80-120	09/02/2021 1512
Nickel	2.0	1.9		1	96	80-120	09/02/2021 1512
Potassium	40	41		1	101	80-120	09/02/2021 1512
Selenium	0.40	0.37		1	93	80-120	09/02/2021 1512
Silver	0.40	0.40		1	101	80-120	09/02/2021 1512
Sodium	40	41		1	102	80-120	09/02/2021 1512
Thallium	0.80	0.81		1	102	80-120	09/02/2021 1512
Tin	0.40	0.38		1	95	80-120	09/02/2021 1512
Titanium	0.40	0.40		1	99	80-120	09/02/2021 1512
Vanadium	2.0	2.0		1	100	80-120	09/02/2021 1512
Zinc	2.0	1.9		1	94	80-120	09/02/2021 1512

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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TCLP Metals - MB

Sample ID: WQ14330-001
Batch: 14330
Analytical Method: 6010D

Matrix: Solid
Prep Method: 1311/3010A
Prep Date: 09/03/2021 0121 Leachate Date: 09/02/2021 0041

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Arsenic	ND		1	0.15	0.025	mg/L	09/03/2021 1043
Barium	ND		1	0.25	0.031	mg/L	09/03/2021 1043
Cadmium	ND		1	0.050	0.0060	mg/L	09/03/2021 1043
Chromium	ND		1	0.10	0.013	mg/L	09/03/2021 1043
Lead	ND		1	0.10	0.047	mg/L	09/03/2021 1043
Selenium	ND		1	0.20	0.085	mg/L	09/03/2021 1043
Silver	ND		1	0.10	0.021	mg/L	09/03/2021 1043

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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TCLP Metals - LCS

Sample ID: WQ14330-002
Batch: 14330
Analytical Method: 6010D

Matrix: Solid
Prep Method: 1311/3010A
Prep Date: 09/03/2021 0121 Leachate Date: 09/02/2021 0041

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	50	48		1	95	80-120	09/03/2021 1047
Barium	100	100		1	105	80-120	09/03/2021 1047
Cadmium	10	9.2		1	92	80-120	09/03/2021 1047
Chromium	50	46		1	92	80-120	09/03/2021 1047
Lead	50	45		1	90	80-120	09/03/2021 1047
Selenium	10	9.4		1	94	80-120	09/03/2021 1047
Silver	10	9.8		1	98	80-120	09/03/2021 1047

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
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N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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TCLP Metals - MS

Sample ID: WH26123-001MS
Batch: 14330
Analytical Method: 6010D

Matrix: Solid
Prep Method: 1311/3010A
Prep Date: 09/03/2021 0121 Leachate Date: 09/02/2021 0041

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Arsenic	ND	50	49		1	98	75-125	09/03/2021 1058
Barium	0.52	100	110		1	111	75-125	09/03/2021 1058
Cadmium	ND	10	9.3		1	93	75-125	09/03/2021 1058
Chromium	0.020	50	50		1	100	75-125	09/03/2021 1058
Lead	ND	50	47		1	93	75-125	09/03/2021 1058
Selenium	ND	10	9.7		1	97	75-125	09/03/2021 1058
Silver	ND	10	10		1	103	75-125	09/03/2021 1058

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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TCLP Metals - MSD

Sample ID: WH26123-001MD
Batch: 14330
Analytical Method: 6010D

Matrix: Solid
Prep Method: 1311/3010A
Prep Date: 09/03/2021 0121 Leachate Date: 09/02/2021 0041

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	%Rec Limit	% RPD Limit	Analysis Date
Arsenic	ND	50	50		1	99	1.0	75-125	20	09/03/2021 1120
Barium	0.52	100	100		1	103	7.9	75-125	20	09/03/2021 1120
Cadmium	ND	10	9.4		1	94	1.0	75-125	20	09/03/2021 1120
Chromium	0.020	50	48		1	95	4.5	75-125	20	09/03/2021 1120
Lead	ND	50	48		1	95	2.1	75-125	20	09/03/2021 1120
Selenium	ND	10	9.8		1	98	0.68	75-125	20	09/03/2021 1120
Silver	ND	10	9.8		1	98	5.3	75-125	20	09/03/2021 1120

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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TCLP Metals - MB

Sample ID: WQ14392-001
Batch: 14392
Analytical Method: 7470A

Matrix: Solid
Prep Method: 1311/7470A
Prep Date: 09/03/2021 1427 Leachate Date: 09/02/2021 0041

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
Mercury	ND		1	0.0020	0.00091	mg/L	09/03/2021 1827

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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TCLP Metals - LCS

Sample ID: WQ14392-002
Batch: 14392
Analytical Method: 7470A

Matrix: Solid
Prep Method: 1311/7470A
Prep Date: 09/03/2021 1427 Leachate Date: 09/02/2021 0041

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
Mercury	0.020	0.018		1	92	80-120	09/03/2021 1830

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

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Chain of Custody
and
Miscellaneous Documents

Pace Analytical®

PACE ANALYTICAL SERVICES, LLC
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.pacelabs.com

Number 124583

Client: AECOM	Report to Contact: Scott Ross	Telephone No. / E-mail: (803) 791-9662 sross@aecom.com	Quote No.
Address: 101 Research Dr.	Sampler's Signature:	Analysis (Attach list if more space is needed)	Page 1 of 2
City: Columbia State: SC Zip Code: 29203	Printed Name: Scott E Ross		
Project Name: PS - Shakespeare			
Project No.: 60635197	P.O. No.		

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	# Grab Containers	Matrix: Aqueous	Matrix: Solid	Matrix: Non-aqueous	No. of Containers by Preservative Type: Unpres.	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Field Filtered	TCLP VOCs	TCLP SVOCs	TCLP Metals	VOCs	SVOCs	Metals			Remarks / Cooler I.D.
Soil IDW	3/24/21	1100	C		X		X							X	X	X						
Liquid IDW	"	1120	C	X					X	X							X	X	X			

WH26123
HKL

Turn Around Time Required (Prior lab approval required for expedited TAT.): X Standard _ Rush (Specify)

Sample Disposal: ☐ Return to Client ☒ Disposal by Lab

Possible Hazard Identification: X Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by	3/25/21	1336	1. Received by		
2. Relinquished by	Date	Time	2. Received by	Date	Time
3. Relinquished by	Date	Time	3. Received by	Date	Time
4. Relinquished by	Date	Time	4. Laboratory received by	Date 3/26/21	Time 1338

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Circle) (Yes) No Ice Pack Receipt Temp. 4.3 °C
Temp Blank ☒ Y ☐ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N2-01

Pace Analytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020

Sample Receipt Checklist (SRC)

Client: AECOM Cooler Inspected by/date: JSM / 08/26/2021 Lot #: WH26123

Means of receipt: ☑ Pace ☐ Client ☐ UPS ☐ FedEx ☐ Other:

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: 21-852 Chlorine Strip ID: NA Tested by: JSM

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

4.3 / 4.3 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☐ Temperature Blank ☑ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

Method of coolant: ☐ Wet Ice ☐ Ice Packs ☐ Dry Ice ☑ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☑ No	☐ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea size" (¼"or 6mm in diameter) in any of the VOA vials?
☑ Yes	☐ No	☐ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote # 28222

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is ***no***) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: JSM Date: 08/26/2021

Comments:

Appendix F

Historic Groundwater Data Summary Tables for 2014 to 2022

Table F-1
Shallow Monitoring Well Sample Results
2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Main Building																					
Sample ID		**MW-1**				**MW-1-PDB**	**MW-2**			**MW-3**				**MW-4**			**MW-5**						
Laboratory ID	USEPA	PE22065-001	QG08070-003	SF20036-001	XC02133-010	XC02133-009	QG08070-008	SF13096-005	XC01066-006	QG08070-004	SF12046-002	SF12046-002	XB24099-007	QG08070-006	SF12046-005	XB28047-001	QG08070-001	SF12046-004	XB24099-014				
Date Collected	MCL	05/22/14	07/07/15	06/19/17	03/02/22	03/02/22	07/08/15	06/13/17	03/01/22	07/07/15	06/12/17	06/12/17	02/23/22	07/08/15	06/12/17	02/28/22	07/07/15	06/12/17	02/24/22				
Volatile Organic Compounds by USEPA Method 8260B (µg/L)																							
1,1,1-Trichloroethane	200	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
1,1,2,2-Tetrachloroethane	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	< 5	< 5	< 5	< 1	< 1	< 5	< 5	< 1	< 5	< 5	< 5	< 1	< 5	< 5	< 1	< 5	< 5	< 1				
1,1,2-Trichloroethane	5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
1,1-Dichloroethane	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
1,1-Dichloroethene	7	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	**0.46 J//**	< 0.5	< 5	< 5	< 0.5				
1,2,4-Trichlorobenzene	70	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
1,2-Dibromo-3-chloropropane (DBCP)	0.2	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
1,2-Dibromoethane (EDB)	0.05	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
1,2-Dichlorobenzene	600	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
1,2-Dichloroethane	5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	**1.1**				
1,2-Dichloropropane	5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
1,3-Dichlorobenzene	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
1,4-Dichlorobenzene	75	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
2-Butanone (MEK)	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10				
2-Hexanone	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10				
4-Methyl-2-pentanone	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10				
Acetone	NS	< 20	< 20	< 20	< 10	**4.7 J//**	< 20	< 20	< 10	< 20	< 20	< 20	< 10	< 20	< 20	**4.8 J//**	< 20	**6.4 J/B/T**	**4 J/B/F**				
Benzene	5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	**0.53**	**0.58 J//**	**0.6**	< 5	< 5	< 0.5				
Bromodichloromethane	80 [1]	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
Bromoform	80 [1]	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
Bromomethane (Methyl bromide)	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
Carbon disulfide	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
Carbon tetrachloride	5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
Chlorobenzene	100	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
Chloroethane	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
Chloroform	80 [1]	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	**0.9**	**2 J//**	**1.1**				
Chloromethane (Methyl chloride)	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
cis-1,2-Dichloroethene	70	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	**14**	**12**	**5.1**	< 5	< 5	**0.58**				
cis-1,3-Dichloropropene	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
Cyclohexane	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
Dibromochloromethane	80 [1]	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
Dichlorodifluoromethane	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
Ethylbenzene	700	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
Isopropylbenzene	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
Methyl acetate	NS	< 5	< 5	< 5	< 1	< 1	< 5	< 5	< 1	< 5	< 5	< 5	< 1	< 5	< 5	< 1	< 5	< 5	< 1				
Methyl tertiary butyl ether (MTBE)	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
Methylcyclohexane	NS	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5				
Methylene chloride	5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
Styrene	100	**0.45 J//**	< 5	< 5	< 0.5	< 0.5	< 5	< 5	**5.1**	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
Tetrachloroethene	5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
Toluene	1000	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	**0.8**	< 5	< 0.5				
trans-1,2-Dichloroethene	100	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	**0.87**	< 5	< 0.5	< 5	< 5	< 0.5				
trans-1,3-Dichloropropene	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
Trichloroethene (TCE)	5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	**3.5**	**3.3 J//**	< 0.5	**71**	**11**	**240**				
Trichlorofluoromethane	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5				
Vinyl chloride	2	< 2	< 2	< 2	< 0.5	< 0.5	< 2	< 2	< 0.5	< 2	< 2	< 2	< 0.5	< 2	< 2	< 0.5	< 2	< 2	< 0.5				
Xylenes (total)	10000	< 5	< 5	< 5	< 1	< 1	< 5	< 5	< 1	< 5	< 5	< 5	< 1	< 5	< 5	< 1	< 5	< 5	< 1				
Metals by USEPA Method 6010 and SM 3500-Fe B-2011 (mg/L)																							
Iron	0.3 [2]	**0.023 J**	NA	**0.11**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.052 J//**				
Manganese	0.05 [2]	**0.23**	NA	**0.035**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA				
Dissolved Iron	0.3 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1				
Dissolved Manganese	0.05 [2]	**0.22**	NA	**0.018**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA				
Ferrous Iron	NS	NA	NA	< 0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.05				
Ferric Iron (calculation)	NS	**0.063**	NA	**0.077 J//**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA				
Alkalinity by USEPA Method SM 2320B-2011 (mg/L)																							
Alkalinity	NS	< 10	NA	**3.1 J//**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 20				
Chloride, Nitrate, Nitrite, and Sulfate by USEPA Method 300.0 (mg/L)																							
Chloride	250 [2]	NA	NA	**2.2**	NA	NA	NA	NA	**2.2**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA				
Nitrate	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.3 B//**				
Nitrite	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.02				
Sulfate	250 [2]	**11**	NA	**0.7 J//**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1				
Sulfide by USEPA Method SM 4500-S2 F-2011 (mg/L)																							
Sulfide	NS	< 1	NA	< 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA				
Dissolved Gases by USEPA Method AM20GAX (ug/L)																							
Ethane	NS	0.25	NA	**0.01 Jn**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 10				
Methane	NS	**0.49**	NA	**47 n**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**5.6 J//**				
Carbon Dioxide	NS	NS	NA	**27000 n**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA				
Ethene	NS	**0.092**	NA	**0.0047 Jn**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 10				
Total Organic Carbon by USEPA Method SM 5310C-2014 (mg/L)																							
TOC	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.6**				

Table F-1
Shallow Monitoring Well Sample Results
2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Main Building																		
Sample ID		**MW-1**				**MW-1-PDB**	**MW-2**			**MW-3**				**MW-4**			**MW-5**			
Laboratory ID	USEPA	PE22065-001	QG08070-003	SF20036-001	XC02133-010	XC02133-009	QG08070-008	SF13096-005	XC01066-006	QG08070-004	SF12046-002	SF12046-002	XB24099-007	QG08070-006	SF12046-005	XB28047-001	QG08070-001	SF12046-004	XB24099-014	
Date Collected	MCL	05/22/14	07/07/15	06/19/17	03/02/22	03/02/22	07/08/15	06/13/17	03/01/22	07/07/15	06/12/17	06/12/17	02/23/22	07/08/15	06/12/17	02/28/22	07/07/15	06/12/17	02/24/22	
Microbial																				
Dehalococcoides	NS	< 0.3	NA	< 0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.5**	
Dehalobacter spp	NS	3.6	NA	< 4.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9	
BAV1 Vinyl Chloride Reductase	NS	NA	NA	< 0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.5	
tceA Reductase	NS	NA	NA	< 0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.5	
Vinyl chloride Reductase	NS	NA	NA	< 0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.5	
1,1 DCA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9	
1,2 DCA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9	
cerA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9	
Chloroform Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9	
Dehalobacter DCM	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9	
Dehalobium chlorocoercia	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**384**	
Dehalogenimonas spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9	
Desulfitobacterium spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**13.8**	
Desulfuromonas spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9	
Dichloromethane Dehalogenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9	
Epoxyalkane Transferase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9	
Ethene Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9	
Methanogens	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.6**	**J**
PCE Reductase 1	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9	
PCE Reductase 2	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9	
Phenol Hydroxylase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9	
Soluble Methane Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9	
Sulfate Reducing Bacteria	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**474**	
Toluene Dioxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**6**	
Toluene Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9	
Toluene Monooxygenase 2	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9	
Total Eubacteria	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**5670**	
trans-1,2-DCE Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9	
Trichlorobenzene Dioxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9	

Notes:
-a - Indicates a field duplicate sample.
MCL - Maximum Contaminant Level (USEPA, April 2012)
NS - No Standard
USEPA - United States Environmental Protection Agency
Bold font indicates the analyte was detected.
Bold outline indicates an exceedance of the USEPA MCL.

Table F-1
Shallow Monitoring Well Sample Results
2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Main Building																							
Sample ID		MW-6					MW-7						MW-7-PDB	MW-8				MW-8-PDB	MW-9		
Laboratory ID	USEPA	PE22065-003	QG08070-007	SF20036-002	SF20036-008 (Dup-MW-6A)	XB24099-015	PE22065-002	QG08070-002	QG08070-005 (DUP-1)	SF12046-003	XC03052-004	XC03052-003	PE22065-004	QG08070-009	SF20036-005	XC04096-002	XC04096-001	QG08070-010	SF12046-001	XC04096-004
Date Collected	MCL	05/22/14	07/08/15	06/19/17	06/19/17	02/24/22	05/22/14	07/07/15	07/07/15	06/12/17	03/03/22	03/03/22	05/22/14	07/08/15	06/19/17	03/04/22	03/04/22	07/08/15	06/12/17	03/04/22
Volatile Organic Compounds by USEPA Method 8260B (µg/L)																				
1,1,1-Trichloroethane	200	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
1,1,2,2-Tetrachloroethane	NS	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	< 50	< 25	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 1	< 1	< 50	< 5	< 5	< 5	< 5	< 25	< 5	< 1
1,1,2-Trichloroethane	5	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
1,1-Dichloroethane	NS	< 50	< 25	**0.76 J//**	**0.72 J//**	< 2.5	**1.5 J//**	**1.9 J//**	**1.8 J//**	**1 J//**	**0.55**	**0.43 J//**	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
1,1-Dichloroethene	7	< 50	< 25	**1.5 J//**	**1.5 J//**	< 2.5	**1.9 J//**	**3.6 J//**	**3.5 J//**	**1.8 J//**	**1.1**	**0.84**	< 50	**2.8 J//**	**2.6 J//**	**2.2 J//**	**2.7**	< 25	< 5	< 0.5
1,2,4-Trichlorobenzene	70	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
1,2-Dibromo-3-chloropropane (DBCP)	0.2	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
1,2-Dibromoethane (EDB)	0.05	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
1,2-Dichlorobenzene	600	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
1,2-Dichloroethane	5	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
1,2-Dichloropropane	5	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
1,3-Dichlorobenzene	NS	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
1,4-Dichlorobenzene	75	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
2-Butanone (MEK)	NS	< 100	< 50	< 10	< 10	< 50	< 10	< 10	< 10	< 10	< 10	< 10	< 100	< 10	< 10	**23 J//**	< 50	< 50	< 10	< 10
2-Hexanone	NS	< 100	< 50	< 10	< 10	< 50	< 10	< 10	< 10	< 10	< 10	< 10	< 100	< 10	< 10	< 50	< 50	< 50	< 10	< 10
4-Methyl-2-pentanone	NS	< 100	< 50	< 10	< 10	< 50	< 10	< 10	< 10	< 10	< 10	< 10	< 100	< 10	< 10	< 50	< 50	< 50	< 10	< 10
Acetone	NS	< 200	< 100	< 20	**4.5 J//**	< 50	< 20	< 20	< 20	< 20 /J/E	< 10	**6.2 J//**	< 200	< 20	< 20	< 50	< 50	< 100	< 20 /J/E	**4.5 J//**
Benzene	5	< 50	< 25	**0.66 J//**	**0.63 J//**	< 2.5	**0.29 J//**	**0.36 J//**	**0.5 J//**	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
Bromodichloromethane	80 [1]	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
Bromoform	80 [1]	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
Bromomethane (Methyl bromide)	NS	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
Carbon disulfide	NS	< 50	< 25	< 5	< 5	< 2.5	**0.47 J//**	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
Carbon tetrachloride	5	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
Chlorobenzene	100	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
Chloroethane	NS	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
Chloroform	80 [1]	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	**3.1 J//**	**1.6 J//**	< 2.5	< 2.5	< 25	< 5	< 0.5
Chloromethane (Methyl chloride)	NS	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
cis-1,2-Dichloroethene	70	**620**	**740**	**530**	**430**	**220**	**95**	**110**	**110**	**44**	**48**	**38**	**80**	**78**	**74**	**76**	**83**	**11 J//**	**7**	**11**
cis-1,3-Dichloropropene	NS	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
Cyclohexane	NS	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
Dibromochloromethane	80 [1]	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
Dichlorodifluoromethane	NS [1]	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
Ethylbenzene	700	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
Isopropylbenzene	NS	< 50	**3.1**	**3.6 J//**	**3.4 J//**	< 2.5	**2.1 J//**	**2.2 J//**	**2.2 J//**	< 5	< 0.5	< 0.5	< 50	**0.74 J//**	**0.59 J//**	< 2.5	< 2.5	< 25	< 5	< 0.5
Methyl acetate	NS	< 50	< 25	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 1	< 1	< 50	< 5	< 5	< 5	< 5	< 25	< 5	< 1
Methyl tertiary butyl ether (MTBE)	NS	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
Methylcyclohexane	NS	< 50	< 25	< 5	< 5	< 25	< 5	< 5	< 5	< 5	< 5	< 5	< 50	< 5	< 5	< 25	< 25	< 25	< 5	< 5
Methylene chloride	5	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
Styrene	100	**1.3 J//**	< 25	**2 J//**	**2.9 J//**	**2.5 /B/F**	**0.14 J//**	< 5	< 5	< 5	< 0.5	< 0.5	< 50	**2.2 J//**	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
Tetrachloroethene	5	< 50	< 25	< 5	< 5	**2.7**	< 5	**0.81 J//**	< 5	< 5	< 0.5	< 0.5	**5.7 J//**	**8.4**	**5**	< 2.5	**2.2 J//**	< 25	**1.1 J//**	< 0.5
Toluene	1000	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
trans-1,2-Dichloroethene	100	**18 J//**	**26**	**21**	**19**	**7.8**	**0.87 J//**	**1.5 J//**	**1.6 J//**	< 5	**0.45 J//**	< 0.5	< 50	**3.5 J//**	**6.8**	**3.7**	**4.4**	< 25	< 5	< 0.5
trans-1,3-Dichloropropene	NS	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
Trichloroethene (TCE)	5	**40 J//**	**64**	**27**	**28**	**330**	**19**	**69**	**69**	**190**	**22**	**17**	**890**	**1100**	**650**	**530**	**600**	**340**	**170**	**69**
Trichlorofluoromethane	NS	< 50	< 25	< 5	< 5	< 2.5	< 5	< 5	< 5	< 5	< 0.5	< 0.5	< 50	< 5	< 5	< 2.5	< 2.5	< 25	< 5	< 0.5
Vinyl chloride	2	**23**	**15**	**8.1**	**7.4**	**2 J//**	**3.8**	**3.6**	**3.3**	**0.92 J//**	**1.2**	**0.87**	< 20	< 2	**0.68 J//**	< 2.5	< 2.5	< 10	< 2	< 0.5
Xylenes (total)	10000	< 50	< 25	**0.52 J//**	**0.47 J//**	< 5	< 5	< 5	< 5	< 5	< 1	< 1	< 50	< 5	< 5	< 5	< 5	< 25	< 5	< 1
Metals by USEPA Method 6010 and SM 3500-Fe B-2011 (mg/L)																				
Iron	0.3 [2]	**5.6**	NA	**11**	NA	**5.7**	**0.045 J**	NA	NA	NA	**0.06 J//**	NA	**0.24**	NA	**0.21**	**0.97**	NA	NA	NA	**0.3**
Manganese	0.05 [2]	**0.071**	NA	**0.032**	NA	NA	**0.1**	NA	NA	NA	**0.23**	NA	**0.13**	NA	**0.059**	**0.08**	NA	NA	NA	**0.045**
Dissolved Iron	0.3 [2]	NA	NA	NA	NA	**5.9**	NA	NA	NA	NA	< 0.1	NA	NA	NA	**0.06**	**0.076**	NA	NA	NA	< 0.1
Dissolved Manganese	0.05 [2]	**0.072**	NA	**0.034**	NA	NA	<0.1	NA	NA	NA	**0.22**	NA	**0.17**	NA	NA	NA	NA	NA	NA	**0.043**
Ferrous Iron	NS	**5.7**	NA	**58**	NA	**5.7**	**0.15**	NA	NA	NA	< 0.05	NA	**0.38**	NA	< 0.05	**0.051 H//**	NA	NA	NA	< 0.05 H//
Ferric Iron (calculation)	NS	<0.1	NA	< 0.1	NA	NA	**0.3**	NA	NA	NA	NA	NA	<1.0	NA	**0.19**	NA	NA	NA	NA	NA
Alkalinity by USEPA Method SM 2320B-2011 (mg/L)																				
Alkalinity	NS	**12**	NA	**2.9 J//**	NA	< 20	**5.6 J**	NA	NA	NA	< 20	NA	**11**	NA	< 10	< 20	NA	NA	NA	< 20
Chloride, Nitrate, Nitrite, and Sulfate by USEPA Method 300.0 (mg/L)																				
Chloride	250 [2]	**14**	NA	**15**	NA	NA	**6.1**	NA	NA	NA	**14**	NA	**6.6**	NA	**5.1**	NA	NA	NA	NA	NA
Nitrate	10	NA	NA	NA	NA	**0.053 B//**	NA	NA	NA	NA	< 0.02	NA	NA	NA	NA	**0.053 B//**	NA	NA	NA	**0.69 B//**
Nitrite	1	NA	NA	NA	NA	**0.015 J//**	NA	NA	NA	NA	< 0.02	NA	NA	NA	NA	**0.036**	NA	NA	NA	< 0.02
Sulfate	250 [2]	**2.9**	NA	**4.9**	NA	**1.9**	<1.0	NA	NA	NA	**0.66 J//**	NA	**4.2**	NA	< 1	**0.55 J//**	NA	NA	NA	**0.27 J//**
Sulfide by USEPA Method SM 4500-S2 F-2011 (mg/L)																				
Sulfide	NS	**0.9**	NA	< 1	NA	NA	<1.0	NA	NA	NA	NA	NA	<1	NA	< 1	NA	NA	NA	NA	NA
Dissolved Gases by USEPA Method AM20GAX (ug/L)																				
Ethane	NS	**0.18**	NA	**0.084 J n**	NA	< 10	**0.012J**	NA	NA	NA	< 10	NA	0.041	NA	**0.014 Jn**	< 10	NA	NA	NA	< 10
Methane	NS	**400**	NA	**560 n**	NA	**790**	**79**	NA	NA	NA	**69 B//**	NA	150	NA	**340 n**	**220**	NA	NA	NA	**4.2 J//**
Carbon Dioxide	NS		NA	**260000**	NA	NA		NA	NA	NA	NA	NA		NA	**210000**	NA	NA	NA	NA	NA
Ethene	NS	**0.5**	NA	**0.13 n**	NA	< 10	**0.0075J**	NA	NA	NA	< 10	NA	0.039	NA	**0.03 Jn**	< 10	NA	NA	NA	< 10
Total Organic Carbon by USEPA Method SM 5310C-2014 (mg/L)																				
TOC	NS	NA	NA	NA	NA	**1.4**	NA	NA	NA	NA	**1.5**	NA	NA	NA	NA	**1.8**	NA	NA	NA	< 1

Table F-1
Shallow Monitoring Well Sample Results
2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Main Building																		
Sample ID		**MW-6**					**MW-7**					**MW-7-PDB**	**MW-8**				**MW-8-PDB**	**MW-9**		
Laboratory ID	USEPA	PE22065-003	QG08070-007	SF20036-002	SF20036-008 (Dup-MW-6A)	XB24099-015	PE22065-002	QG08070-002	QG08070-005 (DUP-1)	SF12046-003	XC03052-004	XC03052-003	PE22065-004	QG08070-009	SF20036-005	XC04096-002	XC04096-001	QG08070-010	SF12046-001	XC04096-004
Date Collected	MCL	05/22/14	07/08/15	06/19/17	06/19/17	02/24/22	05/22/14	07/07/15	07/07/15	06/12/17	03/03/22	03/03/22	05/22/14	07/08/15	06/19/17	03/04/22	03/04/22	07/08/15	06/12/17	03/04/22
Microbial																				
Dehalococcoides	NS	**34.1**	NA	**5.1**	NA	**6.5**	<0.3	NA	NA	NA	< 0.5	NA	**0.6**	NA	<0.5	< 0.5	NA	NA	NA	< 0.5
Dehalobacter spp	NS	**3110**	NA	**4550**	NA	**200**	<3	NA	NA	NA	< 4.8	NA	**256**	NA	<4.6	< 5	NA	NA	NA	< 4.7
BAV1 Vinyl Chloride Reductase	NS	NA	NA	**0.1 J**	NA	< 0.5	NA	NA	NA	NA	< 0.5	NA	NA	NA	<0.5	< 0.5	NA	NA	NA	< 0.5
tceA Reductase	NS	NA	NA	**0.1 J**	NA	< 0.5	NA	NA	NA	NA	< 0.5	NA	NA	NA	<0.5	< 0.5	NA	NA	NA	< 0.5
Vinyl chloride Reductase	NS	NA	NA	**0.4 J**	NA	< 0.5	NA	NA	NA	NA	< 0.5	NA	NA	NA	<0.5	< 0.5	NA	NA	NA	< 0.5
1,1 DCA Reductase	NS	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 5	NA	NA	NA	< 4.7
1,2 DCA Reductase	NS	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 5	NA	NA	NA	< 4.7
cerA Reductase	NS	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 5	NA	NA	NA	< 4.7
Chloroform Reductase	NS	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 5	NA	NA	NA	< 4.7
Dehalobacter DCM	NS	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 5	NA	NA	NA	< 4.7
Dehalobium chlorocoercia	NS	NA	NA	NA	NA	**2470**	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 5	NA	NA	NA	< 4.7
Dehalogenimonas spp	NS	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 5	NA	NA	NA	< 4.7
Desulfitobacterium spp	NS	NA	NA	NA	NA	**4470**	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 5	NA	NA	NA	**13.3**
Desulfuromonas spp	NS	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 5	NA	NA	NA	< 4.7
Dichloromethane Dehalogenase	NS	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 5	NA	NA	NA	< 4.7
Epoxyalkane Transferase	NS	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 5	NA	NA	NA	< 4.7
Ethene Monooxygenase	NS	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 5	NA	NA	NA	< 4.7
Methanogens	NS	NA	NA	NA	NA	**1410**	NA	NA	NA	NA	**1.4 J**	NA	NA	NA	NA	< 5	NA	NA	NA	**1.5 J**
PCE Reductase 1	NS	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 5	NA	NA	NA	< 4.7
PCE Reductase 2	NS	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 5	NA	NA	NA	< 4.7
Phenol Hydroxylase	NS	NA	NA	NA	NA	**45.5**	NA	NA	NA	NA	**2.7 J**	NA	NA	NA	NA	< 5	NA	NA	NA	**528**
Soluble Methane Monooxygenase	NS	NA	NA	NA	NA	**139**	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 5	NA	NA	NA	< 4.7
Sulfate Reducing Bacteria	NS	NA	NA	NA	NA	**38900**	NA	NA	NA	NA	**9.8**	NA	NA	NA	NA	< 5	NA	NA	NA	< 4.7
Toluene Dioxygenase	NS	NA	NA	NA	NA	**22.2**	NA	NA	NA	NA	**0.3 J**	NA	NA	NA	NA	< 5	NA	NA	NA	< 4.7
Toluene Monooxygenase	NS	NA	NA	NA	NA	**3220**	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 5	NA	NA	NA	**4430**
Toluene Monooxygenase 2	NS	NA	NA	NA	NA	**208**	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 5	NA	NA	NA	**39.9**
Total Eubacteria	NS	NA	NA	NA	NA	**88900**	NA	NA	NA	NA	**5850**	NA	NA	NA	NA	**573 I**	NA	NA	NA	**326000**
trans-1,2-DCE Reductase	NS	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 5	NA	NA	NA	< 4.7
Trichlorobenzene Dioxygenase	NS	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 4.8	NA	NA	NA	NA	< 5	NA	NA	NA	< 4.7

Notes:
-a - Indicates a field duplicate sample.
MCL - Maximum Contaminant Level (USEPA, April 2012)
NS - No Standard
USEPA - United States Environmental Protection Agency
Bold font indicates the analyte was detected.
Bold outline indicates an exceedance of the USEPA MCL.

Table F-1
Shallow Monitoring Well Sample Results
2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Main Building																														
Sample ID		**MW-9-PDB**		**TMW-21**			**TMW-22**			**TMW-23**			**TMW-29**			**TMW-30**			**TMW-31**			**MW-22**											
Laboratory ID	USEPA	XC04096-003		QG09023-006		SF14078-001	XB28047-005	QG09023-005		SF14078-002	XB28047-006	QG09023-003		SF14078-003	XC01061-002	PF04097-011	XC01066-003	QG09023-004		SF14078-004	XC01061-001	QG09023-002		SF14078-005	XC01066-004	QI08038-005	SF13096-006		XB24099-017			
Date Collected	MCL	03/04/22		07/09/15		06/14/17	02/28/22	07/09/15		06/14/17	02/28/22	07/09/15		06/14/17	03/01/22	06/04/14	03/01/22	07/09/15		06/14/17	03/01/22	07/09/15		06/14/17	03/01/22	09/08/15	06/13/17		02/24/22			
Volatile Organic Compounds by USEPA Method 8260B (µg/L)																																
1,1,1-Trichloroethane	200	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
1,1,2,2-Tetrachloroethane	NS	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	< 1		< 100		< 100	< 1	< 25		< 50	< 1	< 5		< 5	< 10	< 5	< 1	< 5		< 5	< 1	< 25		< 100	< 5	< 5	< 5		< 1			
1,1,2-Trichloroethane	5	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	**0.3**	**J//**	< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
1,1-Dichloroethane	NS	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
1,1-Dichloroethene	7	< 0.5		< 100		< 100	**3.9**	< 25		< 50	**3.1**	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
1,2,4-Trichlorobenzene	70	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
1,2-Dibromo-3-chloropropane (DBCP)	0.2	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
1,2-Dibromoethane (EDB)	0.05	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
1,2-Dichlorobenzene	600	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
1,2-Dichloroethane	5	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
1,2-Dichloropropane	5	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
1,3-Dichlorobenzene	NS	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
1,4-Dichlorobenzene	75	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
2-Butanone (MEK)	NS	< 10		< 200		< 200	**8**	**J//**	< 50	< 100	**2.8**	**J//**	< 10	< 10	< 100	< 10	< 10	< 10		< 10	< 10	< 50		< 200	< 50	< 10	< 10		< 10			
2-Hexanone	NS	< 10		< 200		< 200	< 10		< 50	< 100	< 10		< 10	< 10	< 100	< 10	< 10	< 10		< 10	< 10	< 50		< 200	< 50	< 10	< 10		< 10			
4-Methyl-2-pentanone	NS	< 10		< 200		< 200	< 10		< 50	< 100	< 10		< 10	< 10	< 100	< 10	< 10	< 10		< 10	< 10	< 50		< 200	< 50	< 10	< 10		< 10			
Acetone	NS	< 10		< 400		**41**	**J/B/T**	**100**		**58**	**J//**	**35**	**J/B/T**	**38**		**19**	**J//**	**29**	**/B/T**	< 100	**55**	**7.9**	**J//**	**21**		**11**	**J/B/T**	**12**		**51**	**J//**	**70**	**J/B/T**	< 50	**6.5**	**J//**	< 20	< 10		
Benzene	5	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
Bromodichloromethane	80 [1]	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	**0.6**	**J//**		< 5	< 0.5		
Bromoform	80 [1]	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
Bromomethane (Methyl bromide)	NS	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
Carbon disulfide	NS	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
Carbon tetrachloride	5	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
Chlorobenzene	100	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
Chloroethane	NS	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
Chloroform	80 [1]	< 0.5		**9.5**	**J//**	< 100	**1.3**	**6.6**	**J//**	**5.7**	**J//**	**0.87**		< 5	**0.8**	**J//**	**8.9**	< 5	< 0.5	**6.1**		**3.3**	**J//**	**2.1**	< 25	< 100	< 2.5	**2.3**	**J//**	**0.5**	**J//**	< 0.5		
Chloromethane (Methyl chloride)	NS	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
cis-1,2-Dichloroethene	70	**11**		**58**	**J//**	**50**	**J//**	**130**	**31**		**33**	**J//**	**49**		**6.3**		**3.8**	**J//**	< 5	< 0.5	**5.6**		**1.2**	**J//**	< 0.5	**2**	**J//**	**9.3**	**J//**	**3**	< 5	< 5	< 0.5		
cis-1,3-Dichloropropene	NS	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
Cyclohexane	NS	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
Dibromochloromethane	80 [1]	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
Dichlorodifluoromethane	NS	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
Ethylbenzene	700	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
Isopropylbenzene	NS	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
Methyl acetate	NS	< 1		< 100		**8.1**	**J//**	< 1	< 25		< 50	< 1		< 5	< 10	< 5	< 1	< 5		< 5	< 1	< 25		< 100	< 5	< 5	< 5		< 1			
Methyl tertiary butyl ether (MTBE)	NS	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
Methylcyclohexane	NS	< 5		< 100		< 100	< 5	< 25		< 50	< 5	< 5		< 5	< 50	< 5	< 5	< 5		< 5	< 5	< 25		< 100	< 25	< 5	< 5		< 5			
Methylene chloride	5	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
Styrene	100	< 0.5		**8.6**	**J//**	< 100	**56**	**24**	**J//**	**18**	**J//**	**31**		**68**		**43**	**20**	**81**	**120**	**32**		**6.9**	**18**	**27**	**18**	**J//**	< 2.5	< 5	< 5		< 0.5			
Tetrachloroethene	5	< 0.5		**7.2**	**J//**	< 100	**1.1**	**4.4**	**J//**	< 50	**0.95**	**0.7**	**J//**	**1.7**	**J//**	< 5	< 5	< 0.5	**0.9**	**J//**	**0.6**	**J//**	< 0.5	< 25	< 100	< 2.5	< 5	< 5		< 0.5			
Toluene	1000	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
trans-1,2-Dichloroethene	100	< 0.5		< 100		< 100	**5.1**	< 25		< 50	**2.2**	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
trans-1,3-Dichloropropene	NS	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
Trichloroethene (TCE)	5	**73**		**1000**		**890**	**260**	**680**		**440**	**220**	**92**		**170**	**420**	**25**	**9.3**	**150**	**/M/m**	**74**	**20**	**330**		**1400**	**480**	< 5	< 5		< 0.5			
Trichlorofluoromethane	NS	< 0.5		< 100		< 100	< 0.5	< 25		< 50	< 0.5	< 5		< 5	< 5	< 5	< 0.5	< 5		< 5	< 0.5	< 25		< 100	< 2.5	< 5	< 5		< 0.5			
Vinyl chloride	2	< 0.5		< 40		< 40	**0.89**	< 10		< 20	**0.4**	**J//**	< 2		< 2	< 5	< 2	< 0.5	< 2		< 2	< 0.5	< 10		< 40	< 2.5	< 2	< 2		< 0.5			
Xylenes (total)	10000	< 1		< 100		< 100	< 1	< 25		< 50	< 1	< 5		< 5	< 10	< 5	< 1	< 5		< 5	< 1	< 25		< 100	< 5	< 5	< 5		< 1			
Metals by USEPA Method 6010 and SM 3500-Fe B-2011 (mg/L)																																
Iron	0.3 [3]	NA		NA		NA	< 0.1	NA		NA	< 0.1	NA		NA	NA	NA	NA	NA		NA	NA	NA		NA	NA	NA	NA		< 0.1			
Manganese	0.05 [2]	NA		NA		NA	NA	NA		NA	NA	NA		NA	NA	NA	NA	NA		NA	NA	NA		NA	NA	NA	NA		NA			
Dissolved Iron	0.3 [2]	NA		NA		NA	< 0.1	NA		NA	< 0.1	NA		NA	NA	NA	NA	NA		NA	NA	NA		NA	NA	NA	NA		< 0.1			
Dissolved Manganese	0.05 [2]	NA		NA		NA	NA	NA		NA	NA	NA		NA	NA	NA	NA	NA		NA	NA	NA		NA	NA	NA	NA		NA			
Ferrous Iron	NS	NA		NA		NA	**0.089**	NA		NA	< 0.05	NA		NA	NA	NA	NA	NA		NA	NA	NA		NA	NA	NA	NA		< 0.05			
Ferric Iron (calculation)	NS	NA		NA		NA	NA	NA		NA	NA	NA		NA	NA	NA	NA	NA		NA	NA	NA		NA	NA	NA	NA		NA			
Alkalinity by USEPA Method SM 2320B-2011 (mg/L)																																
Alkalinity	NS	NA		NA		NA	< 20	NA		NA	< 20	NA		NA	NA	NA	NA	NA		NA	NA	NA		NA	NA	NA	NA		< 20			
Chloride, Nitrate, Nitrite, and Sulfate by USEPA Method 300.0 (mg/L)																																
Chloride	250 [2]	NA		NA		NA	NA	NA		NA	NA	NA		NA	NA	NA	**2.8**	NA		NA	NA	NA		NA	**6**	NA	NA		NA			
Nitrate	10	NA		NA		NA	**0.37**	NA		NA	**0.026**	NA		NA	NA	NA	NA	NA		NA	NA	NA		NA	NA	NA	NA		**1.2**	**B//**		
Nitrite	1	NA		NA		NA	**0.011**	**J//**	NA		NA	< 0.02		NA	NA	NA	NA	NA		NA	NA	NA		NA	NA	NA	NA		< 0.02			
Sulfate	250 [2]	NA		NA		NA	< 1	NA		NA	< 1	NA		NA	NA	NA	NA	NA		NA	NA	NA		NA	NA	NA	NA		**7.4**			
Sulfide by USEPA Method SM 4500-S2 F-2011 (mg/L)																																
Sulfide	NS	NA		NA		NA	NA	NA		NA	NA	NA		NA	NA	NA	NA	NA		NA	NA	NA		NA	NA	NA	NA		NA			
Dissolved Gases by USEPA Method AM20GAX (ug/L)																																
Ethane	NS	NA		NA		NA	< 10	NA		NA	< 10	NA		NA	NA	NA	NA	NA		NA	NA	NA		NA	NA	NA	NA		< 10			
Methane	NS	NA		NA		NA	**280**	NA		NA	**120**	NA		NA	NA	NA	NA	NA		NA	NA	NA		NA	NA	NA	NA		**2.7**	**J//**		
Carbon Dioxide	NS	NA		NA		NA	NA	NA		NA	NA	NA		NA	NA	NA	NA	NA		NA	NA	NA		NA	NA	NA	NA		NA			
Ethene	NS	NA		NA		NA	< 10	NA		NA	< 10	NA		NA	NA	NA	NA	NA		NA	NA	NA		NA	NA	NA	NA		< 10			
Total Organic Carbon by USEPA Method SM 5310C-2014 (mg/L)																																
TOC	NS	NA		NA		NA	< 1	NA		NA	< 1	NA		NA	NA	NA	NA	NA		NA	NA	NA		NA	NA	NA	NA		< 1			

Table F-1
Shallow Monitoring Well Sample Results
2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Main Building																					
Sample ID		**MW-9-PDB**	**TMW-21**			**TMW-22**			**TMW-23**			**TMW-29**		**TMW-30**			**TMW-31**			**MW-22**		
Laboratory ID	USEPA	XC04096-003	QG09023-006	SF14078-001	XB28047-005	QG09023-005	SF14078-002	XB28047-006	QG09023-003	SF14078-003	XC01061-002	PF04097-011	XC01066-003	QG09023-004	SF14078-004	XC01061-001	QG09023-002	SF14078-005	XC01066-004	QI08038-005	SF13096-006	XB24099-017
Date Collected	MCL	03/04/22	07/09/15	06/14/17	02/28/22	07/09/15	06/14/17	02/28/22	07/09/15	06/14/17	03/01/22	06/04/14	03/01/22	07/09/15	06/14/17	03/01/22	07/09/15	06/14/17	03/01/22	09/08/15	06/13/17	02/24/22
Microbial																						
Dehalococcoides	NS	NA	NA	NA	< 0.5	NA	NA	**0.7**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.5
Dehalobacter spp	NS	NA	NA	NA	**9640**	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**110**
BAV1 Vinyl Chloride Reductase	NS	NA	NA	NA	< 0.5	NA	NA	< 0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.5
tceA Reductase	NS	NA	NA	NA	< 0.5	NA	NA	< 0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.5
Vinyl chloride Reductase	NS	NA	NA	NA	< 0.5	NA	NA	< 0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.5
1,1 DCA Reductase	NS	NA	NA	NA	< 5.2	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9
1,2 DCA Reductase	NS	NA	NA	NA	< 5.2	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9
cerA Reductase	NS	NA	NA	NA	< 5.2	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9
Chloroform Reductase	NS	NA	NA	NA	< 5.2	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9
Dehalobacter DCM	NS	NA	NA	NA	< 5.2	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**< 4.9**
Dehalobium chlorocoercia	NS	NA	NA	NA	**246**	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**38.8**
Dehalogenimonas spp	NS	NA	NA	NA	< 5.2	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9
Desulfitobacterium spp	NS	NA	NA	NA	**11400**	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**546**
Desulfuromonas spp	NS	NA	NA	NA	**141**	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9
Dichloromethane Dehalogenase	NS	NA	NA	NA	< 5.2	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9
Epoxyalkane Transferase	NS	NA	NA	NA	< 5.2	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**135**
Ethene Monooxygenase	NS	NA	NA	NA	< 5.2	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**273**
Methanogens	NS	NA	NA	NA	< 5.2	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.5 J**
PCE Reductase 1	NS	NA	NA	NA	< 5.2	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9
PCE Reductase 2	NS	NA	NA	NA	< 5.2	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9
Phenol Hydroxylase	NS	NA	NA	NA	**2760**	NA	NA	**129**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**77.4**
Soluble Methane Monooxygenase	NS	NA	NA	NA	**331**	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**124**
Sulfate Reducing Bacteria	NS	NA	NA	NA	**7690**	NA	NA	**3180**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2250**
Toluene Dioxygenase	NS	NA	NA	NA	< 5.2	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9
Toluene Monooxygenase	NS	NA	NA	NA	< 5.2	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9
Toluene Monooxygenase 2	NS	NA	NA	NA	**253**	NA	NA	**1.6 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**414**
Total Eubacteria	NS	NA	NA	NA	**2400000**	NA	NA	**69900**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**19400**
trans-1,2-DCE Reductase	NS	NA	NA	NA	< 5.2	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9
Trichlorobenzene Dioxygenase	NS	NA	NA	NA	< 5.2	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.9

Notes:
-a - Indicates a field duplicate sample.
MCL - Maximum Contaminant Level (USEPA, April 2012)
NS - No Standard
USEPA - United States Environmental Protection Agency
Bold font indicates the analyte was detected.
Bold outline indicates an exceedance of the USEPA MCL.

Table F-1
Shallow Monitoring Well Sample Results
2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Pole Winder Building												Dickert Property						
Sample ID		**TMW-24**			**TMW-25**			**TMW-32**		**TMW-33**			**MW-10**			**MW-11**			**MW-11-PDB**
Laboratory ID	USEPA	QG08070-012	SF13096-008	XB28047-002	QG09023-001	SF13096-010	XB28047-004	QG08070-011	SF13096-009	QG09023-007	SF13096-007	XB28047-003	QH06108-007	SF20036-006	XC08061-004	QH06108-008	SF16059-004	XC02133-005	XC02133-006
Date Collected	MCL	07/08/15	06/13/17	02/28/22	07/08/15	06/13/17	02/28/22	07/08/15	06/13/17	07/09/15	06/13/17	02/28/22	08/06/15	06/19/17	03/08/22	08/06/15	06/15/17	03/02/22	03/02/22
Volatile Organic Compounds by USEPA Method 8260B (µg/L)																			
1,1,1-Trichloroethane	200	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	NS	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	< 25	< 25	< 1	< 5	< 5	< 1	< 5	< 25	< 25	< 25	< 1	< 25	< 5	< 20	< 5	< 5	< 1	< 1
1,1,2-Trichloroethane	5	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
1,1-Dichloroethane	NS	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
1,1-Dichloroethene	7	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
1,2,4-Trichlorobenzene	70	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
1,2-Dibromo-3-chloropropane (DBCP)	0.2	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
1,2-Dibromoethane (EDB)	0.05	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
1,2-Dichlorobenzene	600	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
1,2-Dichloroethane	5	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	**0.54 J//**	< 10	< 5	< 5	< 0.5	< 0.5
1,2-Dichloropropane	5	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
1,3-Dichlorobenzene	NS	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
1,4-Dichlorobenzene	75	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
2-Butanone (MEK)	NS	< 50	< 50	< 10	< 10	**3.7 J//**	< 10	< 10	< 50	< 50	< 50	< 10	< 50	< 10	< 200	< 10	< 10	< 10	< 10
2-Hexanone	NS	< 50	< 50	< 10	< 10	< 10	< 10	< 10	< 50	< 50	< 50	< 10	< 50	< 10	< 200	< 10	< 10	< 10	< 10
4-Methyl-2-pentanone	NS	< 50	< 50	< 10	< 10	< 10	< 10	< 10	< 50	< 50	< 50	< 10	< 50	< 10	< 200	< 10	< 10	< 10	< 10
Acetone	NS	**58 J//**	**150**	**29**	**7.5 J//**	**7.8 J//**	**5 J//**	**11 J//**	**16 J//**	< 100	< 100	**34**	< 100	**2.6 J//**	< 200	< 20	< 20	< 10	**9.2 J//**
Benzene	5	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
Bromodichloromethane	80 [1]	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
Bromoform	80 [1]	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
Bromomethane (Methyl bromide)	NS	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
Carbon disulfide	NS	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
Carbon tetrachloride	5	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
Chlorobenzene	100	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
Chloroethane	NS	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
Chloroform	80 [1]	**2.5 J//**	**2.2 J//**	< 0.5	**0.32 J//**	< 5	< 0.5	**0.33 J//**	< 25	**3.3 J//**	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
Chloromethane (Methyl chloride)	NS	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
cis-1,2-Dichloroethene	70	**4 J//**	< 25	**1.3**	< 5	< 5	< 0.5	**3.8 J//**	**4.2 J//**	< 25	< 25	**0.74**	< 25	**1.5 J//**	< 10	< 5	< 5	< 0.5	< 0.5
cis-1,3-Dichloropropene	NS	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
Cyclohexane	NS	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
Dibromochloromethane	80 [1]	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
Dichlorodifluoromethane	NS	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
Ethylbenzene	700	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
Isopropylbenzene	NS	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
Methyl acetate	NS	< 25	< 25	< 1	< 5	< 5	< 1	< 5	< 25	< 25	< 25	< 1	< 25	< 5	< 20	< 5	< 5	< 1	< 1
Methyl tertiary butyl ether (MTBE)	NS	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
Methylcyclohexane	NS	< 25	< 25	< 5	< 5	< 5	< 5	< 5	< 25	< 25	< 25	< 5	< 25	< 5	< 100	< 5	< 5	< 5	< 5
Methylene chloride	5	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
Styrene	100	< 25	**14 J//**	**22**	**2.8 J//**	< 5	**4.8**	**23**	**15 J//**	< 25	< 25	**10**	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
Tetrachloroethene	5	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
Toluene	1000	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
trans-1,2-Dichloroethene	100	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
trans-1,3-Dichloropropene	NS	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
Trichloroethene (TCE)	5	**1200**	**320**	**70**	**15**	**38**	**45**	**200**	**220**	**240**	**120**	**20**	**830**	**570**	**590**	< 5	**0.6 J//**	< 0.5	< 0.5
Trichlorofluoromethane	NS	< 25	< 25	< 0.5	< 5	< 5	< 0.5	< 5	< 25	< 25	< 25	< 0.5	< 25	< 5	< 10	< 5	< 5	< 0.5	< 0.5
Vinyl chloride	2	< 10	< 10	< 0.5	< 2	< 2	< 0.5	< 2	< 10	< 10	< 10	< 0.5	< 10	< 2	< 10	< 2	< 2	< 0.5	< 0.5
Xylenes (total)	10000	< 25	< 25	< 1	< 5	< 5	< 1	< 5	< 25	< 25	< 25	< 1	< 25	< 5	< 20	< 5	< 5	< 1	< 1
Metals by USEPA Method 6010 and SM 3500-Fe B-2011 (mg/L)																			
Iron	0.3 [2]	NA	NA	**0.15**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.14**	**5.9**	NA	NA	NA	NA
Manganese	0.05 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.012 J//**	**0.18**	NA	NA	NA	NA
Dissolved Iron	0.3 [2]	NA	NA	< 0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.9**	NA	NA	NA	NA
Dissolved Manganese	0.05 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.012 J//**	**0.052**	NA	NA	NA	NA
Ferrous Iron	NS	NA	NA	< 0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.05	NA	NA	NA	NA	NA
Ferric Iron (calculation)	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.11**	NA	NA	NA	NA	NA
Alkalinity by USEPA Method SM 2320B-2011 (mg/L)																			
Alkalinity	NS	NA	NA	< 20	NA	NA	NA	NA	NA	NA	NA	NA	NA	**12**	NA	NA	NA	NA	NA
Chloride, Nitrate, Nitrite, and Sulfate by USEPA Method 300.0 (mg/L)																			
Chloride	250 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**56**	**28**	NA	NA	NA	NA
Nitrate	10	NA	NA	**1.2**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.17**	NA	NA	NA	NA
Nitrite	1	NA	NA	< 0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.015 J//**	NA	NA	NA	NA
Sulfate	250 [2]	NA	NA	< 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1	**0.58 J//**	NA	NA	NA	NA
Sulfide by USEPA Method SM 4500-S2 F-2011 (mg/L)																			
Sulfide	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1	NA	NA	NA	NA	NA
Dissolved Gases by USEPA Method AM20GAX (ug/L)																			
Ethane	NS	NA	NA	< 10	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.038 Jn**	< 10	NA	NA	NA	NA
Methane	NS	NA	NA	< 10	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.2 n**	**2600**	NA	NA	NA	NA
Carbon Dioxide	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**100000**	NA	NA	NA	NA	NA
Ethene	NS	NA	NA	< 10	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.061 Jn**	**2.8 J//**	NA	NA	NA	NA
Total Organic Carbon by USEPA Method SM 5310C-2014 (mg/L)																			
TOC	NS	NA	NA	< 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**920**	NA	NA	NA	NA

Table F-1
Shallow Monitoring Well Sample Results
2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Pole Winder Building											Dickert Property						
Sample ID		**TMW-24**			**TMW-25**			**TMW-32**		**TMW-33**			**MW-10**			**MW-11**			**MW-11-PDB**
Laboratory ID	USEPA	QG08070-012	SF13096-008	XB28047-002	QG09023-001	SF13096-010	XB28047-004	QG08070-011	SF13096-009	QG09023-007	SF13096-007	XB28047-003	QH06108-007	SF20036-006	XC08061-004	QH06108-008	SF16059-004	XC02133-005	XC02133-006
Date Collected	MCL	07/08/15	06/13/17	02/28/22	07/08/15	06/13/17	02/28/22	07/08/15	06/13/17	07/09/15	06/13/17	02/28/22	08.06/15	06/19/17	03/08/22	08/06/15	06/15/17	03/02/22	03/02/22
Microbial																			
Dehalococcoides	NS	NA	NA	NA	NA	NA	< 0.5	NA	NA	NA	NA	NA	NA	<0.5	NA	NA	NA	NA	NA
Dehalobacter spp	NS	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	<4.8	NA	NA	NA	NA	NA
BAV1 Vinyl Chloride Reductase	NS	NA	NA	NA	NA	NA	< 0.5	NA	NA	NA	NA	NA	NA	<0.5	NA	NA	NA	NA	NA
tceA Reductase	NS	NA	NA	NA	NA	NA	< 0.5	NA	NA	NA	NA	NA	NA	<0.5	NA	NA	NA	NA	NA
Vinyl chloride Reductase	NS	NA	NA	NA	NA	NA	< 0.5	NA	NA	NA	NA	NA	NA	<0.5	NA	NA	NA	NA	NA
1,1 DCA Reductase	NS	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2 DCA Reductase	NS	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cerA Reductase	NS	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform Reductase	NS	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobacter DCM	NS	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobium chlorocoercia	NS	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalogenimonas spp	NS	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Desulfitobacterium spp	NS	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Desulfuromonas spp	NS	NA	NA	NA	NA	NA	**5.2**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichloromethane Dehalogenase	NS	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Epoxyalkane Transferase	NS	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethene Monooxygenase	NS	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanogens	NS	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCE Reductase 1	NS	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCE Reductase 2	NS	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol Hydroxylase	NS	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Soluble Methane Monooxygenase	NS	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate Reducing Bacteria	NS	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Dioxygenase	NS	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Monooxygenase	NS	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Monooxygenase 2	NS	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Eubacteria	NS	NA	NA	NA	NA	NA	**5390**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-DCE Reductase	NS	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorobenzene Dioxygenase	NS	NA	NA	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
-a - Indicates a field duplicate sample.
MCL - Maximum Contaminant Level (USEPA, April 2012)
NS - No Standard
USEPA - United States Environmental Protection Agency
Bold font indicates the analyte was detected.
Bold outline indicates an exceedance of the USEPA MCL.

Table F-1
Shallow Monitoring Well Sample Results
2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Dickert Property																						
Sample ID		**MW-12**			**MW-12-PDB**	**MW-13**			**MW-14**			**MW-14-PDB**	**MW-15**			**MW-16**			**MW-17**		
Laboratory ID	USEPA	QH11036-001	SF16059-012	XC02133-001	XC02133-002	QH11036-006	SF16059-011	XB24099-002	QH11036-002	SF16059-010	XC02133-003	XC02133-004	QH11036-003	SF16059-009	XB22075-005	QH11036-004	SF16059-002	XB22075-002	QH11036-005	SF16059-001	XB22075-003
Date Collected	MCL	08/10/15	06/16/17	03/02/22	03/02/22	08/10/15	06/16/17	02/22/22	08/10/15	06/16/17	03/02/22	03/02/22	08/10/15	06/16/17	02/22/22	08/10/15	06/15/17	02/22/22	08/10/15	06/15/17	02/22/22
Volatile Organic Compounds by USEPA Method 8260B (µg/L)																					
1,1,1-Trichloroethane	200	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D	< 5	< 0.5	< 5	< 5	< 0.5
1,1,2,2-Tetrachloroethane	NS	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D/M	< 5	< 0.5	< 5	< 5	< 0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	< 5	< 5	< 1	< 1	< 5	< 5	< 1	< 5	< 5	< 1	< 1	< 5	< 5	< 1	< 5 /M/D/M	< 5	< 1	< 5	< 5	< 1
1,1,2-Trichloroethane	5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D/M	< 5	< 0.5	< 5	< 5	< 0.5
1,1-Dichloroethane	NS	< 5	**0.5 J//**	**0.47 J//**	**0.46 J//**	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D	< 5	< 0.5	< 5	< 5	< 0.5
1,1-Dichloroethene	7	< 5	**1 J//**	**0.61**	**0.68**	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D/M	< 5	< 0.5	< 5	< 5	< 0.5
1,2,4-Trichlorobenzene	70	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D/M	< 5	< 0.5	< 5	< 5	< 0.5
1,2-Dibromo-3-chloropropane (DBCP)	0.2	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D	< 5	< 0.5	< 5	< 5	< 0.5
1,2-Dibromoethane (EDB)	0.05	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D/M	< 5	< 0.5	< 5	< 5	< 0.5
1,2-Dichlorobenzene	600	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D/M	< 5	< 0.5	< 5	< 5	< 0.5
1,2-Dichloroethane	5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D	< 5	< 0.5	< 5	< 5	< 0.5
1,2-Dichloropropane	5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D	< 5	< 0.5	< 5	< 5	< 0.5
1,3-Dichlorobenzene	NS	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D/M	< 5	< 0.5	< 5	< 5	< 0.5
1,4-Dichlorobenzene	75	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D/M	< 5	< 0.5	< 5	< 5	< 0.5
2-Butanone (MEK)	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10 /M/D	< 10	< 10	< 10	< 10	< 10
2-Hexanone	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10 /M/D	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-pentanone	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10 /M/D	< 10	< 10	< 10	< 10	< 10
Acetone	NS	< 20	< 20	< 10	**10**	< 20	< 20	< 10	< 20	< 20	< 10	**6.9 J//**	< 20	< 20	< 10	< 20 /M/D	< 20	< 10	< 20	< 20	< 10
Benzene	5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D/M	< 5	< 0.5	< 5	< 5	< 0.5
Bromodichloromethane	80 [1]	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D	< 5	< 0.5	< 5	< 5	< 0.5
Bromoform	80 [1]	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D	< 5	< 0.5	< 5	< 5	< 0.5
Bromomethane (Methyl bromide)	NS	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D/M	< 5	< 0.5	< 5	< 5	< 0.5
Carbon disulfide	NS	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D	< 5	< 0.5	< 5	< 5	< 0.5
Carbon tetrachloride	5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D/M	< 5	< 0.5	< 5	< 5	< 0.5
Chlorobenzene	100	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D/M	< 5	< 0.5	< 5	< 5	< 0.5
Chloroethane	NS	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D/M	< 5	< 0.5	< 5	< 5	< 0.5
Chloroform	80 [1]	< 5	< 5	< 0.5	**0.59 J//**	< 5	< 5	< 0.5	**1.8 J//**	< 5	< 0.5	< 0.5	**1.4 J//**	< 5	< 0.5	< 5 /M/D	< 5	< 0.5	**0.53 J//**	< 5	< 0.5
Chloromethane (Methyl chloride)	NS	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D	< 5	< 0.5	< 5	< 5	< 0.5
cis-1,2-Dichloroethene	70	**22**	**37**	**29**	**30**	**3.2 J//**	**3.8 J//**	**3.1**	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D	< 5	< 0.5	**0.5 J//**	< 5	< 0.5
cis-1,3-Dichloropropene	NS	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D	< 5	< 0.5	< 5	< 5	< 0.5
Cyclohexane	NS	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D	< 5	< 0.5	< 5	< 5	< 0.5
Dibromochloromethane	80 [1]	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D/M	< 5	< 0.5	< 5	< 5	< 0.5
Dichlorodifluoromethane	NS	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D/M	< 5	< 0.5	< 5	< 5	< 0.5
Ethylbenzene	700	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D/M	< 5	< 0.5	< 5	< 5	< 0.5
Isopropylbenzene	NS	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D/M	< 5	< 0.5	< 5	< 5	< 0.5
Methyl acetate	NS	< 5	< 5	< 1	< 1	< 5	< 5	< 1	< 5	< 5	< 1	< 1	< 5	< 5	< 1	< 5 /M/D	< 5	< 1	< 5	< 5	< 1
Methyl tertiary butyl ether (MTBE)	NS	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D	< 5	< 0.5	< 5	< 5	< 0.5
Methylcyclohexane	NS	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5 /M/D/M	< 5	< 5	< 5	< 5	< 5
Methylene chloride	5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D	< 5	< 0.5	< 5	< 5	< 0.5
Styrene	100	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D	< 5	< 0.5	< 5	< 5	< 0.5
Tetrachloroethene	5	**0.49 J//**	**0.67 J//**	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D/M	< 5	< 0.5	< 5	< 5	< 0.5
Toluene	1000	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D/M	< 5	< 0.5	< 5	< 5	< 0.5
trans-1,2-Dichloroethene	100	< 5	**0.43 J//**	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D	< 5	< 0.5	< 5	< 5	< 0.5
trans-1,3-Dichloropropene	NS	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D	< 5	< 0.5	< 5	< 5	< 0.5
Trichloroethene (TCE)	5	**39**	**58**	**47**	**54**	**13**	**25**	**70**	**24**	**50**	**100**	**100**	**15**	**4.2 J//**	**3.3**	**38** /M/D/M	**35**	**48**	**18**	**14**	**8.6**
Trichlorofluoromethane	NS	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5 /M/D/M	< 5	< 0.5	< 5	< 5	< 0.5
Vinyl chloride	2	< 2	< 2	< 0.5	< 0.5	< 2	< 2	< 0.5	< 2	< 2	< 0.5	< 0.5	< 2	< 2	< 0.5	< 2 /M/D/M	< 2	< 0.5	< 2	< 2	< 0.5
Xylenes (total)	10000	< 5	< 5	< 1	< 1	< 5	< 5	< 1	< 5	< 5	< 1	< 1	< 5	< 5	< 1	< 5 /M/D/M	< 5	< 1	< 5	< 5	< 1
Metals by USEPA Method 6010 and SM 3500-Fe B-2011 (mg/L)																					
Iron	0.3 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.05 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Iron	0.3 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Manganese	0.05 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferric Iron (calculation)	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alkalinity by USEPA Method SM 2320B-2011 (mg/L)																					
Alkalinity	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride, Nitrate, Nitrite, and Sulfate by USEPA Method 300.0 (mg/L)																					
Chloride	250 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfide by USEPA Method SM 4500-S2 F-2011 (mg/L)																					
Sulfide	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Gases by USEPA Method AM20GAX (ug/L)																					
Ethane	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methane	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Dioxide	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethene	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon by USEPA Method SM 5310C-2014 (mg/L)																					
TOC	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F-1
Shallow Monitoring Well Sample Results
2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Dickert Property																		
Sample ID		**MW-12**			**MW-12-PDB**	**MW-13**			**MW-14**			**MW-14-PDB**	**MW-15**			**MW-16**			**MW-17**		
Laboratory ID	USEPA	QH11036-001	SF16059-012	XC02133-001	XC02133-002	QH11036-006	SF16059-011	XB24099-002	QH11036-002	SF16059-010	XC02133-003	XC02133-004	QH11036-003	SF16059-009	XB22075-005	QH11036-004	SF16059-002	XB22075-002	QH11036-005	SF16059-001	XB22075-003
Date Collected	MCL	08/10/15	06/16/17	03/02/22	03/02/22	08/10/15	06/16/17	02/22/22	08/10/15	06/16/17	03/02/22	03/02/22	08/10/15	06/16/17	02/22/22	08/10/15	06/15/17	02/22/22	08/10/15	06/15/17	02/22/22
Microbial																					
Dehalococcoides	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobacter spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAV1 Vinyl Chloride Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tceA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1 DCA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2 DCA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cerA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobacter DCM	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobium chlorocoercia	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalogenimonas spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Desulfitobacterium spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Desulfuromonas spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichloromethane Dehalogenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Epoxyalkane Transferase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethene Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanogens	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCE Reductase 1	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCE Reductase 2	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol Hydroxylase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Soluble Methane Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate Reducing Bacteria	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Dioxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Monooxygenase 2	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Eubacteria	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-DCE Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorobenzene Dioxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
-a - Indicates a field duplicate sample.
MCL - Maximum Contaminant Level (USEPA, April 2012)
NS - No Standard
USEPA - United States Environmental Protection Agency
Bold font indicates the analyte was detected.
Bold outline indicates an exceedance of the USEPA MCL.

Table F-1
Shallow Monitoring Well Sample Results
2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Dickert Property								Folk Property				Chapman Property			Boazman Property			
Sample ID		**MW-18**			**MW-28**		**MW-29**		**TMW 117**	**MW-26**		**MW-27**		**MW-19**			**MW-20**			**MW-20-PDB**
Laboratory ID	USEPA	QH06108-006	SF22082-001	XB22075-010	TD03064-002	XB24099-001	TD03064-001	XB22075-009	SFI20145-001 (21 - 25 ft)	TD03064-003	XB24099-004	TD03064-004	XB24099-003	QH11036-007	SFI 3096-003	XB24099-006	QH11036-009	SF20036-009	XC08059-002	XC08059-001
Date Collected	MCL	08/06/15	06/20/17	02/22/22	04/03/18	02/22/22	04/03/18	02/22/22	06/12/17	04/03/18	02/23/22	04/03/18	02/23/22	08/11/15	06/13/17	02/23/22	08/11/15	06/20/17	03/07/22	03/07/22
Volatile Organic Compounds by USEPA Method 8260B (ug/L)																				
1,1,1-Trichloroethane	200	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	NS	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	< 5	< 5	< 1	< 5	< 1	< 5	< 1	< 5	< 5	< 1	< 5	< 1	< 5	< 5	< 1	< 5	< 5	< 1	< 1
1,1,2-Trichloroethane	5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
1,1-Dichloroethane	NS	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
1,1-Dichloroethene	7	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
1,2,4-Trichlorobenzene	70	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
1,2-Dibromo-3-chloropropane (DBCP)	0.2	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
1,2-Dibromoethane (EDB)	0.05	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
1,2-Dichlorobenzene	600	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
1,2-Dichloroethane	5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
1,2-Dichloropropane	5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
1,3-Dichlorobenzene	NS	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
1,4-Dichlorobenzene	75	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
2-Butanone (MEK)	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	**2.1 J//**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
2-Hexanone	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-pentanone	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Acetone	NS	< 20	< 20	< 10	**2.4 J//**	< 10	**4.1 J//**	< 10	**35**	< 20	< 10	< 20	< 10	< 20	< 20	< 10	< 20	< 20	**4.8 J/J/C**	**30**
Benzene	5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
Bromodichloromethane	80 [1]	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	**0.46 J//**	< 5	< 0.5	< 0.5
Bromoform	80 [1]	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
Bromomethane (Methyl bromide)	NS	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
Carbon disulfide	NS	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
Carbon tetrachloride	5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
Chlorobenzene	100	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
Chloroethane	NS	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
Chloroform	80 [1]	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	**0.4 J//**	**1.2**	**6.8**	< 5	< 0.5	**7.1**	**0.46 J//**	< 0.5	< 0.5
Chloromethane (Methyl chloride)	NS	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
cis-1,2-Dichloroethene	70	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
cis-1,3-Dichloropropene	NS	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
Cyclohexane	NS	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
Dibromochloromethane	80 [1]	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
Dichlorodifluoromethane	NS	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
Ethylbenzene	700	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
Isopropylbenzene	NS	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
Methyl acetate	NS	< 5	< 5	< 1	< 5	< 1	< 5	< 1	< 5	< 5	< 1	< 5	< 1	< 5	< 5	< 1	< 5	< 5	< 1	< 1
Methyl tertiary butyl ether (MTBE)	NS	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
Methylcyclohexane	NS	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Methylene chloride	5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
Styrene	100	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
Tetrachloroethene	5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	**0.64 J//**	< 5	< 0.5	< 0.5
Toluene	1000	< 5	< 5	< 0.5	< 5	< 0.5	**2.2 J//**	< 0.5	< 5	< 5	< 0.5	**0.6 J//**	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
trans-1,2-Dichloroethene	100	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
trans-1,3-Dichloropropene	NS	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
Trichloroethene (TCE)	5	**7.4**	**7.3**	**27**	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	**110**	**3.9 J//**	< 0.5	< 0.5
Trichlorofluoromethane	NS	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 0.5
Vinyl chloride	2	< 2	< 2	< 0.5	< 2	< 0.5	< 2	< 0.5	< 2	< 2	< 0.5	< 2	< 0.5	< 2	< 2	< 0.5	< 2	< 2	< 0.5	< 0.5
Xylenes (total)	10000	< 5	< 5	< 1	< 5	< 1	< 5	< 1	< 5	< 5	< 1	< 5	< 1	< 5	< 5	< 1	< 5	< 5	< 1	< 1
Metals by USEPA Method 6010 and SM 3500-Fe B-2011 (mg/L)																				
Iron	0.3 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.57**	NA	NA
Manganese	0.05 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.02**	NA	NA
Dissolved Iron	0.3 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Manganese	0.05 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.016**	NA	NA
Ferrous Iron	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.16**	NA	NA
Ferric Iron (calculation)	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.42**	NA	NA
Alkalinity by USEPA Method SM 2320B-2011 (mg/L)																				
Alkalinity	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**9.4 J//**	NA	NA
Chloride, Nitrate, Nitrite, and Sulfate by USEPA Method 300.0 (mg/L)																				
Chloride	250 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**5.1**	NA	NA
Nitrate	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.57 J//**	NA	NA
Sulfide by USEPA Method SM 4500-S2 F-2011 (mg/L)																				
Sulfide	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1	NA	NA
Dissolved Gases by USEPA Method AM20GAX (ug/L)																				
Ethane	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.009 Jn**	NA	NA
Methane	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.99 n**	NA	NA
Carbon Dioxide	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**66000**	NA	NA
Ethene	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.017 Jn**	NA	NA
Total Organic Carbon by USEPA Method SM 5310C-2014 (mg/L)																				
TOC	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F-1
Shallow Monitoring Well Sample Results
2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Dickert Property								Folk Property				Chapman Property			Boazman Property			
Sample ID		**MW-18**			**MW-28**		**MW-29**		**TMW 117**	**MW-26**		**MW-27**		**MW-19**			**MW-20**			**MW-20-PDB**
Laboratory ID	USEPA	QH06108-006	SF22082-001	XB22075-010	TD03064-002	XB24099-001	TD03064-001	XB22075-009	SFI2045-001 (21 - 25 ft)	TD03064-003	XB24099-004	TD03064-004	XB24099-003	QH11036-007	SFI3096-003	XB24099-006	QH11036-009	SF20036-009	XC08059-002	XC08059-001
Date Collected	MCL	08/06/15	06/20/17	02/22/22	04/03/18	02/22/22	04/03/18	02/22/22	06/12/17	04/03/18	02/23/22	04/03/18	02/23/22	08/11/15	06/13/17	02/23/22	08/11/15	06/20/17	03/07/22	03/07/22
Microbial																				
Dehalococcoides	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.5	NA	NA
Dehalobacter spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<4.5	NA	NA
BAV1 Vinyl Chloride Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.5	NA	NA
tceA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.5	NA	NA
Vinyl chloride Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.5	NA	NA
1,1 DCA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2 DCA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cerA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobacter DCM	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobium chlorocoercia	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalogenimonas spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Desulfitobacterium spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Desulfuromonas spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichloromethane Dehalogenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Epoxyalkane Transferase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethene Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanogens	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCE Reductase 1	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCE Reductase 2	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol Hydroxylase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Soluble Methane Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate Reducing Bacteria	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Dioxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Monooxygenase 2	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Eubacteria	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-DCE Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorobenzene Dioxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
-a - Indicates a field duplicate sample.
MCL - Maximum Contaminant Level (USEPA, April 2012)
NS - No Standard
USEPA - United States Environmental Protection Agency
Bold font indicates the analyte was detected.
Bold outline indicates an exceedance of the USEPA MCL.

Table F-1
Shallow Monitoring Well Sample Results
2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Ringer Property			Shealy Property												
Sample ID		**MW-21**			**MW-23**			**MW-24**			**MW-25**						**MW-25-PDB**
Laboratory ID	USEPA	QH11036-008	SF16059-006	XB24099-009	RA13091-003	SF13096-001	XB22002-003	RA13091-002	SF13096-004	XB22002-004	RB26034-001	SF13096-011	SF13096-013 (DUP)	XC02133-007	XC02133-011 (Dup)	XC02133-008
Date Collected	MCL	08/11/15	06/15/17	02/23/22	01/13/16	06/13/17	02/21/22	01/13/16	06/13/17	02/21/22	2/26/2016	06/13/17	06/13/17	03/02/22	03/02/22	03/02/22
Volatile Organic Compounds by USEPA Method 8260B (µg/L)																
1,1,1-Trichloroethane	200	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	NS	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	< 5	< 5	< 1	< 5	< 5	< 1	< 5	< 5	< 1	< 5	< 5	< 5	< 1	< 1	< 1
1,1,2-Trichloroethane	5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethane	NS	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethene	7	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
1,2,4-Trichlorobenzene	70	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
1,2-Dibromo-3-chloropropane (DBCP)	0.2	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
1,2-Dibromoethane (EDB)	0.05	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
1,2-Dichlorobenzene	600	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
1,2-Dichloroethane	5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
1,2-Dichloropropane	5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
1,3-Dichlorobenzene	NS	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
1,4-Dichlorobenzene	75	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	**1.6**	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
2-Butanone (MEK)	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
2-Hexanone	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-pentanone	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Acetone	NS	< 20	< 20	< 10	< 20	**2.3 J//**	< 10	< 20	< 20	< 10	< 20	< 20	< 20	< 10	< 10	**7.4 J//**
Benzene	5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	80 [1]	**0.4 J//**	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
Bromoform	80 [1]	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
Bromomethane (Methyl bromide)	NS	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
Carbon disulfide	NS	< 5	< 5	< 0.5	**1.1 J//**	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
Carbon tetrachloride	5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
Chlorobenzene	100	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
Chloroethane	NS	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
Chloroform	80 [1]	**4.5 J//**	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	**4 J//**	< 5	< 5	< 0.5	< 0.5	< 0.5
Chloromethane (Methyl chloride)	NS	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
cis-1,2-Dichloroethene	70	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
cis-1,3-Dichloropropene	NS	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
Cyclohexane	NS	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	80 [1]	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	NS	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
Ethylbenzene	700	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
Isopropylbenzene	NS	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
Methyl acetate	NS	< 5	< 5	< 1	< 5	< 5	< 1	< 5	< 5	< 1	< 5	< 5	< 5	< 1	< 1	< 1
Methyl tertiary butyl ether (MTBE)	NS	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
Methylcyclohexane	NS	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Methylene chloride	5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
Styrene	100	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
Toluene	1000	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
trans-1,2-Dichloroethene	100	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
trans-1,3-Dichloropropene	NS	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
Trichloroethene (TCE)	5	< 5	< 5	< 0.5	**1 J//**	< 5	< 0.5	< 5	**0.65 J//**	< 0.5	**0.9 J//**	**2.2 J//**	**1.9 J//**	**4.2**	**4.7**	**3.1**
Trichlorofluoromethane	NS	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 0.5
Vinyl chloride	2	< 2	< 2	< 0.5	< 2	< 2	< 0.5	< 2	< 2	< 0.5	< 2	< 2	< 2	< 0.5	< 0.5	< 0.5
Xylenes (total)	10000	< 5	< 5	< 1	< 5	< 5	< 1	< 5	< 5	< 1	< 5	< 5	< 5	< 1	< 1	< 1
Metals by USEPA Method 6010 and SM 3500-Fe B-2011 (mg/L)																
Iron	0.3 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.05 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Iron	0.3 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Manganese	0.05 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferric Iron (calculation)	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alkalinity by USEPA Method SM 2320B-2011 (mg/L)																
Alkalinity	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride, Nitrate, Nitrite, and Sulfate by USEPA Method 300.0 (mg/L)																
Chloride	250 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfide by USEPA Method SM 4500-S2 F-2011 (mg/L)																
Sulfide	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Gases by USEPA Method AM20GAX (ug/L)																
Ethane	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methane	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Dioxide	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethene	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon by USEPA Method SM 5310C-2014 (mg/L)																
TOC	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table F-1
Shallow Monitoring Well Sample Results
2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Ringer Property			Shealy Property											
Sample ID		**MW-21**			**MW-23**			**MW-24**			**MW-25**					**MW-25-PDB**
Laboratory ID	USEPA	QH11036-008	SF16059-006	XB24099-009	RA13091-003	SF13096-001	XB22002-003	RA13091-002	SF13096-004	XB22002-004	RB26034-001	SF13096-011	SF13096-013 **(DUP)**	XC02133-007	XC02133-011 (Dup)	XC02133-008
Date Collected	MCL	08/11/15	06/15/17	02/23/22	01/13/16	06/13/17	02/21/22	01/13/16	06/13/17	02/21/22	2/26/2016	06/13/17	06/13/17	03/02/22	03/02/22	03/02/22
Microbial																
Dehalococcoides	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobacter spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAV1 Vinyl Chloride Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tceA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1 DCA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2 DCA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cerA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobacter DCM	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobium chlorocoercia	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalogenimonas spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Desulfitobacterium spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Desulfuromonas spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichloromethane Dehalogenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Epoxyalkane Transferase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethene Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanogens	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCE Reductase 1	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCE Reductase 2	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol Hydroxylase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Soluble Methane Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfite Reducing Bacteria	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Dioxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Monooxygenase 2	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Eubacteria	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-DCE Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorobenzene Dioxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
-a - Indicates a field duplicate sample.
MCL - Maximum Contaminant Level (USEPA, April 2012)
NS - No Standard
USEPA - United States Environmental Protection Agency
Bold font indicates the analyte was detected.
Bold outline indicates an exceedance of the USEPA MCL.

Table F-2
RI - Intermediate Monitoring Well Sample Results
2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Facility																			
Sample ID		MW-2I			MW-2i-PDB	MW-3I				MW-5I			MW-5i-PDB	MW-6I				MW-7I			MW-7i-PDB
Laboratory ID	USEPA	QH27050-001	SF22082-006	XC04096-012	XC04096-011	QH13026-002	SF16059-008	XB24099-005	XB24099-012 (Dup)	QH27050-004	SF22082-004	XC03052-006	XC03052-005	QH27050-003	SF16059-003	XB24099-013	QH27050-005	SF20036-004	XC03052-002	XC03052-001
Date Collected	MCL	08/26/15	06/21/17	03/04/22	03/04/22	08/12/15	06/15/17	02/23/22	02/23/22	08/27/15	06/21/17	03/03/22	03/03/22	08/26/15	06/15/17	02/24/22	08/27/15	06/19/17	03/03/22	03/03/22
Volatile Organic Compounds by USEPA Method 8260B (µg/L)																				
1,1,1-Trichloroethane	200	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	< 5	< 2.5	< 2.5
1,1,2,2-Tetrachloroethane	NS	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	< 5	< 2.5	< 2.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	< 5	< 5	< 1	< 1	< 5	< 5	< 1	< 1	< 5	< 25	< 5	< 5	< 5	< 5	< 1	< 25	< 5	< 5	< 5
1,1,2-Trichloroethane	5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	< 5	< 2.5	< 2.5
1,1-Dichloroethane	NS	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	**1.7 J//**	**2.4 J//**	< 2.5	< 2.5
1,1-Dichloroethene	7	< 5	< 5	< 0.5	< 0.5	< 5	**0.6 J//**	< 0.5	**0.41 J//**	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	**3.8 J//**	**5.2**	**3.8**	**4.2**
1,2,4-Trichlorobenzene	70	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	< 5	< 2.5	< 2.5
1,2-Dibromo-3-chloropropane (DBCP)	0.2	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	< 5	< 2.5	< 2.5
1,2-Dibromoethane (EDB)	0.05	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	< 5	< 2.5	< 2.5
1,2-Dichlorobenzene	600	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	< 5	< 2.5	< 2.5
1,2-Dichloroethane	5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	**1.1 J//**	< 25	**4.2**	**4.5**	< 5	< 5	< 0.5	< 25	< 5	< 2.5	< 2.5
1,2-Dichloropropane	5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	< 5	< 2.5	< 2.5
1,3-Dichlorobenzene	NS	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	< 5	< 2.5	< 2.5
1,4-Dichlorobenzene	75	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	< 5	< 2.5	< 2.5
2-Butanone (MEK)	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 50	< 50	< 50	< 10	< 10	< 10	< 50	< 10	< 50	< 50
2-Hexanone	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 50	< 50	< 50	< 10	< 10	< 10	< 50	< 10	< 50	< 50
4-Methyl-2-pentanone	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 50	< 50	< 50	< 10	< 10	< 10	< 50	< 10	< 50	< 50
Acetone	NS	< 20	< 20	< 10	**21**	**2.4 J//**	**2.1 J/B/T**	< 10	< 10	**2.1 J//**	< 100	< 50	< 50	< 20	< 20	< 10	< 100	< 20	< 50	< 50
Benzene	5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	**0.49 J//**	< 2.5	< 2.5
Bromodichloromethane	80 [1]	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	< 5	< 2.5	< 2.5
Bromoform	80 [1]	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	< 5	< 2.5	< 2.5
Bromomethane (Methyl bromide)	NS	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	< 5	< 2.5	< 2.5
Carbon disulfide	NS	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	**0.93 J/B/KT**	< 0.5	< 25	**0.68 BJ/B/K**	< 2.5	< 2.5
Carbon tetrachloride	5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	< 5	< 2.5	< 2.5
Chlorobenzene	100	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	< 5	< 2.5	< 2.5
Chloroethane	NS	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	< 5	< 2.5	< 2.5
Chloroform	80 [1]	**0.75 J/B/K**	< 5	< 0.5	< 0.5	**2.2 J//**	< 5	< 0.5	< 0.5	**2.9 J//**	< 25	< 2.5	< 2.5	**0.89 J/B/K**	< 5	< 0.5	**1.6 J//**	< 5	< 2.5	< 2.5
Chloromethane (Methyl chloride)	NS	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	< 5	< 2.5	< 2.5
cis-1,2-Dichloroethene	70	< 5	< 5	< 0.5	< 0.5	**2.3 J//**	**11**	**33**	**35**	**0.92 J//**	**5.1 J//**	**2.2 J//**	< 2.5	**2.6 J//**	**5.7**	**0.86**	**61**	**140**	**84**	**100**
cis-1,3-Dichloropropene	NS	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	< 5	< 2.5	< 2.5
Cyclohexane	NS	< 5	< 5	< 0.5	**0.81**	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	< 5	< 2.5	< 2.5
Dibromochloromethane	80 [1]	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	< 5	< 2.5	< 2.5
Dichlorodifluoromethane	NS	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	< 5	< 2.5	< 2.5
Ethylbenzene	700	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	< 5	< 2.5	< 2.5
Isopropylbenzene	NS	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	**1.1 J//**	< 2.5	< 2.5
Methyl acetate	NS	< 5	< 5	< 1	< 1	< 5	< 5	< 1	< 1	< 5	< 25	< 5	< 5	< 5	< 5	< 1	< 25	< 5	< 5	< 5
Methyl tertiary butyl ether (MTBE)	NS	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	< 5	< 2.5	< 2.5
Methylcyclohexane	NS	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 25	< 25	< 25	< 5	< 5	< 5	< 25	< 5	< 25	< 25
Methylene chloride	5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	**0.41 J//**	< 2.5	< 2.5
Styrene	100	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	**1.5 J//**	< 0.5	< 25	< 5	< 2.5	< 2.5
Tetrachloroethene	5	< 5	< 5	< 0.5	< 0.5	**0.25 J//**	**0.8 J//**	**0.41 J//**	**0.49 J//**	< 5	< 25	< 2.5	< 2.5	**0.29 J//**	< 5	< 0.5	**1.3 J//**	**2.1 J//**	< 2.5	< 2.5
Toluene	1000	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	< 5	< 2.5	< 2.5
trans-1,2-Dichloroethene	100	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	**1.4 J//**	< 2.5	< 2.5
trans-1,3-Dichloropropene	NS	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	< 5	< 2.5	< 2.5
Trichloroethene (TCE)	5	**17**	**24**	**41**	**18**	**4.8 J//**	**8**	**12**	**13**	**430**	**200**	**610**	**550**	**20**	**10**	**15**	**290**	**280**	**300**	**280**
Trichlorofluoromethane	NS	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5	< 5	< 25	< 2.5	< 2.5	< 5	< 5	< 0.5	< 25	< 5	< 2.5	< 2.5
Vinyl chloride	2	< 2	< 2	< 0.5	< 0.5	< 2	< 2	< 0.5	< 0.5	< 2	< 10	< 2.5	< 2.5	< 2	< 2	< 0.5	< 10	< 2	< 2.5	< 2.5
Xylenes (total)	10000	< 5	< 5	< 1	< 1	< 5	< 5	< 1	< 1	< 5	< 25	< 5	< 5	< 5	< 5	< 1	< 25	**1.8 J//**	< 5	< 5
Metals by USEPA Method 6010 and SM 3500- Fe B-2011 (mg/L)																				
Iron	0.3 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.1	NA	NA	NA	**0.25**	NA	**1.2**	**0.23**	NA
Manganese	0.05 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.055**	NA	NA	NA	NA	NA	**0.2**	**0.11**	NA
Dissolved Iron	0.3 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.046 J//**	NA	NA	NA	< 0.1	NA	NA	**0.061 J//**	NA
Dissolved Manganese	0.05 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.052**	NA	NA	NA	NA	NA	**0.18**	**0.11**	NA
Ferrous Iron	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.05	NA	NA	NA	< 0.05	NA	**0.15**	< 0.05	NA
Ferric Iron (calculation)	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.1**	NA	NA
Alkalinity by USEPA Method SM 2320B-2011 (mg/L)																				
Alkalinity	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**30**	NA	NA	NA	25	NA	**23**	**23**	NA
Chloride, Nitrate, Nitrite, and Sulfate by USEPA Method 300.0 (mg/L)																				
Chloride	250 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**32**	NA	NA	NA	NA	NA	**2.8**	**5.7**	NA
Nitrate	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.1**	NA	NA	NA	**0.2 B//**	NA	NA	**0.28**	NA
Nitrite	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.02	NA	NA	NA	< 0.02	NA	NA	**0.013 J//**	NA
Sulfate	250 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.3 J//**	NA	NA	NA	< 1	NA	< 1	**1**	NA
Sulfide by USEPA Method SM 4500-S2 F-2011 (mg/L)																				
Sulfide	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1	NA	NA
Dissolved Gases by USEPA Method AM20GAX (ug/L)																				
Ethane	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 10	NA	NA	NA	< 10	NA	**0.018 Jn**	< 10	NA
Methane	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.5 BJ//**	NA	NA	NA	**4.7 J//**	NA	**100 n**	**80 B//**	NA
Carbon Dioxide	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**180000**	NA	NA
Ethene	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 10	NA	NA	NA	< 10	NA	**0.47 n**	< 10	NA
Total Organic Carbon by USEPA Method SM 5310C-2014 (mg/L)																				
TOC	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1	NA	NA	NA	**2.5**	NA	NA	< 1	NA

Table F-2
RI - Intermediate Monitoring Well Sample Results
2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Facility																		
Sample ID		MW-2I			MW-2i-PDB	MW-3I				MW-5I			MW-5i-PDB	MW-6I			MW-7I			MW-7i-PDB
Laboratory ID	USEPA	QH27050-001	SF22082-006	XC04096-012	XC04096-011	QH13026-002	SF16059-008	XB24099-005	XB24099-012 (Dup)	QH27050-004	SF22082-004	XC03052-006	XC03052-005	QH27050-003	SF16059-003	XB24099-013	QH27050-005	SF20036-004	XC03052-002	XC03052-001
Date Collected	MCL	08/26/15	06/21/17	03/04/22	03/04/22	08/12/15	06/15/17	02/23/22	02/23/22	08/27/15	06/21/17	03/03/22	03/03/22	08/26/15	06/15/17	02/24/22	08/27/15	06/19/17	03/03/22	03/03/22
Microbial																				
Dehalococcoides	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.5	NA	NA	NA	**0.2**	NA	<0.5	**3.7**	NA
Dehalobacter spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1110**	NA	NA	NA	**5250**	NA	<4.6	< 4.5	NA
BAV1 Vinyl Chloride Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.5	NA	NA	NA	< 0.5	NA	< 0.5	< 0.5	NA
tceA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.5	NA	NA	NA	< 0.5	NA	< 0.5	< 0.5	NA
Vinyl chloride Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.2** J	NA	NA	NA	< 0.5	NA	< 0.5	0.1 J	NA
1,1 DCA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.8	NA	NA	NA	< 4.8	NA	NA	< 4.5	NA
1,2 DCA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.8	NA	NA	NA	< 4.8	NA	NA	< 4.5	NA
cerA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.8	NA	NA	NA	< 4.8	NA	NA	< 4.5	NA
Chloroform Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.8	NA	NA	NA	< 4.8	NA	NA	< 4.5	NA
Dehalobacter DCM	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.8	NA	NA	NA	< 4.8	NA	NA	< 4.5	NA
Dehalobium chlorocoercia	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.8	NA	NA	NA	**833**	NA	NA	< 4.5	NA
Dehalogenimonas spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.8	NA	NA	NA	< 4.8	NA	NA	< 4.5	NA
Desulfitobacterium spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.8	NA	NA	NA	**6410**	NA	NA	< 4.5	NA
Desulfuromonas spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.8	NA	NA	NA	< 4.8	NA	NA	< 4.5	NA
Dichloromethane Dehalogenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.8	NA	NA	NA	< 4.8	NA	NA	< 4.5	NA
Epoxyalkane Transferase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**6790**	NA	NA	NA	**436**	NA	NA	< 4.5	NA
Ethene Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1610**	NA	NA	NA	< 4.8	NA	NA	< 4.5	NA
Methanogens	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1** J	NA	NA	NA	**87.3**	NA	NA	**0.8** J	NA
PCE Reductase 1	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.8	NA	NA	NA	< 4.8	NA	NA	< 4.5	NA
PCE Reductase 2	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.8	NA	NA	NA	< 4.8	NA	NA	< 4.5	NA
Phenol Hydroxylase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**138**	NA	NA	NA	**150**	NA	NA	< 4.5	NA
Soluble Methane Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**16.1**	NA	NA	NA	< 4.8	NA	NA	< 4.5	NA
Sulfite Reducing Bacteria	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1200**	NA	NA	NA	**1790**	NA	NA	**489**	NA
Toluene Dioxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.8	NA	NA	NA	**22.4**	NA	NA	< 4.5	NA
Toluene Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**9**	NA	NA	NA	**5.4**	NA	NA	**179**	NA
Toluene Monooxygenase 2	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**238**	NA	NA	NA	**238**	NA	NA	< 4.5	NA
Total Eubacteria	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**103000**	NA	NA	NA	**60700**	NA	NA	**24600**	NA
trans-1,2-DCE Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.8	NA	NA	NA	< 4.8	NA	NA	< 4.5	NA
Trichlorobenzene Dioxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.8	NA	NA	NA	< 4.8	NA	NA	< 4.5	NA

Notes:
-a - Indicates a field duplicate sample.
MCL - Maximum Contaminant Level (USEPA, April 2012)
NS - No Standard
USEPA - United States Environmental Protection Agency
Bold font indicates the analyte was detected.
Bold outline indicates an exceedance of the USEPA MCL.
* Vertical profile sampling interval

Table F-2
RI - Intermediate Monitoring Well Sample Results
2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Facility				Dickert Property								Chapman Property		
Sample ID		MW-91				MW-101			MW-121		MW-17D	TMW 118		MW-191		
Laboratory ID	USEPA	QH27050-002	SF20036-012	SF20036-013 (Dup)	XB24099-016	QI08038-002	SF20036-010	XC08061-002	SF22082-011	XB22075-006	SG11048-001 (38-44 ft)*	SF12045-002 (30 - 34 ft)*	SF06080-001 (19 - 23 ft)*	SF23023-001	XB24099-010	
Date Collected	MCL	08/26/15	06/20/17	06/20/17	02/24/22	09/08/15	06/20/17	03/08/22	06/22/17	02/22/22	07/11/17	06/12/17	06/06/17	06/23/17	02/23/22	
Volatile Organic Compounds by USEPA Method 8260B (µg/L)																
1,1,1-Trichloroethane	200	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
1,1,2,2-Tetrachloroethane	NS	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	< 25	< 5	< 5	< 10	< 25	< 25	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 1	
1,1,2-Trichloroethane	5	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
1,1-Dichloroethane	NS	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
1,1-Dichloroethene	7	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
1,2,4-Trichlorobenzene	70	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
1,2-Dibromo-3-chloropropane (DBCP)	0.2	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
1,2-Dibromoethane (EDB)	0.05	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
1,2-Dichlorobenzene	600	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
1,2-Dichloroethane	5	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
1,2-Dichloropropane	5	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
1,3-Dichlorobenzene	NS	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
1,4-Dichlorobenzene	75	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
2-Butanone (MEK)	NS	< 50	< 10	< 10	< 100	< 50	< 50	< 50	< 10	< 10	**2.5 J//**	< 10	< 10	< 10	< 10	
2-Hexanone	NS	< 50	< 10	< 10	< 100	< 50	< 50	< 50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	
4-Methyl-2-pentanone	NS	< 50	< 10	< 10	< 100	< 50	< 50	< 50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	
Acetone	NS	< 100	< 20	< 20	< 100	< 100	< 100	< 50	< 20	< 10	**78**	**12 J//**	**6.5 J//**	**43**	< 10	
Benzene	5	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
Bromodichloromethane	80 [1]	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	**7.9**	< 5	< 5	< 5	< 0.5	
Bromoform	80 [1]	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
Bromomethane (Methyl bromide)	NS	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
Carbon disulfide	NS	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	**0.91 J/B/K**	< 5	< 5	< 5	< 0.5	
Carbon tetrachloride	5	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
Chlorobenzene	100	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
Chloroethane	NS	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
Chloroform	80 [1]	**24 J//**	**3.4 J//**	**2.3 J//**	< 5	**2.4 J//**	< 25	< 2.5	< 5	< 0.5	**42**	< 5	< 5	< 5	< 0.5	
Chloromethane (Methyl chloride)	NS	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
cis-1,2-Dichloroethene	70	**21 J//**	**31**	**26**	**43**	**2.1 J//**	< 25	**690**	**2.6 J//**	**1.2**	< 5	< 5	< 5	< 5	< 0.5	
cis-1,3-Dichloropropene	NS	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
Cyclohexane	NS	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
Dibromochloromethane	80 [1]	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	**1.7 J//**	< 5	< 5	< 5	< 0.5	
Dichlorodifluoromethane	NS	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
Ethylbenzene	700	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	**1.6 J//**	< 5	< 5	< 5	< 0.5	
Isopropylbenzene	NS	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
Methyl acetate	NS	< 25	< 5	< 5	< 10	< 25	< 25	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 1	
Methyl tertiary butyl ether (MTBE)	NS	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
Methylcyclohexane	NS	< 25	< 5	< 5	< 50	< 25	< 25	< 25	< 5	< 5	< 5	< 5	< 5	< 5	< 5	
Methylene chloride	5	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
Styrene	100	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
Tetrachloroethene	5	**1.7 J//**	**3.1 J//**	**2.8 J//**	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	**1.1 J//**	< 0.5	
Toluene	1000	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	**0.54 J//**	< 0.5	
trans-1,2-Dichloroethene	100	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
trans-1,3-Dichloropropene	NS	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
Trichloroethene (TCE)	5	**380**	**480**	**420**	**850**	**890**	**1000**	**50**	**1.2 J//**	**0.5**	< 5	< 5	< 5	< 5	< 0.5	
Trichlorofluoromethane	NS	< 25	< 5	< 5	< 5	< 25	< 25	< 2.5	< 5	< 0.5	< 5	< 5	< 5	< 5	< 0.5	
Vinyl chloride	2	< 10	< 2	< 2	< 5	< 10	< 10	< 2.5	< 2	< 0.5	< 2	< 2	< 2	**0.4 J//**	< 0.5	
Xylenes (total)	10000	< 25	< 5	< 5	< 10	< 25	< 25	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 1	
Metals by USEPA Method 6010 and SM 3500-Fe B-2011 (mg/L)																
Iron	0.3 [2]	NA	**8.9**	NA	**4.6**	NA	**0.21**	**12**	NA	NA	NA	NA	NA	NA	NA	
Manganese	0.05 [2]	NA	**0.15**	NA	NA	NA	**0.011 J//**	**0.98**	NA	NA	NA	NA	NA	NA	NA	
Dissolved Iron	0.3 [2]	NA	NA	NA	< 0.1	NA	NA	**11**	NA	NA	NA	NA	NA	NA	NA	
Dissolved Manganese	0.05 [2]	NA	**0.026**	NA	NA	NA	**0.0086 J//**	**1**	NA	NA	NA	NA	NA	NA	NA	
Ferrous Iron	NS	NA	**0.56**	NA	**2.7**	NA	**0.042 J//**	NA	NA	NA	NA	NA	NA	NA	NA	
Ferric Iron (calculation)	NS	NA	**8.4**	NA	NA	NA	**0.17**	NA	NA	NA	NA	NA	NA	NA	NA	
Alkalinity by USEPA Method SM 2320B-2011 (mg/L)																
Alkalinity	NS	NA	**81**	NA	28	NA	**22**	NA	NA	NA	NA	NA	NA	NA	NA	
Chloride, Nitrate, Nitrite, and Sulfate by USEPA Method 300.0 (mg/																
Chloride	250 [2]	NA	**3**	NA	NA	NA	**6**	**8.2**	NA	NA	NA	NA	NA	NA	NA	
Nitrate	10	NA	NA	NA	**0.9 B//**	NA	NA	< 0.02	NA	NA	NA	NA	NA	NA	NA	
Nitrite	1	NA	NA	NA	< 0.02	NA	NA	< 0.02	NA	NA	NA	NA	NA	NA	NA	
Sulfate	250 [2]	NA	**5**	NA	**1.8**	NA	< 1	< 1	NA	NA	NA	NA	NA	NA	NA	
Sulfide by USEPA Method SM 4500-S2 F-2011 (mg/L)																
Sulfide	NS	NA	< 1	NA	NA	NA	< 1	NA	NA	NA	NA	NA	NA	NA	NA	
Dissolved Gases by USEPA Method AM20GAX (ug/L)																
Ethane	NS	NA	**0.23 n**	NA	< 10	NA	**0.046 Jn**	< 10	NA	NA	NA	NA	NA	NA	NA	
Methane	NS	NA	**4 n**	NA	**2.9 J//**	NA	**0.88 n**	**1400**	NA	NA	NA	NA	NA	NA	NA	
Carbon Dioxide	NS	NA	**26000 n**	NA	NA	NA	**70000**	NA	NA	NA	NA	NA	NA	NA	NA	
Ethene	NS	NA	**0.49 n**	NA	< 10	NA	**0.038 Jn**	< 10	NA	NA	NA	NA	NA	NA	NA	
Total Organic Carbon by USEPA Method SM 5310C-2014 (mg/L)																
TOC	NS	NA	NA	NA	< 1	NA	NA	**16**	NA	NA	NA	NA	NA	NA	NA	

Table F-2
RI - Intermediate Monitoring Well Sample Results
2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Facility				Dickert Property							Chapman Property		
Sample ID		MW-91				MW-101			MW-121		MW-17D	TMW 118	MW-191		
Laboratory ID	USEPA	QH27050-002	SF20036-012	SF20036-013 (Dup)	XB24099-016	QI08038-002	SF20036-010	XC08061-002	SF22082-011	XB22075-006	SG11048-001 (38-44 ft)*	SF12045-002 (30 - 34 ft)*	SF06080-001 (19 - 23 ft)*	SF23023-001	XB24099-010
Date Collected	MCL	08/26/15	06/20/17	06/20/17	02/24/22	09/08/15	06/20/17	03/08/22	06/22/17	02/22/22	07/11/17	06/12/17	06/06/17	06/23/17	02/23/22
Microbial															
Dehalococcoides	NS	NA	< 11.1	NA	< 2.4	NA	< 0.5	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobacter spp	NS	NA	<11.1	NA	< 23.8	NA	<4.6	NA	NA	NA	NA	NA	NA	NA	NA
BAV1 Vinyl Chloride Reductase	NS	NA	< 11.1	NA	< 2.4	NA	<0.5	NA	NA	NA	NA	NA	NA	NA	NA
tceA Reductase	NS	NA	< 11.1	NA	< 2.4	NA	<0.5	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride Reductase	NS	NA	< 11.1	NA	< 2.4	NA	<0.5	NA	NA	NA	NA	NA	NA	NA	NA
1,1 DCA Reductase	NS	NA	NA	NA	< 23.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2 DCA Reductase	NS	NA	NA	NA	< 23.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cerA Reductase	NS	NA	NA	NA	< 23.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform Reductase	NS	NA	NA	NA	< 23.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobacter DCM	NS	NA	NA	NA	< 23.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobium chlorocoercia	NS	NA	NA	NA	< 23.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalogenimonas spp	NS	NA	NA	NA	< 23.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Desulfitobacterium spp	NS	NA	NA	NA	< 23.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Desulfuromonas spp	NS	NA	NA	NA	< 23.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichloromethane Dehalogenase	NS	NA	NA	NA	< 23.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Epoxyalkane Transferase	NS	NA	NA	NA	< 23.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethene Monooxygenase	NS	NA	NA	NA	< 23.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanogens	NS	NA	NA	NA	< 23.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCE Reductase 1	NS	NA	NA	NA	< 23.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCE Reductase 2	NS	NA	NA	NA	< 23.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol Hydroxylase	NS	NA	NA	NA	< 23.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Soluble Methane Monooxygenase	NS	NA	NA	NA	< 23.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate Reducing Bacteria	NS	NA	NA	NA	< 23.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Dioxygenase	NS	NA	NA	NA	< 23.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Monooxygenase	NS	NA	NA	NA	< 23.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Monooxygenase 2	NS	NA	NA	NA	< 23.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Eubacteria	NS	NA	NA	NA	**38**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-DCE Reductase	NS	NA	NA	NA	< 23.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorobenzene Dioxygenase	NS	NA	NA	NA	< 23.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
-a - Indicates a field duplicate sample.
MCL - Maximum Contaminant Level (USEPA, April 2012)
NS - No Standard
USEPA - United States Environmental Protection Agency
Bold font indicates the analyte was detected.
Bold outline indicates an exceedance of the USEPA MCL.
* Vertical profile sampling interval

Table F-2
RI - Intermediate Monitoring Well Sample Results
2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Boazman Property					Ringer Property			Shealy Property		
Sample ID		MW-20I				MW-20i-PDB	MW-21I			MW24I		
Laboratory ID	USEPA	QH13026-003	QH13026-004	SF20036-011	XC04096-008	XC04096-007	QH13026-001	SF16059-007	XB24099-008	RC03069-001	SF13096-002	XB22002-002
Date Collected	MCL	08/13/15	08/13/15	06/20/17	03/04/22	03/04/22	08/12/15	06/15/17	02/23/22	3/3/2016	06/13/17	02/21/22
Volatile Organic Compounds by USEPA Method 8260B (µg/L)												
1,1,1-Trichloroethane	200	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
1,1,2,2-Tetrachloroethane	NS	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	< 25	< 25	< 5	< 1	< 1	< 5	< 5	< 1	< 5	< 5	< 1
1,1,2-Trichloroethane	5	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
1,1-Dichloroethane	NS	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
1,1-Dichloroethene	7	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
1,2,4-Trichlorobenzene	70	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
1,2-Dibromo-3-chloropropane (DBCP)	0.2	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
1,2-Dibromoethane (EDB)	0.05	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
1,2-Dichlorobenzene	600	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
1,2-Dichloroethane	5	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
1,2-Dichloropropane	5	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
1,3-Dichlorobenzene	NS	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
1,4-Dichlorobenzene	75	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
2-Butanone (MEK)	NS	< 50	< 50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
2-Hexanone	NS	< 50	< 50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
4-Methyl-2-pentanone	NS	< 50	< 50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Acetone	NS	< 100	< 100	**2.1 J//**	< 10	**5.5 J//**	**4.9 J//**	< 20	< 10	< 20	**2.3 J//**	< 10
Benzene	5	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
Bromodichloromethane	80 [1]	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
Bromoform	80 [1]	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
Bromomethane (Methyl bromide)	NS	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
Carbon disulfide	NS	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
Carbon tetrachloride	5	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
Chlorobenzene	100	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
Chloroethane	NS	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
Chloroform	80 [1]	**2.4 J//**	**2.7 J//**	**0.48 J//**	< 0.5	< 0.5	**1.6 J//**	< 5	< 0.5	**2.1 J//**	**0.41 J//**	< 0.5
Chloromethane (Methyl chloride)	NS	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
cis-1,2-Dichloroethene	70	**6.2 J//**	**5.9 J//**	**4.5 J//**	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
cis-1,3-Dichloropropene	NS	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
Cyclohexane	NS	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
Dibromochloromethane	80 [1]	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
Dichlorodifluoromethane	NS	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
Ethylbenzene	700	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
Isopropylbenzene	NS	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
Methyl acetate	NS	< 25	< 25	< 5	< 1	< 1	< 5	< 5	< 1	< 5	< 5	< 1
Methyl tertiary butyl ether (MTBE)	NS	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
Methylcyclohexane	NS	< 25	< 25	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Methylene chloride	5	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
Styrene	100	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
Tetrachloroethene	5	**2.4 J//**	**2.5 J//**	**2.2 J//**	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
Toluene	1000	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
trans-1,2-Dichloroethene	100	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
trans-1,3-Dichloropropene	NS	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
Trichloroethene (TCE)	5	**460**	**460**	**330**	**33**	**40**	< 5	< 5	< 0.5	**1.8 J//**	< 5	< 0.5
Trichlorofluoromethane	NS	< 25	< 25	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 5	< 5	< 0.5
Vinyl chloride	2	< 10	< 10	< 2	< 0.5	< 0.5	< 2	< 2	< 0.5	< 2	< 2	< 0.5
Xylenes (total)	10000	< 25	< 25	< 5	< 1	< 1	< 5	< 5	< 1	< 5	< 5	< 1
Metals by USEPA Method 6010 and SM 3500-Fe B-2011 (mg/L)												
Iron	0.3 [2]	NA	NA	**0.35**	**5.4**	NA	NA	NA	NA	NA	NA	NA
Manganese	0.05 [2]	NA	NA	**0.025**	**0.1**	NA	NA	NA	NA	NA	NA	NA
Dissolved Iron	0.3 [2]	NA	NA	NA	**0.06 J//**	NA	NA	NA	NA	NA	NA	NA
Dissolved Manganese	0.05 [2]	NA	NA	**0.017**	**0.0063 J//**	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron	NS	NA	NA	**0.052**	**0.057**	NA	NA	NA	NA	NA	NA	NA
Ferric Iron (calculation)	NS	NA	NA	**0.3**	NA	NA	NA	NA	NA	NA	NA	NA
Alkalinity by USEPA Method SM 2320B-2011 (mg/L)												
Alkalinity	NS	NA	NA	**22**	< 20	NA	NA	NA	NA	NA	NA	NA
Chloride, Nitrate, Nitrite, and Sulfate by USEPA Method 300.0 (mg/												
Chloride	250 [2]	NA	NA	**4.8**	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate	10	NA	NA	NA	**0.4 B//**	NA	NA	NA	NA	NA	NA	NA
Nitrite	1	NA	NA	NA	< 0.02	NA	NA	NA	NA	NA	NA	NA
Sulfate	250 [2]	NA	NA	**0.59 J//**	**1.4**	NA	NA	NA	NA	NA	NA	NA
Sulfide by USEPA Method SM 4500-S2 F-2011 (mg/L)												
Sulfide	NS	NA	NA	< 1	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Gases by USEPA Method AM20GAX (ug/L)												
Ethane	NS	NA	NA	0.04 Jn	< 10	NA	NA	NA	NA	NA	NA	NA
Methane	NS	NA	NA	0.45 Jn	< 10	NA	NA	NA	NA	NA	NA	NA
Carbon Dioxide	NS	NA	NA	70000	NA	NA	NA	NA	NA	NA	NA	NA
Ethene	NS	NA	NA	0.017 Jn	< 10	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon by USEPA Method SM 5310C-2014 (mg/L)												
TOC	NS	NA	NA	NA	< 1	NA	NA	NA	NA	NA	NA	NA

Table F-2
RI - Intermediate Monitoring Well Sample Results
2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Boazman Property					Ringer Property			Shealy Property		
Sample ID		MW-20I				MW-20i-PDB	MW-21I			MW24I		
Laboratory ID	USEPA	QH13026-003	QH13026-004	SF20036-011	XC04096-008	XC04096-007	QH13026-001	SF16059-007	XB24099-008	RC03069-001	SF13096-002	XB22002-002
Date Collected	MCL	08/13/15	08/13/15	06/20/17	03/04/22	03/04/22	08/12/15	06/15/17	02/23/22	3/3/2016	06/13/17	02/21/22
Microbial												
Dehalococcoides	NS	NA	NA	< 0.5	**2.1**	NA	NA	NA	NA	NA	NA	NA
Dehalobacter spp	NS	NA	NA	<4.6	**60.1**	NA	NA	NA	NA	NA	NA	NA
BAV1 Vinyl Chloride Reductase	NS	NA	NA	<0.5	**0.1 J**	NA	NA	NA	NA	NA	NA	NA
tceA Reductase	NS	NA	NA	<0.5	< 0.5	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride Reductase	NS	NA	NA	<0.5	< 0.5	NA	NA	NA	NA	NA	NA	NA
1,1 DCA Reductase	NS	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA
1,2 DCA Reductase	NS	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA
cerA Reductase	NS	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA
Chloroform Reductase	NS	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA
Dehalobacter DCM	NS	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA
Dehalobium chlorocoercia	NS	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA
Dehalogenimonas spp	NS	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA
Desulfitobacterium spp	NS	NA	NA	NA	**11900**	NA	NA	NA	NA	NA	NA	NA
Desulfuromonas spp	NS	NA	NA	NA	**5**	NA	NA	NA	NA	NA	NA	NA
Dichloromethane Dehalogenase	NS	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA
Epoxyalkane Transferase	NS	NA	NA	NA	**5060**	NA	NA	NA	NA	NA	NA	NA
Ethene Monooxygenase	NS	NA	NA	NA	**2340**	NA	NA	NA	NA	NA	NA	NA
Methanogens	NS	NA	NA	NA	**0.4 J**	NA	NA	NA	NA	NA	NA	NA
PCE Reductase 1	NS	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA
PCE Reductase 2	NS	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA
Phenol Hydroxylase	NS	NA	NA	NA	**3150**	NA	NA	NA	NA	NA	NA	NA
Soluble Methane Monooxygenase	NS	NA	NA	NA	**132**	NA	NA	NA	NA	NA	NA	NA
Sulfate Reducing Bacteria	NS	NA	NA	NA	**1850**	NA	NA	NA	NA	NA	NA	NA
Toluene Dioxygenase	NS	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA
Toluene Monooxygenase	NS	NA	NA	NA	**6**	NA	NA	NA	NA	NA	NA	NA
Toluene Monooxygenase 2	NS	NA	NA	NA	**2450**	NA	NA	NA	NA	NA	NA	NA
Total Eubacteria	NS	NA	NA	NA	**478000**	NA	NA	NA	NA	NA	NA	NA
trans-1,2-DCE Reductase	NS	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA
Trichlorobenzene Dioxygenase	NS	NA	NA	NA	< 4.9	NA	NA	NA	NA	NA	NA	NA

Notes:
-a - Indicates a field duplicate sample.
MCL - Maximum Contaminant Level (USEPA, April 2012)
NS - No Standard
USEPA - United States Environmental Protection Agency
Bold font indicates the analyte was detected.
Bold outline indicates an exceedance of the USEPA MCL.
* Vertical profile sampling interval

Table F-3
Bedrock Monitoring Well Sample Results
2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Facility																			
		MW-2D					MW-3D							MW-6D							
Sample ID	USEPA	PH28036-004	QH04060-001	SF22082-013	SF22082-014	XB25085-005	PH28036-001	QH06108-002	QH06108-003	SF22082-002	SF22082-003	XB25085-002		PH28036-003	QH06108-004	SF20036-003	XC04096-009	XC04096-010			
Laboratory ID					Duplicate						(Dup)							(Dup)			
Date Collected	MCL	08/28/14	08/03/15	06/22/17	06/22/17	02/25/22	08/28/14	08/06/15	08/06/15	06/21/17	06/21/17	02/25/22		08/28/14	08/06/15	06/19/17	03/04/22	03/04/22			
Volatile Organic Compounds by USEPA Method 8260B (ug/L)																					
1,1,1-Trichloroethane	200	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
1,1,2,2-Tetrachloroethane	NS	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 1		< 25	< 25	< 5	< 1	< 1			
1,1,2-Trichloroethane	5	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
1,1-Dichloroethane	NS	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
1,1-Dichloroethene	7	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
1,2,4-Trichlorobenzene	70	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
1,2-Dibromo-3-chloropropane (DBCP)	0.2	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
1,2-Dibromoethane (EDB)	0.05	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
1,2-Dichlorobenzene	600	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
1,2-Dichloroethane	5	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	**0.73 J//**	**0.58**	**0.63**			
1,2-Dichloropropane	5	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
1,3-Dichlorobenzene	NS	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
1,4-Dichlorobenzene	75	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
2-Butanone (MEK)	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		< 50	< 50	< 10	< 10	< 10			
2-Hexanone	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		< 50	< 50	< 10	< 10	< 10			
4-Methyl-2-pentanone	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	**0.56 J//**	< 10	< 10	< 10		< 50	< 50	< 10	< 10	< 10			
Acetone	NS	< 20	< 20	< 20	< 20	< 10	< 20	< 20	< 20	< 20	< 20	< 10		< 100	**8.8 J//**	< 20	< 10	< 10			
Benzene	5	**0.43 J//**	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
Bromodichloromethane	80 [1]	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
Bromoform	80 [1]	< 5	< 5	< 5	< 5	< 1	< 5	< 5	**1.1 J//**	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
Bromomethane (Methyl bromide)	NS	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
Carbon disulfide	NS	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
Carbon tetrachloride	5	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
Chlorobenzene	100	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
Chloroethane	NS	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
Chloroform	80 [1]	< 5	< 5	< 5	< 5	< 1	< 5	**0.23 J//**	**0.26 J//**	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
Chloromethane (Methyl chloride)	NS	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
cis-1,2-Dichloroethene	70	< 5	< 5	< 5	< 5	< 1	**18**	**17**	**11**	**11**	**11**	**36**		< 25	< 25	**1.8 J//**	< 0.5	< 0.5			
cis-1,3-Dichloropropene	NS	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
Cyclohexane	NS	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
Dibromochloromethane	80 [1]	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
Dichlorodifluoromethane	NS	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
Ethylbenzene	700	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
Isopropylbenzene	NS	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
Methyl acetate	NS	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 1		< 25	< 25	< 5	< 1	< 1			
Methyl tertiary butyl ether (MTBE)	NS	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
Methylcyclohexane	NS	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5		< 25	< 25	< 5	< 5	< 5			
Methylene chloride	5	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
Styrene	100	**0.29 J//**	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
Tetrachloroethene	5	< 5	< 5	< 5	< 5	< 1	**1 J//**	**1.1 J//**	**1.1 J//**	**0.4 J//**	**0.5 J//**	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
Toluene	1000	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
trans-1,2-Dichloroethene	100	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
trans-1,3-Dichloropropene	NS	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
Trichloroethene	5	< 5	< 5	< 5	< 5	< 1	**40**	**30**	**30**	**16**	**15**	**24**		**210**	**250**	**160**	**160**	**160**			
Trichlorofluoromethane	NS	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 0.5		< 25	< 25	< 5	< 0.5	< 0.5			
Vinyl chloride	2	< 2	< 2	< 2	< 2	< 1	< 2	< 2	< 2	< 2	< 2	< 0.5		< 10	< 10	< 2	< 0.5	< 0.5			
Xylenes (total)	10000	< 5	< 5	< 5	< 5	< 1	< 5	< 5	< 5	< 5	< 5	< 1		< 25	< 25	< 5	< 1	< 1			
Metals by USEPA Method 6010 and SM 3500-Fe B-2011 (mg/L)																					
Iron	0.3 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	**0.04 J//**	**0.15**	NA			
Manganese	0.05 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	< 0.015	**0.0019 J//**	NA			
Dissolved Iron	0.3 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	**0.059 J//**	NA			
Dissolved Manganese	0.05 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	< 0.015	< 0.015	NA			
Ferrous Iron	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	< 0.05	< 0.05	NA			
Ferric Iron (calculation)	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	< 0.1	NA	NA			
Alkalinity by USEPA Method SM 2320B-2011 (mg/L)																					
Alkalinity	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	**66**	**100**	NA			
Chloride, Nitrate, Nitrite, and Sulfate by USEPA Method 300.0 (mg/L)																					
Chloride	250 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	**3.6**	NA	NA			
Nitrate	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	**0.9 B//**	NA	NA			
Nitrite	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	< 0.02	NA			
Sulfate	250 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	**1.2**	**2.2**	NA			
Sulfide by USEPA Method SM 4500-S2 F-2011 (mg/L)																					
Sulfide	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	< 1	NA	NA			
Dissolved Gases by USEPA Method AM20GAX (ug/L)																					
Ethane	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	**0.051 Jn**	< 10	NA			
Methane	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	**3.1 n**	**2.5 J//**	NA			
Carbon Dioxide	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	5000 Un	NA	NA			
Ethene	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	**0.018 Jn**	< 10	NA			
Total Organic Carbon by USEPA Method SM 5310C-2014 (mg/L)																					
TOC	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	< 1	NA			

Table F-3
Bedrock Monitoring Well Sample Results
2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Facility															
		MW-2D					MW-3D						MW-6D				
Sample ID		PH28036-004	QH04060-001	SF22082-013	SF22082-014	XB25085-005	PH28036-001	QH06108-002	QH06108-003	SF22082-002	SF22082-003 (Dup)	XB25085-002	PH28036-003	QH06108-004	SF20036-003	XC04096-009	XC04096-010 (Dup)
Laboratory ID	USEPA				Duplicate												
Date Collected	MCL	08/28/14	08/03/15	06/22/17	06/22/17	02/25/22	08/28/14	08/06/15	08/06/15	06/21/17	06/21/17	02/25/22	08/28/14	08/06/15	06/19/17	03/04/22	03/04/22
Microbial																	
Dehalococcoides	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.5	< 0.5	NA
Dehalobacter spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**551**	< 4.6	NA
BAV1 Vinyl Chloride Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.5	< 0.5	NA
tceA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.5	< 0.5	NA
Vinyl chloride Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.5	< 0.5	NA
1,1 DCA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.6	NA
1,2 DCA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**10.2**	NA
cerA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.6	NA
Chloroform Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.6	NA
Dehalobacter DCM	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.6	NA
Dehalobium chlorocoercia	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.58**	NA
Dehalogenimonas spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.6	NA
Desulfitobacterium spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**45.8**	NA
Desulfuromonas spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**80.4**	NA
Dichloromethane Dehalogenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.6	NA
Epoxyalkane Transferase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**169**	NA
Ethene Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**45.7**	NA
Methanogens	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.6** J	NA
PCE Reductase 1	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.6	NA
PCE Reductase 2	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.6	NA
Phenol Hydroxylase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2350**	NA
Soluble Methane Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.6	NA
Sulfate Reducing Bacteria	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.6	NA
Toluene Dioxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.6	NA
Toluene Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**5.7**	NA
Toluene Monooxygenase 2	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**570**	NA
Total Eubacteria	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**398000**	NA
trans-1,2-DCE Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.6	NA
Trichlorobenzene Dioxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.6	NA

Notes:
-a - Indicates a field duplicate sample.
MCL - Maximum Contaminant Level (USEPA, April 2012)
NS - No Standard
USEPA - United States Environmental Protection Agency
Bold font indicates the analyte was detected.
Bold outline indicates an exceedance of the USEPA MCL.
* Vertical profile sampling interval

Table F-3
Bedrock Monitoring Well Sample Results
2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Facility									Dickert Property								
Sample ID		MW-7D					MW 9D				MW12D			MW-12D-PDB	MW-17D		MW-18D		
Laboratory ID	USEPA	PH28036-002	QH06108-005	SF22082-010	XB25085-006	XB25085-007 (Dup)	RD26033-001	SF22082-010	XB24099-018		SG06069-001 (71- 81 ft) *	SG26040-001	XC08059-004	XC08059-003	SG26040-002	XB22075-004	QI11015-001	SF20036-007	XB22075-007
Date Collected	MCL	08/28/14	08/06/15	06/24/17	02/25/22	02/25/22	04/25/16	06/22/17	02/24/22		07/06/17	07/24/17	03/08/22	03/08/22	07/25/17	02/22/22	09/11/15	06/19/17	02/22/22
Volatile Organic Compounds by USEPA Method 8260B (ug/L)																			
1,1,1-Trichloroethane	200	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
1,1,2,2-Tetrachloroethane	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	< 5	< 5	< 5	< 1	< 1	< 5	< 5	< 1		< 5	< 5	< 1	< 1	< 5	< 1	< 5	< 5	< 1
1,1,2-Trichloroethane	5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
1,1-Dichloroethane	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
1,1-Dichloroethene	7	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	**0.46 J//**	< 5	< 0.5	< 5	< 5	< 0.5
1,2,4-Trichlorobenzene	70	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
1,2-Dibromo-3-chloropropane (DBCP)	0.2	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
1,2-Dibromoethane (EDB)	0.05	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
1,2-Dichlorobenzene	600	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
1,2-Dichloroethane	5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
1,2-Dichloropropane	5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
1,3-Dichlorobenzene	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
1,4-Dichlorobenzene	75	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
2-Butanone (MEK)	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		< 10	< 10	< 10	< 10	< 10	< 10	< 10	**11**	**2.2 J//**
2-Hexanone	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		< 10	< 10	< 10	< 10	< 10	< 10	< 10	**2.2 J//**	< 10
4-Methyl-2-pentanone	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Acetone	NS	< 20	< 20	< 20	< 10	< 10	**2.4 J//**	< 20	< 10		**2.5 J//**	**2.2 J/B/T**	< 10	**9.8 J//**	< 20	< 10	**4.9 J//**	**73**	**21 /B/T**
Benzene	5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
Bromodichloromethane	80 [1]	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		**3.8 J//**	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
Bromoform	80 [1]	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
Bromomethane (Methyl bromide)	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
Carbon disulfide	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	**0.52 J//**	< 5	< 0.5
Carbon tetrachloride	5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
Chlorobenzene	100	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
Chloroethane	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
Chloroform	80 [1]	< 5	< 5	< 5	< 0.5	< 0.5	**2 J//**	**0.4 J//**	< 0.5		**16**	**0.61 J//**	< 0.5	< 0.5	**2 J//**	< 0.5	**0.45 J//**	< 5	< 0.5
Chloromethane (Methyl chloride)	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
cis- 1,2-Dichloroethene	70	**0.6 J//**	**0.27 J//**	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		**2.1 J//**	**4.2 J//**	**10**	**10**	< 5	< 0.5	< 5	< 5	< 0.5
cis- 1,3-Dichloropropene	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
Cyclohexane	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
Dibromochloromethane	80 [1]	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		**0.87 J//**	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
Dichlorodifluoromethane	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
Ethylbenzene	700	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
Isopropylbenzene	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
Methyl acetate	NS	< 5	< 5	< 5	< 1	< 1	< 5	< 5	< 1		< 5	< 5	< 1	< 1	< 5	< 1	< 5	< 5	< 1
Methyl tertiary butyl ether (MTBE)	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
Methylcyclohexane	NS	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5		< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Methylene chloride	5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
Styrene	100	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	**0.5 J//**	< 0.5
Tetrachloroethene	5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
Toluene	1000	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	**0.6 J//**	< 0.5
trans- 1,2-Dichloroethene	100	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
trans- 1,3-Dichloropropene	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
Trichloroethene	5	45	15	**1.5 J**	< 0.5	< 0.5	**3.1 J//**	**2.2 J//**	**3.6**		**7.8**	**12**	**53**	**70**	< 5	< 0.5	**74**	**21**	**19**
Trichlorofluoromethane	NS	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 0.5		< 5	< 5	< 0.5	< 0.5	< 5	< 0.5	< 5	< 5	< 0.5
Vinyl chloride	2	< 2	< 2	< 2	< 0.5	< 0.5	< 2	< 2	< 0.5		< 2	< 2	< 0.5	< 0.5	< 2	< 0.5	< 2	< 2	< 0.5
Xylenes (total)	10000	< 5	< 5	< 5	< 1	< 1	< 5	< 5	< 1		< 5	< 5	< 1	< 1	< 5	< 1	< 5	< 5	< 1
Metals by USEPA Method 6010 and SM 3500-Fe B-2011 (mg/L)																			
Iron	0.3 [2]	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.05 [2]	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Iron	0.3 [2]	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Manganese	0.05 [2]	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron	NS	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferric Iron (calculation)	NS	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA
Alkalinity by USEPA Method SM 2320B-2011 (mg/L)																			
Alkalinity	NS	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride, Nitrate, Nitrite, and Sulfate by USEPA Method 300.0 (mg/L)																			
Chloride	250 [3]	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate	10	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite	1	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250 [2]	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfide by USEPA Method SM 4500-S2 F-2011 (mg/L)																			
Sulfide	NS	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Gases by USEPA Method AM20GAX (ug/L)																			
Ethane	NS	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA
Methane	NS	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Dioxide	NS	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethene	NS	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon by USEPA Method SM 5310C-2014 (mg/L)																			
TOC	NS	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA

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2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Facility								Dickert Property								
Sample ID		MW-7D					MW 9D			MW12D			MW-12D-PDB	MW-17D		MW-18D		
Laboratory ID	USEPA	PH28036-002	QH06108-005	SF22082-010	XB25085-006	XB25085-007 (Dup)	RD26033-001	SF22082-010	XB24099-018	SG06069-001 (71- 81 ft) *	SG26040-001	XC08059-004	XC08059-003	SG26040-002	XB22075-004	QI11015-001	SF20036-007	XB22075-007
Date Collected	MCL	08/28/14	08/06/15	06/24/17	02/25/22	02/25/22	04/25/16	06/22/17	02/24/22	07/06/17	07/24/17	03/08/22	03/08/22	07/25/17	02/22/22	09/11/15	06/19/17	02/22/22
Microbial																		
Dehalococcoides	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobacter spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAV1 Vinyl Chloride Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tceA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1 DCA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2 DCA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cerA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobacter DCM	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobium chlorocoercia	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalogenimonas spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Desulfitobacterium spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Desulfuromonas spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichloromethane Dehalogenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Epoxyalkane Transferase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethene Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanogens	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCE Reductase 1	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCE Reductase 2	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol Hydroxylase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Soluble Methane Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfite Reducing Bacteria	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Dioxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Monooxygenase 2	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Eubacteria	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-DCE Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorobenzene Dioxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
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NS - No Standard
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Bold font indicates the analyte was detected.
Bold outline indicates an exceedance of the USEPA MCL.
* Vertical profile sampling interval

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Bedrock Monitoring Well Sample Results
2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Chapman Property			Ringer Property										Shealy Property		
Sample ID		MW19D			RDW-1				RDW-1-PDB	RDW-2					SDW-1		
Laboratory ID	USEPA	SF26019-001	SG27028-001	XB24099-011	PH27059-001	QH06108-001	SF22082-007	XC04096-006	XC04096-005	PH27059-002	QH04060-002	SF16059-005	XB25085-001		RA13091-001	SF22082-005	XB22075-001
		(45 feet) *															
Date Collected	MCL	06/26/17	07/27/17	02/23/22	08/28/14	08/05/15	06/21/17	03/04/22	03/04/22	08/28/14	08/04/15	06/15/17	02/25/22		01/13/16	06/21/17	02/21/22
Volatile Organic Compounds by USEPA Method 8260B (ug/L)																	
1,1,1-Trichloroethane	200	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
1,1,2,2-Tetrachloroethane	NS	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	< 5	< 5	< 1	< 5	< 5	< 5	< 1	< 1	< 5	< 5	< 5	< 1		< 5	< 5	< 1
1,1,2-Trichloroethane	5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
1,1-Dichloroethane	NS	< 5	< 5	< 0.5	**0.43 J//**	**0.38 J//**	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
1,1-Dichloroethene	7	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
1,2,4-Trichlorobenzene	70	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
1,2-Dibromo-3-chloropropane (DBCP)	0.2	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
1,2-Dibromoethane (EDB)	0.05	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
1,2-Dichlorobenzene	600	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
1,2-Dichloroethane	5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
1,2-Dichloropropane	5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
1,3-Dichlorobenzene	NS	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
1,4-Dichlorobenzene	75	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
2-Butanone (MEK)	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		< 10	< 10	< 10
2-Hexanone	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		< 10	< 10	< 10
4-Methyl-2-pentanone	NS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10		< 10	< 10	< 10
Acetone	NS	< 20	< 20	< 10	< 20 /J/E	**3 J//**	**5.4 J/B/T**	**9.6 J//**	**6.1 J//**	< 20 /J/E	**5 J//**	< 20	**4.9 J//**		< 20	< 20	< 10
Benzene	5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
Bromodichloromethane	80 [1]	**0.72 J//**	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
Bromoform	80 [1]	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
Bromomethane (Methyl bromide)	NS	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
Carbon disulfide	NS	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
Carbon tetrachloride	5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
Chlorobenzene	100	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
Chloroethane	NS	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
Chloroform	80 [1]	**3.1 J//**	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	**2.9 J//**	< 5	< 5	< 0.5		< 5	< 5	< 0.5
Chloromethane (Methyl chloride)	NS	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
cis-1,2-Dichloroethene	70	< 5	< 5	< 0.5	**3.5 J//**	**3.3 J//**	**2.1 J//**	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		**0.96 J//**	**0.56 J//**	**1.3**
cis-1,3-Dichloropropene	NS	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
Cyclohexane	NS	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	**0.51**	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
Dibromochloromethane	80 [1]	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
Dichlorodifluoromethane	NS	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
Ethylbenzene	700	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
Isopropylbenzene	NS	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
Methyl acetate	NS	< 5	< 5	< 1	< 5	< 5	< 5	< 1	< 1	< 5	< 5	< 5	< 1		< 5	< 5	< 1
Methyl tertiary butyl ether (MTBE)	NS	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
Methylcyclohexane	NS	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5		< 5	< 5	< 5
Methylene chloride	5	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
Styrene	100	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
Tetrachloroethene	5	< 5	< 5	< 0.5	**1.3 J//**	**1.1 J//**	**0.66 J//**	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
Toluene	1000	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
trans-1,2-Dichloroethene	100	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
trans-1,3-Dichloropropene	NS	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
Trichloroethene	5	< 5	**3.1 J//**	**3.3**	**190**	**180**	**110**	**10**	**9.1**	< 5	< 5	< 5	< 0.5		**16**	**10**	**25**
Trichlorofluoromethane	NS	< 5	< 5	< 0.5	< 5	< 5	< 5	< 0.5	< 0.5	< 5	< 5	< 5	< 0.5		< 5	< 5	< 0.5
Vinyl chloride	2	< 2	< 2	< 0.5	< 2	< 2	< 2	< 0.5	< 0.5	< 2	< 2	< 2	< 0.5		< 2	< 2	< 0.5
Xylenes (total)	10000	< 5	< 5	< 1	< 5	< 5	< 5	< 1	< 1	< 5	< 5	< 5	< 1		< 5	< 5	< 1
Metals by USEPA Method 6010 and SM 3500-Fe B-2011 (mg/L)																	
Iron	0.3 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA
Manganese	0.05 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA
Dissolved Iron	0.3 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA
Dissolved Manganese	0.05 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA
Ferrous Iron	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA
Ferric Iron (calculation)	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA
Alkalinity by USEPA Method SM 2320B-2011 (mg/L)																	
Alkalinity	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA
Chloride, Nitrate, Nitrite, and Sulfate by USEPA Method 300.0 (mg/L																	
Chloride	250 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA
Nitrate	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA
Nitrite	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA
Sulfate	250 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA
Sulfide by USEPA Method SM 4500-S2 F-2011 (mg/L)																	
Sulfide	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA
Dissolved Gases by USEPA Method AM20GAX (ug/L)																	
Ethane	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA
Methane	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA
Carbon Dioxide	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA
Ethene	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA
Total Organic Carbon by USEPA Method SM 5310C-2014 (mg/L)																	
TOC	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA

Table F-3
Bedrock Monitoring Well Sample Results
2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Chapman Property			Ringer Property									Shealy Property		
Sample ID		MW19D			RDW-1				RDW-1-PDB	RDW-2				SDW-1		
Laboratory ID	USEPA	SF26019-001	SG27028-001	XB24099-011	PH27059-001	QH06108-001	SF22082-007	XC04096-006	XC04096-005	PH27059-002	QH04060-002	SF16059-005	XB25085-001	RA13091-001	SF22082-005	XB22075-001
		(45 feet) *														
Date Collected	MCL	06/26/17	07/27/17	02/23/22	08/28/14	08/05/15	06/21/17	03/04/22	03/04/22	08/28/14	08/04/15	06/15/17	02/25/22	01/13/16	06/21/17	02/21/22
Microbial																
Dehalococcoides	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobacter spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BAV1 Vinyl Chloride Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tceA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1 DCA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2 DCA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cerA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobacter DCM	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobium chlorocoercia	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalogenimonas spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Desulfitobacterium spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Desulfuromonas spp	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichloromethane Dehalogenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Epoxyalkane Transferase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethene Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methanogens	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCE Reductase 1	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCE Reductase 2	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol Hydroxylase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Soluble Methane Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfite Reducing Bacteria	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Dioxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Monooxygenase 2	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Eubacteria	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-DCE Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorobenzene Dioxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
-a - Indicates a field duplicate sample.
MCL - Maximum Contaminant Level (USEPA, April 2012)
NS - No Standard
USEPA - United States Environmental Protection Agency
Bold font indicates the analyte was detected.
Bold outline indicates an exceedance of the USEPA MCL.
* Vertical profile sampling interval

Table F-3
Bedrock Monitoring Well Sample Results
2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Sheally Property											
Sample ID		SDW 2			SDW-3								
Laboratory ID	USEPA	RD26033-003	SF22082-015	XB22075-008	SF29048-001 (56 - 66 ft)*		SF29048-002 (84 ft)*		SG05094-001 (133 ft) *		SG26040-003	XB22002-001	
Date Collected	MCL	04/26/16	06/22/17	02/22/22	06/29/17		06/29/17		07/05/17		07/25/17	02/21/22	
Volatile Organic Compounds by USEPA Method 8260B (ug/L)													
1,1,1-Trichloroethane	200	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
1,1,2,2-Tetrachloroethane	NS	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
1,1,2-Trichloro-1,2,2-Trifluoroethane	NS	< 5	< 5	< 1	< 5		< 5		< 5		< 5	< 1	
1,1,2-Trichloroethane	5	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
1,1-Dichloroethane	NS	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
1,1-Dichloroethene	7	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
1,2,4-Trichlorobenzene	70	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
1,2-Dibromo-3-chloropropane (DBCP)	0.2	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
1,2-Dibromoethane (EDB)	0.05	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
1,2-Dichlorobenzene	600	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
1,2-Dichloroethane	5	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
1,2-Dichloropropane	5	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
1,3-Dichlorobenzene	NS	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
1,4-Dichlorobenzene	75	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
2-Butanone (MEK)	NS	**2.3** J//	< 10	< 10	< 10		< 10		< 10		< 10	< 10	
2-Hexanone	NS	**0.59** J//	< 10	< 10	< 10		< 10		< 10		< 10	< 10	
4-Methyl-2-pentanone	NS	**0.92** J//	< 10	< 10	< 10		< 10		< 10		< 10	< 10	
Acetone	NS	**11** J//	**25** /B/T	**4.2** J/B/T	**14**	J//	< 20		**5.5**	J//	< 20	< 10	
Benzene	5	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
Bromodichloromethane	80 [1]	< 5	< 5	< 0.5	**2.6**	J//	**0.98**	J//	**1.3**	J//	< 5	< 0.5	
Bromoform	80 [1]	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
Bromomethane (Methyl bromide)	NS	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
Carbon disulfide	NS	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
Carbon tetrachloride	5	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
Chlorobenzene	100	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
Chloroethane	NS	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
Chloroform	80 [1]	**5.7**	< 5	**0.5**	**17**		**3.5**	J//	**5.6**		< 5	< 0.5	
Chloromethane (Methyl chloride)	NS	**0.37** J//	**0.42** J//	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
cis-1,2-Dichloroethene	70	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
cis-1,3-Dichloropropene	NS	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
Cyclohexane	NS	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
Dibromochloromethane	80 [1]	< 5	< 5	< 0.5	**0.59**	J//	< 5		< 5		< 5	< 0.5	
Dichlorodifluoromethane	NS	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
Ethylbenzene	700	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
Isopropylbenzene	NS	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
Methyl acetate	NS	< 5	< 5	< 1	< 5		< 5		< 5		< 5	< 1	
Methyl tertiary butyl ether (MTBE)	NS	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
Methylcyclohexane	NS	< 5	< 5	< 5	< 5		< 5		< 5		< 5	< 5	
Methylene chloride	5	**1.8** J//	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
Styrene	100	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
Tetrachloroethene	5	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
Toluene	1000	**27**	**0.85** J//	**0.46** J//	**0.52**	J//	< 5		< 5		< 5	< 0.5	
trans-1,2-Dichloroethene	100	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
trans-1,3-Dichloropropene	NS	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
Trichloroethene	5	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
Trichlorofluoromethane	NS	< 5	< 5	< 0.5	< 5		< 5		< 5		< 5	< 0.5	
Vinyl chloride	2	< 2	< 2	< 0.5	< 2		< 2		< 2		< 2	< 0.5	
Xylenes (total)	10000	< 5	< 5	< 1	< 5		< 5		< 5		< 5	< 1	
Metals by USEPA Method 6010 and SM 3500-Fe B-2011 (mg/L)													
Iron	0.3 [2]	NA	NA	NA	NA		NA		NA		NA	NA	
Manganese	0.05 [2]	NA	NA	NA	NA		NA		NA		NA	NA	
Dissolved Iron	0.3 [2]	NA	NA	NA	NA		NA		NA		NA	NA	
Dissolved Manganese	0.05 [2]	NA	NA	NA	NA		NA		NA		NA	NA	
Ferrous Iron	NS	NA	NA	NA	NA		NA		NA		NA	NA	
Ferric Iron (calculation)	NS	NA	NA	NA	NA		NA		NA		NA	NA	
Alkalinity by USEPA Method SM 2320B-2011 (mg/L)													
Alkalinity	NS	NA	NA	NA	NA		NA		NA		NA	NA	
Chloride, Nitrate, Nitrite, and Sulfate by USEPA Method 300.0 (mg/L													
Chloride	250 [2]	NA	NA	NA	NA		NA		NA		NA	NA	
Nitrate	10	NA	NA	NA	NA		NA		NA		NA	NA	
Nitrite	1	NA	NA	NA	NA		NA		NA		NA	NA	
Sulfate	250 [2]	NA	NA	NA	NA		NA		NA		NA	NA	
Sulfide by USEPA Method SM 4500-S2 F-2011 (mg/L)													
Sulfide	NS	NA	NA	NA	NA		NA		NA		NA	NA	
Dissolved Gases by USEPA Method AM20GAX (ug/L)													
Ethane	NS	NA	NA	NA	NA		NA		NA		NA	NA	
Methane	NS	NA	NA	NA	NA		NA		NA		NA	NA	
Carbon Dioxide	NS	NA	NA	NA	NA		NA		NA		NA	NA	
Ethene	NS	NA	NA	NA	NA		NA		NA		NA	NA	
Total Organic Carbon by USEPA Method SM 5310C-2014 (mg/L)													
TOC	NS	NA	NA	NA	NA		NA		NA		NA	NA	

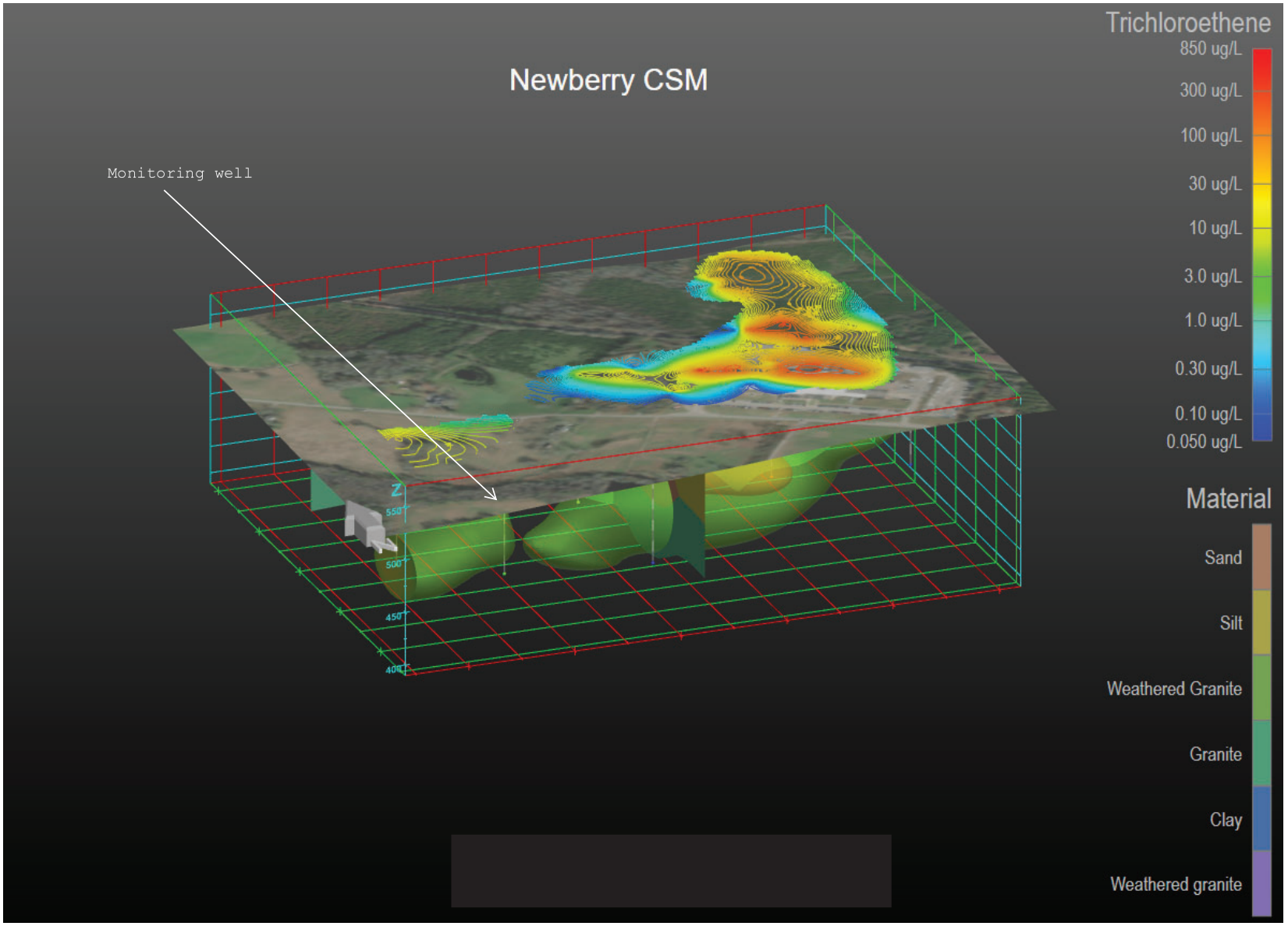
Table F-3
Bedrock Monitoring Well Sample Results
2014 to 2022
Shakespeare Composite Structures Site
RP-VCC-14-6271-RP
Newberry, SC

		Shealy Property							
Sample ID		SDW 2			SDW-3				
Laboratory ID	USEPA	RD26033-003	SF22082-015	XB22075-008	SF29048-001 (56 - 66 ft)*	SF29048-002 (84 ft)*	SG05094-001 (133 ft) *	SG26040-003	XB22002-001
Date Collected	MCL	04/26/16	06/22/17	02/22/22	06/29/17	06/29/17	07/05/17	07/25/17	02/21/22
Microbial									
Dehalococcoides	NS	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobacter spp	NS	NA	NA	NA	NA	NA	NA	NA	NA
BAV1 Vinyl Chloride Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA
tceA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA
1,1 DCA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA
1,2 DCA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA
cerA Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobacter DCM	NS	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobium chlorocoercia	NS	NA	NA	NA	NA	NA	NA	NA	NA
Dehalogenimonas spp	NS	NA	NA	NA	NA	NA	NA	NA	NA
Desulfitobacterium spp	NS	NA	NA	NA	NA	NA	NA	NA	NA
Desulfuromonas spp	NS	NA	NA	NA	NA	NA	NA	NA	NA
Dichloromethane Dehalogenase	NS	NA	NA	NA	NA	NA	NA	NA	NA
Epoxyalkane Transferase	NS	NA	NA	NA	NA	NA	NA	NA	NA
Ethene Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA
Methanogens	NS	NA	NA	NA	NA	NA	NA	NA	NA
PCE Reductase 1	NS	NA	NA	NA	NA	NA	NA	NA	NA
PCE Reductase 2	NS	NA	NA	NA	NA	NA	NA	NA	NA
Phenol Hydroxylase	NS	NA	NA	NA	NA	NA	NA	NA	NA
Soluble Methane Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate Reducing Bacteria	NS	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Dioxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Monooxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA
Toluene Monooxygenase 2	NS	NA	NA	NA	NA	NA	NA	NA	NA
Total Eubacteria	NS	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-DCE Reductase	NS	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorobenzene Dioxygenase	NS	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
-a - Indicates a field duplicate sample.
MCL - Maximum Contaminant Level (USEPA, April 2012)
NS - No Standard
USEPA - United States Environmental Protection Agency
Bold font indicates the analyte was detected.
Bold outline indicates an exceedance of the USEPA MCL.
* Vertical profile sampling interval

Appendix G

Earth Volumetric Studio Projections for TCE in Groundwater (including a CD with complete 3-D visualization)



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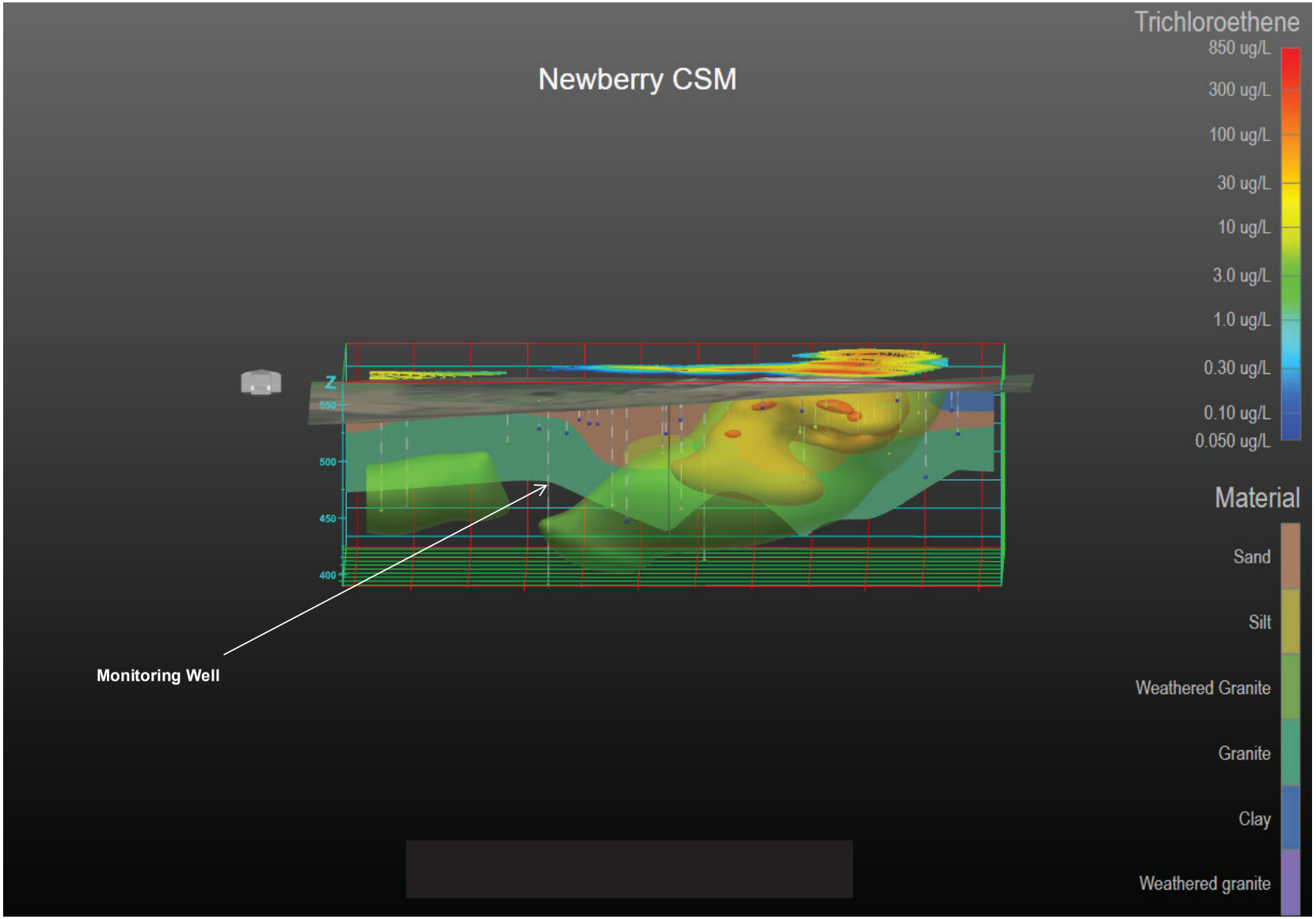
Extent of TCE in Groundwater
Shakespeare Composite Structures
Newberry, SC

Figure Number:

Figure G-1

Sheet Number:

1



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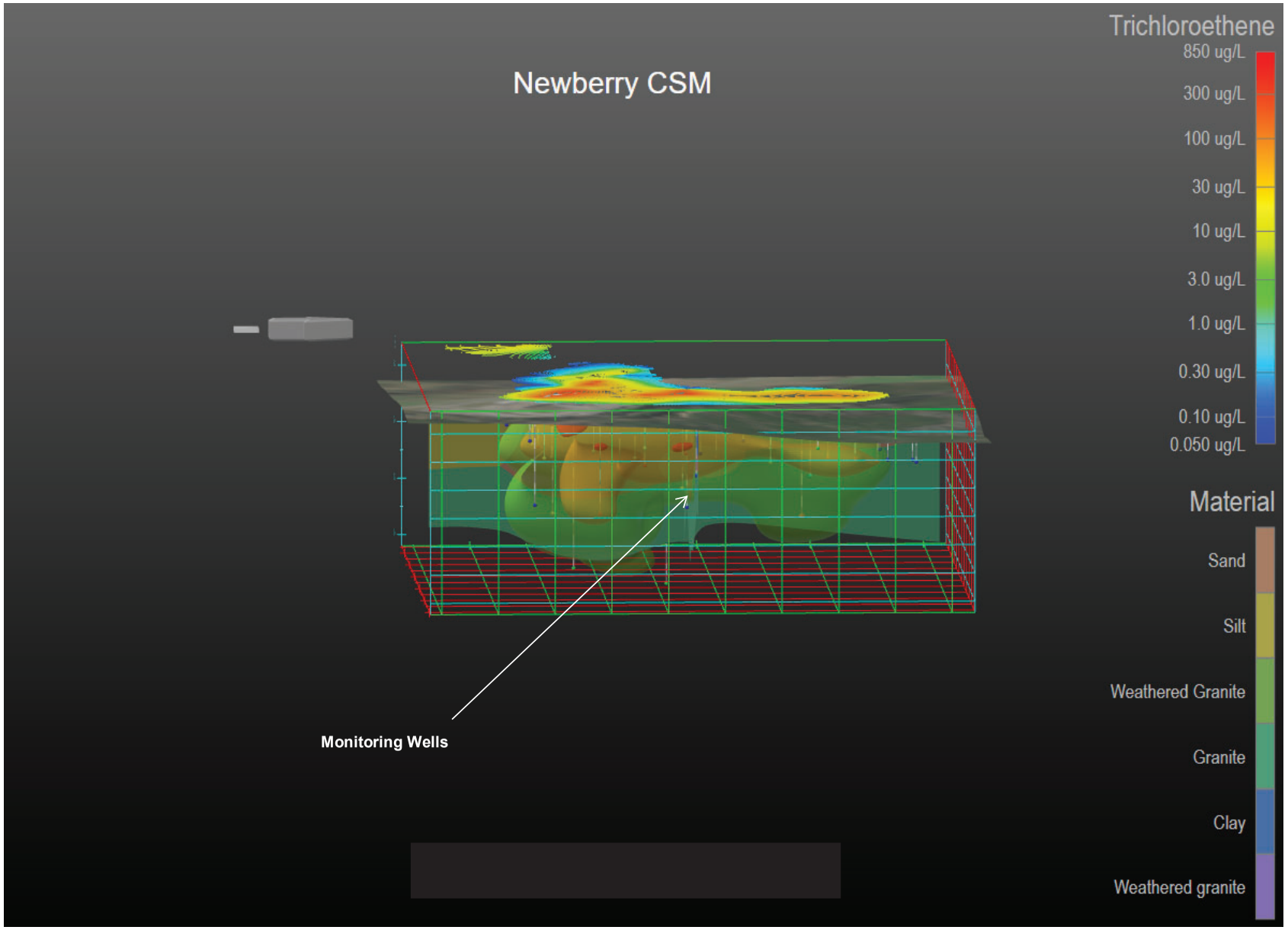
Extent of TCE in Groundwater
View Looking North
Shakespeare Composite Structures
Newberry, SC

Figure Number:

Figure G-2

Sheet Number:

1



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Extent of TCE in Groundwater
View Looking West
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Newberry, SC

Figure Number:

Figure G-3

Sheet Number:

1

CD and Instructions with 3-D Visualization of EVS Projections

INSTRUCTIONS FOR USING CTECH SOFTWARE TO VIEW PLUME VISUALIZATION MODEL

As indicated in Section 4 of the report, a 3-D model of the extent of the TCE plume beneath the site has been generated using software developed by CTech Consulting Services.

To view the 3D plume visualization model first select the link below to open the on-line viewing site

C Tech 3D Scene Viewer

You should see this screen below once you select the link.

Access the compact disc (CD) included in this appendix.

Select the .ctws file on the CD.

Just “Drag and drop” the file onto the top of the screen at the line of text reads “Open Scene” (as shown above) and the model should open.

The scene that is projected allows a view of the site and plume dimensions at any angle (360 degrees).

The scene also includes general lithologic cross sections within the site boundaries.

Selecting the 3 short lines symbol in the upper left hand corner of the screen will open the Interaction tab.

The reviewer can manipulate the model, to an extent, by selecting some of the scenes listed down the left side of the screen.