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SITE ASSESSMENT REMEDIATION & REVITALIZATION

To
Ms. Addie Walker
South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management
2600 Bull Street

Columbia, South Carolina 29201

From:
Thomas Darby II, P.G.

Arcadis U.S., Inc.
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Jeannie Martin – 3M (electronic WeTransfer)

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Date:
August 9, 2017

Subject
2017 Semi-Annual Progress Report Laurens CeramTec Site: ID #5094

Arcadis Project No.:
WI001459.0003

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Ms. Addie Walker
South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management
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Columbia, South Carolina 29201

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Subject:
2017 Semi-Annual Progress Report
Laurens CeramTec Site: ID #5094

Environment

Date:
August 9, 2017

Contact:
Thomas Darby II, P.G.

Phone:
864-987-3918

Email:
Thomas.Darby@arcadis.com

Our ref:
WI001459.0003

Dear Ms. Walker:

Arcadis U.S., Inc. (Arcadis), on behalf of 3M Company (3M), has prepared this *Semi-Annual Progress Report* to present the results of the activities completed during the period of January through June 2017 at the Laurens CeramTec Site (site). A summary of the tasks completed during the reporting period are included below:

- Well Redevelopment (April 10 – 11, 2017)
- Groundwater and Surface Water Monitoring (May 16 – 18, 2017)
- Plant 2 Sparge System Operation (January – June 2017)

Well Redevelopment

Elevated turbidity measurements observed during the 2016 semiannual sampling event indicated the need for well redevelopment and inspection. As a result, 3 wells (MW-62, MW-77, and MW-97) were redeveloped and one well (MW-3) received a replacement concrete pad. Prior to redevelopment, baseline parameters including depth to water, depth to bottom of well, color, sediment amounts, and pH were recorded. Baseline depth to bottom measurements indicate no sediment has accumulated in wells MW-62 and MW-97 and that 10.10 feet of sediment has accumulated in well MW-77. Field logs from the April 2017 event are included in Attachment 1.

Following baseline data collection, each well was redeveloped by South Carolina licensed drilling contractor AE Drilling Services, LLC with Arcadis personnel providing oversight. During redevelopment, parameters were taken after each

well volume purge and redevelopment was considered complete after sediment was no longer observed in the effluent line and field parameters stabilized or seven well volumes were removed. Redevelopment of wells MW-62 and MW-97 was completed using a Waterra inertial pump affixed with a surge block to promote simultaneous surging of the screened interval while purging accumulated sediment and groundwater. Little sediment was noted in either well; however, approximately five well volumes were removed at each location to ensure elimination of potential sediment accumulated within the sand pack.

Following the initial gauging at well MW-77, the driller recommended the use of airlifting as the method for development due to the amount of sediment present in the well. Attempts were made to advance the air lift tooling to the base of the well, but approximately 0.10 feet of sediment was all that could be removed before the tooling could not be advanced deeper. A borehole camera was used in the well to evaluate the condition of the borehole and a deflection in the borehole was observed. This deflection prevented advancement of the tooling and further sediment removal. Based on the observations, additional recommendations for well MW-77 will be included in the site monitoring plan that will be submitted as part of the upcoming design document to implement the Focused Feasibility Study.

Groundwater Monitoring

Groundwater samples were collected from 19 wells at the site as part of the semi-annual event. As summarized in Table 1, the sample schedule for this event included the collection of groundwater samples at 16 locations near Plant Area 1 and three locations adjacent to Plant Area 2. The locations of all active groundwater monitoring wells are presented on Figure 1. Additionally, field logs from the May 2017 semiannual event are included as Attachment 1.

Groundwater samples were collected using low flow sampling methodologies in accordance with current United States Environmental Protection Agency (USEPA) acceptable practices (USEPA 2011). All groundwater samples were collected in pre-preserved laboratory-supplied containers and immediately placed in a cooler with wet ice following collection. At the completion of daily sampling activities, the samples were shipped via Fed Ex for overnight delivery in properly cooled containers to TestAmerica Laboratories (South Carolina Certified Laboratory No. 77001001) in Chicago, Illinois under appropriate chain-of-custody procedures. Samples were analyzed for volatile organic compounds (VOCs) by USEPA Method SW-846 8260B as shown in Table 1. All laboratory reports have been included as Attachment 2. The tabulated groundwater data are included in Table 2.

Throughout the sampling event, quality assurance/quality control (QA/QC) samples were collected to provide additional data for evaluating the quality of the chemical analyses. QA/QC samples included equipment rinsate blanks, trip blanks, blind duplicates, and matrix spike/matrix spike duplicates (MS/MSD). The QA/QC samples were collected at a frequency of one duplicate and MS/MSD sample for every 20 wells sampled (Table 1). One trip blank was included per day for each cooler containing VOC samples and one rinsate blank was collected at the end of each shift.

Data Validation

Analytical data were validated in accordance with the *USEPA National Functional Guidelines* (USEPA 2004). The purpose of the data quality evaluation is to determine the reliability of the chemical analyses, the accuracy, and the precision of information acquired from the laboratory. Data quality is assessed through the review and evaluation of field sampling activities, QC samples, and data associated with the chemical analytical results. Data validation of the groundwater analytical results included in this monitoring report indicates the data are quantitative and useable. The data validation report is included in Attachment 3.

Data Evaluation

The analytical results from the semi-annual monitoring event were compared against *USEPA Maximum Contaminant Levels* (MCLs) (USEPA 2015). Where no MCL is established, sample results were compared to *USEPA Tap Water Regional Screening Levels* (RSLs) (USEPA 2015). Groundwater results for the wells sampled are included in Table 2.

The primary detected constituents at the site are tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), vinyl chloride (VC), 1,1-dichloroethene (1,1-DCE), and 1,1-dichloroethane (1,1-DCA). Additionally, 1,1,1-Trichloroethane (1,1,1-TCA), benzene, toluene, ethylbenzene, and xylenes (BTEX) were also detected, but on a less frequent basis and at lower concentrations.

Surface Water Monitoring

Surface water samples were collected from one location along the Plant 1 groundwater discharge point and five locations along the Plant 2 surface water feature. The sampled locations are included in Table 1 and shown on Figure 1. Field logs from the May 2017 event are included in Attachment 1.

Surface water samples were collected using a direct fill method at downstream locations first, to minimize the disturbance of stream sediment. At the completion of daily sampling activities, the samples were shipped via courier for overnight delivery in properly cooled containers to TestAmerica Laboratories (South Carolina Certified Laboratory No. 77001001) in Chicago, Illinois under appropriate chain-of-custody procedures. Samples were analyzed for VOCs by USEPA Method SW-846 8260B as shown in Table 1. All laboratory reports have been included as Attachment 2. The tabulated surface water data are included in Table 3.

Data Validation

Analytical data were validated in accordance with the *USEPA National Functional Guidelines* (USEPA 2004). The purpose of the data quality evaluation is to determine the reliability of the chemical analyses, the accuracy, and the precision of information acquired from the laboratory. Data quality is assessed through the review and evaluation of field sampling activities, QC samples, and data associated with the chemical analytical results. Data validation of the surface water analytical results included in this progress report indicates the data are quantitative and useable. The data validation report is included in Attachment 3.

Data Evaluation

Analytical results for surface water location WSW-13, downgradient of the Plant 1 area, were below laboratory detection for all VOCs. These data are consistent with historical results from this location.

Five samples were collected along the stream downgradient of Plant 2. VOCs were detected in exceedance of the regulatory standards in four of the five samples collected during the May 2017 sampling event. Benzene, PCE, TCE, cis-1,2-DCE, and VC were all detected above their respective MCLs. The highest concentrations were observed at WSW-2, but concentrations decreased along the flow path and PCE (1.3 micrograms per liter [µg/L]) was the only detection in the furthest downstream sample (WSW-01). This distribution is consistent with previous sampling events where the majority of groundwater discharge is occurring between WSW-19 and WSW-2.

Plant 2 Sparge System Operation

The air sparge system consists of a five-horsepower rotary vane compressor, an air-cooled heat exchanger, two sparge manifolds, eight air sparge wells, and one stream diffuser. The sparge well locations are shown on Figure 1. The sparge system is intended to provide oxygen into the subsurface to promote in-situ bioremediation and to facilitate the volatilization of site specific constituents of concern (COC) from groundwater. Air bubbles injected from the sparge points migrate laterally and upward through the aquifer, allowing the partitioning of oxygen into groundwater to increase the dissolved oxygen concentrations. VOCs present in groundwater also partition into the sparge bubbles and are carried up and out of the groundwater. The stream diffuser is designed to aerate the surface water passing over top of the diffuser, enabling similar physical removal to reduce COCs downstream of the diffuser.

The air sparge wells, designated AW-1 through AW-8, were installed approximately 10 feet (ft) below the groundwater table with depths ranging from 12 to 20 ft below ground surface (bgs). Each sparge well is constructed with two feet of 1.5-inch prepacked well screen connected to 1.5-inch polyvinyl chloride (PVC) riser pipe. The sparge wells are connected to the system in two zones to provide better control of the flow from the compressor: Zone 1 consists of even numbered sparge wells (AW-2, AW-4, AW-6, and AW-8) and Zone 2 consists of odd numbered sparge wells (AW-1, AW-3, AW-5, and AW-7). The creek diffuser consists of a horizontally installed 5-foot screen, anchored to the stream bed. Air from the compressor is routed to each of the sparge wells and stream diffuser via above-grade piping.

Operation and Maintenance

The sparge system was inspected weekly during the reporting period (January-June 2017) to verify system operation and to inspect the system components. During each site visit, the sparge system inspection activities included: the completion of any necessary preventative maintenance, recording pertinent system data, making system flow/pressure adjustments, and inspecting the overall condition of the equipment. System inspection forms are included in Attachment 4**.**

The sparge system was shut down from January 26, 2017 through February 8, 2017, for the replacement of the air compressor motor. Additional compressor motor issues shut down the compressor from March 14, 2017 through March 28, 2017. The air compressor motor was rebuilt by the manufacturer and re-

installed on March 28, 2017. The system operated without significant shutdown throughout the remainder of the first half of 2017.

A table showing the flow rate and pressure from each air sparge well is included in Table 4. The flow rate at each air sparge well ranged between 0.4 to 3.0 standard cubic ft per minute (scfm) at an applied wellhead pressure ranging from 1.0 to of 9.5 pounds per square inch gauge (psig). The stream diffuser was visually inspected and aeration or bubbling of the stream flow was confirmed during each visit.

Please do not hesitate to contact me if you have any questions. I can be reached by phone at (864) 661-3820 or via e-mail at Thomas.Darby@arcadis.com.

Sincerely,

Arcadis U.S., Inc.

THOMAS H. DARBY, II REGISTERED No. 2537 SOUTH CAROLINA PROFESSIONAL GEOLOGIST 8/9/17

Thomas Darby II, P.G.
Senior Hydrogeologist

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Enclosures:

Tables

1 2017 Semi-Annual Sampling and Analysis Plan
2 Groundwater Quality Results – May 2017
3 Surface Water Quality Results – May 2017
4 Summary of Sparge System Data

Figures

1 Site Features Map

Attachment

1. Field Notes
2. Laboratory Reports – Test America
3. Data Validation Report
4. Plant 2 Sparge System Weekly Logs

TABLES

Table 1
2017 Semi-Annual Sampling and Analysis Plan
Laurens CeramTec Site - Laurens, South Carolina

Location	HSU Monitored	Semiannual Event COCs May 2 - 4, 2016	Notes
Plant 1 Wells			
MW-3	SAP	VOCs	-
MW-13	SAP	VOCs	-
MW-18	SAP	VOCs	-
MW-22	PWR	VOCs	Duplicate - 1
MW-32	BR	VOCs	-
MW-58	PWR	VOCs	-
MW-59	PWR	VOCs	-
MW-62	PWR	VOCs	-
MW-77	PWR/BR	VOCs	MS/MSD
MW-78	SAP	VOCs	-
MW-79	BR	VOCs	-
MW-93	PWR	VOCs	-
MW-94	PWR	VOCs	-
MW-97	PWR	VOCs	-
MW-100	SAP	VOCs	Duplicate - 2
MW-101	PWR	VOCs	-
Plant 1 Surface Water			
WSW-13	-	VOCs	-
Plant 2 Wells			
MW-33	SAP	VOCs	-
PZ-C3	SAP	VOCs	MS/MSD
PZ-H3	SAP	VOCs	-
Plant 2 Surface Water			
WSW-1	-	VOCs	-
WSW-2	-	VOCs	-
WSW-3	-	VOCs	-
WSW-15	-	VOCs	-
WSW-19	-	VOCs	-

Notes:
HSU = Hydrostratigraphic Unit
BR = Bedrock
PWR = Partially Weathered Rock
SAP = Saprolite
VOCs = volatile organic compounds
COCs = constituents of concern
- = not available/applicable
MS/MSD - Matrix spike / Matrix spike duplicate

Table 2
Groundwater Quality Results - May 2017
Laurens CeramTec Site - Laurens, South Carolina

Location ID Sample Date	MCL June 2017	RSL June 2017	MW-100 5/16/2017	MW-100 5/16/2017	MW-101 5/16/2017	MW-13 5/16/2017	MW-18 5/18/2017	MW-22 5/17/2017	MW-22 5/17/2017	MW-3 5/17/2017
VOCs (µg/L)										
1,1,1-Trichloroethane	200	8000	< 1.0 U	< 1.0 U	< 1.0 U	**54**	< 1.0 U	**3.3**	**2.9**	< 1.0 U
1,1,2,2-Tetrachloroethane	--	0.076	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-trichloro-1,2,2-trifluoroethane	--	10000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**4.7**	< 1.0 U	< 1.0 U
1,1,2-Trichloroethane	5	0.28	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	--	2.8	**2.6**	**2.9**	< 1.0 U	**430**	**7.5**	**99**	**91**	< 1.0 U
1,1-Dichloroethene	7	280	**4.8**	**4.9**	**0.63 J**	**390**	**3.1**	**260**	**260**	**0.64 J**
1,2-Dichlorobenzene	600	300	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichloroethane	5	0.17	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**2.6**	**2.5**	< 1.0 U
1,2-Dichloropropane	5	0.14	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3-Dichlorobenzene	--	--	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,4-Dichlorobenzene	75	0.48	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Benzene	5	0.46	< 0.50 U	< 0.50 U	< 0.50 U	**0.51**	< 0.50 U	**0.39 J**	**0.29 J**	< 0.50 U
Bromodichloromethane	80	0.13	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromoform	80	3.3	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromomethane	--	7.5	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Carbon Tetrachloride	5	0.46	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CFC-11	--	5200	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CFC-12	--	200	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Chlorobenzene	100	78	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chlorodibromomethane	80	0.87	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroethane	--	21000	< 1.0 U	< 1.0 U	< 1.0 U	**12**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroform	80	0.22	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Chloromethane	--	190	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethene	70	36	**4.1**	**4.9**	< 1.0 U	**2.2**	**97**	**230**	**220**	< 1.0 U
cis-1,3-Dichloropropene	--	--	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Dichloromethane	5	11	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Ethylbenzene	700	1.5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Tetrachloroethene	5	11	**17**	**18**	< 1.0 U	**16**	**6.3**	**47**	**44**	**4.8**
Toluene	1000	1100	**0.25 J**	< 0.50 U	**0.33 J**	**0.26 J**	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Total Xylenes	10000	190	< 1.0 U	< 1.0 U	< 1.0 U	**0.76 J**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethene	100	360	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,3-Dichloropropene	--	--	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethene	5	0.49	**1.6**	**1.9**	< 0.50 U	**6.3**	**3.1**	**11**	**11**	< 0.50 U
Vinyl chloride	2	0.019	< 0.50 U	< 0.50 U	< 0.50 U	**3.9**	**4.7**	**2.4**	**2.7**	< 0.50 U

Notes:
Bold = Concentration was detected above the laboratory detection limit.
Red = Concentration was detected above MCL
Shading = Concentration exceeds RSL for tap water.
Acronyms:
MCL = maximum contaminant level
µg/L = micrograms per liter
NA = not analyzed
RSL = regional screening level
- = not available/applicable
< = less than the specified value
Qualifiers:
J = Estimated value
U = Compound was less than the laboratory detection limit

Table 2
Groundwater Quality Results - May 2017
Laurens CeramTec Site - Laurens, South Carolina

Location ID Sample Date	MCL June 2017	RSL June 2017	MW-32 5/15/2017	MW-33 5/18/2017	MW-58 5/16/2017	MW-59 5/18/2017	MW-62 5/16/2017	MW-77 5/17/2017	MW-78 5/17/2017	MW-79 5/17/2017
VOCs (µg/L)										
1,1,1-Trichloroethane	200	8000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2,2-Tetrachloroethane	--	0.076	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-trichloro-1,2,2-trifluoroethane	--	10000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-Trichloroethane	5	0.28	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**20**	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	--	2.8	**7.6**	< 1.0 U	**190**	**1.6**	**1800**	**9.1**	**7.5**	< 1.0 U
1,1-Dichloroethene	7	280	**13**	< 1.0 U	**63**	**26**	**8400**	**23**	**25**	< 1.0 U
1,2-Dichlorobenzene	600	300	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichloroethane	5	0.17	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**15 J**	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichloropropane	5	0.14	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3-Dichlorobenzene	--	--	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U
1,4-Dichlorobenzene	75	0.48	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U
Benzene	5	0.46	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 0.50 U	< 0.50 U	< 0.50 U
Bromodichloromethane	80	0.13	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromoform	80	3.3	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromomethane	--	7.5	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 40 U	< 2.0 U	< 2.0 U	< 2.0 U
Carbon Tetrachloride	5	0.46	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U
CFC-11	--	5200	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**16 J**	< 1.0 U	< 1.0 U	< 1.0 U
CFC-12	--	200	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 40 U	< 2.0 U	< 2.0 U	< 2.0 U
Chlorobenzene	100	78	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U
Chlorodibromomethane	80	0.87	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroethane	--	21000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroform	80	0.22	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 40 U	< 2.0 U	< 2.0 U	< 2.0 U
Chloromethane	--	190	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethene	70	36	**2.8**	**10**	**2.9**	< 1.0 U	**200**	**16**	**8**	< 1.0 U
cis-1,3-Dichloropropene	--	--	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U
Dichloromethane	5	11	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 100 U	< 5.0 U	< 5.0 U	< 5.0 U
Ethylbenzene	700	1.5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	< 0.50 U	< 0.50 U	< 0.50 U
Tetrachloroethene	5	11	**0.84 J**	**30**	**0.75 J**	**24**	**840**	**37**	**37**	**8.1**
Toluene	1000	1100	< 0.50 U	**0.26 J**	< 0.50 U	< 0.50 U	< 10 U	< 0.50 U	< 0.50 U	< 0.50 U
Total Xylenes	10000	190	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethene	100	360	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	**0.40 J**	< 1.0 U	< 1.0 U
trans-1,3-Dichloropropene	--	--	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethene	5	0.49	**0.56**	**1.4**	**3.9**	**0.91**	**130**	**2.9**	**2.5**	**1**
Vinyl chloride	2	0.019	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 10 U	**2.2**	< 0.50 U	< 0.50 U

Notes:
Bold = Concentration was detected above the laboratory detection limit.
Red = Concentration was detected above MCL
Shading = Concentration exceeds RSL for tap water.
Acronyms:
MCL = maximum contaminant level
µg/L = micrograms per liter
NA = not analyzed
RSL = regional screening level
- = not available/applicable
< = less than the specified value
Qualifiers:
J = Estimated value
U = Compound was less than the laboratory detection limit

Table 2
Groundwater Quality Results - May 2017
Laurens CeramTec Site - Laurens, South Carolina

Location ID Sample Date	MCL June 2017	RSL June 2017	MW-93 5/15/2017	MW-94 5/15/2017	MW-97 5/18/2017	PZ-C3 5/18/2017	PZ-H3 5/18/2017
VOCs (µg/L)							
1,1,1-Trichloroethane	200	8000	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U
1,1,2,2-Tetrachloroethane	--	0.076	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U
1,1,2-trichloro-1,2,2-trifluoroethane	--	10000	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	**160**
1,1,2-Trichloroethane	5	0.28	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U
1,1-Dichloroethane	--	2.8	< 1.0 U	< 1.0 U	**19**	**6.4 J**	**41**
1,1-Dichloroethene	7	280	**1.2**	**14**	**130**	**24**	**47**
1,2-Dichlorobenzene	600	300	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U
1,2-Dichloroethane	5	0.17	< 1.0 U	< 1.0 U	**2.7**	< 10 U	< 10 U
1,2-Dichloropropane	5	0.14	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U
1,3-Dichlorobenzene	--	--	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U
1,4-Dichlorobenzene	75	0.48	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U
Benzene	5	0.46	< 0.50 U	< 0.50 U	< 0.50 U	**48**	< 5.0 U
Bromodichloromethane	80	0.13	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U
Bromoform	80	3.3	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U
Bromomethane	--	7.5	< 2.0 U	< 2.0 U	< 2.0 U	< 20 U	< 20 U
Carbon Tetrachloride	5	0.46	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U
CFC-11	--	5200	< 1.0 U	< 1.0 U	**0.55 J**	< 10 U	< 10 U
CFC-12	--	200	< 2.0 U	< 2.0 U	< 2.0 U	< 20 U	< 20 U
Chlorobenzene	100	78	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U
Chlorodibromomethane	80	0.87	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U
Chloroethane	--	21000	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U
Chloroform	80	0.22	**2.4**	**0.57 J**	< 2.0 U	< 20 U	< 20 U
Chloromethane	--	190	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U
cis-1,2-Dichloroethene	70	36	< 1.0 U	< 1.0 U	**27**	**2200**	**1600**
cis-1,3-Dichloropropene	--	--	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U
Dichloromethane	5	11	< 5.0 U	< 5.0 U	< 5.0 U	< 50 U	< 50 U
Ethylbenzene	700	1.5	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 5.0 U
Tetrachloroethene	5	11	**0.68 J**	**6.1**	**17**	**9000**	**7000**
Toluene	1000	1100	< 0.50 U	< 0.50 U	< 0.50 U	< 5.0 U	< 5.0 U
Total Xylenes	10000	190	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U
trans-1,2-Dichloroethene	100	360	< 1.0 U	< 1.0 U	< 1.0 U	**5.2 J**	**6.6 J**
trans-1,3-Dichloropropene	--	--	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 10 U
Trichloroethene	5	0.49	< 0.50 U	**2.2**	**89**	**330**	**500**
Vinyl chloride	2	0.019	< 0.50 U	< 0.50 U	**1.2**	< 5.0 U	**37**

Notes:
Bold = Concentration was detected above the laboratory detection limit.
Red = Concentration was detected above MCL
Shading = Concentration exceeds RSL for tap water.
Acronyms:
MCL = maximum contaminant level
µg/L = micrograms per liter
NA = not analyzed
RSL = regional screening level
- = not available/applicable
< = less than the specified value
Qualifiers:
J = Estimated value
U = Compound was less than the laboratory detection limit

Table 3
Surface Water Quality Results - May 2017
Laurens CeramTec Site - Laurens, South Carolina

Location ID Sample Date	MCL June 2017	RSL June 2017	WSW-01 5/15/2017	WSW-02 5/15/2017	WSW-03 5/15/2017	WSW-13 5/15/2017	WSW-15 5/15/2017
VOCs (µg/L)							
1,1,1-Trichloroethane	200	8000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2,2-Tetrachloroethane	--	0.076	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-trichloro-1,2,2-trifluoroethane	--	10000	< 1.0 U	< 1.0 U	**1.5**	< 1.0 U	**2.9**
1,1,2-Trichloroethane	5	0.28	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	--	2.8	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**2.2**
1,1-Dichloroethene	7	280	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**1.7**
1,2-Dichlorobenzene	600	300	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichloroethane	5	0.17	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichloropropane	5	0.14	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3-Dichlorobenzene	--	--	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,4-Dichlorobenzene	75	0.48	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Benzene	5	0.46	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	**1.8**
Bromodichloromethane	80	0.13	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromoform	80	3.3	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromomethane	--	7.5	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Carbon Tetrachloride	5	0.46	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CFC-11	--	5200	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
CFC-12	--	200	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Chlorobenzene	100	78	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chlorodibromomethane	80	0.87	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroethane	--	21000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroform	80	0.22	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Chloromethane	--	190	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethene	70	36	< 1.0 U	**110**	**11**	< 1.0 U	**730**
cis-1,3-Dichloropropene	--	--	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Dichloromethane	5	11	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Ethylbenzene	700	1.5	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Tetrachloroethene	5	11	**0.90 J**	**41**	**46**	< 1.0 U	**64**
Toluene	1000	1100	< 0.50 U	**0.49 J**	< 0.50 U	**0.27 J**	**0.34 J**
Total Xylenes	10000	190	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethene	100	360	< 1.0 U	**0.50 J**	< 1.0 U	< 1.0 U	**6.5**
trans-1,3-Dichloropropene	--	--	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethene	5	0.49	< 0.50 U	**10**	**2.7**	< 0.50 U	**50**
Vinyl chloride	2	0.019	< 0.50 U	**7.5**	< 0.50 U	< 0.50 U	**82**

Notes:
Bold = Concentration was detected above the laboratory detection
Red = Concentration was detected above MCL
Shading = Concentration exceeds RSL for tap water.
Acronyms:
MCL = maximum contaminant level
µg/L = micrograms per liter
NA = not analyzed
RSL = regional screening level
- = not available/applicable
< = less than the specified value
Qualifiers:
J = Estimated value
U = Compound was less than the laboratory detection limit

Table 4
Summary of Sparge System Data
October - June 2016
Laurens CeramTec Site - Laurens, South Carolina

Well Number	AW-1			AW-2			AW-3			AW-4		
Diameter (inches)	1.25			1.25			1.25			1.25		
Well Depth	18.00			20.00			20.00			19.00		
Screen Interval	16-18			18-20			18-20			17-19		
Date	Flow	Pressure		Flow	Pressure		Flow	Pressure		Flow	Pressure	
	Manifold	Manifold	Wellhead	Manifold	Manifold	Wellhead	Manifold	Manifold	Wellhead	Manifold	Manifold	Wellhead
1/3/2017	2.5	3.0	3.0	2.0	2.0	1.0	3.0	2.5	2.5	0.5	5.0	5.0
1/12/2017	2.5	3.0	3.0	2.0	2.0	1.0	3.0	2.0	2.0	0.5	5.0	5.0
2/15/2017	1.0	6.0	5.0	2.0	2.0	2.0	2.0	4.0	4.0	0.5	5.0	5.0
2/8/2017	1.0	10.0	9.5	2.5	2.0	1.0	3.0	9.5	9.0	1.0	9.0	9.0
2/22/2017	1.0	6.0	5.0	2.0	2.0	2.0	2.0	.2.0	2.0	0.5	5.0	5.0
3/3/2017	1.0	5.0	5.0	2.0	2.0	2.0	2.0	6.0	6.0	0.5	5.0	5.0
3/29/2017	1.0	7.5	8.0	1.3	2.0	2.0	1.0	8.0	8.0	0.5	6.0	6.0
4/4/2017	1.0	7.0	7.0	1.5	3.0	3.0	1.0	7.0	6.5	1.0	6.0	6.0
4/10/2017	1.0	6.0	6.0	1.5	2.0	2.0	1.0	6.0	6.0	0.5	6.0	6.0
4/19/2017	1.0	7.0	7.0	1.0	2.0	1.0	1.5	7.0	6.5	0.5	6.0	6.0
5/2/2017	1.0	6.0	6.0	1.3	2.0	2.0	2.0	6.0	5.0	1.0	6.0	6.0
5/10/2017	1.0	6.0	5.0	1.5	2.0	1.0	2.0	5.0	4.0	0.5	6.0	6.0
5/17/2017	1.0	5.0	5.0	1.5	2.0	1.0	2.0	5.0	4.5	0.5	6.0	6.0
5/23/2017	1.0	5.0	5.0	1.5	2.0	1.0	2.0	5.0	5.0	0.5	5.0	5.0
5/30/2017	1.0	5.0	4.5	1.5	1.0	1.0	2.0	5.0	4.0	0.5	6.0	6.0
6/8/2017	1.2	4.5	4.5	1.3	1.0	1.0	1.8	4.0	4.0	0.4	6.0	6.0
6/14/2017	1.5	4.0	4.0	1.5	1.0	1.0	2.5	4.0	4.0	0.5	5.0	5.0
6/21/2017	1.5	4.0	3.5	1.0	2.0	1.0	2.0	3.0	3.0	0.5	5.0	5.0
6/27/2017	1.5	4.0	4.0	1.0	1.0	1.0	2.0	3.0	3.0	0.5	5.0	5.0

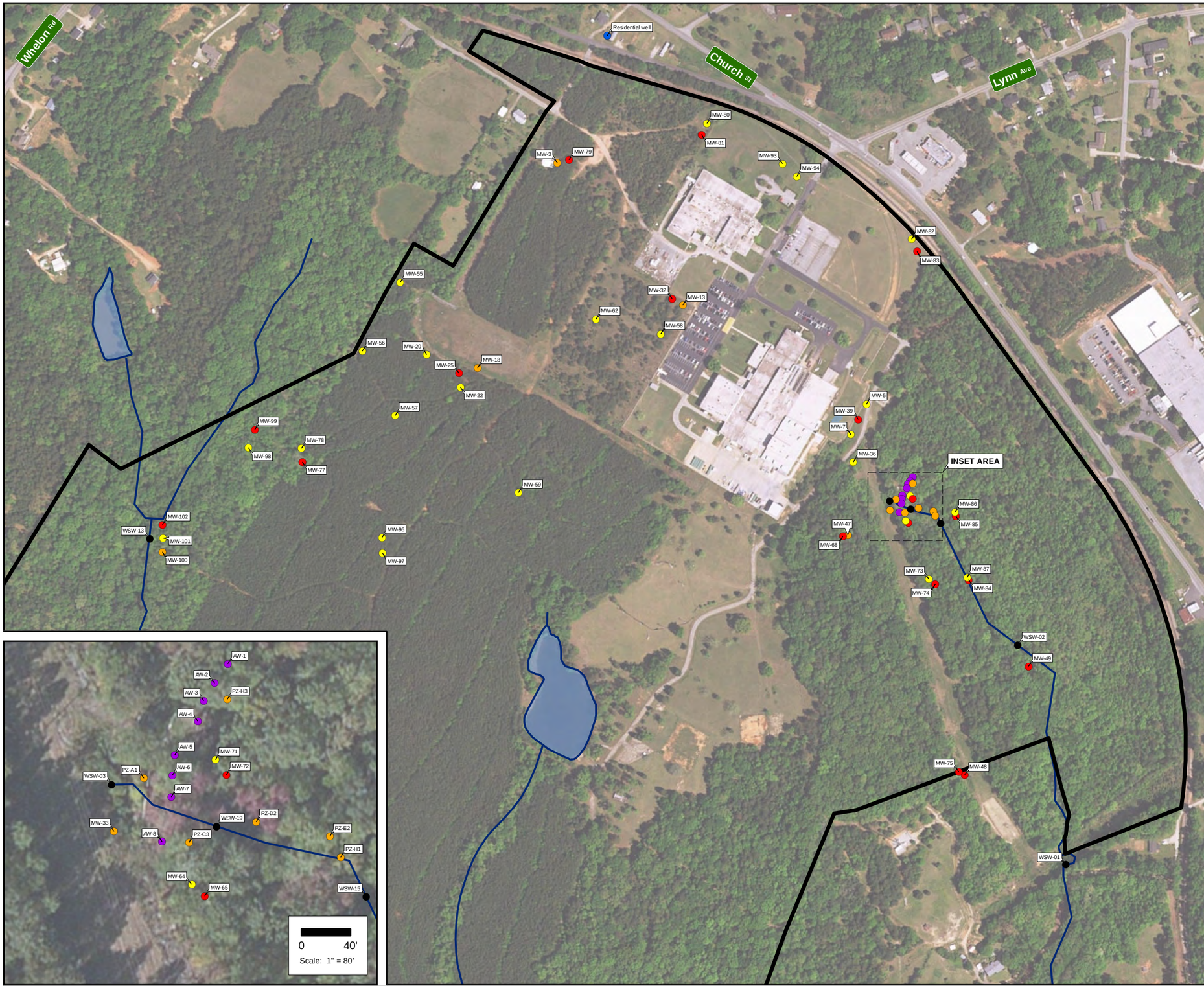
Table 4
Summary of Sparge System Data
October - June 2016
Laurens CeramTec Site - Laurens, South Carolina

Well Number	AW-5			AW-6			AW-7			AW-8		
Diameter (inches)	1.25			1.25			1.25			1.25		
Well Depth (bTOC)	15.00			12.00			13.00			15.00		
Screen Interval (bTOC)	13-15			10-12			11-13			13-15		
Date	Flow	Pressure		Flow	Pressure		Flow	Pressure		Flow	Pressure	
	Manifold	Manifold	Wellhead	Manifold	Manifold	Wellhead	Manifold	Manifold	Wellhead	Manifold	Manifold	Wellhead
1/3/2017	3.0	2.0	2.0	2.0	3.0	3.0	2.0	2.0	2.0	1.5	4.0	4.0
1/12/2017	3.0	2.0	2.0	2.0	3.0	3.0	2.0	2.0	2.0	1.5	4.0	3.0
2/8/2017	2.0	8.0	8.0	1.5	7.5	7.5	1.0	9.0	9.0	2.5	5.0	5.0
2/15/2017	2.0	4.0	4.0	2.0	4.0	4.0	1.0	5.0	5.0	2.0	4.0	4.0
2/22/2017	2.0	4.0	4.0	2.0	4.0	4.0	1.0	4.0	4.0	1.0	4.0	4.0
3/3/2017	1.5	4.0	4.0	2.0	3.0	3.0	1.5	4.0	4.0	1.5	4.0	4.0
3/29/2017	1.5	7.0	7.0	2.0	6.0	6.0	1.0	7.0	7.0	2.0	4.5	4.5
4/4/2017	2.0	6.0	6.0	2.0	5.0	5.0	1.5	6.0	6.0	1.5	4.0	4.0
4/10/2017	2.0	5.0	5.0	2.0	4.0	4.0	1.5	5.0	5.0	1.5	4.0	4.0
4/19/2017	2.0	6.0	5.0	2.0	4.0	4.0	2.0	5.0	5.0	2.0	4.0	4.0
5/2/2017	2.0	5.0	5.0	2.5	3.0	3.0	2.0	5.0	5.0	2.0	4.0	4.0
5/10/2017	2.5	5.0	4.0	2.5	4.0	4.0	2.5	5.0	5.0	2.0	4.0	4.0
5/17/2017	2.5	4.0	4.0	2.5	4.0	4.0	2.0	4.0	4.0	1.5	4.0	4.0
5/23/2017	5.0	3.0	3.0	2.0	3.0	3.0	1.5	4.0	4.0	1.5	4.0	4.0
5/30/2017	3.0	4.0	4.0	2.0	4.0	4.0	2.0	5.0	5.0	1.0	4.0	4.0
6/8/2017	2.2	4.0	3.5	1.6	3.5	4.0	1.4	4.5	4.5	1.0	4.0	4.0
6/14/2017	2.5	3.0	3.0	2.0	3.0	3.0	2.0	4.0	4.0	2.0	4.0	4.0
6/21/2017	2.5	4.0	4.0	2.0	4.0	4.0	2.0	3.0	3.0	1.5	4.0	4.0
6/27/2017	2.5	3.0	3.0	2.0	3.0	3.0	2.0	4.0	4.0	1.5	4.0	4..0

Date	Maintenance Description
1/26/2017 - 2/8/2017	System off for the replacement of the air compressor motor
3/14/2017- 3/28/2017	System off while the air compressor motor was rebuilt by the manufacturer
3/28/2017	Air compressor was re-installed

Notes:
All Measurements = Feet
ND = No Data
Flow = Standard cubic feet per minute (scfm)
Pressure = Pounds per squre inch gauge (PSIG)
[1] - Flow meters not functioning.

FIGURES



LEGEND

- Approximate site boundary
- Surface water feature
- Groundwater well (saprolite)
- Groundwater well (partially weathered rock)
- Groundwater well (bedrock)
- Air sparge well
- Residential well
- Surface water sampling location

NOTES

· Aerial photo source: ESRI World Imagery.

N

0 200 400 Feet

Scale: 1" = 400'

LAURENS CERAMTEC SITE
LAURENS, SOUTH CAROLINA

SITE FEATURES MAP

ARCADIS

FIGURE
1

\\Scottsdale-AZ\Project\3M\GIS\Projects\Semi-annual monitoring report 07-2016\Figure 1 site features map.mxd 7/7/2016

ATTACHMENT 1

Field Notes

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact: JEREMY FIRANE
Company: ARCADIS
Address: 10 FAIRWOOD DR. STE. 335
Address: GREENVILLE, SC 29615
Phone: 864.987.3910
Fax:
E-Mail: JEREMY.FIRANE@ARCADIS.COM

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #:
Chain of Custody Number:
Page 1 of 4
Temperature °C of Cooler:

Client: ARCADIS
Client Project #: WI 001459.0001
Project Name: 3M - CERAMTEC
Project Location/State: LAURENS, SC
Lab Project #:
Sampler: M. CREEL / M. EIBL
Lab PM: ROBIN KINTZ

Preservative: 1
Parameter: VOCs

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	VOCs									Comments
		MW-3 (051317)	5/13/17	1605	3	W	✓									
		MW-13 (051617)	5/16/17	1110	3	W	✓									
		MW-18 (051817)	5/18/17	1050	3	W	✓									
		MW-22 (051717)	5/17/17	1330	3	W	✓									
		MW-37 (051517)	5/15/17	1740	3	W	✓									
		MW-58 (051617)	5/16/17	1535	3	W	✓									
		MW-59 (051817)	5/18/17	1240	3	W	✓									
		MW-62 (051617)	5/16/17	1345	3	W	✓									
	✓	MW-77 (051317)	5/13/17	1030	9	W	✓									MS/MSD
		MW-78 (051717)	5/17/17	1135	3	W	✓									

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date STANDARD

Sample Disposal
☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	ARCADIS	5/18/17	1500				

Lab Courier
Shipped
Hand Delivered

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TAL-4124-500 (1209)

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact:
Company:
Address:
Address:
Phone:
Fax:
E-Mail:

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #:
Chain of Custody Number:
Page 2 of 4
Temperature °C of Cooler:

Client
Client Project #
Project Name
Project Location/State
Lab Project #
Sampler
Lab PM

Preservative
Parameter: VOCs

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	VOCs									Comments
		MW-74 (051517)	5/15/17	1335	3	W	✓									
		MW-97 (051817)	5/18/17	1020	3	W	✓									
		MW-101 (051617)	5/16/17	1135	3	W	✓									
		MW-101 (051617)	5/16/17	1105	3	W	✓									
		MW-33 (051817)	5/18/17	1335	3	W	✓									
	✓	PZ-C3 (051817)	5/18/17	1500	9	W	✓									MS/MSD
		PZ-H3 (051817)	5/18/17	1170	3	W	✓									
		WSW-1 (051517)	5/15/17	1015	3	W	✓									
		WSW-2 (051517)	5/15/17	1030	3	W	✓									
		WSW-3 (051517)	5/15/17	1105	3	W	✓									

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date STANDARD

Sample Disposal
☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	ATI	5/18/17	1500				

Lab Courier
Shipped
Hand Delivered

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TAL-4124-500 (1209)

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact:
Company:
Address:
Address: TAKE
Phone:
Fax: LEE
E-Mail:

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #:
Chain of Custody Number:
Page 3 of 11
Temperature °C of Cooler:

Client
Client Project #
Project Name TAKE
Project Location/State SEE
Lab Project #
Sampler
Lab PM
Preservative 1
Parameter VOCs

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	VOCs									Comments
		WSW-13 (051617)	5/16/17	1215	3	W	✓									
		WSW-15 (051517)	5/15/17	1015	3	W	✓									
		DUP-1 (051717)	5/17/17	-	3	W	✓									
		DUP-2 (051617)	5/16/17	-	3	W	✓									
		IDW-1 (051817)	5/18/17	1415	3	W	✓									
		TB-1 (051817)	-	-	2	W	✓									TRIP BLANK
		MW-29 (051717)	5/17/17	1100	3	W	✓									
		MW-93 (051517)	5/15/17	1545	3	W	✓									
		FB-1 (051617)	5/16/17	1205	3	W	✓									
		EB-2 (051717)	5/17/17	1230	3	W	✓									

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date STANDARD

Sample Disposal
[ ] Return to Client [✓] Disposal by Lab [ ] Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	ARCADIS	5/18/17	1500				
Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier
Shipped
Hand Delivered

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TAL-4124-500 (1209)

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact:
Company:
Address:
Address:
Phone:
Fax:
E-Mail:

SEE PAGE 1

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #:
Chain of Custody Number:
Page 4 of 4
Temperature °C of Cooler:

Client
Client Project #
Project Name
Project Location/State
Lab Project #
Sampler
Lab PM

SEE PAGE 1

Preservative: 1
Parameter: VOCs

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	VOCs									Comments
		ETS-3(05/18/12)	5/18/12	1400	3	W	✓									

5/18/12

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date STANDARD

Sample Disposal
[ ] Return to Client [✓] Disposal by Lab [ ] Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	ATCOTS	5/18/12	1500				
Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier
Shipped
Hand Delivered

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

ARCADIS Design & Consultancy for natural and built assets

Groundwater Sample Log

Project #: WI001459.0006 **Well ID:** MW-3 **Date:** 5/17/17

Site Name/Location: 3M LAURENS-SEMI ANNUAL SAMPLING **Weather:** SUNNY, 90°F

Well Information

Measuring Point: _____ Casing Diameter (in): 2 Screen Setting (ft-bmp): 62-70

Total Depth (ft-bmp): _____ Water Column (ft): _____ Well Completion Type: Flush Mount / Stick-up

Water Level (ft-bmp): 42.90 Well Volume (gal): _____ Well Material: PVC / SS

Purge Details

Purge Start Time: 1520 / 1610 OFF Pump Intake (ft-bmp): 66 Sampling Method: LOW FLOW

Volume Purged (gal): 1.20 Purge Rate (mL/min): 100 Pump Type: BLADDER

Sample Time (label): 1605 **QA/QC Samples:** _____ Sampled By: M. ELBL

Time	Minutes Elapsed	Volume Purged	Depth to Water (ft. bmp)	Temp. (°C)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	pH (SU)	ORP (mV)	Turbidity (NTU)
1530	10	0.30 ~~43.24~~	43.21	24.4	0.040	7.97	5.91	107.8	
1540	20	0.60	43.26	20.5	0.037	6.34	5.86	91.8	2.40
1545	25	0.75	43.26	20.3	0.037	6.40	5.87	85.0	13.0
1550	30	0.90	43.26	20.6	0.037	6.12	5.87	78.6	64.8
1555	35	1.05	43.26	20.2	0.037	6.12	5.90	69.8	63.4
1600	40	1.20	43.26	20.0	0.037	6.03	5.90	64.5	63.2

Sample Description: Color: _____ Odor: _____ Appearance: _____

Constituents Sampled	Container Type	Quantity	Preservative
VOCs	40 mL VOA	3	HCl

Well Condition

Damaged: Yes / No Labled: Yes / No Locked: Yes / No Sealed: Yes / No

Comments: _____

Notes REMOVED 2 INCHES OF CASING FROM TOP.

Conversions:

Well Casing Volumes (gal./ft.)

1" = 0.04 3" = 0.37 6" = 1.47

2" = 0.16 4" = 0.65

1 gal. = 3.785 L

1 L = 0.264 gal.

1 ft. water = 0.433 psi

1 psi = 2.31 ft. water

ARCADIS

Groundwater Sample Log

Project No. WI001459.0006 | Well ID MW-13 | Date 5/16/17

Project Name/Location Semi-annual sampling | Weather SUNNY, 75°F

Measuring Pt. Description | Screen Setting (ft-bmp) 46.3-55.3 | Casing Diameter (in.) 2 | Well Material ✓ PVC / SS / Other

Total Depth (ft-bmp) Measured (Yes/No) | Static Water Level (ft-bmp) 27.05 | Water Column in Well | Gallons in Well

Calc.Gallons Purged | Pump Intake (ft-bmp) 50 | Purge Method: PDB / Bladder ✓ / Disp. Bailer / Peristaltic | Sample Method LOW FLOW

Gallons Purged 1.25 | MP Elevation NA | Pump On/Off ~~1050~~ MAE 1040/

Sample Time: Label 1110 | Replicate/ Code No. | Sampled by M. EIBL

Time	Minutes Elapsed	Gallons Purged CUMUL.	Depth to Water (ft) TOC	Temp. (°C) (°F)	Cond. (µmhos) (mS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Appearance Color	Appearance Odor
1045	5	0.25	27.84	19.2	0.363	1.08	5.28	154.3	1.94	CLEAR	NONE
1050	10	0.50	27.59	19.5	0.361	0.59	5.29	138.6	0.98	↓	↓
1055	15	0.75	27.51	19.8	0.361	0.60	5.29	128.6	2.20	↓	↓
1100	20	1.00	27.42	20.4	0.361	0.59	5.31	117.4	1.43	↓	↓
1105	25	1.25	27.41	20.3	0.361	0.54	5.31	108.3	1.08	↓	↓

Constituents Sampled	Container	Number	Preservative
VOCs	40ml VOA Vial	3	HCL

Well Information

Well Location: See Map | Well Locked at Arrival: Yes / No

Condition of Well: OK | Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up | Key Number To Well:

NOTES:

Purge Rate = 0.05 GPM or 200 mL/min

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

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Groundwater Sample Log

Project #: WI001459.0006 **Well ID:** MW-18 **Date:** 5/18/17

Site Name/Location: 3M LAURENS-SEMI ANNUAL SAMPLING **Weather:** CLOUDY, 75°F

Well Information

Measuring Point: _____ Casing Diameter (in): 2 Screen Setting (ft-bmp): 30.1-44.0

Total Depth (ft-bmp): _____ Water Column (ft): _____ Well Completion Type: Flush Mount / Stick-up

Water Level (ft-bmp): 32.92 Well Volume (gal): _____ Well Material: PVC / SS

Purge Details

Purge Start Time: 1005/1055 Pump Intake (ft-bmp): 37 Sampling Method: LOW FLOW

Volume Purged (gal): 1.05 Purge Rate (mL/min): 100 Pump Type: BLADDER

Sample Time (label): 1050 **QA/QC Samples:** _____ Sampled By: M. EIBL

Time	Minutes Elapsed	Volume Purged	Depth to Water (ft. bmp)	Temp. (°C)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	pH (SU)	ORP (mV)	Turbidity (NTU)
1015	10	0.30	33.11	18.9	0.071	2.73	4.60	195.6	99.2
1025	20	0.45	33.13	18.7	0.075	2.12	4.65	178.7	45.5
1030	25	0.60	33.13	18.7	0.076	2.05	4.66	173.7	27.7
1035	30	0.75	33.14	18.4	0.077	1.87	4.70	167.8	19.5
1040	35	0.90	33.13	18.5	0.078	1.91	4.70	165.2	14.9
1045	40	1.05	33.12	18.5	0.078	1.81	4.71	162.2	9.9

Sample Description: Color: _____ Odor: _____ Appearance: _____

Constituents Sampled	Container Type	Quantity	Preservative
VOCs	40 mL VOA	3	HCl

Well Condition

Damaged: Yes / No Labled: Yes / No Locked: Yes / No Sealed: Yes / No

Comments: _____

Notes

Conversions:

Well Casing Volumes (gal./ft.)

1" = 0.04 3" = 0.37 6" = 1.47

2" = 0.16 4" = 0.65

1 gal. = 3.785 L

1 L = 0.264 gal.

1 ft. water = 0.433 psi

1 psi = 2.31 ft. water

ARCADIS Design & Consultancy for natural and built assets

Groundwater Sample Log

Project #: WI001459.0006 **Well ID:** WM-22 **Date:** 5/17/17

Site Name/Location: 3M LAURENS-SEMIANNUAL SAMPLING **Weather:** SUNNY, 80°F

Well Information

Measuring Point: _____ Casing Diameter (in): 2 Screen Setting (ft-bmp): 48.6-57.6

Total Depth (ft-bmp): _____ Water Column (ft): _____ Well Completion Type: Flush Mount / Stick-up

Water Level (ft-bmp): 38.96 Well Volume (gal): _____ Well Material: PVC / SS

Purge Details

Purge Start Time: 1255/1340 OFF Pump Intake (ft-bmp): 53 Sampling Method: LOW FLOW

Volume Purged (gal): _____ Purge Rate (mL/min): 100 Pump Type: BLADDER

Sample Time (label): 1370 **QA/QC Samples:** DUP-1 (051717) Sampled By: M. ELBL

Time	Minutes Elapsed	Volume Purged	Depth to Water (ft. bmp)	Temp. (°C)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	pH (SU)	ORP (mV)	Turbidity (NTU)
1305	10	0.30	39.99	18.5	0.071	2.91	5.54	154.3	3.29
1310	15	0.45	40.01	18.6	0.071	2.72	5.58	154.0	1.00
1315	20	0.60	40.03	18.4	0.070	2.59	5.63	153.4	1.20
1320	25	0.75	40.03	18.5	0.070	2.52	5.69	150.9	0.60
1325	30	0.90	40.03	18.6	0.070	2.47	5.70	150.7	0.85

Sample Description: Color: CLEAR Odor: NONE Appearance: _____

Constituents Sampled	Container Type	Quantity	Preservative
VOCs	40 mL VOA	3	HCl

Well Condition

Damaged: Yes / No Labled: Yes / No Locked: Yes / No Sealed: Yes / No

Comments: _____

Notes

Conversions:

Well Casing Volumes (gal./ft.)

1" = 0.04 3" = 0.37 6" = 1.47

2" = 0.16 4" = 0.65

1 gal. = 3.785 L

1 L = 0.264 gal.

1 ft. water = 0.433 psi

1 psi = 2.31 ft. water

ARCADIS

Groundwater Sample Log

Project No. WI001459.0006 | Well ID MW-32 | Date 5/15/17

Project Name/Location Semi-annual sampling | Weather SUNNY, 90°F

Measuring Pt. Description | Screen Setting (ft-bmp) 134.0-153.7 | Casing Diameter (in.) 3.0 | Well Material ✓ PVC / SS / Other

Total Depth (ft-bmp) Measured (Yes/No) | Static Water Level (ft-bmp) ~~32.93~~ MAE 31.93 | Water Column in Well | Gallons in Well

Calc.Gallons Purged | Pump Intake (ft-bmp) 143 | Purge Method: PDB / Bladder ✓ / Disp. Bailer / Peristaltic | Sample Method LOW FLOW

Gallons Purged 0.60 | MP Elevation NA | Pump On/Off 1655/

Sample Time: Label 1740 | Replicate/ Code No. | Sampled by M. EIBL

Time	Minutes Elapsed	Gallons Purged CUMUL.	Depth to Water (ft) TOC	Temp. (°C) (°F)	Cond. (µmhos) (mS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Appearance Color	Appearance Odor
1705	10	0.10	31.95	25.3	0.172	5.47	7.54	8.9	1.84	CLEAR	NONE
1715	20	0.30	32.30	26.0	0.171	4.76	7.57	-7.7	0.65	↓	↓
1725	30	0.50	32.70	25.1	0.172	5.03	7.59	-11.5	1.05	↓	↓
1730	35	0.55	32.80	24.6	0.171	5.01	7.60	-14.7	1.11	↓	↓
1735	40	0.60	32.91	25.2	0.171	4.96	7.59	-16.7	1.08	↓	↓

Constituents Sampled	Container	Number	Preservative
VOCs	40ml VOA Vial	3	HCL

Well Information

Well Location: See Map | Well Locked at Arrival: Yes / No

Condition of Well: OK | Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up | Key Number To Well:

NOTES:

Purge Rate = 0.015 GPM or 55 ML/min

Well Casing Volumes

Gallons/Foot					
	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

ARCADIS

Groundwater Sample Log

Project No. GS028543.0017.00002 | Well ID MW-33 | Date 5/18/17

Project Name/Location Sem-annual sampling (Q2) | Weather CLEAR, 75°F

Measuring Pt. Description TOC | Screen Setting (ft-bmp) 4.9 - 18.9 | Casing Diameter (in.) 2 | Well Material ✓ PVC / SS / Other

Total Depth (ft-bmp) Measured (Yes/~~No~~) 18.9 | Static Water Level (ft-bmp) 7.98 | Water Column in Well NA | Gallons in Well NA

Calc.Gallons Purged – | Pump Intake (ft-bmp) 12 | Purge Method: PDB / Bladder / Disp. Bailer / Peristaltic ✓ | Sample Method LOW-FLOW

Gallons Purged 1.2 | MP Elevation NA | Pump On/Off 1300

Sample Time: Label 1335 | Replicate/ Code No. Ø | Sampled by M. CREEL

Time	Minutes Elapsed	Gallons Purged	Depth to Water (ft) TOC	Temp. (°C) (°F)	Cond. (µmhos) (mS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Appearance Color	Appearance Odor
1305	5	0.2	8.52	16.3	0.032	5.12	8.65	18.6	24.88	NONE	NONE
315	15	0.6	8.52	16.1	0.032	5.23	8.74	3.5	11.79	"	"
1320	20	0.8	8.52	16.2	0.032	5.14	7.92	1.4	9.65	"	"
1325	25	1.0	8.52	16.0	0.032	5.24	7.88	0.7	8.32	"	"
1330	30	1.2	8.52	16.0	0.032	5.16	7.87	0.6	7.91	"	"

Constituents Sampled	Container	Number	Preservative
VOCs	40ml VOA Vial		HCL

Well Information

Well Location:	See Map	Well Locked at Arrival:	Yes / No
Condition of Well:	GOOD	Well Locked at Departure:	Yes / No
Well Completion:	Flush Mount / Stick Up	Key Number To Well:	

NOTES:

Purge Rate =

Well Casing Volumes

Gallons/Foot					
	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

ARCADIS

Groundwater Sample Log

Project No. WI001459.0006 | Well ID MW-58 | Date 5/16/17

Project Name/Location Semi-annual sampling | Weather SUNNY, 85°F

Measuring Pt. Description | Screen Setting (ft-bmp) 75.3-85.3 | Casing Diameter (in.) 2 | Well Material ✓ PVC / SS / Other

Total Depth (ft-bmp) Measured (Yes/No) | Static Water Level (ft-bmp) 28.99 | Water Column in Well | Gallons in Well

Calc.Gallons Purged | Pump Intake (ft-bmp) 80 | Purge Method: PDB / Bladder ✓ / Disp. Bailer / Peristaltic | Sample Method LOW FLOW

Gallons Purged 1.05 | MP Elevation NA | Pump On/Off 1455/1540

Sample Time: Label 1535 | Replicate/ Code No. | Sampled by M. EIBL

Time	Minutes Elapsed	Gallons Purged	Depth to Water (ft) TOC	Temp. (°C) (°F)	Cond. (µmhos) (mS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Appearance Color	Appearance Odor
1505	10	0.30	30.41	19.5	0.138	0.94	6.04	22.5	4.48	CLEAR	NONE
1515	20	0.60	30.31	20.4	0.138	0.55	6.04	3.0	2.10	↓	↓
1520	25	0.75	30.27	20.7	0.138	0.54	6.04	-1.9	1.30	↓	↓
1525	30	0.90	30.27	20.4	0.139	0.51	6.03	-5.2	1.51	↓	↓
1530	35	1.05	30.26	20.5	0.139	0.46	6.03	-8.7	1.63	↓	↓

Constituents Sampled	Container	Number	Preservative
VOCs	40ml VOA Vial	3	HCL

Well Information

Well Location: See Map | Well Locked at Arrival: Yes / No

Condition of Well: OK | Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up | Key Number To Well:

NOTES:

Purge Rate = ~~0.015 GPM~~ 100 mL/min
0.03 GPM

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

ARCADIS Design & Consultancy for natural and built assets

Groundwater Sample Log

Project #: WI001459.0006 **Well ID:** MW-59 **Date:** 5/18/17

Site Name/Location: 3M LAURENS-SEMI ANNUAL SAMPLING **Weather:** CLOUDY, 80F

Well Information

Measuring Point: _____ Casing Diameter (in): 2 Screen Setting (ft-bmp): 79-89

Total Depth (ft-bmp): _____ Water Column (ft): _____ Well Completion Type: Flush Mount / Stick-up

Water Level (ft-bmp): 28.04 Well Volume (gal): _____ Well Material: PVC / SS

Purge Details

Purge Start Time: 1205 Pump Intake (ft-bmp): 84 Sampling Method: LOW FLOW

Volume Purged (gal): 1.2 Purge Rate (mL/min): 150 Pump Type: Bladder

Sample Time (label): 1240 **QA/QC Samples:** N/A Sampled By: M. EIBL

Time	Minutes Elapsed	Volume Purged	Depth to Water (ft. bmp)	Temp. (°C)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	pH (SU)	ORP (mV)	Turbidity (NTU)
1220	15	0.60	29.40	17.7	0.062	7.80	6.07	121.6	4.42
1225	20	0.80	29.44	17.5	0.062	7.82	6.25	107.4	2.48
1230	25	1.0	29.45	17.5	0.062	7.85	6.28	102.6	1.51
1235	30	1.2	29.49	17.4	0.061	7.73	6.29	99.1	1.36

Sample Description: Color: _____ Odor: _____ Appearance: _____

Constituents Sampled	Container Type	Quantity	Preservative
VOCs	40 mL VOA	3	HCl

Well Condition

Damaged: Yes / No Labled: Yes / No Locked: Yes / No Sealed: Yes / No

Comments: _____

Notes

_____

Conversions:

Well Casing Volumes (gal./ft.)

1" = 0.04 3" = 0.37 6" = 1.47

2" = 0.16 4" = 0.65

1 gal. = 3.785 L

1 L = 0.264 gal.

1 ft. water = 0.433 psi

1 psi = 2.31 ft. water

ARCADIS

Groundwater Sample Log

Project No. WI001459.0006 | Well ID MW-62 | Date 5/16/17

Project Name/Location Semi-annual sampling | Weather SUNNY, 85°F

Measuring Pt. Description | Screen Setting (ft-bmp) 117.3 - 127.3 | Casing Diameter (in.) 2 | Well Material ✓ PVC / SS / Other

Total Depth (ft-bmp) Measured (Yes/No) | Static Water Level (ft-bmp) 35.38 | Water Column in Well | Gallons in Well

Calc.Gallons Purged | Pump Intake (ft-bmp) 122 | Purge Method: PDB / Bladder ✓ / Disp. Bailer / Peristaltic | Sample Methoc LOW FLOW

Gallons Purged 0.90 | MP Elevation NA | Pump On/Off 1310

Sample Time: Label 1345 | Replicate/ Code No. | Sampled by M. EIBL

Time	Minutes Elapsed	Gallons Purged CUMUL.	Depth to Water (ft) TOC	Temp. (°C) (°F)	Cond. (µmhos) (mS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Appearance Color	Appearance Odor
1315	5	0.15	35.86	18.8	0.243	1.72	7.27	25.1	52.5	CLEAR	NONE
1325	15	0.45	35.73	19.2	0.248	0.91	7.19	5.9	18.9	↓	↓
1330	20	0.60	35.69	20.3	0.248	0.95	7.18	0.7	19.0	↓	↓
1335	25	0.75	35.63	20.3	0.250	1.00	7.16	-2.6	15.9	↓	↓
1340	30	0.90	35.66	20.5	0.251	1.02	7.14	-7.1	15.7	↓	↓

Constituents Sampled	Container	Number	Preservative
VOCs	40ml VOA Vial	3	HCL

Well Information

Well Location: See Map | Well Locked at Arrival: Yes / No

Condition of Well: OK | Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up | Key Number To Well:

NOTES:

Purge Rate = 100mL/min or 0.03 GPM

Well Casing Volumes

Gallons/Foot					
	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

ARCADIS

Groundwater Sample Log

Project No. WI001459.0006 | Well ID MW-77 | Date 5/17/17

Project Name/Location Semi-annual sampling | Weather CLEAR, 78°F

Measuring Pt. Description TOC | Screen Setting (ft-bmp) 63.1 - 104.4 | Casing Diameter (in.) 6 | Well Material ___ PVC ✓ SS ___ Other

Total Depth (ft-bmp) Measured (Yes/No) 104.4 | Static Water Level (ft-bmp) 17.55 | Water Column in Well N/A | Gallons in Well N/A

Calc.Gallons Purged - | Pump Intake (ft-bmp) 85 | Purge Method: PDB ___ Bladder ___ Disp. Bailer ✓ Peristaltic ___ | Sample Method LOW-FLOW

Gallons Purged 0.5 | MP Elevation NA | Pump On/Off 1005

Sample Time: Label 1030 | Replicate/ Code No. MS/MSD | Sampled by M. CREEL

Time	Minutes Elapsed	Gallons Purged	Depth to Water (ft) TOC	Temp. (°C) (°F)	Cond. (µmhos) (mS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Appearance Color	Appearance Odor
1010	5	0.2	17.65	15.6	0.075	2.00	6.50	70.5	>1000	NONE	NONE
1015	10	0.3	17.65	15.3	0.133	1.78	6.40	22.4	>1000	"	"
1020	15	0.4	17.65	15.5	0.133	1.93	6.40	21.5	>1000	"	"
1025	20	0.5	17.65	15.4	0.133	1.97	6.38	19.9	>1000	"	"

Constituents Sampled	Container	Number	Preservative
VOCs	40ml VOA Vial	9	HCL

Well Information

Well Location: See Map | Well Locked at Arrival: Yes / No

Condition of Well: OK | Well Locked at Departure: Yes / No

Well Completion: Flush Mount / (Stick Up) | Key Number To Well:

NOTES:

Purge Rate =

Well Casing Volumes

Gallons/Foot					
	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

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Groundwater Sample Log

Project #: WI001459.0006 **Well ID:** MW-78 **Date:** 5/17/17

Site Name/Location: 3M - LAURENS, SC **Weather:** CLEAR, 75°F

Well Information

Measuring Point: _____ Casing Diameter (in): 2 Screen Setting (ft-bmp): 44.7 - 54.7

Total Depth (ft-bmp): _____ Water Column (ft): N/A Well Completion Type: Flush Mount / Stick-up

Water Level (ft-bmp): 12.38 Well Volume (gal): N/A Well Material: PVC / SS

Purge Details

Purge Start Time: 1110 Pump Intake (ft-bmp): 50 Sampling Method: LOW-FLOW

Volume Purged (gal): _____ Purge Rate (mL/min): _____ Pump Type: PERISTALTIC

Sample Time (label): 1135 **QA/QC Samples:** _____ Sampled By: M. CREEL

Time	Minutes Elapsed	Volume Purged	Depth to Water (ft. bmp)	Temp. (°C)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	pH (SU)	ORP (mV)	Turbidity (NTU)
1115	5	0.2	12.95	15.4	0.121	2.47	6.32	35.6	39.76
1120	10	0.3	12.95	16.0	0.121	2.32	6.26	26.7	32.82
1125	15	0.4	12.95	15.6	0.120	2.47	6.26	20.2	32.35
1130	20	0.5	12.95	15.5	0.121	2.39	6.26	20.5	31.97

Sample Description: Color: NONE Odor: NONE Appearance: CLEAR

Constituents Sampled	Container Type	Quantity	Preservative
VOCs	40mL VOA	3	HCl

Well Condition

Damaged: Yes / No Labled: Yes / No Locked: Yes / No Sealed: Yes / No

Comments: _____

Notes

Conversions:

Well Casing Volumes (gal./ft.)

1" = 0.04 3" = 0.37 6" = 1.47

2" = 0.16 4" = 0.65

1 gal. = 3.785 L

1 L = 0.264 gal.

1 ft. water = 0.433 psi

1 psi = 2.31 ft. water

ARCADIS

Groundwater Sample Log

Project No. WI001459.0006

Well ID ~~MW-3~~ MAE MW-79

Date 5/17/17

Project Name/Location Semi-annual sampling

Weather

Measuring Pt. Description

Screen Setting (ft-bmp) 79-119

Casing Diameter (in.) 6

Well Material ✓ PVC / ✓ SS / Other

Total Depth (ft-bmp) Measured (Yes/No)

Static Water Level (ft-bmp) 40.91

Water Column in Well

Gallons in Well

Calc.Gallons Purged

Pump Intake (ft-bmp) 99

Purge Method: PDB / ✓ Bladder / Disp. Bailer / Peristaltic

Sample Method LOW FLOW

Gallons Purged 1.05

MP Elevation NA

Pump On/Off 1026

Sample Time: Label 1100

Replicate/ Code No.

Sampled by M. ELBL

Time	Minutes Elapsed	Gallons Purged	Depth to Water (ft) TOC	Temp. (°C) (°F)	Cond. (µmhos) (mS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Appearance Color	Appearance Odor
1030	10	0.30	41.51	18.8	0.114	0.96	7.27	-88.7	50.8	CLEAR	NONE
1035	15	0.45	41.12	18.8	0.115	0.72	7.41	-113.1	51.1	↓	↓
1040	20	0.60	41.20	18.8	0.115	0.56	7.47	-112.3	49.9	↓	↓
1045	25	0.75	41.29	18.9	0.115	0.57	7.52	-123.8	52.0	↓	↓
1050	30	0.90	41.35	19.0	0.115	0.50	7.53	-118.3	49.9	↓	↓
1055	35	1.05	41.42	19.2	0.115	0.40	7.56	-118.0	48.4	↓	↓

Constituents Sampled	Container	Number	Preservative
VOCs	40ml VOA Vial	3	HCL

Well Information

Well Location: See Map

Well Locked at Arrival: Yes / No

Condition of Well: OK

Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up

Key Number To Well:

NOTES:

Purge Rate = 0.03 gpm or 100 mL/min

Well Casing Volumes

Gallons/Foot				
	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

ARCADIS

Groundwater Sample Log

Project No. WI001459.0006 | Well ID MW-93 | Date 5/15/17

Project Name/Location Semi-annual sampling | Weather SUNNY, 90°

Measuring Pt. Description | Screen Setting (ft-bmp) 68-78 | Casing Diameter (in.) 2 | Well Material ✓ PVC / SS / Other

Total Depth (ft-bmp) Measured (Yes/No) 83 | Static Water Level (ft-bmp) 26.26 | Water Column in Well 56.74 | Gallons in Well 9.07

Calc.Gallons Purged | Pump Intake (ft-bmp) 73 | Purge Method: PDB / Bladder ✓ / Disp. Bailer / Peristaltic | Sample Method LOW FLOW

Gallons Purged 0.8 | MP Elevation NA | Pump On/Off 1505/1550

Sample Time: Label 1545 | Replicate/ Code No. | Sampled by M. EIBL

Time	Minutes Elapsed	Gallons Purged CUMUL	Depth to Water (ft) TOC	Temp. (°C) (°F)	Cond. (µmhos) (mS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Appearance Color	Appearance Odor
1510	5	0.2	26.81	21.4	0.059	6.68	6.09	15.1	13.9	CLEAR	NONE
1520	15	~~0.5~~ 0.4	26.82	20.6	0.057	5.56	5.99	13.2	6.53	↓	↓
1525	20	0.5	26.81	20.4	0.056	5.44	5.97	15.9	6.71		
1530	25	0.6	26.81	20.6	0.056	5.43	5.97	18.6	18.2		
1535	30	0.7	26.81	20.3	0.056	5.39	5.97	19.4	20.1		
1540	35	0.8	26.81	20.3	0.056	5.31	5.97	18.7	18.5		

Constituents Sampled	Container	Number	Preservative
VOCs	40ml VOA Vial	3	HCL

Well Information

Well Location: See Map | Well Locked at Arrival: Yes / No

Condition of Well: OK | Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up | Key Number To Well:

NOTES:

Purge Rate = 0.02 GAL/MIN OR 75 ML/MIN

Well Casing Volumes

Gallons/Foot					
	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

ARCADIS

Groundwater Sample Log

Project No. WI001459.0006 | Well ID MW-94 | Date 5/15/17

Project Name/Location Semi-annual sampling | Weather 5/ SUNNY, 90°F

Measuring Pt. Description | Screen Setting (ft-bmp) 96-108 | Casing Diameter (in.) 4 | Well Material ___ PVC, ✓ SS, ___ Other

Total Depth (ft-bmp) Measured (Yes/No) 108 | Static Water Level (ft-bmp) 32.93 | Water Column in Well N/A | Gallons in Well N/A

Calc.Gallons Purged ___ | Pump Intake (ft-bmp) 100 | Purge Method: PDB ___, Bladder ✓, Disp. Bailer ___, Peristaltic ___ | Sample Method LOW-FLOW

Gallons Purged 1.9 | MP Elevation NA | Pump On/Off 1250/1345

Sample Time: Label 1335 | Replicate/ Code No. N/A | Sampled by M. EIBL

Time	Minutes Elapsed	Gallons Purged CUMUL.	Depth to Water (ft) TOC	Temp. (°C) (°F)	Cond. (µmhos) (mS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Appearance Color	Appearance Odor
1305	15	1.0	32.75	22.2	0.087	3.96	6.95	-64.3	122	LT. BRWN	NONE
1310	20	1.2	32.74	22.1	0.087	3.92	6.96	-66.1	—	↓	↓
1315	25	1.3	32.75	22.2	0.088	4.17	6.99	-70.9	58.0	↓	↓
1320	30	1.5	32.76	22.0	0.087	4.06	7.00	-73.2	42.2	↓	↓
1325	35	1.7	32.75	22.0	0.087	4.08	7.00	-74.3	39.2	↓	↓
1330	40	1.9	32.75	22.0	0.087	4.08	7.00	-73.4	41.0	↓	↓

Constituents Sampled	Container	Number	Preservative
VOCs	40ml VOA Vial	3	HCL

Well Information

Well Location: See Map | Well Locked at Arrival: Yes / No

Condition of Well: OK | Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up | Key Number To Well:

NOTES:

Purge Rate = 0.04 GPM OR 150 mL/MIN

NO TURBIDITY READING FOR 1310 - HACH HIGH TEMP ERROR

Well Casing Volumes

Gallons/Foot					
	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

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Groundwater Sample Log

Project #: WI001459.0006 **Well ID:** MW-97 **Date:** 5/18/17

Site Name/Location: 3M - LAURENS, SC **Weather:** CLEAR, 64°F

Well Information

Measuring Point: TOC Casing Diameter (in): 2 Screen Setting (ft-bmp): 117.6 - 127.6

Total Depth (ft-bmp): 127.6 Water Column (ft): N/A Well Completion Type: Flush Mount / Stick-up

Water Level (ft-bmp): 48.12 Well Volume (gal): N/A Well Material: PVC / SS

Purge Details

Purge Start Time: 0945 Pump Intake (ft-bmp): 122 Sampling Method: LOW-FLOW

Volume Purged (gal): Purge Rate (mL/min): Pump Type: BLADDER

Sample Time (label): 1020 **QA/QC Samples:** Ø Sampled By: M. STEEL

Time	Minutes Elapsed	Volume Purged	Depth to Water (ft. bmp)	Temp. (°C)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	pH (SU)	ORP (mV)	Turbidity (NTU)
0950	5	0.1	48.35	18.1	0.076	4.36	7.06	20.5	36.31
0955	10	0.2	48.35	16.4	0.075	2.86	6.77	22.2	25.27
1000	15	0.3	48.35	16.3	0.074	2.52	6.54	26.6	22.98
1005	20	0.4	48.35	16.6	0.073	2.51	6.51	23.5	14.96
1010	25	0.5	48.35	16.7	0.073	2.51	6.51	23.2	9.81
1015	30	0.6	48.35	16.7	0.073	2.53	6.51	22.9	9.02

Sample Description: Color: NONE Odor: NONE Appearance: CLEAR

Constituents Sampled	Container Type	Quantity	Preservative
VOCs	40 mL VOA	3	HCl

Well Condition

Damaged: Yes / No Labled: Yes / No Locked: Yes / No Sealed: Yes / No

Comments:

Notes

Conversions:

Well Casing Volumes (gal./ft.)

1" = 0.04 3" = 0.37 6" = 1.47

2" = 0.16 4" = 0.65

1 gal. = 3.785 L

1 L = 0.264 gal.

1 ft. water = 0.433 psi

1 psi = 2.31 ft. water

ARCADIS

Groundwater Sample Log

Project No. WI001459.0006 | Well ID MW-100 | Date 5/16/17

Project Name/Location Semi-annual sampling | Weather CLEAR, 78°F

Measuring Pt. Description TOC | Screen Setting (ft-bmp) 17.7-27.7 | Casing Diameter (in.) 2 | Well Material ✓ PVC / SS / Other

Total Depth (ft-bmp) Measured (Yes/No) 27.7 | Static Water Level (ft-bmp) 12.48 | Water Column in Well N/A | Gallons in Well N/A

Calc.Gallons Purged – | Pump Intake (ft-bmp) 23 | Purge Method: PDB / Bladder / Disp. Bailer / Peristaltic ✓ | Sample Method LOW-FLOW

Gallons Purged 1.2 | MP Elevation NA | Pump On/Off 1110

Sample Time: Label 1135 | Replicate/ Code No. DUP-2 | Sampled by M. CREEK

Time	Minutes Elapsed	Gallons Purged	Depth to Water (ft) TOC	Temp. (°C) (°F)	Cond. (µmhos) (mS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Appearance Color	Appearance Odor
1115	5	0.3	12.81	14.7	0.072	3.53	6.09	37.8	6.12	NONE	NONE
1120	10	0.6	12.81	15.0	0.072	4.00	6.06	33.3	9.26	"	"
1125	15	0.9	12.81	14.9	0.073	3.83	6.06	31.4	8.13	"	"
1130	20	1.2	12.81	14.7	0.072	3.89	6.05	30.3	7.39	"	"

Constituents Sampled	Container	Number	Preservative
VOCs	40ml VOA Vial	6	HCL

Well Information

Well Location: See Map | Well Locked at Arrival: ~~Yes~~ / No

Condition of Well: GOOD | Well Locked at Departure: ~~Yes~~ / No

Well Completion: Flush Mount / Stick Up | Key Number To Well:

NOTES:

Purge Rate =

Well Casing Volumes

Gallons/Foot					
	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

ARCADIS

Groundwater Sample Log

Project No. WI001459.0006 | Well ID MW-101 | Date 5/16/17

Project Name/Location Semi-annual sampling | Weather CLEAR, 75°F

Measuring Pt. Description TOC | Screen Setting (ft-bmp) 39.2-49.2 | Casing Diameter (in.) 2 | Well Material 1 PVC / SS / Other

Total Depth (ft-bmp) Measured (Yes/No) 49.2 | Static Water Level (ft-bmp) 14.87 | Water Column in Well N/A | Gallons in Well N/A

Calc.Gallons Purged – | Pump Intake (ft-bmp) 45 | Purge Method: PDB / Bladder / Disp. Bailer / Peristaltic ✓ | Sample Method LOW FLOW

Gallons Purged 1.0 | MP Elevation NA | Pump On/Off 1040

Sample Time: Label 1105 | Replicate/ Code No. Ø | Sampled by M. CREEL

Time	Minutes Elapsed	Gallons Purged	Depth to Water (ft) TOC	Temp. (°C) (°F)	Cond. (µmhos) (mS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Appearance Color	Appearance Odor
1045	5	0.3	14.91	15.6	0.099	1.18	6.42	18.2	10.2	NONE	NONE
1050	10	0.5	14.91	15.3	0.099	0.89	6.40	13.8	6.96	"	"
1055	15	0.8	14.91	15.3	0.099	0.72	6.41	9.8	5.82	"	"
1100	20	1.0	14.91	15.3	0.099	0.70	6.40	9.9	5.01	"	"

Constituents Sampled	Container	Number	Preservative
VOCs	40ml VOA Vial	3	HCL

Well Information

Well Location: See Map | Well Locked at Arrival: Yes / No

Condition of Well: GOOD | Well Locked at Departure: Yes / No

Well Completion: Flush Mount / Stick Up | Key Number To Well:

NOTES:

Purge Rate = 275 ml/min

Well Casing Volumes

Gallons/Foot					
	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

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Groundwater Sample Log

Project #: WI001459.0006 **Well ID:** PZ-#3 **Date:** 5/18/17

Site Name/Location: 3M - LAURENS, SC **Weather:** CLEAR, 90°F

Well Information

Measuring Point: _____ Casing Diameter (in): 1 Screen Setting (ft-bmp): 9.9 - 19.9

Total Depth (ft-bmp): _____ Water Column (ft): N/A Well Completion Type: Flush Mount / Stick-up

Water Level (ft-bmp): 10.25 Well Volume (gal): N/A Well Material: PVC / SS

Purge Details

Purge Start Time: 1050 Pump Intake (ft-bmp): 15 Sampling Method: LOW-FLOW

Volume Purged (gal): _____ Purge Rate (mL/min): _____ Pump Type: PERISTALTIC

Sample Time (label): 1120 **QA/QC Samples:** Ø Sampled By: M. CREEL

Time	Minutes Elapsed	Volume Purged	Depth to Water (ft. bmp)	Temp. (°C)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	pH (SU)	ORP (mV)	Turbidity (NTU)
1055	5	0.1	NM	15.7	0.166	7.62	6.24	56.5	61.09
1100	10	0.3	NM	16.2	0.167	7.63	6.23	54.4	53.32
1105	15	0.3	NM	15.3	0.167	8.23	6.24	54.0	29.63
1110	20	0.4	NM	15.2	0.166	8.26	6.22	55.2	28.19
1115	25	0.5	NM	15.3	0.166	8.17	6.22	54.7	28.04

Sample Description: Color: NONE Odor: NONE Appearance: CLEAR

Constituents Sampled	Container Type	Quantity	Preservative
VOCs	40 mL VOA	3	HCl

Well Condition

Damaged: Yes / ~~No~~ Labled: ~~Yes~~ / No Locked: ~~Yes~~ / No Sealed: ~~Yes~~ / No

Comments: _____

Notes

Conversions:

Well Casing Volumes (gal./ft.)

1" = 0.04 3" = 0.37 6" = 1.47

2" = 0.16 4" = 0.65

1 gal. = 3.785 L

1 L = 0.264 gal.

1 ft. water = 0.433 psi

1 psi = 2.31 ft. water

ARCADIS

Groundwater Sample Log

Project No. ~~GS028543.0017.00002~~ WI001459.0006 Well ID PZ-C3 Date 5/18/17

Project Name/Location ~~Sem-annual sampling (Q2)~~ 3M - LAWRENCE, KS Weather CLEAR, 70°F

Measuring Pt. Description TOC Screen Setting (ft-bmp) 12.1 - 22.1 Casing Diameter (in.) 1 Well Material ✓ PVC ___ SS ___ Other

Total Depth (ft-bmp) Measured (Yes/No) 22.1 Static Water Level (ft-bmp) 4.33 Water Column in Well N/A Gallons in Well NA

Calc.Gallons Purged - Pump Intake (ft-bmp) 17 Purge Method: PDB ___ Bladder ___ Disp. Bailer ___ Peristaltic ✓ Sample Method LOW-FLOW

Gallons Purged 0.9 MP Elevation NA Pump On/Off 1130

Sample Time: Label 1200 Replicate/ Code No. MS/MSD Sampled by M. CREEL

Time	Minutes Elapsed	Gallons Purged	Depth to Water (ft) TOC	Temp. (°C) (°F)	Cond. (µmhos) (mS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Appearance Color	Appearance Odor
1135	5	0.2	NM	16.2	0.062	1.82	5.99	46.1	192.5	NONE	NONE
1145	15	0.5	NM	17.2	0.061	1.48	6.02	45.8	53.77		
1150	20	0.7	NM	17.7	0.063	1.36	5.98	40.2	54.98		
1155	25	0.9	NM	17.7	0.063	1.29	5.98	38.5	52.71		

Constituents Sampled	Container	Number	Preservative
VOCs	40ml VOA Vial		HCL

Well Information

Well Location:	See Map	Well Locked at Arrival:	Yes / No
Condition of Well:	OK	Well Locked at Departure:	Yes / No
Well Completion:	Flush Mount / Stick Up	Key Number To Well:	

NOTES:

Purge Rate =

Well Casing Volumes

Gallons/Foot	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

ARCADIS

Surface Water Log

Client: 3M
Event: Semi Annual
Technician: M. EIBL / M. CREEL

Project # : WI001459.0006
City: Laurens, SC
Instument: YSI 556
030476

Date: 5/15/17

	Location	TIME	Turbidity	Temp (°C)	Cond (Ms/cm)	DO (mg/L)	pH	ORP (mV)	Comments
	WSW-1	1015	4.06	16.0	0.043	7.70	5.90	212.6	
	WSW-2	1030	13.2	16.8	0.056	4.72	6.25	136.0	
	WSW-15	1045	64.3	17.1	0.046	5.36	5.91	88.7	
	WSW-19	1055	—	—	—	—	—	—	NO SURFACE WATER PRESENT
	WSW-3	1105	10.7	16.6	0.031	6.60	5.49	103.2	
5/16/17	WSW-13	1215	~~32.58~~	16.6	0.065	6.43	6.43	-2.6	

NOTES:

ARCADIS

Well Development Log: 3M Laurens

Project No. W1001459 Well ID Mw-62 Date 4/11/17

Measuring Point TOC Development Method Airlift: AE Drilling Services Developed By D. Mayer

Water Level 35.00 Water Column 93.46 Well Volume (gal) 15 gallons

Well Details		Current Well Details	
Casing Diameter (inches)	2"	Casing Diameter (inches)	2"
Total Depth(ft)	128.46	Total Depth(ft)	~~128.46~~ 128.46
Screened Interval (ft)	117.3-127.3	Screened Interval (ft)	117.3-127.3
Surface Elev. (ft)	N/A	Surface Elev. (ft)	N/A
TOC Elev. (ft)	N/A	TOC Elev. (ft)	N/A
Stick-up Height (ft)	Flush mount	Stick-up Height (ft)	Flush mount

Total Volume Purged ~90

Development Start 1015

Development End 1210

Well Casing Volumes

gallon/foot

1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

	Time Elapsed (post development)	DTW (ft)	Total Depth (ft)	Depth to Product (ft)	Volume Purged (gal)	Observations: Color	Odor	Sediment	Other / PH
Pre Development	1035	47.80	128.46	NA	~15	light brown	NO	little	PH 6.9
Post Development	1055	49.11	128.46	NA	~30	light brown	NO	little	PH 9.1
Obeservation 1	1115	48.72	128.46	NA	~45	light brown	NO	little	PH 8.9
Obeservation 2	1135	44.68	128.46	NA	~60	light brown	NO	little	PH 9.0
Obeservation 3	1150	41.90	128.46	NA	~75	light brown	NO	very little	PH 9.3
Obeservation 4	1205	39.47	128.46	NA	~90	light brown	NO	very little	PH 9.1

INITIAL/BASELINE NOTES: well tagged at true bottom prior to start of redevelopment

POST PUMPING NOTES: very little sediment noted in wells

OBSERVATION NOTES (2 hrs):

OBSERVATION NOTES (24 hrs):

EQUIPMENT NOTES (Type,Condition,Repairs,etc.):

waterra pump was used in redevelopment of well

Well Information

Well Location:	See map	Well Locked at Arrival:	Yes / No
Condition of Well:	Good	Well Locked at Departure:	Yes / No
Well Completion:	Flush Mount / Stick Up	Key Number To Well:	Bolted shut

ARCADIS

Well Development Log: 3M Laurens

Project No: W1001459 | Well ID: MW-77 | Date: 4/10/17

Measuring Point: TOC | Development Method: Airlift AE Drilling Services | Developed By: [illegible]

Water Level: 16.42 | Water Column: | Well Volume (gal): 114.77 (pre airlift)

Well Details		Current Well Details	
Casing Diameter (inches)	6"	Casing Diameter (inches)	6"
Total Depth(ft)	104.4	Total Depth(ft)	94.5
Screened Interval (ft)	open hole 63.1 - 104.4	Screened Interval (ft)	open hole 63.1 - 104.4
Surface Elev. (ft)	N/A	Surface Elev. (ft)	N/A
TOC Elev. (ft)	N/A	TOC Elev. (ft)	N/A
Stick-up Height (ft)	~2'	Stick-up Height (ft)	~2'

Total Volume Purged: 200

Development Start: 1230

Development End: 1300

Well Casing Volumes

gallon/foot: 1-¼" = 0.06; 1-½" = 0.09; 2" = 0.16; 2-½" = 0.26; 3" = 0.37; 3-½" = 0.50; 4" = 0.65; 6" = 1.47

	Time Elapsed (post development)	DTW (ft)	Total Depth (ft)	Depth to Product (ft)	Volume Purged (gal)	Observations: Color	Odor	Sediment	Other
Pre Development	1230	16.42	94.5	NA	Taken before start of airlift				
Post Development	1238	24.38	94.5	NA	~100	brown	no	yes	pH 6.6, very turbid
Obeservation 1	1300	28.65	94.6	NA	~200	brown	no	yes	pH 8.3, very turbid
Obeservation 2	stopped airlift b/c assembly would not advance below 63'								
Obeservation 3									
Obeservation 4									

INITIAL/BASELINE NOTES: Initial DTW of 16.42'. Initial total depth of 94.5'. Initial water column ~~column~~ of 78.08' with a well volume of 114.77 gallons

POST PUMPING NOTES: Sending camera down well on 4/11/17. Cannot advance airlift assembly past 63' below TOC.

OBSERVATION NOTES (2 hrs):

OBSERVATION NOTES (24 hrs): Camera was sent down well. Video from camera shows at around 63' below TOC the well bore starts to curve from side to side creating ledges. Airlift assembly cannot advance below 63' bas due to ledges and curve of well bore

EQUIPMENT NOTES (Type,Condition,Repairs,etc.):

Well Information

Well Location:	See map	Well Locked at Arrival:	Yes / (No)
Condition of Well:	Needs new lock	Well Locked at Departure:	Yes / (No) Lock is broken
Well Completion:	Flush Mount / (Stick Up)	Key Number To Well:	X2290

ARCADIS

Well Development Log: 3M Laurens

Project No. W1001459 Well ID MW-97 Date 4/10/17

Measuring Point TOC Development Method ~~Airlift~~ AE Drilling Services Developed By [illegible]

Water Level 48.89 Water Column 78.81' Well Volume (gal) 12.6

Well Details		Current Well Details	
Casing Diameter (inches)	2"	Casing Diameter (inches)	2"
Total Depth(ft)	127.7 TOC	Total Depth(ft)	127.7 (TOC)
Screened Interval (ft)	115-125	Screened Interval (ft)	115-125
Surface Elev. (ft)	NA	Surface Elev. (ft)	NA
TOC Elev. (ft)	NA	TOC Elev. (ft)	NA
Stick-up Height (ft)	2'	Stick-up Height (ft)	2'

Total Volume Purged ~50

Development Start 1420

Development End 1625

Well Casing Volumes

gallon/foot

1-¼" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
1-½" = 0.09	2-½" = 0.26	3-½" = 0.50	6" = 1.47

	Time Elapsed (post development)	DTW (ft)	Total Depth (ft)	Depth to Product (ft)	Volume Purged (gal)	Observations: Color	Odor	Sediment	Other / PH
Observation ~~Pre Development~~ Bm	1445	51.80	127.7	NA	~125	Slight cloudy	NO	NO	PH 6.9
Observation ~~Post Development~~ Bm	1510	52.56	127.7	NA	~25	Slightly cloudy	NO	NO	PH 7.8
Obeservation 1	1535	51.80	127.7	NA	~37.5	Slightly cloudy	NO	NO	PH 7.9
Obeservation 2	1600	51.80	127.7	NA	~50	Slightly cloudy	NO	NO	PH 8.1
Obeservation 3	1625	51.81	127.7	NA	~62.5	Slightly cloudy	NO	NO	PH 8.1
Obeservation 4									

INITIAL/BASELINE NOTES: Appears to be no sediment in bottom of well

POST PUMPING NOTES: very little sediment in wells

OBSERVATION NOTES (2 hrs):

OBSERVATION NOTES (24 hrs):

EQUIPMENT NOTES (Type,Condition,Repairs,etc.): waterra pump was used in redevelopment of well

Well Information

Well Location:	See map	Well Locked at Arrival:	(Yes) / No
Condition of Well:	Good	Well Locked at Departure:	(Yes) / No
Well Completion:	Flush Mount / (Stick Up)	Key Number To Well:	22289

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☐

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
Arcadis	Thomas Durst	4/12/17	2[illegible]

Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page 1 of 1
30 Freeway Dr Suite 151	216-903-7278 Jeremy.Fr[illegible]@arcadis.com		

City	State	Zip Code	Site Contact	Lab Contact
Greenville	SC	29615		

Project Name and Location (State)	Carrier/Waybill Number
3M Laurens, SC	

Contract/Purchase Order/Quote No.

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed	Soil	Containers & Preservatives: Unpres	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis (Attach list if more space is needed): VOCs 8260	Special Instructions/ Conditions of Receipt
IDW-1 (041117)	4/11/17	1500		/						3			/	

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☑ Other Standard

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Bryan Mayent	4/12/17	1500	1. Received By		
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

ATTACHMENT 2

Laboratory Reports – TestAmerica

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-128409-1
Client Project/Site: 3M - Laurens Ceramtec

For:
ARCADIS U.S., Inc.
10 Patewood Drive, Suite 375
Greenville, South Carolina 29615

Attn: Tom Darby

Authorized for release by:
5/31/2017 3:19:28 PM

Robin Kintz, Project Manager II
(708)534-5200
robin.kintz@testamericainc.com

Table of Contents

Job ID: 500-128409-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-128409-1

Comments
No additional comments.

Receipt
The samples were received on 5/19/2017 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.7º C.

Receipt Exceptions

Received all 3 vials for sample 5 with ID of MW-93 (051517) with time of 1740, logged per COC since we already have a MW-93. Received 1 vial for sample 26 with headspace.

GC/MS VOA
Method(s) 8260B: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-59 (051817) (500-128409-7), MW-62 (051617) (500-128409-8), PZ-C3 (051817) (500-128409-16), PZ-C3 (051817) (500-128409-16[MS]) and PZ-C3 (051817) (500-128409-16[MSD]). Elevated reporting limits (RLs) are provided.

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

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: MW-3 (051717) — Lab Sample ID: 500-128409-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	0.64	J	1.0	0.39	ug/L	1		8260B	Total/NA
Tetrachloroethene	4.8		1.0	0.37	ug/L	1		8260B	Total/NA

Client Sample ID: MW-13 (051617) — Lab Sample ID: 500-128409-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	54		1.0	0.38	ug/L	1		8260B	Total/NA
Benzene	0.51		0.50	0.15	ug/L	1		8260B	Total/NA
Chloroethane	12		1.0	0.51	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	2.2		1.0	0.41	ug/L	1		8260B	Total/NA
Tetrachloroethene	16		1.0	0.37	ug/L	1		8260B	Total/NA
Toluene	0.26	J	0.50	0.15	ug/L	1		8260B	Total/NA
Trichloroethene	6.3		0.50	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	3.9		0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total	0.76	J	1.0	0.22	ug/L	1		8260B	Total/NA
1,1-Dichloroethane - DL	430		10	4.1	ug/L	10		8260B	Total/NA
1,1-Dichloroethene - DL	390		10	3.9	ug/L	10		8260B	Total/NA

Client Sample ID: MW-18 (051817) — Lab Sample ID: 500-128409-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	7.5		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	3.1		1.0	0.39	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	97		1.0	0.41	ug/L	1		8260B	Total/NA
Tetrachloroethene	6.3		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	3.1		0.50	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	4.7		0.50	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-22 (051717) — Lab Sample ID: 500-128409-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	2.9		1.0	0.38	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	91		1.0	0.41	ug/L	1		8260B	Total/NA
1,2-Dichloroethane	2.5		1.0	0.39	ug/L	1		8260B	Total/NA
Benzene	0.29	J	0.50	0.15	ug/L	1		8260B	Total/NA
Tetrachloroethene	44		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	11		0.50	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	2.7		0.50	0.20	ug/L	1		8260B	Total/NA
1,1-Dichloroethene - DL	260		10	3.9	ug/L	10		8260B	Total/NA
cis-1,2-Dichloroethene - DL	220		10	4.1	ug/L	10		8260B	Total/NA

Client Sample ID: MW-32 (051517) — Lab Sample ID: 500-128409-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	7.6		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	13		1.0	0.39	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	2.8		1.0	0.41	ug/L	1		8260B	Total/NA
Tetrachloroethene	0.84	J	1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	0.56		0.50	0.16	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: MW-58 (051617) — Lab Sample ID: 500-128409-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	190		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	63		1.0	0.39	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	2.9		1.0	0.41	ug/L	1		8260B	Total/NA
Tetrachloroethene	0.75	J	1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	3.9		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: MW-59 (051817) — Lab Sample ID: 500-128409-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	1.6		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	26		1.0	0.39	ug/L	1		8260B	Total/NA
Tetrachloroethene	24		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	0.91		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: MW-62 (051617) — Lab Sample ID: 500-128409-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,2-Trichloroethane	20		20	7.0	ug/L	20		8260B	Total/NA
1,1-Dichloroethane	1800		20	8.2	ug/L	20		8260B	Total/NA
1,2-Dichloroethane	15	J	20	7.8	ug/L	20		8260B	Total/NA
cis-1,2-Dichloroethene	200		20	8.2	ug/L	20		8260B	Total/NA
Tetrachloroethene	840		20	7.4	ug/L	20		8260B	Total/NA
Trichloroethene	130		10	3.3	ug/L	20		8260B	Total/NA
Trichlorofluoromethane	16	J	20	8.5	ug/L	20		8260B	Total/NA
1,1-Dichloroethene - DL	8400		200	78	ug/L	200		8260B	Total/NA

Client Sample ID: MW-77 (051717) — Lab Sample ID: 500-128409-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	9.1		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	23		1.0	0.39	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	16		1.0	0.41	ug/L	1		8260B	Total/NA
Tetrachloroethene	37		1.0	0.37	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	0.40	J	1.0	0.35	ug/L	1		8260B	Total/NA
Trichloroethene	2.9		0.50	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	2.2		0.50	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-78 (051717) — Lab Sample ID: 500-128409-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	7.5		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	25		1.0	0.39	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	8.0		1.0	0.41	ug/L	1		8260B	Total/NA
Tetrachloroethene	37		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	2.5		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: MW-94 (051517) — Lab Sample ID: 500-128409-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	14		1.0	0.39	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: MW-94 (051517) (Continued) — Lab Sample ID: 500-128409-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloroform	0.57	J	2.0	0.37	ug/L	1		8260B	Total/NA
Tetrachloroethene	6.1		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	2.2		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: MW-97 (051817) — Lab Sample ID: 500-128409-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	19		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	130		1.0	0.39	ug/L	1		8260B	Total/NA
1,2-Dichloroethane	2.7		1.0	0.39	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	27		1.0	0.41	ug/L	1		8260B	Total/NA
Tetrachloroethene	17		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	89		0.50	0.16	ug/L	1		8260B	Total/NA
Trichlorofluoromethane	0.55	J	1.0	0.43	ug/L	1		8260B	Total/NA
Vinyl chloride	1.2		0.50	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-100 (051617) — Lab Sample ID: 500-128409-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	2.6		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	4.8		1.0	0.39	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	4.1		1.0	0.41	ug/L	1		8260B	Total/NA
Tetrachloroethene	17		1.0	0.37	ug/L	1		8260B	Total/NA
Toluene	0.25	J	0.50	0.15	ug/L	1		8260B	Total/NA
Trichloroethene	1.6		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: MW-101 (051617) — Lab Sample ID: 500-128409-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	0.63	J	1.0	0.39	ug/L	1		8260B	Total/NA
Toluene	0.33	J	0.50	0.15	ug/L	1		8260B	Total/NA

Client Sample ID: MW-33 (051817) — Lab Sample ID: 500-128409-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	10		1.0	0.41	ug/L	1		8260B	Total/NA
Tetrachloroethene	30		1.0	0.37	ug/L	1		8260B	Total/NA
Toluene	0.26	J	0.50	0.15	ug/L	1		8260B	Total/NA
Trichloroethene	1.4		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: PZ-C3 (051817) — Lab Sample ID: 500-128409-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	6.4	J	10	4.1	ug/L	10		8260B	Total/NA
1,1-Dichloroethene	24		10	3.9	ug/L	10		8260B	Total/NA
Benzene	48		5.0	1.5	ug/L	10		8260B	Total/NA
trans-1,2-Dichloroethene	5.2	J	10	3.5	ug/L	10		8260B	Total/NA
Trichloroethene	330		5.0	1.6	ug/L	10		8260B	Total/NA
cis-1,2-Dichloroethene - DL	2200		100	41	ug/L	100		8260B	Total/NA
Tetrachloroethene - DL	9000		100	37	ug/L	100		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: PZ-H3 (051817) — Lab Sample ID: 500-128409-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,2-Trichloro-1,2,2-trifluoroethane	160		10	4.6	ug/L	10		8260B	Total/NA
1,1-Dichloroethane	41		10	4.1	ug/L	10		8260B	Total/NA
1,1-Dichloroethene	47		10	3.9	ug/L	10		8260B	Total/NA
cis-1,2-Dichloroethene	1600		10	4.1	ug/L	10		8260B	Total/NA
trans-1,2-Dichloroethene	6.6	J	10	3.5	ug/L	10		8260B	Total/NA
Trichloroethene	500		5.0	1.6	ug/L	10		8260B	Total/NA
Vinyl chloride	37		5.0	2.0	ug/L	10		8260B	Total/NA
Tetrachloroethene - DL	7000		100	37	ug/L	100		8260B	Total/NA

Client Sample ID: WSW-1 (051517) — Lab Sample ID: 500-128409-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	0.90	J	1.0	0.37	ug/L	1		8260B	Total/NA

Client Sample ID: WSW-2 (051517) — Lab Sample ID: 500-128409-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	110		1.0	0.41	ug/L	1		8260B	Total/NA
Tetrachloroethene	41		1.0	0.37	ug/L	1		8260B	Total/NA
Toluene	0.49	J	0.50	0.15	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	0.50	J	1.0	0.35	ug/L	1		8260B	Total/NA
Trichloroethene	10		0.50	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	7.5		0.50	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: WSW-3 (051517) — Lab Sample ID: 500-128409-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,2-Trichloro-1,2,2-trifluoroethane	1.5		1.0	0.46	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	11		1.0	0.41	ug/L	1		8260B	Total/NA
Tetrachloroethene	46		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	2.7		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: WSW-13 (051617) — Lab Sample ID: 500-128409-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.27	J	0.50	0.15	ug/L	1		8260B	Total/NA

Client Sample ID: WSW-15 (051517) — Lab Sample ID: 500-128409-22

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,2-Trichloro-1,2,2-trifluoroethane	2.9		1.0	0.46	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	2.2		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	1.7		1.0	0.39	ug/L	1		8260B	Total/NA
Benzene	1.8		0.50	0.15	ug/L	1		8260B	Total/NA
Tetrachloroethene	64		1.0	0.37	ug/L	1		8260B	Total/NA
Toluene	0.34	J	0.50	0.15	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	6.5		1.0	0.35	ug/L	1		8260B	Total/NA
Trichloroethene	50		0.50	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	82		0.50	0.20	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene - DL	730		10	4.1	ug/L	10		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: DUP-1 (051717) — Lab Sample ID: 500-128409-23

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	3.3		1.0	0.38	ug/L	1		8260B	Total/NA
1,1,2-Trichloro-1,2,2-trifluoroethane	4.7		1.0	0.46	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	99		1.0	0.41	ug/L	1		8260B	Total/NA
1,2-Dichloroethane	2.6		1.0	0.39	ug/L	1		8260B	Total/NA
Benzene	0.39	J	0.50	0.15	ug/L	1		8260B	Total/NA
Tetrachloroethene	47		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	11		0.50	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	2.4		0.50	0.20	ug/L	1		8260B	Total/NA
1,1-Dichloroethene - DL	260		10	3.9	ug/L	10		8260B	Total/NA
cis-1,2-Dichloroethene - DL	230		10	4.1	ug/L	10		8260B	Total/NA

Client Sample ID: DUP-2 (051617) — Lab Sample ID: 500-128409-24

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	2.9		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	4.9		1.0	0.39	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	4.9		1.0	0.41	ug/L	1		8260B	Total/NA
Tetrachloroethene	18		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	1.9		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: IDW-1 (051817) — Lab Sample ID: 500-128409-25

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,2-Trichloro-1,2,2-trifluoroethane	2.0		1.0	0.46	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	28		1.0	0.41	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	41		1.0	0.39	ug/L	1		8260B	Total/NA
Benzene	1.2		0.50	0.15	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	100		1.0	0.41	ug/L	1		8260B	Total/NA
Tetrachloroethene	190		1.0	0.37	ug/L	1		8260B	Total/NA
Toluene	0.72		0.50	0.15	ug/L	1		8260B	Total/NA
Trichloroethene	16		0.50	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	0.58		0.50	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: TB-1 (051817) — Lab Sample ID: 500-128409-26

No Detections.

Client Sample ID: MW-79 (051717) — Lab Sample ID: 500-128409-27

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	8.1		1.0	0.37	ug/L	1		8260B	Total/NA
Trichloroethene	1.0		0.50	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: MW-93 (051517) — Lab Sample ID: 500-128409-28

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	1.2		1.0	0.39	ug/L	1		8260B	Total/NA
Chloroform	2.4		2.0	0.37	ug/L	1		8260B	Total/NA
Tetrachloroethene	0.68	J	1.0	0.37	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: EB-1 (051617) — Lab Sample ID: 500-128409-29

No Detections.

Client Sample ID: EB-2 (051717) — Lab Sample ID: 500-128409-30

No Detections.

Client Sample ID: EB-3 (051817) — Lab Sample ID: 500-128409-31

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-128409-1	MW-3 (051717)	Water	05/17/17 16:05	05/19/17 09:00
500-128409-2	MW-13 (051617)	Water	05/16/17 11:10	05/19/17 09:00
500-128409-3	MW-18 (051817)	Water	05/18/17 10:50	05/19/17 09:00
500-128409-4	MW-22 (051717)	Water	05/17/17 13:30	05/19/17 09:00
500-128409-5	MW-32 (051517)	Water	05/15/17 17:40	05/19/17 09:00
500-128409-6	MW-58 (051617)	Water	05/16/17 15:35	05/19/17 09:00
500-128409-7	MW-59 (051817)	Water	05/18/17 12:40	05/19/17 09:00
500-128409-8	MW-62 (051617)	Water	05/16/17 13:45	05/19/17 09:00
500-128409-9	MW-77 (051717)	Water	05/17/17 10:30	05/19/17 09:00
500-128409-10	MW-78 (051717)	Water	05/17/17 11:35	05/19/17 09:00
500-128409-11	MW-94 (051517)	Water	05/15/17 13:35	05/19/17 09:00
500-128409-12	MW-97 (051817)	Water	05/18/17 10:20	05/19/17 09:00
500-128409-13	MW-100 (051617)	Water	05/16/17 11:35	05/19/17 09:00
500-128409-14	MW-101 (051617)	Water	05/16/17 11:05	05/19/17 09:00
500-128409-15	MW-33 (051817)	Water	05/18/17 13:35	05/19/17 09:00
500-128409-16	PZ-C3 (051817)	Water	05/18/17 12:00	05/19/17 09:00
500-128409-17	PZ-H3 (051817)	Water	05/18/17 11:20	05/19/17 09:00
500-128409-18	WSW-1 (051517)	Water	05/15/17 10:15	05/19/17 09:00
500-128409-19	WSW-2 (051517)	Water	05/15/17 10:30	05/19/17 09:00
500-128409-20	WSW-3 (051517)	Water	05/15/17 11:05	05/19/17 09:00
500-128409-21	WSW-13 (051617)	Water	05/16/17 12:15	05/19/17 09:00
500-128409-22	WSW-15 (051517)	Water	05/15/17 10:45	05/19/17 09:00
500-128409-23	DUP-1 (051717)	Water	05/17/17 00:00	05/19/17 09:00
500-128409-24	DUP-2 (051617)	Water	05/16/17 00:00	05/19/17 09:00
500-128409-25	IDW-1 (051817)	Water	05/18/17 14:15	05/19/17 09:00
500-128409-26	TB-1 (051817)	Water	05/18/17 00:00	05/19/17 09:00
500-128409-27	MW-79 (051717)	Water	05/17/17 11:00	05/19/17 09:00
500-128409-28	MW-93 (051517)	Water	05/15/17 15:45	05/19/17 09:00
500-128409-29	EB-1 (051617)	Water	05/16/17 12:05	05/19/17 09:00
500-128409-30	EB-2 (051717)	Water	05/17/17 12:30	05/19/17 09:00
500-128409-31	EB-3 (051817)	Water	05/18/17 14:00	05/19/17 09:00

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: MW-3 (051717)

Date Collected: 05/17/17 16:05
Date Received: 05/19/17 09:00

Lab Sample ID: 500-128409-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/27/17 14:09	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/27/17 14:09	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.46	ug/L			05/27/17 14:09	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/27/17 14:09	1
1,1-Dichloroethane	ND		1.0	0.41	ug/L			05/27/17 14:09	1
1,1-Dichloroethene	**0.64**	**J**	1.0	0.39	ug/L			05/27/17 14:09	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/27/17 14:09	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/27/17 14:09	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/27/17 14:09	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/27/17 14:09	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/27/17 14:09	1
Benzene	ND		0.50	0.15	ug/L			05/27/17 14:09	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/27/17 14:09	1
Bromoform	ND		1.0	0.48	ug/L			05/27/17 14:09	1
Bromomethane	ND		2.0	0.80	ug/L			05/27/17 14:09	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/27/17 14:09	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/27/17 14:09	1
Chloroethane	ND		1.0	0.51	ug/L			05/27/17 14:09	1
Chloroform	ND		2.0	0.37	ug/L			05/27/17 14:09	1
Chloromethane	ND		1.0	0.32	ug/L			05/27/17 14:09	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			05/27/17 14:09	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/27/17 14:09	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/27/17 14:09	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/27/17 14:09	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/27/17 14:09	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/27/17 14:09	1
Tetrachloroethene	**4.8**		1.0	0.37	ug/L			05/27/17 14:09	1
Toluene	ND		0.50	0.15	ug/L			05/27/17 14:09	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/27/17 14:09	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/27/17 14:09	1
Trichloroethene	ND		0.50	0.16	ug/L			05/27/17 14:09	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/27/17 14:09	1
Vinyl chloride	ND		0.50	0.20	ug/L			05/27/17 14:09	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/27/17 14:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*75 - 126*		*05/27/17 14:09*	*1*
4-Bromofluorobenzene (Surr)	*93*		*72 - 124*		*05/27/17 14:09*	*1*
Dibromofluoromethane	*97*		*75 - 120*		*05/27/17 14:09*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*05/27/17 14:09*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: MW-13 (051617)

Date Collected: 05/16/17 11:10
Date Received: 05/19/17 09:00

Lab Sample ID: 500-128409-2

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	**54**		1.0	0.38	ug/L			05/27/17 14:39	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/27/17 14:39	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.46	ug/L			05/27/17 14:39	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/27/17 14:39	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/27/17 14:39	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/27/17 14:39	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/27/17 14:39	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/27/17 14:39	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/27/17 14:39	1
Benzene	**0.51**		0.50	0.15	ug/L			05/27/17 14:39	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/27/17 14:39	1
Bromoform	ND		1.0	0.48	ug/L			05/27/17 14:39	1
Bromomethane	ND		2.0	0.80	ug/L			05/27/17 14:39	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/27/17 14:39	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/27/17 14:39	1
Chloroethane	**12**		1.0	0.51	ug/L			05/27/17 14:39	1
Chloroform	ND		2.0	0.37	ug/L			05/27/17 14:39	1
Chloromethane	ND		1.0	0.32	ug/L			05/27/17 14:39	1
cis-1,2-Dichloroethene	**2.2**		1.0	0.41	ug/L			05/27/17 14:39	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/27/17 14:39	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/27/17 14:39	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/27/17 14:39	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/27/17 14:39	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/27/17 14:39	1
Tetrachloroethene	**16**		1.0	0.37	ug/L			05/27/17 14:39	1
Toluene	**0.26**	**J**	0.50	0.15	ug/L			05/27/17 14:39	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/27/17 14:39	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/27/17 14:39	1
Trichloroethene	**6.3**		0.50	0.16	ug/L			05/27/17 14:39	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/27/17 14:39	1
Vinyl chloride	**3.9**		0.50	0.20	ug/L			05/27/17 14:39	1
Xylenes, Total	**0.76**	**J**	1.0	0.22	ug/L			05/27/17 14:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*75 - 126*		*05/27/17 14:39*	*1*
4-Bromofluorobenzene (Surr)	*94*		*72 - 124*		*05/27/17 14:39*	*1*
Dibromofluoromethane	*94*		*75 - 120*		*05/27/17 14:39*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*05/27/17 14:39*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	**430**		10	4.1	ug/L			05/27/17 15:08	10
1,1-Dichloroethene	**390**		10	3.9	ug/L			05/27/17 15:08	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*75 - 126*		*05/27/17 15:08*	*10*
4-Bromofluorobenzene (Surr)	*90*		*72 - 124*		*05/27/17 15:08*	*10*
Dibromofluoromethane	*95*		*75 - 120*		*05/27/17 15:08*	*10*
Toluene-d8 (Surr)	*96*		*75 - 120*		*05/27/17 15:08*	*10*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: MW-18 (051817)

Lab Sample ID: 500-128409-3

Date Collected: 05/18/17 10:50
Matrix: Water
Date Received: 05/19/17 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/27/17 15:38	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/27/17 15:38	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.46	ug/L			05/27/17 15:38	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/27/17 15:38	1
1,1-Dichloroethane	**7.5**		1.0	0.41	ug/L			05/27/17 15:38	1
1,1-Dichloroethene	**3.1**		1.0	0.39	ug/L			05/27/17 15:38	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/27/17 15:38	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/27/17 15:38	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/27/17 15:38	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/27/17 15:38	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/27/17 15:38	1
Benzene	ND		0.50	0.15	ug/L			05/27/17 15:38	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/27/17 15:38	1
Bromoform	ND		1.0	0.48	ug/L			05/27/17 15:38	1
Bromomethane	ND		2.0	0.80	ug/L			05/27/17 15:38	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/27/17 15:38	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/27/17 15:38	1
Chloroethane	ND		1.0	0.51	ug/L			05/27/17 15:38	1
Chloroform	ND		2.0	0.37	ug/L			05/27/17 15:38	1
Chloromethane	ND		1.0	0.32	ug/L			05/27/17 15:38	1
cis-1,2-Dichloroethene	**97**		1.0	0.41	ug/L			05/27/17 15:38	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/27/17 15:38	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/27/17 15:38	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/27/17 15:38	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/27/17 15:38	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/27/17 15:38	1
Tetrachloroethene	**6.3**		1.0	0.37	ug/L			05/27/17 15:38	1
Toluene	ND		0.50	0.15	ug/L			05/27/17 15:38	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/27/17 15:38	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/27/17 15:38	1
Trichloroethene	**3.1**		0.50	0.16	ug/L			05/27/17 15:38	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/27/17 15:38	1
Vinyl chloride	**4.7**		0.50	0.20	ug/L			05/27/17 15:38	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/27/17 15:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 126*		*05/27/17 15:38*	*1*
4-Bromofluorobenzene (Surr)	*94*		*72 - 124*		*05/27/17 15:38*	*1*
Dibromofluoromethane	*97*		*75 - 120*		*05/27/17 15:38*	*1*
Toluene-d8 (Surr)	*96*		*75 - 120*		*05/27/17 15:38*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: MW-22 (051717)

Date Collected: 05/17/17 13:30
Date Received: 05/19/17 09:00

Lab Sample ID: 500-128409-4

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	**2.9**		1.0	0.38	ug/L			05/27/17 16:07	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/27/17 16:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.46	ug/L			05/27/17 16:07	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/27/17 16:07	1
1,1-Dichloroethane	**91**		1.0	0.41	ug/L			05/27/17 16:07	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/27/17 16:07	1
1,2-Dichloroethane	**2.5**		1.0	0.39	ug/L			05/27/17 16:07	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/27/17 16:07	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/27/17 16:07	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/27/17 16:07	1
Benzene	**0.29**	**J**	0.50	0.15	ug/L			05/27/17 16:07	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/27/17 16:07	1
Bromoform	ND		1.0	0.48	ug/L			05/27/17 16:07	1
Bromomethane	ND		2.0	0.80	ug/L			05/27/17 16:07	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/27/17 16:07	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/27/17 16:07	1
Chloroethane	ND		1.0	0.51	ug/L			05/27/17 16:07	1
Chloroform	ND		2.0	0.37	ug/L			05/27/17 16:07	1
Chloromethane	ND		1.0	0.32	ug/L			05/27/17 16:07	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/27/17 16:07	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/27/17 16:07	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/27/17 16:07	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/27/17 16:07	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/27/17 16:07	1
Tetrachloroethene	**44**		1.0	0.37	ug/L			05/27/17 16:07	1
Toluene	ND		0.50	0.15	ug/L			05/27/17 16:07	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/27/17 16:07	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/27/17 16:07	1
Trichloroethene	**11**		0.50	0.16	ug/L			05/27/17 16:07	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/27/17 16:07	1
Vinyl chloride	**2.7**		0.50	0.20	ug/L			05/27/17 16:07	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/27/17 16:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 126*		*05/27/17 16:07*	*1*
4-Bromofluorobenzene (Surr)	*94*		*72 - 124*		*05/27/17 16:07*	*1*
Dibromofluoromethane	*97*		*75 - 120*		*05/27/17 16:07*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*05/27/17 16:07*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	**260**		10	3.9	ug/L			05/27/17 16:37	10
cis-1,2-Dichloroethene	**220**		10	4.1	ug/L			05/27/17 16:37	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 126*		*05/27/17 16:37*	*10*
4-Bromofluorobenzene (Surr)	*95*		*72 - 124*		*05/27/17 16:37*	*10*
Dibromofluoromethane	*97*		*75 - 120*		*05/27/17 16:37*	*10*
Toluene-d8 (Surr)	*97*		*75 - 120*		*05/27/17 16:37*	*10*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: MW-32 (051517)

Lab Sample ID: 500-128409-5

Date Collected: 05/15/17 17:40
Matrix: Water
Date Received: 05/19/17 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/27/17 17:06	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/27/17 17:06	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.46	ug/L			05/27/17 17:06	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/27/17 17:06	1
1,1-Dichloroethane	**7.6**		1.0	0.41	ug/L			05/27/17 17:06	1
1,1-Dichloroethene	**13**		1.0	0.39	ug/L			05/27/17 17:06	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/27/17 17:06	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/27/17 17:06	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/27/17 17:06	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/27/17 17:06	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/27/17 17:06	1
Benzene	ND		0.50	0.15	ug/L			05/27/17 17:06	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/27/17 17:06	1
Bromoform	ND		1.0	0.48	ug/L			05/27/17 17:06	1
Bromomethane	ND		2.0	0.80	ug/L			05/27/17 17:06	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/27/17 17:06	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/27/17 17:06	1
Chloroethane	ND		1.0	0.51	ug/L			05/27/17 17:06	1
Chloroform	ND		2.0	0.37	ug/L			05/27/17 17:06	1
Chloromethane	ND		1.0	0.32	ug/L			05/27/17 17:06	1
cis-1,2-Dichloroethene	**2.8**		1.0	0.41	ug/L			05/27/17 17:06	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/27/17 17:06	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/27/17 17:06	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/27/17 17:06	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/27/17 17:06	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/27/17 17:06	1
Tetrachloroethene	**0.84**	**J**	1.0	0.37	ug/L			05/27/17 17:06	1
Toluene	ND		0.50	0.15	ug/L			05/27/17 17:06	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/27/17 17:06	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/27/17 17:06	1
Trichloroethene	**0.56**		0.50	0.16	ug/L			05/27/17 17:06	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/27/17 17:06	1
Vinyl chloride	ND		0.50	0.20	ug/L			05/27/17 17:06	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/27/17 17:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 126*		*05/27/17 17:06*	*1*
4-Bromofluorobenzene (Surr)	*95*		*72 - 124*		*05/27/17 17:06*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*05/27/17 17:06*	*1*
Toluene-d8 (Surr)	*94*		*75 - 120*		*05/27/17 17:06*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: MW-58 (051617)

Lab Sample ID: 500-128409-6

Date Collected: 05/16/17 15:35
Matrix: Water
Date Received: 05/19/17 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/27/17 17:36	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/27/17 17:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.46	ug/L			05/27/17 17:36	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/27/17 17:36	1
1,1-Dichloroethane	**190**		1.0	0.41	ug/L			05/27/17 17:36	1
1,1-Dichloroethene	**63**		1.0	0.39	ug/L			05/27/17 17:36	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/27/17 17:36	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/27/17 17:36	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/27/17 17:36	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/27/17 17:36	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/27/17 17:36	1
Benzene	ND		0.50	0.15	ug/L			05/27/17 17:36	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/27/17 17:36	1
Bromoform	ND		1.0	0.48	ug/L			05/27/17 17:36	1
Bromomethane	ND		2.0	0.80	ug/L			05/27/17 17:36	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/27/17 17:36	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/27/17 17:36	1
Chloroethane	ND		1.0	0.51	ug/L			05/27/17 17:36	1
Chloroform	ND		2.0	0.37	ug/L			05/27/17 17:36	1
Chloromethane	ND		1.0	0.32	ug/L			05/27/17 17:36	1
cis-1,2-Dichloroethene	**2.9**		1.0	0.41	ug/L			05/27/17 17:36	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/27/17 17:36	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/27/17 17:36	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/27/17 17:36	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/27/17 17:36	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/27/17 17:36	1
Tetrachloroethene	**0.75**	**J**	1.0	0.37	ug/L			05/27/17 17:36	1
Toluene	ND		0.50	0.15	ug/L			05/27/17 17:36	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/27/17 17:36	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/27/17 17:36	1
Trichloroethene	**3.9**		0.50	0.16	ug/L			05/27/17 17:36	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/27/17 17:36	1
Vinyl chloride	ND		0.50	0.20	ug/L			05/27/17 17:36	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/27/17 17:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 126*		*05/27/17 17:36*	*1*
4-Bromofluorobenzene (Surr)	*96*		*72 - 124*		*05/27/17 17:36*	*1*
Dibromofluoromethane	*98*		*75 - 120*		*05/27/17 17:36*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*05/27/17 17:36*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: MW-59 (051817)

Lab Sample ID: 500-128409-7

Date Collected: 05/18/17 12:40
Matrix: Water
Date Received: 05/19/17 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/27/17 18:35	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/27/17 18:35	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.46	ug/L			05/27/17 18:35	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/27/17 18:35	1
1,1-Dichloroethane	**1.6**		1.0	0.41	ug/L			05/27/17 18:35	1
1,1-Dichloroethene	**26**		1.0	0.39	ug/L			05/27/17 18:35	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/27/17 18:35	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/27/17 18:35	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/27/17 18:35	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/27/17 18:35	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/27/17 18:35	1
Benzene	ND		0.50	0.15	ug/L			05/27/17 18:35	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/27/17 18:35	1
Bromoform	ND		1.0	0.48	ug/L			05/27/17 18:35	1
Bromomethane	ND		2.0	0.80	ug/L			05/27/17 18:35	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/27/17 18:35	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/27/17 18:35	1
Chloroethane	ND		1.0	0.51	ug/L			05/27/17 18:35	1
Chloroform	ND		2.0	0.37	ug/L			05/27/17 18:35	1
Chloromethane	ND		1.0	0.32	ug/L			05/27/17 18:35	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			05/27/17 18:35	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/27/17 18:35	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/27/17 18:35	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/27/17 18:35	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/27/17 18:35	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/27/17 18:35	1
Tetrachloroethene	**24**		1.0	0.37	ug/L			05/27/17 18:35	1
Toluene	ND		0.50	0.15	ug/L			05/27/17 18:35	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/27/17 18:35	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/27/17 18:35	1
Trichloroethene	**0.91**		0.50	0.16	ug/L			05/27/17 18:35	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/27/17 18:35	1
Vinyl chloride	ND		0.50	0.20	ug/L			05/27/17 18:35	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/27/17 18:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 126*		*05/27/17 18:35*	*1*
4-Bromofluorobenzene (Surr)	*97*		*72 - 124*		*05/27/17 18:35*	*1*
Dibromofluoromethane	*100*		*75 - 120*		*05/27/17 18:35*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*05/27/17 18:35*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: MW-62 (051617)

Date Collected: 05/16/17 13:45
Date Received: 05/19/17 09:00

Lab Sample ID: 500-128409-8

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		20	7.6	ug/L			05/27/17 19:04	20
1,1,2,2-Tetrachloroethane	ND		20	8.0	ug/L			05/27/17 19:04	20
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		20	9.2	ug/L			05/27/17 19:04	20
1,1,2-Trichloroethane	**20**		20	7.0	ug/L			05/27/17 19:04	20
1,1-Dichloroethane	**1800**		20	8.2	ug/L			05/27/17 19:04	20
1,2-Dichlorobenzene	ND		20	6.7	ug/L			05/27/17 19:04	20
1,2-Dichloroethane	**15**	**J**	20	7.8	ug/L			05/27/17 19:04	20
1,2-Dichloropropane	ND		20	8.6	ug/L			05/27/17 19:04	20
1,3-Dichlorobenzene	ND		20	8.0	ug/L			05/27/17 19:04	20
1,4-Dichlorobenzene	ND		20	7.3	ug/L			05/27/17 19:04	20
Benzene	ND		10	2.9	ug/L			05/27/17 19:04	20
Bromodichloromethane	ND		20	7.4	ug/L			05/27/17 19:04	20
Bromoform	ND		20	9.7	ug/L			05/27/17 19:04	20
Bromomethane	ND		40	16	ug/L			05/27/17 19:04	20
Carbon tetrachloride	ND		20	7.7	ug/L			05/27/17 19:04	20
Chlorobenzene	ND		20	7.7	ug/L			05/27/17 19:04	20
Chloroethane	ND		20	10	ug/L			05/27/17 19:04	20
Chloroform	ND		40	7.4	ug/L			05/27/17 19:04	20
Chloromethane	ND		20	6.4	ug/L			05/27/17 19:04	20
cis-1,2-Dichloroethene	**200**		20	8.2	ug/L			05/27/17 19:04	20
cis-1,3-Dichloropropene	ND		20	8.3	ug/L			05/27/17 19:04	20
Dibromochloromethane	ND		20	9.8	ug/L			05/27/17 19:04	20
Dichlorodifluoromethane	ND		40	13	ug/L			05/27/17 19:04	20
Ethylbenzene	ND		10	3.7	ug/L			05/27/17 19:04	20
Methylene Chloride	ND		100	33	ug/L			05/27/17 19:04	20
Tetrachloroethene	**840**		20	7.4	ug/L			05/27/17 19:04	20
Toluene	ND		10	3.0	ug/L			05/27/17 19:04	20
trans-1,2-Dichloroethene	ND		20	7.0	ug/L			05/27/17 19:04	20
trans-1,3-Dichloropropene	ND		20	7.2	ug/L			05/27/17 19:04	20
Trichloroethene	**130**		10	3.3	ug/L			05/27/17 19:04	20
Trichlorofluoromethane	**16**	**J**	20	8.5	ug/L			05/27/17 19:04	20
Vinyl chloride	ND		10	4.1	ug/L			05/27/17 19:04	20
Xylenes, Total	ND		20	4.4	ug/L			05/27/17 19:04	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 126*		*05/27/17 19:04*	*20*
4-Bromofluorobenzene (Surr)	*90*		*72 - 124*		*05/27/17 19:04*	*20*
Dibromofluoromethane	*102*		*75 - 120*		*05/27/17 19:04*	*20*
Toluene-d8 (Surr)	*92*		*75 - 120*		*05/27/17 19:04*	*20*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	**8400**		200	78	ug/L			05/27/17 19:33	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 126*		*05/27/17 19:33*	*200*
4-Bromofluorobenzene (Surr)	*97*		*72 - 124*		*05/27/17 19:33*	*200*
Dibromofluoromethane	*100*		*75 - 120*		*05/27/17 19:33*	*200*
Toluene-d8 (Surr)	*97*		*75 - 120*		*05/27/17 19:33*	*200*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: MW-77 (051717)

Lab Sample ID: 500-128409-9

Date Collected: 05/17/17 10:30
Matrix: Water
Date Received: 05/19/17 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/27/17 20:03	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/27/17 20:03	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.46	ug/L			05/27/17 20:03	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/27/17 20:03	1
1,1-Dichloroethane	**9.1**		1.0	0.41	ug/L			05/27/17 20:03	1
1,1-Dichloroethene	**23**		1.0	0.39	ug/L			05/27/17 20:03	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/27/17 20:03	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/27/17 20:03	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/27/17 20:03	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/27/17 20:03	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/27/17 20:03	1
Benzene	ND		0.50	0.15	ug/L			05/27/17 20:03	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/27/17 20:03	1
Bromoform	ND		1.0	0.48	ug/L			05/27/17 20:03	1
Bromomethane	ND	F1	2.0	0.80	ug/L			05/27/17 20:03	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/27/17 20:03	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/27/17 20:03	1
Chloroethane	ND		1.0	0.51	ug/L			05/27/17 20:03	1
Chloroform	ND		2.0	0.37	ug/L			05/27/17 20:03	1
Chloromethane	ND		1.0	0.32	ug/L			05/27/17 20:03	1
cis-1,2-Dichloroethene	**16**		1.0	0.41	ug/L			05/27/17 20:03	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/27/17 20:03	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/27/17 20:03	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/27/17 20:03	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/27/17 20:03	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/27/17 20:03	1
Tetrachloroethene	**37**		1.0	0.37	ug/L			05/27/17 20:03	1
Toluene	ND		0.50	0.15	ug/L			05/27/17 20:03	1
trans-1,2-Dichloroethene	**0.40**	**J**	1.0	0.35	ug/L			05/27/17 20:03	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/27/17 20:03	1
Trichloroethene	**2.9**		0.50	0.16	ug/L			05/27/17 20:03	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/27/17 20:03	1
Vinyl chloride	**2.2**		0.50	0.20	ug/L			05/27/17 20:03	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/27/17 20:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 126*		*05/27/17 20:03*	*1*
4-Bromofluorobenzene (Surr)	*100*		*72 - 124*		*05/27/17 20:03*	*1*
Dibromofluoromethane	*100*		*75 - 120*		*05/27/17 20:03*	*1*
Toluene-d8 (Surr)	*94*		*75 - 120*		*05/27/17 20:03*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: MW-78 (051717)

Date Collected: 05/17/17 11:35
Date Received: 05/19/17 09:00

Lab Sample ID: 500-128409-10

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/27/17 20:32	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/27/17 20:32	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.46	ug/L			05/27/17 20:32	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/27/17 20:32	1
1,1-Dichloroethane	**7.5**		1.0	0.41	ug/L			05/27/17 20:32	1
1,1-Dichloroethene	**25**		1.0	0.39	ug/L			05/27/17 20:32	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/27/17 20:32	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/27/17 20:32	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/27/17 20:32	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/27/17 20:32	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/27/17 20:32	1
Benzene	ND		0.50	0.15	ug/L			05/27/17 20:32	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/27/17 20:32	1
Bromoform	ND		1.0	0.48	ug/L			05/27/17 20:32	1
Bromomethane	ND		2.0	0.80	ug/L			05/27/17 20:32	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/27/17 20:32	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/27/17 20:32	1
Chloroethane	ND		1.0	0.51	ug/L			05/27/17 20:32	1
Chloroform	ND		2.0	0.37	ug/L			05/27/17 20:32	1
Chloromethane	ND		1.0	0.32	ug/L			05/27/17 20:32	1
cis-1,2-Dichloroethene	**8.0**		1.0	0.41	ug/L			05/27/17 20:32	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/27/17 20:32	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/27/17 20:32	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/27/17 20:32	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/27/17 20:32	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/27/17 20:32	1
Tetrachloroethene	**37**		1.0	0.37	ug/L			05/27/17 20:32	1
Toluene	ND		0.50	0.15	ug/L			05/27/17 20:32	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/27/17 20:32	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/27/17 20:32	1
Trichloroethene	**2.5**		0.50	0.16	ug/L			05/27/17 20:32	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/27/17 20:32	1
Vinyl chloride	ND		0.50	0.20	ug/L			05/27/17 20:32	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/27/17 20:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 126*		*05/27/17 20:32*	*1*
4-Bromofluorobenzene (Surr)	*96*		*72 - 124*		*05/27/17 20:32*	*1*
Dibromofluoromethane	*100*		*75 - 120*		*05/27/17 20:32*	*1*
Toluene-d8 (Surr)	*94*		*75 - 120*		*05/27/17 20:32*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: MW-94 (051517)

Lab Sample ID: 500-128409-11

Date Collected: 05/15/17 13:35
Matrix: Water
Date Received: 05/19/17 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/27/17 21:01	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/27/17 21:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.46	ug/L			05/27/17 21:01	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/27/17 21:01	1
1,1-Dichloroethane	ND		1.0	0.41	ug/L			05/27/17 21:01	1
1,1-Dichloroethene	**14**		1.0	0.39	ug/L			05/27/17 21:01	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/27/17 21:01	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/27/17 21:01	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/27/17 21:01	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/27/17 21:01	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/27/17 21:01	1
Benzene	ND		0.50	0.15	ug/L			05/27/17 21:01	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/27/17 21:01	1
Bromoform	ND		1.0	0.48	ug/L			05/27/17 21:01	1
Bromomethane	ND		2.0	0.80	ug/L			05/27/17 21:01	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/27/17 21:01	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/27/17 21:01	1
Chloroethane	ND		1.0	0.51	ug/L			05/27/17 21:01	1
Chloroform	**0.57**	**J**	2.0	0.37	ug/L			05/27/17 21:01	1
Chloromethane	ND		1.0	0.32	ug/L			05/27/17 21:01	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			05/27/17 21:01	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/27/17 21:01	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/27/17 21:01	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/27/17 21:01	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/27/17 21:01	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/27/17 21:01	1
Tetrachloroethene	**6.1**		1.0	0.37	ug/L			05/27/17 21:01	1
Toluene	ND		0.50	0.15	ug/L			05/27/17 21:01	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/27/17 21:01	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/27/17 21:01	1
Trichloroethene	**2.2**		0.50	0.16	ug/L			05/27/17 21:01	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/27/17 21:01	1
Vinyl chloride	ND		0.50	0.20	ug/L			05/27/17 21:01	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/27/17 21:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 126*		*05/27/17 21:01*	*1*
4-Bromofluorobenzene (Surr)	*95*		*72 - 124*		*05/27/17 21:01*	*1*
Dibromofluoromethane	*101*		*75 - 120*		*05/27/17 21:01*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*05/27/17 21:01*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: MW-97 (051817)

Lab Sample ID: 500-128409-12

Date Collected: 05/18/17 10:20
Matrix: Water
Date Received: 05/19/17 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/27/17 21:31	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/27/17 21:31	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.46	ug/L			05/27/17 21:31	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/27/17 21:31	1
1,1-Dichloroethane	**19**		1.0	0.41	ug/L			05/27/17 21:31	1
1,1-Dichloroethene	**130**		1.0	0.39	ug/L			05/27/17 21:31	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/27/17 21:31	1
1,2-Dichloroethane	**2.7**		1.0	0.39	ug/L			05/27/17 21:31	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/27/17 21:31	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/27/17 21:31	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/27/17 21:31	1
Benzene	ND		0.50	0.15	ug/L			05/27/17 21:31	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/27/17 21:31	1
Bromoform	ND		1.0	0.48	ug/L			05/27/17 21:31	1
Bromomethane	ND		2.0	0.80	ug/L			05/27/17 21:31	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/27/17 21:31	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/27/17 21:31	1
Chloroethane	ND		1.0	0.51	ug/L			05/27/17 21:31	1
Chloroform	ND		2.0	0.37	ug/L			05/27/17 21:31	1
Chloromethane	ND		1.0	0.32	ug/L			05/27/17 21:31	1
cis-1,2-Dichloroethene	**27**		1.0	0.41	ug/L			05/27/17 21:31	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/27/17 21:31	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/27/17 21:31	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/27/17 21:31	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/27/17 21:31	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/27/17 21:31	1
Tetrachloroethene	**17**		1.0	0.37	ug/L			05/27/17 21:31	1
Toluene	ND		0.50	0.15	ug/L			05/27/17 21:31	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/27/17 21:31	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/27/17 21:31	1
Trichloroethene	**89**		0.50	0.16	ug/L			05/27/17 21:31	1
Trichlorofluoromethane	**0.55**	**J**	1.0	0.43	ug/L			05/27/17 21:31	1
Vinyl chloride	**1.2**		0.50	0.20	ug/L			05/27/17 21:31	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/27/17 21:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*75 - 126*		*05/27/17 21:31*	*1*
4-Bromofluorobenzene (Surr)	*97*		*72 - 124*		*05/27/17 21:31*	*1*
Dibromofluoromethane	*99*		*75 - 120*		*05/27/17 21:31*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*05/27/17 21:31*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: MW-100 (051617)

Date Collected: 05/16/17 11:35
Date Received: 05/19/17 09:00

Lab Sample ID: 500-128409-13

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/27/17 13:56	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/27/17 13:56	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.46	ug/L			05/27/17 13:56	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/27/17 13:56	1
1,1-Dichloroethane	**2.6**		1.0	0.41	ug/L			05/27/17 13:56	1
1,1-Dichloroethene	**4.8**		1.0	0.39	ug/L			05/27/17 13:56	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/27/17 13:56	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/27/17 13:56	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/27/17 13:56	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/27/17 13:56	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/27/17 13:56	1
Benzene	ND		0.50	0.15	ug/L			05/27/17 13:56	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/27/17 13:56	1
Bromoform	ND		1.0	0.48	ug/L			05/27/17 13:56	1
Bromomethane	ND		2.0	0.80	ug/L			05/27/17 13:56	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/27/17 13:56	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/27/17 13:56	1
Chloroethane	ND		1.0	0.51	ug/L			05/27/17 13:56	1
Chloroform	ND		2.0	0.37	ug/L			05/27/17 13:56	1
Chloromethane	ND		1.0	0.32	ug/L			05/27/17 13:56	1
cis-1,2-Dichloroethene	**4.1**		1.0	0.41	ug/L			05/27/17 13:56	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/27/17 13:56	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/27/17 13:56	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/27/17 13:56	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/27/17 13:56	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/27/17 13:56	1
Tetrachloroethene	**17**		1.0	0.37	ug/L			05/27/17 13:56	1
Toluene	**0.25**	**J**	0.50	0.15	ug/L			05/27/17 13:56	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/27/17 13:56	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/27/17 13:56	1
Trichloroethene	**1.6**		0.50	0.16	ug/L			05/27/17 13:56	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/27/17 13:56	1
Vinyl chloride	ND		0.50	0.20	ug/L			05/27/17 13:56	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/27/17 13:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*75 - 126*		*05/27/17 13:56*	*1*
4-Bromofluorobenzene (Surr)	*116*		*72 - 124*		*05/27/17 13:56*	*1*
Dibromofluoromethane	*89*		*75 - 120*		*05/27/17 13:56*	*1*
Toluene-d8 (Surr)	*103*		*75 - 120*		*05/27/17 13:56*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: MW-101 (051617)

Date Collected: 05/16/17 11:05
Date Received: 05/19/17 09:00

Lab Sample ID: 500-128409-14

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/27/17 14:23	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/27/17 14:23	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.46	ug/L			05/27/17 14:23	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/27/17 14:23	1
1,1-Dichloroethane	ND		1.0	0.41	ug/L			05/27/17 14:23	1
1,1-Dichloroethene	**0.63**	**J**	1.0	0.39	ug/L			05/27/17 14:23	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/27/17 14:23	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/27/17 14:23	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/27/17 14:23	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/27/17 14:23	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/27/17 14:23	1
Benzene	ND		0.50	0.15	ug/L			05/27/17 14:23	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/27/17 14:23	1
Bromoform	ND		1.0	0.48	ug/L			05/27/17 14:23	1
Bromomethane	ND		2.0	0.80	ug/L			05/27/17 14:23	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/27/17 14:23	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/27/17 14:23	1
Chloroethane	ND		1.0	0.51	ug/L			05/27/17 14:23	1
Chloroform	ND		2.0	0.37	ug/L			05/27/17 14:23	1
Chloromethane	ND		1.0	0.32	ug/L			05/27/17 14:23	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			05/27/17 14:23	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/27/17 14:23	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/27/17 14:23	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/27/17 14:23	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/27/17 14:23	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/27/17 14:23	1
Tetrachloroethene	ND		1.0	0.37	ug/L			05/27/17 14:23	1
Toluene	**0.33**	**J**	0.50	0.15	ug/L			05/27/17 14:23	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/27/17 14:23	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/27/17 14:23	1
Trichloroethene	ND		0.50	0.16	ug/L			05/27/17 14:23	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/27/17 14:23	1
Vinyl chloride	ND		0.50	0.20	ug/L			05/27/17 14:23	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/27/17 14:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*75 - 126*		*05/27/17 14:23*	*1*
4-Bromofluorobenzene (Surr)	*115*		*72 - 124*		*05/27/17 14:23*	*1*
Dibromofluoromethane	*89*		*75 - 120*		*05/27/17 14:23*	*1*
Toluene-d8 (Surr)	*103*		*75 - 120*		*05/27/17 14:23*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: MW-33 (051817)

Lab Sample ID: 500-128409-15

Date Collected: 05/18/17 13:35
Matrix: Water
Date Received: 05/19/17 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/27/17 14:50	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/27/17 14:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.46	ug/L			05/27/17 14:50	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/27/17 14:50	1
1,1-Dichloroethane	ND		1.0	0.41	ug/L			05/27/17 14:50	1
1,1-Dichloroethene	ND		1.0	0.39	ug/L			05/27/17 14:50	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/27/17 14:50	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/27/17 14:50	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/27/17 14:50	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/27/17 14:50	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/27/17 14:50	1
Benzene	ND		0.50	0.15	ug/L			05/27/17 14:50	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/27/17 14:50	1
Bromoform	ND		1.0	0.48	ug/L			05/27/17 14:50	1
Bromomethane	ND		2.0	0.80	ug/L			05/27/17 14:50	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/27/17 14:50	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/27/17 14:50	1
Chloroethane	ND		1.0	0.51	ug/L			05/27/17 14:50	1
Chloroform	ND		2.0	0.37	ug/L			05/27/17 14:50	1
Chloromethane	ND		1.0	0.32	ug/L			05/27/17 14:50	1
cis-1,2-Dichloroethene	**10**		1.0	0.41	ug/L			05/27/17 14:50	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/27/17 14:50	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/27/17 14:50	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/27/17 14:50	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/27/17 14:50	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/27/17 14:50	1
Tetrachloroethene	**30**		1.0	0.37	ug/L			05/27/17 14:50	1
Toluene	**0.26**	**J**	0.50	0.15	ug/L			05/27/17 14:50	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/27/17 14:50	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/27/17 14:50	1
Trichloroethene	**1.4**		0.50	0.16	ug/L			05/27/17 14:50	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/27/17 14:50	1
Vinyl chloride	ND		0.50	0.20	ug/L			05/27/17 14:50	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/27/17 14:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*75 - 126*		*05/27/17 14:50*	*1*
4-Bromofluorobenzene (Surr)	*112*		*72 - 124*		*05/27/17 14:50*	*1*
Dibromofluoromethane	*87*		*75 - 120*		*05/27/17 14:50*	*1*
Toluene-d8 (Surr)	*101*		*75 - 120*		*05/27/17 14:50*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: PZ-C3 (051817)

Date Collected: 05/18/17 12:00
Date Received: 05/19/17 09:00

Lab Sample ID: 500-128409-16

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		10	3.8	ug/L			05/27/17 15:17	10
1,1,2,2-Tetrachloroethane	ND		10	4.0	ug/L			05/27/17 15:17	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		10	4.6	ug/L			05/27/17 15:17	10
1,1,2-Trichloroethane	ND		10	3.5	ug/L			05/27/17 15:17	10
1,1-Dichloroethane	**6.4**	**J**	10	4.1	ug/L			05/27/17 15:17	10
1,1-Dichloroethene	**24**		10	3.9	ug/L			05/27/17 15:17	10
1,2-Dichlorobenzene	ND		10	3.3	ug/L			05/27/17 15:17	10
1,2-Dichloroethane	ND		10	3.9	ug/L			05/27/17 15:17	10
1,2-Dichloropropane	ND		10	4.3	ug/L			05/27/17 15:17	10
1,3-Dichlorobenzene	ND		10	4.0	ug/L			05/27/17 15:17	10
1,4-Dichlorobenzene	ND		10	3.6	ug/L			05/27/17 15:17	10
Benzene	**48**		5.0	1.5	ug/L			05/27/17 15:17	10
Bromodichloromethane	ND		10	3.7	ug/L			05/27/17 15:17	10
Bromoform	ND		10	4.8	ug/L			05/27/17 15:17	10
Bromomethane	ND		20	8.0	ug/L			05/27/17 15:17	10
Carbon tetrachloride	ND		10	3.8	ug/L			05/27/17 15:17	10
Chlorobenzene	ND		10	3.9	ug/L			05/27/17 15:17	10
Chloroethane	ND		10	5.1	ug/L			05/27/17 15:17	10
Chloroform	ND		20	3.7	ug/L			05/27/17 15:17	10
Chloromethane	ND		10	3.2	ug/L			05/27/17 15:17	10
cis-1,3-Dichloropropene	ND		10	4.2	ug/L			05/27/17 15:17	10
Dibromochloromethane	ND		10	4.9	ug/L			05/27/17 15:17	10
Dichlorodifluoromethane	ND		20	6.7	ug/L			05/27/17 15:17	10
Ethylbenzene	ND		5.0	1.8	ug/L			05/27/17 15:17	10
Methylene Chloride	ND		50	16	ug/L			05/27/17 15:17	10
Toluene	ND		5.0	1.5	ug/L			05/27/17 15:17	10
trans-1,2-Dichloroethene	**5.2**	**J**	10	3.5	ug/L			05/27/17 15:17	10
trans-1,3-Dichloropropene	ND		10	3.6	ug/L			05/27/17 15:17	10
Trichloroethene	**330**		5.0	1.6	ug/L			05/27/17 15:17	10
Trichlorofluoromethane	ND		10	4.3	ug/L			05/27/17 15:17	10
Vinyl chloride	ND		5.0	2.0	ug/L			05/27/17 15:17	10
Xylenes, Total	ND		10	2.2	ug/L			05/27/17 15:17	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*75 - 126*		*05/27/17 15:17*	*10*
4-Bromofluorobenzene (Surr)	*115*		*72 - 124*		*05/27/17 15:17*	*10*
Dibromofluoromethane	*89*		*75 - 120*		*05/27/17 15:17*	*10*
Toluene-d8 (Surr)	*101*		*75 - 120*		*05/27/17 15:17*	*10*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	**2200**		100	41	ug/L			05/27/17 15:44	100
Tetrachloroethene	**9000**		100	37	ug/L			05/27/17 15:44	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*75 - 126*		*05/27/17 15:44*	*100*
4-Bromofluorobenzene (Surr)	*115*		*72 - 124*		*05/27/17 15:44*	*100*
Dibromofluoromethane	*89*		*75 - 120*		*05/27/17 15:44*	*100*
Toluene-d8 (Surr)	*100*		*75 - 120*		*05/27/17 15:44*	*100*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: PZ-H3 (051817)

Date Collected: 05/18/17 11:20
Date Received: 05/19/17 09:00

Lab Sample ID: 500-128409-17

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		10	3.8	ug/L			05/27/17 16:10	10
1,1,2,2-Tetrachloroethane	ND		10	4.0	ug/L			05/27/17 16:10	10
1,1,2-Trichloro-1,2,2-trifluoroethane	**160**		10	4.6	ug/L			05/27/17 16:10	10
1,1,2-Trichloroethane	ND		10	3.5	ug/L			05/27/17 16:10	10
1,1-Dichloroethane	**41**		10	4.1	ug/L			05/27/17 16:10	10
1,1-Dichloroethene	**47**		10	3.9	ug/L			05/27/17 16:10	10
1,2-Dichlorobenzene	ND		10	3.3	ug/L			05/27/17 16:10	10
1,2-Dichloroethane	ND		10	3.9	ug/L			05/27/17 16:10	10
1,2-Dichloropropane	ND		10	4.3	ug/L			05/27/17 16:10	10
1,3-Dichlorobenzene	ND		10	4.0	ug/L			05/27/17 16:10	10
1,4-Dichlorobenzene	ND		10	3.6	ug/L			05/27/17 16:10	10
Benzene	ND		5.0	1.5	ug/L			05/27/17 16:10	10
Bromodichloromethane	ND		10	3.7	ug/L			05/27/17 16:10	10
Bromoform	ND		10	4.8	ug/L			05/27/17 16:10	10
Bromomethane	ND		20	8.0	ug/L			05/27/17 16:10	10
Carbon tetrachloride	ND		10	3.8	ug/L			05/27/17 16:10	10
Chlorobenzene	ND		10	3.9	ug/L			05/27/17 16:10	10
Chloroethane	ND		10	5.1	ug/L			05/27/17 16:10	10
Chloroform	ND		20	3.7	ug/L			05/27/17 16:10	10
Chloromethane	ND		10	3.2	ug/L			05/27/17 16:10	10
cis-1,2-Dichloroethene	**1600**		10	4.1	ug/L			05/27/17 16:10	10
cis-1,3-Dichloropropene	ND		10	4.2	ug/L			05/27/17 16:10	10
Dibromochloromethane	ND		10	4.9	ug/L			05/27/17 16:10	10
Dichlorodifluoromethane	ND		20	6.7	ug/L			05/27/17 16:10	10
Ethylbenzene	ND		5.0	1.8	ug/L			05/27/17 16:10	10
Methylene Chloride	ND		50	16	ug/L			05/27/17 16:10	10
Toluene	ND		5.0	1.5	ug/L			05/27/17 16:10	10
trans-1,2-Dichloroethene	**6.6**	**J**	10	3.5	ug/L			05/27/17 16:10	10
trans-1,3-Dichloropropene	ND		10	3.6	ug/L			05/27/17 16:10	10
Trichloroethene	**500**		5.0	1.6	ug/L			05/27/17 16:10	10
Trichlorofluoromethane	ND		10	4.3	ug/L			05/27/17 16:10	10
Vinyl chloride	**37**		5.0	2.0	ug/L			05/27/17 16:10	10
Xylenes, Total	ND		10	2.2	ug/L			05/27/17 16:10	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*75 - 126*		*05/27/17 16:10*	*10*
4-Bromofluorobenzene (Surr)	*115*		*72 - 124*		*05/27/17 16:10*	*10*
Dibromofluoromethane	*91*		*75 - 120*		*05/27/17 16:10*	*10*
Toluene-d8 (Surr)	*101*		*75 - 120*		*05/27/17 16:10*	*10*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	**7000**		100	37	ug/L			05/27/17 16:36	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*75 - 126*		*05/27/17 16:36*	*100*
4-Bromofluorobenzene (Surr)	*116*		*72 - 124*		*05/27/17 16:36*	*100*
Dibromofluoromethane	*91*		*75 - 120*		*05/27/17 16:36*	*100*
Toluene-d8 (Surr)	*101*		*75 - 120*		*05/27/17 16:36*	*100*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: WSW-1 (051517)

Lab Sample ID: 500-128409-18

Date Collected: 05/15/17 10:15
Matrix: Water
Date Received: 05/19/17 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/27/17 17:03	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/27/17 17:03	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.46	ug/L			05/27/17 17:03	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/27/17 17:03	1
1,1-Dichloroethane	ND		1.0	0.41	ug/L			05/27/17 17:03	1
1,1-Dichloroethene	ND		1.0	0.39	ug/L			05/27/17 17:03	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/27/17 17:03	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/27/17 17:03	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/27/17 17:03	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/27/17 17:03	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/27/17 17:03	1
Benzene	ND		0.50	0.15	ug/L			05/27/17 17:03	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/27/17 17:03	1
Bromoform	ND		1.0	0.48	ug/L			05/27/17 17:03	1
Bromomethane	ND		2.0	0.80	ug/L			05/27/17 17:03	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/27/17 17:03	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/27/17 17:03	1
Chloroethane	ND		1.0	0.51	ug/L			05/27/17 17:03	1
Chloroform	ND		2.0	0.37	ug/L			05/27/17 17:03	1
Chloromethane	ND		1.0	0.32	ug/L			05/27/17 17:03	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			05/27/17 17:03	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/27/17 17:03	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/27/17 17:03	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/27/17 17:03	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/27/17 17:03	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/27/17 17:03	1
Tetrachloroethene	**0.90**	**J**	1.0	0.37	ug/L			05/27/17 17:03	1
Toluene	ND		0.50	0.15	ug/L			05/27/17 17:03	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/27/17 17:03	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/27/17 17:03	1
Trichloroethene	ND		0.50	0.16	ug/L			05/27/17 17:03	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/27/17 17:03	1
Vinyl chloride	ND		0.50	0.20	ug/L			05/27/17 17:03	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/27/17 17:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*75 - 126*		*05/27/17 17:03*	*1*
4-Bromofluorobenzene (Surr)	*114*		*72 - 124*		*05/27/17 17:03*	*1*
Dibromofluoromethane	*90*		*75 - 120*		*05/27/17 17:03*	*1*
Toluene-d8 (Surr)	*102*		*75 - 120*		*05/27/17 17:03*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: WSW-2 (051517)

Lab Sample ID: 500-128409-19

Date Collected: 05/15/17 10:30
Matrix: Water
Date Received: 05/19/17 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/27/17 17:30	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/27/17 17:30	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.46	ug/L			05/27/17 17:30	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/27/17 17:30	1
1,1-Dichloroethane	ND		1.0	0.41	ug/L			05/27/17 17:30	1
1,1-Dichloroethene	ND		1.0	0.39	ug/L			05/27/17 17:30	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/27/17 17:30	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/27/17 17:30	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/27/17 17:30	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/27/17 17:30	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/27/17 17:30	1
Benzene	ND		0.50	0.15	ug/L			05/27/17 17:30	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/27/17 17:30	1
Bromoform	ND		1.0	0.48	ug/L			05/27/17 17:30	1
Bromomethane	ND		2.0	0.80	ug/L			05/27/17 17:30	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/27/17 17:30	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/27/17 17:30	1
Chloroethane	ND		1.0	0.51	ug/L			05/27/17 17:30	1
Chloroform	ND		2.0	0.37	ug/L			05/27/17 17:30	1
Chloromethane	ND		1.0	0.32	ug/L			05/27/17 17:30	1
cis-1,2-Dichloroethene	**110**		1.0	0.41	ug/L			05/27/17 17:30	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/27/17 17:30	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/27/17 17:30	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/27/17 17:30	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/27/17 17:30	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/27/17 17:30	1
Tetrachloroethene	**41**		1.0	0.37	ug/L			05/27/17 17:30	1
Toluene	**0.49**	**J**	0.50	0.15	ug/L			05/27/17 17:30	1
trans-1,2-Dichloroethene	**0.50**	**J**	1.0	0.35	ug/L			05/27/17 17:30	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/27/17 17:30	1
Trichloroethene	**10**		0.50	0.16	ug/L			05/27/17 17:30	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/27/17 17:30	1
Vinyl chloride	**7.5**		0.50	0.20	ug/L			05/27/17 17:30	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/27/17 17:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*75 - 126*		*05/27/17 17:30*	*1*
4-Bromofluorobenzene (Surr)	*116*		*72 - 124*		*05/27/17 17:30*	*1*
Dibromofluoromethane	*89*		*75 - 120*		*05/27/17 17:30*	*1*
Toluene-d8 (Surr)	*101*		*75 - 120*		*05/27/17 17:30*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: WSW-3 (051517)

Lab Sample ID: 500-128409-20

Date Collected: 05/15/17 11:05
Matrix: Water
Date Received: 05/19/17 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/27/17 17:57	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/27/17 17:57	1
1,1,2-Trichloro-1,2,2-trifluoroethane	**1.5**		1.0	0.46	ug/L			05/27/17 17:57	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/27/17 17:57	1
1,1-Dichloroethane	ND		1.0	0.41	ug/L			05/27/17 17:57	1
1,1-Dichloroethene	ND		1.0	0.39	ug/L			05/27/17 17:57	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/27/17 17:57	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/27/17 17:57	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/27/17 17:57	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/27/17 17:57	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/27/17 17:57	1
Benzene	ND		0.50	0.15	ug/L			05/27/17 17:57	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/27/17 17:57	1
Bromoform	ND		1.0	0.48	ug/L			05/27/17 17:57	1
Bromomethane	ND		2.0	0.80	ug/L			05/27/17 17:57	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/27/17 17:57	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/27/17 17:57	1
Chloroethane	ND		1.0	0.51	ug/L			05/27/17 17:57	1
Chloroform	ND		2.0	0.37	ug/L			05/27/17 17:57	1
Chloromethane	ND		1.0	0.32	ug/L			05/27/17 17:57	1
cis-1,2-Dichloroethene	**11**		1.0	0.41	ug/L			05/27/17 17:57	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/27/17 17:57	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/27/17 17:57	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/27/17 17:57	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/27/17 17:57	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/27/17 17:57	1
Tetrachloroethene	**46**		1.0	0.37	ug/L			05/27/17 17:57	1
Toluene	ND		0.50	0.15	ug/L			05/27/17 17:57	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/27/17 17:57	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/27/17 17:57	1
Trichloroethene	**2.7**		0.50	0.16	ug/L			05/27/17 17:57	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/27/17 17:57	1
Vinyl chloride	ND		0.50	0.20	ug/L			05/27/17 17:57	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/27/17 17:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*75 - 126*		*05/27/17 17:57*	*1*
4-Bromofluorobenzene (Surr)	*118*		*72 - 124*		*05/27/17 17:57*	*1*
Dibromofluoromethane	*90*		*75 - 120*		*05/27/17 17:57*	*1*
Toluene-d8 (Surr)	*103*		*75 - 120*		*05/27/17 17:57*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: WSW-13 (051617)

Lab Sample ID: 500-128409-21

Date Collected: 05/16/17 12:15
Matrix: Water
Date Received: 05/19/17 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/27/17 18:23	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/27/17 18:23	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.46	ug/L			05/27/17 18:23	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/27/17 18:23	1
1,1-Dichloroethane	ND		1.0	0.41	ug/L			05/27/17 18:23	1
1,1-Dichloroethene	ND		1.0	0.39	ug/L			05/27/17 18:23	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/27/17 18:23	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/27/17 18:23	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/27/17 18:23	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/27/17 18:23	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/27/17 18:23	1
Benzene	ND		0.50	0.15	ug/L			05/27/17 18:23	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/27/17 18:23	1
Bromoform	ND		1.0	0.48	ug/L			05/27/17 18:23	1
Bromomethane	ND		2.0	0.80	ug/L			05/27/17 18:23	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/27/17 18:23	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/27/17 18:23	1
Chloroethane	ND		1.0	0.51	ug/L			05/27/17 18:23	1
Chloroform	ND		2.0	0.37	ug/L			05/27/17 18:23	1
Chloromethane	ND		1.0	0.32	ug/L			05/27/17 18:23	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			05/27/17 18:23	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/27/17 18:23	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/27/17 18:23	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/27/17 18:23	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/27/17 18:23	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/27/17 18:23	1
Tetrachloroethene	ND		1.0	0.37	ug/L			05/27/17 18:23	1
Toluene	**0.27**	**J**	0.50	0.15	ug/L			05/27/17 18:23	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/27/17 18:23	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/27/17 18:23	1
Trichloroethene	ND		0.50	0.16	ug/L			05/27/17 18:23	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/27/17 18:23	1
Vinyl chloride	ND		0.50	0.20	ug/L			05/27/17 18:23	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/27/17 18:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*75 - 126*		*05/27/17 18:23*	*1*
4-Bromofluorobenzene (Surr)	*114*		*72 - 124*		*05/27/17 18:23*	*1*
Dibromofluoromethane	*90*		*75 - 120*		*05/27/17 18:23*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*05/27/17 18:23*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: WSW-15 (051517)

Date Collected: 05/15/17 10:45
Date Received: 05/19/17 09:00

Lab Sample ID: 500-128409-22

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/27/17 18:49	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/27/17 18:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	**2.9**		1.0	0.46	ug/L			05/27/17 18:49	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/27/17 18:49	1
1,1-Dichloroethane	**2.2**		1.0	0.41	ug/L			05/27/17 18:49	1
1,1-Dichloroethene	**1.7**		1.0	0.39	ug/L			05/27/17 18:49	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/27/17 18:49	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/27/17 18:49	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/27/17 18:49	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/27/17 18:49	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/27/17 18:49	1
Benzene	**1.8**		0.50	0.15	ug/L			05/27/17 18:49	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/27/17 18:49	1
Bromoform	ND		1.0	0.48	ug/L			05/27/17 18:49	1
Bromomethane	ND		2.0	0.80	ug/L			05/27/17 18:49	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/27/17 18:49	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/27/17 18:49	1
Chloroethane	ND		1.0	0.51	ug/L			05/27/17 18:49	1
Chloroform	ND		2.0	0.37	ug/L			05/27/17 18:49	1
Chloromethane	ND		1.0	0.32	ug/L			05/27/17 18:49	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/27/17 18:49	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/27/17 18:49	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/27/17 18:49	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/27/17 18:49	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/27/17 18:49	1
Tetrachloroethene	**64**		1.0	0.37	ug/L			05/27/17 18:49	1
Toluene	**0.34**	**J**	0.50	0.15	ug/L			05/27/17 18:49	1
trans-1,2-Dichloroethene	**6.5**		1.0	0.35	ug/L			05/27/17 18:49	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/27/17 18:49	1
Trichloroethene	**50**		0.50	0.16	ug/L			05/27/17 18:49	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/27/17 18:49	1
Vinyl chloride	**82**		0.50	0.20	ug/L			05/27/17 18:49	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/27/17 18:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*75 - 126*		*05/27/17 18:49*	*1*
4-Bromofluorobenzene (Surr)	*112*		*72 - 124*		*05/27/17 18:49*	*1*
Dibromofluoromethane	*90*		*75 - 120*		*05/27/17 18:49*	*1*
Toluene-d8 (Surr)	*99*		*75 - 120*		*05/27/17 18:49*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	**730**		10	4.1	ug/L			05/27/17 19:17	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*75 - 126*		*05/27/17 19:17*	*10*
4-Bromofluorobenzene (Surr)	*116*		*72 - 124*		*05/27/17 19:17*	*10*
Dibromofluoromethane	*92*		*75 - 120*		*05/27/17 19:17*	*10*
Toluene-d8 (Surr)	*100*		*75 - 120*		*05/27/17 19:17*	*10*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: DUP-1 (051717)

Date Collected: 05/17/17 00:00
Date Received: 05/19/17 09:00

Lab Sample ID: 500-128409-23

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	**3.3**		1.0	0.38	ug/L			05/27/17 19:43	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/27/17 19:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	**4.7**		1.0	0.46	ug/L			05/27/17 19:43	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/27/17 19:43	1
1,1-Dichloroethane	**99**		1.0	0.41	ug/L			05/27/17 19:43	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/27/17 19:43	1
1,2-Dichloroethane	**2.6**		1.0	0.39	ug/L			05/27/17 19:43	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/27/17 19:43	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/27/17 19:43	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/27/17 19:43	1
Benzene	**0.39**	**J**	0.50	0.15	ug/L			05/27/17 19:43	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/27/17 19:43	1
Bromoform	ND		1.0	0.48	ug/L			05/27/17 19:43	1
Bromomethane	ND		2.0	0.80	ug/L			05/27/17 19:43	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/27/17 19:43	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/27/17 19:43	1
Chloroethane	ND		1.0	0.51	ug/L			05/27/17 19:43	1
Chloroform	ND		2.0	0.37	ug/L			05/27/17 19:43	1
Chloromethane	ND		1.0	0.32	ug/L			05/27/17 19:43	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/27/17 19:43	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/27/17 19:43	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/27/17 19:43	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/27/17 19:43	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/27/17 19:43	1
Tetrachloroethene	**47**		1.0	0.37	ug/L			05/27/17 19:43	1
Toluene	ND		0.50	0.15	ug/L			05/27/17 19:43	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/27/17 19:43	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/27/17 19:43	1
Trichloroethene	**11**		0.50	0.16	ug/L			05/27/17 19:43	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/27/17 19:43	1
Vinyl chloride	**2.4**		0.50	0.20	ug/L			05/27/17 19:43	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/27/17 19:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*75 - 126*		*05/27/17 19:43*	*1*
4-Bromofluorobenzene (Surr)	*116*		*72 - 124*		*05/27/17 19:43*	*1*
Dibromofluoromethane	*92*		*75 - 120*		*05/27/17 19:43*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*05/27/17 19:43*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	**260**		10	3.9	ug/L			05/27/17 20:09	10
cis-1,2-Dichloroethene	**230**		10	4.1	ug/L			05/27/17 20:09	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*75 - 126*		*05/27/17 20:09*	*10*
4-Bromofluorobenzene (Surr)	*113*		*72 - 124*		*05/27/17 20:09*	*10*
Dibromofluoromethane	*88*		*75 - 120*		*05/27/17 20:09*	*10*
Toluene-d8 (Surr)	*99*		*75 - 120*		*05/27/17 20:09*	*10*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: DUP-2 (051617)

Lab Sample ID: 500-128409-24

Date Collected: 05/16/17 00:00
Matrix: Water
Date Received: 05/19/17 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/27/17 20:34	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/27/17 20:34	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.46	ug/L			05/27/17 20:34	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/27/17 20:34	1
1,1-Dichloroethane	**2.9**		1.0	0.41	ug/L			05/27/17 20:34	1
1,1-Dichloroethene	**4.9**		1.0	0.39	ug/L			05/27/17 20:34	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/27/17 20:34	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/27/17 20:34	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/27/17 20:34	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/27/17 20:34	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/27/17 20:34	1
Benzene	ND		0.50	0.15	ug/L			05/27/17 20:34	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/27/17 20:34	1
Bromoform	ND		1.0	0.48	ug/L			05/27/17 20:34	1
Bromomethane	ND		2.0	0.80	ug/L			05/27/17 20:34	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/27/17 20:34	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/27/17 20:34	1
Chloroethane	ND		1.0	0.51	ug/L			05/27/17 20:34	1
Chloroform	ND		2.0	0.37	ug/L			05/27/17 20:34	1
Chloromethane	ND		1.0	0.32	ug/L			05/27/17 20:34	1
cis-1,2-Dichloroethene	**4.9**		1.0	0.41	ug/L			05/27/17 20:34	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/27/17 20:34	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/27/17 20:34	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/27/17 20:34	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/27/17 20:34	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/27/17 20:34	1
Tetrachloroethene	**18**		1.0	0.37	ug/L			05/27/17 20:34	1
Toluene	ND		0.50	0.15	ug/L			05/27/17 20:34	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/27/17 20:34	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/27/17 20:34	1
Trichloroethene	**1.9**		0.50	0.16	ug/L			05/27/17 20:34	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/27/17 20:34	1
Vinyl chloride	ND		0.50	0.20	ug/L			05/27/17 20:34	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/27/17 20:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*75 - 126*		*05/27/17 20:34*	*1*
4-Bromofluorobenzene (Surr)	*117*		*72 - 124*		*05/27/17 20:34*	*1*
Dibromofluoromethane	*90*		*75 - 120*		*05/27/17 20:34*	*1*
Toluene-d8 (Surr)	*99*		*75 - 120*		*05/27/17 20:34*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: IDW-1 (051817)

Date Collected: 05/18/17 14:15
Date Received: 05/19/17 09:00

Lab Sample ID: 500-128409-25

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/27/17 21:01	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/27/17 21:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	**2.0**		1.0	0.46	ug/L			05/27/17 21:01	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/27/17 21:01	1
1,1-Dichloroethane	**28**		1.0	0.41	ug/L			05/27/17 21:01	1
1,1-Dichloroethene	**41**		1.0	0.39	ug/L			05/27/17 21:01	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/27/17 21:01	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/27/17 21:01	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/27/17 21:01	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/27/17 21:01	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/27/17 21:01	1
Benzene	**1.2**		0.50	0.15	ug/L			05/27/17 21:01	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/27/17 21:01	1
Bromoform	ND		1.0	0.48	ug/L			05/27/17 21:01	1
Bromomethane	ND		2.0	0.80	ug/L			05/27/17 21:01	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/27/17 21:01	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/27/17 21:01	1
Chloroethane	ND		1.0	0.51	ug/L			05/27/17 21:01	1
Chloroform	ND		2.0	0.37	ug/L			05/27/17 21:01	1
Chloromethane	ND		1.0	0.32	ug/L			05/27/17 21:01	1
cis-1,2-Dichloroethene	**100**		1.0	0.41	ug/L			05/27/17 21:01	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/27/17 21:01	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/27/17 21:01	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/27/17 21:01	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/27/17 21:01	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/27/17 21:01	1
Tetrachloroethene	**190**		1.0	0.37	ug/L			05/27/17 21:01	1
Toluene	**0.72**		0.50	0.15	ug/L			05/27/17 21:01	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/27/17 21:01	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/27/17 21:01	1
Trichloroethene	**16**		0.50	0.16	ug/L			05/27/17 21:01	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/27/17 21:01	1
Vinyl chloride	**0.58**		0.50	0.20	ug/L			05/27/17 21:01	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/27/17 21:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*75 - 126*		*05/27/17 21:01*	*1*
4-Bromofluorobenzene (Surr)	*117*		*72 - 124*		*05/27/17 21:01*	*1*
Dibromofluoromethane	*91*		*75 - 120*		*05/27/17 21:01*	*1*
Toluene-d8 (Surr)	*101*		*75 - 120*		*05/27/17 21:01*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: TB-1 (051817)

Date Collected: 05/18/17 00:00
Date Received: 05/19/17 09:00

Lab Sample ID: 500-128409-26

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/28/17 15:33	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/28/17 15:33	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.46	ug/L			05/28/17 15:33	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/28/17 15:33	1
1,1-Dichloroethane	ND		1.0	0.41	ug/L			05/28/17 15:33	1
1,1-Dichloroethene	ND		1.0	0.39	ug/L			05/28/17 15:33	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/28/17 15:33	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/28/17 15:33	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/28/17 15:33	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/28/17 15:33	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/28/17 15:33	1
Benzene	ND		0.50	0.15	ug/L			05/28/17 15:33	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/28/17 15:33	1
Bromoform	ND		1.0	0.48	ug/L			05/28/17 15:33	1
Bromomethane	ND		2.0	0.80	ug/L			05/28/17 15:33	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/28/17 15:33	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/28/17 15:33	1
Chloroethane	ND		1.0	0.51	ug/L			05/28/17 15:33	1
Chloroform	ND		2.0	0.37	ug/L			05/28/17 15:33	1
Chloromethane	ND		1.0	0.32	ug/L			05/28/17 15:33	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			05/28/17 15:33	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/28/17 15:33	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/28/17 15:33	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/28/17 15:33	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/28/17 15:33	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/28/17 15:33	1
Tetrachloroethene	ND		1.0	0.37	ug/L			05/28/17 15:33	1
Toluene	ND		0.50	0.15	ug/L			05/28/17 15:33	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/28/17 15:33	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/28/17 15:33	1
Trichloroethene	ND		0.50	0.16	ug/L			05/28/17 15:33	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/28/17 15:33	1
Vinyl chloride	ND		0.50	0.20	ug/L			05/28/17 15:33	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/28/17 15:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*75 - 126*		*05/28/17 15:33*	*1*
4-Bromofluorobenzene (Surr)	*118*		*72 - 124*		*05/28/17 15:33*	*1*
Dibromofluoromethane	*92*		*75 - 120*		*05/28/17 15:33*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*05/28/17 15:33*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: MW-79 (051717)

Lab Sample ID: 500-128409-27

Date Collected: 05/17/17 11:00
Matrix: Water
Date Received: 05/19/17 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/27/17 21:26	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/27/17 21:26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.46	ug/L			05/27/17 21:26	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/27/17 21:26	1
1,1-Dichloroethane	ND		1.0	0.41	ug/L			05/27/17 21:26	1
1,1-Dichloroethene	ND		1.0	0.39	ug/L			05/27/17 21:26	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/27/17 21:26	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/27/17 21:26	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/27/17 21:26	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/27/17 21:26	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/27/17 21:26	1
Benzene	ND		0.50	0.15	ug/L			05/27/17 21:26	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/27/17 21:26	1
Bromoform	ND		1.0	0.48	ug/L			05/27/17 21:26	1
Bromomethane	ND		2.0	0.80	ug/L			05/27/17 21:26	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/27/17 21:26	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/27/17 21:26	1
Chloroethane	ND		1.0	0.51	ug/L			05/27/17 21:26	1
Chloroform	ND		2.0	0.37	ug/L			05/27/17 21:26	1
Chloromethane	ND		1.0	0.32	ug/L			05/27/17 21:26	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			05/27/17 21:26	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/27/17 21:26	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/27/17 21:26	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/27/17 21:26	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/27/17 21:26	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/27/17 21:26	1
Tetrachloroethene	**8.1**		1.0	0.37	ug/L			05/27/17 21:26	1
Toluene	ND		0.50	0.15	ug/L			05/27/17 21:26	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/27/17 21:26	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/27/17 21:26	1
Trichloroethene	**1.0**		0.50	0.16	ug/L			05/27/17 21:26	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/27/17 21:26	1
Vinyl chloride	ND		0.50	0.20	ug/L			05/27/17 21:26	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/27/17 21:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*75 - 126*		*05/27/17 21:26*	*1*
4-Bromofluorobenzene (Surr)	*116*		*72 - 124*		*05/27/17 21:26*	*1*
Dibromofluoromethane	*91*		*75 - 120*		*05/27/17 21:26*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*05/27/17 21:26*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: MW-93 (051517)

Lab Sample ID: 500-128409-28

Date Collected: 05/15/17 15:45
Matrix: Water
Date Received: 05/19/17 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/28/17 15:59	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/28/17 15:59	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.46	ug/L			05/28/17 15:59	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/28/17 15:59	1
1,1-Dichloroethane	ND		1.0	0.41	ug/L			05/28/17 15:59	1
1,1-Dichloroethene	**1.2**		1.0	0.39	ug/L			05/28/17 15:59	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/28/17 15:59	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/28/17 15:59	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/28/17 15:59	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/28/17 15:59	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/28/17 15:59	1
Benzene	ND		0.50	0.15	ug/L			05/28/17 15:59	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/28/17 15:59	1
Bromoform	ND		1.0	0.48	ug/L			05/28/17 15:59	1
Bromomethane	ND		2.0	0.80	ug/L			05/28/17 15:59	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/28/17 15:59	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/28/17 15:59	1
Chloroethane	ND		1.0	0.51	ug/L			05/28/17 15:59	1
Chloroform	**2.4**		2.0	0.37	ug/L			05/28/17 15:59	1
Chloromethane	ND		1.0	0.32	ug/L			05/28/17 15:59	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			05/28/17 15:59	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/28/17 15:59	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/28/17 15:59	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/28/17 15:59	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/28/17 15:59	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/28/17 15:59	1
Tetrachloroethene	**0.68**	**J**	1.0	0.37	ug/L			05/28/17 15:59	1
Toluene	ND		0.50	0.15	ug/L			05/28/17 15:59	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/28/17 15:59	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/28/17 15:59	1
Trichloroethene	ND		0.50	0.16	ug/L			05/28/17 15:59	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/28/17 15:59	1
Vinyl chloride	ND		0.50	0.20	ug/L			05/28/17 15:59	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/28/17 15:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*75 - 126*		*05/28/17 15:59*	*1*
4-Bromofluorobenzene (Surr)	*117*		*72 - 124*		*05/28/17 15:59*	*1*
Dibromofluoromethane	*92*		*75 - 120*		*05/28/17 15:59*	*1*
Toluene-d8 (Surr)	*102*		*75 - 120*		*05/28/17 15:59*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: EB-1 (051617)

Date Collected: 05/16/17 12:05
Date Received: 05/19/17 09:00

Lab Sample ID: 500-128409-29

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/28/17 16:25	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/28/17 16:25	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.46	ug/L			05/28/17 16:25	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/28/17 16:25	1
1,1-Dichloroethane	ND		1.0	0.41	ug/L			05/28/17 16:25	1
1,1-Dichloroethene	ND		1.0	0.39	ug/L			05/28/17 16:25	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/28/17 16:25	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/28/17 16:25	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/28/17 16:25	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/28/17 16:25	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/28/17 16:25	1
Benzene	ND		0.50	0.15	ug/L			05/28/17 16:25	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/28/17 16:25	1
Bromoform	ND		1.0	0.48	ug/L			05/28/17 16:25	1
Bromomethane	ND		2.0	0.80	ug/L			05/28/17 16:25	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/28/17 16:25	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/28/17 16:25	1
Chloroethane	ND		1.0	0.51	ug/L			05/28/17 16:25	1
Chloroform	ND		2.0	0.37	ug/L			05/28/17 16:25	1
Chloromethane	ND		1.0	0.32	ug/L			05/28/17 16:25	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			05/28/17 16:25	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/28/17 16:25	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/28/17 16:25	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/28/17 16:25	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/28/17 16:25	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/28/17 16:25	1
Tetrachloroethene	ND		1.0	0.37	ug/L			05/28/17 16:25	1
Toluene	ND		0.50	0.15	ug/L			05/28/17 16:25	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/28/17 16:25	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/28/17 16:25	1
Trichloroethene	ND		0.50	0.16	ug/L			05/28/17 16:25	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/28/17 16:25	1
Vinyl chloride	ND		0.50	0.20	ug/L			05/28/17 16:25	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/28/17 16:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*75 - 126*		*05/28/17 16:25*	*1*
4-Bromofluorobenzene (Surr)	*113*		*72 - 124*		*05/28/17 16:25*	*1*
Dibromofluoromethane	*93*		*75 - 120*		*05/28/17 16:25*	*1*
Toluene-d8 (Surr)	*104*		*75 - 120*		*05/28/17 16:25*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: EB-2 (051717)

Lab Sample ID: 500-128409-30

Date Collected: 05/17/17 12:30
Matrix: Water
Date Received: 05/19/17 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/28/17 16:51	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/28/17 16:51	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.46	ug/L			05/28/17 16:51	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/28/17 16:51	1
1,1-Dichloroethane	ND		1.0	0.41	ug/L			05/28/17 16:51	1
1,1-Dichloroethene	ND		1.0	0.39	ug/L			05/28/17 16:51	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/28/17 16:51	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/28/17 16:51	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/28/17 16:51	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/28/17 16:51	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/28/17 16:51	1
Benzene	ND		0.50	0.15	ug/L			05/28/17 16:51	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/28/17 16:51	1
Bromoform	ND		1.0	0.48	ug/L			05/28/17 16:51	1
Bromomethane	ND		2.0	0.80	ug/L			05/28/17 16:51	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/28/17 16:51	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/28/17 16:51	1
Chloroethane	ND		1.0	0.51	ug/L			05/28/17 16:51	1
Chloroform	ND		2.0	0.37	ug/L			05/28/17 16:51	1
Chloromethane	ND		1.0	0.32	ug/L			05/28/17 16:51	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			05/28/17 16:51	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/28/17 16:51	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/28/17 16:51	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/28/17 16:51	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/28/17 16:51	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/28/17 16:51	1
Tetrachloroethene	ND		1.0	0.37	ug/L			05/28/17 16:51	1
Toluene	ND		0.50	0.15	ug/L			05/28/17 16:51	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/28/17 16:51	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/28/17 16:51	1
Trichloroethene	ND		0.50	0.16	ug/L			05/28/17 16:51	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/28/17 16:51	1
Vinyl chloride	ND		0.50	0.20	ug/L			05/28/17 16:51	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/28/17 16:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*75 - 126*		*05/28/17 16:51*	*1*
4-Bromofluorobenzene (Surr)	*113*		*72 - 124*		*05/28/17 16:51*	*1*
Dibromofluoromethane	*93*		*75 - 120*		*05/28/17 16:51*	*1*
Toluene-d8 (Surr)	*102*		*75 - 120*		*05/28/17 16:51*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: EB-3 (051817)

Date Collected: 05/18/17 14:00
Date Received: 05/19/17 09:00

Lab Sample ID: 500-128409-31

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/28/17 17:17	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/28/17 17:17	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.46	ug/L			05/28/17 17:17	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/28/17 17:17	1
1,1-Dichloroethane	ND		1.0	0.41	ug/L			05/28/17 17:17	1
1,1-Dichloroethene	ND		1.0	0.39	ug/L			05/28/17 17:17	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/28/17 17:17	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/28/17 17:17	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/28/17 17:17	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/28/17 17:17	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/28/17 17:17	1
Benzene	ND		0.50	0.15	ug/L			05/28/17 17:17	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/28/17 17:17	1
Bromoform	ND		1.0	0.48	ug/L			05/28/17 17:17	1
Bromomethane	ND		2.0	0.80	ug/L			05/28/17 17:17	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/28/17 17:17	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/28/17 17:17	1
Chloroethane	ND		1.0	0.51	ug/L			05/28/17 17:17	1
Chloroform	ND		2.0	0.37	ug/L			05/28/17 17:17	1
Chloromethane	ND		1.0	0.32	ug/L			05/28/17 17:17	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			05/28/17 17:17	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/28/17 17:17	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/28/17 17:17	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/28/17 17:17	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/28/17 17:17	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/28/17 17:17	1
Tetrachloroethene	ND		1.0	0.37	ug/L			05/28/17 17:17	1
Toluene	ND		0.50	0.15	ug/L			05/28/17 17:17	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/28/17 17:17	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/28/17 17:17	1
Trichloroethene	ND		0.50	0.16	ug/L			05/28/17 17:17	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/28/17 17:17	1
Vinyl chloride	ND		0.50	0.20	ug/L			05/28/17 17:17	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/28/17 17:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*75 - 126*		*05/28/17 17:17*	*1*
4-Bromofluorobenzene (Surr)	*115*		*72 - 124*		*05/28/17 17:17*	*1*
Dibromofluoromethane	*92*		*75 - 120*		*05/28/17 17:17*	*1*
Toluene-d8 (Surr)	*104*		*75 - 120*		*05/28/17 17:17*	*1*

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
F1	MS and/or MSD Recovery is outside acceptance limits.

Glossary

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

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

GC/MS VOA

Analysis Batch: 387184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-128409-13	MW-100 (051617)	Total/NA	Water	8260B	
500-128409-14	MW-101 (051617)	Total/NA	Water	8260B	
500-128409-15	MW-33 (051817)	Total/NA	Water	8260B	
500-128409-16	PZ-C3 (051817)	Total/NA	Water	8260B	
500-128409-16 - DL	PZ-C3 (051817)	Total/NA	Water	8260B	
500-128409-17	PZ-H3 (051817)	Total/NA	Water	8260B	
500-128409-17 - DL	PZ-H3 (051817)	Total/NA	Water	8260B	
500-128409-18	WSW-1 (051517)	Total/NA	Water	8260B	
500-128409-19	WSW-2 (051517)	Total/NA	Water	8260B	
500-128409-20	WSW-3 (051517)	Total/NA	Water	8260B	
500-128409-21	WSW-13 (051617)	Total/NA	Water	8260B	
500-128409-22	WSW-15 (051517)	Total/NA	Water	8260B	
500-128409-22 - DL	WSW-15 (051517)	Total/NA	Water	8260B	
500-128409-23	DUP-1 (051717)	Total/NA	Water	8260B	
500-128409-23 - DL	DUP-1 (051717)	Total/NA	Water	8260B	
500-128409-24	DUP-2 (051617)	Total/NA	Water	8260B	
500-128409-25	IDW-1 (051817)	Total/NA	Water	8260B	
500-128409-27	MW-79 (051717)	Total/NA	Water	8260B	
MB 500-387184/6	Method Blank	Total/NA	Water	8260B	
LCS 500-387184/4	Lab Control Sample	Total/NA	Water	8260B	
500-128409-16 MS	PZ-C3 (051817)	Total/NA	Water	8260B	
500-128409-16 MSD	PZ-C3 (051817)	Total/NA	Water	8260B	

Analysis Batch: 387187

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-128409-1	MW-3 (051717)	Total/NA	Water	8260B	
500-128409-2	MW-13 (051617)	Total/NA	Water	8260B	
500-128409-2 - DL	MW-13 (051617)	Total/NA	Water	8260B	
500-128409-3	MW-18 (051817)	Total/NA	Water	8260B	
500-128409-4	MW-22 (051717)	Total/NA	Water	8260B	
500-128409-4 - DL	MW-22 (051717)	Total/NA	Water	8260B	
500-128409-5	MW-32 (051517)	Total/NA	Water	8260B	
500-128409-6	MW-58 (051617)	Total/NA	Water	8260B	
500-128409-7	MW-59 (051817)	Total/NA	Water	8260B	
500-128409-8	MW-62 (051617)	Total/NA	Water	8260B	
500-128409-8 - DL	MW-62 (051617)	Total/NA	Water	8260B	
500-128409-9	MW-77 (051717)	Total/NA	Water	8260B	
500-128409-10	MW-78 (051717)	Total/NA	Water	8260B	
500-128409-11	MW-94 (051517)	Total/NA	Water	8260B	
500-128409-12	MW-97 (051817)	Total/NA	Water	8260B	
MB 500-387187/6	Method Blank	Total/NA	Water	8260B	
LCS 500-387187/4	Lab Control Sample	Total/NA	Water	8260B	
500-128409-9 MS	MW-77 (051717)	Total/NA	Water	8260B	
500-128409-9 MSD	MW-77 (051717)	Total/NA	Water	8260B	

Analysis Batch: 387214

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-128409-26	TB-1 (051817)	Total/NA	Water	8260B	
500-128409-28	MW-93 (051517)	Total/NA	Water	8260B	
500-128409-29	EB-1 (051617)	Total/NA	Water	8260B	
500-128409-30	EB-2 (051717)	Total/NA	Water	8260B	

GC/MS VOA (Continued)

Analysis Batch: 387214 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-128409-31	EB-3 (051817)	Total/NA	Water	8260B	
MB 500-387214/6	Method Blank	Total/NA	Water	8260B	
LCS 500-387214/4	Lab Control Sample	Total/NA	Water	8260B	
500-128409-28 MS	MW-93 (051517)	Total/NA	Water	8260B	
500-128409-28 MSD	MW-93 (051517)	Total/NA	Water	8260B	

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

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

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(75-126)	(72-124)	(75-120)	(75-120)
500-128409-1	MW-3 (051717)	95	93	97	95
500-128409-2	MW-13 (051617)	91	94	94	97
500-128409-2 - DL	MW-13 (051617)	92	90	95	96
500-128409-3	MW-18 (051817)	94	94	97	96
500-128409-4	MW-22 (051717)	96	94	97	95
500-128409-4 - DL	MW-22 (051717)	96	95	97	97
500-128409-5	MW-32 (051517)	98	95	99	94
500-128409-6	MW-58 (051617)	97	96	98	95
500-128409-7	MW-59 (051817)	97	97	100	95
500-128409-8	MW-62 (051617)	100	90	102	92
500-128409-8 - DL	MW-62 (051617)	98	97	100	97
500-128409-9	MW-77 (051717)	97	100	100	94
500-128409-9 MS	MW-77 (051717)	92	98	94	96
500-128409-9 MSD	MW-77 (051717)	92	94	95	96
500-128409-10	MW-78 (051717)	98	96	100	94
500-128409-11	MW-94 (051517)	99	95	101	95
500-128409-12	MW-97 (051817)	95	97	99	95
500-128409-13	MW-100 (051617)	104	116	89	103
500-128409-14	MW-101 (051617)	105	115	89	103
500-128409-15	MW-33 (051817)	105	112	87	101
500-128409-16	PZ-C3 (051817)	105	115	89	101
500-128409-16 - DL	PZ-C3 (051817)	106	115	89	100
500-128409-16 MS	PZ-C3 (051817)	108	108	94	98
500-128409-16 MSD	PZ-C3 (051817)	108	116	93	97
500-128409-17	PZ-H3 (051817)	108	115	91	101
500-128409-17 - DL	PZ-H3 (051817)	110	116	91	101
500-128409-18	WSW-1 (051517)	109	114	90	102
500-128409-19	WSW-2 (051517)	107	116	89	101
500-128409-20	WSW-3 (051517)	111	118	90	103
500-128409-21	WSW-13 (051617)	109	114	90	98
500-128409-22	WSW-15 (051517)	110	112	90	99
500-128409-22 - DL	WSW-15 (051517)	108	116	92	100
500-128409-23	DUP-1 (051717)	107	116	92	100
500-128409-23 - DL	DUP-1 (051717)	103	113	88	99
500-128409-24	DUP-2 (051617)	108	117	90	99
500-128409-25	IDW-1 (051817)	107	117	91	101
500-128409-26	TB-1 (051817)	108	118	92	100
500-128409-27	MW-79 (051717)	108	116	91	100
500-128409-28	MW-93 (051517)	104	117	92	102
500-128409-28 MS	MW-93 (051517)	107	109	94	100
500-128409-28 MSD	MW-93 (051517)	108	112	95	100
500-128409-29	EB-1 (051617)	106	113	93	104
500-128409-30	EB-2 (051717)	110	113	93	102
500-128409-31	EB-3 (051817)	107	115	92	104
LCS 500-387184/4	Lab Control Sample	104	111	92	99
LCS 500-387187/4	Lab Control Sample	90	96	95	98
LCS 500-387214/4	Lab Control Sample	104	109	92	100
MB 500-387184/6	Method Blank	106	121	89	103
MB 500-387187/6	Method Blank	96	95	98	94

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

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

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
		12DCE	BFB	DBFM	TOL				
Lab Sample ID	**Client Sample ID**	**(75-126)**	**(72-124)**	**(75-120)**	**(75-120)**				
MB 500-387214/6	Method Blank	106	116	92	104				

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
TOL = Toluene-d8 (Surr)

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

Lab Sample ID: MB 500-387184/6
Matrix: Water
Analysis Batch: 387184

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/27/17 13:28	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/27/17 13:28	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.46	ug/L			05/27/17 13:28	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/27/17 13:28	1
1,1-Dichloroethane	ND		1.0	0.41	ug/L			05/27/17 13:28	1
1,1-Dichloroethene	ND		1.0	0.39	ug/L			05/27/17 13:28	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/27/17 13:28	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/27/17 13:28	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/27/17 13:28	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/27/17 13:28	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/27/17 13:28	1
Benzene	ND		0.50	0.15	ug/L			05/27/17 13:28	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/27/17 13:28	1
Bromoform	ND		1.0	0.48	ug/L			05/27/17 13:28	1
Bromomethane	ND		2.0	0.80	ug/L			05/27/17 13:28	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/27/17 13:28	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/27/17 13:28	1
Chloroethane	ND		1.0	0.51	ug/L			05/27/17 13:28	1
Chloroform	ND		2.0	0.37	ug/L			05/27/17 13:28	1
Chloromethane	ND		1.0	0.32	ug/L			05/27/17 13:28	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			05/27/17 13:28	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/27/17 13:28	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/27/17 13:28	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/27/17 13:28	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/27/17 13:28	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/27/17 13:28	1
Tetrachloroethene	ND		1.0	0.37	ug/L			05/27/17 13:28	1
Toluene	ND		0.50	0.15	ug/L			05/27/17 13:28	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/27/17 13:28	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/27/17 13:28	1
Trichloroethene	ND		0.50	0.16	ug/L			05/27/17 13:28	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/27/17 13:28	1
Vinyl chloride	ND		0.50	0.20	ug/L			05/27/17 13:28	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/27/17 13:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*75 - 126*		*05/27/17 13:28*	*1*
4-Bromofluorobenzene (Surr)	*121*		*72 - 124*		*05/27/17 13:28*	*1*
Dibromofluoromethane	*89*		*75 - 120*		*05/27/17 13:28*	*1*
Toluene-d8 (Surr)	*103*		*75 - 120*		*05/27/17 13:28*	*1*

Lab Sample ID: LCS 500-387184/4
Matrix: Water
Analysis Batch: 387184

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	50.0	50.9		ug/L		102	70 - 125
1,1,2,2-Tetrachloroethane	50.0	50.3		ug/L		101	67 - 127

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

Lab Sample ID: LCS 500-387184/4
Matrix: Water
Analysis Batch: 387184

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	47.9		ug/L		96	70 - 123
1,1,2-Trichloroethane	50.0	47.9		ug/L		96	70 - 122
1,1-Dichloroethane	50.0	52.2		ug/L		104	70 - 125
1,1-Dichloroethene	50.0	46.6		ug/L		93	67 - 122
1,2-Dichlorobenzene	50.0	48.8		ug/L		98	70 - 125
1,2-Dichloroethane	50.0	52.6		ug/L		105	68 - 127
1,2-Dichloropropane	50.0	53.2		ug/L		106	67 - 130
1,3-Dichlorobenzene	50.0	50.0		ug/L		100	70 - 125
1,4-Dichlorobenzene	50.0	48.0		ug/L		96	70 - 120
Benzene	50.0	49.3		ug/L		99	70 - 120
Bromodichloromethane	50.0	47.2		ug/L		94	69 - 120
Bromoform	50.0	49.4		ug/L		99	56 - 132
Bromomethane	50.0	34.0		ug/L		68	40 - 130
Carbon tetrachloride	50.0	47.7		ug/L		95	65 - 122
Chlorobenzene	50.0	49.3		ug/L		99	70 - 120
Chloroethane	50.0	41.1		ug/L		82	45 - 127
Chloroform	50.0	48.3		ug/L		97	70 - 120
Chloromethane	50.0	46.9		ug/L		94	54 - 147
cis-1,2-Dichloroethene	50.0	50.2		ug/L		100	70 - 125
cis-1,3-Dichloropropene	50.0	50.6		ug/L		101	64 - 127
Dibromochloromethane	50.0	46.5		ug/L		93	68 - 125
Dichlorodifluoromethane	50.0	38.5		ug/L		77	40 - 150
Ethylbenzene	50.0	49.9		ug/L		100	70 - 120
m&p-Xylene	50.0	52.0		ug/L		104	70 - 125
Methylene Chloride	50.0	45.8		ug/L		92	69 - 125
o-Xylene	50.0	48.9		ug/L		98	70 - 120
Tetrachloroethene	50.0	50.7		ug/L		101	70 - 128
Toluene	50.0	51.5		ug/L		103	70 - 125
trans-1,2-Dichloroethene	50.0	46.8		ug/L		94	70 - 125
trans-1,3-Dichloropropene	50.0	49.4		ug/L		99	62 - 128
Trichloroethene	50.0	48.2		ug/L		96	70 - 125
Trichlorofluoromethane	50.0	45.7		ug/L		91	70 - 126
Vinyl chloride	50.0	47.7		ug/L		95	64 - 126
Xylenes, Total	100	101		ug/L		101	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*75 - 126*
4-Bromofluorobenzene (Surr)	*111*		*72 - 124*
Dibromofluoromethane	*92*		*75 - 120*
Toluene-d8 (Surr)	*99*		*75 - 120*

Lab Sample ID: 500-128409-16 MS
Matrix: Water
Analysis Batch: 387184

Client Sample ID: PZ-C3 (051817)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		500	510		ug/L		102	70 - 125

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

Lab Sample ID: 500-128409-16 MS
Matrix: Water
Analysis Batch: 387184

Client Sample ID: PZ-C3 (051817)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2,2-Tetrachloroethane	ND		500	509		ug/L		102	67 - 127
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		500	469		ug/L		94	70 - 123
1,1,2-Trichloroethane	ND		500	520		ug/L		104	70 - 122
1,1-Dichloroethane	6.4	J	500	524		ug/L		104	70 - 125
1,1-Dichloroethene	24		500	483		ug/L		92	67 - 122
1,2-Dichlorobenzene	ND		500	484		ug/L		97	70 - 125
1,2-Dichloroethane	ND		500	549		ug/L		110	68 - 127
1,2-Dichloropropane	ND		500	553		ug/L		111	67 - 130
1,3-Dichlorobenzene	ND		500	489		ug/L		98	70 - 125
1,4-Dichlorobenzene	ND		500	473		ug/L		95	70 - 120
Benzene	48		500	554		ug/L		101	70 - 120
Bromodichloromethane	ND		500	482		ug/L		96	69 - 120
Bromoform	ND		500	500		ug/L		100	56 - 132
Bromomethane	ND		500	349		ug/L		70	40 - 130
Carbon tetrachloride	ND		500	469		ug/L		94	65 - 122
Chlorobenzene	ND		500	497		ug/L		99	70 - 120
Chloroethane	ND		500	368		ug/L		74	45 - 127
Chloroform	ND		500	493		ug/L		99	70 - 120
Chloromethane	ND		500	474		ug/L		95	54 - 147
cis-1,2-Dichloroethene	2200	E	500	2930	E 4	ug/L		153	70 - 125
cis-1,3-Dichloropropene	ND		500	512		ug/L		102	64 - 127
Dibromochloromethane	ND		500	469		ug/L		94	68 - 125
Dichlorodifluoromethane	ND		500	395		ug/L		79	40 - 150
Ethylbenzene	ND		500	478		ug/L		96	70 - 120
m&p-Xylene	ND		500	514		ug/L		103	70 - 125
Methylene Chloride	ND		500	470		ug/L		94	69 - 125
o-Xylene	ND		500	493		ug/L		99	70 - 120
Tetrachloroethene	8300	E	500	9070	E 4	ug/L		151	70 - 128
Toluene	ND		500	517		ug/L		103	70 - 125
trans-1,2-Dichloroethene	5.2	J	500	472		ug/L		93	70 - 125
trans-1,3-Dichloropropene	ND		500	489		ug/L		98	62 - 128
Trichloroethene	330		500	843		ug/L		103	70 - 125
Trichlorofluoromethane	ND		500	457		ug/L		91	70 - 126
Vinyl chloride	ND		500	474		ug/L		95	64 - 126
Xylenes, Total	ND		1000	1010		ug/L		101	70 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*108*		*75 - 126*
4-Bromofluorobenzene (Surr)	*108*		*72 - 124*
Dibromofluoromethane	*94*		*75 - 120*
Toluene-d8 (Surr)	*98*		*75 - 120*

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

Lab Sample ID: 500-128409-16 MSD
Matrix: Water
Analysis Batch: 387184

Client Sample ID: PZ-C3 (051817)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		500	574		ug/L		115	70 - 125	12	20
1,1,2,2-Tetrachloroethane	ND		500	607		ug/L		121	67 - 127	18	20
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		500	543		ug/L		109	70 - 123	15	20
1,1,2-Trichloroethane	ND		500	559		ug/L		112	70 - 122	7	20
1,1-Dichloroethane	6.4	J	500	603		ug/L		119	70 - 125	14	20
1,1-Dichloroethene	24		500	549		ug/L		105	67 - 122	13	20
1,2-Dichlorobenzene	ND		500	583		ug/L		117	70 - 125	19	20
1,2-Dichloroethane	ND		500	615		ug/L		123	68 - 127	11	20
1,2-Dichloropropane	ND		500	620		ug/L		124	67 - 130	11	20
1,3-Dichlorobenzene	ND		500	573		ug/L		115	70 - 125	16	20
1,4-Dichlorobenzene	ND		500	552		ug/L		110	70 - 120	15	20
Benzene	48		500	636		ug/L		118	70 - 120	14	20
Bromodichloromethane	ND		500	546		ug/L		109	69 - 120	12	20
Bromoform	ND		500	566		ug/L		113	56 - 132	12	20
Bromomethane	ND		500	386		ug/L		77	40 - 130	10	20
Carbon tetrachloride	ND		500	539		ug/L		108	65 - 122	14	20
Chlorobenzene	ND		500	556		ug/L		111	70 - 120	11	20
Chloroethane	ND		500	446		ug/L		89	45 - 127	19	20
Chloroform	ND		500	556		ug/L		111	70 - 120	12	20
Chloromethane	ND		500	543		ug/L		109	54 - 147	14	20
cis-1,2-Dichloroethene	2200	E	500	3320	E 4	ug/L		231	70 - 125	12	20
cis-1,3-Dichloropropene	ND		500	582		ug/L		116	64 - 127	13	20
Dibromochloromethane	ND		500	536		ug/L		107	68 - 125	13	20
Dichlorodifluoromethane	ND		500	464		ug/L		93	40 - 150	16	20
Ethylbenzene	ND		500	536		ug/L		107	70 - 120	11	20
m&p-Xylene	ND		500	580		ug/L		116	70 - 125	12	20
Methylene Chloride	ND		500	537		ug/L		107	69 - 125	13	20
o-Xylene	ND		500	555		ug/L		111	70 - 120	12	20
Tetrachloroethene	8300	E	500	10200	E 4	ug/L		373	70 - 128	12	20
Toluene	ND		500	577		ug/L		115	70 - 125	11	20
trans-1,2-Dichloroethene	5.2	J	500	530		ug/L		105	70 - 125	12	20
trans-1,3-Dichloropropene	ND		500	552		ug/L		110	62 - 128	12	20
Trichloroethene	330		500	939		ug/L		122	70 - 125	11	20
Trichlorofluoromethane	ND		500	538		ug/L		108	70 - 126	16	20
Vinyl chloride	ND		500	570		ug/L		114	64 - 126	18	20
Xylenes, Total	ND		1000	1140		ug/L		114	70 - 125	12	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*108*		*75 - 126*
4-Bromofluorobenzene (Surr)	*116*		*72 - 124*
Dibromofluoromethane	*93*		*75 - 120*
Toluene-d8 (Surr)	*97*		*75 - 120*

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

Lab Sample ID: MB 500-387187/6
Matrix: Water
Analysis Batch: 387187

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/27/17 13:40	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/27/17 13:40	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.46	ug/L			05/27/17 13:40	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/27/17 13:40	1
1,1-Dichloroethane	ND		1.0	0.41	ug/L			05/27/17 13:40	1
1,1-Dichloroethene	ND		1.0	0.39	ug/L			05/27/17 13:40	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/27/17 13:40	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/27/17 13:40	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/27/17 13:40	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/27/17 13:40	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/27/17 13:40	1
Benzene	ND		0.50	0.15	ug/L			05/27/17 13:40	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/27/17 13:40	1
Bromoform	ND		1.0	0.48	ug/L			05/27/17 13:40	1
Bromomethane	ND		2.0	0.80	ug/L			05/27/17 13:40	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/27/17 13:40	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/27/17 13:40	1
Chloroethane	ND		1.0	0.51	ug/L			05/27/17 13:40	1
Chloroform	ND		2.0	0.37	ug/L			05/27/17 13:40	1
Chloromethane	ND		1.0	0.32	ug/L			05/27/17 13:40	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			05/27/17 13:40	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/27/17 13:40	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/27/17 13:40	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/27/17 13:40	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/27/17 13:40	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/27/17 13:40	1
Tetrachloroethene	ND		1.0	0.37	ug/L			05/27/17 13:40	1
Toluene	ND		0.50	0.15	ug/L			05/27/17 13:40	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/27/17 13:40	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/27/17 13:40	1
Trichloroethene	ND		0.50	0.16	ug/L			05/27/17 13:40	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/27/17 13:40	1
Vinyl chloride	ND		0.50	0.20	ug/L			05/27/17 13:40	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/27/17 13:40	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*75 - 126*		*05/27/17 13:40*	*1*
4-Bromofluorobenzene (Surr)	*95*		*72 - 124*		*05/27/17 13:40*	*1*
Dibromofluoromethane	*98*		*75 - 120*		*05/27/17 13:40*	*1*
Toluene-d8 (Surr)	*94*		*75 - 120*		*05/27/17 13:40*	*1*

Lab Sample ID: LCS 500-387187/4
Matrix: Water
Analysis Batch: 387187

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	50.0	43.9		ug/L		88	70 - 125
1,1,2,2-Tetrachloroethane	50.0	52.9		ug/L		106	67 - 127

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

Lab Sample ID: LCS 500-387187/4
Matrix: Water
Analysis Batch: 387187

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	50.1		ug/L		100	70 - 123
1,1,2-Trichloroethane	50.0	52.1		ug/L		104	70 - 122
1,1-Dichloroethane	50.0	48.0		ug/L		96	70 - 125
1,1-Dichloroethene	50.0	47.7		ug/L		95	67 - 122
1,2-Dichlorobenzene	50.0	51.4		ug/L		103	70 - 125
1,2-Dichloroethane	50.0	47.4		ug/L		95	68 - 127
1,2-Dichloropropane	50.0	52.6		ug/L		105	67 - 130
1,3-Dichlorobenzene	50.0	51.9		ug/L		104	70 - 125
1,4-Dichlorobenzene	50.0	51.4		ug/L		103	70 - 120
Benzene	50.0	46.9		ug/L		94	70 - 120
Bromodichloromethane	50.0	44.9		ug/L		90	69 - 120
Bromoform	50.0	52.0		ug/L		104	56 - 132
Bromomethane	50.0	48.5		ug/L		97	40 - 130
Carbon tetrachloride	50.0	45.0		ug/L		90	65 - 122
Chlorobenzene	50.0	51.9		ug/L		104	70 - 120
Chloroethane	50.0	38.9		ug/L		78	45 - 127
Chloroform	50.0	45.4		ug/L		91	70 - 120
Chloromethane	50.0	44.0		ug/L		88	54 - 147
cis-1,2-Dichloroethene	50.0	48.2		ug/L		96	70 - 125
cis-1,3-Dichloropropene	50.0	46.3		ug/L		93	64 - 127
Dibromochloromethane	50.0	52.4		ug/L		105	68 - 125
Dichlorodifluoromethane	50.0	31.8		ug/L		64	40 - 150
Ethylbenzene	50.0	50.6		ug/L		101	70 - 120
m&p-Xylene	50.0	48.2		ug/L		96	70 - 125
Methylene Chloride	50.0	44.7		ug/L		89	69 - 125
o-Xylene	50.0	47.1		ug/L		94	70 - 120
Tetrachloroethene	50.0	50.8		ug/L		102	70 - 128
Toluene	50.0	49.1		ug/L		98	70 - 125
trans-1,2-Dichloroethene	50.0	48.2		ug/L		96	70 - 125
trans-1,3-Dichloropropene	50.0	45.5		ug/L		91	62 - 128
Trichloroethene	50.0	50.9		ug/L		102	70 - 125
Trichlorofluoromethane	50.0	40.8		ug/L		82	70 - 126
Vinyl chloride	50.0	47.0		ug/L		94	64 - 126
Xylenes, Total	100	95.3		ug/L		95	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*90*		*75 - 126*
4-Bromofluorobenzene (Surr)	*96*		*72 - 124*
Dibromofluoromethane	*95*		*75 - 120*
Toluene-d8 (Surr)	*98*		*75 - 120*

Lab Sample ID: 500-128409-9 MS
Matrix: Water
Analysis Batch: 387187

Client Sample ID: MW-77 (051717)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		50.0	42.4		ug/L		85	70 - 125

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

Lab Sample ID: 500-128409-9 MS
Matrix: Water
Analysis Batch: 387187

Client Sample ID: MW-77 (051717)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2,2-Tetrachloroethane	ND		50.0	54.9		ug/L		110	67 - 127
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		50.0	49.3		ug/L		99	70 - 123
1,1,2-Trichloroethane	ND		50.0	53.3		ug/L		107	70 - 122
1,1-Dichloroethane	9.1		50.0	56.1		ug/L		94	70 - 125
1,1-Dichloroethene	23		50.0	61.8		ug/L		77	67 - 122
1,2-Dichlorobenzene	ND		50.0	51.1		ug/L		102	70 - 125
1,2-Dichloroethane	ND		50.0	47.4		ug/L		95	68 - 127
1,2-Dichloropropane	ND		50.0	52.1		ug/L		104	67 - 130
1,3-Dichlorobenzene	ND		50.0	50.1		ug/L		100	70 - 125
1,4-Dichlorobenzene	ND		50.0	50.3		ug/L		101	70 - 120
Benzene	ND		50.0	46.3		ug/L		93	70 - 120
Bromodichloromethane	ND		50.0	45.0		ug/L		90	69 - 120
Bromoform	ND		50.0	53.7		ug/L		107	56 - 132
Bromomethane	ND	F1	50.0	74.8	F1	ug/L		150	40 - 130
Carbon tetrachloride	ND		50.0	44.7		ug/L		89	65 - 122
Chlorobenzene	ND		50.0	51.7		ug/L		103	70 - 120
Chloroethane	ND		50.0	48.4		ug/L		97	45 - 127
Chloroform	ND		50.0	44.8		ug/L		90	70 - 120
Chloromethane	ND		50.0	45.6		ug/L		91	54 - 147
cis-1,2-Dichloroethene	16		50.0	62.7		ug/L		94	70 - 125
cis-1,3-Dichloropropene	ND		50.0	42.7		ug/L		85	64 - 127
Dibromochloromethane	ND		50.0	52.3		ug/L		105	68 - 125
Dichlorodifluoromethane	ND		50.0	32.9		ug/L		66	40 - 150
Ethylbenzene	ND		50.0	49.7		ug/L		99	70 - 120
m&p-Xylene	ND		50.0	47.7		ug/L		95	70 - 125
Methylene Chloride	ND		50.0	45.4		ug/L		91	69 - 125
o-Xylene	ND		50.0	46.7		ug/L		93	70 - 120
Tetrachloroethene	37		50.0	86.5		ug/L		100	70 - 128
Toluene	ND		50.0	48.0		ug/L		96	70 - 125
trans-1,2-Dichloroethene	0.40	J	50.0	48.3		ug/L		96	70 - 125
trans-1,3-Dichloropropene	ND		50.0	42.5		ug/L		85	62 - 128
Trichloroethene	2.9		50.0	52.9		ug/L		100	70 - 125
Trichlorofluoromethane	ND		50.0	43.1		ug/L		86	70 - 126
Vinyl chloride	2.2		50.0	50.3		ug/L		96	64 - 126
Xylenes, Total	ND		100	94.3		ug/L		94	70 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*92*		*75 - 126*
4-Bromofluorobenzene (Surr)	*98*		*72 - 124*
Dibromofluoromethane	*94*		*75 - 120*
Toluene-d8 (Surr)	*96*		*75 - 120*

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

Lab Sample ID: 500-128409-9 MSD
Matrix: Water
Analysis Batch: 387187

Client Sample ID: MW-77 (051717)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		50.0	42.6		ug/L		85	70 - 125	0	20
1,1,2,2-Tetrachloroethane	ND		50.0	53.5		ug/L		107	67 - 127	3	20
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		50.0	48.9		ug/L		98	70 - 123	1	20
1,1,2-Trichloroethane	ND		50.0	52.1		ug/L		104	70 - 122	2	20
1,1-Dichloroethane	9.1		50.0	56.2		ug/L		94	70 - 125	0	20
1,1-Dichloroethene	23		50.0	64.3		ug/L		82	67 - 122	4	20
1,2-Dichlorobenzene	ND		50.0	51.0		ug/L		102	70 - 125	0	20
1,2-Dichloroethane	ND		50.0	47.8		ug/L		96	68 - 127	1	20
1,2-Dichloropropane	ND		50.0	51.7		ug/L		103	67 - 130	1	20
1,3-Dichlorobenzene	ND		50.0	49.9		ug/L		100	70 - 125	0	20
1,4-Dichlorobenzene	ND		50.0	50.0		ug/L		100	70 - 120	1	20
Benzene	ND		50.0	45.7		ug/L		91	70 - 120	1	20
Bromodichloromethane	ND		50.0	44.5		ug/L		89	69 - 120	1	20
Bromoform	ND		50.0	52.7		ug/L		105	56 - 132	2	20
Bromomethane	ND	F1	50.0	68.1	F1	ug/L		136	40 - 130	9	20
Carbon tetrachloride	ND		50.0	44.4		ug/L		89	65 - 122	1	20
Chlorobenzene	ND		50.0	51.1		ug/L		102	70 - 120	1	20
Chloroethane	ND		50.0	49.1		ug/L		98	45 - 127	1	20
Chloroform	ND		50.0	44.8		ug/L		90	70 - 120	0	20
Chloromethane	ND		50.0	46.2		ug/L		92	54 - 147	1	20
cis-1,2-Dichloroethene	16		50.0	62.2		ug/L		93	70 - 125	1	20
cis-1,3-Dichloropropene	ND		50.0	43.1		ug/L		86	64 - 127	1	20
Dibromochloromethane	ND		50.0	51.7		ug/L		103	68 - 125	1	20
Dichlorodifluoromethane	ND		50.0	33.3		ug/L		67	40 - 150	1	20
Ethylbenzene	ND		50.0	48.0		ug/L		96	70 - 120	3	20
m&p-Xylene	ND		50.0	46.7		ug/L		93	70 - 125	2	20
Methylene Chloride	ND		50.0	45.1		ug/L		90	69 - 125	1	20
o-Xylene	ND		50.0	45.8		ug/L		92	70 - 120	2	20
Tetrachloroethene	37		50.0	84.3		ug/L		95	70 - 128	3	20
Toluene	ND		50.0	47.1		ug/L		94	70 - 125	2	20
trans-1,2-Dichloroethene	0.40	J	50.0	47.8		ug/L		95	70 - 125	1	20
trans-1,3-Dichloropropene	ND		50.0	42.7		ug/L		85	62 - 128	0	20
Trichloroethene	2.9		50.0	52.2		ug/L		99	70 - 125	1	20
Trichlorofluoromethane	ND		50.0	42.9		ug/L		86	70 - 126	0	20
Vinyl chloride	2.2		50.0	51.6		ug/L		99	64 - 126	3	20
Xylenes, Total	ND		100	92.5		ug/L		93	70 - 125	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*92*		*75 - 126*
4-Bromofluorobenzene (Surr)	*94*		*72 - 124*
Dibromofluoromethane	*95*		*75 - 120*
Toluene-d8 (Surr)	*96*		*75 - 120*

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

Lab Sample ID: MB 500-387214/6
Matrix: Water
Analysis Batch: 387214

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.38	ug/L			05/28/17 08:12	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.40	ug/L			05/28/17 08:12	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.46	ug/L			05/28/17 08:12	1
1,1,2-Trichloroethane	ND		1.0	0.35	ug/L			05/28/17 08:12	1
1,1-Dichloroethane	ND		1.0	0.41	ug/L			05/28/17 08:12	1
1,1-Dichloroethene	ND		1.0	0.39	ug/L			05/28/17 08:12	1
1,2-Dichlorobenzene	ND		1.0	0.33	ug/L			05/28/17 08:12	1
1,2-Dichloroethane	ND		1.0	0.39	ug/L			05/28/17 08:12	1
1,2-Dichloropropane	ND		1.0	0.43	ug/L			05/28/17 08:12	1
1,3-Dichlorobenzene	ND		1.0	0.40	ug/L			05/28/17 08:12	1
1,4-Dichlorobenzene	ND		1.0	0.36	ug/L			05/28/17 08:12	1
Benzene	ND		0.50	0.15	ug/L			05/28/17 08:12	1
Bromodichloromethane	ND		1.0	0.37	ug/L			05/28/17 08:12	1
Bromoform	ND		1.0	0.48	ug/L			05/28/17 08:12	1
Bromomethane	ND		2.0	0.80	ug/L			05/28/17 08:12	1
Carbon tetrachloride	ND		1.0	0.38	ug/L			05/28/17 08:12	1
Chlorobenzene	ND		1.0	0.39	ug/L			05/28/17 08:12	1
Chloroethane	ND		1.0	0.51	ug/L			05/28/17 08:12	1
Chloroform	ND		2.0	0.37	ug/L			05/28/17 08:12	1
Chloromethane	ND		1.0	0.32	ug/L			05/28/17 08:12	1
cis-1,2-Dichloroethene	ND		1.0	0.41	ug/L			05/28/17 08:12	1
cis-1,3-Dichloropropene	ND		1.0	0.42	ug/L			05/28/17 08:12	1
Dibromochloromethane	ND		1.0	0.49	ug/L			05/28/17 08:12	1
Dichlorodifluoromethane	ND		2.0	0.67	ug/L			05/28/17 08:12	1
Ethylbenzene	ND		0.50	0.18	ug/L			05/28/17 08:12	1
Methylene Chloride	ND		5.0	1.6	ug/L			05/28/17 08:12	1
Tetrachloroethene	ND		1.0	0.37	ug/L			05/28/17 08:12	1
Toluene	ND		0.50	0.15	ug/L			05/28/17 08:12	1
trans-1,2-Dichloroethene	ND		1.0	0.35	ug/L			05/28/17 08:12	1
trans-1,3-Dichloropropene	ND		1.0	0.36	ug/L			05/28/17 08:12	1
Trichloroethene	ND		0.50	0.16	ug/L			05/28/17 08:12	1
Trichlorofluoromethane	ND		1.0	0.43	ug/L			05/28/17 08:12	1
Vinyl chloride	ND		0.50	0.20	ug/L			05/28/17 08:12	1
Xylenes, Total	ND		1.0	0.22	ug/L			05/28/17 08:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*75 - 126*		*05/28/17 08:12*	*1*
4-Bromofluorobenzene (Surr)	*116*		*72 - 124*		*05/28/17 08:12*	*1*
Dibromofluoromethane	*92*		*75 - 120*		*05/28/17 08:12*	*1*
Toluene-d8 (Surr)	*104*		*75 - 120*		*05/28/17 08:12*	*1*

Lab Sample ID: LCS 500-387214/4
Matrix: Water
Analysis Batch: 387214

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	50.0	53.3		ug/L		107	70 - 125
1,1,2,2-Tetrachloroethane	50.0	48.3		ug/L		97	67 - 127

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

Lab Sample ID: LCS 500-387214/4
Matrix: Water
Analysis Batch: 387214

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	50.3		ug/L		101	70 - 123
1,1,2-Trichloroethane	50.0	48.9		ug/L		98	70 - 122
1,1-Dichloroethane	50.0	53.6		ug/L		107	70 - 125
1,1-Dichloroethene	50.0	48.6		ug/L		97	67 - 122
1,2-Dichlorobenzene	50.0	51.8		ug/L		104	70 - 125
1,2-Dichloroethane	50.0	54.3		ug/L		109	68 - 127
1,2-Dichloropropane	50.0	54.4		ug/L		109	67 - 130
1,3-Dichlorobenzene	50.0	51.6		ug/L		103	70 - 125
1,4-Dichlorobenzene	50.0	49.6		ug/L		99	70 - 120
Benzene	50.0	50.7		ug/L		101	70 - 120
Bromodichloromethane	50.0	48.6		ug/L		97	69 - 120
Bromoform	50.0	49.8		ug/L		100	56 - 132
Bromomethane	50.0	36.3		ug/L		73	40 - 130
Carbon tetrachloride	50.0	51.4		ug/L		103	65 - 122
Chlorobenzene	50.0	51.3		ug/L		103	70 - 120
Chloroethane	50.0	45.1		ug/L		90	45 - 127
Chloroform	50.0	50.2		ug/L		100	70 - 120
Chloromethane	50.0	52.2		ug/L		104	54 - 147
cis-1,2-Dichloroethene	50.0	51.8		ug/L		104	70 - 125
cis-1,3-Dichloropropene	50.0	51.7		ug/L		103	64 - 127
Dibromochloromethane	50.0	47.7		ug/L		95	68 - 125
Dichlorodifluoromethane	50.0	42.0		ug/L		84	40 - 150
Ethylbenzene	50.0	51.2		ug/L		102	70 - 120
m&p-Xylene	50.0	53.6		ug/L		107	70 - 125
Methylene Chloride	50.0	47.2		ug/L		94	69 - 125
o-Xylene	50.0	50.8		ug/L		102	70 - 120
Tetrachloroethene	50.0	52.0		ug/L		104	70 - 128
Toluene	50.0	53.0		ug/L		106	70 - 125
trans-1,2-Dichloroethene	50.0	48.9		ug/L		98	70 - 125
trans-1,3-Dichloropropene	50.0	49.7		ug/L		99	62 - 128
Trichloroethene	50.0	50.0		ug/L		100	70 - 125
Trichlorofluoromethane	50.0	50.6		ug/L		101	70 - 126
Vinyl chloride	50.0	51.5		ug/L		103	64 - 126
Xylenes, Total	100	104		ug/L		104	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*75 - 126*
4-Bromofluorobenzene (Surr)	*109*		*72 - 124*
Dibromofluoromethane	*92*		*75 - 120*
Toluene-d8 (Surr)	*100*		*75 - 120*

Lab Sample ID: 500-128409-28 MS
Matrix: Water
Analysis Batch: 387214

Client Sample ID: MW-93 (051517)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		50.0	51.6		ug/L		103	70 - 125

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

Lab Sample ID: 500-128409-28 MS
Matrix: Water
Analysis Batch: 387214

Client Sample ID: MW-93 (051517)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2,2-Tetrachloroethane	ND		50.0	52.3		ug/L		105	67 - 127
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		50.0	47.4		ug/L		95	70 - 123
1,1,2-Trichloroethane	ND		50.0	50.9		ug/L		102	70 - 122
1,1-Dichloroethane	ND		50.0	51.6		ug/L		103	70 - 125
1,1-Dichloroethene	1.2		50.0	47.4		ug/L		92	67 - 122
1,2-Dichlorobenzene	ND		50.0	49.2		ug/L		98	70 - 125
1,2-Dichloroethane	ND		50.0	53.5		ug/L		107	68 - 127
1,2-Dichloropropane	ND		50.0	53.7		ug/L		107	67 - 130
1,3-Dichlorobenzene	ND		50.0	50.4		ug/L		101	70 - 125
1,4-Dichlorobenzene	ND		50.0	47.0		ug/L		94	70 - 120
Benzene	ND		50.0	49.2		ug/L		98	70 - 120
Bromodichloromethane	ND		50.0	49.4		ug/L		99	69 - 120
Bromoform	ND		50.0	52.7		ug/L		105	56 - 132
Bromomethane	ND		50.0	36.3		ug/L		73	40 - 130
Carbon tetrachloride	ND		50.0	48.8		ug/L		98	65 - 122
Chlorobenzene	ND		50.0	49.5		ug/L		99	70 - 120
Chloroethane	ND		50.0	42.4		ug/L		85	45 - 127
Chloroform	2.4		50.0	51.0		ug/L		97	70 - 120
Chloromethane	ND		50.0	42.0		ug/L		84	54 - 147
cis-1,2-Dichloroethene	ND		50.0	49.5		ug/L		99	70 - 125
cis-1,3-Dichloropropene	ND		50.0	52.4		ug/L		105	64 - 127
Dibromochloromethane	ND		50.0	48.9		ug/L		98	68 - 125
Dichlorodifluoromethane	ND		50.0	37.7		ug/L		75	40 - 150
Ethylbenzene	ND		50.0	48.2		ug/L		96	70 - 120
m&p-Xylene	ND		50.0	51.4		ug/L		103	70 - 125
Methylene Chloride	ND		50.0	45.7		ug/L		91	69 - 125
o-Xylene	ND		50.0	48.2		ug/L		96	70 - 120
Tetrachloroethene	0.68	J	50.0	51.4		ug/L		101	70 - 128
Toluene	ND		50.0	51.4		ug/L		103	70 - 125
trans-1,2-Dichloroethene	ND		50.0	46.1		ug/L		92	70 - 125
trans-1,3-Dichloropropene	ND		50.0	48.8		ug/L		98	62 - 128
Trichloroethene	ND		50.0	47.4		ug/L		95	70 - 125
Trichlorofluoromethane	ND		50.0	42.8		ug/L		86	70 - 126
Vinyl chloride	ND		50.0	43.0		ug/L		86	64 - 126
Xylenes, Total	ND		100	99.6		ug/L		100	70 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*107*		*75 - 126*
4-Bromofluorobenzene (Surr)	*109*		*72 - 124*
Dibromofluoromethane	*94*		*75 - 120*
Toluene-d8 (Surr)	*100*		*75 - 120*

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

Lab Sample ID: 500-128409-28 MSD
Matrix: Water
Analysis Batch: 387214

Client Sample ID: MW-93 (051517)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		50.0	50.9		ug/L		102	70 - 125	1	20
1,1,2,2-Tetrachloroethane	ND		50.0	49.9		ug/L		100	67 - 127	5	20
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		50.0	47.4		ug/L		95	70 - 123	0	20
1,1,2-Trichloroethane	ND		50.0	47.8		ug/L		96	70 - 122	6	20
1,1-Dichloroethane	ND		50.0	51.9		ug/L		104	70 - 125	1	20
1,1-Dichloroethene	1.2		50.0	47.6		ug/L		93	67 - 122	0	20
1,2-Dichlorobenzene	ND		50.0	49.9		ug/L		100	70 - 125	1	20
1,2-Dichloroethane	ND		50.0	52.9		ug/L		106	68 - 127	1	20
1,2-Dichloropropane	ND		50.0	53.3		ug/L		107	67 - 130	1	20
1,3-Dichlorobenzene	ND		50.0	49.7		ug/L		99	70 - 125	1	20
1,4-Dichlorobenzene	ND		50.0	47.8		ug/L		96	70 - 120	2	20
Benzene	ND		50.0	48.9		ug/L		98	70 - 120	1	20
Bromodichloromethane	ND		50.0	49.3		ug/L		99	69 - 120	0	20
Bromoform	ND		50.0	53.2		ug/L		106	56 - 132	1	20
Bromomethane	ND		50.0	42.1		ug/L		84	40 - 130	15	20
Carbon tetrachloride	ND		50.0	48.7		ug/L		97	65 - 122	0	20
Chlorobenzene	ND		50.0	48.3		ug/L		97	70 - 120	2	20
Chloroethane	ND		50.0	47.7		ug/L		95	45 - 127	12	20
Chloroform	2.4		50.0	51.0		ug/L		97	70 - 120	0	20
Chloromethane	ND		50.0	48.6		ug/L		97	54 - 147	14	20
cis-1,2-Dichloroethene	ND		50.0	49.0		ug/L		98	70 - 125	1	20
cis-1,3-Dichloropropene	ND		50.0	50.0		ug/L		100	64 - 127	5	20
Dibromochloromethane	ND		50.0	48.0		ug/L		96	68 - 125	2	20
Dichlorodifluoromethane	ND		50.0	43.0		ug/L		86	40 - 150	13	20
Ethylbenzene	ND		50.0	46.8		ug/L		94	70 - 120	3	20
m&p-Xylene	ND		50.0	50.5		ug/L		101	70 - 125	2	20
Methylene Chloride	ND		50.0	44.9		ug/L		90	69 - 125	2	20
o-Xylene	ND		50.0	48.0		ug/L		96	70 - 120	0	20
Tetrachloroethene	0.68	J	50.0	49.6		ug/L		98	70 - 128	4	20
Toluene	ND		50.0	50.9		ug/L		102	70 - 125	1	20
trans-1,2-Dichloroethene	ND		50.0	45.4		ug/L		91	70 - 125	2	20
trans-1,3-Dichloropropene	ND		50.0	48.3		ug/L		97	62 - 128	1	20
Trichloroethene	ND		50.0	47.8		ug/L		96	70 - 125	1	20
Trichlorofluoromethane	ND		50.0	49.7		ug/L		99	70 - 126	15	20
Vinyl chloride	ND		50.0	49.8		ug/L		100	64 - 126	15	20
Xylenes, Total	ND		100	98.5		ug/L		99	70 - 125	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*108*		*75 - 126*
4-Bromofluorobenzene (Surr)	*112*		*72 - 124*
Dibromofluoromethane	*95*		*75 - 120*
Toluene-d8 (Surr)	*100*		*75 - 120*

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: MW-3 (051717)
Date Collected: 05/17/17 16:05
Date Received: 05/19/17 09:00

Lab Sample ID: 500-128409-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387187	05/27/17 14:09	JMP	TAL CHI

Client Sample ID: MW-13 (051617)
Date Collected: 05/16/17 11:10
Date Received: 05/19/17 09:00

Lab Sample ID: 500-128409-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387187	05/27/17 14:39	JMP	TAL CHI
Total/NA	Analysis	8260B	DL	10	387187	05/27/17 15:08	JMP	TAL CHI

Client Sample ID: MW-18 (051817)
Date Collected: 05/18/17 10:50
Date Received: 05/19/17 09:00

Lab Sample ID: 500-128409-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387187	05/27/17 15:38	JMP	TAL CHI

Client Sample ID: MW-22 (051717)
Date Collected: 05/17/17 13:30
Date Received: 05/19/17 09:00

Lab Sample ID: 500-128409-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387187	05/27/17 16:07	JMP	TAL CHI
Total/NA	Analysis	8260B	DL	10	387187	05/27/17 16:37	JMP	TAL CHI

Client Sample ID: MW-32 (051517)
Date Collected: 05/15/17 17:40
Date Received: 05/19/17 09:00

Lab Sample ID: 500-128409-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387187	05/27/17 17:06	JMP	TAL CHI

Client Sample ID: MW-58 (051617)
Date Collected: 05/16/17 15:35
Date Received: 05/19/17 09:00

Lab Sample ID: 500-128409-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387187	05/27/17 17:36	JMP	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: MW-59 (051817)
Lab Sample ID: 500-128409-7
Date Collected: 05/18/17 12:40
Matrix: Water
Date Received: 05/19/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387187	05/27/17 18:35	JMP	TAL CHI

Client Sample ID: MW-62 (051617)
Lab Sample ID: 500-128409-8
Date Collected: 05/16/17 13:45
Matrix: Water
Date Received: 05/19/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		20	387187	05/27/17 19:04	JMP	TAL CHI
Total/NA	Analysis	8260B	DL	200	387187	05/27/17 19:33	JMP	TAL CHI

Client Sample ID: MW-77 (051717)
Lab Sample ID: 500-128409-9
Date Collected: 05/17/17 10:30
Matrix: Water
Date Received: 05/19/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387187	05/27/17 20:03	JMP	TAL CHI

Client Sample ID: MW-78 (051717)
Lab Sample ID: 500-128409-10
Date Collected: 05/17/17 11:35
Matrix: Water
Date Received: 05/19/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387187	05/27/17 20:32	JMP	TAL CHI

Client Sample ID: MW-94 (051517)
Lab Sample ID: 500-128409-11
Date Collected: 05/15/17 13:35
Matrix: Water
Date Received: 05/19/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387187	05/27/17 21:01	JMP	TAL CHI

Client Sample ID: MW-97 (051817)
Lab Sample ID: 500-128409-12
Date Collected: 05/18/17 10:20
Matrix: Water
Date Received: 05/19/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387187	05/27/17 21:31	JMP	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: MW-100 (051617)
Lab Sample ID: 500-128409-13
Date Collected: 05/16/17 11:35
Matrix: Water
Date Received: 05/19/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387184	05/27/17 13:56	PJH	TAL CHI

Client Sample ID: MW-101 (051617)
Lab Sample ID: 500-128409-14
Date Collected: 05/16/17 11:05
Matrix: Water
Date Received: 05/19/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387184	05/27/17 14:23	PJH	TAL CHI

Client Sample ID: MW-33 (051817)
Lab Sample ID: 500-128409-15
Date Collected: 05/18/17 13:35
Matrix: Water
Date Received: 05/19/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387184	05/27/17 14:50	PJH	TAL CHI

Client Sample ID: PZ-C3 (051817)
Lab Sample ID: 500-128409-16
Date Collected: 05/18/17 12:00
Matrix: Water
Date Received: 05/19/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	387184	05/27/17 15:17	PJH	TAL CHI
Total/NA	Analysis	8260B	DL	100	387184	05/27/17 15:44	PJH	TAL CHI

Client Sample ID: PZ-H3 (051817)
Lab Sample ID: 500-128409-17
Date Collected: 05/18/17 11:20
Matrix: Water
Date Received: 05/19/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	387184	05/27/17 16:10	PJH	TAL CHI
Total/NA	Analysis	8260B	DL	100	387184	05/27/17 16:36	PJH	TAL CHI

Client Sample ID: WSW-1 (051517)
Lab Sample ID: 500-128409-18
Date Collected: 05/15/17 10:15
Matrix: Water
Date Received: 05/19/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387184	05/27/17 17:03	PJH	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: WSW-2 (051517)
Lab Sample ID: 500-128409-19
Date Collected: 05/15/17 10:30
Matrix: Water
Date Received: 05/19/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387184	05/27/17 17:30	PJH	TAL CHI

Client Sample ID: WSW-3 (051517)
Lab Sample ID: 500-128409-20
Date Collected: 05/15/17 11:05
Matrix: Water
Date Received: 05/19/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387184	05/27/17 17:57	PJH	TAL CHI

Client Sample ID: WSW-13 (051617)
Lab Sample ID: 500-128409-21
Date Collected: 05/16/17 12:15
Matrix: Water
Date Received: 05/19/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387184	05/27/17 18:23	PJH	TAL CHI

Client Sample ID: WSW-15 (051517)
Lab Sample ID: 500-128409-22
Date Collected: 05/15/17 10:45
Matrix: Water
Date Received: 05/19/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387184	05/27/17 18:49	PJH	TAL CHI
Total/NA	Analysis	8260B	DL	10	387184	05/27/17 19:17	PJH	TAL CHI

Client Sample ID: DUP-1 (051717)
Lab Sample ID: 500-128409-23
Date Collected: 05/17/17 00:00
Matrix: Water
Date Received: 05/19/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387184	05/27/17 19:43	PJH	TAL CHI
Total/NA	Analysis	8260B	DL	10	387184	05/27/17 20:09	PJH	TAL CHI

Client Sample ID: DUP-2 (051617)
Lab Sample ID: 500-128409-24
Date Collected: 05/16/17 00:00
Matrix: Water
Date Received: 05/19/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387184	05/27/17 20:34	PJH	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: IDW-1 (051817)
Lab Sample ID: 500-128409-25
Date Collected: 05/18/17 14:15
Matrix: Water
Date Received: 05/19/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387184	05/27/17 21:01	PJH	TAL CHI

Client Sample ID: TB-1 (051817)
Lab Sample ID: 500-128409-26
Date Collected: 05/18/17 00:00
Matrix: Water
Date Received: 05/19/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387214	05/28/17 15:33	JMP	TAL CHI

Client Sample ID: MW-79 (051717)
Lab Sample ID: 500-128409-27
Date Collected: 05/17/17 11:00
Matrix: Water
Date Received: 05/19/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387184	05/27/17 21:26	PJH	TAL CHI

Client Sample ID: MW-93 (051517)
Lab Sample ID: 500-128409-28
Date Collected: 05/15/17 15:45
Matrix: Water
Date Received: 05/19/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387214	05/28/17 15:59	JMP	TAL CHI

Client Sample ID: EB-1 (051617)
Lab Sample ID: 500-128409-29
Date Collected: 05/16/17 12:05
Matrix: Water
Date Received: 05/19/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387214	05/28/17 16:25	JMP	TAL CHI

Client Sample ID: EB-2 (051717)
Lab Sample ID: 500-128409-30
Date Collected: 05/17/17 12:30
Matrix: Water
Date Received: 05/19/17 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387214	05/28/17 16:51	JMP	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Client Sample ID: EB-3 (051817)

Date Collected: 05/18/17 14:00
Date Received: 05/19/17 09:00

Lab Sample ID: 500-128409-31

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	387214	05/28/17 17:17	JMP	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: 3M - Laurens Ceramtec

TestAmerica Job ID: 500-128409-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
South Carolina	State Program	4	77001	04-30-17 *

The following analytes are included in this report, but are not accredited/certified under this accreditation/certification:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	1,1,2-Trichloro-1,2,2-trifluoroethane

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

TestAmerica

THE LEADER IN ENVIRONMENTAI

2417 Bond Street, University Park, IL 60
Phone: 708.534.5200 Fax: 708.534

500-128409 COC

Chain of Custody Record

Lab Job #: 500-128409

Chain of Custody Number:

Page 1 of 4

Temperature °C of Cooler: 2.7

Report To (optional)
Contact: JEREMY FRANZ
Company: ARCADIS
Address: 10 PATEWOOD DR. STE. 375
Address: GREENVILLE, SC 29615
Phone: 864.987.3910
Fax:
E-Mail: JEREMY.FRANZ@ARCADIS.COM

Bill To (optional)
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Client: ARCADIS
Client Project #: WI001459.0006
Project Name: 3M- CERAMTEC
Project Location/State: LAURENS, SC
Lab Project #:
Sampler: M. CREEL/M. EIBL
Lab PM: ROBIN KINTZ

Preservative: 1
Parameter: VOCs

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	VOCs	Comments
1		MW-3 (051717)	5/17/17	1605	3	W	✓	
2		MW-13 (051617)	5/16/17	1110	3	W	✓	
3		MW-18 (051817)	5/18/17	1050	3	W	✓	
4		MW-22 (051717)	5/17/17	1330	3	W	✓	
5		MW-32 (051517)	5/15/17	1740	3	W	✓	
6		MW-58 (051617)	5/16/17	1535	3	W	✓	
7		MW-59 (051817)	5/18/17	1240	3	W	✓	
8		MW-62 (051617)	5/16/17	1345	3	W	✓	
9	✓	MW-77 (051717)	5/17/17	1030	9	W	✓	MS/MSD
10		MW-78 (051717)	5/17/17	1135	3	W	✓	

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date STANDARD

Sample Disposal
[ ] Return to Client [✓] Disposal by Lab [ ] Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	ARCADIS	5/18/17	1500	Shirin Scott	TA-CHS	5/19/17	0900
Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier:
Shipped: Fed-X
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact:
Company:
Address:
Address:
Phone:
Fax:
E-Mail:

SEE PAGE 1

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-128409

Chain of Custody Number:

Page 2 of 4

Temperature °C of Cooler:

Client | Client Project # | Preservative | 1

Project Name | Parameter

Project Location/State | Lab Project #

Sampler | Lab PM

SEE PAGE 1

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	VOCs									Comments
11		MW-94 (051517)	5/15/17	1335	3	W	✓									
12		MW-97 (051817)	5/18/17	1020	3	W	✓									
13		MW-100 (051617)	5/16/17	1135	3	W	✓									
14		MW-101 (051617)	5/16/17	1105	3	W	✓									
15		MW-33 (051817)	5/18/17	1335	3	W	✓									
16	✓	PZ-C3 (051817)	5/18/17	1200	9	W	✓									MS/MSD
17		PZ-H3 (051817)	5/18/17	1120	3	W	✓									
18		WSW-1 (051517)	5/15/17	1015	3	W	✓									
19		WSW-2 (051517)	5/15/17	1030	3	W	✓									
20		WSW-3 (051517)	5/15/17	1105	3	W	✓									

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date STANDARD

Sample Disposal
☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	ARCADIS	5/18/17	1500	[signature]	TA-CHI	5/19/17	0900
Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier
Shipped Fed X
Hand Delivered

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact:
Company:
Address:
Address:
Phone:
Fax:
E-Mail:

SEE PAGE 1

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-128409

Chain of Custody Number:

Page 3 of 4

Temperature °C of Cooler:

Client
Client Project #
Project Name
Project Location/State
Lab Project #
Sampler
Lab PM

SEE PAGE

Preservative: 1

Parameter: VOCs

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	VOCs									Comments
21		WSW-13 (051617)	5/16/17	1215	3	W	✓									
22		WSW-15 (051517)	5/15/17	1045	3	W	✓									
23		DUP-1 (051717)	5/17/17	–	3	W	✓									
24		DUP-2 (051617)	5/16/17	–	3	W	✓									
25		IDW-1 (051817)	5/18/17	1415	3	W	✓									
26		TB-1 (051817)	–	–	2	W	✓									TRIP BLANK
27		MW-79 (051717)	5/17/17	1100	3	W	✓									
28		MW-93 (051517)	5/15/17	1545	3	W	✓									
29		EB-1 (051617)	5/16/17	1205	3	W	✓									
30		EB-2 (051717)	5/17/17	1230	3	W	✓									

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date STANDARD

Sample Disposal
☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[illegible]	ARCADIS	5/18/17	1500	[illegible]	TA-CHI	5/19/17	0900

Lab Courier
Shipped FedEx
Hand Delivered

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TAL-4124-500 (1209)

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact:
Company:
Address:
Address:
Phone:
Fax:
E-Mail:

SEE PAGE 1

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-128409

Chain of Custody Number:

Page 4 of 4

Temperature °C of Cooler:

Client
Client Project #
Project Name
Project Location/State
Lab Project #
Sampler
Lab PM

SEE PAGE 1

Preservative: 1

Parameter: VOCs

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	VOCs									Comments
31		EB-3 (051817)	5/18/17	1400	3	W	✓									

Rel 5/18/17

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date STANDARD

Sample Disposal
[ ] Return to Client [✓] Disposal by Lab [ ] Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	ARCADIS	5/18/17	1500	[signature]	TA-ERI	5/19/17	0900
Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier
Shipped: FedEx
Hand Delivered

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-128409-1

Login Number: 128409
List Number: 1
Creator: Scott, Sherri L

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	False	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ATTACHMENT 3

Data Validation Report

DATA VALIDATION CHECKLIST **3-M Laurens**

ARCADIS, Inc.
3850 N. Causeway Blvd.
Suite 990
Metairie, LA 70002
Tel. (504) 832-4174
Fax. (504) 832-2145

Sample Team:	ARCADIS
Sample Matrix:	Water
Lab Project Manager:	Robin Kintz
SDG Numbers:	500-128409-1
Analyses:	VOCs – 8260B
QA Reporting Level:	ARCADIS, Level II

Environmental Project:
3-M Laurens

Project Number:
WI001459.0006.00003

Analytical data were evaluated in accordance with applicable USEPA SW-846 method requirements, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review" (October 1999), analytical method control criteria, the analytical laboratory Quality Assurance Control Limits, and professional judgment.

The data verification was performed at a Level II and included review of data package completeness, Laboratory Control Samples and Method Blanks, Matrix Spike Recoveries, and holding time compliance. Laboratory calculations were not verified. Only QA/QC results and analytical data associated with analytes/compounds of interest were reviewed for this validation. Field sampling documentation was not reviewed.

Only QA/QC results and analytical data associated with analytes/compounds of interest were reviewed for this validation.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The following samples were included in this data validation:

SDG Number	Sample ID	Sample Date	Parent Sample
500-128409-1	MW-3	05/17/17	
500-128409-1	MW-13	05/16/17	
500-128409-1	MW-18	05/18/17	
500-128409-1	MW-22	05/17/17	
500-128409-1	MW-32	05/15/17	
500-128409-1	MW-58	05/16/17	
500-128409-1	MW-59	05/18/17	
500-128409-1	MW-62	05/16/17	
500-128409-1	MW-77	05/17/17	
500-128409-1	MW-78	05/17/17	
500-128409-1	MW-94	05/15/17	
500-128409-1	MW-97	05/18/17	
500-128409-1	MW-100	05/16/17	
500-128409-1	MW-101	05/16/17	
500-128409-1	MW-33	05/18/17	
500-128409-1	PZ-C3	05/18/17	
500-128409-1	PZ-H3	05/18/17	
500-128409-1	WSW-1	05/15/17	
500-128409-1	WSW-2	05/15/17	
500-128409-1	WSW-3	05/15/17	
500-128409-1	WSW-13	05/16/17	
500-128409-1	WSW-15	05/15/17	
500-128409-1	DUP-1	05/17/17	MW-22
500-128409-1	DUP-2	05/16/17	MW-100
500-128409-1	TB-1	05/18/17	
500-128409-1	MW-79	05/17/17	
500-128409-1	MW-93	05/15/17	
500-128409-1	EB-1	05/16/17	
500-128409-1	EB-2	05/17/17	
500-128409-1	EB-3	05/18/17	

I. GENERAL INFORMATION

ITEMS REVIEWED	REPORTED/REVIEWED		EXCEPTIONS NOTED		GENERAL COMMENTS NOTED		ITEM NOT REQUIRED
	NO	YES	NO	YES	NO	YES	
1. Chain of Custody		X	X		X		
2. Sampling dates and times		X	X		X		
3. Sample type on COC		X	X		X		
4. Field QC samples		X	X		X		
5. Case Narrative		X	X		X		
6. Sample Receipt Condition		X	X		X		

COMMENTS: Performance was acceptable, with the following exceptions and notes.

The analytical report was complete with the following exceptions or notations.

Comments:

The IDW sample was not included in the data package.

II. VOLATILES

ITEMS REVIEWED	REPORTED/REVIEWED		EXCEPTIONS NOTED		GENERAL COMMENTS NOTED		ITEM NOT REQUIRED
	NO	YES	NO	YES	NO	YES	
1. Holding times		X	X		X		
2. Reporting limits		X	X		X		
3. Blanks							
A. Method Blanks		X	X		X		
B. Field Blanks/Equipment Blanks		X	X		X		
C. Trip Blanks		X	X		X		
4. Laboratory control sample (LCS) %R		X	X		X		
5. Laboratory control sample duplicate (LCSD) %R	X						X
6. LCS/LCSD RPD	X						X
7. Matrix spike (MS) %R		X	X			X	
8. MSD %R		X	X			X	
9. MS/MSD RPD		X	X			X	
10. Surrogate Recoveries		X	X		X		
11. Field Duplicate Comparison		X	X			X	

VOCs - volatile organic compounds %R - percent recovery RPD - relative percent difference MSD- Matrix Spike Duplicate

COMMENTS: Performance was acceptable, with the following exceptions and notes.

7-9. Samples PZ-C3 and MW-93 were used as the MS/SMDs. The recoveries and RPDs were acceptable.

Sample MW-77 was used as the MS/MSD. The recovery of bromomethane was above the control limit in the MS and the MSD. The parent sample was non-detect for this compound; therefore, qualification of the data was not warranted.

11. Sample DUP-1 was collected as a field duplicate of MW-22. The RPDs were acceptable at less than 40%.

Sample DUP-2 was collected as a field duplicate of MW-100. The RPDs were acceptable at less than 40%.

DATA VALIDATION QUALIFICATION SUMMARY

Qualifier Definitions:

J – Result is considered to be estimated at the value reported.
UJ – Result is considered not detected but estimated due to QC deficiencies.
UB – Non-detect at the Reporting Limit or at the concentration reported if greater than the RL due to associated blank contamination.
R – Result is qualified as unusable, data point is rejected.

Explanation/Notes:

Sample ID	Parameter	Result	Units	Qualifier	Reason
No Qualification					

VALIDATION PERFORMED BY: Rachelle Borne

SIGNATURE: Rachelle Borne

DATE: June 21, 2017

ATTACHMENT 4

Plant 2 Sparge System Weekly Logs

Checklist Record Form

Plant 2 Aeration System

CenterTar Facility, Laurens, South Carolina

GENERAL INFORMATION

Date: 1/23/17

Time: 1115

Weather: 56 / overcast

Inspection by: G Pittman

PLEASE PROVIDE ANY COMMENT IN THE SPACE PROVIDED ON PAGE 2 OF THIS FORM.

BUILDING / SYSTEM CONDITIONS (circle appropriate comment)

			Comment No.
Building Exterior:	Good	Damaged	
Locked:	Yes	No	
Landscaping:	Good	Noticeable Erosion	
Outside Conduit/Piping:	Good	Damaged	
Gauges (both interior and exterior):	Operational	Damaged	

COMPRESSOR SYSTEM (circle appropriate comment)

Compressor:	On	Off	
Aftercooler Fan:	On	Off	
Needs Cleaning:	Yes	No	
Window Fan:	On	Off	
Needs Cleaning:	Yes	No	
Surge Protector Light On:	Yes	No	
Condensate Released:	Yes	No	
System Appears Air-tight:	Yes	No	
Temperature Discharge (Mechanical gauge):	120 °F		
Air Flow (Mechanical gauge):	10 SCFM		
Pressure Discharged To:	Line 1	Line 2	
Pressure Discharge (Mechanical gauge):	60 PSI	60 PSI	

AIR SPARGE WELLS and DIFFUSER

	Pressure Reading at Shed	Pressure Reading at Wellhead	Air Flow	
AW-1	3.0 PSI	3.0 PSI	2.5 SCFM	
AW-2	2.0 PSI	1.0 PSI	2.0 SCFM	
AW-3	2.5 PSI	2.5 PSI	3.0 SCFM	
AW-4	5.0 PSI	5.0 PSI	1.0 SCFM	
AW-5	2.0 PSI	2.0 PSI	3.0 SCFM	
AW-6	3.0 PSI	3.0 PSI	2.0 SCFM	
AW-7	2.0 PSI	2.0 PSI	3.0 SCFM	
AW-8	4.0 PSI	4.0 PSI	1.5 SCFM	
Diffuser Activated	Yes		No	
Water level above diffuser in creek	Yes		No	

K:\2231\02\Air Sparge\Sampling Station Inspection Checklist

Checklist Record Form

Plant 2 Aeration System

CreenTec Facility, Laurens, South Carolina

GENERAL INFORMATION

Date: 1/12/17

Time: 1500

Weather: 67 / Sunny

Inspection by: G Brinkley

PLEASE PROVIDE ANY COMMENT IN THE SPACE PROVIDED ON PAGE 2 OF THIS FORM.

BUILDING / SYSTEM CONDITIONS (circle appropriate comment)

			Comments Yes
Building Exterior:	Good	Damaged	
Locked:	Yes	No	
Landscaping:	Good	Noticeable Erosion	
Outside Conduit/Piping:	Good	Damaged	
Gauges (both interior and exterior):	Operational	Damaged	

COMPRESSOR SYSTEM (circle appropriate comment)

Compressor:	On	Off	
Aftercooler Fan	On	Off	
Needs Cleaning	Yes	No	
Window Fan:	On	Off	
Needs Cleaning	Yes	No	
Surge Protector Light On:	Yes	No	
Condensate Released:	Yes	No	
System Appears Air-tight	Yes	No	
Temperature Discharge (Mechanical gauge):	135 °F		
Air Flow (Mechanical gauge):	10.0 SCFM		
Pressure Discharged To:	Line 1	Line 2	
Pressure Discharge (Mechanical gauge):	6.0 PSI	6.0 PSI	

AIR SPARGE WELLS and DIFFUSER

	Pressure Reading at Shed	Pressure Reading at Wellhead	Air Flow	
AW-1	3.0 PSI	3.0 PSI	2.5 SCFM	
AW-2	2.0 PSI	1.0 PSI	2.0 SCFM	
AW-3	2.0 PSI	2.0 PSI	3.0 SCFM	
AW-4	5.0 PSI	5.0 PSI	1.50 SCFM	
AW-5	2.0 PSI	2.0 PSI	3.0 SCFM	
AW-6	3.0 PSI	3.0 PSI	2.0 SCFM	
AW-7	2.0 PSI	2.0 PSI	2.0 SCFM	
AW-8	4.0 PSI	3.0 PSI	1.5 SCFM	
Diffuser Activated	Yes	No		
Water level above diffuser in creek	Yes	No		

Checklist Record Form

Plant 2 Aeration System

CrownTec Facility, Laurens, South Carolina

GENERAL INFORMATION

Date: 2/15/17

Weather: 55 / overcast

Time: 10:00

Inspection by: GP Stone

PLEASE PROVIDE ANY COMMENT IN THE SPACE PROVIDED ON PAGE 2 OF THIS FORM.

BUILDING / SYSTEM CONDITIONS (circle appropriate comment)			Comment No.
Building Exterior:	Good	Damaged	
Locked:	Yes	No	
Landscaping:	Good	Noticeable Erosion	
Outside Conduit/Piping:	Good	Damaged	
Gauges (both interior and exterior):	Operational	Damaged	

COMPRESSOR SYSTEM (circle appropriate comment)			
Compressor:	On	Off	
Aftercooler Fan:	On	Off	
Needs Cleaning	Yes	No	
Window Fan:	On	Off	
Needs Cleaning	Yes	No	
Surge Protector Light On	Yes	No	
Condensate Released:	Yes	No	
System Appears Air-tight	Yes	No	
Temperature Discharge (Mechanical gauge):	120 °F		
Air Flow (Mechanical gauge):	50 SCFM		
Pressure Discharged To:	Line 1	Line 2	
Pressure Discharge (Mechanical gauge):	60 PSI	60 PSI	

AIR SPARGE WELLS and DIFFUSER	Pressure Reading at Well	Pressure Reading at Wellhead	Air Flow	
AW-1	6.0 PSI	5.0 PSI	1.0 SCFM	
AW-2	2.0 PSI	2.0 PSI	2.0 SCFM	
AW-3	4.0 PSI	4.0 PSI	3.0 SCFM	
AW-4	5.0 PSI	5.0 PSI	.50 SCFM	
AW-5	4.0 PSI	4.0 PSI	2.0 SCFM	
AW-6	4.0 PSI	4.0 PSI	2.0 SCFM	
AW-7	5.0 PSI	5.0 PSI	1.0 SCFM	
AW-8	4.0 PSI	4.0 PSI	2.0 SCFM	
Diffuser Activated	Yes		No	
Water level above diffuser in creek	Yes		No	

Checklist Record Form

Plant 2 Aeration System

CreatTec Facility, Laurens, South Carolina

GENERAL INFORMATION

Date: 2/8/17

Time: 1500

Weather: 68 / Sunny

Inspection by: G. Richard

PLEASE PROVIDE ANY COMMENT IN THE SPACE PROVIDED ON PAGE 2 OF THIS FORM.

BUILDING / SYSTEM CONDITIONS (circle appropriate comment)			Comment No.
Building Exterior:	Good	Damaged	
Locked:	Yes	No	
Landscaping:	Good	Noticeable Erosion	
Outside Conduit/Piping:	Good	Damaged	
Gauges (both interior and exterior):	Operational	Damaged	

COMPRESSOR SYSTEM (circle appropriate comment)			
Compressor:	On	Off	
Aftercooler Fan:	On	Off	
Needs Cleaning	Yes	No	
Window Fan:	On	Off	
Needs Cleaning	Yes	No	
Surge Protector Light On	Yes	No	
Condensate Released:	Yes	No	
System Appears Air-tight	Yes	No	
Temperature Discharge (Mechanical gauge):	100 °F		
Air Flow (Mechanical gauge):	10.0 SCFM		
Pressure Discharged To:	Line 1	Line 2	
Pressure Discharge (Mechanical gauge):	9.0 PSI	10.0 PSI	

AIR SPARGE WELLS and DIFFUSER

	Pressure Reading at Shed	Pressure Reading at Wellhead	Air Flow	
AW-1	10.0 PSI	9.5 PSI	1.0 SCFM	
AW-2	2.0 PSI	1.0 PSI	2.5 SCFM	
AW-3	9.5 PSI	9.0 PSI	3.0 SCFM	
AW-4	9.0 PSI	9.0 PSI	1.0 SCFM	
AW-5	9.0 PSI	8.0 PSI	2.0 SCFM	
AW-6	7.5 PSI	7.5 PSI	1.5 SCFM	
AW-7	9.0 PSI	9.0 PSI	1.0 SCFM	
AW-8	5.0 PSI	5.0 PSI	2.5 SCFM	
Diffuser Activated	Yes	No		
Water level above diffuser in creek	Yes	No		

Install new motor + Rebuild Blower

Checklist Record Form

Plant 2 Aeration System

CertainTeed Facility, Laurens, South Carolina

GENERAL INFORMATION

Date: 2/22/17 Weather: 55 / cloudy

Time: 1115 Inspection by: G.A. Tonkin

PLEASE PROVIDE ANY COMMENT IN THE SPACE PROVIDED ON PAGE 2 OF THIS FORM.

BUILDING / SYSTEM CONDITIONS (circle appropriate comment)			Comment No.
Building Exterior:	Good	Damaged	
Locked:	Yes	No	
Landscaping:	Good	Noticeable Erosion	
Outside Conduit/Piping:	Good	Damaged	
Gauges (both interior and exterior):	Operational	Damaged	

COMPRESSOR SYSTEM (circle appropriate comment)			
Compressor:	On	Off	
Aftercooler Fan:	On	Off	
Needs Cleaning	Yes	No	
Window Fan:	On	Off	
Needs Cleaning	Yes	No	
Surge Protector Light On:	Yes	No	
Condensate Released:	Yes	No	
System Appears Air-tight:	Yes	No	
Temperature Discharge (Mechanical gauge):	130 °F		
Air Flow (Mechanical gauge):	5.0 SCFM		
Pressure Discharged To:	Line 1	Line 2	
Pressure Discharge (Mechanical gauge):	6.0 PSI	6.0 PSI	

AIR SPARGE WELLS and DIFFUSER

	Pressure Reading at Shed	Pressure Reading at Wellhead	Air Flow	
AW-1	6.0 PSI	5.0 PSI	1.0 SCFM	
AW-2	2.0 PSI	2.0 PSI	2.0 SCFM	
AW-3	4.0 PSI	4.0 PSI	2.0 SCFM	
AW-4	5.0 PSI	5.0 PSI	.5 SCFM	
AW-5	4.0 PSI	4.0 PSI	2.0 SCFM	
AW-6	4.0 PSI	4.0 PSI	2.0 SCFM	
AW-7	4.0 PSI	4.0 PSI	1.0 SCFM	
AW-8	4.0 PSI	4.0 PSI	1.0 SCFM	
Diffuser Activated	Yes		No	
Water level above diffuser in creek	Yes		No	

K:\021\1\02\Air sparge\Sparging Station Inspection Sheets

Checklist Record Form

Plant 2 Aeration System

CleanTec Facility, Laurens, South Carolina

GENERAL INFORMATION

Date: 3/4/12 Weather: Sunny

Time: 10:30 Inspection by: G. Pinto

PLEASE PROVIDE ANY COMMENT IN THE SPACE PROVIDED ON PAGE 2 OF THIS FORM.

BUILDING / SYSTEM CONDITIONS (circle appropriate comment)			Comment No.
Building Exterior:	Good	Damaged	
Locked:	Yes	No	
Landscaping:	Good	Noticeable Erosion	
Outside Conduit/Piping:	Good	Damaged	
Gauges (both interior and exterior):	Operational	Damaged	

COMPRESSOR SYSTEM (circle appropriate comment)			
Compressor:	On	Off	
Aftercooler Fan:	On	Off	
Needs Cleaning	Yes	No	
Window Fan:	On	Off	
Needs Cleaning	Yes	No	
Surge Protector Light On:	Yes	No	
Condensate Released:	Yes	No	
System Appears Air-tight:	Yes	No	
Temperature Discharge (Mechanical gauge):	120 °F		
Air Flow (Mechanical gauge):	50 SCFM		
Pressure Discharge(To:	Line 1	Line 2	
Pressure Discharge (Mechanical gauge):	60 PSI	60 PSI	

AIR SPARGE WELLS and DIFFUSER

	Pressure Reading at Shed	Pressure Reading at Wellhead	Air Flow	
AW-1	5.0 PSI	5.0 PSI	1.0 SCFM	
AW-2	2.0 PSI	2.0 PSI	2.0 SCFM	
AW-3	4.0 PSI	4.0 PSI	2.0 SCFM	
AW-4	5.0 PSI	5.0 PSI	.5 SCFM	
AW-5	4.0 PSI	4.0 PSI	1.5 SCFM	
AW-6	3.0 PSI	3.0 PSI	2.0 SCFM	
AW-7	4.0 PSI	4.0 PSI	1.5 SCFM	
AW-8	4.0 PSI	4.0 PSI	1.5 SCFM	
Diffuser Activated	Yes		No	
Water level above diffuser in creek	Yes		No	

K:\0701\1\0\Sparge\Sparging Outlet Inspection Sheets

Checklist Record Form

Plant 2 Aeration System

CertainTeed Facility, Laurens, South Carolina

GENERAL INFORMATION

3/29/17
1605

Weather: 77 / Sunny

Inspection by: E. Pittman

PLEASE PROVIDE ANY COMMENT IN THE SPACE PROVIDED ON PAGE 2 OF THIS FORM.

BUILDING / SYSTEM CONDITIONS (circle appropriate comment)

			Comment No.
g Exterior:	Good	Damaged	
d:	Yes	No	
caping:	Good	Noticeable Erosion	
le Conduit/Piping:	Good	Damaged	
ns (both interior and exterior):	Operational	Damaged	

COMPRESSOR SYSTEM (circle appropriate comment)

ressor:	On	Off	
ooler Fan:	On	Off	
eds Cleaning	Yes	No	
ow Fan:	On	Off	
eds Cleaning	Yes	No	
Protector Light On:	Yes	No	
ensate Released:	Yes	No	
Appears Air-tight	Yes	No	
eratures Discharge (Mechanical gauge):	150 °F		
ow (Mechanical gauge):	.5 SCFM		
	Line 1	Line 2	
ine Discharge Tic:	9.0 PSI	9.0 PSI	
sure Discharge (Mechanical gauge):			

AIR SPARGE WELLS and DIFFUSER

	Pressure Reading at Shed	Pressure Reading at Wellhead	Air Flow	
AW-1	8.0 PSI	7.5 PSI	1.0 SCFM	
AW-2	2.0 PSI	2.0 PSI	1.75 SCFM	
AW-3	8.0 PSI	8.0 PSI	1.0 SCFM	
AW-4	6.0 PSI	6.0 PSI	.50 SCFM	
AW-5	7.0 PSI	7.0 PSI	1.5 SCFM	
AW-6	6.0 PSI	6.0 PSI	2.0 SCFM	
AW-7	7.0 PSI	7.0 PSI	1.0 SCFM	
AW-8	0.5 PSI	0.5 PSI	2.0 SCFM	
Diffuser Activated	Yes		No	
Water level above diffuser in creek	Yes		No	

Daily Sampling Below Inspection Sheets

Checklist Record Form

Plant 2 Aeration System

CoranTec Facility, Laurens, South Carolina

GENERAL INFORMATION

Date: 4/4/17 Weather: 68 / Sunny

Time: 1050 Inspection by: [illegible]

PLEASE PROVIDE ANY COMMENT IN THE SPACE PROVIDED ON PAGE 2 OF THIS FORM.

BUILDING / SYSTEM CONDITIONS (circle appropriate comment)			Comment No.
Building Exterior:	Good	Damaged	
Locked:	Yes	No	
Landscaping:	Good	Noticeable Erosion	
Outside Conduit/Piping:	Good	Damaged	
Gauges (both interior and exterior):	Operational	Damaged	

COMPRESSOR SYSTEM (circle appropriate comment)			
Compressor:	On	Off	
Aftercooler Fan:	On	Off	
Needs Cleaning:	Yes	No	
Window Fan:	On	Off	
Needs Cleaning:	Yes	No	
Surge Protector Light On:	Yes	No	
Condensate Released:	Yes	No	
System Appears Air-tight:	Yes	No	
Temperature Discharge (Mechanical gauge):	140 °F		
Air Flow (Mechanical gauge):	5.0 SCFM		
Pressure Discharged To:	Line 1	Line 2	
Pressure Discharge (Mechanical gauge):	3.0 PSI	5.0 PSI	

AIR SPARGE WELLS and DIFFUSER

	Pressure Reading at Shed	Pressure Reading at Wellhead	Air Flow	
AW-1	7.0 PSI	1.0 PSI	1.0 SCFM	
AW-2	3.0 PSI	3.0 PSI	1.5 SCFM	
AW-3	7.0 PSI	6.5 PSI	1.0 SCFM	
AW-4	6.0 PSI	6.0 PSI	1.0 SCFM	
AW-5	6.0 PSI	6.0 PSI	3.0 SCFM	
AW-6	5.0 PSI	5.0 PSI	3.0 SCFM	
AW-7	6.0 PSI	6.0 PSI	1.5 SCFM	
AW-8	4.0 PSI	4.0 PSI	1.5 SCFM	
Diffuser Activated	Yes		No	
Water level above diffuser in creek	Yes		No	

Checklist Record Form

Plant 2 Aeration System

CarusTec Facility, Laurens, South Carolina

GENERAL INFORMATION

Date: 4/10/17

Time: 1530

Weather: 72 / 50-79%

Inspection by: [illegible]

PLEASE PROVIDE ANY COMMENT IN THE SPACE PROVIDED ON PAGE 2 OF THIS FORM.

BUILDING / SYSTEM CONDITIONS (circle appropriate comment)

			Comment No.
Building Exterior:			
Locked:	Good	Damaged	
Landscaping:	Yes	No	
Outside Conduit/Piping:	Good	Noticeable Erosion	
Gauges (both interior and exterior):	Good	Damaged	
	Operational	Damaged	

COMPRESSOR SYSTEM (circle appropriate comment)

Compressor:	On	Off	
Aftercooler Fan:	On	Off	
Needs Cleaning	Yes	No	
Window Fan:	On	Off	
Needs Cleaning	Yes	No	
Surge Protector Light On	Yes	No	
Condensate Released:	Yes	No	
System Appears Air-tight	Yes	No	
Temperature Discharge (Mechanical gauge):	145 °F		
Air Flow (Mechanical gauge):	7.0 SCFM		
Pressure Discharged To:	Line 1	Line 2	
Pressure Discharge (Mechanical gauge):	8.0 PSI	8.0 PSI	

AIR SPARGE WELLS and DIFFUSER

	Pressure Reading at Reel	Pressure Reading at Wellhead	Air Flow	
AW-1	6.0 PSI	6.0 PSI	1.0 SCFM	
AW-2	2.0 PSI	8.0 PSI	1.5 SCFM	
AW-3	6.0 PSI	6.0 PSI	1.0 SCFM	
AW-4	6.0 PSI	6.0 PSI	.5 SCFM	
AW-5	5.0 PSI	5.0 PSI	2.0 SCFM	
AW-6	4.0 PSI	4.0 PSI	2.0 SCFM	
AW-7	5.0 PSI	5.0 PSI	1.5 SCFM	
AW-8	4.0 PSI	4.0 PSI	1.5 SCFM	
Diffuser Activated	Yes	No		
Water level above diffuser in creek	Yes	No		

[illegible] Weekly Inspection Sheets

Checklist Record Form

Plant 2 Aeration System

CoranTec Facility, Laurens, South Carolina

GENERAL INFORMATION

Date: 4/14/17

Time: 1415

Weather: 55 / Drought

Inspection by: G.P. [illegible]

PLEASE PROVIDE ANY COMMENT IN THE SPACE PROVIDED ON PAGE 1 OF THIS FORM.

BUILDING / SYSTEM CONDITIONS (circle appropriate comment)			Comment No.
Building Exterior:	Good	Damaged	
Locked:	Yes	No	
Landscaping:	Good	Noticeable Erosion	
Outside Conduit/Piping:	Good	Damaged	
Gauges (both interior and exterior):	Operational	Damaged	

COMPRESSOR SYSTEM (circle appropriate comment)			
Compressor:	On	Off	
Aftercooler Fan:	On	Off	
Needs Cleaning:	Yes	No	
Window Fan:	On	Off	
Needs Cleaning:	Yes	No	
Surge Protector Light On:	Yes	No	
Condensate Released:	Yes	No	
System Appears Air-tight:	Yes	No	
Temperature Discharge (Mechanical gauge):	130 °F		
Air Flow (Mechanical gauge):	5.0 SCFM		
Pressure Discharged To:	Line 1	Line 2	
Pressure Discharge (Mechanical gauge):	7.0 PSI	7.0 PSI	

AIR SPARGE WELLS and DIFFUSER

	Pressure Reading at Shed	Pressure Reading at (Wellhead)	Air Flow	
AW-1	7.0 PSI	7.0 PSI	1.0 SCFM	
AW-2	2.0 PSI	1.0 PSI	1.0 SCFM	
AW-3	7.0 PSI	6.5 PSI	1.5 SCFM	
AW-4	6.0 PSI	6.0 PSI	.50 SCFM	
AW-5	6.0 PSI	5.0 PSI	2.0 SCFM	
AW-6	4.0 PSI	4.0 PSI	2.0 SCFM	
AW-7	5.0 PSI	5.0 PSI	2.0 SCFM	
AW-8	4.0 PSI	4.0 PSI	2.0 SCFM	
Diffuser Activated	Yes	No		
Water level above diffuser in creek	Yes	No		

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Checklist Record Form

Plant 2 Aeration System

CeramTec Facility, Laurens, South Carolina

GENERAL INFORMATION

Date: 5/3/17 Weather: 75/ Sunny

Time: 1600 Inspection by: G. Pintowe

PLEASE PROVIDE ANY COMMENT IN THE SPACE PROVIDED ON PAGE 2 OF THIS FORM.

BUILDING / SYSTEM CONDITIONS (circle appropriate comment)			Comment No.
Building Exterior:	Good	Damaged	
Locked:	Yes	No	
Landscaping:	Good	Noticeable Erosion	
Outside Conduit/Piping:	Good	Damaged	
Gauges (both interior and exterior):	Operational	Damaged	

COMPRESSOR SYSTEM (circle appropriate comment)			
Compressor:	On	Off	
Aftercooler Fan:	On	Off	
Needs Cleaning	Yes	No	
Window Fan:	On	Off	
Needs Cleaning	Yes	No	
Surge Protector Light On	Yes	No	
Condensate Released:	Yes	No	
System Appears Air-tight	Yes	No	
Temperature Discharge (Mechanical gauge):	145 °F		
Air Flow (Mechanical gauge):	5.0 SCFM		
Pressure Discharged To:	Line 1	Line 2	
Pressure Discharge (Mechanical gauge):	7.0 PSI	8.0 PSI	

AIR SPARGE WELLS and DIFFUSER

	Pressure Reading at Shed	Pressure Reading at Wellhead	Air Flow	
AW-1	6.0 PSI	6.0 PSI	1.0 SCFM	
AW-2	2.0 PSI	2.0 PSI	1.25 SCFM	
AW-3	6.0 PSI	5.0 PSI	2.0 SCFM	
AW-4	6.0 PSI	6.0 PSI	1.0 SCFM	
AW-5	5.0 PSI	5.0 PSI	2.0 SCFM	
AW-6	3.0 PSI	3.0 PSI	2.5 SCFM	
AW-7	5.0 PSI	5.0 PSI	2.0 SCFM	
AW-8	4.0 PSI	4.0 PSI	2.0 SCFM	
Diffuser Activated	Yes		No	
Water level above diffuser in creek	Yes		No	

K:\2018\Safety\Air\Sparging Station Inspection Sheets

Checklist Record Form

Plant 1 Aeration System

CertainTeed Facility, Laurens, South Carolina

GENERAL INFORMATION

Date: 5/10/17 Weather: 82 / Sunny

Time: 1300 Inspection by: G Patauch

PLEASE PROVIDE ANY COMMENT IN THE SPACE PROVIDED ON PAGE 2 OF THIS FORM.

BUILDING / SYSTEM CONDITIONS (circle appropriate comment)			Comment No.
Building Exterior:	Good	Damaged	
Locked:	Yes	No	
Landscaping:	Good	Noticeable Erosion	
Outside Conduit/Piping:	Good	Damaged	
Gauges (both interior and exterior):	Operational	Damaged	

COMPRESSOR SYSTEM (circle appropriate comment)			
Compressor:	On	Off	
Aftercooler Fan:	On	Off	
Needs Cleaning:	Yes	No	
Window Fan:	On	Off	
Needs Cleaning:	Yes	No	
Surge Protector Light On:	Yes	No	
Condensate Released:	Yes	No	
System Appears Air-tight:	Yes	No	
Temperature Discharge (Mechanical gauge):	150 °F		
Air Flow (Mechanical gauge):	6.0 SCFM		
Pressure Discharged To:	Line 1	Line 2	
Pressure Discharge (Mechanical gauge):	6.0 PSI	6.0 PSI	

AIR SPARGE WELLS and DIFFUSER

	Pressure Reading at Shed	Pressure Reading at Wellhead	Air Flow	
AW-1	6.0 PSI	5.0 PSI	1.0 SCFM	
AW-2	8.0 PSI	1.0 PSI	1.5 SCFM	
AW-3	5.0 PSI	4.5 PSI	2.0 SCFM	
AW-4	6.0 PSI	6.0 PSI	15.0 SCFM	
AW-5	5.0 PSI	4.0 PSI	2.5 SCFM	
AW-6	4.0 PSI	4.0 PSI	2.5 SCFM	
AW-7	5.0 PSI	5.0 PSI	2.0 SCFM	
AW-8	4.0 PSI	4.0 PSI	2.0 SCFM	
Diffuser Activated	Yes		No	
Water level above diffuser in creek	Yes		No	

Checklist Record Form

Phase 2 Aeration System

CarwinTec Facility, Laurens, South Carolina

GENERAL INFORMATION

Date: 5/17/17 Weather: 80 / Sunny

Time: 1300 Inspection by: G Pistauce

PLEASE PROVIDE ANY COMMENT IN THE SPACE PROVIDED ON PAGE 2 OF THIS FORM.

BUILDING / SYSTEM CONDITIONS (circle appropriate comment)			Comment No.
Building Exterior:	Good	Damaged	
Locked:	Yes	No	
Landscaping:	Good	Noticeable Erosion	
Outside Conduit/Piping:	Good	Damaged	
Gauges (both interior and exterior):	Operational	Damaged	

COMPRESSOR SYSTEM (circle appropriate comment)			
Compressor:	On	Off	
Aftercooler Fan:	On	Off	
Needs Cleaning	Yes	No	
Window Fan:	On	Off	
Needs Cleaning	Yes	No	
Surge Protector Light On:	Yes	No	
Condensate Released:	Yes	No	
System Appears Air-tight	Yes	No	
Temperature Discharge (Mechanical gauge):	150 °F		
Air Flow (Mechanical gauge):	8.0 SCFM		
Pressure Discharged To:	Line 1	Line 2	
Pressure Discharge (Mechanical gauge):	6.0 PSI	6.0 PSI	

AIR SPARGE WELLS and DIFFUSER

	Pressure Reading at Riser	Pressure Reading at Wellhead	Air Flow	
AW-1	5.0 PSI	5.0 PSI	1.0 SCFM	
AW-2	2.0 PSI	1.0 PSI	1.5 SCFM	
AW-3	5.0 PSI	4.5 PSI	2.0 SCFM	
AW-4	6.0 PSI	6.0 PSI	2.50 SCFM	
AW-5	4.0 PSI	4.0 PSI	2.5 SCFM	
AW-6	4.0 PSI	4.0 PSI	2.5 SCFM	
AW-7	4.0 PSI	4.0 PSI	2.0 SCFM	
AW-8	4.0 PSI	4.0 PSI	1.5 SCFM	
Diffuser Activated	Yes	No		
Water level above diffuser in creek	Yes	No		

Checklist Record Form

Phase 2 Aeration System

CarolinaTex Facility, Laurens, South Carolina

GENERAL INFORMATION

Date: 5/23/12 Weather: 90 / rain

Time: 1045 Inspection by: G Rutledge

PLEASE PROVIDE ANY COMMENT IN THE SPACE PROVIDED ON PAGE 2 OF THIS FORM.

BUILDING / SYSTEM CONDITIONS (circle appropriate comment)

			Comment No.
Building Exterior:	Good	Damaged	
Locked:	Yes	No	
Landscaping:	Good	Noticeable Erosion	
Outside Conduit/Piping:	Good	Damaged	
Gauges (both interior and exterior):	Operational	Damaged	

COMPRESSOR SYSTEM (circle appropriate comment)

Compressor:	On	Off	
Aftercooler Fan:	On	Off	
Needs Cleaning:	Yes	No	
Window Fan:	On	Off	
Needs Cleaning:	Yes	No	
Surge Protector Light On:	Yes	No	
Condensate Released:	Yes	No	
System Appears Air-tight:	Yes	No	
Temperature Discharge (Mechanical gauge):	140 °F		
Air Flow (Mechanical gauge):	60 SCFM		
Pressure Discharged To:	Line 1	Line 2	
Pressure Discharge (Mechanical gauge):	60 PSI	60 PSI	

AIR SPARGE WELLS and DIFFUSER

	Pressure Reading at Shed	Pressure Reading at Wellhead	Air Flow	
AW-1	5.0 PSI	5.0 PSI	1.5 SCFM	
AW-2	2.0 PSI	1.0 PSI	1.5 SCFM	
AW-3	5.0 PSI	5.0 PSI	2.0 SCFM	
AW-4	5.0 PSI	5.0 PSI	.50 SCFM	
AW-5	3.0 PSI	3.0 PSI	5.0 SCFM	
AW-6	2.0 PSI	2.0 PSI	2.0 SCFM	
AW-7	4.0 PSI	4.0 PSI	1.5 SCFM	
AW-8	4.0 PSI	4.0 PSI	1.5 SCFM	
Diffuser Activated	Yes		No	
Water level above diffuser in creek	Yes		No	

Checklist Record Form

Plant 2 Aeration System

CerneTec Facility, Laurens, South Carolina

GENERAL INFORMATION

Date: 5/30/17

Time: 1615

Weather: 82 / Sunny

Inspection by: G Pittman

PLEASE PROVIDE ANY COMMENT IN THE SPACE PROVIDED ON PAGE 2 OF THIS FORM.

BUILDING / SYSTEM CONDITIONS (circle appropriate comment)			Comment No.
uilding Exterior:	Good	Damaged	
ocked:	Yes	No	
andscaping:	Good	Noticeable Erosion	
utside Conduit/Piping:	Good	Damaged	
auges (both interior and exterior):	Operational	Damaged	

COMPRESSOR SYSTEM (circle appropriate comment)			
ompressor:	On	Off	
tercooler Fan:	On	Off	
Needs Cleaning	Yes	No	
indow Fan:	On	Off	
Needs Cleaning	Yes	No	
rge Protector Light: On	Yes	No	
ondensate Released:	Yes	No	
stem Appears Air-tight	Yes	No	
mperature Discharge (Mechanical gauge):	1.0 °F		
Flow (Mechanical gauge):	8.0 SCFM		
essure Discharged To:	Line 1	Line 2	
essure Discharge (Mechanical gauge):	6.0 PSI	6.0 PSI	

AIR SPARGE WELLS and DIFFUSER

	Pressure Reading at Rest	Pressure Reading at Wellhead	Air Flow	
AW-1	5.0 PSI	4.5 PSI	1.0 SCFM	
AW-2	1.0 PSI	1.0 PSI	1.5 SCFM	
AW-3	5.0 PSI	4.0 PSI	2.0 SCFM	
AW-4	6.0 PSI	6.0 PSI	.50 SCFM	
AW-5	4.0 PSI	4.0 PSI	3.0 SCFM	
AW-6	4.0 PSI	4.0 PSI	2.0 SCFM	
AW-7	5.0 PSI	5.0 PSI	2.0 SCFM	
AW-8	4.0 PSI	4.0 PSI	1.0 SCFM	
Diffuser Activated	Yes	No		
Water level above diffuser in creek	Yes	No		

Checklist Record Form

Plant 2 Aeration System

CeramTec Facility, Laurens, South Carolina

GENERAL INFORMATION

Date: 6/8/17 Weather: CLEAR 70°F

Time: 1215 Inspection by: M. CREEL

PLEASE PROVIDE ANY COMMENT IN THE SPACE PROVIDED ON PAGE 2 OF THIS FORM.

BUILDING / SYSTEM CONDITIONS (circle appropriate comment)			Comment No.
Building Exterior:	Good	Damaged	
Locked:	Yes	No	
Landscaping:	Good	Noticeable Erosion	
Outside Conduit/Piping:	Good	Damaged	
Gauges (both interior and exterior):	Operational	Damaged	

COMPRESSOR SYSTEM (circle appropriate comment)			
Compressor:	On	Off	
Aftercooler Fan:	On	Off	
Needs Cleaning	Yes	No	
Window Fan:	On	Off	
Needs Cleaning	Yes	No	
Surge Protector Light On	Yes	No	
Condensate Released:	Yes	No	
System Appears Air-tight	Yes	No	
Temperature Discharge (Mechanical gauge):	140 °F		
Air Flow (Mechanical gauge):	8.0 SCFM		
Pressure Discharged To:	Line 1	Line 2	
Pressure Discharge (Mechanical gauge):	7.0 PSI	7.0 PSI	

AIR SPARGE WELLS and DIFFUSER

	Pressure Reading at Shed	Pressure Reading at Wellhead	Air Flow	
AW-1	4.5 PSI	4.5 PSI	1.2 SCFM	
AW-2	1.0 PSI	1.0 PSI	1.3 SCFM	
AW-3	4.0 PSI	4.0 PSI	1.8 SCFM	
AW-4	6.0 PSI	6.0 PSI	0.4 SCFM	
AW-5	4.0 PSI	3.5 PSI	2.2 SCFM	
AW-6	3.5 PSI	4.5 PSI	1.6 SCFM	
AW-7	4.5 PSI	4.5 PSI	1.4 SCFM	
AW-8	4.0 PSI	4.0 PSI	1.0 SCFM	
Diffuser Activated	Yes		No	
Water level above diffuser in creek	Yes		No	

Checklist Record Form

Plant 2 Aeration System

CowanTec Facility, Laurens, South Carolina

GENERAL INFORMATION

Date: 6/14/17 Weather: 92 / Sunny

Time: 1600 Inspection by: G Pintauro

PLEASE PROVIDE ANY COMMENT IN THE SPACE PROVIDED ON PAGE 2 OF THIS FORM.

BUILDING / SYSTEM CONDITIONS (circle appropriate comment)

			Comment No.
Building Exterior:	Good	Damaged	
Locked:	Yes	No	
Landscaping:	Good	Noticeable Erosion	
Outside Conduit/Piping:	Good	Damaged	
Gauges (both interior and exterior):	Operational	Damaged	

COMPRESSOR SYSTEM (circle appropriate comment)

Compressor:	On	Off	
Aftercooler Fan:	On	Off	
Needs Cleaning	Yes	No	
Window Fan:	On	Off	
Needs Cleaning	Yes	No	
Surge Protector Light On	Yes	No	
Condensate Released:	Yes	No	
System Appears Air-tight	Yes	No	
Temperature Discharge (Mechanical gauge):	155 °F		
Air Flow (Mechanical gauge):	8.0 SCFM		
Pressure Discharged To:	Line 1	Line 2	
Pressure Discharge (Mechanical gauge):	6.0 PSI	6.0 PSI	

AIR SPARGE WELLS and DIFFUSER

	Pressure Reading at Shed	Pressure Reading at Wellhead	Air Flow	
AW-1	4.0 PSI	4.0 PSI	1.5 SCFM	
AW-2	1.0 PSI	1.0 PSI	1.5 SCFM	
AW-3	9.0 PSI	4.0 PSI	2.5 SCFM	
AW-4	5.0 PSI	5.0 PSI	.50 SCFM	
AW-5	3.0 PSI	3.0 PSI	2.5 SCFM	
AW-6	3.0 PSI	3.0 PSI	2.0 SCFM	
AW-7	4.0 PSI	4.0 PSI	2.0 SCFM	
AW-8	4.0 PSI	4.0 PSI	0.0 SCFM	
Diffuser Activated	Yes		No	
Water level above diffuser in creek	Yes		No	

Checklist Record Form

Phase 2 Aeration System

CoastEnc Facility, Laurens, South Carolina

GENERAL INFORMATION

Date: 6/27/17 Weather: 75 / cloudy

Time: 1445 Inspection by: G Pinkney

PLEASE PROVIDE ANY COMMENT IN THE SPACE PROVIDED ON PAGE 2 OF THIS FORM.

BUILDING / SYSTEM CONDITIONS (circle appropriate comment)			Comment No.
Building Exterior:	Good	Damaged	
Locked:	Yes	No	
Landscaping:	Good	Noticeable Erosion	
Outside Conduit/Piping:	Good	Damaged	
Gauges (both interior and exterior):	Operational	Damaged	

COMPRESSOR SYSTEM (circle appropriate comment)			
Compressor:	On	Off	
Aftercooler Fan:	On	Off	
Needs Cleaning	Yes	No	
Window Fan:	On	Off	
Needs Cleaning	Yes	No	
Surge Protector Light On	Yes	No	
Condensate Released:	Yes	No	
System Appears Air-tight	Yes		
Temperature Discharge (Mechanical gauge):	150 °F		
Air Flow (Mechanical gauge):	8.0 SCFM		
Pressure Discharged To:	Line 1	Line 2	
Pressure Discharge (Mechanical gauge)	6.0 PSI	6.0 PSI	

AIR SPARGE WELLS and DIFFUSER

	Pressure Reading at Shed	Pressure Reading at Wellhead	Air Flow	
AW-1	4.0 PSI	3.5 PSI	1.5 SCFM	
AW-2	2.0 PSI	1.0 PSI	1.0 SCFM	
AW-3	3.0 PSI	3.0 PSI	2.0 SCFM	
AW-4	5.0 PSI	5.0 PSI	.50 SCFM	
AW-5	4.0 PSI	4.0 PSI	2.5 SCFM	
AW-6	4.0 PSI	4.0 PSI	2.0 SCFM	
AW-7	3.0 PSI	3.0 PSI	2.0 SCFM	
AW-8	4.0 PSI	4.0 PSI	1.5 SCFM	
Diffuser Activated	Yes		No	
Water level above diffuser in creek	Yes		No	

Checklist Record Form

Plant 2 Aeration System

CerroTec Facility, Laurens, South Carolina

GENERAL INFORMATION

Date: 5/27/17 Weather: 80 / Sunny

Time: 1330 Inspection by: G Pistanno

PLEASE PROVIDE ANY COMMENT IN THE SPACE PROVIDED ON PAGE 2 OF THIS FORM.

BUILDING / SYSTEM CONDITIONS (circle appropriate comment)

			Comment No.
Building Exterior:	Good	Damaged	
Locked:	Yes	No	
Landscaping:	Good	Noticeable Erosion	
Outside Conduit/Piping:	Good	Damaged	
Gauges (both interior and exterior):	Operational	Damaged	

COMPRESSOR SYSTEM (circle appropriate comment)

Compressor:	On	Off	
Aftercooler Fan:	On	Off	
Needs Cleaning:	Yes	No	
Window Fan:	On	Off	
Needs Cleaning:	Yes	No	
Surge Protector Light On:	Yes	No	
Condensate Released:	Yes	No	
System Appears Air-tight:	Yes	No	
Temperature Discharge (Mechanical gauge):	150 °F		
Air Flow (Mechanical gauge):	3.0 SCFM		
Pressure Discharged To:	Line 1	Line 2	
Pressure Discharge (Mechanical gauge):	6.0 PSI	6.0 PSI	

AIR SPARGE WELLS and DIFFUSER

	Pressure Reading at Well	Pressure Reading at Wellhead	Air Flow	
AW-1	4.0 PSI	4.0 PSI	1.5 SCFM	
AW-2	1.0 PSI	1.0 PSI	1.0 SCFM	
AW-3	3.0 PSI	3.0 PSI	2.0 SCFM	
AW-4	5.0 PSI	5.0 PSI	.50 SCFM	
AW-5	3.0 PSI	3.0 PSI	2.5 SCFM	
AW-6	3.0 PSI	3.0 PSI	2.0 SCFM	
AW-7	4.0 PSI	4.0 PSI	2.0 SCFM	
AW-8	4.0 PSI	4.0 PSI	1.5 SCFM	
Diffuser Activated:	Yes	No		
Water level above diffuser in creek:	Yes	No		

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