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May 17, 2016

Ms. Addie Walker, Project Manager
SC Department of Health and Environmental Control
Bureau of Land and Waste Management
2600 Bull Street
Columbia, SC 29201

Re: Post Remedial Investigation Report
Delavan Spray Technologies Site
Bamberg, South Carolina
SCDHEC VCC Number 13-4762-RP
SCDHEC File Number 51778
AECOM Project Number 60314964

Dear Ms. Walker:

On behalf of United Technologies Corporation (UTC), AECOM is providing you one (1) hard copy and one (1) electronic copy of the Post Remedial Investigation Report for the Delavan Spray Technologies Site.

If you have any questions or require further information, please feel free to contact me.

Sincerely,

AECOM Technical Services, Inc.

Walter C. Gerald

Walter C. Gerald, P.G.
Project Manager
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cc: Mr. Bill Penn – United Technologies Corporation
Ms. Evelyn Rogers, PE – AECOM
Ms. Leslee Alexander, PG – AECOM
Project File 60314964

Post Remedial Investigation Report

United Technologies Corporation
Delavan Spray Technologies Site
4334 Main Highway
US Highway 301 South
Bamberg, South Carolina

VCC 13-4762-RP

Prepared by:

AECOM Technical Services, Inc.
10 Patewood Drive
Building 6, Suite 500
Greenville, South Carolina

May 17, 2016

POST REMEDIAL INVESTIGATION REPORT

UNITED TECHNOLOGIES CORPORATION (UTC)
DELAVAN SPRAY TECHNOLOGIES SITE
BAMBERG, SOUTH CAROLINA

RESPONSIBILITY PARTY VOLUNTARY CLEANUP CONTRACT NUMBER 13-4762

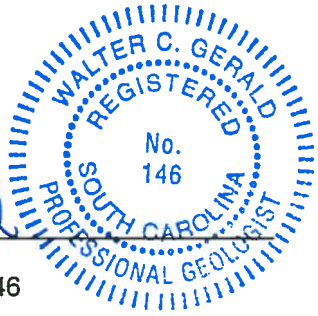
The undersigned certify that they have reviewed the attached document and that the document is in material compliance with the guidelines and requirements of the State of South Carolina and the South Carolina Department of Health and Environmental Control (SCDHEC) and specifically, requirements under the SCDHEC Voluntary Cleanup Contract (VCC). The data presentations contained herein are consistent with generally accepted practices in the environmental profession.

Prepared by:

Leslee J. Alexander, PG
South Carolina PG No. 2433
AECOM Project Hydrogeologist

May 17, 2016
Date

Reviewed by:



Walter C. Gerald, PG
South Carolina PG No. 146
AECOM Project Manager

May 17, 2016
Date

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1.0 INTRODUCTION

The Delavan Spray Technologies Site (the "Site") is located at 4334 Main Highway (US Highway 301 South) in the town of Bamberg, South Carolina (Figure 1). Previous assessments have documented chlorinated volatile organic compounds (VOCs) in soil and groundwater related to their historic use at the facility. Additional Site background and history were reported in detail in Section 2.0 of the *RI Report* (AECOM, July 2014).

In 2014 a Remedial Investigation (RI) was completed at the Site to assess soils, surface water, groundwater and vapor intrusion pathways. As part of the RI, a Baseline Risk Assessment (BRA) was performed to evaluate potential risks to human and ecological receptors.

Based on comments received from the South Carolina Department of Health and Environmental Control (SCDHEC) to the RI Report and to the subsequent *Fall 2014 Semi-Annual Groundwater Monitoring Report* (AECOM, January 2015), additional assessment was deemed necessary to address some data gaps (SCDHEC, correspondence of May 6 and May 7, 2015). The *Post RI Investigation Work Plan* (AECOM, June 2015) was submitted to address these data gaps, including:

- Further assessment in the deep limestone aquifer to the southwest;
- Further soil assessment in the vicinity of the northern degreaser, located in the Wickman room; and
- Installation of an additional shallow monitoring well toward the western corner of the property.

Assessment activities were completed between November 30, 2015 and December 4, 2015.

1.1 Report Organization

This report documents the activities completed as part of the Post RI Investigation and presents the results. The report is organized into five sections. Section 1 presents an introduction and overview of the project. The field and analytical methods used to generate the environmental quality data are outlined in Section 2. Section 3 discusses the environmental quality data and results of the field investigation. A summary and conclusions that may be drawn from the data are presented in Section 4. Pertinent references cited in the report are presented in Section 5.

2.0 ADDITIONAL ASSESSMENT

Field data acquisition methodologies were designed to be in general accordance with the United States Environmental Protection Agency (USEPA) Region 4 Science and Ecosystem Support Division (SESD) Field Branches Quality System and Technical Procedures document (http://www.epa.gov/region4/sesd/fbqstp/) (most recent version). Field activities were conducted in accordance with the *Post RI Investigation Work Plan* (AECOM, June 2015) and Appendix B to the *RI Work Plan* (Hart & Hickman, August 2013). Field documentation is provided in Appendix A of this report.

2.1 Pre-Investigation Activities

The monitoring wells proposed for the deep limestone aquifer were located off-Site (Figure 2); therefore, an updated access agreement was obtained from the property owner prior to the installation of the monitoring wells. After obtaining off-Site property access and prior to conducting intrusive sampling activities, the South Carolina One-Call public utility service was contacted to mark public utilities at the Site and vicinity. GEL Geophysics, LLC, a private utility locator from Charleston, South Carolina, was contracted to confirm the one-call markings and to mark the location of potential private subsurface utilities in the area of the proposed sampling locations.

Prior to mobilization, a monitoring well permit application was submitted to SCDHEC. The permits are included in Appendix B.

2.2 Slug Testing

Slug tests were performed in shallow monitoring wells MW-1, MW-5, and MW-21 and deeper monitoring wells MW-21D and MW-22D in order to evaluate hydrologic properties of the aquifers beneath the Site. Slug tests were conducted using falling head and rising head tests. Falling head tests were conducted by inserting a decontaminated, solid PVC cylinder (aka, “slug”) into the well and monitoring the water levels as they declined downward toward the static level. Rising head tests were conducted by removing the slug from a well and monitoring the water levels as they rose up toward the static level. Falling head slug tests were not performed in wells with partially saturated screens.

Prior to initiating the test, the static water level in the well was measured with an electronic water level meter and recorded. A decontaminated pressure transducer was then lowered at least 8 to10 feet below the static water level or within one foot of the bottom of the well. The static water level was again measured and recorded and the measurement was repeated until water level equilibrium was verified (i.e., two equal readings taken at least five minutes apart). The slug was then attached to clean, new synthetic rope. The falling head test was initiated by instantaneously lowering the cylinder into the well, resulting in an immediate water level rise. The data logger was activated to measure the declining (falling) water levels. When the water level had returned to static conditions, the rising head slug test was

conducted. For the rising head test, the data logger was activated as the cylinder was instantaneously removed from the well (resulting in an immediate water level decline) and the rising water levels were measured. Water levels were monitored until they were within 10 percent of their original static level.

Multiple tests were conducted on each well to ensure a representative test result. Falling head slug tests were not conducted in monitoring wells MW-1 and MW-5 because these wells are screened across the water table. The results of the slug testing are discussed in Section 3.1 of this Report.

2.3 Additional Soil Sampling

Former Degreaser Areas

Four soil borings were installed in the vicinity of the northern former degreaser, located in the Wickman Room, to further evaluate the concentration and occurrence of chlorinated VOCs beneath the manufacturing facility (Figure 3). At each location, a 4-inch core was cut from the concrete to allow access to complete the borehole. Soil boring DPT-58, located outside and just north of the Wickman Room, was completed using 54DT track-mounted Geoprobe® rig. Soil borings DPT-59 through DPT-61, located inside the Wickman Room, were completed using hand augers. All soil borings were advanced to approximately 15 to 16 feet below ground surface (bgs).

Soil borings were installed by a state of South Carolina-licensed driller from SAEDACCO, Inc., a drilling contractor located in Fort Mill, South Carolina. Soil boring were logged for lithology by an AECOM geologist and were screened for VOCs (headspace) using a MiniRAE 2000 hand-held organic vapor monitor (photoionization detector [PID]). Lithologic descriptions, observations, and headspace readings were recorded on the Test Boring Reports included in Appendix A. Two soil samples were selected from each boring based on field screening (i.e., elevated PID readings, visual methods, olfactory observations, etc.) and were collected in accordance with the procedures in the *RI Work Plan* (Hart & Hickman, August 2013). Each soil sample was collected over a one-foot interval and the sample identification incorporated the bottom of the depth interval. Soil samples from the selected intervals were submitted to Accutest Laboratories Southeast, a South Carolina-certified laboratory located in Orlando, Florida for laboratory analysis of VOCs by USEPA method 8260B.

Following soil sampling, the borings were converted to monitoring points for potential future monitoring or remediation. Monitoring points were constructed using 1-inch poly-vinyl chloride (PVC) with a 0.010-inch machine slot, pre-packed well screen from 5 to 15 feet bgs. The annulus around the well screen were filled with a clean filter sand, as needed, and filter sand was emplaced to approximately 1 foot above the top of the well screen. A one-foot thick layer of bentonite clay chips was used to seal the monitoring point and was hydrated with potable water, as necessary. A neat cement-bentonite grout was then emplaced from above the bentonite seal to within approximately 6-inches below the finished concrete floor or surface. The surface completions for the 1-inch shallow monitoring points consisted of a 4- inch diameter

cast-iron vault with a bolt down lid. The vaults were flush-mounted into the core holes and grouted in place flush with the floor with high strength concrete. Soil cuttings and decontamination fluids were containerized in 55-gallon drums and stored at a designated location on-Site as investigation-derived waste (IDW) as described in Section 2.6 below.

Background Areas

In order to determine the background oxidant demand for potential future remedial planning, additional soil samples were collected in the vicinity of RI soil sample locations BG-3 and BG-5 (see Figure 3-2 of the *RI Report*; AECOM, July 2014) for analysis of total oxidant demand (TOD). Soil borings were installed in the vicinity of BG-3 and BG-5 by SAEDACCO, Inc. using a 54DT track-mounted Geoprobe® rig.

Two soil borings, located approximately one-foot apart, were installed at locations BG-6 and BG-7 (Figure 4). Samples were collected by compositing the 4 to 6 foot and 8 to 10 foot intervals from each location to get a representative sample for TOD analysis. Upon collection, the composite soil samples were placed in an ice-filled cooler, maintained under chain-of-custody protocol, and shipped to Eurofins Spectrum Analytical, located in Agawam, Massachusetts for analysis of TOD.

Surveying

Following the soil sampling and installation of the monitoring points, the ground surface elevations, top of casing elevations, and the horizontal locations of the monitoring points and borings were surveyed by an AECOM surveyor licensed in South Carolina. Horizontal locations were reported in South Carolina State Plane Coordinates referenced to North American Datum of 1983 (NAD-83) to the nearest 0.01 foot. Ground surface and top of casing elevations were referenced to North American Vertical Datum of 1988 (NAVD-88) to the nearest 0.01 foot. The survey information is included in Table 1 and was used to update the Site base map.

2.4 Additional Groundwater Assessment

In accordance with SCDHEC's correspondence of May 6 and 7, 2015 for further groundwater assessment, one additional shallow monitoring well (MW-24) and two additional deeper limestone aquifer monitoring wells (MW-25D and MW-26D) were drilled and installed using sonic drilling techniques (Figure 2). Details regarding the field activities related to the additional groundwater assessment are presented in the subsections below.

Borehole Drilling

For both the shallow and deeper monitoring wells, a South Carolina licensed driller from SAEDACCO, Inc., used sonic drilling techniques to advance the boring to the target depth. The sonic rig utilized a 6-inch diameter outer casing and a 4-inch diameter inner core barrel. Per the Site Walk with SCDHEC on June 3, 2015 and as documented in the *Post RI Work Plan* (AECOM, June 2015), the temporary drill casing was used to seal the upper aquifer during drilling and well installation of the deeper limestone monitoring wells and, therefore, a permanent surface casing did not need to be installed.

Soil samples were extruded from the inner core barrel into plastic sleeves for lithological logging by an AECOM geologist. Soil samples were screened for organic vapors using a MiniRAE 2000 hand-held VOC monitor (PID). Lithologic details, organic vapor screening results, and other observations were recorded by the AECOM geologist on the Test Boring Reports included in Appendix A. Soil cuttings and drilling fluids were containerized in 55-gallon drums and stored at a designated location on-Site as IDW as described in Section 2.6 below.

Monitoring Well Installation

Per the *Post RI Work Plan* (AECOM, June 2015), the target installation depth for the shallow monitoring well (MW-24) was 20 feet bgs and the target depth for the deeper monitoring wells (MW-25D and MW-26D) was 50 feet bgs. The borehole for MW-24 was advanced to 27 feet bgs and the well was screened from 6 to 21 feet bgs, immediately above the first indication of limestone (calcareous sands with shell fragments). The screen intervals for the deeper monitoring wells MW-25D and MW-26D were adjusted in the field, as needed, based on the organic vapor readings. The boreholes for MW-25D and MW-26D were advanced to 67 feet bgs and 52 feet bgs, respectively. Monitoring well MW-25D was screened from 52 to 62 feet bgs based on organic vapor readings of 1.1 parts per million (ppm) to 2.8 ppm in this interval compared to 0.6 ppm to 0.9 ppm below this interval. The organic vapor readings in the boring for MW-26D were uniform throughout at 0 to 1 ppm and the monitoring well was screened from 38 to 48 feet bgs.

All monitoring wells were installed through the center of the sonic core barrel and were constructed of 2-inch diameter Schedule 40 PVC casing and 0.010-inch machine slotted PVC screen. The shallow monitoring well (MW-24) was constructed with 15 feet of PVC screen and the two deeper wells (MW-25D and MW-26D) were constructed with 10 feet of PVC screen. Filter sand was placed into the annular space of each well and extended approximately one- to two-feet above the top of the well screen. A pelletized bentonite clay seal 1.5- to 3-feet thick was placed in the annular space above the filter sand and hydrated with potable water, as necessary. As the filter sand and bentonite clay were added, the core barrels were pulled from the borehole to ensure the annulus was completely filled. Depths to sand and bentonite were monitored with a weighted tape measure as the installation progressed. A neat cement-bentonite grout was then injected from above the bentonite seal to land surface via a tremie pipe.

The surface completions for the shallow and deep monitoring wells consisted of an 8-inch diameter cast-iron vault with a bolt down lid. Each vault was set flush-mounted into a two-foot-by-two-foot square pad of high strength concrete, which served as a surface seal. Monitoring Well Construction Details are provided on forms included in Appendix A and are summarized in Table 1.

Well Development

Upon installation, the groundwater monitoring wells were developed so that they produce representative groundwater samples. The monitoring wells were developed by AECOM personnel by surging and purging with an electric submersible pump. Groundwater indicator parameters [e.g. temperature, specific conductivity, dissolved oxygen (DO), pH, oxygen reduction potential (ORP) and turbidity] were measured using a water quality meter and recorded on AECOM Monitoring Well Development Logs included in Appendix A. Development of monitoring wells continued until parameters had stabilized and turbidity of the water was reduced as much as possible.

Purge water from well development was containerized in 55-gallon drums and stored at a designated location on-Site as IDW as described in Section 2.6.

Surveying

Following well installation, the top of casing and land surface elevations and the horizontal locations of the new wells were surveyed by an AECOM surveyor licensed in South Carolina. Horizontal locations were reported in South Carolina State Plane Coordinates referenced to the NAD-83 to the nearest 0.01 foot. Ground surface elevations and well top of casing elevations were referenced to the NAVD-88 to the nearest 0.01 foot. The survey information is included in Table 1 and was used to update the Site layout map (Figure 2).

Water Level Measurements

The depth to water from the surveyed top of casing measuring point from the three newly installed monitoring wells and all existing monitoring wells was measured on the first day of the semi-annual groundwater monitoring event (recently completed in April 2016). An electric water level indicator was used to collect water level measurements in general accordance with the USEPA Region 4 SESD Groundwater Level and Well Depth Measurement Operating Procedure (USEPA, January 2013). Depth to water was corrected to groundwater elevations to provide a thorough evaluation of groundwater occurrence and flow directions across the Site. The resulting potentiometric maps will be included in the upcoming spring 2016 semi-annual monitoring report.

Groundwater Sampling

As part of the additional assessment activities, groundwater samples were collected from the newly installed monitoring wells. Groundwater samples were collected using low flow/low stress sampling methods in accordance with the *RI Work Plan* (Hart & Hickman, August 2013), EPA's Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures (EPA/540/S-95/504 dated April 1996) and as described in Appendix B of the *RI Work Plan*. Since drilling could not be scheduled in time to sample the new monitoring wells during the October 2015 semi-annual sampling event, new monitoring wells were sampled after they were developed instead of waiting until the next semi-annual sampling event. Groundwater sampling was completed using a peristaltic pump and flow-through cell for field parameter measurement. Sample bottles were placed in an ice-filled cooler, maintained under chain-of-custody protocol, and shipped to the analytical laboratory using Federal Express.

The monitoring well samples were analyzed for VOCs by USEPA method 8260B by Accutest Laboratories Southeast, a South Carolina-certified laboratory located in Orlando, Florida. Field measurements of DO, pH, conductivity, temperature, and ORP were collected from the sampled monitoring wells using a flow through cell and recorded on the Field Data Logs for Groundwater Sampling included in Appendix A.

As discussed in Section 3.3, groundwater quality data from the new monitoring wells was used in conjunction with data collected during the October 2015 semi-annual monitoring event to evaluate the occurrence and distribution of chlorinated VOCs in the two aquifer units beneath the Site.

2.5 Investigation-Derived Waste Management

IDW consisting of decontamination water, well development/purge water, and soils from drilling activities was containerized in 55-gallon steel drums, labeled, and temporarily staged on-Site until receipt of characterization analysis. Details regarding the drum contents, date filled, and date sampled were recorded on the IDW Management form included in Appendix A.

For characterization and disposal purposes, one composite sample was collected from the drums of IDW soil and submitted to Accutest Laboratories Southeast for analysis of Toxicity Characteristic Leaching Procedure (TCLP) VOCs (USEPA method 8260B), TCLP semi-volatile organic compounds (SVOCs; USEPA method 8270D), and TCLP priority pollutant metals (USEPA methods 6010C and 7470B). One composite sample from the drums of IDW decontamination water was collected for analysis of VOCs (USEPA method 8260B), SVOCs (USEPA method 8270D), and priority pollutant metals (USEPA methods 6010C and 7470B) by Accutest Laboratories Southeast. Drums of well development/purge water were characterized using sampling results from the monitoring wells.

Once received, the characterization and monitoring well sampling data was provided to the Environment, Health, and Safety (EH&S) contact at the UTC Delavan Spray Technologies Facility for use in IDW profiling and subsequent disposal by the Facility.

3.0 INVESTIGATION RESULTS

Results of hydrogeologic and environmental testing are presented in the subsections below. Hydrogeologic test results are summarized in Table 2 and presented in Appendix C. Analytical data and data validation reports are presented in Appendix D and summarized in Tables 3 through 8. Analytical data qualifiers are summarized in Table 9.

3.1 Hydrogeologic Properties

Slug test data were analyzed using Aqtesolv® version 4.5 – Professional (Duffield, 2007), a commercially available software package, and the methods of Bouwer and Rice (1976) and Bouwer (1989). The Bouwer and Rice technique is valid for water table or confined aquifers with partially- or fully-penetrating wells and was used for all wells where slug tests were conducted at the Site.

In certain situations, wells exhibit what is known as the "double straight-line effect" in response to a slug test. Graphs of slug test data exhibiting this effect are concave-up, and the multiple "straight-line" portions of the graph can lead to erroneous matching. Butler (1998) recommends matching to a normalized head (i.e., displacement at any given time divided by the initial displacement) range of 0.20 to 0.30 to increase the reliability of matching when using Bouwer and Rice. This correction is incorporated in the Aqtesolv® software package and was utilized for the analyses included in Appendix C. The recommended head range is distinguished by horizontal dotted lines on the graphs in Appendix C and was utilized as a guide for wells exhibiting the "double straight-line effect".

A few tests (e.g., MW21-in1 and MW21d-out3) had "waves" in the early data, indicating that the slug movement was not smooth or the well response was too rapid. These data were not used to calculate slug test statistics. Other wells (e.g., MW-21D and MW-22D) exhibited a very rapid repose to the test. While this rapid response resulted in less points to "fit" through for the analysis, the result is still considered valid.

The slug test results are summarized in Table 2. The estimated hydraulic conductivity values for the shallow wells ranged from 0.175 feet per day (ft/day) in MW-1 to 0.667 ft/day in MW-12, with a geometric mean of 0.350 ft/day. The estimated hydraulic conductivity values for the deeper wells ranged from 21.2 feet per day (ft/day) in MW-22D to 121 ft/day in MW-21D, with a geometric mean of 47.8 ft/day.

3.2 Soil Assessment

Northern Former Degreaser

Two soil samples were collected from each of the four borings in the vicinity of the former degreaser in the Wickman Room for a total of eight soil samples. The laboratory data packages and validation reports

are included in Appendix D and sample results are summarized in Table 3 along with their associated maximum contaminant level (MCL) –based Soil Screening Level (SSL) from the USEPA Regional Screening Level (RSL) table (USEPA, November 2015).

Six VOCs, 1,1,1-trichloroethane (1,1,1-TCA), 1,1,2-trichloroethane (1,1,2-TCA), acetone, cis-1,2-dichloroethene (cis-1,2-DCE), tetrachloroethene (PCE), and trichloroethene (TCE), were detected in the soil samples (Table 3 and Figure 5). PCE was detected in all eight samples at concentrations ranging from 0.0012 J (estimated) milligrams per kilogram (mg/kg) in DPT-58-11 to 0.343 mg/kg in DPT-61-6. Seven of the detected concentrations exceeded the MCL-based SSL for PCE. 1,1,2-TCA was detected in one sample (DPT-61-8) at an estimated concentration of 0.0017 J mg/kg, which exceeded the MCL-based SSL for 1,1,2-TCA. The remaining detected concentrations of VOCs did not exceed their respective MCL-based SSLs.

Background Soil

Background soil samples were analyzed for TOD in order to evaluate the background oxidant demand in vadose zone soils to aid in future evaluation of potential source area remedies. The TOD was analyzed using the following additives:

- 28.9 grams per liter (g/L) of 30% hydrogen peroxide and 2 grams per kilogram (g/kg) of ferrous sulfate;
- 10 g/L of persulfate;
- 20 g/L of persulfate;
- 20 g/L of permanganate; and
- 30 g/L of permanganate.

TOD results are provided in the laboratory reports in Appendix D and are summarized in Table 4 and Figure 6. Results varied across the different additives and concentrations of additive. The lowest TOD was measured using persulfate, where TOD results ranged from 8.0 g/kg to 11 g/kg. Results from using permanganate were in the mid-range, with measured TOD values ranging from 25 g/kg to 58 g/kg. Hydrogen peroxide with ferrous sulfate provided the highest TOD values, with measured TOD ranging from 131 g/kg to 144 g/kg.

Quality Control Samples

In accordance with Appendix B of the *RI Work Plan* (Hart & Hickman, August 2013) and in Tables 2 and 3 of the *Post RI Work Plan* (AECOM, 2015), quality control samples included soil rinseate blanks from the

hand auger bucket, field duplicates, and matrix spike/matrix spike duplicates. Quality control (QC) sample results for soil are presented in Table 5.

There were no compounds detected in the hand auger rinseate or the associated trip blank samples. Relative percent difference (RPD) was not calculated for the field duplicate sample results because the detected compounds in the primary sample were estimated (J-flagged). The result for PCE in sample DPT-61-8-a was qualified "/M/m" due to low recovery in the associated matrix spike sample. These qualifiers indicate the result should be considered biased low. The QC excursions encountered during the validation of this data did not result in the rejection of any data. There were no QC excursions in the remaining data and no other data flags were required. As a result of the validation process, the data should be considered compliant and adequate for its intended use.

3.3 Groundwater Assessment

VOCs

Following installation and development, groundwater samples from monitoring wells MW-24, MW-25D and MW-26D were analyzed for VOCs. Results for VOCs in new groundwater monitoring wells are presented in Table 6 and analytical data packages are presented in Appendix D.

Two compounds, cis-1,2-DCE and PCE, were detected in shallow monitoring well MW-24. One of these, PCE, was detected at a concentration of 344 micrograms per liter (µg/L), which is above the MCL for PCE (5 µg/L). No other compounds exceeded their respective MCLs in shallow well MW-24.

In the deeper aquifer wells MW-25D and MW-26D, four VOCs (1,1-dichloroethene [1,1-DCE], cis-1,2-DCE, PCE, and TCE) were detected. The detected concentrations of PCE in monitoring wells MW-25D (129 µg/L) and MW-26D (98.1 µg/L) exceeded the MCL for PCE (5 µg/L). None of the other detected compounds exceeded their respective MCLs in the deeper aquifer wells.

The analytical results from the newly installed wells were used to update maps of VOCs in groundwater from the *Fall 2015 Semi-Annual Monitoring Report* (AECOM, January 2016). Figures 7 through 10 illustrate PCE, TCE, cis-1,2-DCE, and 1,1-DCE for the shallow groundwater and Figures 11 through 14 illustrate the same compounds for the deeper groundwater.

As shown on Figure 7, MW-24 is out of the "source" area for PCE, but within the core of the shallow PCE plume as it moves to the west. Similarly, MW-25D and MW-26D appear to be in the core of the dilute PCE plume as it moves off-Site to the southwest in deeper groundwater.

Assessment Quality Control Samples

In accordance with Appendix B of the *RI Work Plan* (Hart & Hickman, August 2013) and in Tables 2 and 3 of the *Post RI Work Plan* (AECOM, 2015), QC samples for groundwater included trip blanks, field duplicates, and matrix spike/matrix spike duplicates. QC sample results for groundwater are presented in Table 7.

Methylene chloride, which is a common laboratory artifact and was not detected in the groundwater samples, was the only compound detected in the trip blank sample. The RPD between the primary sample and field duplicate sample results was 5% or less for all detected compounds. There were no QC excursions encountered during the validation of this data and the data should be considered compliant and adequate for its intended use.

3.4 Investigation-Derived Waste

Results for the solid and aqueous IDW samples are presented in Table 8 along with the associated USEPA Maximum Concentration of Contaminants for the Toxicity Characteristic (40CFR§261.24 Toxicity Characteristic, 2007). Although several compounds were detected in the IDW samples, none of the concentrations exceeded the maximum value for toxicity characteristic. Therefore, based on the analytical testing, the IDW was not characteristically hazardous for disposal.

Waste profiling and disposal will be coordinated by the local EH&S contact at the Delavan Facility.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The following conclusions can be made from the data collected during this investigation:

- The hydraulic conductivity in the shallow aquifer estimated from slug tests was 0.175 ft/day to 0.667 ft/day, with a geometric mean of 0.350 ft /day. This is comparable to previous slug test results from the shallow aquifer which yielded a geometric mean hydraulic conductivity of 0.13 ft/day (Hart & Hickman, August 2013).
- The hydraulic conductivity in the deeper aquifer estimated from slug tests was 21.2 ft/day to 121 ft/day, with a geometric mean of 47.8 ft /day. This is comparable to, but slightly greater than, previous slug test results from the deeper aquifer which yielded a geometric mean hydraulic conductivity of 28 ft/day (Hart & Hickman, August 2013).
- The soil sample results from the Northern Former Degreaser in the Wickman Room provide additional delineation in this source area. Concentrations were within the range detected during the RI (AECOM, July 2014), but the maximum detected concentration of PCE during this investigation (0.343 mg/kg) was orders of magnitude less than that detected during the RI (85.4 mg/kg).
- Soil samples from DPT-61, installed adjacent to 2012 soil boring DPT-3 confirmed the presence of PCE at this location, however, the detected concentrations during this investigation (0.0709 mg/kg to 0.0759 mg/kg) were orders of magnitude less than those detected during the 2012 investigation (4.82 mg/kg).
- The TOD results show a wide range for various soil additives. This information will be useful in the evaluation of potential remedies for the “source” area.
- The location of MW-24 helps to delineate the PCE plume in the shallow aquifer on the west side of the Site. The groundwater sampling results indicate that this well is out of the “source area” but still within the core of the PCE plume that is moving off-Site to the west in shallow aquifer groundwater.
- Deeper aquifer monitoring wells MW-25D and MW-26D provide further delineation of the PCE plume in the deeper aquifer as it moves off-Site to the southwest. Groundwater sampling results confirm the presence of PCE above the MCL in these wells but, on the off-Site property, PCE concentrations decrease with distance from the Facility.

Based on the data collected to date and the results of this investigation, it is recommended that semi-annual groundwater monitoring continue for the Site. A proposed list of wells and analytes for the next two sampling events is provided in Table 10. Upon concurrence from SCDHEC, this plan will be implemented on the current sampling schedule. The next event is currently scheduled for June 2016.

The existing data from the RI confirm the presence of VOCs, especially PCE, in subsurface soil samples (AECOM, 2014). Furthermore, concentrations of PCE, and, in some cases, TCE, cis-1,2-DCE, 1,1-DCE and methylene chloride, exceeded their respective MCL-based SSL in one or more subsurface soil samples collected during the RI and post RI. Groundwater concentrations of PCE are highest in the immediate vicinity of former PCE degreasers, and analytical data indicate that these suspected "source areas" are contributing to the on-going groundwater plume beneath the Site. As stated in Section 3.C of the Voluntary Cleanup Contract (VCC) for the Site (SCDHEC, 2013), it is recommended that a Focused Feasibility study be prepared to evaluate options to remediate the VOC contamination in subsurface soils in the vicinity of the Former PCE Degreasers. PCE concentrations in soil and groundwater in the vicinity of the Former PCE Degreasers are up to three to four orders of magnitude higher than in the other areas. Therefore, remediating the areas near the Former PCE Degreasers would likely be the quickest way to mitigate the on-going shallow groundwater plume of VOCs on-Site and deeper aquifer migration of VOCs off-Site.

5.0 REFERENCES

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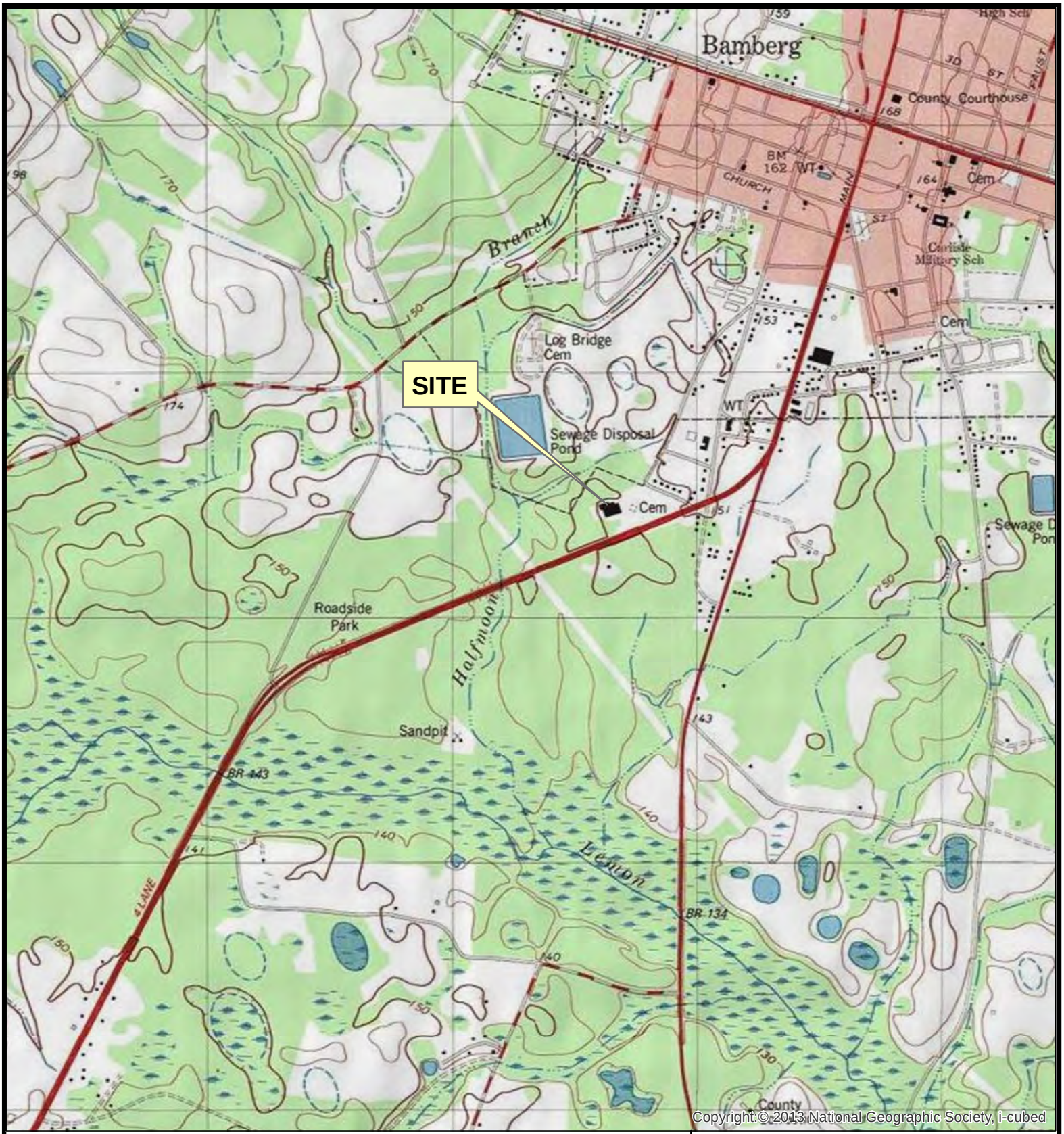
FIGURES



N

0 500 1,000 2,000 3,000 4,000
Feet

U.S.G.S. QUADRANGLE MAP

BAMBERG, SC 1979 (PHOTO REVISED 1987)

QUADRANGLE
7.5 MINUTE SERIES (TOPOGRAPHIC)

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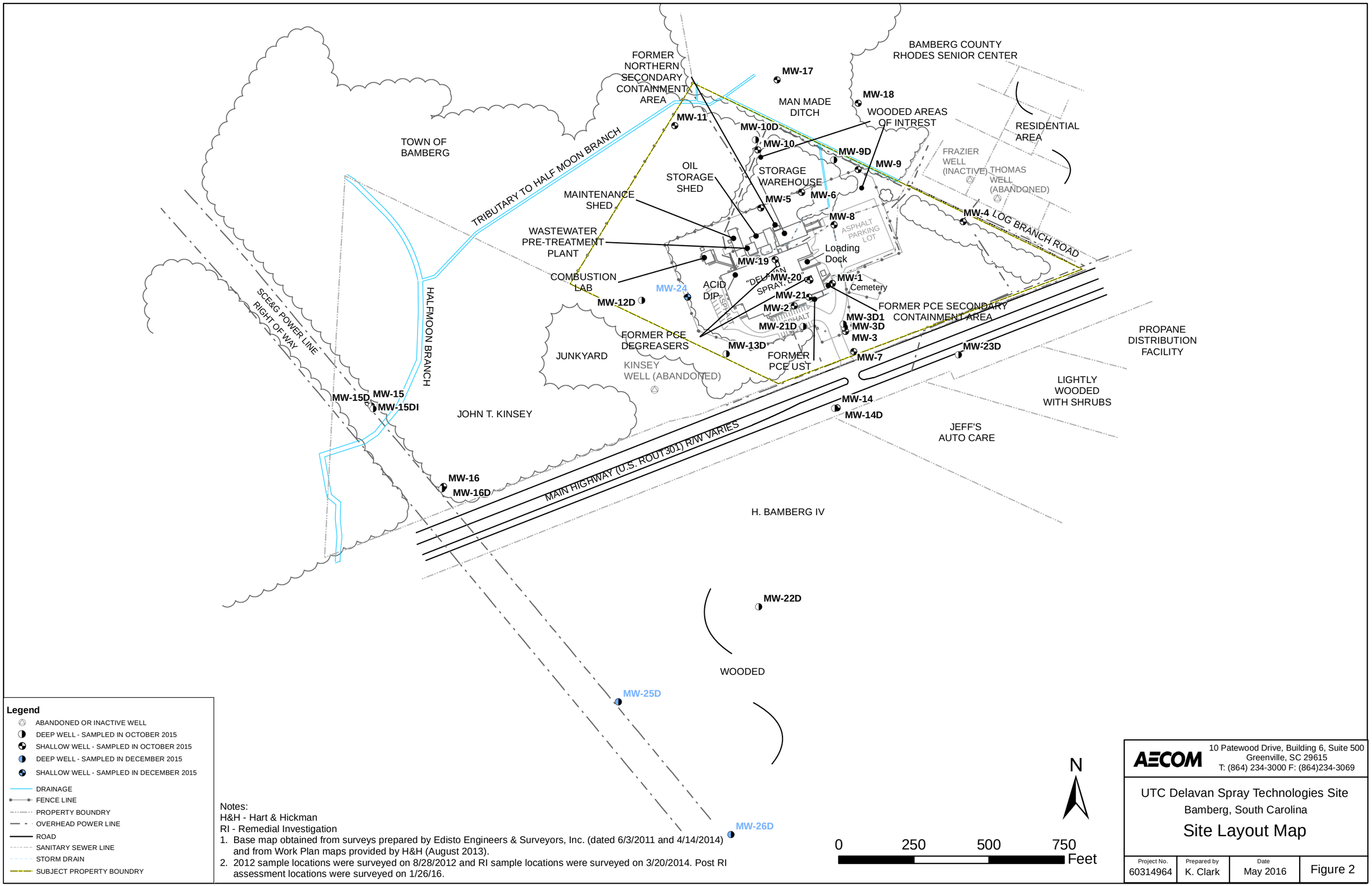
Site Location Map

Project No.	Prepared by	Date	
60314964	K. Clark	May 2016	Figure 1

Path: L:\Projects\60314964\900-CAD-GIS\920 GIS-Graphics\Maps\Maps for May 2016\Figure 1 Site Location Map.mxd



Legend

- ABANDONED OR INACTIVE WELL
- DEEP WELL - SAMPLED IN OCTOBER 2015
- SHALLOW WELL - SAMPLED IN OCTOBER 2015
- DEEP WELL - SAMPLED IN DECEMBER 2015
- SHALLOW WELL - SAMPLED IN DECEMBER 2015
- DRAINAGE
- FENCE LINE
- PROPERTY BOUNDRY
- OVERHEAD POWER LINE
- ROAD
- SANITARY SEWER LINE
- STORM DRAIN
- SUBJECT PROPERTY BOUNDRY

Notes:
H&H - Hart & Hickman
RI - Remedial Investigation

1. Base map obtained from surveys prepared by Edisto Engineers & Surveyors, Inc. (dated 6/3/2011 and 4/14/2014) and from Work Plan maps provided by H&H (August 2013).
2. 2012 sample locations were surveyed on 8/28/2012 and RI sample locations were surveyed on 3/20/2014. Post RI assessment locations were surveyed on 1/26/16.

N

0 250 500 750 Feet

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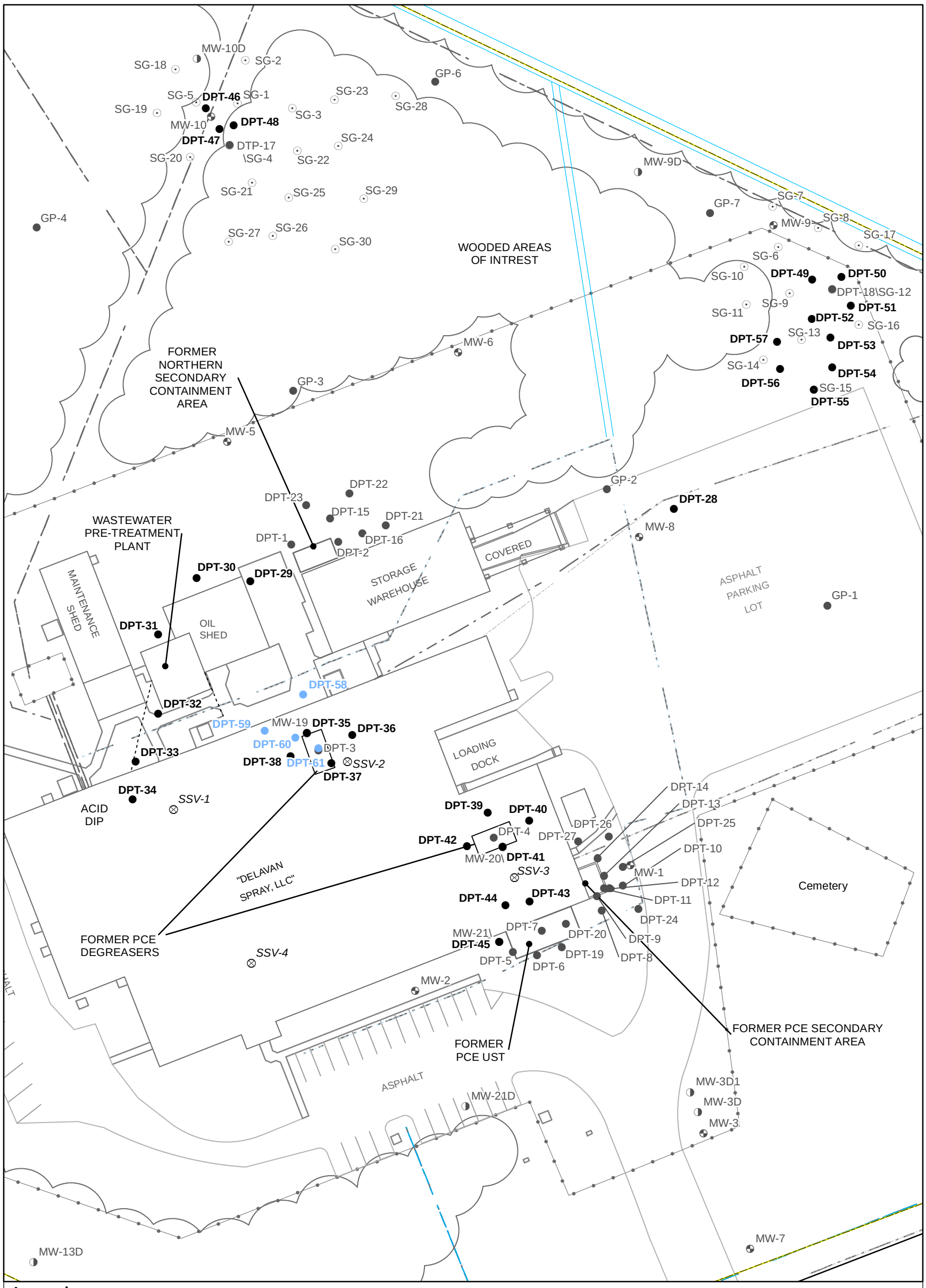
Site Layout Map

Project No.	Prepared by	Date	
60314964	K. Clark	May 2016	Figure 2

Path: L:\Projects\60314964\900-CAD-GIS\920 GIS-Graphics\Maps\Maps for May 2016\Figure 2 site layout.mxd



Legend

- 2015 SOIL BORING LOCATION
- 2012 SOIL BORING LOCATION
- 2012 SOIL GAS SAMPLE LOCATION
- SSV SAMPLE LOCATION
- RI SOIL BORING LOCATION
- ABANDONED OR INACTIVE WELL
- DEEP WELL
- SHALLOW WELL
- FENCE LINE
- OVERHEAD POWER LINE
- SUBJECT PROPERTY BOUNDRY
- PROPERTY BOUNDRY
- DRAINAGE
- STORM DRAIN
- SANITARY SEWER LINE
- WASTEWATER LINE
- WATER LINE

N

0 60 120

Feet

Notes: H&H - Hart & Hickman RI - Remedial Investigation

1. Base map obtained from surveys prepared by Edisto Engineers & Surveyors, Inc. (dated 6/3/2011 and 4/14/2014) and from Work Plan maps provided by H&H (August 2013).
2. 2012 sample locations were surveyed on 8/28/2012 and RI sample locations were surveyed on 3/20/2014. Post RI assessment sample locations were surveyed 1/26/2015
3. 2012 soil borings were sampled by H&H in August 2012. RI soil borings were sampled by AECOM in February/March 2014. Post RI assessment soil borings were sampled by AECOM in December 2015.

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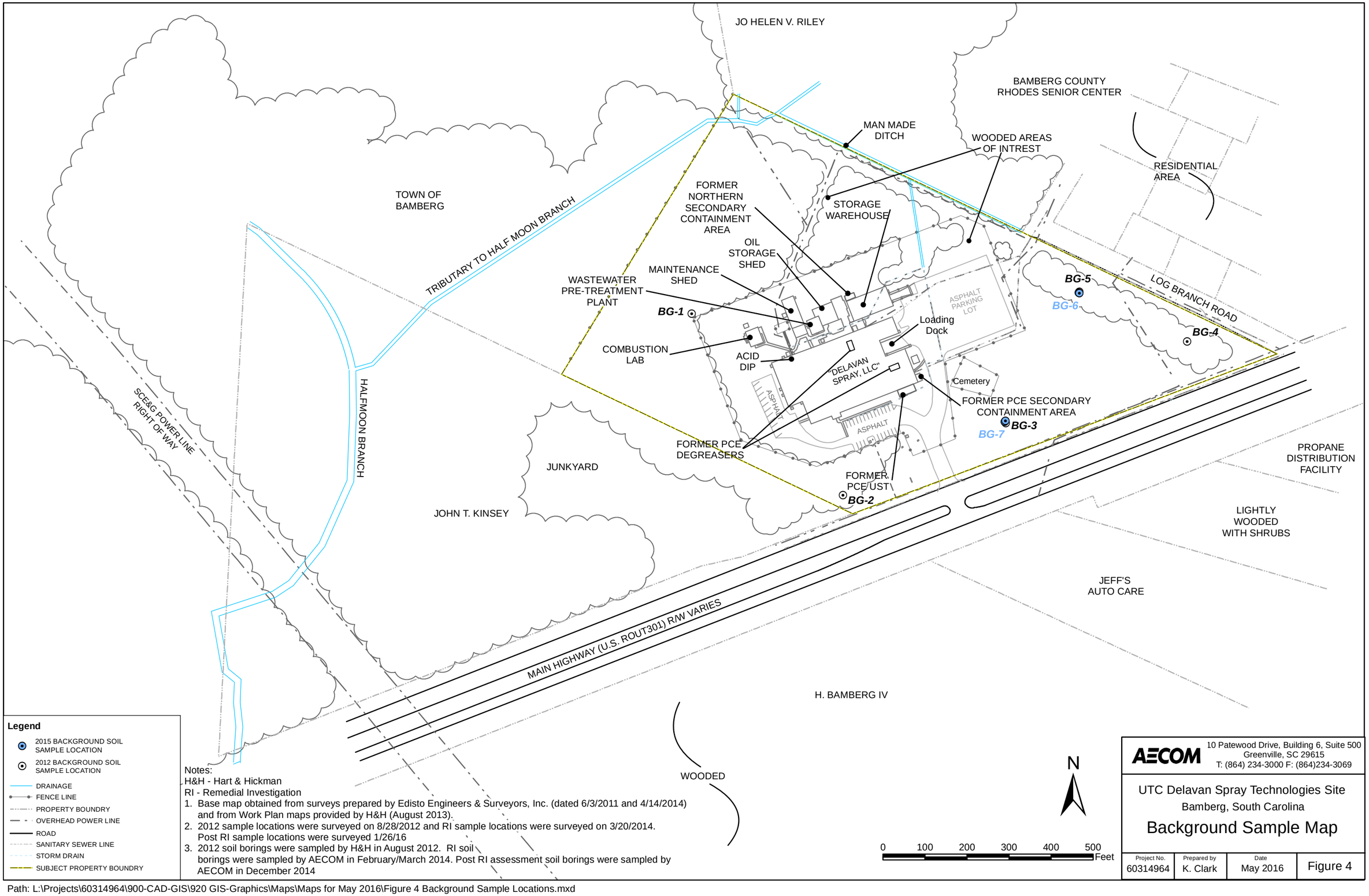
Soil Boring Location Map

Project No.	Prepared by	Date	
60314964	K. Clark	May 2016	Figure 3

Path: L:\Projects\60314964\900-CAD-GIS\920 GIS-Graphics\Maps\Maps for May 2016\Figure 3 SoilBorings.mxd



Legend

- 2015 BACKGROUND SOIL SAMPLE LOCATION
- 2012 BACKGROUND SOIL SAMPLE LOCATION
- DRAINAGE
- FENCE LINE
- PROPERTY BOUNDRY
- OVERHEAD POWER LINE
- ROAD
- SANITARY SEWER LINE
- STORM DRAIN
- SUBJECT PROPERTY BOUNDRY

Notes:
H&H - Hart & Hickman
RI - Remedial Investigation

1. Base map obtained from surveys prepared by Edisto Engineers & Surveyors, Inc. (dated 6/3/2011 and 4/14/2014) and from Work Plan maps provided by H&H (August 2013).
2. 2012 sample locations were surveyed on 8/28/2012 and RI sample locations were surveyed on 3/20/2014. Post RI sample locations were surveyed 1/26/16
3. 2012 soil borings were sampled by H&H in August 2012. RI soil borings were sampled by AECOM in February/March 2014. Post RI assessment soil borings were sampled by AECOM in December 2014

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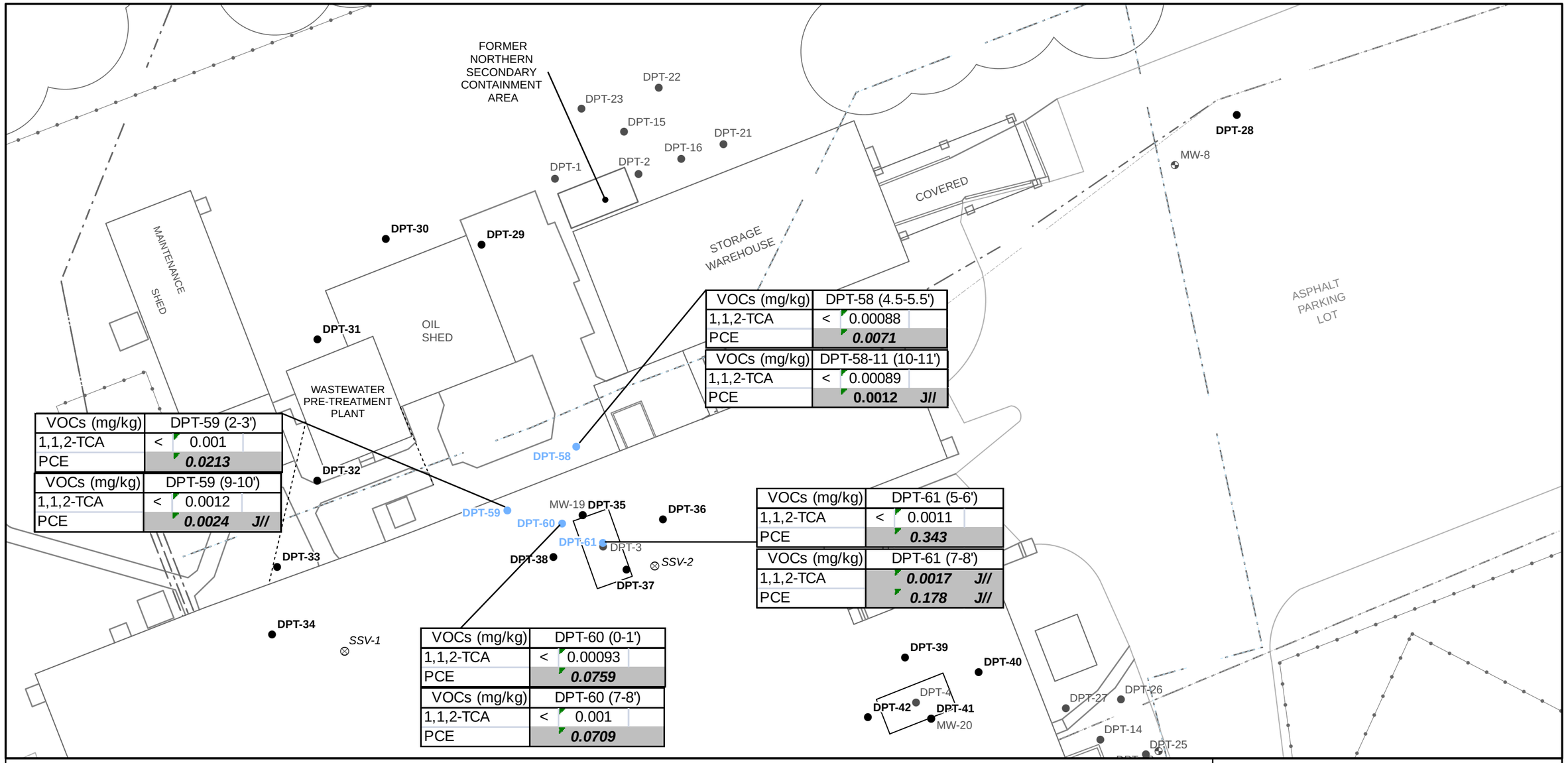
Background Sample Map

Project No.	Prepared by	Date	
60314964	K. Clark	May 2016	Figure 4

Path: L:\Projects\60314964\900-CAD-GIS\920 GIS-Graphics\Maps\Maps for May 2016\Figure 4 Background Sample Locations.mxd



VOCs (mg/kg)	DPT-59 (2-3')
1,1,2-TCA	< 0.001
PCE	***0.0213***

VOCs (mg/kg)	DPT-59 (9-10')
1,1,2-TCA	< 0.0012
PCE	***0.0024 J//***

VOCs (mg/kg)	DPT-58 (4.5-5.5')
1,1,2-TCA	< 0.00088
PCE	***0.0071***

VOCs (mg/kg)	DPT-58-11 (10-11')
1,1,2-TCA	< 0.00089
PCE	**0.0012 *J//***

VOCs (mg/kg)	DPT-61 (5-6')
1,1,2-TCA	< 0.0011
PCE	***0.343***

VOCs (mg/kg)	DPT-61 (7-8')
1,1,2-TCA	***0.0017 J//***
PCE	***0.178 J//***

VOCs (mg/kg)	DPT-60 (0-1')
1,1,2-TCA	< 0.00093
PCE	***0.0759***

VOCs (mg/kg)	DPT-60 (7-8')
1,1,2-TCA	< 0.001
PCE	***0.0709***

Legend

- 2015 SOIL BORING LOCATION
- 2012 SOIL BORING LOCATION
- 2012 SOIL GAS SAMPLE LOCATION
- SSV SAMPLE LOCATION
- RI SOIL BORING LOCATION
- SHALLOW WELL
- WASTE WATERLINES
- OVERHEAD POWER LINE
- SANITARY SEWER LINE
- STORM DRAIN

Notes:
1,1,2-TCA - 1,1,2-Trichloroethane
MCL - Maximum Contaminant Level
mg/kg - milligram per kilogram
PCE - Tetrachloroethylene
RI - Remedial Investigation
SSL - Soil Screening Level
VOCs - Volatile Organic Compounds

1. Base map obtained from surveys prepared by Edisto Engineers & Surveyors, Inc. dated 6/3/2011 and 4/14/2014. Post RI Assessment samples were surveyed 1/26/2016.
2. Only compounds detected above the MCL-based SSLs are shown.
3. MCL-Based SSL is the maximum contaminant level (MCL)-based Soil Screening Level (SSL) from the USEPA RSL Table (November 2015). SSL values are based on a dilution attenuation factor of 1.
4. Bold font and shading indicate the concentration is detected. Italics indicates the concentration exceeds the MCL-Based SSL.
5. Sample depth (in feet) is indicated by the numbers in parentheses in the sample identification.
6. See Table 10 for an explanation of data qualifiers.

0 30 60 Feet

N

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Sample Results for VOCs in Soil

Project No.	Prepared by	Date	
60314964	K. Clark	May 2016	Figure 5

JO HELEN V. RILEY

TOWN OF BAMBERG

TRIBUTARY TO HALF MOON BRANCH

HALFMOON BRANCH

SCE&G POWER LINE RIGHT OF WAY

JUNKYARD

JOHN T. KINSEY

MAIN HIGHWAY (U.S. ROUT301) R/W VARIES

H. BAMBERG IV

WOODED

LOG BRANCH ROAD

ASPHALT PARKING LOT

ACID DIP

"DELAVAN SPRAY, LLC"

ASPHALT

Cemetery

PROPANE DISTRIBUTION FACILITY

LIGHTLY WOODED WITH SHRUBS

BG-1 BG-2 BG-3 BG-4 BG-5 BG-6 BG-7

Sample Used	BG-6 (4-6')	
Additive	28.9 g/L of 30% peroxide and 2 g/kg of ferrous sulfate	
Hydrogen Peroxide (g/L)	2.65	
TOD Peroxide (g/kg)	131	
Sample Used	**BG-6 (4-6')**	**BG-6 (4-6')**
Persulfate Added	**10 g/L**	**20 g/L**
Persulfate (g/L)	7.90	17.3
TOD Persulfate (g/kg)	11	14
Sample Used	**BG-6 (4-6')**	**BG-6 (4-6')**
Permanganate Added	**20 g/L**	**30 g/L**
Permanganate (g/L)	12.5	18.4
TOD Permanganate (g/kg)	38	58

Sample Used	BG-6 (8-10')	
Additive	28.9 g/L of 30% peroxide and 2 g/kg of ferrous sulfate	
Hydrogen Peroxide (g/L)	2.2	
TOD Peroxide (g/kg)	134	
Sample Used	**BG-6 (8-10')**	**BG-6 (8-10')**
Persulfate Added	**10 g/L**	**20 g/L**
Persulfate (g/L)	7.77	17.9
TOD Persulfate (g/kg)	11	11
Sample Used	**BG-6 (8-10')**	**BG-6 (8-10')**
Permanganate Added	**20 g/L**	**30 g/L**
Permanganate (g/L)	13.6	19.1
TOD Permanganate (g/kg)	32	55

Sample Used	BG-7 (4-6')	
Additive	28.9 g/L of 30% peroxide and 2 g/kg of ferrous sulfate	
Hydrogen Peroxide (g/L)	0.424	
TOD Peroxide (g/kg)	142	
Sample Used	**BG-7 (4-6')**	**BG-7 (4-6')**
Persulfate Added	**10 g/L**	**20 g/L**
Persulfate (g/L)	7.77	18.2
TOD Persulfate (g/kg)	11	9
Sample Used	**BG-7 (4-6')**	**BG-7 (4-6')**
Permanganate Added	**20 g/L**	**30 g/L**
Permanganate (g/L)	14.3	20.6
TOD Permanganate (g/kg)	29	47

Sample Used	BG-7 (8-10')	
Additive	28.9 g/L of 30% peroxide and 2 g/kg of ferrous sulfate	
Hydrogen Peroxide (g/L)	1.82	
TOD Peroxide (g/kg)	135	
Sample Used	**BG-7 (8-10')**	**BG-7 (8-10')**
Persulfate Added	**10 g/L**	**20 g/L**
Persulfate (g/L)	7.90	18.3
TOD Persulfate (g/kg)	11	8.5
Sample Used	**BG-7 (8-10')**	**BG-7 (8-10')**
Permanganate Added	**20 g/L**	**30 g/L**
Permanganate (g/L)	15.1	21.4
TOD Permanganate (g/kg)	25	43

Legend

- 2015 BACKGROUND SOIL SAMPLE LOCATION
- 2012 BACKGROUND SOIL SAMPLE LOCATION
- DRAINAGE
- FENCE LINE
- PROPERTY BOUNDRY
- OVERHEAD POWER LINE
- ROAD
- SANITARY SEWER LINE
- STORM DRAIN
- SUBJECT PROPERTY BOUNDRY

Notes:
g/L - grams per Liter
g/kg - grams per kilogram
TOD - total oxidant demand

N

0 100 200 300 400 500 Feet

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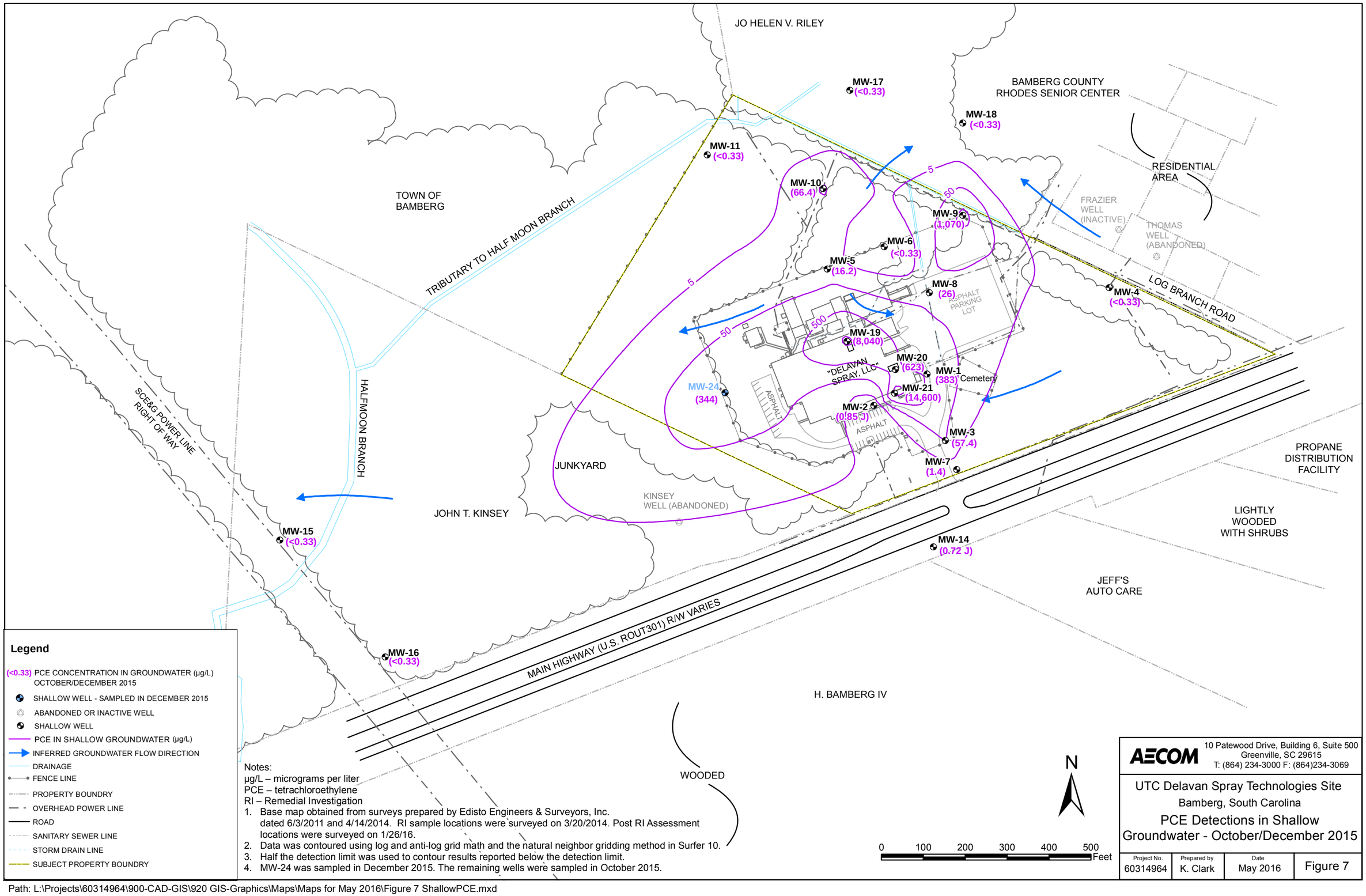
Sample Results for TOD in Background Soil

Project No.	Prepared by	Date	
60314964	K. Clark	May 2016	Figure 6

Path: L:\Projects\60314964\900-CAD-GIS\920 GIS-Graphics\Maps\Maps for May 2016\Figure 6 Sample Result for TOD in Background.mxd



Legend

- (<0.33) PCE CONCENTRATION IN GROUNDWATER (µg/L) OCTOBER/DECEMBER 2015
- SHALLOW WELL - SAMPLED IN DECEMBER 2015
- ABANDONED OR INACTIVE WELL
- SHALLOW WELL
- PCE IN SHALLOW GROUNDWATER (µg/L)
- INFERRED GROUNDWATER FLOW DIRECTION
- DRAINAGE
- FENCE LINE
- PROPERTY BOUNDRY
- OVERHEAD POWER LINE
- ROAD
- SANITARY SEWER LINE
- STORM DRAIN LINE
- SUBJECT PROPERTY BOUNDRY

Notes:
µg/L – micrograms per liter
PCE – tetrachloroethylene
RI – Remedial Investigation

1. Base map obtained from surveys prepared by Edisto Engineers & Surveyors, Inc. dated 6/3/2011 and 4/14/2014. RI sample locations were surveyed on 3/20/2014. Post RI Assessment locations were surveyed on 1/26/16.
2. Data was contoured using log and anti-log grid math and the natural neighbor gridding method in Surfer 10.
3. Half the detection limit was used to contour results reported below the detection limit.
4. MW-24 was sampled in December 2015. The remaining wells were sampled in October 2015.

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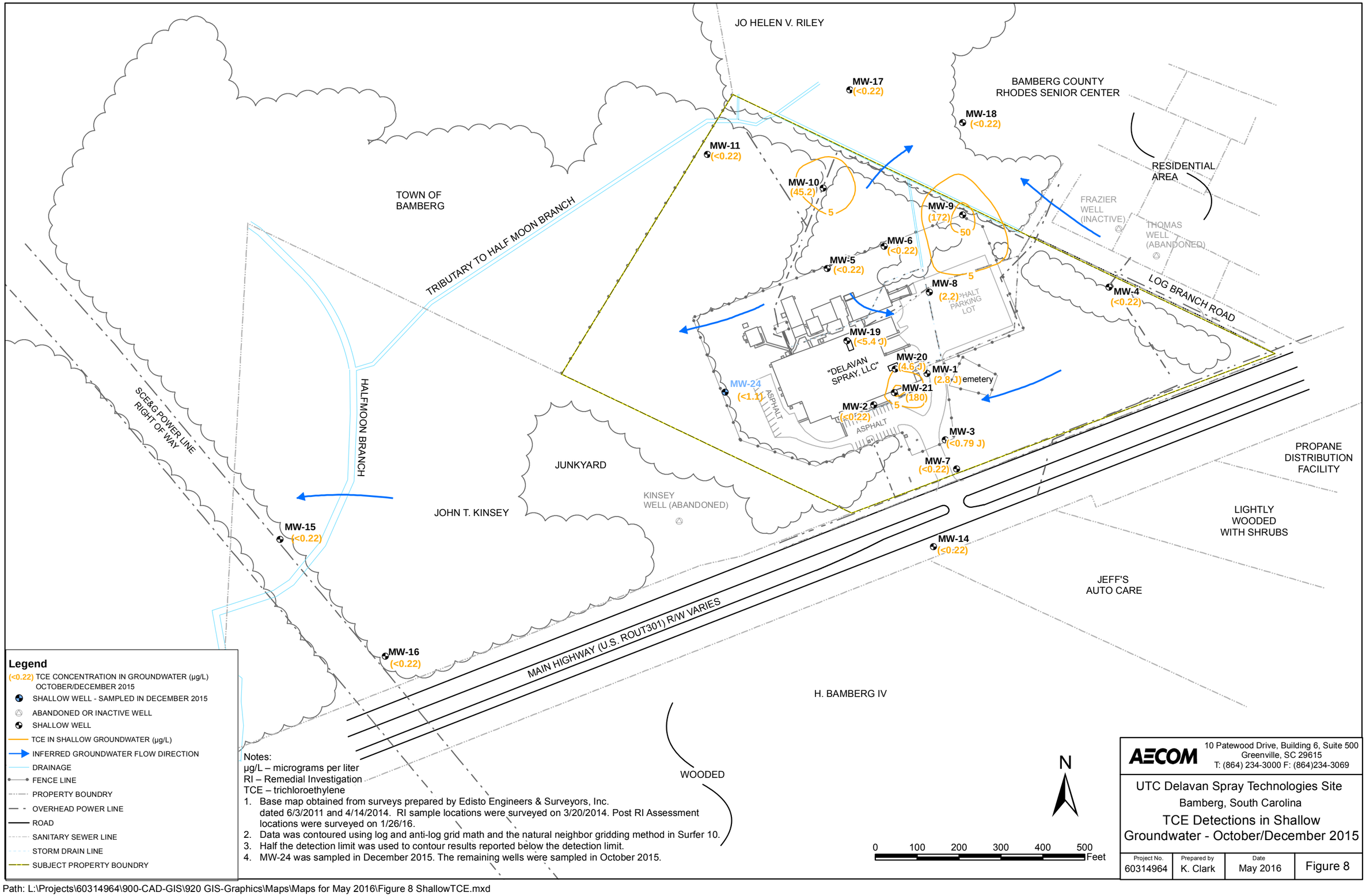
PCE Detections in Shallow Groundwater - October/December 2015

Project No.	Prepared by	Date	
60314964	K. Clark	May 2016	Figure 7

Path: L:\Projects\60314964\900-CAD-GIS\920 GIS-Graphics\Maps\Maps for May 2016\Figure 7 ShallowPCE.mxd



Legend

(<0.22) TCE CONCENTRATION IN GROUNDWATER (µg/L) OCTOBER/DECEMBER 2015
SHALLOW WELL - SAMPLED IN DECEMBER 2015
ABANDONED OR INACTIVE WELL
SHALLOW WELL
TCE IN SHALLOW GROUNDWATER (µg/L)
INFERRED GROUNDWATER FLOW DIRECTION
DRAINAGE
FENCE LINE
PROPERTY BOUNDRY
OVERHEAD POWER LINE
ROAD
SANITARY SEWER LINE
STORM DRAIN LINE
SUBJECT PROPERTY BOUNDRY

Notes:
µg/L – micrograms per liter
RI – Remedial Investigation
TCE – trichloroethylene

1. Base map obtained from surveys prepared by Edisto Engineers & Surveyors, Inc. dated 6/3/2011 and 4/14/2014. RI sample locations were surveyed on 3/20/2014. Post RI Assessment locations were surveyed on 1/26/16.
2. Data was contoured using log and anti-log grid math and the natural neighbor gridding method in Surfer 10.
3. Half the detection limit was used to contour results reported below the detection limit.
4. MW-24 was sampled in December 2015. The remaining wells were sampled in October 2015.

N

0 100 200 300 400 500 Feet

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TCE Detections in Shallow Groundwater - October/December 2015

Project No.	Prepared by	Date	
60314964	K. Clark	May 2016	Figure 8

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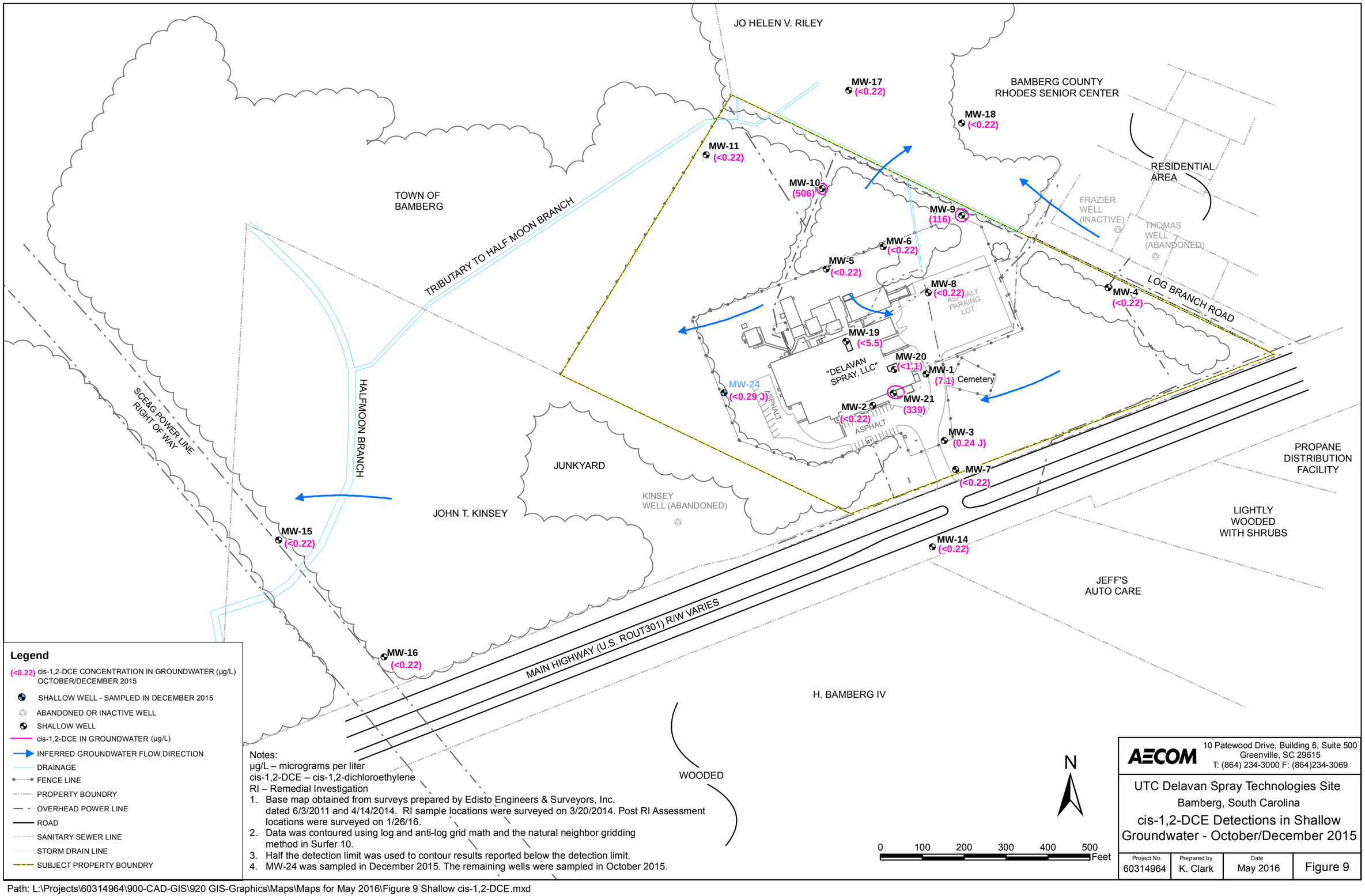

Legend

- (<0.22) cis-1,2-DCE CONCENTRATION IN GROUNDWATER (µg/L) OCTOBER/DECEMBER 2015
- SHALLOW WELL - SAMPLED IN DECEMBER 2015
- ABANDONED OR INACTIVE WELL
- SHALLOW WELL
- cis-1,2-DCE IN GROUNDWATER (µg/L)
- INFERRED GROUNDWATER FLOW DIRECTION
- DRAINAGE
- FENCE LINE
- PROPERTY BOUNDRY
- OVERHEAD POWER LINE
- ROAD
- SANITARY SEWER LINE
- STORM DRAIN LINE
- SUBJECT PROPERTY BOUNDRY

Notes:
µg/L – micrograms per liter
cis-1,2-DCE – cis-1,2-dichloroethylene
RI – Remedial Investigation

1. Base map obtained from surveys prepared by Edisto Engineers & Surveyors, Inc. dated 6/3/2011 and 4/14/2014. RI sample locations were surveyed on 3/20/2014. Post RI Assessment locations were surveyed on 1/26/16.
2. Data was contoured using log and anti-log grid math and the natural neighbor gridding method in Surfer 10.
3. Half the detection limit was used to contour results reported below the detection limit.
4. MW-24 was sampled in December 2015. The remaining wells were sampled in October 2015.

N

0 100 200 300 400 500 Feet

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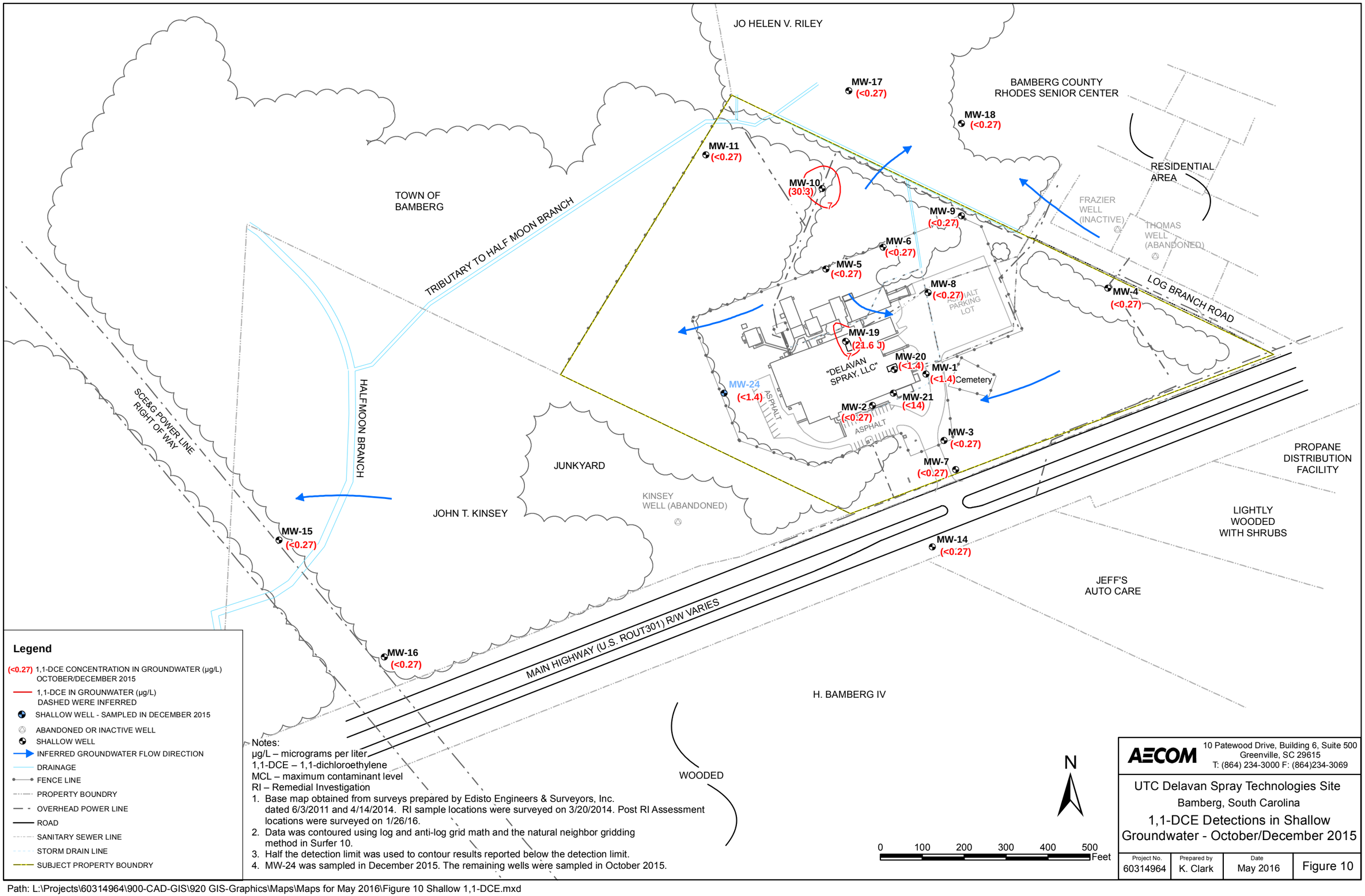
cis-1,2-DCE Detections in Shallow Groundwater - October/December 2015

Project No.	Prepared by	Date	
60314964	K. Clark	May 2016	Figure 9

Path: L:\Projects\60314964\900-CAD-GIS\920 GIS-Graphics\Maps\Maps for May 2016\Figure 9 Shallow cis-1,2-DCE.mxd



Legend

- (<0.27) 1,1-DCE CONCENTRATION IN GROUNDWATER (µg/L) OCTOBER/DECEMBER 2015
- 1,1-DCE IN GROUNWATER (µg/L) DASHED WERE INFERRED
- SHALLOW WELL - SAMPLED IN DECEMBER 2015
- ABANDONED OR INACTIVE WELL
- SHALLOW WELL
- INFERRED GROUNDWATER FLOW DIRECTION
- DRAINAGE
- FENCE LINE
- PROPERTY BOUNDRY
- OVERHEAD POWER LINE
- ROAD
- SANITARY SEWER LINE
- STORM DRAIN LINE
- SUBJECT PROPERTY BOUNDRY

Notes:
µg/L – micrograms per liter
1,1-DCE – 1,1-dichloroethylene
MCL – maximum contaminant level
RI – Remedial Investigation

1. Base map obtained from surveys prepared by Edisto Engineers & Surveyors, Inc. dated 6/3/2011 and 4/14/2014. RI sample locations were surveyed on 3/20/2014. Post RI Assessment locations were surveyed on 1/26/16.
2. Data was contoured using log and anti-log grid math and the natural neighbor gridding method in Surfer 10.
3. Half the detection limit was used to contour results reported below the detection limit.
4. MW-24 was sampled in December 2015. The remaining wells were sampled in October 2015.

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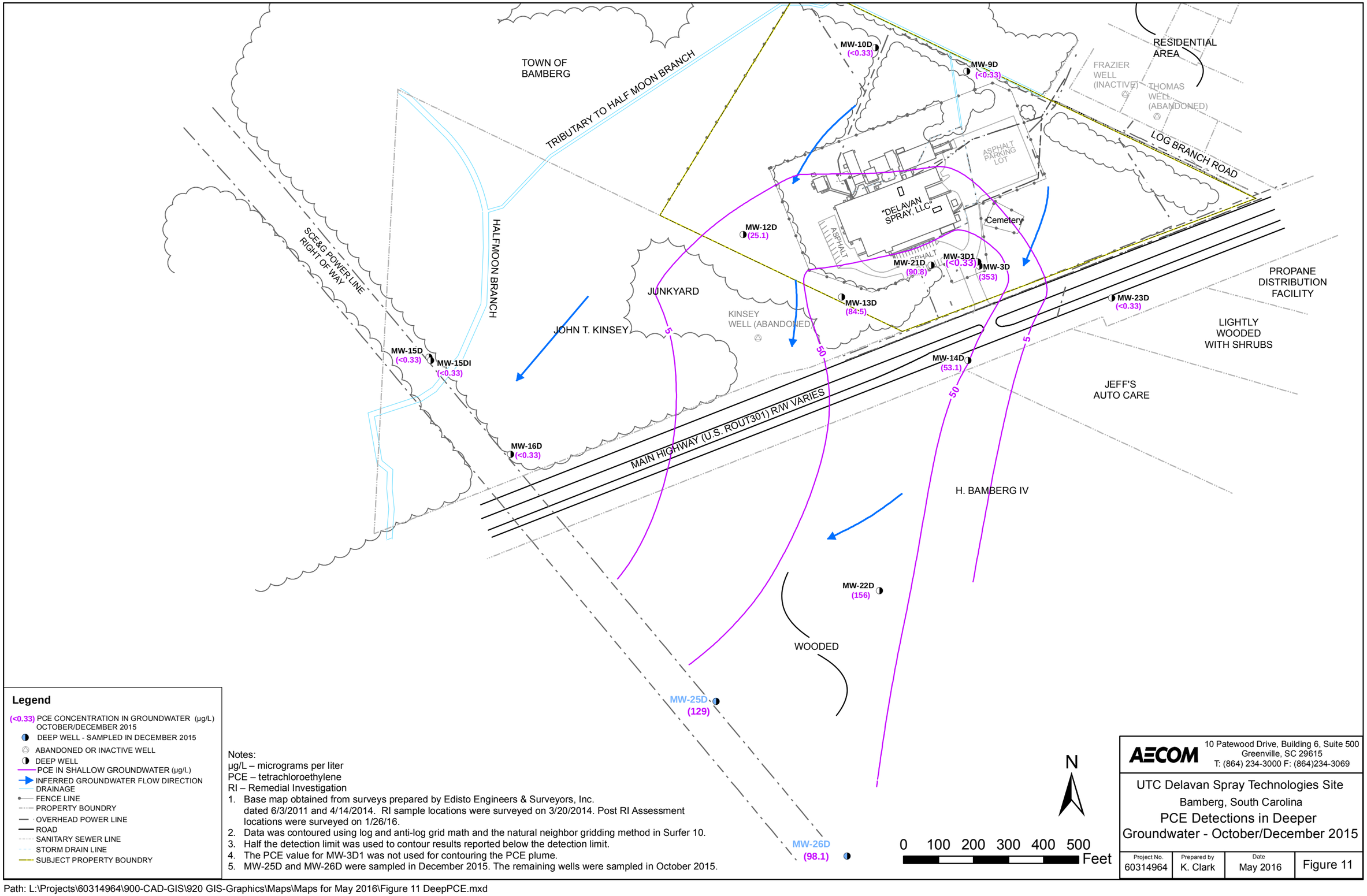
1,1-DCE Detections in Shallow Groundwater - October/December 2015

Project No.	Prepared by	Date	
60314964	K. Clark	May 2016	Figure 10

Path: L:\Projects\60314964\900-CAD-GIS\920 GIS-Graphics\Maps\Maps for May 2016\Figure 10 Shallow 1,1-DCE.mxd



Legend

- (<0.33) PCE CONCENTRATION IN GROUNDWATER (µg/L) OCTOBER/DECEMBER 2015
- DEEP WELL - SAMPLED IN DECEMBER 2015
- ABANDONED OR INACTIVE WELL
- DEEP WELL
- PCE IN SHALLOW GROUNDWATER (µg/L)
- INFERRED GROUNDWATER FLOW DIRECTION
- DRAINAGE
- FENCE LINE
- PROPERTY BOUNDRY
- OVERHEAD POWER LINE
- ROAD
- SANITARY SEWER LINE
- STORM DRAIN LINE
- SUBJECT PROPERTY BOUNDRY

Notes:
µg/L – micrograms per liter
PCE – tetrachloroethylene
RI – Remedial Investigation

1. Base map obtained from surveys prepared by Edisto Engineers & Surveyors, Inc. dated 6/3/2011 and 4/14/2014. RI sample locations were surveyed on 3/20/2014. Post RI Assessment locations were surveyed on 1/26/16.
2. Data was contoured using log and anti-log grid math and the natural neighbor gridding method in Surfer 10.
3. Half the detection limit was used to contour results reported below the detection limit.
4. The PCE value for MW-3D1 was not used for contouring the PCE plume.
5. MW-25D and MW-26D were sampled in December 2015. The remaining wells were sampled in October 2015.

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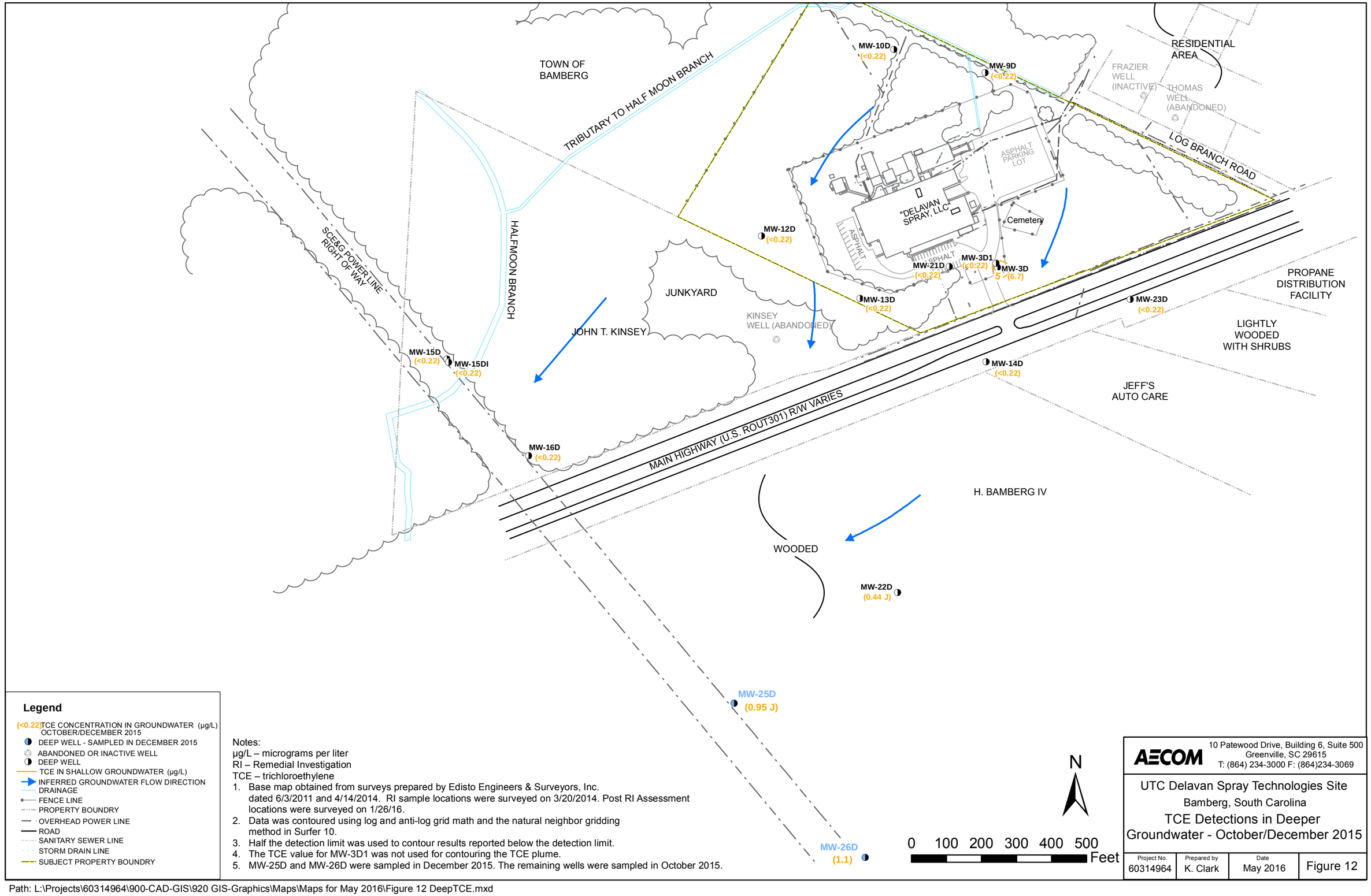
UTC Delavan Spray Technologies Site
Bamberg, South Carolina
PCE Detections in Deeper Groundwater - October/December 2015

Project No.	Prepared by	Date	
60314964	K. Clark	May 2016	Figure 11

Path: L:\Projects\60314964\900-CAD-GIS\920 GIS-Graphics\Maps\Maps for May 2016\Figure 11 DeepPCE.mxd



Legend

- (<0.22) TCE CONCENTRATION IN GROUNDWATER (µg/L) OCTOBER/DECEMBER 2015
- DEEP WELL - SAMPLED IN DECEMBER 2015
- ABANDONED OR INACTIVE WELL
- DEEP WELL
- TCE IN SHALLOW GROUNDWATER (µg/L)
- INFERRED GROUNDWATER FLOW DIRECTION
- DRAINAGE
- FENCE LINE
- PROPERTY BOUNDRY
- OVERHEAD POWER LINE
- ROAD
- SANITARY SEWER LINE
- STORM DRAIN LINE
- SUBJECT PROPERTY BOUNDRY

Notes:
µg/L – micrograms per liter
RI – Remedial Investigation
TCE – trichloroethylene

1. Base map obtained from surveys prepared by Edisto Engineers & Surveyors, Inc. dated 6/3/2011 and 4/14/2014. RI sample locations were surveyed on 3/20/2014. Post RI Assessment locations were surveyed on 1/26/16.
2. Data was contoured using log and anti-log grid math and the natural neighbor gridding method in Surfer 10.
3. Half the detection limit was used to contour results reported below the detection limit.
4. The TCE value for MW-3D1 was not used for contouring the TCE plume.
5. MW-25D and MW-26D were sampled in December 2015. The remaining wells were sampled in October 2015.

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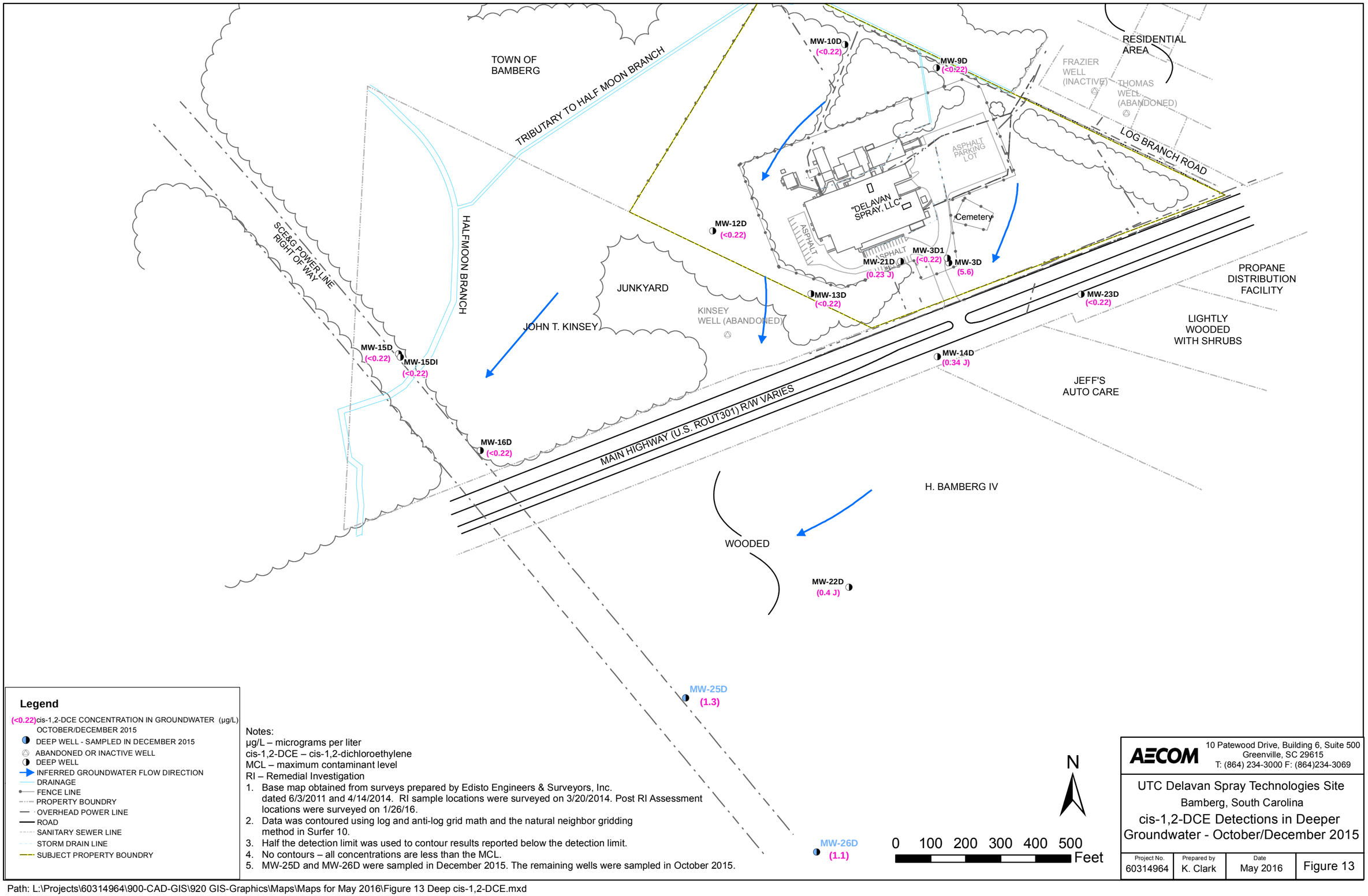
UTC Delavan Spray Technologies Site
Bamberg, South Carolina
TCE Detections in Deeper Groundwater - October/December 2015

Project No.	Prepared by	Date	
60314964	K. Clark	May 2016	Figure 12

Path: L:\Projects\60314964\900-CAD-GIS\920 GIS-Graphics\Maps\Maps for May 2016\Figure 12 DeepTCE.mxd



Legend

- (<0.22) cis-1,2-DCE CONCENTRATION IN GROUNDWATER (µg/L) OCTOBER/DECEMBER 2015
- DEEP WELL - SAMPLED IN DECEMBER 2015
- ABANDONED OR INACTIVE WELL
- DEEP WELL
- INFERRED GROUNDWATER FLOW DIRECTION
- DRAINAGE
- FENCE LINE
- PROPERTY BOUNDRY
- OVERHEAD POWER LINE
- ROAD
- SANITARY SEWER LINE
- STORM DRAIN LINE
- SUBJECT PROPERTY BOUNDRY

Notes:
µg/L – micrograms per liter
cis-1,2-DCE – cis-1,2-dichloroethylene
MCL – maximum contaminant level
RI – Remedial Investigation

1. Base map obtained from surveys prepared by Edisto Engineers & Surveyors, Inc. dated 6/3/2011 and 4/14/2014. RI sample locations were surveyed on 3/20/2014. Post RI Assessment locations were surveyed on 1/26/16.
2. Data was contoured using log and anti-log grid math and the natural neighbor gridding method in Surfer 10.
3. Half the detection limit was used to contour results reported below the detection limit.
4. No contours – all concentrations are less than the MCL.
5. MW-25D and MW-26D were sampled in December 2015. The remaining wells were sampled in October 2015.

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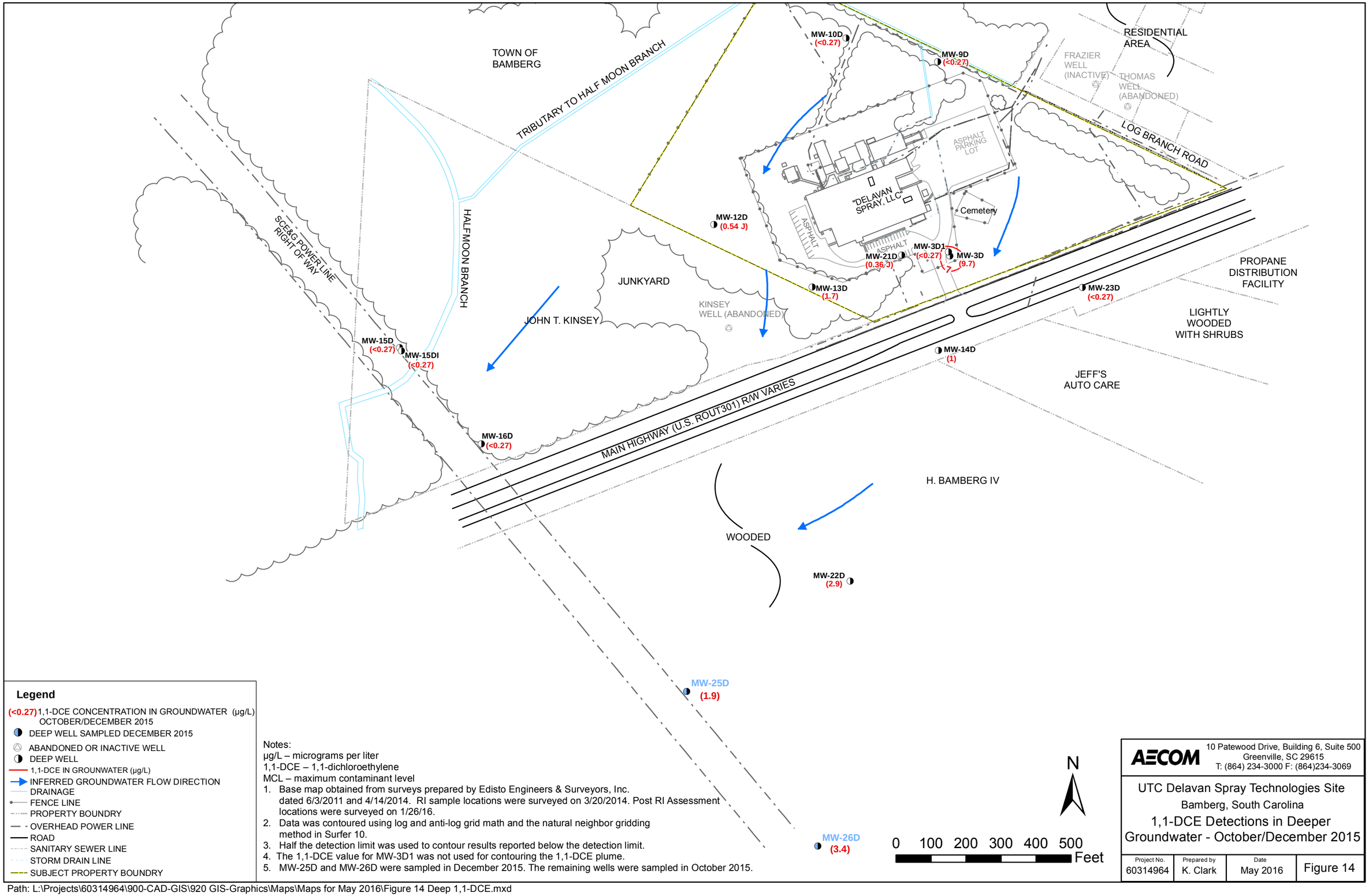
UTC Delavan Spray Technologies Site
Bamberg, South Carolina
cis-1,2-DCE Detections in Deeper Groundwater - October/December 2015

Project No.	Prepared by	Date	
60314964	K. Clark	May 2016	Figure 13

Path: L:\Projects\60314964\900-CAD-GIS\920 GIS-Graphics\Maps\Maps for May 2016\Figure 13 Deep cis-1,2-DCE.mxd



Legend

- (<0.27) 1,1-DCE CONCENTRATION IN GROUNDWATER (µg/L) OCTOBER/DECEMBER 2015
- DEEP WELL SAMPLED DECEMBER 2015
- ABANDONED OR INACTIVE WELL
- DEEP WELL
- 1,1-DCE IN GROUNWATER (µg/L)
- INFERRED GROUNDWATER FLOW DIRECTION
- DRAINAGE
- FENCE LINE
- PROPERTY BOUNDRY
- OVERHEAD POWER LINE
- ROAD
- SANITARY SEWER LINE
- STORM DRAIN LINE
- SUBJECT PROPERTY BOUNDRY

Notes:
µg/L – micrograms per liter
1,1-DCE – 1,1-dichloroethylene
MCL – maximum contaminant level

1. Base map obtained from surveys prepared by Edisto Engineers & Surveyors, Inc. dated 6/3/2011 and 4/14/2014. RI sample locations were surveyed on 3/20/2014. Post RI Assessment locations were surveyed on 1/26/16.
2. Data was contoured using log and anti-log grid math and the natural neighbor gridding method in Surfer 10.
3. Half the detection limit was used to contour results reported below the detection limit.
4. The 1,1-DCE value for MW-3D1 was not used for contouring the 1,1-DCE plume.
5. MW-25D and MW-26D were sampled in December 2015. The remaining wells were sampled in October 2015.

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UTC Delavan Spray Technologies Site
Bamberg, South Carolina
1,1-DCE Detections in Deeper Groundwater - October/December 2015

Project No.	Prepared by	Date	
60314964	K. Clark	May 2016	Figure 14

Path: L:\Projects\60314964\900-CAD-GIS\920 GIS-Graphics\Maps\Maps for May 2016\Figure 14 Deep 1,1-DCE.mxd

TABLES

Table 1
Summary of New Monitoring Well Construction Details
UTC Delavan Spray Technologies Site
Bamberg, South Carolina
AECOM Project No. 60314964

Well Number	Northing[1]	Easting[1]	Date Installed	Installed By	Ground Surface Elevation[2] (ft MSL)	Top of Casing Elevation[2] (ft MSL)	Stick-up Height (ft)	Well Diameter (Inches)	Casing Type	Total Depth (ft bgs)	Classification	Surface Casing Depth (ft bgs)	Screen Interval (ft bgs)
MW-24	527332.95	1985487.59	12/3/2015	AECOM	148.52	147.85	-0.67	2	PVC	21	Shallow	NA	6-21
MW-25D	525988.09	1985257.31	12/2/2015	AECOM	139.30	139.21	-0.09	2	PVC	62	Deep	NA[3]	52-62
MW-26D	525547.18	1985631.39	12/1/2015	AECOM	143.83	143.64	-0.19	2	PVC	48	Deep	NA[3]	38-48
DPT-58	527478.86	1985775.68	12/1/2015	AECOM	148.31	148.02	-0.29	1	PVC	16	Shallow	NA	5-15
DPT-59	527457.60	1985752.80	12/2/2015	AECOM	148.53	148.24	-0.29	1	PVC	15	Shallow	NA	5-15
DPT-60	527453.36	1985770.99	12/2/2015	AECOM	148.53	148.31	-0.22	1	PVC	15	Shallow	NA	5-15
DPT-61	527446.95	1985784.57	12/2/2015	AECOM	148.44	147.99	-0.45	1	PVC	15	Shallow	NA	5-15

Notes:

bgs - below ground surface

ft - feet

ft MSL - feet above mean sea level

NA - not applicable

[1] - Horizontal coordinates are referenced to the State Plane Coordinate System and the North American Datum of 1983 (NAD 83).

[2] - Vertical locations are referenced to the North American Vertical Datum of 1988 (NAVD 88).

[3] - The outer geoprobe casing was used as a temporary surface casing during advancement of the borehole and well installation.

Table 2
Summary of Slug Test Results
Delavan Spray Technologies Site
Bamberg, South Carolina
AECOM Project No. 60314964

Well ID	Test Name	K (ft/day)	Use Result?	Comments
MW-1	mw1-out1	0.259	Yes	
MW-1	mw1-out2	0.175	Yes	
MW-5	mw5-out1	0.436	Yes	
MW-5	mw5-out2	0.414	Yes	
MW-21	mw21-in1	2.93	No	uncertain of test quality -waves in early data
MW-21	mw21-in2	0.667	Yes	
MW-21	mw21-out1	0.469	Yes	
MW-21	mw21-out2	0.254	Yes	
	Minimum	**0.175**		
	Maximum	**0.667**		
	Shallow Well Geometric Mean	**0.350**		
	MW-1 Geometric Mean	**0.213**		
	MW-5 Geometric Mean	**0.425**		
	MW-21 Geometric Mean	**0.430**		

Well ID	Test Name	K (ft/day)	Use Result?	Comments
MW-21D	mw21d-in1	72.5	Yes	rapid response - not many points to fit
MW-21D	mw21d-in2	67.2	Yes	waves in early data and response very fast and possibly missed most of it - not many points to fit
MW-21D	mw21d-in3	74.0	Yes	waves in early data and response very fast and missed most of it - not many points to fit
MW-21D	mw21d-out1	97.2	Yes	response is very rapid and test missed the peak - not many points to fit
MW-21D	mw21d-out2	121	Yes	response is very rapid - not many points to fit
MW-21D	mw21d-out3	495	No	Do not use result - waves in data throughout test
MW-22D	mm22d-out3	21.2	Yes	Rapid response - some waves in early data
MW-22D	mw22d-in1	23.0	Yes	Rapid response - some waves in early data
MW-22D	mw22d-in2	24.6	Yes	Rapid response - some waves in early data
MW-22D	mw22d-in3	38.6	Yes	Rapid response
MW-22D	mw22d-out1	38.3	Yes	Rapid response
MW-22D	mw22d-out2	39.9	Yes	Rapid response
	Minimum	**21.2**		
	Maximum	**121**		
	Deeper Wells Geometric Mean	**47.8**		
	MW-21D Geometric Mean	**84.2**		
	MW-22D Geometric Mean	**29.8**		

Table 3
Analytical Results for Soil Samples - VOCs
UTC Delavan Spray Technologies Site
Bamberg, South Carolina
AECOM Project No. 60314964

Sample ID		DPT-58-5.5	DPT-58-11	DPT-59-3	DPT-59-10
Laboratory ID	MCL-Based	FA29626-2	FA29626-3	FA29657-2	FA29657-3
Date Collected	SSL	12/01/15	12/01/15	12/02/15	12/02/15
Volatile Organic Compounds by USEPA Method 8260B (mg/kg)					
1,1,1-Trichloroethane	0.07	< 0.00092	< 0.00092	< 0.0011	< 0.0013
1,1,2,2-Tetrachloroethane	—	< 0.00078	< 0.00078	< 0.00092	< 0.0011
1,1,2-Trichloroethane	0.0016	< 0.00088	< 0.00089	< 0.001	< 0.0012
1,1-Dichloroethane	—	< 0.0007	< 0.0007	< 0.00083	< 0.00095
1,1-Dichloroethylene	0.0025	< 0.00093	< 0.00093	< 0.0011	< 0.0013
1,2-Dichloroethane	0.0014	< 0.0007	< 0.0007	< 0.00083	< 0.00095
1,2-Dichloropropane	0.0017	< 0.0007	< 0.0007	< 0.00083	< 0.00095
2-Butanone (MEK)	—	< 0.006	< 0.006	< 0.007	< 0.0081
2-Hexanone	—	< 0.0057	< 0.0057	< 0.0067	< 0.0078
4-Methyl-2-pentanone	—	< 0.0038	< 0.0038	< 0.0044	< 0.0051
Acetone	—	**0.0931**	< 0.011	**0.019** ***J//***	< 0.014
Benzene	0.0026	< 0.0007	< 0.0007	< 0.00083	< 0.00095
Bromodichloromethane	0.022	< 0.0007	< 0.0007	< 0.00083	< 0.00095
Bromoform	0.021	< 0.0007	< 0.0007	< 0.00083	< 0.00095
Carbon disulfide	—	< 0.001	< 0.001	< 0.0012	< 0.0014
Carbon tetrachloride	0.0019	< 0.0007	< 0.0007	< 0.00083	< 0.00095
Chlorobenzene	0.068	< 0.0007	< 0.0007	< 0.00083	< 0.00095
Chloroethane	—	< 0.0014	< 0.0014	< 0.0017	< 0.0019
Chloroform	0.022	< 0.0007	< 0.0007	< 0.00083	< 0.00095
cis-1,2-Dichloroethylene	0.021	**0.0054**	**0.00077** ***J//***	< 0.00083	< 0.00095
cis-1,3-Dichloropropene	—	< 0.0007	< 0.0007	< 0.00083	< 0.00095
Dibromochloromethane	0.021	< 0.0007	< 0.0007	< 0.00083	< 0.00095
Ethylbenzene	0.78	< 0.0007	< 0.0007	< 0.00083	< 0.00095
Methyl bromide	—	< 0.0015	< 0.0015	< 0.0018	< 0.0021
Methyl chloride	—	< 0.0014	< 0.0014	< 0.0017	< 0.0019
Methylene chloride	0.0013	< 0.0028	< 0.0028	< 0.0033	< 0.0038
Styrene	0.11	< 0.0007	< 0.0007	< 0.00083	< 0.00095
Tetrachloroethylene	0.0023	***0.0071***	**0.0012** ***J//***	***0.0213***	***0.0024*** ***J//***
Toluene	0.69	< 0.0007	< 0.0007	< 0.00083	< 0.00095
trans-1,2-Dichloroethylene	0.031	< 0.0007	< 0.0007	< 0.00083	< 0.00095
trans-1,3-Dichloropropene	—	< 0.0007	< 0.0007	< 0.00083	< 0.00095
Trichloroethylene	0.0018	< 0.0007	< 0.0007	< 0.00083	< 0.00095
Vinyl chloride	0.00069	< 0.0011	< 0.0011	< 0.0013	< 0.0015
Xylene (total)	9.8	< 0.0015	< 0.0015	< 0.0017	< 0.002

Table 3
Analytical Results for Soil Samples - VOCs
UTC Delavan Spray Technologies Site
Bamberg, South Carolina
AECOM Project No. 60314964

Sample ID		DPT-60-1	DPT-60-8	DPT-61-6	DPT-61-8
Laboratory ID	MCL-Based	FA29657-4	FA29657-6	FA29657-7	FA29657-8
Date Collected	SSL	12/02/15	12/02/15	12/02/15	12/02/15
Volatile Organic Compounds by USEPA Method 8260B (mg/kg)					
1,1,1-Trichloroethane	0.07	< 0.00097	< 0.0011	**0.0014 J//**	**0.0025 J//**
1,1,2,2-Tetrachloroethane	—	< 0.00082	< 0.0009	< 0.00099	< 0.001
1,1,2-Trichloroethane	0.0016	< 0.00093	< 0.001	< 0.0011	***0.0017 J//***
1,1-Dichloroethane	—	< 0.00074	< 0.00081	< 0.00089	< 0.00092
1,1-Dichloroethylene	0.0025	< 0.00098	< 0.0011	< 0.0012	< 0.0012
1,2-Dichloroethane	0.0014	< 0.00074	< 0.00081	< 0.00089	< 0.00092
1,2-Dichloropropane	0.0017	< 0.00074	< 0.00081	< 0.00089	< 0.00092
2-Butanone (MEK)	—	< 0.0063	< 0.0069	< 0.0076	< 0.0078
2-Hexanone	—	< 0.006	< 0.0066	< 0.0073	< 0.0075
4-Methyl-2-pentanone	—	< 0.004	< 0.0043	< 0.0048	< 0.0049
Acetone	—	< 0.011	< 0.012	< 0.013	< 0.014
Benzene	0.0026	< 0.00074	< 0.00081	< 0.00089	< 0.00092
Bromodichloromethane	0.022	< 0.00074	< 0.00081	< 0.00089	< 0.00092
Bromoform	0.021	< 0.00074	< 0.00081	< 0.00089	< 0.00092
Carbon disulfide	—	< 0.0011	< 0.0012	< 0.0013	< 0.0014
Carbon tetrachloride	0.0019	< 0.00074	< 0.00081	< 0.00089	< 0.00092
Chlorobenzene	0.068	< 0.00074	< 0.00081	< 0.00089	< 0.00092
Chloroethane	—	< 0.0015	< 0.0016	< 0.0018	< 0.0018
Chloroform	0.022	< 0.00074	< 0.00081	< 0.00089	< 0.00092
cis-1,2-Dichloroethylene	0.021	< 0.00074	**0.001 J//**	< 0.00089	**0.0014 J//**
cis-1,3-Dichloropropene	—	< 0.00074	< 0.00081	< 0.00089	< 0.00092
Dibromochloromethane	0.021	< 0.00074	< 0.00081	< 0.00089	< 0.00092
Ethylbenzene	0.78	< 0.00074	< 0.00081	< 0.00089	< 0.00092
Methyl bromide	—	< 0.0016	< 0.0018	< 0.0019	< 0.002
Methyl chloride	—	< 0.0015	< 0.0016	< 0.0018	< 0.0018
Methylene chloride	0.0013	< 0.003	< 0.0032	< 0.0036	< 0.0037
Styrene	0.11	< 0.00074	< 0.00081	< 0.00089	< 0.00092
Tetrachloroethylene	0.0023	***0.0759***	***0.0709***	***0.343***	***0.178 J//***
Toluene	0.69	< 0.00074	< 0.00081	< 0.00089	< 0.00092
trans-1,2-Dichloroethylene	0.031	< 0.00074	< 0.00081	< 0.00089	< 0.00092
trans-1,3-Dichloropropene	—	< 0.00074	< 0.00081	< 0.00089	< 0.00092
Trichloroethylene	0.0018	< 0.00074	< 0.00081	< 0.00089	**0.001 J//**
Vinyl chloride	0.00069	< 0.0012	< 0.0013	< 0.0014	< 0.0015
Xylene (total)	9.8	< 0.0015	< 0.0017	< 0.0019	< 0.0019

Notes:

mg/kg - milligrams per kilogram (parts per million)

MCL-Based SSL is the maximum contaminant level (MCL)-based Soil Screening Level (SSL) from the USEPA RSL Table (November 2015). SSL values are based on a dilution attenuation factor of 1.

Bold font and shading indicate the concentration is detected.

Italics indicates the concentration exceeds the MCL-Based SSL.

— - Indicates No Standard (for screening criteria) or Not Analyzed (for analytical data).

See Table 9 for explanation of data qualifiers.

Table 4
Analytical Results for Soil Samples - TOD
UTC Delavan Spray Technologies Site
Bamberg, South Carolina
AECOM Project No. 60314964

Sample Used	BG-6-6	BG-6-10	BG-7-6	BG-7-10	none
Lab Package ID	SC15664-05	SC15664-06	SC15664-07	SC15664-08	SC15664-09
Sample Sample ID	4-01 A.3	4-02 A.3	4-03 A.3	4-04 A.3	Control A.3
Additive	28.9 g/L of 30% peroxide and 2 g/kg of ferrous sulfate				
Hydrogen Peroxide (g/L)	2.65	2.20	0.424	1.82	0.055
TOD Peroxide (g/kg)	131	134	142	135	144

Sample Used	BG-6-6	BG-6-6	BG-6-10	BG-6-10	BG-7-6	BG-7-6	BG-7-10	BG-7-10	none
Lab Package ID	SC15664-10	SC15664-11	SC15664-12	SC15664-13	SC15664-14	SC15664-15	SC15664-16	SC15664-17	SC15664-18
Sample Sample ID	4-01 A.1	4-01 A.2	4-02 A.1	4-02 A.2	4-03 A.1	4-03 A.2	4-04 A.1	4-04 A.2	Control A.2
Persulfate Added	10 g/L	20 g/L	10 g/L	20 g/L	10 g/L	20 g/L	10 g/L	20 g/L	20 g/L
Persulfate (g/L)	7.90	17.3	7.77	17.9	7.77	18.2	7.90	18.3	18.4
TOD Persulfate (g/kg)	11	14	11	11	11	9.0	11	8.5	8.0

Sample Used	BG-6-6	BG-6-6	BG-6-10	BG-6-10	BG-7-6	BG-7-6	BG-7-10	BG-7-10	none
Lab Package ID	SC15664-19	SC15664-20	SC15664-21	SC15664-22	SC15664-23	SC15664-24	SC15664-25	SC15664-26	SC15664-27
Sample Sample ID	4-01 B.1	4-01 B.2	4-02 B.1	4-02 B.2	4-03 B.1	4-03 B.2	4-04 B.1	4-04 B.2	Control B.2
Permanganate Added	20 g/L	30 g/L	20 g/L	30 g/L	20 g/L	30 g/L	20 g/L	30 g/L	30 g/L
Permanganate (g/L)	12.5	18.4	13.6	19.1	14.3	20.6	15.1	21.4	30.8
TOD Permanganate (g/kg)	38	58	32	55	29	47	25	43	0

Notes:
g/L - grams per Liter
g/kg - grams per kilogram
TOD - total oxidant demand

Table 5
Analytical Results for Soil Samples - QA/QC
UTC Delavan Spray Technologies Site
Bamberg, South Carolina
AECOM Project No. 60314964

Sample ID		DPT-60-8-D
Laboratory ID		FA29657-5
Date Collected		12/02/15
Volatile Organic Compounds by USEPA Method 8260B (µg/L)		
1,1,1-Trichloroethane	<	0.26
1,1,2,2-Tetrachloroethane	<	0.22
1,1,2-Trichloroethane	<	0.31
1,1-Dichloroethane	<	0.2
1,1-Dichloroethylene	<	0.27
1,2-Dichloroethane	<	0.2
1,2-Dichloropropane	<	0.25
2-Butanone (MEK)	<	1.2
2-Hexanone	<	2
4-Methyl-2-pentanone (MIBK)	<	1
Acetone	<	10
Benzene	<	0.2
Bromodichloromethane	<	0.22
Bromoform	<	0.32
Carbon Disulfide	<	0.29
Carbon Tetrachloride	<	0.28
Chlorobenzene	<	0.2
Chloroethane	<	0.5
Chloroform	<	0.3
cis-1,2-Dichloroethylene	<	0.22
cis-1,3-Dichloropropene	<	0.25
Dibromochloromethane	<	0.2
Ethylbenzene	<	0.2
Methyl Bromide	<	0.5
Methyl Chloride	<	0.5
Methylene Chloride	<	2
Styrene	<	0.28
Tetrachloroethylene	<	0.33
Toluene	<	0.4
trans-1,2-Dichloroethylene	<	0.21
trans-1,3-Dichloropropene	<	0.26
Trichloroethylene	<	0.22
Vinyl Chloride	<	0.25
Xylene (total)	<	0.51

Notes:
-D - Indicates a rinsate sample.
µg/L - micrograms per liter (parts per billion)

Table 5
Analytical Results for Soil Samples - QA/QC
UTC Delavan Spray Technologies Site
Bamberg, South Carolina
AECOM Project No. 60314964

Sample ID	DPT-58-5.5-C	DPT-59-3-C
Laboratory ID	FA29626-1	FA29657-1
Date Collected	12/01/15	12/02/15
Volatile Organic Compounds by USEPA Method 8260B (mg/kg)		
1,1,1-Trichloroethane	< 0.0013	< 0.0013
1,1,2,2-Tetrachloroethane	< 0.0011	< 0.0011
1,1,2-Trichloroethane	< 0.0013	< 0.0013
1,1-Dichloroethane	< 0.001	< 0.001
1,1-Dichloroethylene	< 0.0013	< 0.0013
1,2-Dichloroethane	< 0.001	< 0.001
1,2-Dichloropropane	< 0.001	< 0.001
2-Butanone (MEK)	< 0.0085	< 0.0085
2-Hexanone	< 0.0082	< 0.0082
4-Methyl-2-pentanone (MIBK)	< 0.0054	< 0.0054
Acetone	< 0.015	< 0.015
Benzene	< 0.001	< 0.001
Bromodichloromethane	< 0.001	< 0.001
Bromoform	< 0.001	< 0.001
Carbon Disulfide	< 0.0015	< 0.0015
Carbon Tetrachloride	< 0.001	< 0.001
Chlorobenzene	< 0.001	< 0.001
Chloroethane	< 0.002	< 0.002
Chloroform	< 0.001	< 0.001
cis-1,2-Dichloroethylene	< 0.001	< 0.001
cis-1,3-Dichloropropene	< 0.001	< 0.001
Dibromochloromethane	< 0.001	< 0.001
Ethylbenzene	< 0.001	< 0.001
Methyl Bromide	< 0.0022	< 0.0022
Methyl Chloride	< 0.002	< 0.002
Methylene Chloride	< 0.004	< 0.004
Styrene	< 0.001	< 0.001
Tetrachloroethylene	< 0.0016	< 0.0016
Toluene	< 0.001	< 0.001
trans-1,2-Dichloroethylene	< 0.001	< 0.001
trans-1,3-Dichloropropene	< 0.001	< 0.001
Trichloroethylene	< 0.001	< 0.001
Vinyl Chloride	< 0.0016	< 0.0016
Xylene (total)	< 0.0021	< 0.0021

Notes:
-C - Indicates a soil trip blank sample.
mg/kg - milligrams per kilogram (parts per million)

Table 5
Analytical Results for Soil Samples - QA/QC
UTC Delavan Spray Technologies Site
Bamberg, South Carolina
AECOM Project No. 60314964

Sample ID	DPT-61-8		DPT-61-8-A		Relative
Laboratory ID	FA29657-8		FA29657-9		Percent
Date Collected	12/02/15		12/02/15		Difference
Volatile Organic Compounds by USEPA Method 8260B (mg/kg)					
1,1,1-Trichloroethane	**0.0025**	**J//**	**0.0012**	**J//**	NC
1,1,2,2-Tetrachloroethane	< 0.001		< 0.00097		NC
1,1,2-Trichloroethane	**0.0017**	**J//**	**0.0014**	**J//**	NC
1,1-Dichloroethane	< 0.00092		< 0.00087		NC
1,1-Dichloroethylene	< 0.0012		< 0.0012		NC
1,2-Dichloroethane	< 0.00092		< 0.00087		NC
1,2-Dichloropropane	< 0.00092		< 0.00087		NC
2-Butanone (MEK)	< 0.0078		< 0.0074		NC
2-Hexanone	< 0.0075		< 0.0071		NC
4-Methyl-2-pentanone (MIBK)	< 0.0049		< 0.0047		NC
Acetone	< 0.014		< 0.013		NC
Benzene	< 0.00092		< 0.00087		NC
Bromodichloromethane	< 0.00092		< 0.00087		NC
Bromoform	< 0.00092		< 0.00087		NC
Carbon Disulfide	< 0.0014		< 0.0013		NC
Carbon Tetrachloride	< 0.00092		< 0.00087		NC
Chlorobenzene	< 0.00092		< 0.00087		NC
Chloroethane	< 0.0018		< 0.0017		NC
Chloroform	< 0.00092		< 0.00087		NC
cis-1,2-Dichloroethylene	**0.0014**	**J//**	**0.0012**	**J//**	NC
cis-1,3-Dichloropropene	< 0.00092		< 0.00087		NC
Dibromochloromethane	< 0.00092		< 0.00087		NC
Ethylbenzene	< 0.00092		< 0.00087		NC
Methyl Bromide	< 0.002		< 0.0019		NC
Methyl Chloride	< 0.0018		< 0.0017		NC
Methylene Chloride	< 0.0037		< 0.0035		NC
Styrene	< 0.00092		< 0.00087		NC
Tetrachloroethylene	**0.178**	**J//**	**0.699**	**/M/m**	NC
Toluene	< 0.00092		< 0.00087		NC
trans-1,2-Dichloroethylene	< 0.00092		< 0.00087		NC
trans-1,3-Dichloropropene	< 0.00092		< 0.00087		NC
Trichloroethylene	**0.001**	**J//**	< 0.00087		NC
Vinyl Chloride	< 0.0015		< 0.0014		NC
Xylene (total)	< 0.0019		< 0.0018		NC

Notes:
-A - Indicates a field duplicate sample.
mg/kg - milligrams per kilogram (parts per million)
NC - Not Calculated
RPD - Relative Percent Difference
See Table 9 for explanation of data qualifiers.

Table 6
Analytical Results for Groundwater Samples - VOCs
UTC Delavan Spray Technologies Site
Bamberg, South Carolina
AECOM Project No. 60314964

Sample ID		MW-24		MW-25D		MW-26D	
Laboratory ID	USEPA	FA29765-4		FA29765-2		FA29765-1	
Date Collected	MCL	12/04/15		12/04/15		12/04/15	
Volatile Organic Compounds by USEPA Method 8260B (µg/L)							
1,1,1-Trichloroethane	200	< 1.3		< 0.26		< 0.26	
1,1,2,2-Tetrachloroethane	—	< 1.1		< 0.22		< 0.22	
1,1,2-Trichloroethane	5	< 1.6		< 0.31		< 0.31	
1,1-Dichloroethane	—	< 1		< 0.2		< 0.2	
1,1-Dichloroethylene	7	< 1.4		**3.4**		**1.9**	
1,2-Dichloroethane	5	< 1		< 0.2		< 0.2	
1,2-Dichloropropane	5	< 1.3		< 0.25		< 0.25	
2-Butanone (MEK)	—	< 5.8		< 1.2		< 1.2	
2-Hexanone	—	< 10		< 2		< 2	
4-Methyl-2-pentanone (MIBK)	—	< 5		< 1		< 1	
Acetone	—	< 50		< 10		< 10	
Benzene	5	< 1		< 0.2		< 0.2	
Bromodichloromethane	80 [1]	< 1.1		< 0.22		< 0.22	
Bromoform	80 [1]	< 1.6		< 0.32		< 0.32	
Carbon Disulfide	—	< 1.5		< 0.29		< 0.29	
Carbon Tetrachloride	5	< 1.4		< 0.28		< 0.28	
Chlorobenzene	100	< 1		< 0.2		< 0.2	
Chloroethane	—	< 2.5		< 0.5		< 0.5	
Chloroform	80 [1]	< 1.5		< 0.3		< 0.3	
cis-1,2-Dichloroethylene	70	**2.9**	***J//***	**1.3**		**1.1**	
cis-1,3-Dichloropropene	—	< 1.3		< 0.25		< 0.25	
Dibromochloromethane	80 [1]	< 1		< 0.2		< 0.2	
Ethylbenzene	700	< 1		< 0.2		< 0.2	
Methyl Bromide	—	< 2.5		< 0.5		< 0.5	
Methyl Chloride	—	< 2.5		< 0.5		< 0.5	
Methylene Chloride	5	< 10		< 2		< 2	
Styrene	100	< 1.4		< 0.28		< 0.28	
Tetrachloroethylene	5	**344**		**129**		**98.1**	
Toluene	1,000	< 2		< 0.4		< 0.4	
trans-1,2-Dichloroethylene	100	< 1		< 0.21		< 0.21	
trans-1,3-Dichloropropene	—	< 1.3		< 0.26		< 0.26	
Trichloroethylene	5	< 1.1		**0.95**	***J//***	**1.1**	
Vinyl Chloride	2	< 1.3		< 0.25		< 0.25	
Xylene (total)	10,000	< 2.6		< 0.51		< 0.51	

Notes:
µg/L - micrograms per liter (parts per billion)
USEPA MCL - United States Environmental Protection Agency Maximum Contaminant Level (April, 2012).
[1] 1998 Final Rule for Disinfectants and Disinfection By-products. The total for trihalomethanes (THM) is 80 ug/L.
— - Indicates No Standard (for screening criteria) or Not Analyzed (for analytical data).
Bold font and shading indicate the concentration is detected.
Bold outline indicates the concentration exceeds the MCL.
South Carolina Department of Health and Environmental Control (SCDHEC) R.61-68 Water Classifications and Standards (June 22, 2012) were also identified for the list of detected chemicals in groundwater. In each case, however, they were the same values as the USEPA MCLs.
See Table 9 for explanation of data qualifiers.

Table 7
Analytical Results for Groundwater Samples - QA/QC
UTC Delavan Spray Technologies Site
Bamberg, South Carolina
AECOM Project No. 60314964

Sample ID		TRIP BLANK
Laboratory ID		FA29765-7
Date Collected		12/04/15
Volatile Organic Compounds by USEPA Method 8260B (µg/L)		
1,1,1-Trichloroethane	<	0.26
1,1,2,2-Tetrachloroethane	<	0.22
1,1,2-Trichloroethane	<	0.31
1,1-Dichloroethane	<	0.2
1,1-Dichloroethylene	<	0.27
1,2-Dichloroethane	<	0.2
1,2-Dichloropropane	<	0.25
2-Butanone (MEK)	<	1.2
2-Hexanone	<	2
4-Methyl-2-pentanone (MIBK)	<	1
Acetone	<	10
Benzene	<	0.2
Bromodichloromethane	<	0.22
Bromoform	<	0.32
Carbon Disulfide	<	0.29
Carbon Tetrachloride	<	0.28
Chlorobenzene	<	0.2
Chloroethane	<	0.5
Chloroform	<	0.3
cis-1,2-Dichloroethylene	<	0.22
cis-1,3-Dichloropropene	<	0.25
Dibromochloromethane	<	0.2
Ethylbenzene	<	0.2
Methyl Bromide	<	0.5
Methyl Chloride	<	0.5
Methylene Chloride		**5.4**
Styrene	<	0.28
Tetrachloroethylene	<	0.33
Toluene	<	0.4
trans-1,2-Dichloroethylene	<	0.21
trans-1,3-Dichloropropene	<	0.26
Trichloroethylene	<	0.22
Vinyl Chloride	<	0.25
Xylene (total)	<	0.51

Notes:
-C - Indicates a trip blank.
µg/L - micrograms per liter (parts per billion)
Bold font and shading indicate the concentration is detected.

Table 7
Analytical Results for Groundwater Samples - QA/QC
UTC Delavan Spray Technologies Site
Bamberg, South Carolina
AECOM Project No. 60314964

Sample ID	MW-25D		MW-25D-A		Relative
Laboratory ID	FA29765-2		FA29765-3		Percent
Date Collected	12/04/15		12/04/15		Difference
Volatile Organic Compounds by USEPA Method 8260B (µg/L)					
1,1,1-Trichloroethane	< 0.26		< 0.26		NC
1,1,2,2-Tetrachloroethane	< 0.22		< 0.22		NC
1,1,2-Trichloroethane	< 0.31		< 0.31		NC
1,1-Dichloroethane	< 0.2		< 0.2		NC
1,1-Dichloroethylene	**3.4**		**3.5**		3
1,2-Dichloroethane	< 0.2		< 0.2		NC
1,2-Dichloropropane	< 0.25		< 0.25		NC
2-Butanone (MEK)	< 1.2		< 1.2		NC
2-Hexanone	< 2		< 2		NC
4-Methyl-2-pentanone (MIBK)	< 1		< 1		NC
Acetone	< 10		< 10		NC
Benzene	< 0.2		< 0.2		NC
Bromodichloromethane	< 0.22		< 0.22		NC
Bromoform	< 0.32		< 0.32		NC
Carbon Disulfide	< 0.29		< 0.29		NC
Carbon Tetrachloride	< 0.28		< 0.28		NC
Chlorobenzene	< 0.2		< 0.2		NC
Chloroethane	< 0.5		< 0.5		NC
Chloroform	< 0.3		< 0.3		NC
cis-1,2-Dichloroethylene	**1.3**		**1.3**		0
cis-1,3-Dichloropropene	< 0.25		< 0.25		NC
Dibromochloromethane	< 0.2		< 0.2		NC
Ethylbenzene	< 0.2		< 0.2		NC
Methyl Bromide	< 0.5		< 0.5		NC
Methyl Chloride	< 0.5		< 0.5		NC
Methylene Chloride	< 2		< 2		NC
Styrene	< 0.28		< 0.28		NC
Tetrachloroethylene	**129**		**136**		5
Toluene	< 0.4		< 0.4		NC
trans-1,2-Dichloroethylene	< 0.21		< 0.21		NC
trans-1,3-Dichloropropene	< 0.26		< 0.26		NC
Trichloroethylene	**0.95**	***J//***	**0.97**	***J//***	NC
Vinyl Chloride	< 0.25		< 0.25		NC
Xylene (total)	< 0.51		< 0.51		NC

Notes:
-A - Indicates a field duplicate sample.
NC - Not Calculated
RPD - Relative Percent Difference
µg/L - micrograms per liter (parts per billion)
Bold font and shading indicate the concentration is detected.
See Table 9 for explanation of data qualifiers.

Table 8
Analytical Results for Investigation-Derived Waste Sample
UTC Delavan Spray Technologies Site
Bamberg, South Carolina
AECOM Project No. 60314964

Sample ID Laboratory ID Date Collected	USEPA Toxicity Characteristic	AQUEOUS IDW-1 FA29765-5 12/4/2015	SOLID IDW-1 FA29765-6 12/4/2015
Volatile Organic Compounds by Method 8260B (µg/L)			
1,1,1-Trichloroethane	—	< 0.51	NA
1,1,2,2-Tetrachloroethane	—	< 0.45	NA
1,1,2-Trichloroethane	—	< 0.63	NA
1,1-Dichloroethane	—	< 0.4	NA
1,1-Dichloroethylene	700	< 0.54	< 2.7
1,2-Dichloroethane	500	< 0.4	< 2
1,2-Dichloropropane	—	< 0.51	NA
1,4-Dichlorobenzene	7500	NA	< 2.5
2-Butanone (MEK)	200,000	< 2.3	< 10
2-Hexanone	—	< 4	NA
4-Methyl-2-pentanone (MIBK)	—	< 2	NA
Acetone	—	< 20	NA
Benzene	500	< 0.4	< 2
Bromodichloromethane	—	< 0.43	NA
Bromoform	—	< 0.65	NA
Carbon Disulfide	—	< 0.59	NA
Carbon Tetrachloride	500	< 0.56	< 2.8
Chlorobenzene	100,000	< 0.4	< 2
Chloroethane	—	< 1	NA
Chloroform	6,000	< 0.6	< 3
cis-1,2-Dichloroethylene	—	**0.72 J//**	NA
cis-1,3-Dichloropropene	—	< 0.5	NA
Dibromochloromethane	—	< 0.4	NA
Ethylbenzene	—	< 0.4	NA
Methyl Bromide	—	< 1	NA
Methyl Chloride	—	< 1	NA
Methylene Chloride	—	< 4	NA
Styrene	—	< 0.56	NA
Tetrachloroethylene	700	**86.9**	< 3.3
Toluene	—	< 0.8	NA
trans-1,2-Dichloroethylene	—	< 0.42	NA
trans-1,3-Dichloropropene	—	< 0.52	NA
Trichloroethylene	500	< 0.43	< 2.2
Vinyl Chloride	200	< 0.5	< 2.5
Xylene (total)	—	< 1	NA
Semivolatile Organic Compounds by Method 8270D (µg/L)			
1,2,4-Trichlorobenzene	—	< 0.5	NA
1,2-Dichlorobenzene	—	< 0.5	NA
1,3-Dichlorobenzene	—	< 0.63	NA
1,4-Dichlorobenzene	7,500	< 0.65	< 6.5
2,4,5-Trichlorophenol	400,000	< 0.68	< 6.8
2,4,6-Trichlorophenol	2,000	< 0.63	< 6.3
2,4-Dichlorophenol	—	< 0.5	NA
2,4-Dimethylphenol	—	< 0.5	NA
2,4-Dinitrophenol	—	< 5	NA
2,4-Dinitrotoluene	130	< 0.58	< 5.8
2,6-Dinitrotoluene	—	< 0.69	NA
2-Chloronaphthalene	—	< 0.5	NA
2-Chlorophenol	—	< 0.5	NA
2-Methylnaphthalene	—	< 0.5	NA
2-Methylphenol	200,000	< 0.5	< 5
2-Nitroaniline	—	< 0.5	NA
2-Nitrophenol	—	< 0.88	NA
3&4-Methylphenol	200,000	< 1	< 10
3,3'-Dichlorobenzidine	—	< 0.52	NA
3-Nitroaniline	—	< 0.53	NA
4,6-Dinitro-o-cresol	—	< 2.1	NA
4-Bromophenyl Phenyl Ether	—	< 0.64	NA
4-Chloro-3-methyl Phenol	—	< 0.5	NA
4-Chloroaniline	—	< 0.5	NA
4-Chlorophenyl Phenyl Ether	—	< 0.57	NA
4-Nitroaniline	—	< 0.99	NA
4-Nitrophenol	—	< 5	NA

Table 8
Analytical Results for Investigation-Derived Waste Sample
UTC Delavan Spray Technologies Site
Bamberg, South Carolina
AECOM Project No. 60314964

Sample ID	USEPA	AQUEOUS IDW-1		SOLID IDW-1	
Laboratory ID	Toxicity	FA29765-5		FA29765-6	
Date Collected	Characteristic	12/4/2015		12/4/2015	
Semivolatile Organic Compounds by Method 8270D (µg/L)					
Acenaphthene	—	< 0.5		NA	
Acenaphthylene	—	< 0.5		NA	
Anthracene	—	< 0.5		NA	
Benzo(a)anthracene	—	< 0.5		NA	
Benzo(a)pyrene	—	< 0.5		NA	
Benzo(b)fluoranthene	—	< 0.58		NA	
Benzo(g,h,i)perylene	—	< 0.66		NA	
Benzo(k)fluoranthene	—	< 0.68		NA	
Benzoic Acid	—	< 10	/R/c	NA	
Benzyl Alcohol	—	< 0.85		NA	
bis(2-Chloroethoxy)methane	—	< 0.63		NA	
bis(2-Chloroethyl)ether	—	< 0.69		NA	
bis(2-Chloroisopropyl)ether	—	< 0.5		NA	
bis(2-Ethylhexyl)phthalate	—	< 1		NA	
Butyl Benzyl Phthalate	—	< 1		NA	
Carbazole	—	< 0.5		NA	
Chrysene	—	< 0.51		NA	
Dibenzo(a,h)anthracene	—	< 0.68		NA	
Dibenzofuran	—	< 0.5		NA	
Diethyl Phthalate	—	< 1.4		NA	
Dimethyl Phthalate	—	< 1		NA	
Di-n-butyl Phthalate	—	< 1		NA	
Di-n-octyl Phthalate	—	< 1		NA	
Fluoranthene	—	< 0.5		NA	
Fluorene	—	< 0.5		NA	
Hexachlorobenzene	130	< 0.63		< 6.3	
Hexachlorobutadiene	500	< 0.6		< 6	
Hexachlorocyclopentadiene	—	< 1		NA	
Hexachloroethane	3,000	< 0.68		< 6.8	
Indeno(1,2,3-cd)pyrene	—	< 0.63		NA	
Isophorone	—	< 0.51		NA	
Naphthalene	—	< 0.5		NA	
Nitrobenzene	2,000	< 0.52		< 5.2	
N-Nitrosodi-n-propylamine	—	< 0.58		NA	
N-Nitrosodiphenylamine	—	< 0.59		NA	
Pentachlorophenol	100,000	< 5		< 50	
Phenanthrene	—	< 0.51		NA	
Phenol	—	< 0.5		NA	
Pyrene	—	< 0.55		NA	
Pyridine	5,000	NA		< 20	
Metals by Method 6010C/7470B (µg/L)					
Antimony	—	**2**	**J//**	NA	
Arsenic	5,000	< 1.3		< 10	
Barium	100,000	NA		**120**	**J//**
Beryllium	—	**0.3**	**J//**	NA	
Cadmium	1,000	**1**	**J//**	< 2	
Chromium	5,000	**12.8**		< 10	
Copper	—	**8.6**	**J//**	NA	
Lead	5,000	**5.5**		< 10	
Mercury	200	< 0.03		< 0.5	
Nickel	—	**3.4**	**J//**	NA	
Selenium	1,000	< 2.9		< 20	
Silver	5,000	< 0.7		< 7	
Thallium	—	< 1.4		NA	
Zinc	—	**34.1**		NA	

Notes:
— - No Standard
IDW - Investigation Derived Waste
µg/L - micrograms per liter (parts per billion)
USEPA Toxicity Characteristic - United States Environmental Protection Agency Maximum Concentration of Contaminants for the Toxicity Characteristic (40CFR§261.24 Toxicity Characteristic, July 1, 2007).
Bold font and shading indicates the analyte was detected.
See Table 9 for explanation of data qualifiers.

Table 9
Summary of Analytical Data Qualifiers
UTC Delavan Spray Technologies Site
Bamberg, South Carolina
AECOM Project No. 60314964

Modifier	Description
<	Indicates not detected at the reporting limit indicated.
"/"	Separates the laboratory added data qualifiers from the validation data qualifiers. The laboratory added data qualifiers precede the first "/". The result qualifiers follow the first "/", and the analysis qualifiers follow the second "/". The result qualifiers are a product of the data validation process, and the analysis qualifier defines the type of QC excursion.

Laboratory Data Qualifiers

Qualifier	Description
J	Estimated concentration above the method detection limit and below the reporting limit.

Result Data Qualifiers

Qualifier	Description
M	A matrix effect was present.

Analysis Data Qualifiers

Qualifier	Description
m	Matrix spike recovery below the established criteria.

Table 10
Proposed Sampling Plan
Delavan Spray Technologies Site
Bamberg, South Carolina
AECOM Project No. 60314964

Well Number	Northing	Easting	Date Installed	Classification	Screen Interval (ft bgs)	Spring 2016 Semi-Annual Sampling			Fall 2016 Semi-Annual Sampling		
						Field Water Quality Indicator Parameters	VOCs	MNA Parameters	Field Water Quality Indicator Parameters	VOCs	MNA Parameters
Off-Site Background Areas											
MW-17	528054.31	1985785.06	3/4/2014	Shallow	13-28	-	-	-	X	X	-
MW-18	527976.58	1986054.35	3/3/2014	Shallow	11-26	-	-	-	X	X	-
On-Site Background Areas											
MW-4	527583.49	1986403.57	6/4/2003	Shallow	4-14	-	-	-	X	X	-
Wooded Areas of Interest											
MW-9	527756.57	1986053.98	12/29/2003	Shallow	5-20	X	X	X	X	X	-
MW-9D	527787.94	1985973.71	12/14/2007	Deep	44-49	-	-	-	X	X	-
MW-10	527820.72	1985721.19	12/30/2003	Shallow	3-18	X	X	X	X	X	-
MW-10D	527855.07	1985712.71	12/14/2007	Deep	43-48	-	-	-	X	X	-
MW-11	527901.23	1985444.60	12/30/2003	Shallow	3-18	-	-	-	X	X	-
Manufacturing Areas											
MW-1	527377.94	1985969.04	6/4/2003	Shallow	3-18	X	X	-	X	X	-
MW-2	527303.71	1985841.78	6/4/2003	Shallow	3-18	X	X	-	X	X	-
MW-3	527219.26	1986012.34	6/4/2003	Shallow	3-18	X	X	-	X	X	-
MW-3D	527231.99	1986009.14	12/13/2007	Deep	44-49	X	X	-	X	X	-
MW-3D1	527243.77	1986004.60	10/29/2009	Deep	75-85	-	-	-	X	X	-
MW-5	527628.44	1985730.62	6/4/2003	Shallow	4-14	X	X	-	X	X	-
MW-6	527681.37	1985867.15	6/4/2003	Shallow	4-14	-	-	-	X	X	-
MW-7	527150.98	1986039.96	12/30/2003	Shallow	5-20	X	X	-	X	X	-
MW-8	527572.13	1985974.43	12/29/2003	Shallow	5-20	X	X	-	X	X	-
MW-12D	527322.24	1985335.17	10/29/2009	Deep	40-50	X	X	-	X	X	-
MW-13D	527143.18	1985615.99	10/29/2009	Deep	40-50	X	X	-	X	X	-
MW-19	527456.18	1985777.81	3/1/2014	Shallow	5-20	X	X	-	X	X	-
MW-20	527388.72	1985893.51	3/2/2014	Shallow	5-15	X	X	-	X	X	-
MW-21	527332.46	1985891.49	2/25/2014	Shallow	19-34	X	X	X	X	X	-
MW-21D	527235.35	1985871.60	2/25/2014	Deep	43-53	X	X	X	X	X	-
MW-24	527332.95	1985487.59	12/3/2015	Shallow	6-21	X	X	X	X	X	-

Table 10
Proposed Sampling Plan
Delavan Spray Technologies Site
Bamberg, South Carolina
AECOM Project No. 60314964

Downgradient Off-Site Areas												
MW-14	526965.63	1985984.33	10/26/2009	Shallow	5-20	X	X	-	X	X	-
MW-14D	526962.99	1985976.64	10/27/2009	Deep	40-50	X	X	-	X	X	-
MW-15	526981.84	1984425.77	5/18/2011	Shallow	4-19	X	X	-	X	X	-
MW-15D	526971.08	1984437.05	5/19/2011	Deep	35-45	X	X	-	X	X	-
MW-15D1	526961.60	1984442.37	4/30/2012	Deep	75-85	X	X	-	X	X	-
MW-16	526703.00	1984676.68	5/16/2011	Shallow	4-19	X	X	-	X	X	-
MW-16D	526694.72	1984670.89	5/17/2011	Deep	35-45	X	X	-	X	X	-
MW-22D	526303.91	1985723.83	2/26/2014	Deep	38-48	X	X	X	X	X	-
MW-23D	527141.40	1986387.76	2/27/2014	Deep	40-50	X	X	-	X	X	-
MW-25D	525988.09	1985257.31	12/2/2015	Deep	52-62	X	X	X	X	X	-
MW-26D	525547.18	1985631.39	12/1/2015	Deep	38-48	X	X	X	X	X	-
Totals												
Totals for all analytes						27	27	8	35	35	0
QA/QC Samples												
Field Duplicate	one per 10 samples					-	3	-	-	3	-
MS/MSD	one per 20 samples					-	1	-	-	2	-
Rinesate Blank	one per 20 samples for re-useable sampling equipment					NA - peristaltic pump / disp. tubing			NA - peristaltic pump / disp. tubing		
Trip Blank	one per cooler shipment					-	3	-	-	4	-

Notes:
bgs = below ground surface NA = Not Applicable

APPENDIX A
FIELD DOCUMENTATION

- Calibration Records
- Tailgate Safety Meeting Logs
- Test Boring Reports
- Water Well Records
- Monitoring Well Construction Details
- Monitoring Well Development Logs
- Field Data Logs for Groundwater Sampling
- Chain of Custody Forms
- IDW Management Form
- Logbooks

AECOM

Project Name: UTC Delaven Bamberg
Project Number: 60314964.11
Calibrated By: Randy Morgan
Signature: Randy Morgan

YSI 556 SN: 04M1480AA
Turbidimeter Model/SN: MicroTPW 20D703026
Additional Equipulpment/SN:
Date: 12-4-15

Operation Notes:
1) Turn meter on in Run mode and allow to warm up 10-15 minutes prior to calibration. 2) Observe DO% for 2-3 minutes when meter is initialy turned on 3) The unit should display decreasing values until it is stabilized near-100% 4) If the meter does not stabilize at/near 100%, indicates the D.O. sensor requires maintainence

These values should be keyed in when calibrating a water quality meter. Be sure to use the temperature of the standards not ambient temperature and the temperature sensor is submerged in solution.

Table 1: Calibration Values At Various Temeratures					
Temp., C	PH 4	PH 7	PH 10	Conductivity	ORP
5	4.00	7.07	10.19	896.00	257.00
10	4.00	7.06	10.16	1020.00	250.50
15	4.00	7.04	10.10	1147.00	244.00
20	4.00	7.02	10.05	1278.00	237.50
25	4.00	7.01	10.01	1413.00	231.00
30	4.00	6.99	9.96	1548.00	224.50

mm Hg = Millimeters of Mercury. Note that the YSI 556 uses this information ONLY when the DO calibration is being done. After calibration is complete it no longer corrects for pressure change. Verify the meter is correct for your altitude when calibrating.

Table 2: Atmospheric Pressure / Altitude Table					
Altitude feet (asl)	Pressure (mmHG)	Altitude feet (asl)	Pressure (mmHG)	Altitude feet (asl)	Pressure (mmHG)
0	760	1126	730	2290	698
278	752	1413	722	2587	692
558	745	1703	714	2887	684
841	737	1995	707	3190	676

Table 3: DO% Saturation VS. Temperature									
Temp C	DO	Temp C	DO	Temp C	DO	Temp C	DO	Temp C	DO
15	10.084	20	9.092	25	8.263	30	7.559	35	6.950
16	9.870	21	8.915	26	8.113	31	7.430	36	6.837
17	9.665	22	8.743	27	7.968	32	7.305	37	6.727
18	9.467	23	8.578	28	7.827	33	7.183	38	6.620
19	9.276	24	8.418	29	7.691	34	7.065	39	6.515

YSI 556 Calibration				
Parameter	Before Calibration	After Calibration	Time	Units
Barametric Pressure	763.9	[illegible]	0600	mmHg
Temperature (Saturated Air)	22.18	22.33	0600	c
Temperature (Calibration Solution)	21.19	22.30	0620	c
D.O.	8.81	8.75	0600	mg/L
PH 7	7.39	7.02	0608	SU
PH 4	3.75	4.00	0612	SU
PH 10	9.47	9.93	0614	SU
Specific Conductance	1.279	1.278	0604	mS/cm
ORP	236.7	237.5	0620	mV

MicroTPW Calibration	
Calibrations performed 0.02, 10, and 1000 NTU	Calibrations accepted: (YES) NO Circe One

AECOM

Project Name: Delavan UTC Bamberg
Project Number: 60314964.11
Calibrated By: Randy Morgan
Signature: Randy Morgan

YSI 556 SN: 04M 1450 AA
Turbidimeter Model/SN: MicroTPW 200703026
Additional Equipulpment/SN:
Date: 12-3-15

Operation Notes:
1) Turn meter on in Run mode and allow to warm up 10-15 minutes prior to calibration. 2) Observe DO% for 2-3 minutes when meter is initialy turned on 3) The unit should display decreasing values until it is stabilized near-100% 4) If the meter does not stabilize at/near 100%, indicates the D.O. sensor requires maintainence

These values should be keyed in when calibrating a water quality meter. Be sure to use the temperature of the standards not ambient temperature and the temperature sensor is submerged in solution.

Table 1: Calibration Values At Various Temeratures					
Temp., C	PH 4	PH 7	PH 10	Conductivity	ORP
5	4.00	7.07	10.19	896.00	257.00
10	4.00	7.06	10.16	1020.00	250.50
15	4.00	7.04	10.10	1147.00	244.00
20	4.00	7.02	10.05	1278.00	237.50
25	4.00	7.01	10.01	1413.00	231.00
30	4.00	6.99	9.96	1548.00	224.50

mm Hg = Millimeters of Mercury. Note that the YSI 556 uses this information ONLY when the DO calibration is being done. After calibration is complete it no longer corrects for pressure change. Verify the meter is correct for your altitude when calibrating.

Table 2: Atmospheric Pressure / Altitude Table					
Altitude feet (asl)	Pressure (mmHG)	Altitude feet (asl)	Pressure (mmHG)	Altitude feet (asl)	Pressure (mmHG)
0	760	1126	730	2290	699
278	752	1413	722	2587	692
558	745	1703	714	2887	684
841	737	1995	707	3190	676

Table 3: DO% Saturation VS. Temperature									
Temp C	DO	Temp C	DO	Temp C	DO	Temp C	DO	Temp C	DO
15	10.084	20	9.092	25	8.263	30	7.559	35	6.950
16	9.870	21	8.915	26	8.113	31	7.430	36	6.837
17	9.665	22	8.743	27	7.968	32	7.305	37	6.727
18	9.457	23	8.578	28	7.827	33	7.183	38	6.620
19	9.276	24	8.418	29	7.691	34	7.065	39	6.515

YSI 556 Calibration				
Parameter	Before Calibration	After Calibration	Time	Units
Barametric Pressure	755.3		0630	mmHg
Temperature (Saturated Air)	22.41	22.32	0630	c
Temperature (Calibration Solution)	21.35	22.11	0650	c
D.O.	8.38	8.64	0630	mg/L
PH 7	7.62	7.02	0638	SU
PH 4	3.67	4.00	0642	SU
PH 10	9.32	9.90	0646	SU
Specific Conductance	1.257	1.278	0634	mS/cm
ORP	235.7	237.5	0650	mV

MicroTPW Calibration	
Calibrations performed 0.02, 10, and 1000 NTU	Calibrations accepted: (YES) NO Circle One

AECOM

Tailgate Safety Meeting Log*

This sign-in log documents the topics of the tailgate safety briefing and individual attendance at the briefing. Personnel who perform work operations onsite are required to attend each safety briefing and acknowledge their ability to ask questions and receipt of such briefings daily. Please provide a brief narrative of the following topics as applicable to the Project.

Meeting Leader: Chuck Sudderth	Signature: Charles K. Sudderth
Date /Time: 11/30/15	Project Name & Location: Delaware UTC ~~Kalama Specialty Chemicals~~ Site, Beaufort, SC
Weather Conditions: clear, mild	Project Number: 60314964

Topic	*Discussion (Circle one)*
Today's Scope of Work (All tasks)	(yes) / NA
Schedule / New Work / Scope Changes	(yes) / NA
Reviewed Procedures, THA, etc.	(yes) / NA
Emergency Action Plan & Procedures	(yes) / NA
Communications Protocol	(yes) / NA
Required PPE	(yes) / NA
Required Monitoring / Instruments	(yes) / NA
Site Control / Work Zones / Security	(yes) / NA
Access / Egress / Slips, Trips, & Falls	(yes) / NA
Smoking, Eating, & Drinking	(yes) / NA
Washroom / Facililties Location	(yes) / NA
Heat/Cold Stress	(yes) / NA
Exclusion Areas Barricades / Cones	(yes) / NA
Required Permits, Passes, Keys, etc.	(yes) / NA
Decon Procedures / IDW Mngmt	(yes) / NA
Equipment Inspections /Safety Checklists	(yes) / NA

Comments/Other: Cardinal Rules: Confined Space (✓), GFCI (✓), Elevated Work (✓), Lockout/Tagout (✓), and Machine Guarding (✓). No loose/leather gloves near rotating equipment.

Tailgate Meeting Attendees

Printed Name	Signature
SCOTT T. SMITH	Scott T. Smith
Jamy Atkinson	Jamy Atkinson
KANISTHA C. COOMBS	Kanistha C. Coombs
Leslee Alexander	Leslee Alexander
Randy Morgan	Randy Morgan
Sean Dover	Sean Dover
Will Hayes	Will Hayes
Brad Saunders	Brad Saunders
Wes Smoak	
Joseph Moskaitis	

*This form is to be utilized for documenting daily safety meetings and stored with project files upon completion

AECOM

Tailgate Safety Meeting Log*

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Meeting Leader	Signature
Chuck Suddeth	Charles K. Suddeth
Date /Time 12/1/15	Project Name & Location UTC Delavan Spray Technologies Site Bamberg, South Carolina
Weather Conditions Cloudy, Fog	Project Number 60314964

Topic	*Discussion (Circle one)*
Today's Scope of Work (All tasks)	(yes) / NA
Schedule / New Work / Scope Changes	(yes) / NA
Reviewed Procedures, THA, etc.	(yes) / NA
Emergency Action Plan & Procedures	(yes) / NA
Communications Protocol	(yes) / NA
Required PPE	(yes) / NA
Required Monitoring / Instruments	(yes) / NA
Site Control / Work Zones / Security	(yes) / NA
Access / Egress / Slips, Trips, & Falls	(yes) / NA
Smoking, Eating, & Drinking	(yes) / NA
Washroom / Facililties Location	(yes) / NA
Heat/Cold Stress	(yes) / NA
Exclusion Areas Barricades / Cones	(yes) / NA
Required Permits, Passes, Keys, etc.	(yes) / NA
Decon Procedures / IDW Mngmt	(yes) / NA
Equipment Inspections /Safety Checklists	(yes) / NA

Comments/Other: Cardinal Rules: Confined Space (✓), GFCI (✓), Elevated Work (✓), Lockout/Tagout (✓), and Machine Guarding (✓). No loose/leather gloves near rotating equipment.

Tailgate Meeting Attendees

Printed Name	Signature
Will Kenyon	
Sam Dover	
Joseph Moskaitis	
Brad Saunders	
Randy Morgan	
Leslie Alexander	

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AECOM

Tailgate Safety Meeting Log*

This sign-in log documents the topics of the tailgate safety briefing and individual attendance at the briefing. Personnel who perform work operations onsite are required to attend each safety briefing and acknowledge their ability to ask questions and receipt of such briefings daily. Please provide a brief narrative of the following topics as applicable to the Project.

Meeting Leader	Signature
Leslie Alexander	
Date /Time: 12/2/15 0755	Project Name & Location: UTC Delavan Spray Technologies Site, Bamberg, South Carolina
Weather Conditions: Cloudy, chance of rain	Project Number: 60314964

Topic	*Discussion (Circle one)*
Today's Scope of Work (All tasks)	(yes) / NA
Schedule / New Work / Scope Changes	(yes) / NA
Reviewed Procedures, THA, etc.	(yes) / NA
Emergency Action Plan & Procedures	(yes) / NA
Communications Protocol	(yes) / NA
Required PPE	(yes) / NA
Required Monitoring / Instruments	(yes) / NA
Site Control / Work Zones / Security	(yes) / NA
Access / Egress / Slips, Trips, & Falls	(yes) / NA
Smoking, Eating, & Drinking	(yes) / NA
Washroom / Facililties Location	(yes) / NA
Heat/Cold Stress	(yes) / NA
Exclusion Areas Barricades / Cones	(yes) / NA
Required Permits, Passes, Keys, etc.	(yes) / NA
Decon Procedures / IDW Mngmt	(yes) / NA
Equipment Inspections /Safety Checklists	(yes) / NA

Comments/Other: Cardinal Rules: Confined Space (X), GFCI (X), Elevated Work (X), Lockout/Tagout (X), and Machine Guarding (X). No loose/leather gloves near rotating equipment.

Tailgate Meeting Attendees

Printed Name	Signature
Brad Saunders	
Randy Morgan	Randy Morgan
Sam Dove	
Will Keeler	
Joseph Mosquitos	
Chuck Suddeth	Charles K. Suddeth

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AECOM

Tailgate Safety Meeting Log*

This sign-in log documents the topics of the tailgate safety briefing and individual attendance at the briefing. Personnel who perform work operations onsite are required to attend each safety briefing and acknowledge their ability to ask questions and receipt of such briefings daily. Please provide a brief narrative of the following topics as applicable to the Project.

Meeting Leader	Signature
Chuck Sudderth	Charles K. Sudderth
Date /Time 12/3/15	**Project Name & Location** UTC Delavan Spray Technologies Site Bamberg, South Carolina
Weather Conditions cloudy, cool	**Project Number** 60314964

Topic	*Discussion (Circle one)*
Today's Scope of Work (All tasks)	(yes) / NA
Schedule / New Work / Scope Changes	(yes) / NA
Reviewed Procedures, THA, etc.	(yes) / NA
Emergency Action Plan & Procedures	(yes) / NA
Communications Protocol	(yes) / NA
Required PPE	(yes) / NA
Required Monitoring / Instruments	(yes) / NA
Site Control / Work Zones / Security	(yes) / NA
Access / Egress / Slips, Trips, & Falls	(yes) / NA
Smoking, Eating, & Drinking	(yes) / NA
Washroom / Facililties Location	(yes) / NA
Heat/Cold Stress	(yes) / NA
Exclusion Areas Barricades / Cones	(yes) / NA
Required Permits, Passes, Keys, etc.	(yes) / NA
Decon Procedures / IDW Mngmt	(yes) / NA
Equipment Inspections /Safety Checklists	(yes) / NA

Comments/Other: Cardinal Rules: Confined Space (✓), GFCI (✓), Elevated Work (✓), Lockout/Tagout (✓), and Machine Guarding (✓). No loose/leather gloves near rotating equipment.

Tailgate Meeting Attendees

Printed Name	Signature
Will Keyes	
Sam Dover	
Brad Saunders	
Randy Morgan	

*This form is to be utilized for documenting daily safety meetings and stored with project files upon completion

AECOM Test Boring Report

BORING NO. BG-6
PAGE 1 OF 2

PROJECT: UTC Delavan Spray Technologies Site
CLIENT: UTC
CONTRACTOR: ~~AECOM~~ SAEDACCO
EQUIPMENT: ~~Hand Auger~~ Geoprobe 54DT

PROJECT NO: 60314964
LOCATION: near BG-5
ELEVATION:
DATE START: 12/1/15
DATE FINISH: 12/1/15
DRILLER: ~~NA~~ W Keyes
PREPARED BY: L. Alexander

GROUND WATER		DEPTH TO:				CASING	SAMPLER	CORE BARREL
DATE	HRS AFTER COMP	WATER	BOTTOM OF CASING	BOTTOM OF HOLE	TYPE	NA	~~Hand Auger~~	NA
					SIZE ID	NA	~~3.25" ID~~ 4	NA
					HAMMER WT	NA	NA	NA
					HAMMER FALL	NA	NA	NA

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLE INFIORMATION	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
1.0	0		0-4'	CLAYEY SAND (SC), moist, yellowish brown (10YR 5/8) mostly fine-coarse sand, little-some clay.
	0			
	0	No analytical Samples collected		
2.0	0		3.8'/4'	-1.5' grading to SANDY CLAY (CL), moist, yellowish brown (10YR 5/6) mostly clay, some fine-coarse sand
	0			
3.0	0			- 3' grading to yellowish brown (10YR 5/6) mottled w/ light gray (10YR 7/1) and yellowish red (5YR 5/8)
	0			
4.0	0			
	0	BG-6-6 D: 4-6' T: 1055 A: TDD	4-8'	grading to CLAY w/ SAND (CL), moist, light gray (2.5Y 7/1), w/ few mottles of strong brown (7.5 YR 5/8) and red (2.5 YR 4/6), mostly clay, few to little fine-coarse sand & silt.
5.0	0		4'/4'	
	0			
6.0	0			
	0			
7.0	0	No analytical Samples collected		- increasing sand content from 7-8'
	0			
8.0	0			
	0	BG-6-10 D: 8-10' T: 1105 A: TDD	8-11'	CLAY (CL), light gray (5Y 7/1), moist, stiff, mostly clay, few sand clay lenses
9.0	0		3'/3'	- 9' grading to with GRADED SAND (SW), moist, strong brown (7.5YR 5/8), mostly fine-coarse sand, few clay/silt w/ occasional lenses of CLAY like 8-9' above
	0			
10.0	0			

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.		DESCRIPTIONS		NOTES	
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY	50-100%	WD	WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME	30-45%	NE	NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE	15-25%	UR	NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW	5-10%	NR	NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE	<5%		
		31+	HARD						

AECOM

Test Boring Report

BORING NO. B6-6

PAGE 2 OF 2

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLE INFIORMATION	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
10.0				Boring terminated at 11' bgs. backfilled w/ soil & grout. Note: 2 holes drilled approximately 2 ft apart. composited the samples from the intervals in both holes to submit 1 sample from 4-6' & 1 sample from 8-10' for TCDD analysis
12.5				
15.0				
17.5				
20.0				
22.5				

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
50+	VERY DENSE

BLOWS/FT.	CONSISTENCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
31+	HARD

SAMPLER ID.	
SS	SPLIT SPOON
ST	SHELBY TUBE
G	GRAB SAMPLE
MC	MACRO-CORE

DESCRIPTIONS	
MOSTLY	50-100%
SOME	30-45%
LITTLE	15-25%
FEW	5-10%
TRACE	<5%

NOTES	
WD	WHILE DRILLING
NE	NOT ENCOUNTERED
UR	NOT READ
NR	NO RECOVERY

AECOM Test Boring Report

BORING NO. BG-7
PAGE 1 OF 1

PROJECT: UTC Delavan Spray Technologies Site
CLIENT: UTC
CONTRACTOR: ~~AECOM~~ SHEDACCO
EQUIPMENT: ~~Hand Auger~~ Geoprobe 54DT

PROJECT NO: 60314964
LOCATION: Near BG-3
ELEVATION:
DATE START: 12/1/15
DATE FINISH: 12/1/15
DRILLER: ~~NA~~ W. Kaye
PREPARED BY: L. Alexander

GROUND WATER		DEPTH TO:				CASING	SAMPLER	CORE BARREL
DATE	HRS AFTER COMP	WATER	BOTTOM OF CASING	BOTTOM OF HOLE	TYPE	NA	~~Hand Auger~~	NA
					SIZE ID	NA	3.25" ID	NA
					HAMMER WT	NA	NA	NA
					HAMMER FALL	NA	NA	NA

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLE INFIORMATION	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
	6		0-2' hand auger	SILTY SAND (SM), dry, very dark grayish brown (10YR 3/2), mostly fine - medium sand, little silt, trace - few organics & roots
1.0	0	No analytical samples collected		4" POORLY GRADED SAND (SP), dry, light olive brown (2.5Y 5/4), mostly v. fine - fine sand, trace - few med sand, trace silt.
	0			8" grading to light yellowish brown (2.5Y 6/4)
	0			1' grading to CLAYEY SAND (SC), moist, yellowish brown (10YR 5/4)
2.0	0		2-4' 2 1/2'	mostly fine - med sand, little clay
	0			1.5' grading to dark yellowish brown (10YR 4/4).
3.0	0			
	0			3.2' grading to POORLY GRADED SAND W/ CLAY (~~SP~~ SP-SM), moist, brownish yellow (10YR 6/8), mostly fine - medium sand, few clay & silt.
4.0	0	BG-7-6 D: 4-6' T: 1025 A: TOD	4-8' 4'/4'	
	0			
5.0	0			
	0			
6.0	0			6' grading to CLAYEY SAND (SC), moist, light brownish gray (10YR 6/2), mottled w/ yellowish brown (10YR 5/4) and yellowish red (5YR 4/6), mostly fine - coarse sand, little - some clay.
	0	No analytical samples collected		
7.0	0			
	0			
8.0	0			8' same as above but few clay lenses 1-2" thick, light gray (10YR 7/1), mostly clay, few med - coarse sand
	0	BG-7-10 D: 8-10' T: 1030 A: TOD	8'-10' 2'/2'	
9.0	0			
	0			
	0			Boring terminated at 10' bgs. backfilled w/ soil and grout.
10.0				Note: 2 rods were installed about 2' apart and samples were composited from both at intervals noted for TOD analysis

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
50+	VERY DENSE

BLOWS/FT.	CONSISTENCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
31+	HARD

SAMPLER ID.	
SS	SPLIT SPOON
ST	SHELBY TUBE
G	GRAB SAMPLE
MC	MACRO-CORE

DESCRIPTIONS	
MOSTLY	50-100%
SOME	30-45%
LITTLE	15-25%
FEW	5-10%
TRACE	<5%

NOTES	
WD	WHILE DRILLING
NE	NOT ENCOUNTERED
UR	NOT READ
NR	NO RECOVERY

AECOM — Test Boring Report

BORING NO. DPT-58
PAGE 1 OF 2

PROJECT:	UTC Delavan Spray Technologies Site
CLIENT:	UTC
CONTRACTOR:	~~AECOM~~ SAEDACCO
EQUIPMENT:	~~Hand Auger~~ Geoprobe 54DT
PROJECT NO:	60314964
LOCATION:	W side of western room
ELEVATION:	
DATE START:	12/1/15
DATE FINISH:	12/1/15
DRILLER:	~~NA~~ W. Kayes
PREPARED BY:	L. Alexander

GROUND WATER		DEPTH TO:				CASING	SAMPLER	CORE BARREL
DATE	HRS AFTER COMP	WATER	BOTTOM OF CASING	BOTTOM OF HOLE	TYPE	NA	Hand Auger	NA
					SIZE ID	NA	3.25" ID	NA
					HAMMER WT	NA	NA	NA
					HAMMER FALL	NA	NA	NA

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLE INFIORMATION	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
0–1.0		No analytical samples collected	0-2' hand auger	CONCRETE - 4.5" thick 0.4' POORLY GRADED SAND (SP), moist, light olive brown (2.5Y 5/4), mostly fine-med sand, trace coarse sand.
1.0–2.0	125.8		2-4' 2'/2'	1.5' grading to CLAYEY SAND (SC), moist, yellowish brown (10YR 5/8), mostly fine-med sand, some clay.
2.0–3.0	150.6			2.5' sand content increasing w/ depth
3.0–4.0	74.3			3' WELL GRADED SAND W/ CLAY (SW-SC), moist, light gray (2.5Y 7/2), mottled w/ yellowish brown (10YR 5/8), and yellowish red (5YR 4/6), mostly fine-coarse sand, little clay. 4' grading to CLAYEY SAND (SC), like 1.5' above.
4.0–5.0	173.3	DPT-58-5.5 D: 4.5-5.5' T: 1350 A: VOCs & % solids	4-8' 4'/4'	
5.0–6.0	12.5			5.3' WELL GRADED SAND W/ CLAY (SW-SC), like 3' above but yellowish brown (10YR 5/8) and yellowish red (5YR 4/6).
6.0–7.0	65	No analytical samples collected		6' grading to SANDY CLAY (CL), moist, light gray (2.5Y 7/2), mostly clay, some fine-coarse sand & silt. 6.5' WELL GRADED SAND W/ CLAY (SW-SC), moist, yellowish red (5YR 4/6), mostly fine-coarse sand, few clay, w/ lenses of CLAY (CL) like 6' above; lenses are 1-3" thick
7.0–8.0	3.5 3.8			
8.0–9.0	36.3		8-12' 4'/4'	8' same as above
9.0–10.0	22.3			9.5' grading to CLAYEY SAND (SC), moist, strong brown (7.5YR 5/8), mostly fine-coarse sand, little clay

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.		DESCRIPTIONS		NOTES	
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY	50-100%	WD	WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME	30-45%	NE	NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE	15-25%	UR	NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW	5-10%	NR	NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE	<5%		
		31+	HARD						

AECOM

Test Boring Report

BORING NO. DPT-SB

PAGE 2 OF 2

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLE INFIORMATION	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
10.0	10.1	DPT-SB-11 D: 10-11' T: 1400 A: VOCs & %solids		
	4.4			
		No analytical Samples collected	12-16'	
12.5	0.6		4'/4'	-13' grading to POORLY GRADED SAND (SW), wet, yellowish red (7.5YR 6/8), mostly medium sand, trace - few clay
				- clay content increasing w/ depth
	14.4			-14.5' grading to CLAYEY SAND (SC), wet, strong brown (7.5YR 5/8), mostly med - coarse sand, little - some clay, interbedded w/ CLAY (CL), moist, pale yellow (5Y 8/2), mostly clay & silt, trace fine sand
15.0	16.2			
	8.7			
				Boring terminated at 16' bgs. backfilled w/ sand to 15' bgs set 1" well w/ 6" prepack screen. Screen 5-15'
17.5				
20.0				
22.5				

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
50+	VERY DENSE

BLOWS/FT.	CONSISTENCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
31+	HARD

SAMPLER ID.	
SS	SPLIT SPOON
ST	SHELBY TUBE
G	GRAB SAMPLE
MC	MACRO-CORE

DESCRIPTIONS	
MOSTLY	50-100%
SOME	30-45%
LITTLE	15-25%
FEW	5-10%
TRACE	<5%

NOTES	
WD	WHILE DRILLING
NE	NOT ENCOUNTERED
UR	NOT READ
NR	NO RECOVERY

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AECOM Test Boring Report

BORING NO. DPT-SS1
PAGE 1 OF 3

PROJECT: UTC Delavan Spray Technologies Site
CLIENT: UTC
CONTRACTOR: AECOM
EQUIPMENT: Hand Auger

PROJECT NO: 60314964
LOCATION: right inside entrance gate
ELEVATION:
DATE START: 12/2/15
DATE FINISH: 12/2/15
DRILLER: NA
PREPARED BY: L. Alexander
W Keyes & B Saunders

GROUND WATER		DEPTH TO:				CASING	SAMPLER	CORE BARREL
DATE	HRS AFTER COMP	WATER	BOTTOM OF CASING	BOTTOM OF HOLE	TYPE	NA	Hand Auger	NA
					SIZE ID	NA	3.25" ID	NA
					HAMMER WT	NA	NA	NA
					HAMMER FALL	NA	NA	NA

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLE INFIORMATION	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
1.0	14.5			-4.5" concrete POORLY GRADED SAND (SP) dry, yellowish brown (10YR 5/8), mostly fine sand, trace silt
2.0	14.4	DPT-SS-3 D: 2-3' A: VOCs 8 010 501 T: 1205 w/ms/msd		-1' grading to CLAYEY SAND (SC) moist, yellowish brown (10YR 5/8) mostly fine sand, little clay.
3.0	15.4			-2 color change to strong brown (7.5YR 5/8), increasing clay w/ depth
4.0	15.4			-grading to SANDY CLAY (CL), as above at 1 ft but strong brown (7.5YR 5/6), mostly clay, some fine sand
5.0	13.0			-4' Same as above but less sand.
6.0	14.1			-5' CLAYEY SAND (SC), dry-moist, strong brown (7.5YR 5/8) mostly fine-med sand, some clay, interbedded w/ clay (CL) layers moist, light gray (7.5YR 7/1), mostly clay, few-little fine-med sand.
7.0	13.1			-6.0 as above but more frequent clay layers.
8.0	9.0			-7.0 as above but few clay lenses
9.0	14.3	DPT-SS-10 D: 9-10 A: VOCs 010 501 T: 1230		-8 CLAYEY SAND (SC), moist, strong brown (7.5YR 5/8) mottled w/ light gray (7.5YR 7/1), mostly fine-med sand, little - some clay. -9, color change to yellowish red (5YR 4/6) mottled w/ light gray (7.5YR 7/1) clay lenses
10.0				

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
50+	VERY DENSE

BLOWS/FT.	CONSISTENCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
31+	HARD

SAMPLER ID.	
SS	SPLIT SPOON
ST	SHELBY TUBE
G	GRAB SAMPLE
MC	MACRO-CORE

DESCRIPTIONS	
MOSTLY	50-100%
SOME	30-45%
LITTLE	15-25%
FEW	5-10%
TRACE	<5%

NOTES	
WD	WHILE DRILLING
NE	NOT ENCOUNTERED
UR	NOT READ
NR	NO RECOVERY

1230 instead used DPT-SS 10/15

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Test Boring Report

BORING NO. DPT-59
PAGE 2 OF 2

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLE INFIORMATION	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
10.0				Same as above
	15.7			
12.5				-grading to wet, yellowish red (5YR 5/8).
15.0				Boring terminated at 15 Ft Installed well – screen 5-15 Ft – 1" prepack screen & 1" casing, 1 Ft sand above screen & 1 Ft bentonite. Allow bent. to hydrate before grout.
17.5				
20.0				
22.5				

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
50+	VERY DENSE

BLOWS/FT.	CONSISTENCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
31+	HARD

SAMPLER ID.	
SS	SPLIT SPOON
ST	SHELBY TUBE
G	GRAB SAMPLE
MC	MACRO-CORE

DESCRIPTIONS	
MOSTLY	50-100%
SOME	30-45%
LITTLE	15-25%
FEW	5-10%
TRACE	<5%

NOTES	
WD	WHILE DRILLING
NE	NOT ENCOUNTERED
UR	NOT READ
NR	NO RECOVERY

AECOM Test Boring Report

BORING NO. DPT-60
PAGE 1 OF 2

PROJECT: UTC Delavan Spray Technologies Site
CLIENT: UTC
CONTRACTOR: AECOM
EQUIPMENT: Hand Auger

PROJECT NO: 60314964
LOCATION:
ELEVATION:
DATE START: 12/2
DATE FINISH: 12/2
DRILLER: ~~NA~~ Williams B Sands
PREPARED BY: L. Alexander

GROUND WATER		DEPTH TO:				CASING	SAMPLER	CORE BARREL
DATE	HRS AFTER COMP	WATER	BOTTOM OF CASING	BOTTOM OF HOLE	TYPE	NA	Hand Auger	NA
					SIZE ID	NA	3.25" ID	NA
					HAMMER WT	NA	NA	NA
					HAMMER FALL	NA	NA	NA

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLE INFIORMATION	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
1.0	33.5	DPT-60-1 D:0-1 A:VOCs, %Sil.ds T:1530		4" concrete. Note - 1st location is ~ ft ~ towards DPT-35 hit concrete about 7" below 1st 3" of concrete. POORLY GRADED SAND (SP), dry, yellowish brown (10YR 5/8) mostly fine sand
2.0	18.9			1' Same as above but trace - few clay/silt 2' CLAYEY SAND (SC), moist, strong brown (7.5YR 5/6), mostly fine-medium sand, little - some clay.
3.0	14.5			3' POORLY GRADED SAND W/ CLAY (SP-SC), moist, like 2' above but few - little clay. interbedded w/ few lenses of CLAY/SANDY CLAY (?)
4.0	19.3			moist, light gray (2.5Y 7/2), mostly clay, few - little sand. Same as above
5.0	17.8			Same as above but grading to yellowish red (5YR 4/8) w/ light gray (2.5Y 7/2)
6.0	16.3			Same as above
7.0	23.9	DPT-60-8-d Equipment blank T:1535 A:VOCs		Same as above but sand is fine-coarse (WELL GRADED)
8.0	28.4	DPT-60-8 D:7-8 T:1540 A:VOCs, %Sil.ds		
9.0	33.9			WELL GRADED SAND W/ CLAY (SW-SC), moist, yellowish red (5YR 4/6), mostly fine-coarse sand, few clay, occasion CLAY lenses, white (2.5Y 8/1).
10.0	39.7			

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.		DESCRIPTIONS		NOTES	
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY	50-100%	WD	WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME	30-45%	NE	NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE	15-25%	UR	NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW	5-10%	NR	NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE	<5%		
		31+	HARD						

AECOM

Test Boring Report

BORING NO. DPT-60
PAGE 2 OF 2

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLE INFIORMATION	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
10.0				Same as above but red-v. coarse sand, Grading to wet, light grey mottles
	25.9			12' POORLY GRADED SAND (SP). wet, yellow (10YR 7/8), mostly fine-med sand, trace-few clay/silt.
12.5				
	31.1			Same as above
	21.4			
15.0				Boring terminated at 15ft bgs Installed 1" prepack screen (5'-15') w/ 1" casing. Sand 1ft above & 0.5ft bentonite
17.5				
20.0				
22.5				

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
50+	VERY DENSE

BLOWS/FT.	CONSISTENCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
31+	HARD

SAMPLER ID.	
SS	SPLIT SPOON
ST	SHELBY TUBE
G	GRAB SAMPLE
MC	MACRO-CORE

DESCRIPTIONS	
MOSTLY	50-100%
SOME	30-45%
LITTLE	15-25%
FEW	5-10%
TRACE	<5%

NOTES	
WD	WHILE DRILLING
NE	NOT ENCOUNTERED
UR	NOT READ
NR	NO RECOVERY

AECOM Test Boring Report

BORING NO. DPT-61
PAGE 1 OF 2

PROJECT: UTC Delavan Spray Technologies Site
CLIENT: UTC
CONTRACTOR: AECOM
EQUIPMENT: Hand Auger

PROJECT NO: 60314964
LOCATION: adjacent to DPT-60
ELEVATION:
DATE START: 12/2/15
DATE FINISH: 12/2/15
DRILLER: NA
PREPARED BY: L. Alexander

GROUND WATER		DEPTH TO:				CASING	SAMPLER	CORE BARREL
DATE	HRS AFTER COMP	WATER	BOTTOM OF CASING	BOTTOM OF HOLE	TYPE	NA	Hand Auger	NA
					SIZE ID	NA	3.25" ID	NA
					HAMMER WT	NA	NA	NA
					HAMMER FALL	NA	NA	NA

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLE INFIORMATION	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
0				4" thick concrete
1.0	44.7			POORLY GRADED SAND (SP), dry, yellowish brown (10YR 5/6), mostly fine sand
				same as above but grading to brownish yellow (10YR 6/6).
2.0	30.3			same as above but mostly fine, sand, few med sand
3.0	32.9			
				grading to yellowish brown (10YR 5/8), few clay moist
4.0	31.6			
				grading to as above but with clay, few-little clay
5.0	34.0	DPT-61-6 D: 5-6' A: VOCs 89, solids		
	50.7	T: 1640		grading to above mottled w/ LEAN CLAY SAND (CL), moist, yellowish red (5YR 4/6), mostly fine - med sand, little-some clay
6.0				
	50.3			
7.0		DPT-61-DS DPT-61-D-a (field dup) A: VOCs 89, solids		same as above but w/ occasional clay lenses, moist pale yellow (7.5Y) mostly clay, few-little sand
	90.1	T: 1650		
8.0				
	50.3			
9.0				same as above
10.0				

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.		DESCRIPTIONS		NOTES	
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY	50-100%	WD	WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME	30-45%	NE	NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE	15-25%	UR	NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW	5-10%	NR	NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE	<5%		
		31+	HARD						

AECOM

Test Boring Report

BORING NO. DPT-61

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DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLE INFIORMATION	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
10.0				CLAYEY SAND (SC), moist, strong brown (7.5YR 5/8), mottled w/ yellowish red (5YR 4/6) & occasional light gray (10YR 7/1), mostly fine-coarse sand, little-some clay.
	38.2			
				12' same as above but grading to wet, few-little clay
12.5				
	49.7			
				- POORLY GRADED SANDS (SP) wet, reddish yellow (7.5YR 6/8), mostly fine-med sand, trace clay,
	60.7			
15.0				Boring terminated at 15 ft bgs
				Set well screen 5-15'
17.5				
20.0				
22.5				

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
50+	VERY DENSE

BLOWS/FT.	CONSISTENCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
31+	HARD

SAMPLER ID.	
SS	SPLIT SPOON
ST	SHELBY TUBE
G	GRAB SAMPLE
MC	MACRO-CORE

DESCRIPTIONS	
MOSTLY	50-100%
SOME	30-45%
LITTLE	15-25%
FEW	5-10%
TRACE	<5%

NOTES	
WD	WHILE DRILLING
NE	NOT ENCOUNTERED
UR	NOT READ
NR	NO RECOVERY

AECOM Test Boring Report

BORING NO. MW-24
PAGE 1 OF 3

PROJECT: UTC Delavan Spray Technologies Site
CLIENT: UTC
CONTRACTOR: SAEDACCO
EQUIPMENT: Geoprobe 8140 LS Sonic Rig

PROJECT NO: 60314964
LOCATION:
ELEVATION:
DATE START: 12/3/15
DATE FINISH: 12/3/15
DRILLER: W. Keyes
PREPARED BY: C. Fiddeth

GROUND WATER		DEPTH TO:				CASING	SAMPLER	CORE BARREL
DATE	HRS AFTER COMP	WATER	BOTTOM OF CASING	BOTTOM OF HOLE	TYPE		Acetate Liners	Core barrel
					SIZE ID			
					HAMMER WT			
					HAMMER FALL			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLE INFIORMATION	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
			0-4	SAND (SW), light yellowish brown 10YR 6/4, fine to medium grained, well graded, saturated.
2.5				
5.0			4-7	SAND (SW), reddish yellow 7.5YR 7/8, fine to medium grained, few clay, well graded, wet.
7.5			7-17	CLAYEY SAND (SC), yellowish brown 10YR 5/8, to red 2.5YR 4/8, medium to coarse grained, little clay, well graded, saturated.
10.0				

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.		DESCRIPTIONS		NOTES	
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY	50-100%	WD	WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME	30-45%	NE	NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE	15-25%	UR	NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW	5-10%	NR	NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE	<5%		
		31+	HARD						

AECOM

Test Boring Report

BORING NO. MW-24
PAGE 2 OF 3

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLE INFIORMATION	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
10.0				CLAYEY SILT (MH), pale yellow 2.5Y 8/2 to red 2.5YR 4/6 stiff, little clay, medium plasticity, wet.
12.5	1.5		7-17	
				No recovery 13-17
15.0				
17.5				SILT (ML), brownish yellow 10YR 6/6 to red 2.5YR 4/6, stiff, low plasticity, few clay, moist.
20.0	1.5		17-27	
22.5	2.5			SAND (SW), yellow 10YR 7/6, fine to coarse grained, shells, well graded, calcareous, saturated.

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
50+	VERY DENSE

BLOWS/FT.	CONSISTENCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
31+	HARD

SAMPLER ID.	
SS	SPLIT SPOON
ST	SHELBY TUBE
G	GRAB SAMPLE
MC	MACRO-CORE

DESCRIPTIONS	
MOSTLY	50-100%
SOME	30-45%
LITTLE	15-25%
FEW	5-10%
TRACE	<5%

NOTES	
WD	WHILE DRILLING
NE	NOT ENCOUNTERED
UR	NOT READ
NR	NO RECOVERY

AECOM

Test Boring Report

BORING NO. MW-24

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DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLE INFIORMATION	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
22.5	3.0		17-27	No recovery 23-27
25.0				
27.5				Boring terminated at 27 ft.
30.0				
32.5				
35.0				

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
50+	VERY DENSE

BLOWS/FT.	CONSISTENCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
31+	HARD

SAMPLER ID.	
SS	SPLIT SPOON
ST	SHELBY TUBE
G	GRAB SAMPLE
MC	MACRO-CORE

DESCRIPTIONS	
MOSTLY	50-100%
SOME	30-45%
LITTLE	15-25%
FEW	5-10%
TRACE	<5%

NOTES	
WD	WHILE DRILLING
NE	NOT ENCOUNTERED
UR	NOT READ
NR	NO RECOVERY

AECOM

Test Boring Report

BORING NO. MW-25D
PAGE 1 OF 6

PROJECT: UTC Delavan Spray Technologies Site
CLIENT: UTC
CONTRACTOR: SAEDACCO
EQUIPMENT: Geoprobe 8140 LS Sonic Rig

PROJECT NO: 60314964
LOCATION:
ELEVATION:
DATE START: 12/1/15
DATE FINISH: 12/2/15
DRILLER: W. Keyes
PREPARED BY: C. Suddeth

GROUND WATER		DEPTH TO:			CASING		SAMPLER	CORE BARREL
DATE	HRS AFTER COMP	WATER	BOTTOM OF CASING	BOTTOM OF HOLE	TYPE		Acetate Liners	Core barrel
					SIZE ID			
					HAMMER WT			
					HAMMER FALL			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLE INFIORMATION	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
			0-7	SAND (SW), light yellowish brown 10YR 6/4, fine to coarse grained, well graded, moist
2.5				
5.0	1.3			CLAYEY SAND (SC), light gray 10YR 7/1 to brownish yellow 10YR 6/8, fine to coarse grained, little clay, well graded, wet
				CLAY (CH), light gray 10YR 7/1, medium stiff, high plasticity, wet
7.5				CLAYEY SILT (MH), white 2.5Y 8/1, stiff, low plasticity, little clay, moist to wet
			7-17	
10.0	0.4			

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
50+	VERY DENSE

BLOWS/FT.	CONSISTENCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
31+	HARD

SAMPLER ID.	
SS	SPLIT SPOON
ST	SHELBY TUBE
G	GRAB SAMPLE
MC	MACRO-CORE

DESCRIPTIONS	
MOSTLY	50-100%
SOME	30-45%
LITTLE	15-25%
FEW	5-10%
TRACE	<5%

NOTES	
WD	WHILE DRILLING
NE	NOT ENCOUNTERED
UR	NOT READ
NR	NO RECOVERY

AECOM

Test Boring Report

BORING NO. MW-25D

PAGE 2 OF 6

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLE INFIORMATION	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
10.0				CLAYEY SILT (MH), white 2.5Y 8/1 to yellow 2.5Y 7/6, stiff, low plasticity, little clay, moist to wet
12.5			7-17	
15.0	0.3			CLAYEY SILT (MH), white 2.5Y 8/1 with layers of light red 2.5YR 6/6, stiff, low plasticity, little clay, wet
17.5				SAND (SW), pale olive 5Y 6/3 to yellowish brown 10YR 5/6, fine to medium grained, well graded, saturated.
20.0	0.2		17-27	
22.5				

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
50+	VERY DENSE

BLOWS/FT.	CONSISTENCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
31+	HARD

SAMPLER ID.	
SS	SPLIT SPOON
ST	SHELBY TUBE
G	GRAB SAMPLE
MC	MACRO-CORE

DESCRIPTIONS	
MOSTLY	50-100%
SOME	30-45%
LITTLE	15-25%
FEW	5-10%
TRACE	<5%

NOTES	
WD	WHILE DRILLING
NE	NOT ENCOUNTERED
UR	NOT READ
NR	NO RECOVERY

AECOM

Test Boring Report

BORING NO. MW-25D
PAGE 3 OF 6

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLE INFIORMATION	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
22.5				
			17-27	LIMESTONE (SW), pale yellow 5Y 8/2, fine to coarse grained, sand and shell fragments, well graded, saturated.
	0.8			
25.0				
27.5				
	0.3			LIMESTONE (SW), pale yellow 2.5Y 8/2, fine to coarse grained, sand and shell fragments, well graded, saturated.
30.0				
			27-37	
32.5				
	0.6			
35.0				

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
50+	VERY DENSE

BLOWS/FT.	CONSISTENCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
31+	HARD

SAMPLER ID.	
SS	SPLIT SPOON
ST	SHELBY TUBE
G	GRAB SAMPLE
MC	MACRO-CORE

DESCRIPTIONS	
MOSTLY	50-100%
SOME	30-45%
LITTLE	15-25%
FEW	5-10%
TRACE	<5%

NOTES	
WD	WHILE DRILLING
NE	NOT ENCOUNTERED
UR	NOT READ
NR	NO RECOVERY

AECOM

Test Boring Report

BORING NO. MW-25D
PAGE 4 OF 6

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLE INFIORMATION	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
35.0			27-37	LIMESTONE (SW), pale yellow 2.5 Y 8/3, fine to coarse grained, shells, well graded, saturated.
37.5				LIMESTONE (SW), as above
40.0	0.7		37-47	
42.5				LIMESTONE (SW), white 5 Y 8/1, medium to coarse grained, few hard sections in core, shells & fossils, well graded, saturated.
45	1.2			
47.5				

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
50+	VERY DENSE

BLOWS/FT.	CONSISTENCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
31+	HARD

SAMPLER ID.	
SS	SPLIT SPOON
ST	SHELBY TUBE
G	GRAB SAMPLE
MC	MACRO-CORE

DESCRIPTIONS	
MOSTLY	50-100%
SOME	30-45%
LITTLE	15-25%
FEW	5-10%
TRACE	<5%

NOTES	
WD	WHILE DRILLING
NE	NOT ENCOUNTERED
UR	NOT READ
NR	NO RECOVERY

AECOM

Test Boring Report

BORING NO. MW-25D
PAGE 5 OF 6

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLE INFIORMATION	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
47.5				LIMESTONE (SW), white 5Y 8/1, medium to coarse grained, few hard sections in core, well graded, shells & fossils, saturated.
			47-52	
	1.7			
50.0				LIMESTONE (SW), as above with trace hard sections in core
	1.3			
				LIMESTONE (SW), White 5Y 8/1, medium to coarse grained, few hard sections in core, well graded, shells & fossils, saturated.
52.5				
55.0			52-62	
	1.3			
				LIMESTONE (SW), as above.
57.5	1.1			
60				

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
50+	VERY DENSE

BLOWS/FT.	CONSISTENCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
31+	HARD

	SAMPLER ID.
SS	SPLIT SPOON
ST	SHELBY TUBE
G	GRAB SAMPLE
MC	MACRO-CORE

DESCRIPTIONS	
MOSTLY	50-100%
SOME	30-45%
LITTLE	15-25%
FEW	5-10%
TRACE	<5%

	NOTES
WD	WHILE DRILLING
NE	NOT ENCOUNTERED
UR	NOT READ
NR	NO RECOVERY

AECOM

Test Boring Report

BORING NO. MW-25D
PAGE 6 OF 6

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLE INFIORMATION	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
60 ~~47.5~~				LIMESTONE (SW), white 5Y 8/1, medium to coarse grained, few hard sections, shells & fossils, well graded, saturated.
	2.8			
62.5 ~~50.0~~				
	0.6			
				LIMESTONE (SW), as above
65 ~~52.5~~	0.8			
	0.9			
67.5 ~~55.0~~				Boring terminated at 67 ft.
~~87.5~~				
~~60~~				

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
50+	VERY DENSE

BLOWS/FT.	CONSISTENCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
31+	HARD

SAMPLER ID.	
SS	SPLIT SPOON
ST	SHELBY TUBE
G	GRAB SAMPLE
MC	MACRO-CORE

DESCRIPTIONS	
MOSTLY	50-100%
SOME	30-45%
LITTLE	15-25%
FEW	5-10%
TRACE	<5%

NOTES	
WD	WHILE DRILLING
NE	NOT ENCOUNTERED
UR	NOT READ
NR	NO RECOVERY

AECOM

Test Boring Report

BORING NO. MW-26D
PAGE 1 OF 5

PROJECT: UTC Delavan Spray Technologies Site
CLIENT: UTC
CONTRACTOR: SAEDACCO
EQUIPMENT: Geoprobe 8140 LS Sonic Rig

PROJECT NO: 60314964
LOCATION:
ELEVATION:
DATE START: 12/1/15
DATE FINISH: 12/1/15
DRILLER: W. Keyes
PREPARED BY: C. Sudleth

GROUND WATER		DEPTH TO:			CASING		SAMPLER	CORE BARREL
DATE	HRS AFTER COMP	WATER	BOTTOM OF CASING	BOTTOM OF HOLE	TYPE		Acetate Liners	Core barrel
					SIZE ID			
					HAMMER WT			
					HAMMER FALL			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLE INFIORMATION	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
				SAND (SW), brownish yellow 10YR 6/6, fine to medium grained, well graded, damp
				CLAYEY SAND (SC), light gray 10YR 7/2 to strong brown 7.5YR 5/8, fine to medium grained, little clay, well graded, damp.
2.5			0-7	
	1.0			
5.0				
7.5				
			7-17	SAND (SW), red 2.5YR 5/6 to light gray 10YR 7/2, layered colors, fine to medium grained, few clay, well graded, saturated
				SAND (SW) as above except fine to coarse grained
	0.8			
10.0				

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
50+	VERY DENSE

BLOWS/FT.	CONSISTENCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
31+	HARD

SAMPLER ID.	
SS	SPLIT SPOON
ST	SHELBY TUBE
G	GRAB SAMPLE
MC	MACRO-CORE

DESCRIPTIONS	
MOSTLY	50-100%
SOME	30-45%
LITTLE	15-25%
FEW	5-10%
TRACE	<5%

NOTES	
WD	WHILE DRILLING
NE	NOT ENCOUNTERED
UR	NOT READ
NR	NO RECOVERY

AECOM

Test Boring Report

BORING NO. MW-26D
PAGE 2 OF 5

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLE INFIORMATION	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
10.0				No recovery 10-17 ft.
12.5			7-17	
15.0				
17.5				CLAY (CH), very pale brown 10YR 8/3 ~~with~~ with thin red layers, medium stiff, few silt, high plasticity, wet
20.0	0.0		17-27	CLAY (CH), brownish yellow 10 YR 6/8, medium stiff, few silt, high plasticity, wet.
22.5				CLAYEY SAND (SC), brownish yellow 10 YR 6/8, fine to medium grained, well graded, little clay, saturated,

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
50+	VERY DENSE

BLOWS/FT.	CONSISTENCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
31+	HARD

	SAMPLER ID.
SS	SPLIT SPOON
ST	SHELBY TUBE
G	GRAB SAMPLE
MC	MACRO-CORE

DESCRIPTIONS	
MOSTLY	50-100%
SOME	30-45%
LITTLE	15-25%
FEW	5-10%
TRACE	<5%

	NOTES
WD	WHILE DRILLING
NE	NOT ENCOUNTERED
UR	NOT READ
NR	NO RECOVERY

AECOM

Test Boring Report

BORING NO. MW-26D
PAGE 3 OF 5

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLE INFIORMATION	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
22.5				CLAYEY SILT (MH), strong brown 7.5YR 5/8, soft, little clay, low plasticity, moist
	0.0		17-27	
25.0				LIMESTONE (sw), pale yellow 5Y 7/4, fine to coarse grained, sand and shell fragments, well graded, saturated.
27.5				LIMESTONE (sw), olive 5Y 4/3 → to pale yellow above, fine to coarse grained, little cobble size cemented zones, well graded, saturated.
	0.2			
30.0			27-42	LIMESTONE (sw), pale yellow 5Y 8/2, medium to coarse grained with large cemented zones, well graded, saturated
32.5				
	0.5			
35.0				

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
50+	VERY DENSE

BLOWS/FT.	CONSISTENCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
31+	HARD

SAMPLER ID.	
SS	SPLIT SPOON
ST	SHELBY TUBE
G	GRAB SAMPLE
MC	MACRO-CORE

DESCRIPTIONS	
MOSTLY	50-100%
SOME	30-45%
LITTLE	15-25%
FEW	5-10%
TRACE	<5%

NOTES	
WD	WHILE DRILLING
NE	NOT ENCOUNTERED
UR	NOT READ
NR	NO RECOVERY

AECOM

Test Boring Report

BORING NO. MW-26

PAGE 4 OF 5

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLE INFIORMATION	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
35.0				LIMESTONE (SW) pale yellow 5Y 8/2, medium to coarse grained, with large cemented zones, well graded, saturated.
37.5			27-42	
				LIMESTONE(SW), as above with some cemented fossils/shells
40.0	0.6			
42.5				LIMESTONE (SW), pale yellow 2.5Y 8/3, medium to coarse grained with some cemented fossils/shells, well graded, saturated.
			42-52	
45.0	0.4			
47.5				

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
50+	VERY DENSE

BLOWS/FT.	CONSISTENCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
31+	HARD

SAMPLER ID.	
SS	SPLIT SPOON
ST	SHELBY TUBE
G	GRAB SAMPLE
MC	MACRO-CORE

DESCRIPTIONS	
MOSTLY	50-100%
SOME	30-45%
LITTLE	15-25%
FEW	5-10%
TRACE	<5%

NOTES	
WD	WHILE DRILLING
NE	NOT ENCOUNTERED
UR	NOT READ
NR	NO RECOVERY

AECOM

Test Boring Report

BORING NO. MW-26D
PAGE 5 OF 5

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLE INFIORMATION	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
47.5			42-52	LIMESTONE (SW), pale yellow 2.5Y 8/3, medium to coarse grained, some cemented zones, well graded, saturated.
	0.5			
50.0				
52.5				Boring terminated at 52 ft.
55.0				
57.5				
60				

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
50+	VERY DENSE

BLOWS/FT.	CONSISTENCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
31+	HARD

SAMPLER ID.	
SS	SPLIT SPOON
ST	SHELBY TUBE
G	GRAB SAMPLE
MC	MACRO-CORE

DESCRIPTIONS	
MOSTLY	50-100%
SOME	30-45%
LITTLE	15-25%
FEW	5-10%
TRACE	<5%

NOTES	
WD	WHILE DRILLING
NE	NOT ENCOUNTERED
UR	NOT READ
NR	NO RECOVERY

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: UTC Delavan Spray Technologies Site (last) (first)
Address: 4334 Main Hwy
City: Bamberg State: SC Zip: 29003
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:**
Name: UTC Delavan Spray Technologies Site
Street Address: 4334 Main Hwy
City: Bamberg, SC Zip: 29003
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: MW-26D **PUBLIC SYSTEM NUMBER:** MW-26D

4. ABANDONMENT: ☐ Yes ☒ No
Give Details Below
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
see geologist's log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:

6. TYPE: ☐ Mud Rotary ☐ Jetted ☒ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☒ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 48' ft. Date Started: 12-1-15 Date Completed: 12-1-15

10. CASING: ☐ Threaded ☐ Welded
Diam.: _____
Type: ☐ PVC ☐ Galvanized ☐ Steel ☐ Other
_____ in. to _____ ft. depth
_____ in. to _____ ft. depth
Height: Above/(Below)
Surface _____ ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☒ No

11. SCREEN:
Type: PVC Diam.: 2"
Slot/Gauge: .10 Length: 10'
Set Between: _____ ft. and _____ ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☒ No

12. STATIC WATER LEVEL 4' ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☒ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☒ No Bacterial Analysis ☐ Yes ☒ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☒ Yes ☐ No
Installed from 36 ft. to 48 ft.
Effective size 2a Uniformity Coefficient _____

16. WELL GROUTED? ☒ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☒ Bentonite/Cement ☐ Other _____
Depth: From 0 ft. to 34 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: _____ ft. _____ direction
Type _____
Well Disinfected ☐ Yes ☒ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☒
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe_____ ft. Capacity ____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Will Keyes CERT. NO.: 2092
Address: (Print) SAEDACCO 9088 Northfield Drive
Level: A (B) C D (circle one)
Telephone No.: (803)548-2180 Fax No.: (803)548-2181

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Will Keyes Date: 12/7/2015
Well Driller

If D Level Driller, provide supervising driller's name:

COPY 1 MAIL TO SCDHEC, COPY 2 TO WELL OWNER, COPY 3 TO WELL DRILLER

D H E C
PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: UTC Delavan Spray Technologies Site
(last) (first)
Address: 4334 Main Hwy
City: Bamberg State: SC Zip: 29003
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:**
Name: UTC Delavan Spray Technologies Site
Street Address: 4334 Main Hwy
City: Bamberg, SC Zip: 29003
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: MW-25D **PUBLIC SYSTEM NUMBER:** MW-25D

4. ABANDONMENT: ☐ Yes ☒ No
Give Details Below
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
see geologist's log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		
5. REMARKS:		

6. TYPE: ☐ Mud Rotary ☐ Jetted ☒ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☒ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 62' ft. Date Started: 12-1-15 Date Completed: 12-1-15

10. CASING: ☐ Threaded ☐ Welded
Diam.: _____
Type: ☐ PVC ☐ Galvanized ☐ Steel ☐ Other
_____ in. to _____ ft. depth
_____ in. to _____ ft. depth
Height: Above/(Below)
Surface _____ ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☒ No

11. SCREEN:
Type: PVC Diam.: 2"
Slot/Gauge: .10 Length: 10'
Set Between: _____ ft. and _____ ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☒ No

12. STATIC WATER LEVEL 4' ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☒ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☒ No Bacterial Analysis ☐ Yes ☒ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☒ Yes ☐ No
Installed from 50 ft. to 62 ft.
Effective size 2a Uniformity Coefficient _____

16. WELL GROUTED? ☒ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☒ Bentonite/Cement ☐ Other _____
Depth: From 0 ft. to 48 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: _____ ft. _____ direction
Type _____
Well Disinfected ☐ Yes ☒ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☒
Mfr. Name: _____ Model No.: _____
H.P. _____ Volts _____ Length of drop pipe _____ ft. Capacity _____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Will Keyes CERT. NO.: 2092
Address: (Print) SAEDACCO
9088 Northfield Drive
Level: A (B) C D (circle one)
Telephone No.: (803) 548-2180 Fax No.: (803) 548-2181

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Will Keyes Date: 12/7/2015
Well Driller

If D Level Driller, provide supervising driller's name:

DHEC 1903 (03/2004) COPY 1 MAIL TO SCDHEC, COPY 2 TO WELL OWNER, COPY 3 TO WELL DRILLER

D H E C
PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: UTC Delavan Spray Technologies Site (last) (first)
Address: 4334 Main Hwy
City: Bamberg State: SC Zip: 29003
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:**
Name: UTC Delavan Spray Technologies Site
Street Address: 4334 Main Hwy
City: Bamberg, SC Zip: 29003
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: MW-24 **PUBLIC SYSTEM NUMBER:** MW-24

4. ABANDONMENT: ☐ Yes ☒ No
Give Details Below
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
see geologist's log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		
5. REMARKS:		

6. TYPE: ☐ Mud Rotary ☐ Jetted ☒ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☒ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 21' ft. Date Started: 12-1-15 Date Completed: 12-1-15

10. CASING: ☐ Threaded ☐ Welded
Diam.: _____
Type: ☐ PVC ☐ Galvanized ☐ Steel ☐ Other
_____ in. to _____ ft. depth
_____ in. to _____ ft. depth
Height: Above/(Below)
Surface _____ ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☒ No

11. SCREEN:
Type: PVC Diam.: 2"
Slot/Gauge: .10 Length: 10'
Set Between: _____ ft. and _____ ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☒ No

12. STATIC WATER LEVEL 4' ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☒ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☒ No Bacterial Analysis ☐ Yes ☒ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☒ Yes ☐ No
Installed from 6 ft. to 21 ft.
Effective size 2a Uniformity Coefficient _____

16. WELL GROUTED? ☒ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☒ Bentonite/Cement ☐ Other _____
Depth: From 0 ft. to 3 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: _____ ft. _____ direction
Type _____
Well Disinfected ☐ Yes ☒ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☒
Mfr. Name: _____ Model No.: _____
H.P. _____ Volts _____ Length of drop pipe _____ ft. Capacity _____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Will Keyes CERT. NO.: 2092
Address: (Print) SAEDACCO
9088 Northfield Drive
Level: A (B) C D (circle one)
Telephone No.: (803) 548-2180 Fax No.: (803) 548-2181

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Will Keyes Date: 12/7/2015
Well Driller

If D Level Driller, provide supervising driller's name:

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: UTC Delavan Spray Technologies Site (last) (first)
Address: 4334 Main Hwy
City: Bamberg State: SC Zip: 29003
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:**
Name: UTC Delavan Spray Technologies Site
Street Address: 4334 Main Hwy
City: Bamberg, SC Zip: 29003
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: DPT-58 **PUBLIC SYSTEM NUMBER:** DPT-58

4. ABANDONMENT: ☐ Yes ☒ No
Give Details Below
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
see geologist's log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		
5. REMARKS:		

6. TYPE: ☐ Mud Rotary ☐ Jetted ☒ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UTC Delavan Spray Technologies Site

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☒ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 15' ft. Date Started: 12-1-15 Date Completed: 12-1-15

10. CASING: ☐ Threaded ☐ Welded
Diam.: _____
Type: ☐ PVC ☐ Galvanized ☐ Steel ☐ Other
_____ in. to _____ ft. depth
_____ in. to _____ ft. depth
Height: Above/(Below)
Surface _____ ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☒ No

11. SCREEN:
Type: PVC Diam.: 1"
Slot/Gauge: .10 Length: 10'
Set Between: _____ ft. and _____ ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☒ No

12. STATIC WATER LEVEL 8' ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☒ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☒ No Bacterial Analysis ☐ Yes ☒ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☒ Yes ☐ No
Installed from 4 ft. to 15 ft.
Effective size 2a Uniformity Coefficient _____

16. WELL GROUTED? ☒ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☒ Bentonite/Cement ☐ Other _____
Depth: From 0 ft. to 3 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: _____ ft. _____ direction
Type _____
Well Disinfected ☐ Yes ☒ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☒
Mfr. Name: _____ Model No.: _____
H.P. _____ Volts _____ Length of drop pipe _____ ft. Capacity _____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Will Keyes CERT. NO. 2092
Address: (Print) SAEDACCO 9088 Northfield Drive
Level: A (B) C D (circle one)
Telephone No.: (803) 548-2180 Fax No.: (803) 548-2181

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Will Keyes Well Driller Date: 12/7/2015

If D Level Driller, provide supervising driller's name:

DHEC 1903 (03/2004) COPY 1 MAIL TO SCDHEC, COPY 2 TO WELL OWNER, COPY 3 TO WELL DRILLER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: UTC Delavan Spray Technologies Site (last) (first)
Address: 4334 Main Hwy
City: Bamberg State: SC Zip: 29003
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY:
Name: UTC Delavan Spray Technologies Site
Street Address: 4334 Main Hwy
City: Bamberg, SC Zip: 29003
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: DPT-59 **PUBLIC SYSTEM NUMBER:** DPT-59

4. ABANDONMENT: ☐ Yes ☒ No
Give Details Below
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
see geologist's log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: Hand augered inside building

6. TYPE: ☐ Mud Rotary ☐ Jetted ☒ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☒ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 15' ft. Date Started: 12-1-15 Date Completed: 12-1-15

10. CASING: ☐ Threaded ☐ Welded
Diam.: _____
Type: ☐ PVC ☐ Galvanized ☐ Steel ☐ Other
_____ in. to _____ ft. depth
_____ in. to _____ ft. depth
Height: Above/(Below)
Surface _____ ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☒ No

11. SCREEN:
Type: PVC Diam.: 1"
Slot/Gauge: .10 Length: 10'
Set Between: _____ ft. and _____ ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☒ No

12. STATIC WATER LEVEL 8' ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☒ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☒ No Bacterial Analysis ☐ Yes ☒ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☒ Yes ☐ No
Installed from 4 ft. to 15 ft.
Effective size 2a Uniformity Coefficient _____

16. WELL GROUTED? ☒ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☒ Bentonite/Cement ☐ Other _____
Depth: From 0 ft. to 3 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: _____ ft. _____ direction
Type _____
Well Disinfected ☐ Yes ☒ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☒
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe_____ ft. Capacity ____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Will Keyes CERT. NO.: 2092
Address: (Print) SAEDACCO 9088 Northfield Drive
Level: A (B) C D (circle one)
Telephone No.: (803) 548-2180 Fax No.: (803) 548-2181

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Will Keyes Well Driller Date: 12/7/2015

If D Level Driller, provide supervising driller's name:

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: UTC Delavan Spray Technologies Site (last) (first)
Address: 4334 Main Hwy
City: Bamberg State: SC Zip: 29003
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY:
Name: UTC Delavan Spray Technologies Site
Street Address: 4334 Main Hwy
City: Bamberg, SC Zip: 29003
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: DPT-60 **PUBLIC SYSTEM NUMBER:** DPT-60

4. ABANDONMENT: ☐ Yes ☒ No
Give Details Below
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
see geologist's log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		
5. REMARKS: Hand augered inside building		

6. TYPE: ☐ Mud Rotary ☐ Jetted ☒ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UTC Delavan Spray Technologies Site

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☒ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 15' ft. Date Started: 12-1-15 Date Completed: 12-1-15

10. CASING: ☐ Threaded ☐ Welded
Diam.: _____
Type: ☐ PVC ☐ Galvanized ☐ Steel ☐ Other
_____ in. to _____ ft. depth
_____ in. to _____ ft. depth
Height: Above/(Below)
Surface _____ ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☒ No

11. SCREEN:
Type: PVC Diam.: 1"
Slot/Gauge: .10 Length: 10'
Set Between: _____ ft. and _____ ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☒ No

12. STATIC WATER LEVEL 8' ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☒ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☒ No Bacterial Analysis ☐ Yes ☒ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☒ Yes ☐ No
Installed from 4 ft. to 15 ft.
Effective size 2a Uniformity Coefficient _____

16. WELL GROUTED? ☒ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☒ Bentonite/Cement ☐ Other _____
Depth: From 0 ft. to 3 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type _____
Well Disinfected ☐ Yes ☒ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☒
Mfr. Name: _____ Model No.: _____
H.P. _____ Volts _____ Length of drop pipe _____ ft. Capacity ____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Will Keyes CERT. NO. 2092
Address: (Print) SAEDACCO 9088 Northfield Drive
Level: A (B) C D (circle one)
Telephone No.: (803) 548-2180 Fax No.: (803) 548-2181

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Will Keyes Well Driller Date: 12/7/2015

If D Level Driller, provide supervising driller's name:

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: UTC Delavan Spray Technologies Site (last) (first)
Address: 4334 Main Hwy
City: Bamberg State: SC Zip: 29003
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY:
Name: UTC Delavan Spray Technologies Site
Street Address: 4334 Main Hwy
City: Bamberg, SC Zip: 29003
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: DPT-61 **PUBLIC SYSTEM NUMBER:** DPT-61

4. ABANDONMENT: ☐ Yes ☒ No
Give Details Below
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
see geologist's log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: Hand augered inside building

6. TYPE: ☐ Mud Rotary ☐ Jetted ☒ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UTC Delavan Spray Technologies Site

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☒ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 15' ft. Date Started: 12-1-15 Date Completed: 12-1-15

10. CASING: ☐ Threaded ☐ Welded
Diam.: _____
Type: ☐ PVC ☐ Galvanized ☐ Steel ☐ Other
_____ in. to _____ ft. depth
_____ in. to _____ ft. depth
Height: Above/(Below)
Surface _____ ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☒ No

11. SCREEN:
Type: PVC Diam.: 1"
Slot/Gauge: .10 Length: 10'
Set Between: _____ ft. and _____ ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☒ No

12. STATIC WATER LEVEL 8' ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☒ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☒ No Bacterial Analysis ☐ Yes ☒ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☒ Yes ☐ No
Installed from 4 ft. to 15 ft.
Effective size 2a Uniformity Coefficient _____

16. WELL GROUTED? ☒ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☒ Bentonite/Cement ☐ Other _____
Depth: From 0 ft. to 3 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: _____ ft. _____ direction
Type _____
Well Disinfected ☐ Yes ☒ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☒
Mfr. Name: _____ Model No.: _____
H.P. _____ Volts _____ Length of drop pipe _____ ft. Capacity _____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Will Keyes CERT. NO. 2092
Address: (Print) SAEDACCO 9088 Northfield Drive
Level: A (B) C D (circle one)
Telephone No.: (803) 548-2180 Fax No.: (803) 548-2181

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Will Keyes Date: 12/7/2015
Well Driller

If D Level Driller, provide supervising driller's name:

COPY 1 MAIL TO SCDHEC, COPY 2 TO WELL OWNER, COPY 3 TO WELL DRILLER

Shallow Monitoring Well Construction Details

PROJECT:	UTC Delavan Spray Technologies Site	**WELL NUMBER:**	MW-24
LOCATION:	Bamberg, SC	**JOB NUMBER:**	60314964
CLIENT:	United Technologies	**TYPE OF INSTALLATION:**	Monitoring Well
CONTRACTOR:	SAEDACCO		
DRILLER:	W. Keyes	**LOCATION:**	West of Plant Building
FIELD REPRESENTATIVE:	C. Suddeth	**INSTALLATION DATE:**	12/03/15

SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)

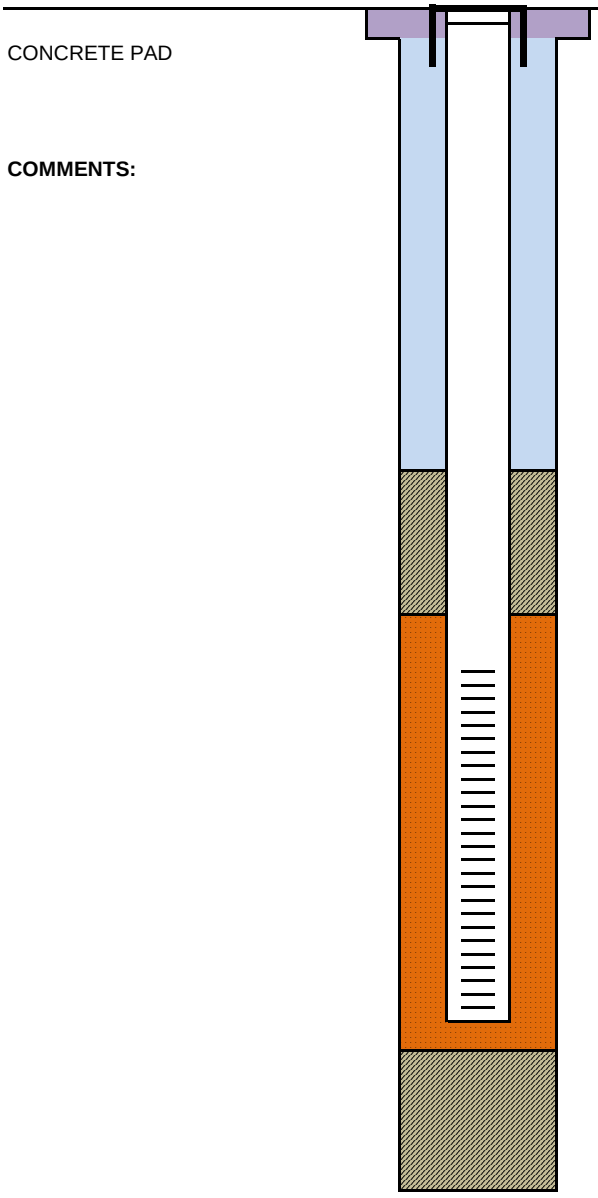
NORTHING: 527,332.95

TOP OF CASING ELEVATION: 147.85 ft

EASTING: 1,985,487.59

GROUND SURFACE ELEVATION: 148.52 ft

CASING STICKUP: -0.67 feet



COMMENTS:

TYPE OF ANNULAR SEAL	30% Solids Bentonite
TYPE OF WELL CASING OR RISER	Sch. 40 PVC
INSIDE DIAMETER	2.0 inch
NOMINAL BOREHOLE DIAMETER	6.0 inch
TOP OF WELL SEAL	3.5 feet
TYPE OF WELL SEAL	Bentonite Chips
TOP OF SAND FILTER PACK	5.0 feet
TOP OF SCREENED INTERVAL	6.0 feet
TYPE OF SCREEN	PVC
SLOT SIZE	0.010 inch
INSIDE DIAMETER	2.0 inch
SCREEN LENGTH	15.0 feet
FILTER PACK AROUND SCREEN	No. 2 sand
BOTTOM OF WELL	21.0 feet
TOP OF BOREHOLE SEAL	22.0 feet
TYPE OF SEAL	Bentonite Chips
BOTTOM OF BOREHOLE	27 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
DIAGRAM NOT TO SCALE

Shallow Monitoring Well Construction Details

PROJECT:	UTC Delavan Spray Technologies Site	**WELL NUMBER:**	MW-25D
LOCATION:	Bamberg, SC	**JOB NUMBER:**	60314964
CLIENT:	United Technologies	**TYPE OF INSTALLATION:**	Monitoring Well
CONTRACTOR:	SAEDACCO		
DRILLER:	W. Keyes	**LOCATION:**	Approx. 1,300' southwest of plant
FIELD REPRESENTATIVE:	C. Suddeth	**INSTALLATION DATE:**	12/02/15

SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)

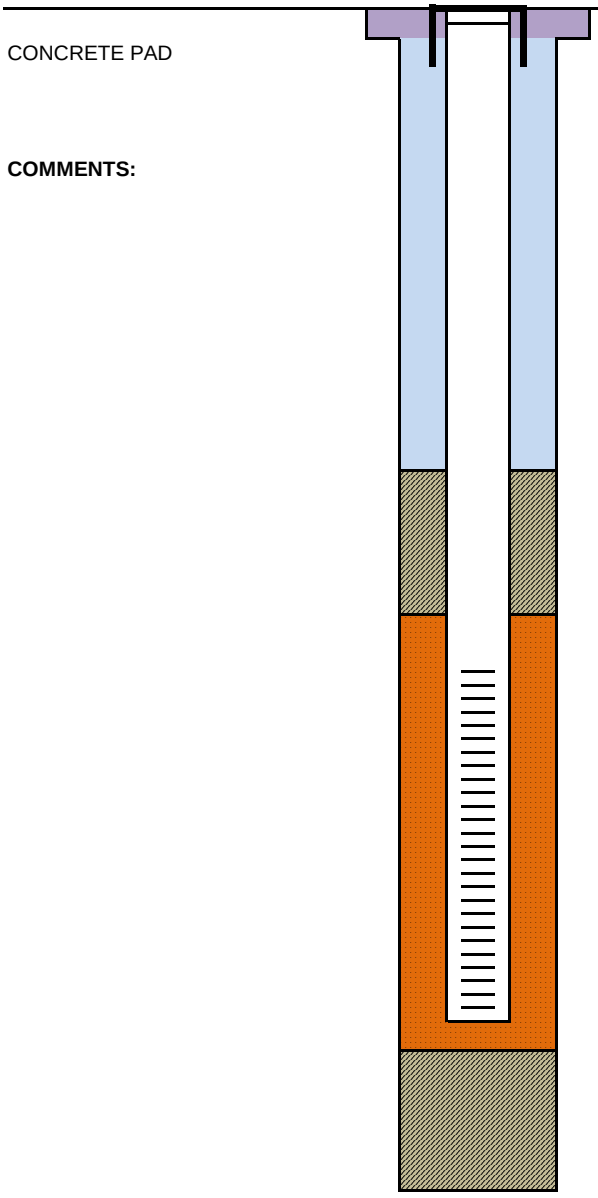
TOP OF CASING ELEVATION: 139.21 ft

NORTHING: 525,988.09

EASTING: 1,985,257.31

GROUND SURFACE ELEVATION: 139.30 ft

CASING STICKUP: -0.09 feet



COMMENTS:

TYPE OF ANNULAR SEAL	30% Solids Bentonite
TYPE OF WELL CASING OR RISER	Sch. 40 PVC
INSIDE DIAMETER	2.0 inch
NOMINAL BOREHOLE DIAMETER	6.0 inch
TOP OF WELL SEAL	47.0 feet
TYPE OF WELL SEAL	Bentonite Chips
TOP OF SAND FILTER PACK	50.0 feet
TOP OF SCREENED INTERVAL	52.0 feet
TYPE OF SCREEN	PVC
SLOT SIZE	0.010 inch
INSIDE DIAMETER	2.0 inch
SCREEN LENGTH	10.0 feet
FILTER PACK AROUND SCREEN	No. 2 sand
BOTTOM OF WELL	62.0 feet
TOP OF BOREHOLE SEAL	64.0 feet
TYPE OF SEAL	Bentonite Chips
BOTTOM OF BOREHOLE	67 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
DIAGRAM NOT TO SCALE

Shallow Monitoring Well Construction Details

PROJECT:	UTC Delavan Spray Technologies Site	**WELL NUMBER:**	MW-26D
LOCATION:	Bamberg, SC	**JOB NUMBER:**	60314964
CLIENT:	United Technologies	**TYPE OF INSTALLATION:**	
CONTRACTOR:	SAEDACCO		Monitoring Well
DRILLER:	W. Keyes	**LOCATION:**	Approx. 1,750' south of plant
FIELD REPRESENTATIVE:	C. Suddeth	**INSTALLATION DATE:**	12/01/15

SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)

NORTHING: 525,547.18

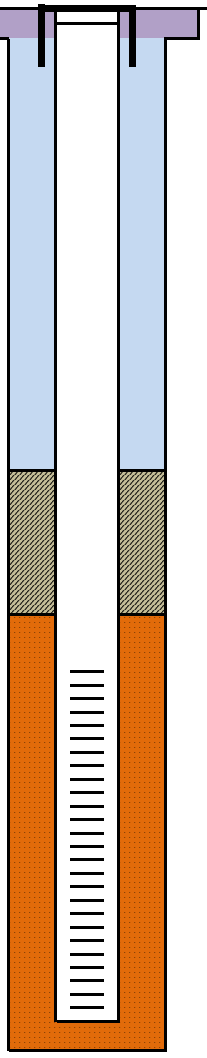
TOP OF CASING ELEVATION: 143.64 ft

EASTING: 1,985,631.39

GROUND SURFACE ELEVATION: 143.83 ft

CASING STICKUP: -0.19

COMMENTS:



TYPE OF ANNULAR SEAL	Neat Cement	
TYPE OF WELL CASING OR RISER	Sch. 40 PVC	
INSIDE DIAMETER	2.0	inch
NOMINAL BOREHOLE DIAMETER	6.0	inch
TOP OF WELL SEAL	33.0	feet
TYPE OF SEAL	Bentonite Chips	
TOP OF SAND FILTER PACK	36.0	feet
TOP OF SCREENED INTERVAL	38.0	feet
TYPE OF SCREEN	PVC	
SLOT SIZE	0.010	inch
INSIDE DIAMETER	2.0	inch
SCREEN LENGTH	10.0	feet
FILTER PACK AROUND SCREEN	No. 2 sand	
BOTTOM OF WELL	48.0	feet
BOTTOM OF BOREHOLE	52.0	feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
DIAGRAM NOT TO SCALE

Shallow Monitoring Well Construction Details

PROJECT:	UTC Delavan Spray Technologies Site	**WELL NUMBER:**	DPT-58
LOCATION:	Bamberg, SC	**JOB NUMBER:**	60314964
CLIENT:	United Technologies	**TYPE OF INSTALLATION:**	
CONTRACTOR:	SAEDACCO		1-inch pre-pack monitoring point
DRILLER:	W. Keyes	**LOCATION:**	Outside the building north of wickman room
FIELD REPRESENTATIVE:	L. Alexander	**INSTALLATION DATE:**	12/01/15

SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)

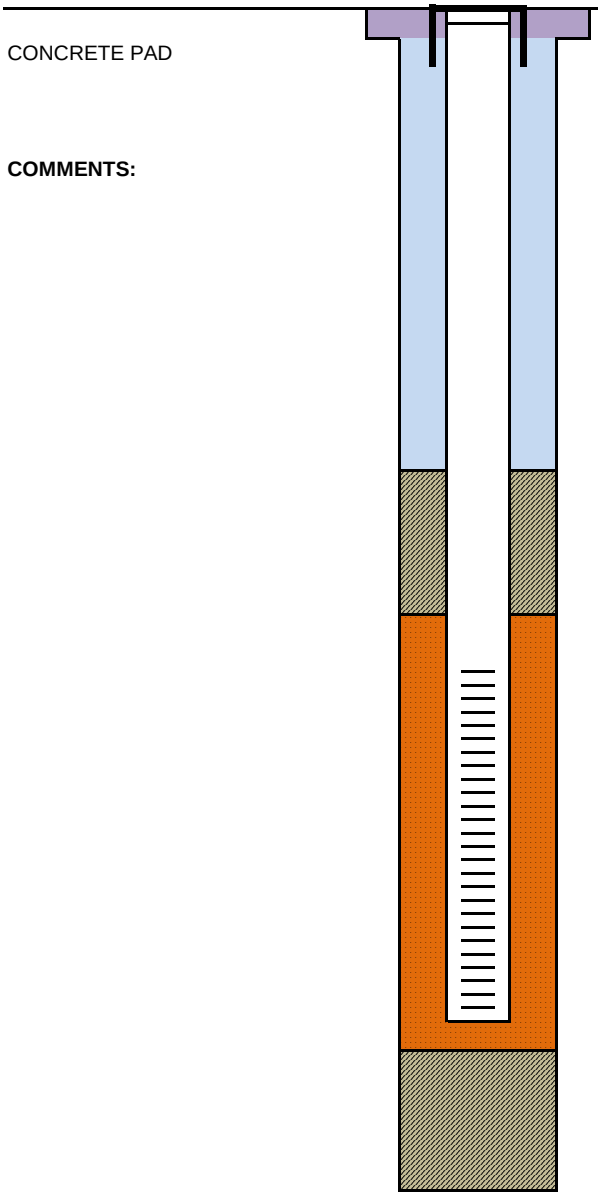
NORTHING: 527,478.86

TOP OF CASING ELEVATION: 148.02 ft

EASTING: 1,985,775.68

GROUND SURFACE ELEVATION: 148.31 ft

CASING STICKUP: -0.29 feet



COMMENTS:

TYPE OF ANNULAR SEAL	30% Solids Bentonite
TYPE OF WELL CASING OR RISER	Sch. 40 PVC
INSIDE DIAMETER	1.0 inch
NOMINAL BOREHOLE DIAMETER	3.0 inch
TOP OF WELL SEAL	3.0 feet
TYPE OF WELL SEAL	Bentonite Chips
TOP OF SAND FILTER PACK	4.0 feet
TOP OF SCREENED INTERVAL	5.0 feet
TYPE OF SCREEN	PVC
SLOT SIZE	0.010 inch
INSIDE DIAMETER	1.0 inch
SCREEN LENGTH	10.0 feet
FILTER PACK AROUND SCREEN	pre-pack well screen w/ No. 2a sand backfill as needed
BOTTOM OF WELL	15.0 feet
TOP OF BOREHOLE SEAL	NA feet
TYPE OF SEAL	NA
BOTTOM OF BOREHOLE	16 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
DIAGRAM NOT TO SCALE

Shallow Monitoring Well Construction Details

PROJECT:	UTC Delavan Spray Technologies Site	**WELL NUMBER:**	DPT-59
LOCATION:	Bamberg, SC	**JOB NUMBER:**	60314964
CLIENT:	United Technologies	**TYPE OF INSTALLATION:**	
CONTRACTOR:	SAEDACCO		1-inch pre-pack monitoring point
DRILLER:	W. Keyes	**LOCATION:**	near the emergency exit in the Wickman room
FIELD REPRESENTATIVE:	L. Alexander	**INSTALLATION DATE:**	12/02/15

SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)

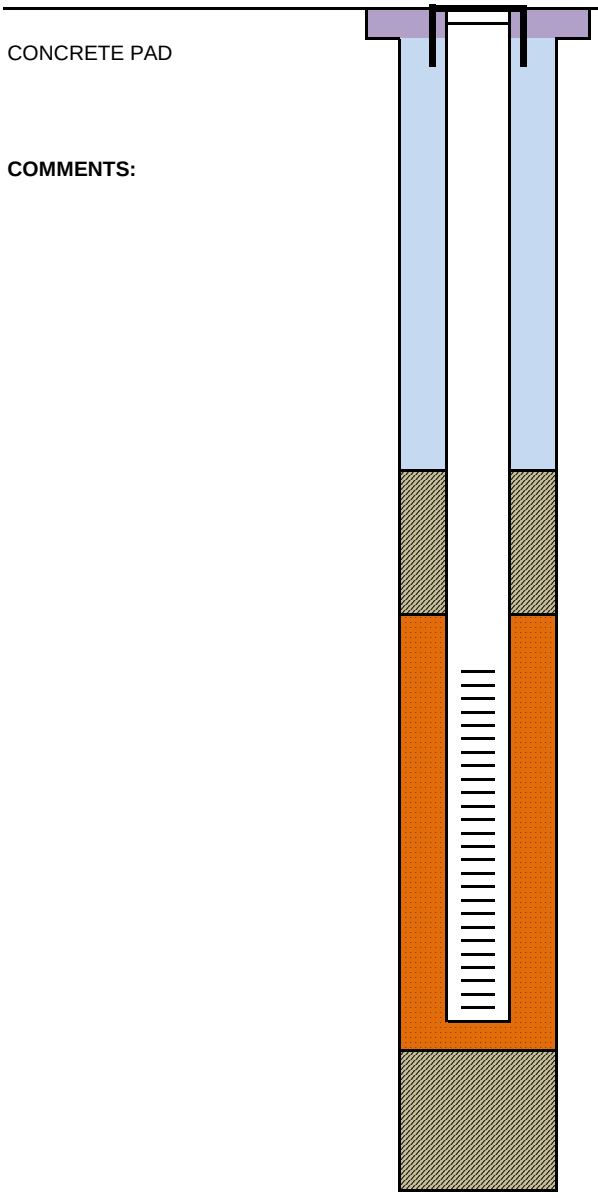
NORTHING: 527,457.60

TOP OF CASING ELEVATION: 148.24 ft

EASTING: 1,985,752.80

GROUND SURFACE ELEVATION: 148.53 ft

CASING STICKUP: -0.29 feet



COMMENTS:

TYPE OF ANNULAR SEAL	30% Solids Bentonite
TYPE OF WELL CASING OR RISER	Sch. 40 PVC
INSIDE DIAMETER	1.0 inch
NOMINAL BOREHOLE DIAMETER	3.0 inch
TOP OF WELL SEAL	3.0 feet
TYPE OF WELL SEAL	Bentonite Chips
TOP OF SAND FILTER PACK	4.0 feet
TOP OF SCREENED INTERVAL	5.0 feet
TYPE OF SCREEN	PVC
SLOT SIZE	0.010 inch
INSIDE DIAMETER	1.0 inch
SCREEN LENGTH	10.0 feet
FILTER PACK AROUND SCREEN	pre-pack well screen w/ No. 2a sand backfill as needed
BOTTOM OF WELL	15.0 feet
TOP OF BOREHOLE SEAL	NA feet
TYPE OF SEAL	NA
BOTTOM OF BOREHOLE	15 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
DIAGRAM NOT TO SCALE

Shallow Monitoring Well Construction Details

PROJECT:	UTC Delavan Spray Technologies Site	**WELL NUMBER:**	DPT-60
LOCATION:	Bamberg, SC	**JOB NUMBER:**	60314964
CLIENT:	United Technologies	**TYPE OF INSTALLATION:**	
CONTRACTOR:	SAEDACCO		1-inch pre-pack monitoring point
DRILLER:	W. Keyes	**LOCATION:**	in the Wickman room betw. MW-19 & DPT59
FIELD REPRESENTATIVE:	L. Alexander	**INSTALLATION DATE:**	12/02/15

SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)

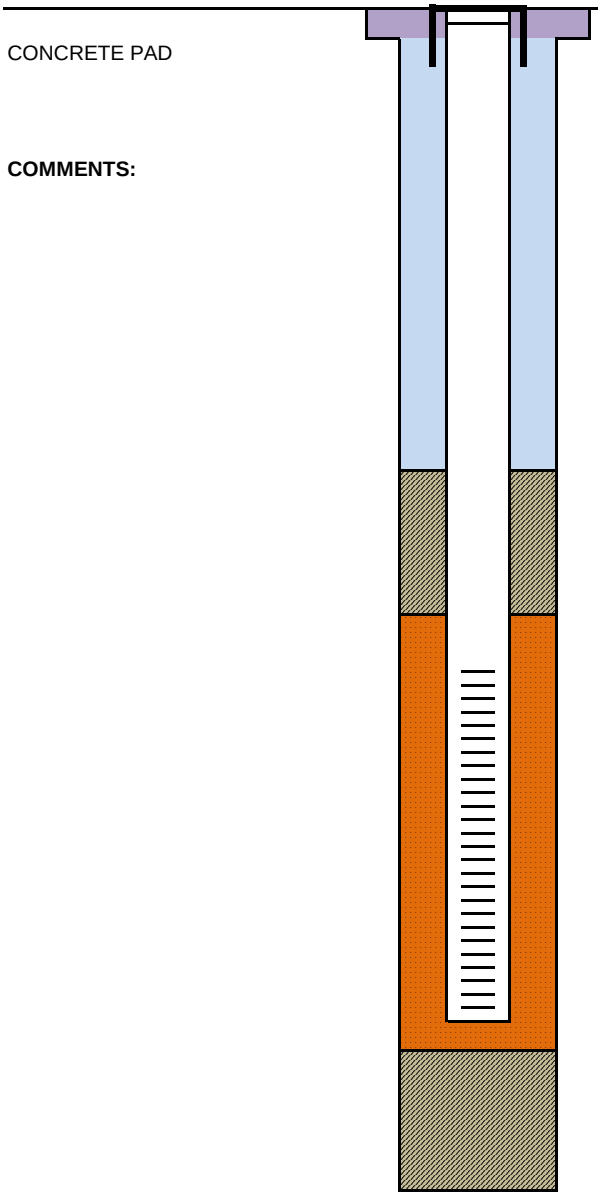
NORTHING: 527,453.36

TOP OF CASING ELEVATION: 148.31 ft

EASTING: 1,985,770.99

GROUND SURFACE ELEVATION: 148.53 ft

CASING STICKUP: -0.22 feet



COMMENTS:

TYPE OF ANNULAR SEAL	30% Solids Bentonite
TYPE OF WELL CASING OR RISER	Sch. 40 PVC
INSIDE DIAMETER	1.0 inch
NOMINAL BOREHOLE DIAMETER	3.0 inch
TOP OF WELL SEAL	3.0 feet
TYPE OF WELL SEAL	Bentonite Chips
TOP OF SAND FILTER PACK	4.0 feet
TOP OF SCREENED INTERVAL	5.0 feet
TYPE OF SCREEN	PVC
SLOT SIZE	0.010 inch
INSIDE DIAMETER	1.0 inch
SCREEN LENGTH	10.0 feet
FILTER PACK AROUND SCREEN	pre-pack well screen w/ No. 2a sand backfill as needed
BOTTOM OF WELL	15.0 feet
TOP OF BOREHOLE SEAL	NA feet
TYPE OF SEAL	NA
BOTTOM OF BOREHOLE	15 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
DIAGRAM NOT TO SCALE

Shallow Monitoring Well Construction Details

PROJECT:	UTC Delavan Spray Technologies Site	**WELL NUMBER:**	DPT-61
LOCATION:	Bamberg, SC	**JOB NUMBER:**	60314964
CLIENT:	United Technologies	**TYPE OF INSTALLATION:**	
CONTRACTOR:	SAEDACCO		1-inch pre-pack monitoring point
DRILLER:	W. Keyes	**LOCATION:**	near the former PCE degreaser in the wickman room
FIELD REPRESENTATIVE:	L. Alexander	**INSTALLATION DATE:**	12/02/15

SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)

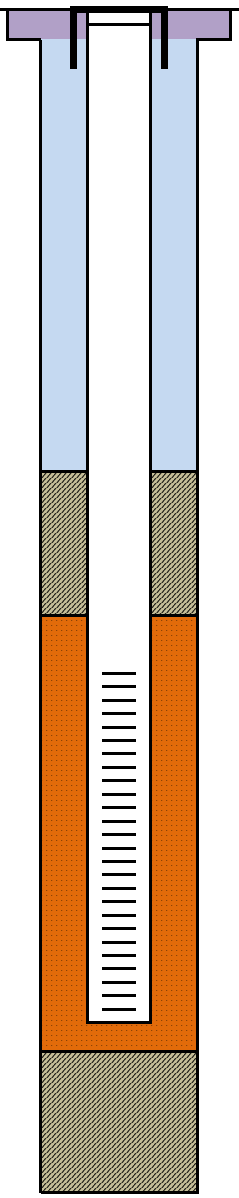
TOP OF CASING ELEVATION: 147.99 ft

NORTHING: 527,446.95

EASTING: 1,985,784.57

GROUND SURFACE ELEVATION: 148.44 ft

CASING STICKUP: -0.45 feet



CONCRETE PAD

COMMENTS:

TYPE OF ANNULAR SEAL	30% Solids Bentonite
TYPE OF WELL CASING OR RISER	Sch. 40 PVC
INSIDE DIAMETER	1.0 inch
NOMINAL BOREHOLE DIAMETER	3.0 inch
TOP OF WELL SEAL	3.0 feet
TYPE OF WELL SEAL	Bentonite Chips
TOP OF SAND FILTER PACK	4.0 feet
TOP OF SCREENED INTERVAL	5.0 feet
TYPE OF SCREEN	PVC
SLOT SIZE	0.010 inch
INSIDE DIAMETER	1.0 inch
SCREEN LENGTH	10.0 feet
FILTER PACK AROUND SCREEN	pre-pack well screen w/ No. 2a sand backfill as needed
BOTTOM OF WELL	15.0 feet
TOP OF BOREHOLE SEAL	NA feet
TYPE OF SEAL	NA
BOTTOM OF BOREHOLE	15 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
DIAGRAM NOT TO SCALE

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 2015-12-4 Date Completed (yr/mo/day) 2015-12-4

Field Personnel Randy Morgan

Site Name UTC Delavan Spray Technologies Site

Job # 60314964

Well ID # MW-24

____ Upgradient ____ Downgradient

Weather Conditions mostly sunny

Air Temperature 40-50's °F

Total Well Depth (TWD) = 21.00 1/100 ft

Depth to Ground Water (DGW) = 12.42 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 8.58 1/100 ft

1 Casing Volume (OCV) = LWC x 0.16 = 1.39 gallons

5 Casing Volumes = 6.99 gallons

Method of Well Development grundfos pump / bailer

Equipment Used grundfos pump / bailer

Total Volume of Water Removed 25.5 gallons

Date/Time 12415	Discharge Rate (ml/min)	Volume Purged (gallons)	Water Temp. (°C)	Specific Conductivity (ms/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity/Color	Sand Content (%)	Remarks
0730	1.0	initial	—	—	—	—	—	71100 Yellow		Surged
0740	.5	10	19.15	0.135	7.40	7.40	78.7	1080		Surged
0805		12	19.40	0.140	7.58	7.01	70.2	789.3		
0820		14.5	19.13	0.100	7.82	6.89	77.4	955.4		bailed Dry
0900		18.0	18.55	0.077	7.39	6.81	102.4	6575		bailed Dry
0923		20.5	19.30	0.083	7.57	6.62	100.9	813.4		bailed Dry
0940		23.0	19.28	0.072	7.04	6.53	99.7	798.5		bailed Dry
1000		25.5	18.98	0.069	7.43	6.49	66.6	845.4		bailed Dry

COMMENTS/OBSERVATIONS: 0742 Pump stopped - pulled pump cleaned
0755 restarted 0758 stopped again
0803 restarted 0805 dry pulled pump used bailer low yield

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 2015-12-3 Date Completed (yr/mo/day) 2015-12-3

Field Personnel Randy Morgan

Site Name UTC Delavan Spray Technologies Site

Job # 60314964

Well ID # MW-250

____ Upgradient ____ Downgradient

Weather Conditions cloudy

Air Temperature 50's °F

Total Well Depth (TWD) = 65.42 TOC 63.12 BGS 1/100 ft

Depth to Ground Water (DGW) = 7.05 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 58.37 1/100 ft

1 Casing Volume (OCV) = LWC x 0.16 = 9.57 gallons

5 Casing Volumes = 47.57 gallons

Method of Well Development grundfos pump - surging

Equipment Used grundfos pump

Total Volume of Water Removed 150 gallons

Date/Time 12-03-15	Discharge Rate (ml/min)	Volume Purged (gallons)	Water Temp. (°C)	Specific Conductivity (ms/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity/Color	Sand Content (%)	Remarks
1150	1.5	initial	—	—	—	—	—	Lt Brn >1100	0	Surged
1210	1.5	30	18.92	0.251	2.21	8.07	-9.2	Lt Brn 1221	0	Surged
1220	1.5	45	18.52	0.257	2.30	7.90	+0.8	445.8 Lt Brn	0	Surged
1230	1.5	60	19.48	0.260	2.50	7.85	+10.1	400.0 milky	0	Surged
1240	1.5	75	19.43	0.260	2.54	7.81	+19.1	371.3 milky	0	Surged
1250	1.5	90	19.60	0.262	2.72	7.77	+25.1	213.2 milky	0	Surged
1300	1.5	105	19.21	0.263	2.53	7.75	+25.6	266.3 milky	0	Surged
1310	1.5	120	19.51	0.263	2.58	7.70	+28.8	87.59 Slight	0	
1320	1.5	135	19.66	0.264	2.64	7.68	+34.1	19.23 clear	0	
1330	1.5	150	19.54	0.265	2.75	7.70	+33.3	12.23 clear	0	

COMMENTS/OBSERVATIONS:

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 2015-12-3 Date Completed (yr/mo/day) 2015-12-3

Field Personnel Randy Morgan

Site Name UTC Delavan Spray Technologies Site

Job # 60314964

Well ID # MW-26D

____ Upgradient ____ Downgradient

Weather Conditions Cloudy

Air Temperature 50's °F

Total Well Depth (TWD) = 48.92 1/100 ft

Depth to Ground Water (DGW) = 10.13 1/100 ft

Length of Water Column (LWC) = TWD - DGW = 38.79 1/100 ft

1 Casing Volume (OCV) = LWC x 0.16 = 6.32 gallons

5 Casing Volumes = 31.61 gallons

Method of Well Development grundfos pump / surging

Equipment Used grundfos pump

Total Volume of Water Removed RM 35 144 gallons

Date/Time 12-3-15	Discharge Rate (ml/min)	Volume Purged (gallons)	Water Temp. (°C)	Specific Conductivity (ms/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity/Color	Sand Content (%)	Remarks
0920	initial	initial	—	—	—	—	—	—	—	Surged
0930	1.2	12.0	18.05	0.277	2.99	7.85	91.3	766.2 Pale yellow	0	Surged
0940	1.2	24.0	18.58	0.270	2.65	7.72	84.2	349.3 Pale yellow	0	Surged
0950	1.2	36.0	18.99	0.268	2.47	7.65	83.9	306.0	0	Surged
1000	1.2	48.0	18.98	0.268	2.63	7.64	84.6	230.3	0	Surged
1010	1.2	60.0	18.73	0.270	2.90	7.64	81.4	215.8	0	Surged
1020	1.2	72.0	19.09	0.268	2.69	7.59	81.4	198.9	0	Surged
1030	1.2	84.0	19.02	0.270	2.93	7.56	81.2	2550	0	Surged
1040	1.2	96.0	19.06	0.268	2.86	7.52	79.2	175.4	0	
1050	1.2	108.0	19.05	0.267	2.75	7.53	79.2	82.55	0	
1100	1.2	120.0	19.21	0.268	2.61	7.56	79.9	69.06	0	

COMMENTS/OBSERVATIONS:

AECOM

Monitoring Well Development Log

Date Started (yr/mo/day) 2015-12-3 Date Completed (yr/mo/day) 2015-12-3

Site Name UTC Delavan Spray Technologies Site

Field Personnel Randy Monge

Job # 60314964

Well ID # MW-26D

Date/Time	Discharge Rate (ml/min)	Volume Purged (gallons)	Water Temp. (°C)	Specific Conductivity (ms/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity/Color	Sand Content (%)	Remarks
1110	1.2	132	19.08	0.267	2.78	7.53	79.1	29.78 clear	0	
1120	1.2	144	18.77	0.266	2.84	7.53	79.5	21.97 clear	0	

COMMENTS/OBSERVATIONS:

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Date (mo/day/yr): Dec -4- 2015
Field Personnel: Randy Morgan
Site Name: UTC Delavan Spray Technologies Site, Bamberg, SC
AECOM Job #: 60314964
Sample ID: MW-24
___ Upgradient ___ Downgradient ___ Sidegradient ___ Source
Weather Conditions: Clear / Sunny
Air Temperature: 50's °F
Total Well Depth (TWD) = 21.00 1/100 ft
Depth to Ground Water (DGW) = 12.49 1/100 ft
Length of Water Column (LWC) = TWD - DGW = 8.51 1/100 ft
1 Casing Volume (OCV) = LWC x .163 = 1.38 gal
3 Casing Volumes = 4.16 gal = Standard Evacuation Volume
Method of Sample Evacuation: Purging with a peristaltic pump
Method of Sample Collection: peristaltic pump; reverse flow for VOCs
Total Volume of Water Removed ___ gal

Casing Diameter: 2.0 inches
Casing Material: PVC
Measuring Point Elevation ___ 1/100 ft
Height of Riser (above land surface) ___ 1/100 ft
Land Surface Elevation ___ 1/100 ft
Screened Interval: 11 - 21 1/100 ft
Dedicated Pump or Bailer: YES ___ NO X Type ___
Steel Guard Pipe Around Casing: YES X NO ___
Locking Cap: YES ___ NO ___
Protective Post/Abutment: YES ___ NO X
Well Integrity Satisfactory: YES X NO ___
Yield: LOW ___ MODERATE ___ HIGH X
Comments/Observations
Sample Time: 1327 QA/QC: none
Sample Analytes: VOC's
PID 3.0 well Head 0.0 Breathing Zone

FIELD ANALYSES

VOLUME PURGED (gallons)	initial	0.40	0.80	1.20	1.60	2.0	2.4	2.8
TIME (Military)	1250	1255	1300	1305	1310	1315	1320	1325
Water Level (ft. BTOC)	12.70	12.80	12.80	12.75	12.74	12.80	12.80	12.80
pH (S.U.)	7.35	6.67	5.85	5.33	5.01	4.85	4.76	4.75
Sp. Cond. (mS/cm)	0.026	0.024	0.023	0.022	0.022	0.022	0.022	0.022
Water Temp. (°C)	19.21	14.50	14.58	14.53	14.48	14.57	14.57	14.54
Turbidity (NTUs)	5341	26.17	14.02	4.71	2.74	1.55	5.26	1.95
Dissolved Oxygen (mg/L)	7.55	7.48	7.62	7.50	7.68	7.65	7.65	7.65
Salinity (ppt)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
ORP (mV)	-4.3	+56.1	129.4	164.1	178.5	184.0	185.8	188.2

COMMENTS/OBSERVATIONS: begin purging at 1247
Purging rate (ml/min): 250

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Date (mo/day/yr): Dec 04, 2015
Field Personnel: Randy Morgan
Site Name: UTC Delavan Spray Technologies Site, Bamberg, SC
AECOM Job #: 60314964
Sample ID: MW-25D
__ Upgradient __ Downgradient __ Sidegradient __ Source
Weather Conditions: clear/sunny
Air Temperature: 50's ° F
Total Well Depth (TWD) = 63.21 1/100 ft
Depth to Ground Water (DGW) = 4.92 1/100 ft
Length of Water Column (LWC) = TWD - DGW = 58.29 1/100 ft
1 Casing Volume (OCV) = LWC x .163 = 9.50 gal
3 Casing Volumes = 28.50 gal = Standard Evacuation Volume
Method of Sample Evacuation: Purging with a peristaltic pump
Method of Sample Collection: peristaltic pump; reverse flow for VOCs
Total Volume of Water Removed gal

Casing Diameter: 2" inches
Casing Material: PVC
Measuring Point Elevation 1/100 ft
Height of Riser (above land surface) 1/100 ft
Land Surface Elevation 1/100 ft
Screened Interval: 53.21 — 63.21 1/100 ft
Dedicated Pump or Bailer: YES __ NO X Type __
Steel Guard Pipe Around Casing: YES X NO __
Locking Cap: YES X NO __
Protective Post/Abutment: YES __ NO X
Well Integrity Satisfactory: YES X NO __
Yield: LOW __ MODERATE __ HIGH X
Comments/Observations
Sample Time: 1227 QA/QC: Duplicate
Sample Analytes: VOCs
PID 0.7 well head 0.0 breathing zone

FIELD ANALYSES

VOLUME PURGED (gallons)	Initial	.40	.80	1.20	1.60	2.0	2.4	2.8
TIME (Military)	1130	1135	1140	1145	1150	1155	1200	1205
Water Level (ft. BTOC)	4.95	4.95	4.96	4.96	4.96	4.96	4.96	4.96
pH (S.U.)	7.54	7.65	7.54	7.43	7.43	7.40	7.54	7.42
Sp. Cond. (mS/cm)	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267
Water Temp. (°C)	18.63	18.75	18.76	18.84	18.94	18.91	18.78	18.89
Turbidity (NTUs) (white milky)	489.2	315.8	186.6	72.12	53.00	35.63	22.57	16.78
Dissolved Oxygen (mg/L)	1.41	1.75	1.55	1.13	0.98	0.92	0.93	0.91
Salinity (ppt)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
ORP (mV)	26.9	+ 9.1	- 8.6	-26.6	-33.3	-36.9	-39.0	-39.7

COMMENTS/OBSERVATIONS: begin purging at 1127
Purging rate (ml/min) 250

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Site Name	UTC Delavan Spray Technologies Site, Bamberg, SC	Date (mo/day/yr)	Dec 4, 2015
AECOM Job #	60314964	Field Personnel	Randy Morgan
Sample ID*	MW-25D	Comments/Observations:	

FIELD ANALYSES

VOLUME PURGED (gallons)	3.20	3.60	4.0	4.40				
TIME (Military)	1210	1215	1220	1225				
Water Level (ft. BTOC)	4.96	4.96	4.96	4.96				
pH (S.U.)	7.41	7.36	7.42	7.40				
Sp. Cond. (mS/cm)	0.267	0.266	0.266	0.266				
Water Temp. (°C)	18.86	18.86	18.95	18.98				
Turbidity (NTUs)	15.74	9.67	5.53	5.59				
Dissolved Oxygen (mg/L)	0.90	0.92	0.94	0.96				
Salinity (ppt)	0.13	0.13	0.13	0.13				
ORP (mV)	-40.4	-41.1	-39.9	-40.0				

FIELD ANALYSES

VOLUME PURGED (gallons)								
TIME (Military)								
Water Level (ft. BTOC)								
pH (S.U.)								
Sp. Cond. (mS/cm)								
Water Temp. (°C)								
Turbidity (NTUs)								
Dissolved Oxygen (mg/L)								
Salinity (ppt)								
ORP (mV)								

COMMENTS/OBSERVATIONS

AECOM

FIELD DATA LOG FOR GROUNDWATER SAMPLING

Date (mo/day/yr): Dec - 4 - 2015
Field Personnel: Randy Morgan
Site Name: UTC Delavan Spray Technologies Site, Bamberg, SC
AECOM Job #: 60314964
Sample ID: MW-26D
____ Upgradient ___ Downgradient ____ Sidegradient ____ Source
Weather Conditions: Clear Sunny
Air Temperature: 50's ° F
Total Well Depth (TWD) = 48.23 1/100 ft
Depth to Ground Water (DGW) = 9.55 1/100 ft
Length of Water Column (LWC) = TWD - DGW = 38.68 1/100 ft
1 Casing Volume (OCV) = LWC x .163 = 6.30 gal
3 Casing Volumes = 18.91 gal = Standard Evacuation Volume
Method of Sample Evacuation: Purging with a peristaltic pump
Method of Sample Collection: peristaltic pump; reverse flow for VOCs
Total Volume of Water Removed: 2.4 gal

Casing Diameter: 2.0 inches
Casing Material: PVC
Measuring Point Elevation: ____ 1/100 ft
Height of Riser (above land surface): ____ 1/100 ft
Land Surface Elevation: ____ 1/100 ft
Screened Interval: 35.23 - 48.23 1/100 ft
Dedicated Pump or Bailer: YES ____ NO X Type ____
Steel Guard Pipe Around Casing: YES X NO ____
Locking Cap: YES X NO ____
Protective Post/Abutment: YES ____ NO X
Well Integrity Satisfactory: YES X NO ____
Yield: LOW ____ MODERATE ____ HIGH X
Comments/Observations
Sample Time: 1103 QA/QC: MS/MSD
Sample Analytes: VOC's
PID 0.1 well head, 0.0 breathing zone

FIELD ANALYSES

VOLUME PURGED (gallons)	initial	1.40	1.80	1.20	1.60	2.0	2.4	
TIME (Military)	1030	1035	1040	1045	1050	1055	1100	
Water Level (ft. BTOC)	9.55	9.55	9.55	9.55	9.55	9.55	9.55	
pH (S.U.)	7.20	7.28	7.28	7.27	7.27	7.31	7.26	
Sp. Cond. (mS/cm)	0.266	0.266	0.267	0.267	0.269	0.268	0.269	
Water Temp. (°C)	18.15	18.27	18.43	18.41	18.51	18.44	18.47	
Turbidity (NTUs)	238.1	98.32	39.56	20.40	9.26	6.89	4.60	
Dissolved Oxygen (mg/L)	3.18	3.00	2.85	2.82	2.73	2.70	2.65	
Salinity (ppt)	0.13	0.13	0.13	0.13	0.13	0.13	0.13	
ORP (mV)	70.7	63.0	54.4	58.9	57.0	57.1	56.3	

COMMENTS/OBSERVATIONS: begin purging at 1027
Purging rate (ml/min) 250 ml/min

Accutest Laboratories Southeast
Chain of Custody

ACCUTEST LABORATORIES

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 • FAX: 407-425-0707
www.accutest.com

Accutest JOB # | PAGE 1 OF 1

Accutest Quote # | SKIFF#

Client / Reporting Information		Project Information		Analytical Information	Matrix Codes
Company Name	AECOM	Project Name:	UTC Delavan Spray Technologies	TCL VOCs 8260	DW - Drinking Water
Address	10 Patewood Blvd II Suite 500	Street	4331 Main Hwy	TCL SVOCs 8270	GW - Ground Water
City	Greenville State SC Zip 29615	City	Bamberg State SC	Metals + Hg PAHs	WW - Water
Project Contact	Doria Cullom E-mail doria.cullom@aecom.com	Project #	60344964	TCLP VOCs 8260	SW - Surface Water
Phone#	864-234-3000	Fax #		TCLP SVOCs 8270	SO - Soil
Sampler(s) Name(s) (Printed)	Randy Morgan	Client Purchase Order #	69402 CM	TCLP Metals	SL - Sludge
					OI - Oil
					LIQ - Other Liquid
					AIR - Air
					SOL - Other Solid
					WP - Wipe

Accutest Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	CONTAINER INFORMATION OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	TCL VOCs 8260	TCL SVOCs 8270	Metals + Hg PAHs	TCLP VOCs 8260	TCLP SVOCs 8270	TCLP Metals	LAB USE ONLY
	MW-26D	12/4/15	1103	RM	GW	3		3								X						
	MW-26D-MS	12/4/15	1103	RM	GW	3		3								X						
	MW-26D-MSD	12/4/15	1103	RM	GW	3		3								X						
	MW-25D	12/4/15	1220	RM	GW	3		3								X						
	MW-25D-FD	12/4/15	1220	RM	GW	3		3								X						
	MW-24	12/4/15	1321	RM	GW	3		3								X						
	Aqueous IDW-1	12/4/15	1420	RM	WW	6		5			1					X	X	X				
	Solid IDW-1	12/4/15	1415	RM	SO	2		2											X	X	X	
	Trip Blank					2										X						
	Temp Blank					1																

TURNAROUND TIME (Business Days)

Approved By: / Rush Code

- [x] 10 Days Standard
- [ ] 7 Day RUSH
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] OTHER

Emergency or Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULT1 (EPA LEVEL 4)
- [X] EDD'S UTC per Scope of Work

Comments / Remarks

Saturday delivery

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished by :	Date Time:	Received By:
1 Randy Morgan	12/4/15 1700	2 FedEx 802045947106	3		4
Relinquished by:	Date Time:	Received By:	Relinquished by:	Date Time:	Received By:
5		6	7		8

Lab Use Only: Custody Seal in Place: Y N Temp Blank Provided: Y N Preserved where Applicable: Y N Total # of Coolers: Cooler Temperature (s) Celsius: _____

eurofins | Spectrum Analytical

CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:

☐ Standard TAT - 7 to 10 business days

☐ Rush TAT - Date Needed: _____

All TATs subject to laboratory approval
Min. 24-hr notification needed for rushes
Samples disposed after 60 days unless otherwise instructed.

Report To: Doria Willom
10 Patewood Dr
Bldg VI Suite 500
Greenville SC 29615
Telephone #: 864-234-8928
Project Mgr: Walter, Gerald 864-234-8925

Invoice To: USAPImaging@aecom.com
P.O No.: _____ Quote #: _____

Project No: 60314964
Site Name: VTC Delaware Spray Technologies Site
Location: Bamberg State: SC
Sampler(s): Leslie Alexander 864-787-6916
R Morgan

F=Field Filtered 1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH3OH 8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11=_____ 12=_____

DW=Dinking Water GW=Groundwater SW=Surface Water WW=Waste Water
O=Oil SO=Soil SL=Sludge A=Indoor/Ambient Air SG=Soil Gas
X1=_____ X2=_____ X3=_____

G= Grab C=Compsite

Lab ID:	Sample ID:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	TOD	Check if chlorinated	QA/QC Reporting Notes: * additional charges may appply
	BG-6-6	12/1/15	1055	C	SO		2			X	☐	4-6 Ft
	BG-6-10	12/1/15	1105	C	SO		2			X	☐	8-10 Ft
	BG-7-6	12/1/15	1025	C	SO		2			X	☐	4-6 Ft
	BG-7-10	12/1/15	1030	C	SO		2			X	☐	8-10 Ft
											☐	
											☐	
											☐	
											☐	
											☐	
											☐	

L Alexander 12/1/15

List Preservative Code below:

MA DEP MCP CAM Report? ☐ Yes ☐ No
CT DPH RCP Report? ☐ Yes ☐ No
☐ Standard ☐ No QC ☐ DQA*
☐ ASP A* ☐ ASP B*
☐ NJ Reduced* ☐ NJ Full*
☐ Tier II* ☐ Tier IV*
☐ Other: _____
State-specific reporting standards:

Relinquished by:	Received by:	Date:	Time:	Temp °C
L Alexander/AECOM	FedEx 820459470911	12/1/15	1400	Observed
				Correction Factor
				Corrected
				IR ID #

☑ EDD format: _____
☑ E-mail to: doria.willom@aecom.com
leslie.alexander@aecom.com

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

Accutest Laboratories Southeast
Chain of Custody

ACCUTEST LABORATORIES

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 • FAX: 407-425-0707
www.accutest.com

Accutest JOB # PAGE 1 OF 1

Accutest Quote # SKIFF#

Client / Reporting Information		Project Information	
Company Name	AECOM	Project Name:	UTC Delavan Spray Technologies Site
Address	10 Patewood Dr Bldg VI #500	Street	4334 Main Hwy
City Greenville State SC Zip 29615		City Bamberg	State SC
Project Contact: Doria Willom	E-mail: doria.willom@aecom.com	Project #	60314964
Phone#	864-734-8928	Fax #	
Sampler(s) Name(s) (Printed)	Leslie Alexander / Randy Morgan	Client Purchase Order #	

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe

Accutest Sample #	Field ID / Point of Collection	Date	Time	Sampled By:	Matrix	Total # of Bottles	Other	None	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI Water	MEOH	8260 TCL	% solids for 8260	Lab Use Only
	DPT-SB-5.5-L (tripblank)	12/1/15	1350	LA	SO	3								2	1	X		
	DPT-SB-5.5	12/1/15	1350	LA	SO	4		1						2	1	X	X	4.5'-5.5'
	DPT-SB-11	12/1/15	1400	LA	SO	4		1						2	1	X	X	10'-11'

L. Alexander 12/1/15

TURNAROUND TIME (Business Days) — Approved By: / Rush Code

- [X] 10 Days Standard
- [ ] 7 Day RUSH
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] OTHER

Emergency or Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULT1 (EPA LEVEL 4)
- [X] EDD'S UTC - per SOW

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished by:	Date Time:	Received By:
1 Leslie Alexander AECOM	12/1/15	2 FedEx 8020 4594 7140	3		4
Relinquished by: 5	Date Time:	Received By: 6	Relinquished by: 7	Date Time:	Received By: 8

Lab Use Only: Custody Seal in Place: Y N Temp Blank Provided: Y N Preserved where Applicable: Y N Total # of Coolers: Cooler Temperature (s) Celsius: ______

Accutest Laboratories Southeast
Chain of Custody

ACCUTEST LABORATORIES

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 • FAX: 407-425-0707
www.accutest.com

Accutest JOB # | PAGE 1 OF 1

Accutest Quote # | SKIFF#

Client / Reporting Information

Company Name: AECOM
Address: 10 PATEWOOD DR BLDG V, STE 500
City: GREENVILLE State: SC Zip: 29615
Project Contact: DARA CULLOM E-mail: dara.cullom@aecom.com
Phone#: 864-234-3000
Sampler(s) Name(s) (Printed): Lester Alexander / Randy Morgan

Project Information

Project Name: DLA Delavan Spray Technologies Site
Street: 4331 Main Hwy
City: BAMBERG State: SC
Project #: 60314964
Fax #:
Client Purchase Order #:

Analytical Information

8260 TCL
% Solids

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe

Accutest Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	CONTAINER INFORMATION: OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	8260 TCL	% Solids										LAB USE ONLY
	DPT-59-3-c (trip blank)	12/2/15	1205	LA	SO	3								2	1	X											
	DPT-59-3	12/2/15	1205	LA	SO	4		1						2	1	X	X										2-3'
	DPT-59-3-ms/msd	12/2/15	1205	LA	SO	8		2						4	2	X	X										2-3'
	DPT-59-10	12/2/15	1230	LA	SO	4		1						2	1	X	X										9-10'
	DPT-60-1	12/2/15	1530	LA	SO	4		1						2	1	X	X										0-1'
	DPT-60-8-d	12/2/15	1535	LA	LIQ	3		3								X											equip blank
	DPT-60-8	12/2/15	1540	LA	SO	4		1						2	1	X	X										7.5-8'
	DPT-61-6	12/2/15	1610	LA	SO	4		1						2	1	X	X										5-6'
	DPT-61-8	12/2/15	1620	LA	SO	4		1						2	1	X	X										7-8'
	DPT-61-8-a	12/2/15	1650	LA	SO	4		1						2	1	X	X										7-8'
	Temp blank	12/2/15						1																			

TURNAROUND TIME (Business Days)

Approved By: / Rush Code

- [x] 10 Days Standard
- [ ] 7 Day RUSH
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] OTHER

Emergency or Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

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- [ ] FULT1 (EPA LEVEL 4)
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Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished by :	Date Time:	Received By:
1	12/2/15 1730	2 FedEx 802045947139	3		4
Relinquished by:	Date Time:	Received By:	Relinquished by:	Date Time:	Received By:
5		6	7		8

Lab Use Only: Custody Seal in Place: Y N Temp Blank Provided: Y N Preserved where Applicable: Y N Total # of Coolers: Cooler Temperature (s) Celsius: _____

IDW MANAGEMENT FORM

PROJECT: UTC Delavan Technologies

SITE NAME:

LOCATION: Bamberg SC

CONTAINER NUMBER	MEDIA DESCRIPTION	MEDIA ORIGIN	DATE FILLED	DATE SAMPLED	DATE DISPOSED	COMMENTS
D-1	SOLID IDW	MW-25D and MW-26D	12/1-12/2/15			soil cuttings from sonic rig
D-2	LIQUID IDW	MW-26D	12/1/15			drilling fluids & decon water
D-3	LIQUID IDW	MW-25D	12/2/15			drilling fluids & decon water
D-4	SOLID IDW	DPT-58, DPT-59, BG-6, BG-7, DPT-60, DPT-61	12/1-3/15			soil cuttings from BGs & DPT
D-5	LIQUID IDW	DPT-58, DPT-59, BG-6, BG-7, DPT60, DPT 61	12/1-3/15			decon fluids (Pump water MW-24, 25D, 26D)
D-6	Liquid IDW	MW-26D	12-3-15			development H2O
D-7	Liquid IDW	MW-26D	12-3-15			development H2O
D-8	Liquid IDW	MW-26D	12-3-15			development H2O
D-9	Liquid IDW	MW-25D	12-3-15			development H2O
D-10	Liquid IDW	MW-25D	12-3-15			development H2O
D-11	Liquid IDW	MW-25D	12-3-15			development H2O
D-12	Solid IDW	MW-24	12-3-15			soil cuttings from sonic rig
D-13	Liquid IDW	MW-24	12-3-15			Drilling Fluids and decon water
~~D-14~~	~~Liquid IDW~~	~~MW-24~~	~~12-3-15~~			~~development water~~ RM
~~D-15~~	~~Liquid IDW~~	~~MW-24~~	~~12-3-15~~			~~development water~~ RM

11/30/15

0700 Drive to office. Get company truck. Load supplies

0745 Travel to site

0915 Sign in at office. Meet GEL Geophysics. Perform utility locations at proposed wells MW-24, MW-25D, and MW-26D.

1130 SAEDACCO arrives. Discover that they do not have the 2 forms of ID for each employee. Therefore, not able to start today because WTC does not have someone available to serve as an escort for on-site work.

1300 Move rig across road and perform limited clearing with skid-steer at proposed well MW-26D. C. Suddeth & L. Alexander re-locate MW-25D due to standing water and soft conditions.

1700 Depart site

12/1/15

0745 Arrive on site. Sign in. Conduct Tailgate Safety Meeting.

0830 Begin drilling MW-26D.

1130 at 52 ft based on PID readings and conversation with W. Gerald, decide to install well to 48'. Install well MW-26D. Screen 38-48. Add 7 bags sand. Tag sand at 36 ft. Add bentonite pellets.

1215 Tag bentonite at 33 ft at 1215
Break for lunch

1240 Back on site. Prep for grouting. Mix 2 bags of Baroid Aqua-Quad in 28 gallons water as indicated on bag for a 30% solids grout.

1350 Pump 1st batch of grout through treavie

1405 Pump 2nd batch of grout.
Move equipment to MW-25D location

1540 Begin drilling MW-25D. Drill to 52 ft

1730 Leave work area, Lock gate. Turn in badge and sign out at plant.

1800 Depart site.

12/2/15

0800 L. Alexander at MW-25D with crew while C. Suddeth is in route to site.

0900 Arrive on site. Drillers cored 52-62. PID readings ranged from
Drill 62-67. Have lower PID readings still in limestone. C. Suddeth & L. Alexander decide to set well at 62' with screen 52-62
Install bentonite pellets 64'-67'. Add well materials. Screen 52-62. Add sand on top of bentonite starting at 64', 4 bags
Tag sand at 50', Add bentonite pellets. ½ bucket

1045 Tag bentonite at 47' at 1045. Rain beginning
Drillers call for truck to get their large truck/trailer rig unstuck from soft soil in powerline right of way.

1130 Break for lunch

1215 Back at rig; steady rain continuing.

1330 Drillers back at rig. Mix grout. Each batch consists of 23 gallons water and 2 bags of Baroid Aqua-Guard.

1350-1511 Pump 4 batches of grout through Tremie at MW-25D. It is believed that the limestone formation took a portion of the grout.

1511 Clean up site and begin moving supplies to the WTC property

12/2/15

1511-1700 Move rig and supplies to MW-24

1730 Depart site with samples. Drive to Fed-Ex at the Columbia Airport. Deliver samples

1930 Depart Airport.

12/3/15

0730 Arrive on site, conduct tailgate safety meeting, Mike Smoak new in meeting.

0810 Begin drilling MW-24. R. Morgan prep for well development

0920 At 21 ft. Encounter calcareous sand with shells (top of limestone) at 22 ft. Discuss well depth with W. Gerald. Plan for screen 6-21.
Add bentonite pellets starting at 21 ft. Tag bentonite at 22 ft. Add PVC well materials, screen 6-21. Add sand. Tag sand at 5 ft. Add bentonite pellets. Tag bentonite at 3.5 ft. Mix Aqua-Guard grout & place grout from 0-3.5 ft.

1045 Drillers clean up, load equipment, and build pads with flush-mount completions at monitoring wells

1200 Break for lunch

1245 Back on site. Provide oversight for drillers. Move all IDW to HAZ waste area behind plant.

1600 Depart site

11/30/15 Post RI Assessment

0715 L Alexander mob from Greenville to Banbury

0945 L Alexander arrives onsite.

0955 R Morgan onsite. AECOM signs in. Check in w/ C Sudduth & GEL

Post RI Assessment 11/30/15

1500 Set up for slug tests

1530 Set up on MW-1. DTW = ~~10.10~~ 10.07 ft BTOC level troll 700 S/N 143596

1600 Waiting for MW-1 to equilibrate after slug in. (MW1-out-1) set up on MW-21

1615 set up MW21-in1. DTW=10.66

1619 slug in at MW-21.

1630 stop slug in 1 at MW-21. Start slug out MW21-out1. Check on MW-1

1650 stop MW-21-out1. set up MW21-in2 DTW 11.23.

1652 start MW-21 in 2.

1700 Start MW-1-in 1.

1709 Stop MW-21 in 2. Start MW-21-out 2

1730 Stop MW-21 in 2. ~~Start~~ Stop MW-1 for the night

~~1745~~ 4 put slug in MW-1 & let equilibrate overnight

1745 Put slug & transducer in MW-5 & secure for night. DTW (static) was 4.56 ft BTOC

1815 AECOM offsite.

12/1/15 Post R1 Assessment

0700 onsite (L Alexander) R Morgan arrives shortly after
0705 sign in & setup for slugtesting
0715 onsite at MW-5. Set up & start test MW5-out 1. DTW 4.64 ABTOC
0725 Mob to MW-1
0730 Set up & Start test MW1-out 2, DTW = 10.20 btoc
Field Team: L Alexander & R Morgan
Assignment: Slug test &
Weather: 60-70; foggy in Am, overcast
Equipment: transducers, recon unit, slug bars, Geoprobe, handaugers, soil sampling equipment, PID, explosimeter & dust monitor
0735 Mob to MW-5. Stop test MW5-out 1 put slug back in and let equilibrate.
0745 Start test MW5-out 2.
0805 Stop test MW5 out 2. Clean up & mob to meet C Siddeth out front participate & H&S tailgate. Discuss today's SOW.
0830 Meet w/ K. Coombs & Wes Smoak. Wes will be our escort outside later today. Crew mob to set up. R Morgan & L Alexander organizing equipment & W. Keyes prepping for geoprobe work
0930 Mob to BG-7 w/ R Morgan & W. Keyes

Post R1 Assessment 12/1/15

0940 Begin handaugering at BG-7. W Smoak came out to check on us
1010 W. Smoak heads to shipping to retrieve SAEDACCO's screens that were delivered
1020 W. Smoak heads back inside
1030 Finish at BG-7
Collected BG-7-6 at 1025 & BG-7-10 at 1030 for TOD. mob to BG-6 at location of former BG-5
1040 Begin geoprobe at BG-6.
1055 Collect sample BG-6-6 ~~at~~ for TOD.
1105 Collect sample BG-6-10 for TOD.
1110 Finish up at BG6 & pack up, Mob to DPT-5B.
1130 Set up on DPT-5B. Coredrill has incompatible plug & pressurized water tank doesn't work (rental from hertz that SAEDACCO brought). W. Keyes calling shop.
1140 W. Smoak stops by to check on us. He says he can make us an adapter plug - he has the materials & McCown will get a sprayer for water
1150 offsite for lunch.
1240 R. Morgan & L Alexander back onsite Set up on DPT-5B & begin for samples

12/1/15 Post RI Assessment

1300 Start coring DPT-58.
1320 Finish coring DPT-58. Concrete is 4.5" thick so set up to Geoprobe.
1330 Begin geoprobing DPT-58
1350 Collect sample DPT-58-5.5 from 4.5-5.5' for VOLS & % solids
1400 Collect sample DPT-58-11 from 10-11' for VOLS & % solids
1410 LAlexander call to DCullon. lab only sent one soil TB & won't do the rest of the sampling until tomorrow. hold time for VOCs is 48 hrs. DCullon to call lab and see if LAlexander can make her own TB out of a bottle set
1420 W. Keyes setting well. boring to 16' bgs well set at 15' w/ 10 ft of pre-pack screen
1420 D Cullon sent message - lab verified that we can make our own TB.
1430 RMorgan to get ice for samples & pack cooler. LAlexander logging. W. Keyes getting well completion materials
1445 well vault completed. W. Keyes cleaning up & will head to help crew on Bamberg property.

Post RI Assessment 12/1/15

RMorgan taking cooler to shipping & receiving for Fed Ex pickup. LAlexander logging rest of sample from DPT-58. DTW on DPT-58 at ~9.7 ft BTOC.
1545 Head to MW-1 to finish slug test
1550 Stop test MW-1-out 2. decon transducer.
1555 mob to MW-21D.
1600 setup on MW-21D. DTW=12.08. Will wait 5 min & double check. TD of well is 53 ft.
1610. DTW is 12.08. transducer in the well. Set up test MW21D-in 1.
1615 Stop test MW21D-in 1. Setup MW 21D-out 1
1620 Stop test MW-21D-out 1. Setup MW21D-in 2
1625 Stop test MW-21D-in 2. Setup MW21D-out 2
1630 Stop test MW-21D-out 2 Setup MW-21D-in 3.
1635 Stop test MW21D-in 3. Setup MW 21D-out 3.
1640 Stop test MW 21D-out 3. Clean up.
1650 Mob to Bamberg property & setup on MW-22D. ~~TD=5 ft~~ TD=48 ft. DTW=11.52 ft. let sit & will check in 5 min. head above troll is 22.14 ft
1701 Start test MW22D-in 1
1705 Stop test MW 22D-in 1. Set up MW22D-out 1
1710 Stop test MW22D-out 1 Set up MW22D-in 2
1716 Stop test MW22D-in 2. Set up MW22D-out 2

12/1/15 Post RI Assessment

1720 Stop test MW22D-~~Deep 4~~ out 2 Setup MW22D-in3.

1725 Stop test ~~MW22D 4~~ MW22D-in3 Setup MW22D-out3

1730 Stop test MW22D out 3 pack up Head to site & sign out

1740. Onsite ~~at Delavan~~. Office closed. Waiting to check on Chuck Suddeth

1750 ~~AECOM~~ offsite

Post RI Assessment 12/2/15

0640 Call from C Suddeth. he is running late due to a major plumbing problem at his house. Will call again after he speaks w/ plumber

0740 Arrive onsite. Sign in. Speak w/ C Suddeth. He is on his way. L Alexander will head w/ crew across to 2nd deep well & work w/ them until C Suddeth gets here.

Calibrate multimeter. reading $CO = 48$ ppm, $H_2S = 9.8$ ppm Oxy = 18% LEL 43%

gas can reads $CO = 50$ ppm, $H_2S = 10$ ppm Oxy = 18% LEL = 50%.

0800 Drillers to get water. L Alexander & R Morgan talk to w/ Smoak about plan for day & call W Gerald re paperwork for V. Ellison who might come onsite today.

0820 Drillers on MW-25D. L Alexander & R Morgan arrive. Drillers start advancing next 10 ft.

0850 took PID readings highest at 62 ft

12/2/15 Post RI Assessment

bgs. Called chuck. He is a few minutes out & will be here shortly

0910 Chuck onsite. We go over status decide to drill another 5 ft to check PID readings & see if we are still in limestone. See Chuck's notes & logs.

1000 Crew prepping to set well at 52-62' bgs. R Morgan & L Alexander get drums labeled & wells flagged while waiting for W. Keyes to finish up w/ crew. Plan to mob across road to work inside once Will keyes us available.

1100 Move inside & setup on ~~ft 4~~ DPT-59

1127 finish coring DPT-59. concrete is 4.5" thick

1230 DPT-59 installed to 15 ft.
Set well. Screen 5-15 ft

12~~45~~ install 1 ft sand above screen & 1 ft bentonite above that. Drill crew to lunch. L Alexander still logging. R Morgan to decon

15~~20~~ ABzum to lunch

1550 Back onsite. ABzum & Sabatacco Hand

Post RI Assessment 12/2/15

Auger crew mob to Wickman room for DPT-60.
DTW on DPT 59 = 9.42 TD = 15.05 ft BTOC

1410 Hit concrete below 4' of concrete at 1st location for DPT 60. Called Walter. Crew moves to DPT-61 & cores.

1445 Crew finish at DPT-61 coring. LA still trying to reach Walter

1500 Reach Walter. Gerald agrees that that crew will step a few ft closer to DPT-35 & if that doesn't work, will abandon that pt.

1510 Continue at DPT-60 after coring is successful

~~1545~~ 1600 Install monitoring pt at DPT-60 Screen 5-15'; 1 ft sand above screen & 1 ft bentonite. DTW = 9.70 TD = 15.25 btoc
Start augering DPT-51

1650 Finish at DPT-61. Install monitoring pt. Screen 5-15'. 1 ft sand above screen 1 ft bentonite. DTW = 9.49 TD = 14.92

1730 Drillers setting last vault. L Alexander finish logging. ABzum cleaning & pack coolers

1830 offsite

12-3-15 Post RI Assessment

0745 arrived on site

0747 H+S briefing w/ Chuck Sackett

0815 Seperate equipment to return to Greenville w/ Lestee today

0845 empty decon water into drum from hand auguring

0900 at MW-26D to set up and begin development

0920 begin developing MW-26D

0945 Shaun Atkinson arrived on site - an individual than hunts on the property and was informing that he lives at: Shaun Atkinson
504 Broxton Bridge Rd 29003
803-300-2198

Developing wells will consist of pumping w/ groundfos pump @ ~~2.5~~ 1.5 GPM surged every 10 minutes then take readings at end of 10 minutes until clearing - stabilization of parameters

1120 complete developing MW-26D
decon pump - move to MW-25D

1150 begin developing MW-25D

1330 complete developing MW-25D

Post RI Assessment 12-3-15

12/3/16

1340 decon pump

1350 lunch

1415 move empty drums & pallet to MW-24 for development
verify all drums are labeled and recorded on IDW log - will need to fill out Non Hazardous labels for IDW drums

1445 inside bldg to retrieve cones from DPT locations - DPT-59 and 61 have ~ 1/8-3/16 lip of concrete on on side - where the vault dropped, took photos and sent to Lestee Alexander at AECOM - took Chuck inside to look at these wells. Nothing can be done at this time
Drillers had already left site
put Non Hazardous labels on all drums
1450 off site. after signing out and turning badge in.

12-4-15 Post KI Assessment
12/4/15

0600 calibrate YSI 556 inside motel room before leaving for site
0710 arrived on site at MW-24 set up to develop w/ grundfos pump
0730 begin developing MW-24 pump stopped several times - low yield well will have to use bailer to develop with, bail well dry x 20-30 ever
1000 complete developing MW-24 using bailer, removed 25.5 gals 18 well volumes
1030 at MW-260 begin to micro purge w/ peristaltic pump w/ tubing inlet in middle of screen
1103 sampled MW-260 also collect MS/MSD for VOCs
1127 at MW-250 begin to micro purge w/ peristaltic pump with tubing inlet in middle of screen
1227 sampled MW-250 for VOCs also collected duplicate
1247 at MW-24 begin to micro purge with peristaltic pump tubing in middle of water column
1322 Sampled MW-24

Post KI Assessment
12/4/15

1345 at IDW storage area all of MW-24 development and purge water went into D-5 drum there is NO D-14 or D 15 drums
1355 preparing to sample Solid IDW-1 out of drums D-1, D-12, and D-4 composite
1415 sample collected - Solid IDW-1
1420 sampled D-5 composite of 3-wells MW-24, 250, 260, decon H2O Aqueous IDW-1
label DPT-pints inside and take photos
1515 off site to purchase additional ice to pack samples for shipment
1700 ship samples Fed EX for Saturday delivery in Columbia SC
1830 returned equipment
1900 at AECOM.

APPENDIX B

MONITORING WELL PERMIT APPLICATION AND PROPOSED CONSTRUCTION DETAILS

D H E C
PROMOTE PROTECT PROSPER
Catherine E. Heigel, Director
Promoting and protecting the health of the public and the environment

July 21, 2015

Mr. William Penn
United Technologies Corporation
EH&S Remediation Group
9 Farm Springs Road, MS101
Farmington, CT 06032

Re: Comments on the Remedial Investigation Report dated June 29, 2015
Post Remedial Investigation Work Plan dated June 29, 2015
Goodrich Delavan Spray Technology Site
Bamberg County
VCC #13-4762-RP
File #51778 (Former Site ID ##02211)

Dear Mr. Penn,

The Department has reviewed and reviewed the referenced submittals and offers the following comments:

Comments on the Remedial Investigation Report dated June 29, 2015

These corrections to the RI Report are approved as submitted.

Post Remedial Investigation Work Plan dated June 29, 2015

The referenced Work Plan is approved as submitted. Attached is your copy of the Monitoring Well Installation Approval for the installation of seven (7) permanent wells. The original well installation approval has been sent to Mr. Walter Gerald of AECOM. The analytical results from the groundwater samples will be submitted in the next monitoring report due on or before January 15, 2016. The remedial investigation report with the documentation of the field work and the soil analytical data should be submitted on or before September 15, 2015. Please note the following:

- Well construction and sampling derived waste including but not limited to drill cuttings, drilling fluids, and development/purge water should be managed properly and in compliance with applicable requirements. If containerized, each vessel should be clearly labeled with regards to contents, source, and date of activity.

- Monitoring wells are to yield groundwater samples representative of the zone monitored per R.61-71 H.1.c of the South Carolina Well Standards and Regulations (e.g. low flow sampling techniques are recommended for samples to be analyzed for metals to reduce induced turbidity).

D H E C

PROMOTE PROTECT PROSPER

Catherine E. Heigel, Director

Promoting and protecting the health of the public and the environment

Monitoring Well Installation Approval

Approval is hereby granted to:	AECOM
(on behalf of):	**UTC**
Facility:	**Delavan Spray Site**
Site Identification:	#02211
County:	Bamberg

This approval is for the installation of three (3) 2" permanent groundwater wells and four (4) 1" permanent groundwater monitoring wells. These wells are to be installed per the correspondence dated July 1, 2015. The wells are to be installed following all of the applicable requirements of R.61-71.

Please note that R.61-71 requires the following:

1. All wells shall be drilled, constructed, and abandoned by a South Carolina certified well driller per R.61-71.D.1.

2. A Water Well Record Form or other form provided or approved by the Department shall be completed and submitted to the Department within 30 days after well completion or abandonment unless another schedule has been approved by the Department. The form should contain the "as-built" construction details and all other information required by R.61-71.H.1.f

3. All analytical data and water levels obtained from each monitoring well shall be submitted to the Department within 30 days of receipt of laboratory results unless another schedule has been approved by the Department as required by R.61-71.H.1.d.

4. All temporary monitoring wells shall be abandoned within 10 days of borehole completion using appropriate methods as required by R.61-71.H.4.c.

5. If any of the information provided to the Department changes, the **Addie Walker (803) 898-0722** shall be notified a minimum of twenty-four hours prior to well construction as required by R.61-71.H.1.a.

This approval is pursuant to the provisions of Section 44-55-40 of the 1976 South Carolina Code of Laws and R.61-71 of the South Carolina Well Standards and Regulations, dated April 26, 2002.

Date of Issuance: **July 21, 2015** **Approval #: MW-10241**

Addie Walker

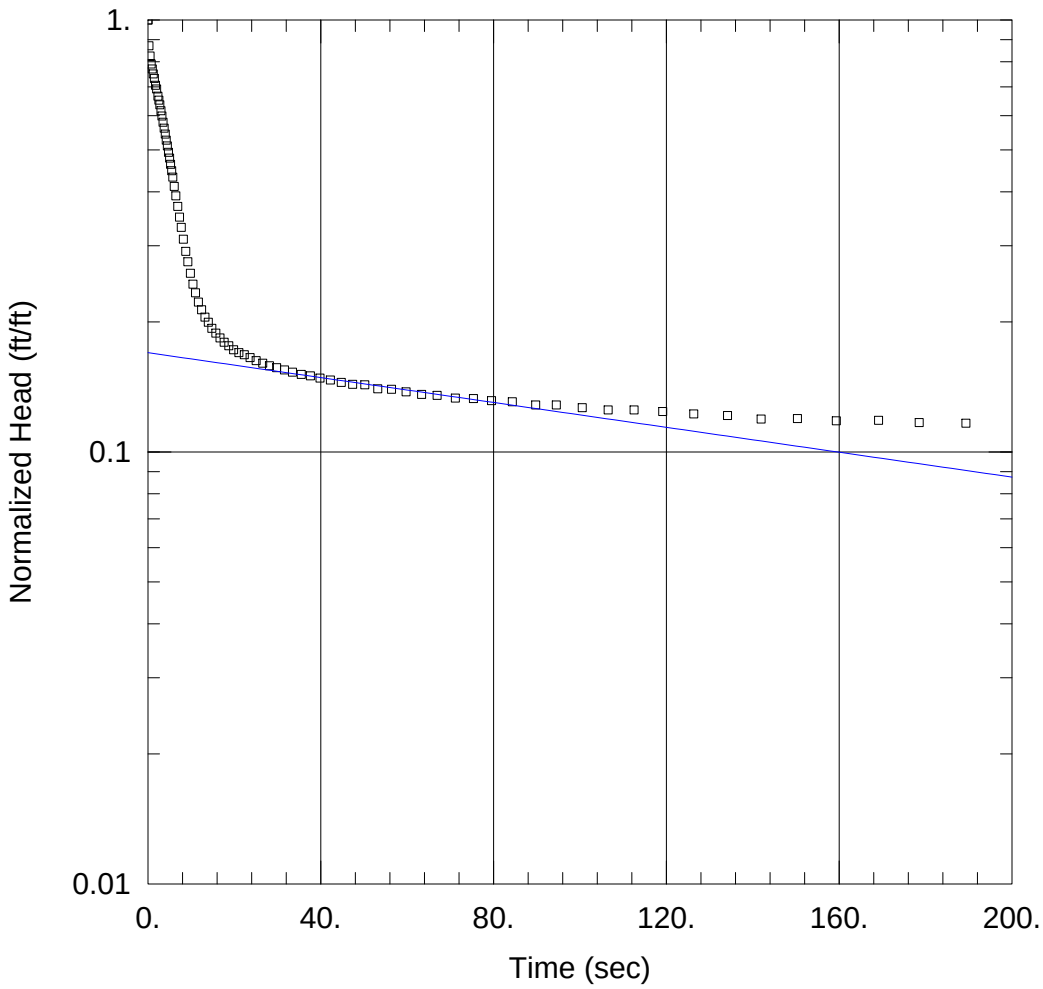
Addie Walker, Hydrologist

State Remediation Section

Bureau of Land and Waste Management

APPENDIX C

SLUG TEST ANALYSIS



MW1-OUT1

Data Set: L:\...\MW1-0UT1.aqt
Date: 04/27/16 Time: 11:11:10

PROJECT INFORMATION

Company: AECOM
Client: UTC
Project: 60414964
Location: Bamberg, SC
Test Well: MW-1
Test Date: 11/30/15

AQUIFER DATA

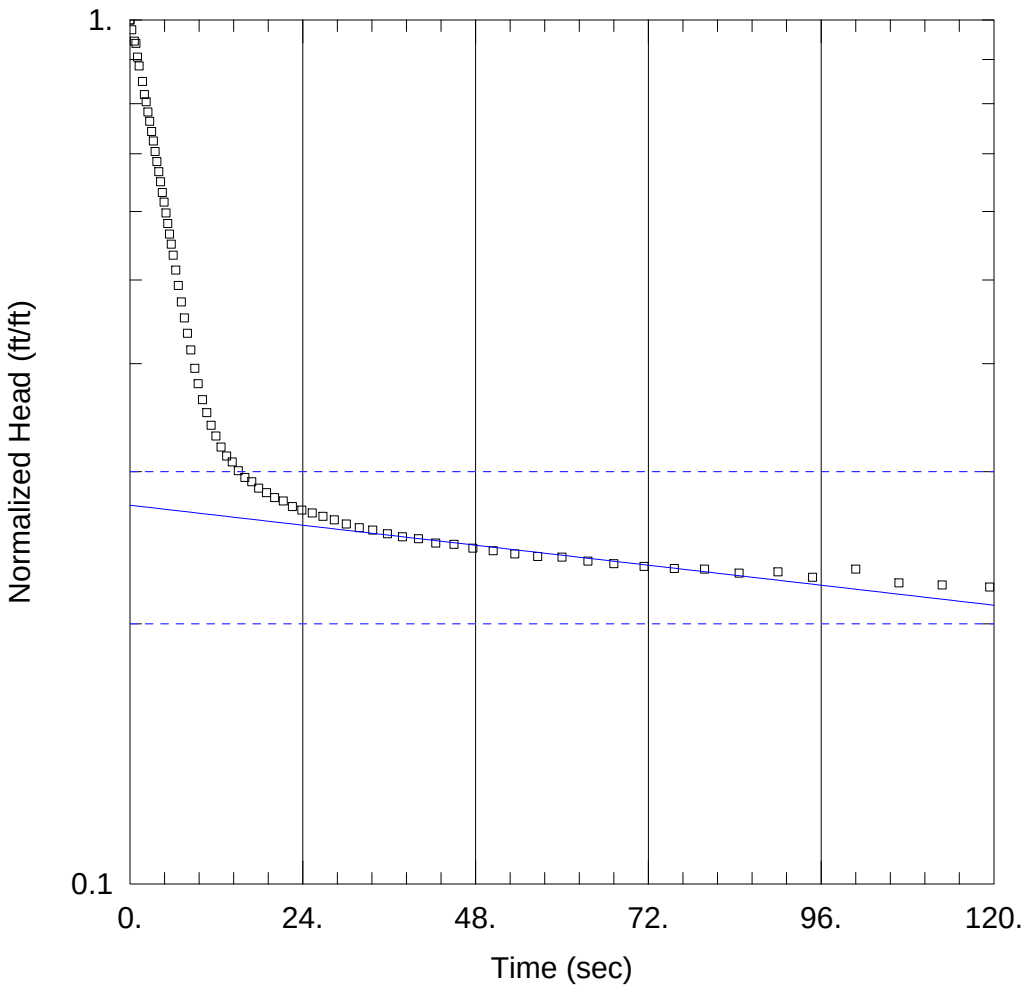
Saturated Thickness: 19.56 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-1)

Initial Displacement: 2.686 ft
Total Well Penetration Depth: 7.56 ft
Casing Radius: 0.083 ft
Static Water Column Height: 7.56 ft
Screen Length: 7.56 ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.2586 ft/day
y0 = 0.4558 ft



MW1-OUT2

Data Set: L:\...\MW1-0UT2.aqt
Date: 04/27/16 Time: 11:06:41

PROJECT INFORMATION

Company: AECOM
Client: UTC
Project: 60414964
Location: Bamberg, SC
Test Well: MW-1
Test Date: 12/1/15

AQUIFER DATA

Saturated Thickness: 19.43 ft Anisotropy Ratio (Kz/Kr): 1.

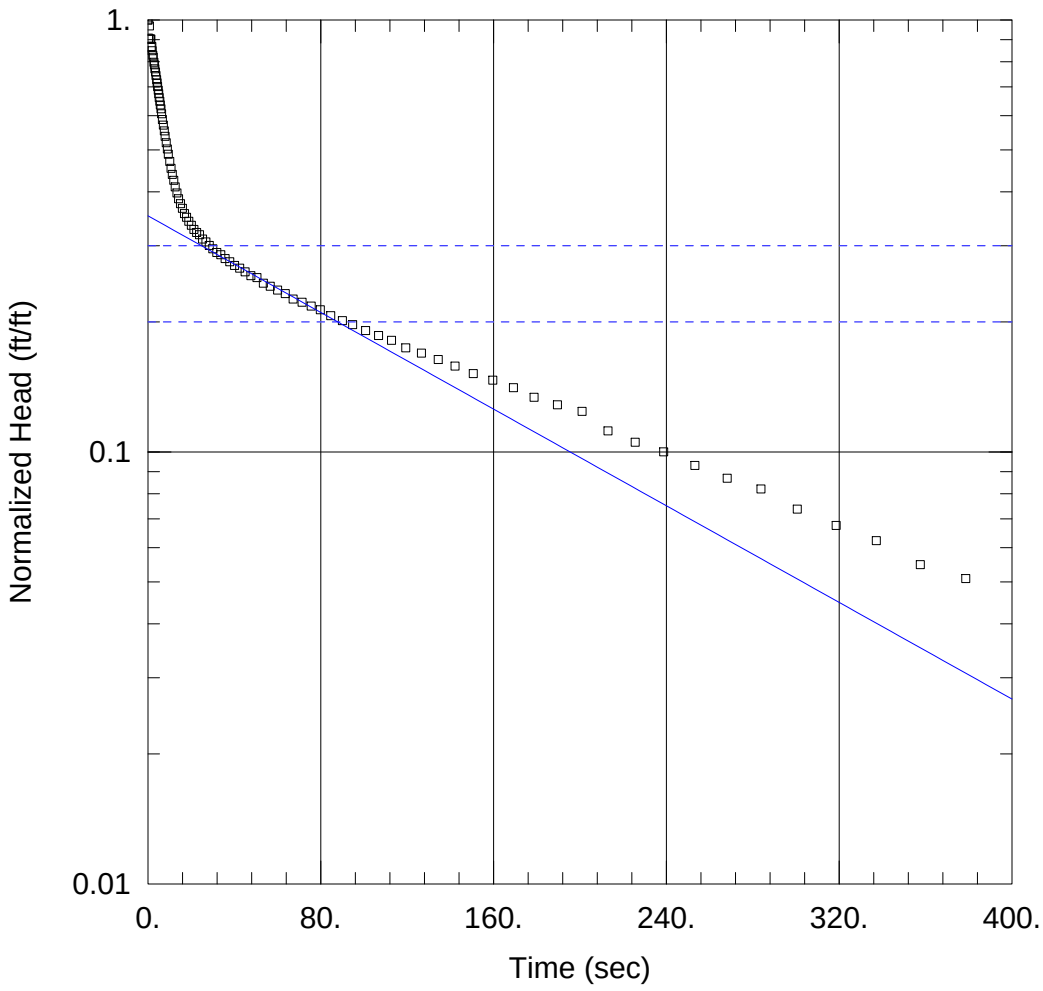
WELL DATA (MW-1)

Initial Displacement: 2.407 ft
Total Well Penetration Depth: 7.43 ft
Casing Radius: 0.083 ft
Static Water Column Height: 7.43 ft
Screen Length: 7.43 ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.1751 ft/day y0 = 0.6604 ft



MW5-OUT1

Data Set: C:\...\MW5-OUT1.aqt
Date: 04/27/16 Time: 11:15:12

PROJECT INFORMATION

Company: AECOM
Client: UTC
Project: 60414964
Location: Bamberg, SC
Test Well: MW-5
Test Date: 12/1/15

AQUIFER DATA

Saturated Thickness: 25.48 ft Anisotropy Ratio (Kz/Kr): 1.

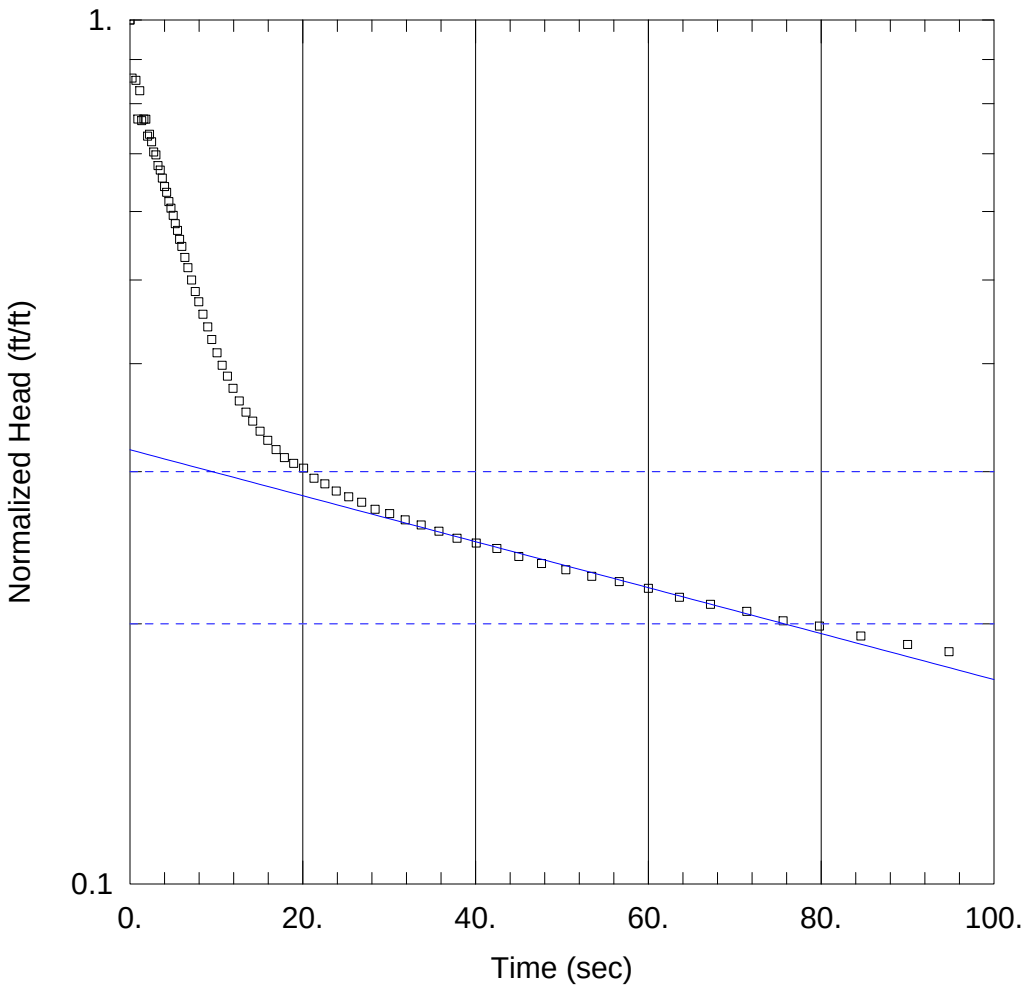
WELL DATA (MW-5)

Initial Displacement: 2.279 ft
Total Well Penetration Depth: 9.48 ft
Casing Radius: 0.083 ft
Static Water Column Height: 9.48 ft
Screen Length: 9.48 ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.4356 ft/day y0 = 0.8022 ft



MW5-OUT2

Data Set: L:\...\MW5-OUT2.aqt
Date: 04/27/16 Time: 11:13:57

PROJECT INFORMATION

Company: AECOM
Client: UTC
Project: 60414964
Location: Bamberg, SC
Test Well: MW-5
Test Date: 12/1/15

AQUIFER DATA

Saturated Thickness: 25.5 ft Anisotropy Ratio (Kz/Kr): 1.

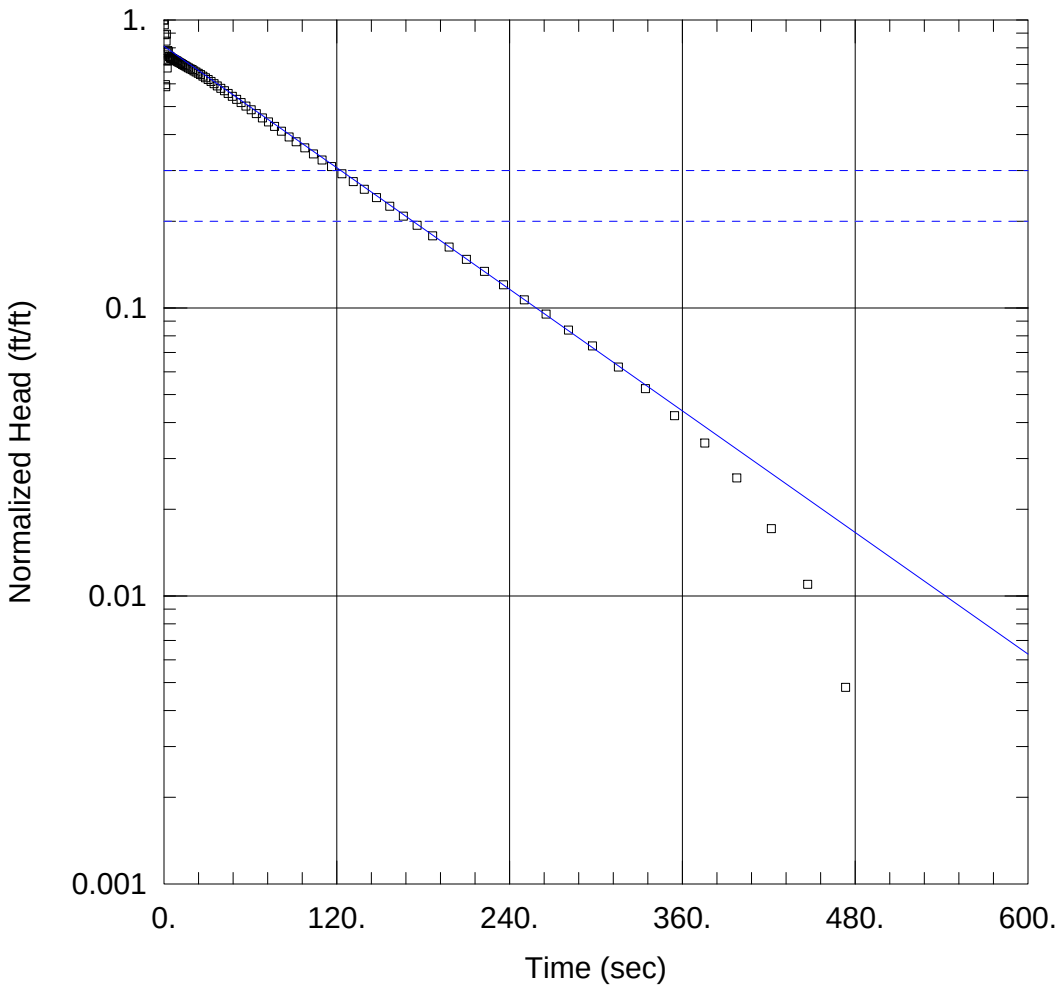
WELL DATA (MW-5)

Initial Displacement: 2.52 ft
Total Well Penetration Depth: 9.5 ft
Casing Radius: 0.083 ft
Static Water Column Height: 9.5 ft
Screen Length: 9.5 ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.4138 ft/day
y0 = 0.8015 ft



MW21-IN1

Data Set: C:\...\MW21-IN1.aqt
Date: 04/27/16 Time: 11:37:17

PROJECT INFORMATION

Company: AECOM
Client: UTC
Project: 60414964
Location: Bamberg, SC
Test Well: MW-21
Test Date: 11/30/15

AQUIFER DATA

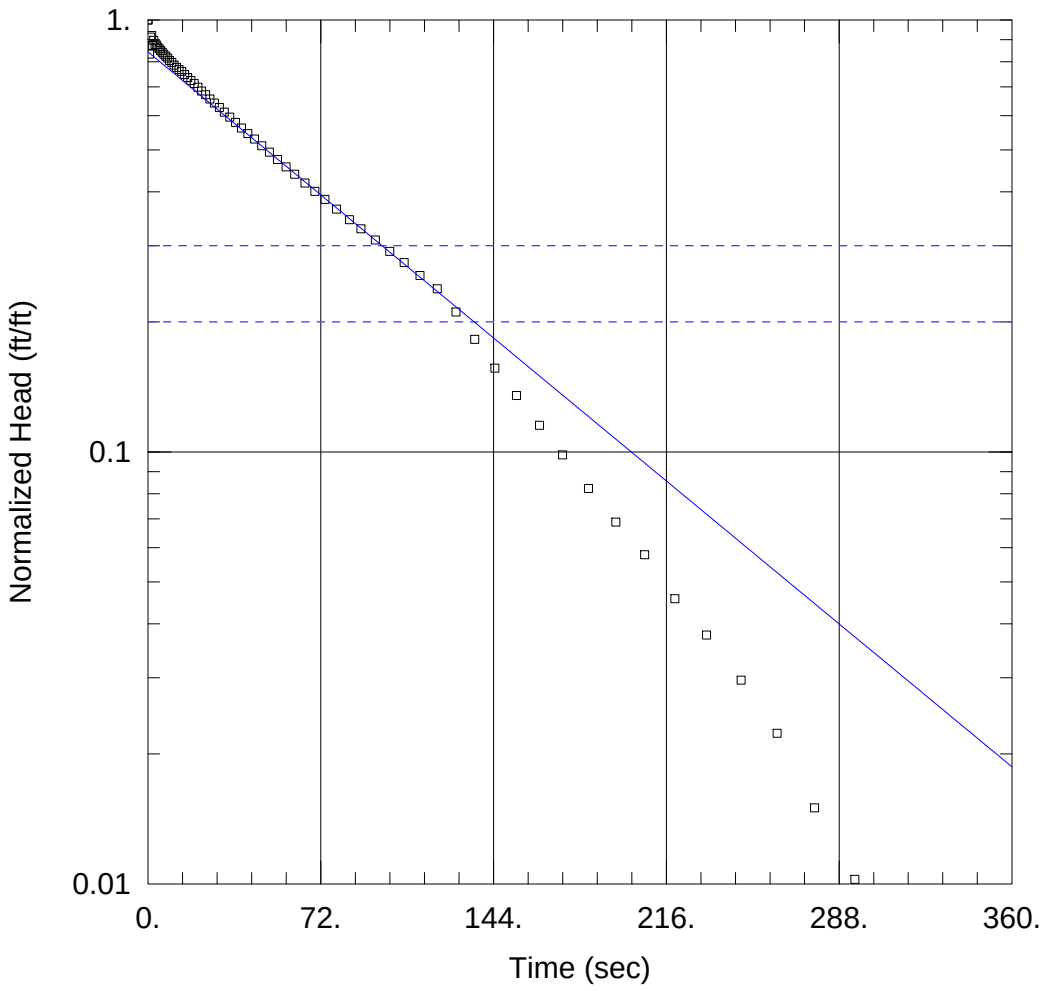
Saturated Thickness: 22.76 ft Anisotropy Ratio (Kz/Kr): 0.01

WELL DATA (MW-21)

Initial Displacement: 3.739 ft Static Water Column Height: 22.76 ft
Total Well Penetration Depth: 22.76 ft Screen Length: 15. ft
Casing Radius: 0.083 ft Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 2.934 ft/day y0 = 3.031 ft



MW21-IN2

Data Set: C:\...\MW21-IN2.aqt
Date: 04/27/16 Time: 11:33:22

PROJECT INFORMATION

Company: AECOM
Client: UTC
Project: 60414964
Location: Bamberg, SC
Test Well: MW-21
Test Date: 11/30/15

AQUIFER DATA

Saturated Thickness: 22.57 ft Anisotropy Ratio (Kz/Kr): 1.

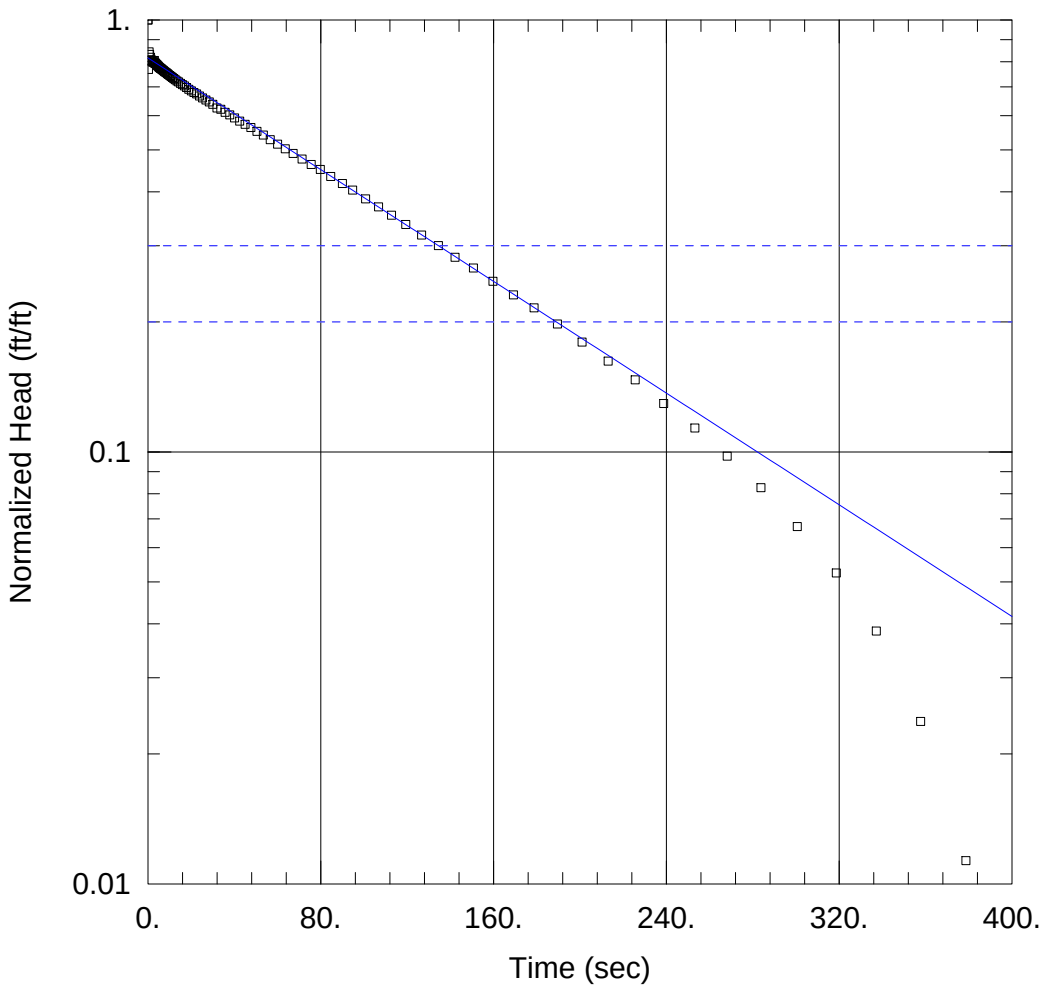
WELL DATA (MW-21)

Initial Displacement: 2.733 ft
Total Well Penetration Depth: 22.57 ft
Casing Radius: 0.083 ft
Static Water Column Height: 22.57 ft
Screen Length: 15. ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.6668 ft/day
y0 = 2.305 ft



MW21-OUT1

Data Set: C:\...\MW21-OUT1.aqt
Date: 04/27/16 Time: 11:37:40

PROJECT INFORMATION

Company: AECOM
Client: UTC
Project: 60414964
Location: Bamberg, SC
Test Well: MW-21
Test Date: 11/30/15

AQUIFER DATA

Saturated Thickness: 22.69 ft Anisotropy Ratio (Kz/Kr): 1.

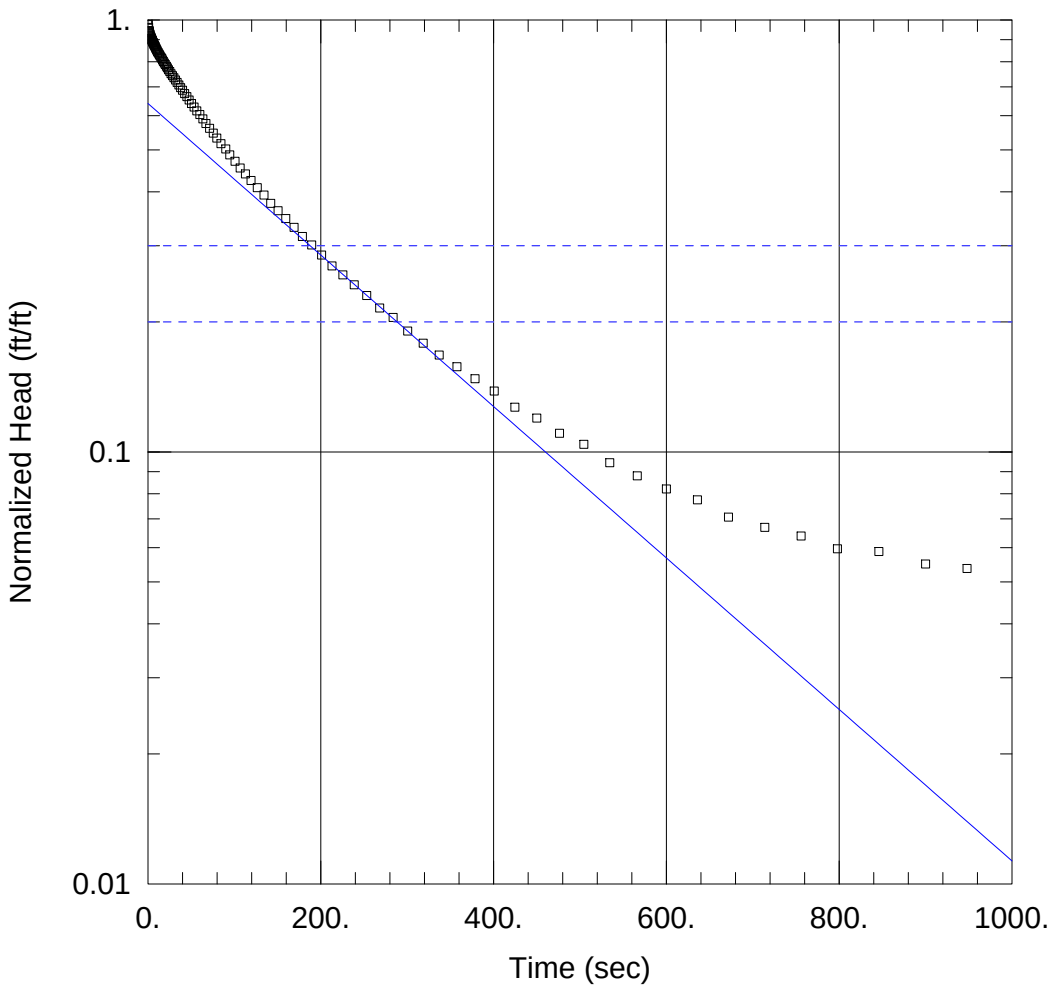
WELL DATA (MW-21)

Initial Displacement: 2.65 ft
Total Well Penetration Depth: 22.69 ft
Casing Radius: 0.083 ft
Static Water Column Height: 22.69 ft
Screen Length: 15. ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.4693 ft/day y0 = 2.163 ft



MW21-OUT2

Data Set: C:\...\MW21-OUT2.aqt
Date: 04/27/16 Time: 11:36:08

PROJECT INFORMATION

Company: AECOM
Client: UTC
Project: 60414964
Location: Bamberg, SC
Test Well: MW-21
Test Date: 11/30/15

AQUIFER DATA

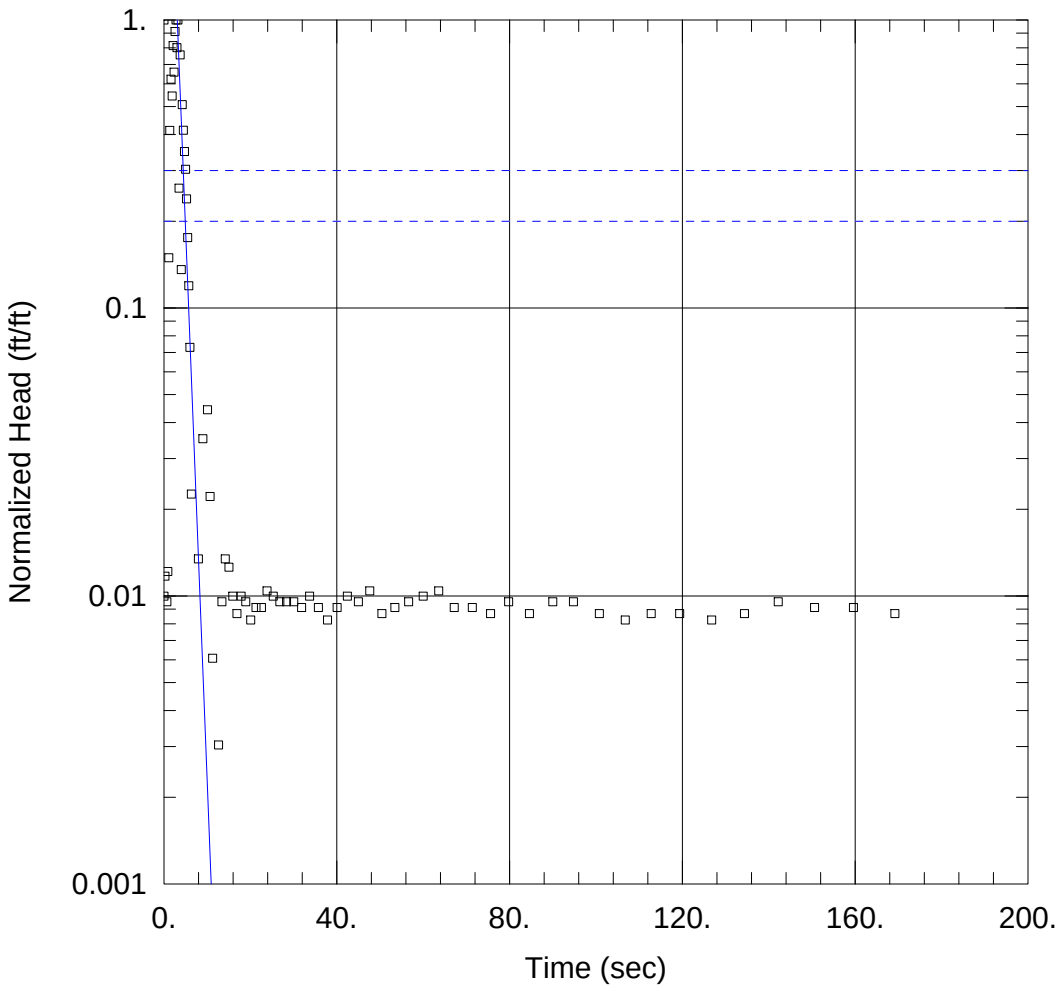
Saturated Thickness: 22.5 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-21)

Initial Displacement: 2.363 ft
Total Well Penetration Depth: 22.5 ft
Casing Radius: 0.083 ft
Static Water Column Height: 22.5 ft
Screen Length: 15. ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.2541 ft/day
y0 = 1.513 ft



MW21D-IN1

Data Set: C:\...\MW21D-IN1.aqt
Date: 04/27/16 Time: 11:39:13

PROJECT INFORMATION

Company: AECOM
Client: UTC
Project: 60414964
Location: Bamberg, SC
Test Well: MW-21D
Test Date: 12/1/15

AQUIFER DATA

Saturated Thickness: 57.61 ft Anisotropy Ratio (Kz/Kr): 1.

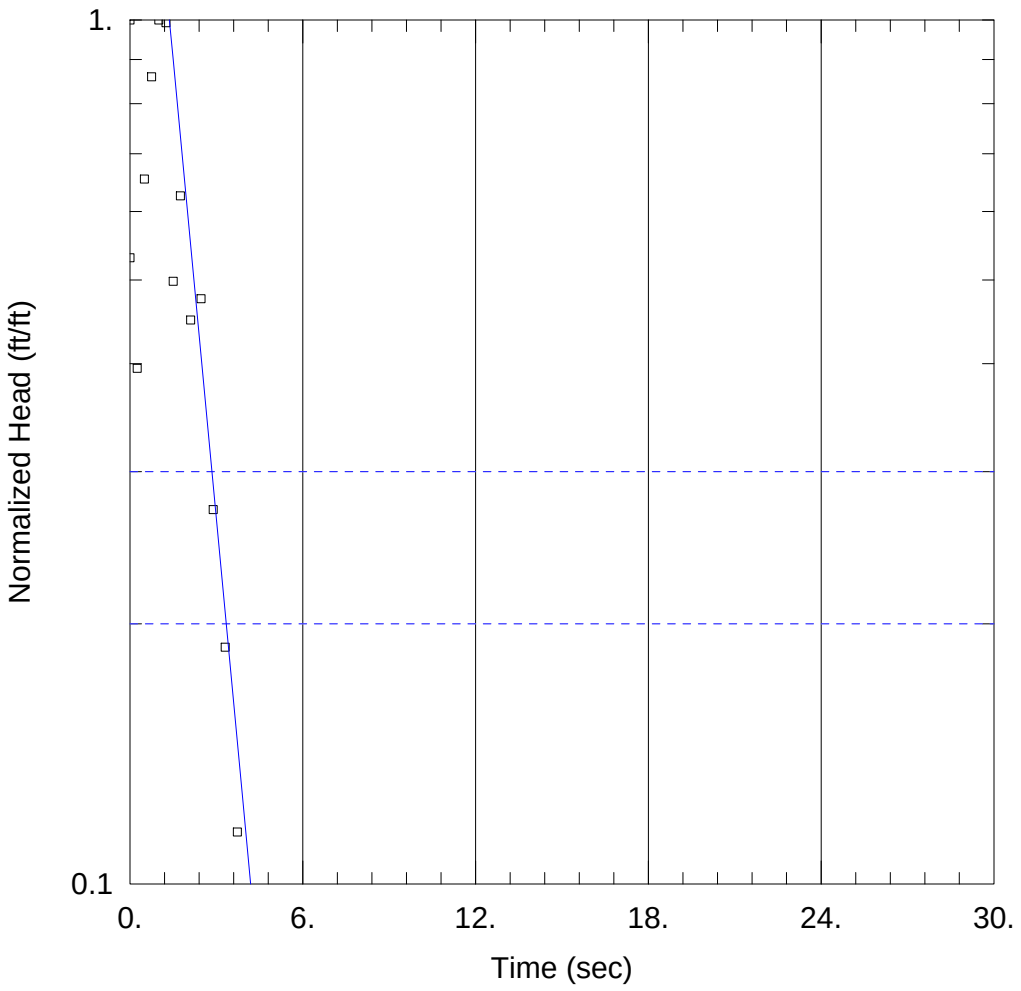
WELL DATA (MW-21D)

Initial Displacement: 2.304 ft Static Water Column Height: 40.61 ft
Total Well Penetration Depth: 40.61 ft Screen Length: 10. ft
Casing Radius: 0.083 ft Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 72.53 ft/day y0 = 35.1 ft



MW21D-IN2

Data Set: C:\...\MW21D-IN2.aqt
Date: 04/27/16 Time: 11:48:01

PROJECT INFORMATION

Company: AECOM
Client: UTC
Project: 60414964
Location: Bamberg, SC
Test Well: MW-21D
Test Date: 12/1/15

AQUIFER DATA

Saturated Thickness: 57.61 ft Anisotropy Ratio (Kz/Kr): 1.

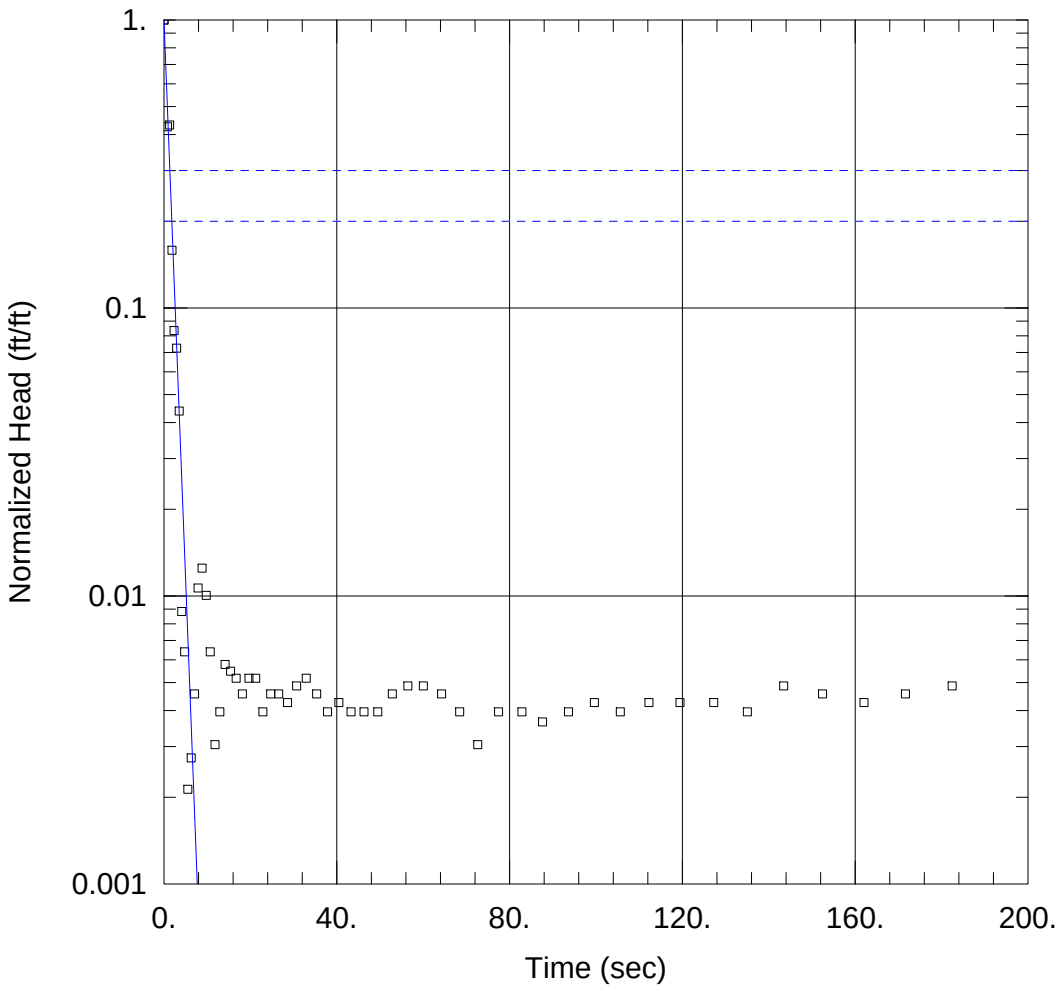
WELL DATA (MW-21D)

Initial Displacement: 2.725 ft
Total Well Penetration Depth: 40.61 ft
Casing Radius: 0.083 ft
Static Water Column Height: 40.61 ft
Screen Length: 10. ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 67.22 ft/day y0 = 8.346 ft



MW21D-IN3

Data Set: C:\...\MW21D-IN3.aqt
Date: 04/27/16 Time: 11:53:00

PROJECT INFORMATION

Company: AECOM
Client: UTC
Project: 60414964
Location: Bamberg, SC
Test Well: MW-21D
Test Date: 12/1/15

AQUIFER DATA

Saturated Thickness: 57.61 ft Anisotropy Ratio (Kz/Kr): 1.

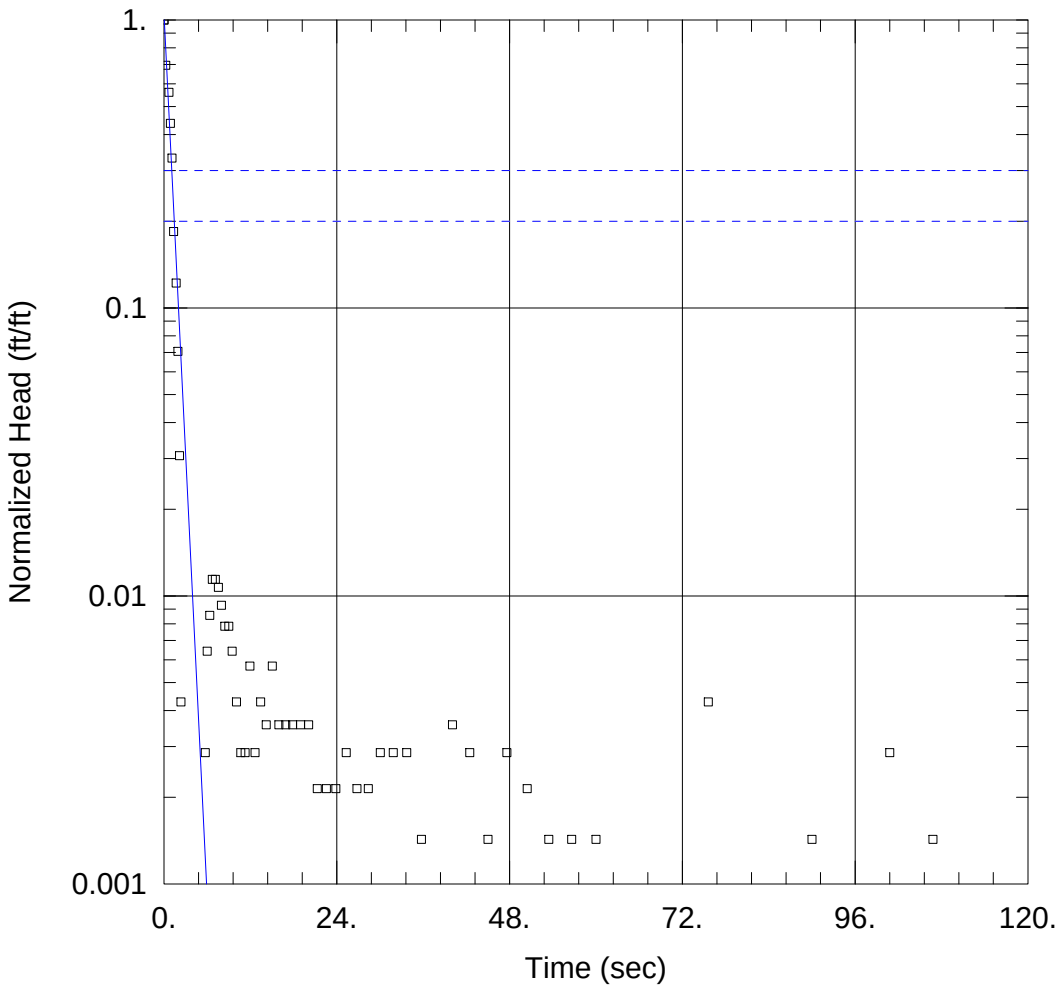
WELL DATA (MW-21D)

Initial Displacement: 3.285 ft
Total Well Penetration Depth: 40.61 ft
Casing Radius: 0.083 ft
Static Water Column Height: 40.61 ft
Screen Length: 10. ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 73.96 ft/day y0 = 3.356 ft



MW21D-OUT1

Data Set: C:\...\MW21D-OUT1.aqt
Date: 04/27/16 Time: 11:56:01

PROJECT INFORMATION

Company: AECOM
Client: UTC
Project: 60414964
Location: Bamberg, SC
Test Well: MW-21D
Test Date: 12/1/15

AQUIFER DATA

Saturated Thickness: 57.61 ft Anisotropy Ratio (Kz/Kr): 1.

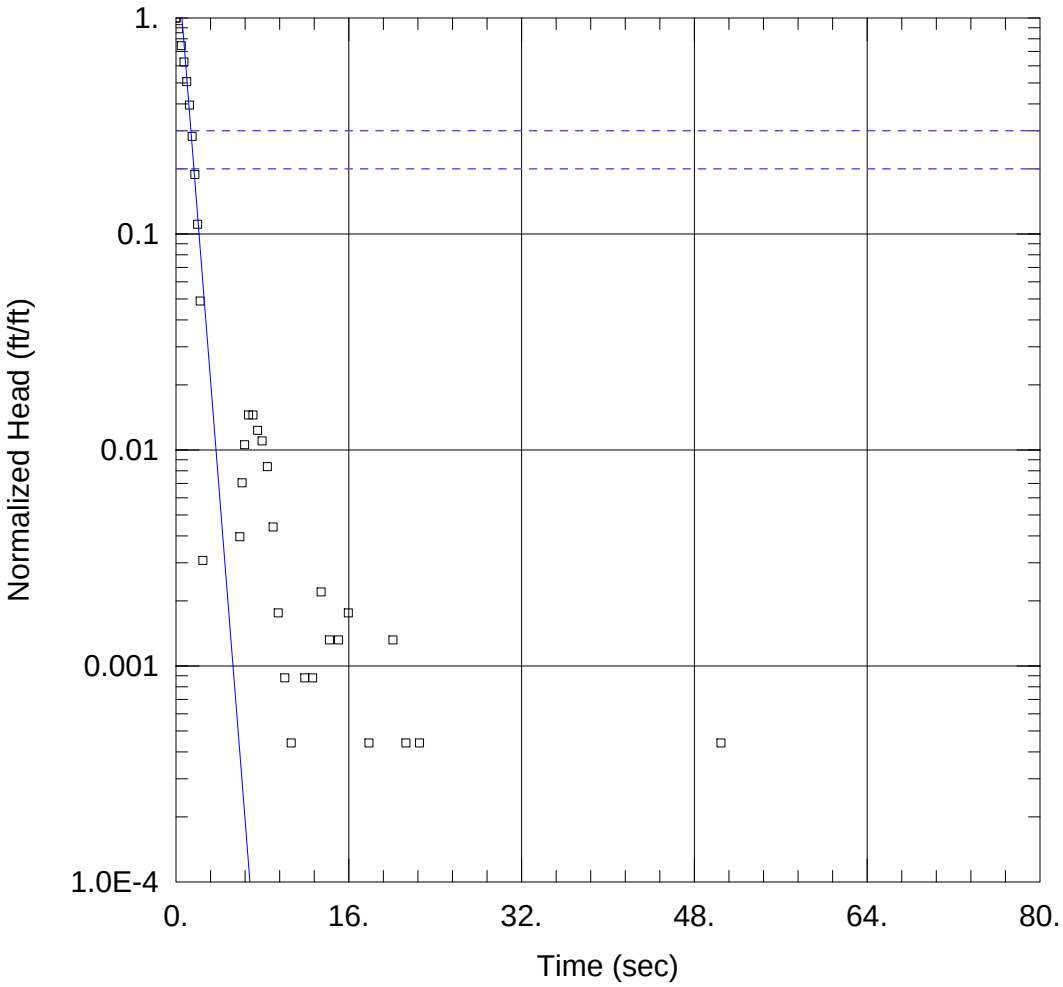
WELL DATA (MW-21D)

Initial Displacement: 1.401 ft
Total Well Penetration Depth: 40.61 ft
Casing Radius: 0.083 ft
Static Water Column Height: 40.61 ft
Screen Length: 10. ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 97.19 ft/day y0 = 1.51 ft



MW21D-OUT2

Data Set: C:\...\MW21D-OUT2.aqt
Date: 04/27/16 Time: 11:59:50

PROJECT INFORMATION

Company: AECOM
Client: UTC
Project: 60414964
Location: Bamberg, SC
Test Well: MW-21D
Test Date: 12/1/15

AQUIFER DATA

Saturated Thickness: 57.61 ft Anisotropy Ratio (Kz/Kr): 1.

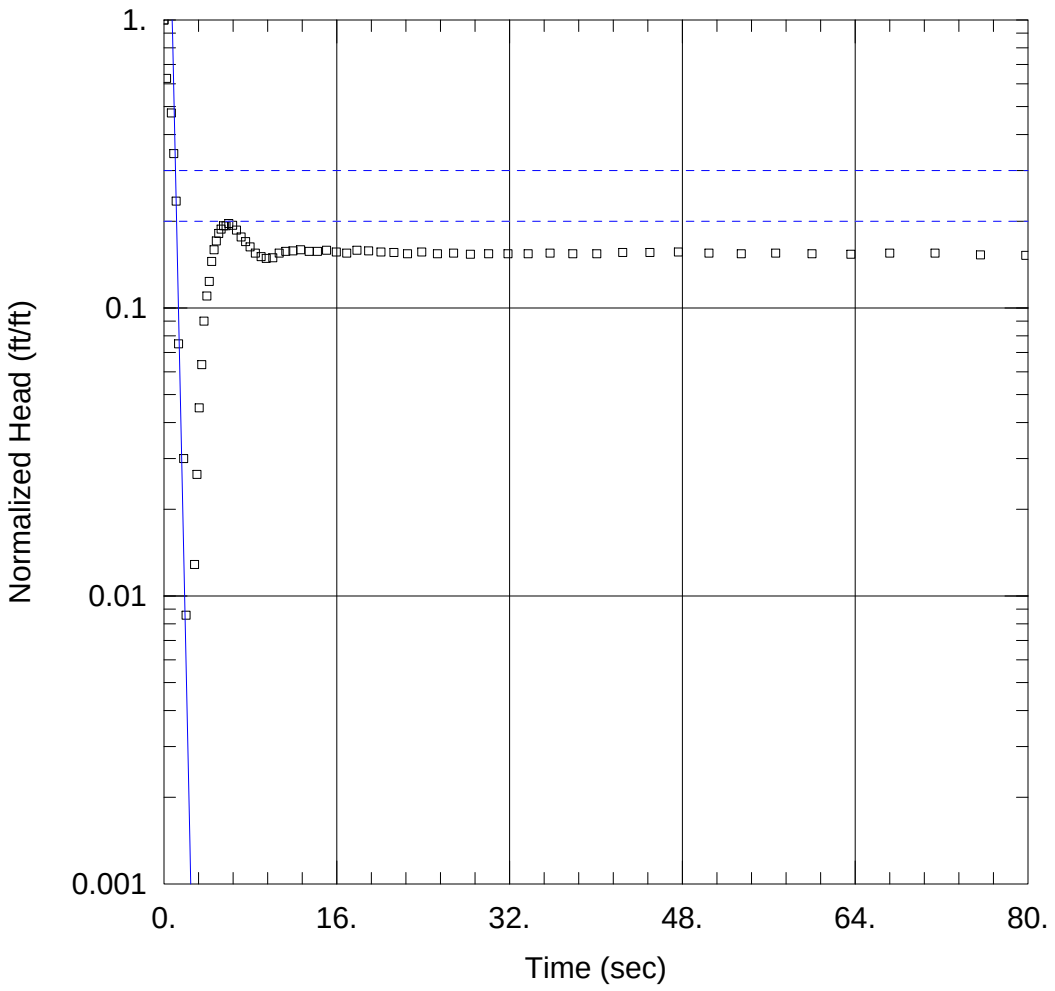
WELL DATA (MW-21D)

Initial Displacement: 2.272 ft
Total Well Penetration Depth: 40.61 ft
Casing Radius: 0.083 ft
Static Water Column Height: 40.61 ft
Screen Length: 10. ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 120.6 ft/day y0 = 5.16 ft



MW21D-OUT3

Data Set: C:\...\MW21D-OUT3.aqt
Date: 04/27/16 Time: 12:05:17

PROJECT INFORMATION

Company: AECOM
Client: UTC
Project: 60414964
Location: Bamberg, SC
Test Well: MW-21D
Test Date: 12/1/15

AQUIFER DATA

Saturated Thickness: 57.61 ft Anisotropy Ratio (Kz/Kr): 0.04018

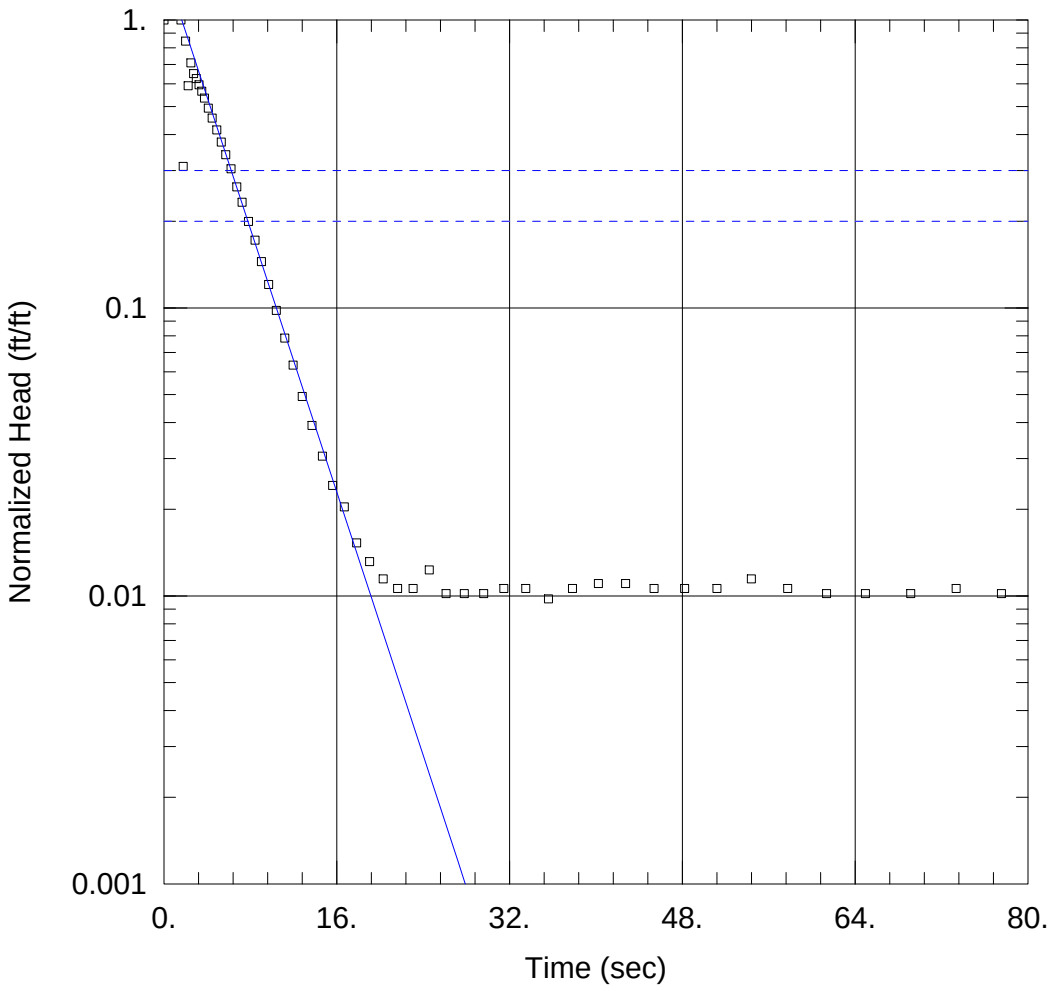
WELL DATA (MW-21D)

Initial Displacement: 1.4 ft
Total Well Penetration Depth: 40.61 ft
Casing Radius: 0.083 ft
Static Water Column Height: 40.61 ft
Screen Length: 10. ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 495.3 ft/day
y0 = 30.58 ft



MW22D-IN1

Data Set: C:\...\MW22D-in1.aqt
Date: 04/27/16 Time: 12:10:01

PROJECT INFORMATION

Company: AECOM
Client: UTC
Project: 60414964
Location: Bamberg, SC
Test Well: MW-22D
Test Date: 12/1/15

AQUIFER DATA

Saturated Thickness: 58.38 ft Anisotropy Ratio (Kz/Kr): 1.

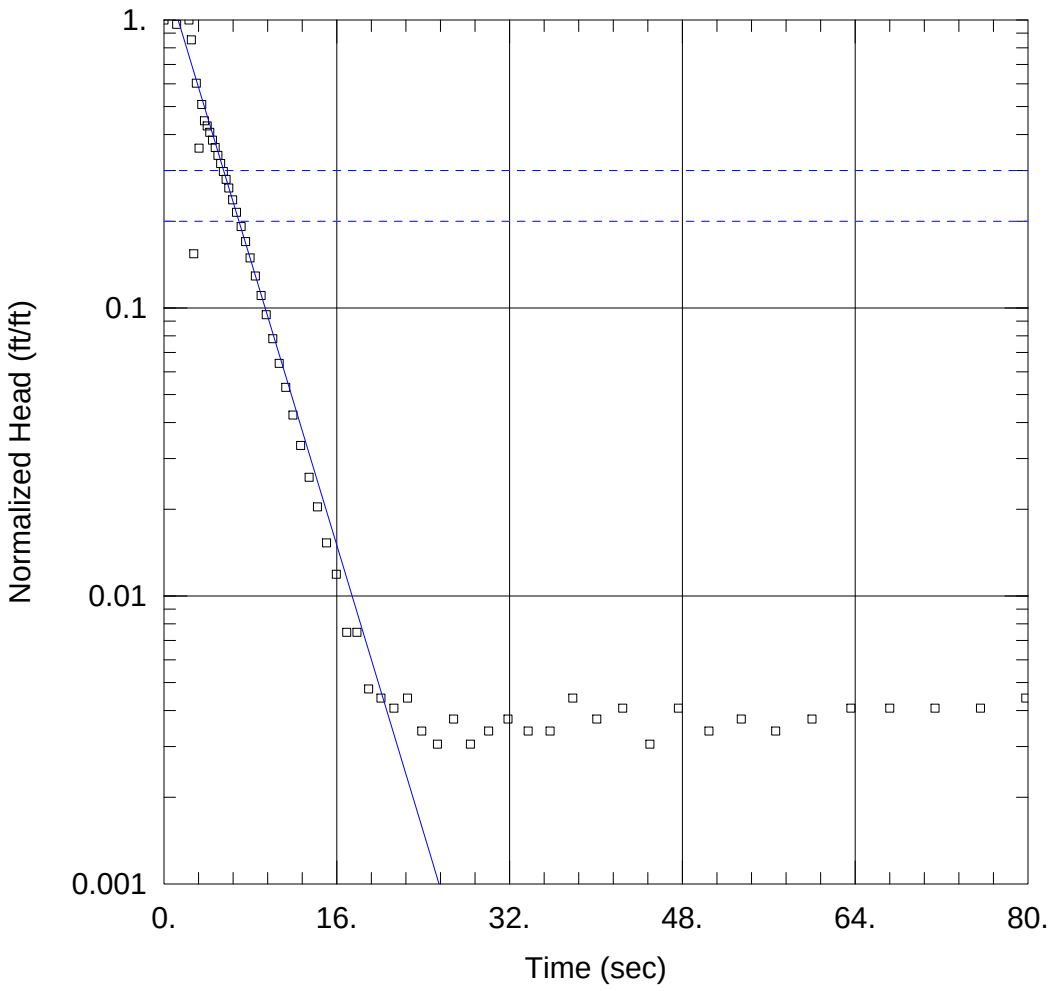
WELL DATA (MW-22D)

Initial Displacement: 2.355 ft
Total Well Penetration Depth: 36.38 ft
Casing Radius: 0.083 ft
Static Water Column Height: 36.38 ft
Screen Length: 10. ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 21.15 ft/day
y0 = 3.633 ft



MW22D-IN2

Data Set: C:\...\MW22D-in2.aqt
Date: 04/27/16 Time: 12:12:56

PROJECT INFORMATION

Company: AECOM
Client: UTC
Project: 60414964
Location: Bamberg, SC
Test Well: MW-22D
Test Date: 12/1/15

AQUIFER DATA

Saturated Thickness: 58.39 ft Anisotropy Ratio (Kz/Kr): 1.

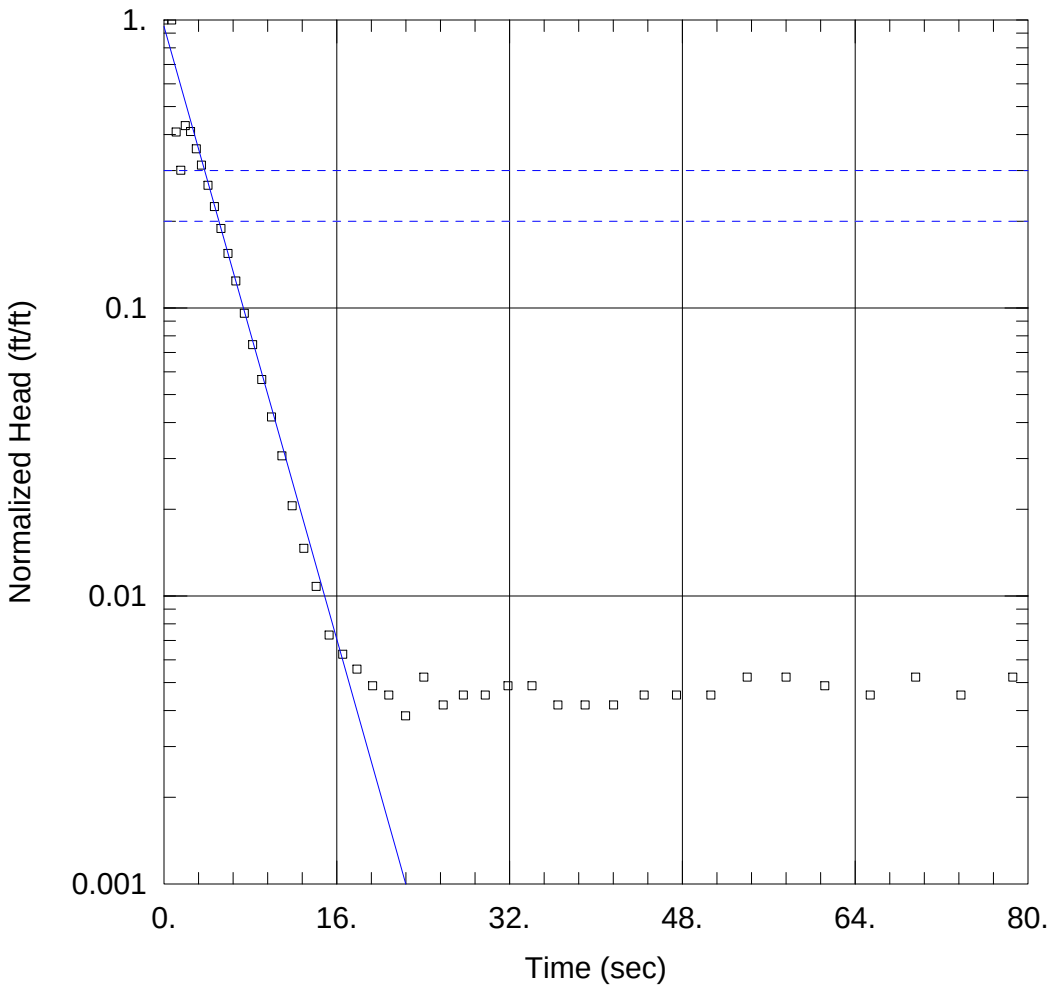
WELL DATA (MW-22D)

Initial Displacement: 2.944 ft
Total Well Penetration Depth: 36.39 ft
Casing Radius: 0.083 ft
Static Water Column Height: 36.39 ft
Screen Length: 10. ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 22.99 ft/day
y0 = 4.283 ft



MW22D-IN3

Data Set: C:\...\MW22D-in3.aqt
Date: 04/27/16 Time: 12:13:57

PROJECT INFORMATION

Company: AECOM
Client: UTC
Project: 60414964
Location: Bamberg, SC
Test Well: MW-22D
Test Date: 12/1/15

AQUIFER DATA

Saturated Thickness: 58.39 ft Anisotropy Ratio (Kz/Kr): 1.

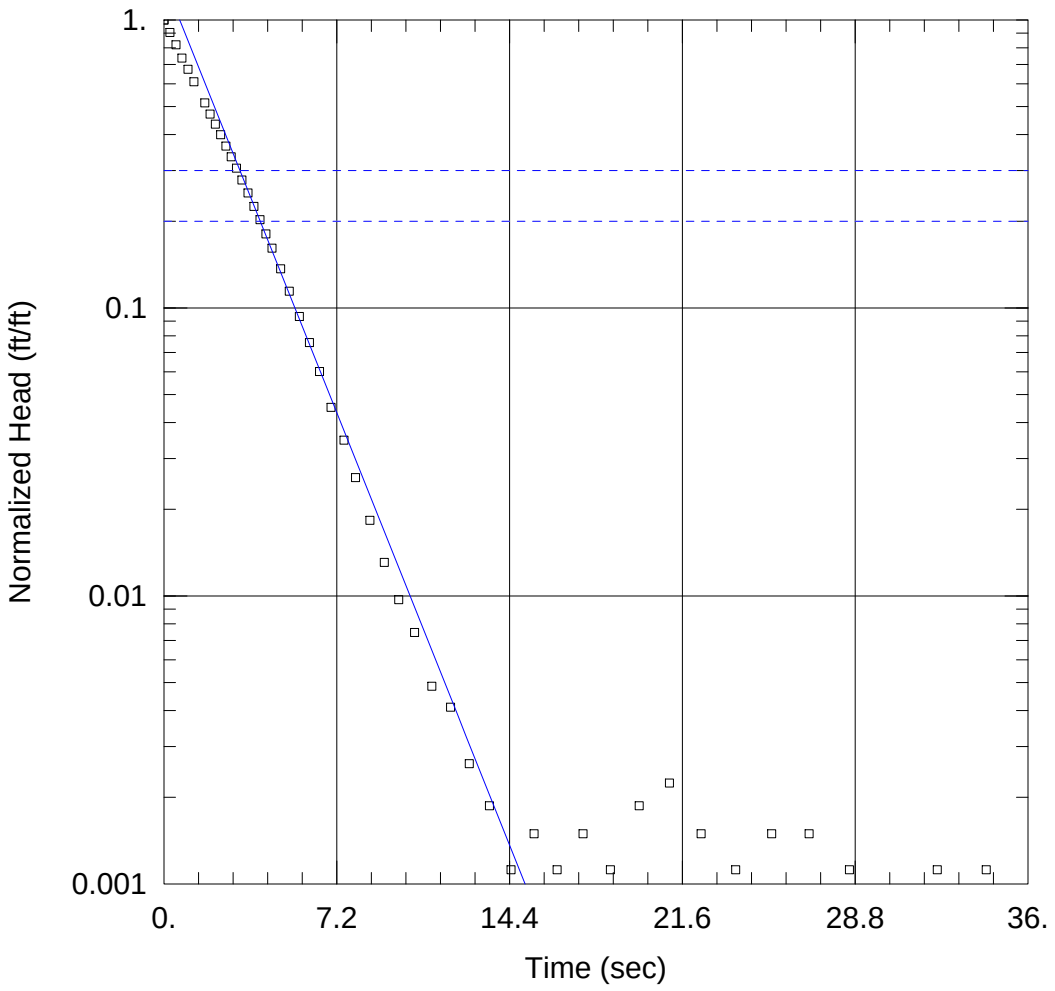
WELL DATA (MW-22D)

Initial Displacement: 2.871 ft
Total Well Penetration Depth: 36.39 ft
Casing Radius: 0.083 ft
Static Water Column Height: 36.39 ft
Screen Length: 10. ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 24.62 ft/day
y0 = 2.727 ft



MW22D-OUT1

Data Set: C:\...\MW22D-out1.aqt
Date: 04/27/16 Time: 12:15:43

PROJECT INFORMATION

Company: AECOM
Client: UTC
Project: 60414964
Location: Bamberg, SC
Test Well: MW-22D
Test Date: 12/1/15

AQUIFER DATA

Saturated Thickness: 58.39 ft Anisotropy Ratio (Kz/Kr): 1.

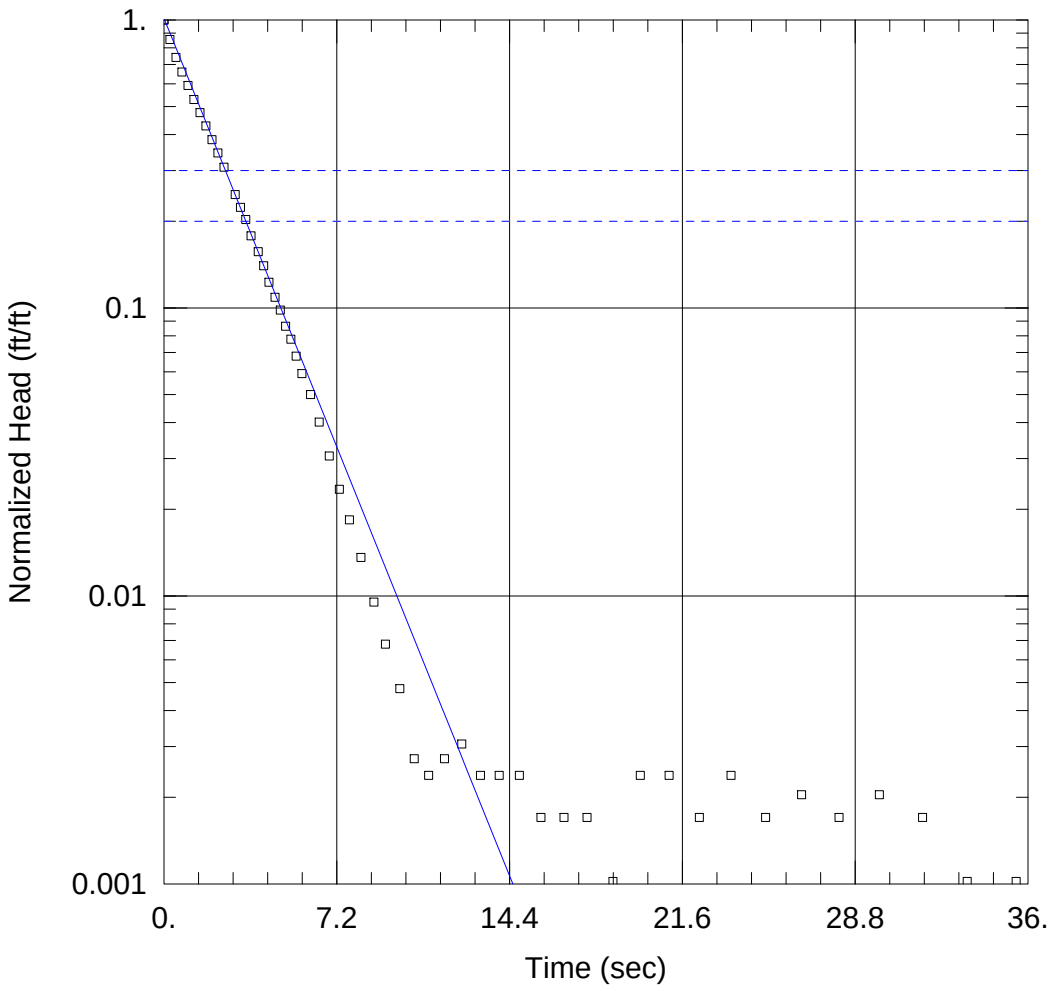
WELL DATA (MW-22D)

Initial Displacement: 2.678 ft
Total Well Penetration Depth: 36.39 ft
Casing Radius: 0.083 ft
Static Water Column Height: 36.39 ft
Screen Length: 10. ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 38.58 ft/day y0 = 3.668 ft



MW22D-OUT2

Data Set: C:\...\MW22D-out2.aqt
Date: 04/27/16 Time: 12:17:26

PROJECT INFORMATION

Company: AECOM
Client: UTC
Project: 60414964
Location: Bamberg, SC
Test Well: MW-22D
Test Date: 12/1/15

AQUIFER DATA

Saturated Thickness: 58.39 ft Anisotropy Ratio (Kz/Kr): 1.

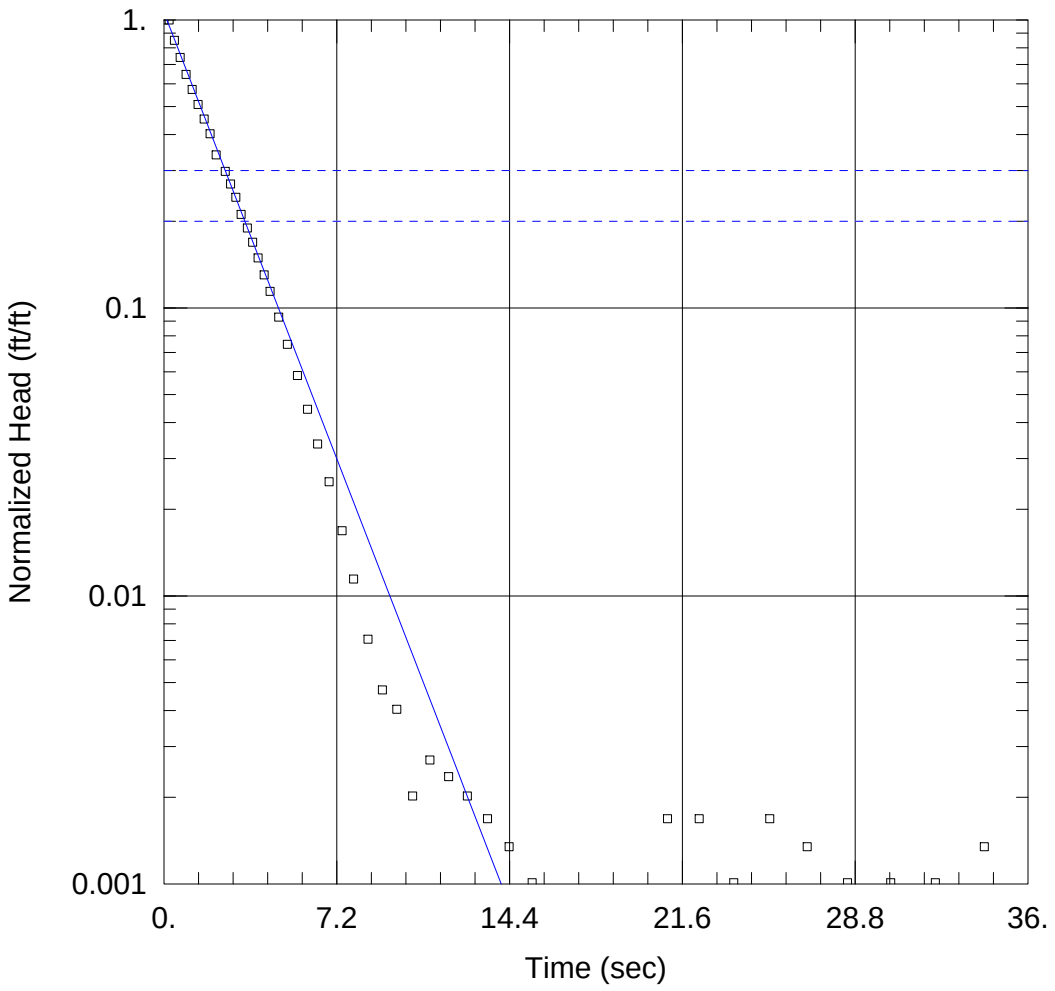
WELL DATA (MW-22D)

Initial Displacement: 2.94 ft
Total Well Penetration Depth: 36.39 ft
Casing Radius: 0.083 ft
Static Water Column Height: 36.39 ft
Screen Length: 10. ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 38.28 ft/day y0 = 2.984 ft



MW22D-OUT3

Data Set: C:\...\MW22D-out3.aqt
Date: 04/27/16 Time: 12:18:14

PROJECT INFORMATION

Company: AECOM
Client: UTC
Project: 60414964
Location: Bamberg, SC
Test Well: MW-22D
Test Date: 12/1/15

AQUIFER DATA

Saturated Thickness: 58.39 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-22D)

Initial Displacement: 2.97 ft
Total Well Penetration Depth: 36.39 ft
Casing Radius: 0.083 ft
Static Water Column Height: 36.39 ft
Screen Length: 10. ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 39.86 ft/day y0 = 3.157 ft

APPENDIX D

LABORATORY ANALYTICAL DATA

- Laboratory Reports
  - Accutest Laboratories Southeast
  - Eurofins| Spectrum Analytical
- Data Validation Reports

Southeast
ACCUTEST LABORATORIES

12/07/15

Technical Report for

United Technologies Corporation

AECOMSCG: Delavan Spray Technologies; Bamberg, SC

60314964

Accutest Job Number: FA29626

Sampling Date: 12/01/15

Report to:

AECOM Environment
10 Patewood Dr Bldg VI, Suite 500
Greenville, SC 29615
doria.cullom@aecom.com

ATTN: Doria Cullom

Total number of pages in report: **23**

NELAP ACCREDITED TNI LABORATORY

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Heather Wandrey 407-425-6700

Certifications: FL (E83510), LA (03051), KS (E-10327), IA (366), IL (200063), NC (573), NJ (FL002), SC (96038001) DoD ELAP (L-A-B L2229), CA (2937), TX (T104704404), PA (68-03573), VA (460177), AK, AR, GA, KY, MA, NV, OK, UT, WA

Sections: 1 2 3 4 5 6

Table of Contents

-1-

Sample Summary

United Technologies Corporation

Job No: FA29626

AECOMSCG: Delavan Spray Technologies; Bamberg, SC
Project No: 60314964

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA29626-1	12/01/15	13:50	LARM	12/02/15	SO	Trip Blank Soil	DPT-58-5.5-C
FA29626-2	12/01/15	13:50	LARM	12/02/15	SO	Soil	DPT-58-5.5
FA29626-3	12/01/15	14:00	LARM	12/02/15	SO	Soil	DPT-58-11

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: United Technologies Corporation **Job No:** FA29626

Site: AECOMSCG: Delavan Spray Technologies; Bamberg, SC **Report Date** 12/7/2015 1:08:49 PM

2 Samples and 1 Trip Blank were collected on 12/01/2015 and were received at Accutest SE on 12/02/2015 properly preserved, at 3.4 Deg. C and intact. These Samples received an Accutest job number of FA29626. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix: SO **Batch ID:** VF2538

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA29619-1MS, FA29619-1MSD were used as the QC samples indicated.

Blank Spike Recovery(s) for Bromoform are outside control limits. Recovery is biased high. Analyte is non-detect in associated samples; therefore data is not adversely affected.

Matrix Spike Duplicate Recovery(s) for Bromoform are outside control limits. Probable cause is due to matrix interference.

FA29626-1 for Bromoform: Associated BS recovery outside control limits.

FA29626-2 for Bromoform: Associated BS recovery outside control limits.

FA29626-3 for Bromoform: Associated BS recovery outside control limits.

Wet Chemistry By Method SM19 2540G

Matrix: SO **Batch ID:** GN68896

Sample(s) FA29626-2DUP was used as the QC samples for Solids, Percent.

Accutest Laboratories Southeast (ALSE) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALSE and as stated on the COC. ALSE certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALSE Quality Manual except as noted above. This report is to be used in its entirety. ALSE is not responsible for any assumptions of data quality if partial data packages are used

Narrative prepared by:

_____ Date: December 7, 2015

Lovelie Metzgar, QA Officer (signature on file)

Summary of Hits

Job Number: FA29626
Account: United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC
Collected: 12/01/15

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
FA29626-1	**DPT-58-5.5-C**					
No hits reported in this sample.						
FA29626-2	**DPT-58-5.5**					
Acetone		93.1	35	11	ug/kg	SW846 8260B
cis-1,2-Dichloroethylene		5.4	3.5	0.70	ug/kg	SW846 8260B
Tetrachloroethylene		7.1	3.5	1.1	ug/kg	SW846 8260B
FA29626-3	**DPT-58-11**					
cis-1,2-Dichloroethylene		0.77 J	3.5	0.70	ug/kg	SW846 8260B
Tetrachloroethylene		1.2 J	3.5	1.1	ug/kg	SW846 8260B

Southeast ACCUTEST LABORATORIES

4

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: DPT-58-5.5-C
Lab Sample ID: FA29626-1
Matrix: SO - Trip Blank Soil
Method: SW846 8260B
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Date Sampled: 12/01/15
Date Received: 12/02/15
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F0074252.D	1	12/02/15	EP	n/a	n/a	VF2538
Run #2							

	Initial Weight	Final Volume
Run #1	5.00 g	5.0 ml
Run #2		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	15	ug/kg	
71-43-2	Benzene	ND	5.0	1.0	ug/kg	
75-27-4	Bromodichloromethane	ND	5.0	1.0	ug/kg	
75-25-2	Bromoform [a]	ND	5.0	1.0	ug/kg	
78-93-3	2-Butanone (MEK)	ND	25	8.5	ug/kg	
75-15-0	Carbon Disulfide	ND	5.0	1.5	ug/kg	
56-23-5	Carbon Tetrachloride	ND	5.0	1.0	ug/kg	
108-90-7	Chlorobenzene	ND	5.0	1.0	ug/kg	
75-00-3	Chloroethane	ND	5.0	2.0	ug/kg	
67-66-3	Chloroform	ND	5.0	1.0	ug/kg	
124-48-1	Dibromochloromethane	ND	5.0	1.0	ug/kg	
75-34-3	1,1-Dichloroethane	ND	5.0	1.0	ug/kg	
107-06-2	1,2-Dichloroethane	ND	5.0	1.0	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	5.0	1.3	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	5.0	1.0	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	5.0	1.0	ug/kg	
78-87-5	1,2-Dichloropropane	ND	5.0	1.0	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	1.0	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	1.0	ug/kg	
100-41-4	Ethylbenzene	ND	5.0	1.0	ug/kg	
591-78-6	2-Hexanone	ND	25	8.2	ug/kg	
74-83-9	Methyl Bromide	ND	5.0	2.2	ug/kg	
74-87-3	Methyl Chloride	ND	5.0	2.0	ug/kg	
75-09-2	Methylene Chloride	ND	10	4.0	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	25	5.4	ug/kg	
100-42-5	Styrene	ND	5.0	1.0	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.0	1.1	ug/kg	
127-18-4	Tetrachloroethylene	ND	5.0	1.6	ug/kg	
108-88-3	Toluene	ND	5.0	1.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	5.0	1.3	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	5.0	1.3	ug/kg	
79-01-6	Trichloroethylene	ND	5.0	1.0	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DPT-58-5.5-C		
Lab Sample ID:	FA29626-1	**Date Sampled:**	12/01/15
Matrix:	SO - Trip Blank Soil	**Date Received:**	12/02/15
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	AECOMSCG: Delavan Spray Technologies; Bamberg, SC		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl Chloride	ND	5.0	1.6	ug/kg	
1330-20-7	Xylene (total)	ND	15	2.1	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		75-124%
17060-07-0	1,2-Dichloroethane-D4	104%		72-135%
2037-26-5	Toluene-D8	103%		75-126%
460-00-4	4-Bromofluorobenzene	97%		71-133%

(a) Associated BS recovery outside control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: DPT-58-5.5
Lab Sample ID: FA29626-2
Matrix: SO - Soil
Method: SW846 8260B
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Date Sampled: 12/01/15
Date Received: 12/02/15
Percent Solids: 87.0

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F0074253.D	1	12/02/15	EP	n/a	n/a	VF2538
Run #2							

	Initial Weight	Final Volume
Run #1	8.19 g	5.0 ml
Run #2		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	93.1	35	11	ug/kg	
71-43-2	Benzene	ND	3.5	0.70	ug/kg	
75-27-4	Bromodichloromethane	ND	3.5	0.70	ug/kg	
75-25-2	Bromoform [a]	ND	3.5	0.70	ug/kg	
78-93-3	2-Butanone (MEK)	ND	18	6.0	ug/kg	
75-15-0	Carbon Disulfide	ND	3.5	1.0	ug/kg	
56-23-5	Carbon Tetrachloride	ND	3.5	0.70	ug/kg	
108-90-7	Chlorobenzene	ND	3.5	0.70	ug/kg	
75-00-3	Chloroethane	ND	3.5	1.4	ug/kg	
67-66-3	Chloroform	ND	3.5	0.70	ug/kg	
124-48-1	Dibromochloromethane	ND	3.5	0.70	ug/kg	
75-34-3	1,1-Dichloroethane	ND	3.5	0.70	ug/kg	
107-06-2	1,2-Dichloroethane	ND	3.5	0.70	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	3.5	0.93	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	5.4	3.5	0.70	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	3.5	0.70	ug/kg	
78-87-5	1,2-Dichloropropane	ND	3.5	0.70	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	3.5	0.70	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	3.5	0.70	ug/kg	
100-41-4	Ethylbenzene	ND	3.5	0.70	ug/kg	
591-78-6	2-Hexanone	ND	18	5.7	ug/kg	
74-83-9	Methyl Bromide	ND	3.5	1.5	ug/kg	
74-87-3	Methyl Chloride	ND	3.5	1.4	ug/kg	
75-09-2	Methylene Chloride	ND	7.0	2.8	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	18	3.8	ug/kg	
100-42-5	Styrene	ND	3.5	0.70	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	3.5	0.78	ug/kg	
127-18-4	Tetrachloroethylene	7.1	3.5	1.1	ug/kg	
108-88-3	Toluene	ND	3.5	0.70	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	3.5	0.92	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	3.5	0.88	ug/kg	
79-01-6	Trichloroethylene	ND	3.5	0.70	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DPT-58-5.5		
Lab Sample ID:	FA29626-2	**Date Sampled:**	12/01/15
Matrix:	SO - Soil	**Date Received:**	12/02/15
Method:	SW846 8260B	**Percent Solids:**	87.0
Project:	AECOMSCG: Delavan Spray Technologies; Bamberg, SC		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl Chloride	ND	3.5	1.1	ug/kg	
1330-20-7	Xylene (total)	ND	11	1.5	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		75-124%
17060-07-0	1,2-Dichloroethane-D4	104%		72-135%
2037-26-5	Toluene-D8	101%		75-126%
460-00-4	4-Bromofluorobenzene	93%		71-133%

(a) Associated BS recovery outside control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: DPT-58-11
Lab Sample ID: FA29626-3
Matrix: SO - Soil
Method: SW846 8260B
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Date Sampled: 12/01/15
Date Received: 12/02/15
Percent Solids: 87.7

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F0074255.D	1	12/02/15	EP	n/a	n/a	VF2538
Run #2							

	Initial Weight	Final Volume
Run #1	8.09 g	5.0 ml
Run #2		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	35	11	ug/kg	
71-43-2	Benzene	ND	3.5	0.70	ug/kg	
75-27-4	Bromodichloromethane	ND	3.5	0.70	ug/kg	
75-25-2	Bromoform [a]	ND	3.5	0.70	ug/kg	
78-93-3	2-Butanone (MEK)	ND	18	6.0	ug/kg	
75-15-0	Carbon Disulfide	ND	3.5	1.0	ug/kg	
56-23-5	Carbon Tetrachloride	ND	3.5	0.70	ug/kg	
108-90-7	Chlorobenzene	ND	3.5	0.70	ug/kg	
75-00-3	Chloroethane	ND	3.5	1.4	ug/kg	
67-66-3	Chloroform	ND	3.5	0.70	ug/kg	
124-48-1	Dibromochloromethane	ND	3.5	0.70	ug/kg	
75-34-3	1,1-Dichloroethane	ND	3.5	0.70	ug/kg	
107-06-2	1,2-Dichloroethane	ND	3.5	0.70	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	3.5	0.93	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	0.77	3.5	0.70	ug/kg	J
156-60-5	trans-1,2-Dichloroethylene	ND	3.5	0.70	ug/kg	
78-87-5	1,2-Dichloropropane	ND	3.5	0.70	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	3.5	0.70	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	3.5	0.70	ug/kg	
100-41-4	Ethylbenzene	ND	3.5	0.70	ug/kg	
591-78-6	2-Hexanone	ND	18	5.7	ug/kg	
74-83-9	Methyl Bromide	ND	3.5	1.5	ug/kg	
74-87-3	Methyl Chloride	ND	3.5	1.4	ug/kg	
75-09-2	Methylene Chloride	ND	7.0	2.8	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	18	3.8	ug/kg	
100-42-5	Styrene	ND	3.5	0.70	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	3.5	0.78	ug/kg	
127-18-4	Tetrachloroethylene	1.2	3.5	1.1	ug/kg	J
108-88-3	Toluene	ND	3.5	0.70	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	3.5	0.92	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	3.5	0.89	ug/kg	
79-01-6	Trichloroethylene	ND	3.5	0.70	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DPT-58-11		
Lab Sample ID:	FA29626-3	**Date Sampled:**	12/01/15
Matrix:	SO - Soil	**Date Received:**	12/02/15
Method:	SW846 8260B	**Percent Solids:**	87.7
Project:	AECOMSCG: Delavan Spray Technologies; Bamberg, SC		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl Chloride	ND	3.5	1.1	ug/kg	
1330-20-7	Xylene (total)	ND	11	1.5	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	115%		75-124%
17060-07-0	1,2-Dichloroethane-D4	108%		72-135%
2037-26-5	Toluene-D8	102%		75-126%
460-00-4	4-Bromofluorobenzene	100%		71-133%

(a) Associated BS recovery outside control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Southeast ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

Accutest Laboratories Southeast
Chain of Custody

ACCUTEST LABORATORIES

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 • FAX: 407-425-0707
www.accutest.com

Accutest JOB # FA29626 PAGE 1 OF 1

Accutest Quote # | SKIFF#

Client / Reporting Information

Company Name: AECOM
Address: 10 Patewood Dr Bldg VI #500
City: Greenville State: SC Zip: 29615
Project Contact: Doria Cullom E-mail: doria.cullom@aecom.com
Phone#: 864-234-8928
Sampler(s) Name(s) (Printed): Leslie Alexander / Randy Morgan

Project Information

Project Name: UTC Delavan Spray Technologies Site
Street: 4334 Main Hwy
City: Bamberg State: SC
Project #: 60314964
Fax #:
Client Purchase Order #:

Analytical Information: 8260 TCL; % Solids for 8260

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe

Accutest Sample #	Field ID / Point of Collection	Date	Time	Sampled By	Matrix	Total # of Bottles	Other	None	HCl	NaOH	HNO3	H2SO4	NaOH+ZnAc	DI Water	MeOH	8260 TCL	% Solids for 8260	LAB USE ONLY
1	DPT-SB-5.5-C (tripblank)	12/1/15	1350	LA	SO	3								2	1	X		
2	DPT-SB-5.5	12/1/15	1350	LA	SO	4		1						2	1	X	X	4.5'-5.5'
3	DPT-SB-11	12/1/15	1400	LA	SO	4		1						2	1	X	X	10'-11'

L Alexander 12/1/15

TURNAROUND TIME (Business Days) — Approved By: / Rush Code

- [x] 10 Days Standard
- [ ] 7 Day RUSH
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] OTHER

Emergency or Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULT1 (EPA LEVEL 4)
- [x] EDD'S UTC - per SOW

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished by:	Date Time:	Received By:
1 Leslie Alexander AECOM	12/1/15	2 FedEx 8020 4594 7140	3 FX	12-2-15	4 [illegible] (A2HE) 09:30
Relinquished by: 5	Date Time:	Received By: 6	Relinquished by: 7	Date Time:	Received By: 8

Lab Use Only: Custody Seal in Place: Y N Temp Blank Provided: Y N Preserved where Applicable: Y N Total # of Coolers: 1 Cooler Temperature (s) Celsius: 3.4

5.1
5

FA29626: Chain of Custody
Page 1 of 3

ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION

ACCUTEST'S JOB NUMBER: FA 29 626 CLIENT: AECOM PROJECT: 60314969

DATE/TIME RECEIVED: 12-2-15 09:30 {MM/DD/YY 24:00} NUMBER OF COOLERS RECEIVED: 1

METHOD OF DELIVERY: (FEDEX) UPS ACCUTEST COURIER DELIVERY OTHER:

AIRBILL NUMBERS: 8020 4594 7140

COOLER INFORMATION

- [ ] CUSTODY SEAL NOT PRESENT OR NOT INTACT
- [ ] CHAIN OF CUSTODY NOT RECEIVED (COC)
- [ ] ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- [ ] SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- [ ] TEMPERATURE CRITERIA NOT MET

TRIP BLANK INFORMATION

- [X] TRIP BLANK PROVIDED
- [ ] TRIP BLANK NOT PROVIDED
- [ ] TRIP BLANK NOT ON COC
- [X] TRIP BLANK INTACT
- [ ] TRIP BLANK NOT INTACT
- [ ] RECEIVED WATER TRIP BLANK
- [X] RECEIVED SOIL TRIP BLANK

MISC. INFORMATION

NUMBER OF ENCORES ? 25-GRAM_____ 5-GRAM_____

NUMBER OF 5035 FIELD KITS ? 2+TB

NUMBER OF LAB FILTERED METALS ? _____

TEMPERATURE INFORMATION

- [ ] IR THERM ID 1 CORR. FACTOR -0.4
- [ ] OBSERVED TEMPS: 3.8
- [ ] CORRECTED TEMPS: 3.4 (USED FOR LIMS)

SAMPLE INFORMATION

- [ ] INCORRECT NUMBER OF CONTAINERS USED
- [ ] SAMPLE RECEIVED IMPROPERLY PRESERVED
- [ ] INSUFFICIENT VOLUME FOR ANALYSIS
- [ ] DATES/TIMES ON COC DO NOT MATCH SAMPLE LABEL
- [ ] ID'S ON COC DO NOT MATCH LABEL
- [ ] VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- [ ] BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- [ ] NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- [ ] UNCLEAR FILTERING OR COMPOSITING INSTRUCTIONS
- [ ] SAMPLE CONTAINER(S) RECEIVED BROKEN
- [ ] 5035 FIELD KITS NOT RECEIVED WITHIN 48 HOURS
- [ ] BULK VOA SOIL JARS NOT RECEIVED WITHIN 48 HOURS
- [ ] % SOLIDS JAR NOT RECEIVED
- [ ] RESIDUAL CHLORINE PRESENT LOT#_____

{APPLICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS}

TEST STRIP LOT#s pH 0-3 204413A pH 10-12 219813A OTHER (specify) _____

SUMMARY OF COMMENTS:

TECHNICIAN SIGNATURE/DATE JC 12-2-15 REVIEWER SIGNATURE/DATE 12/2/15

NF 11/15 receipt confirmation 111015.xls

5.1 5

FA29626: Chain of Custody

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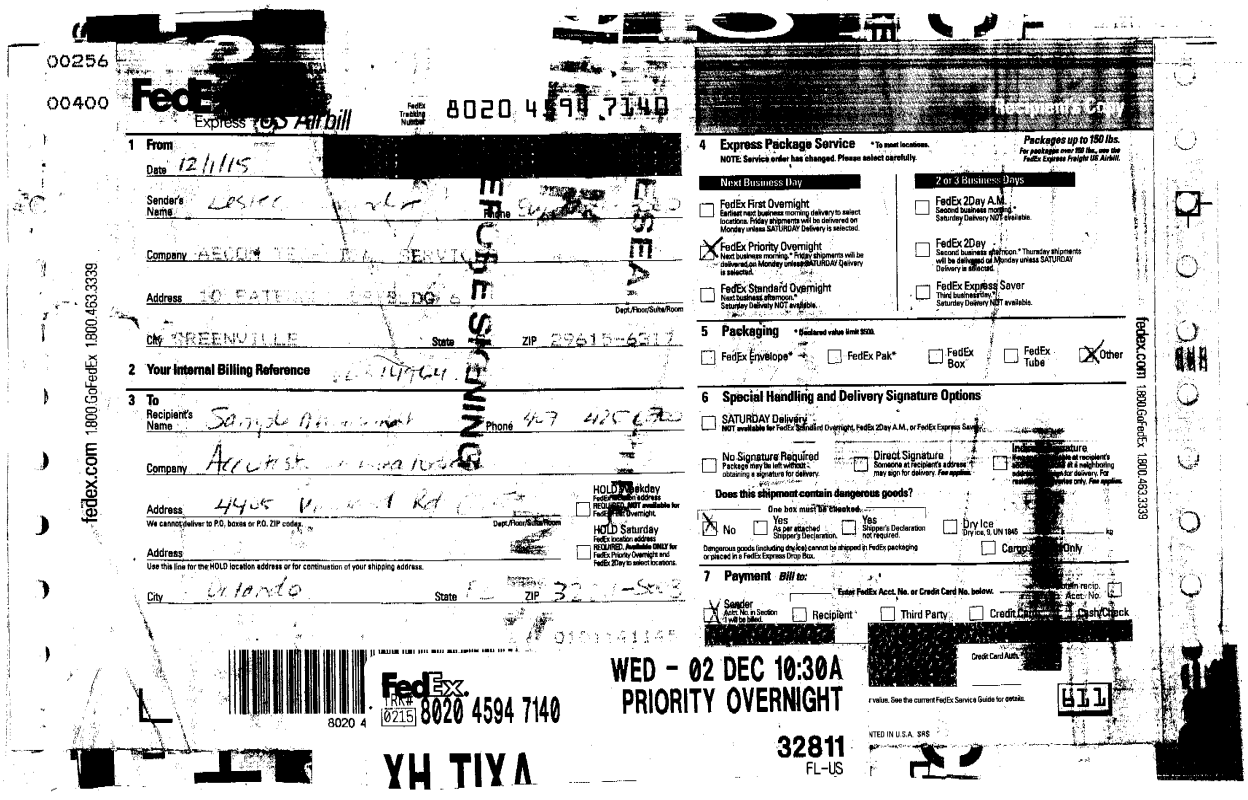

FA29626: Chain of Custody
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Southeast ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: FA29626
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VF2538-MB	F0074243.D	1	12/02/15	EP	n/a	n/a	VF2538

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29626-1, FA29626-2, FA29626-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	15	ug/kg	
71-43-2	Benzene	ND	5.0	1.0	ug/kg	
75-27-4	Bromodichloromethane	ND	5.0	1.0	ug/kg	
75-25-2	Bromoform	ND	5.0	1.0	ug/kg	
78-93-3	2-Butanone (MEK)	ND	25	8.5	ug/kg	
75-15-0	Carbon Disulfide	ND	5.0	1.5	ug/kg	
56-23-5	Carbon Tetrachloride	ND	5.0	1.0	ug/kg	
108-90-7	Chlorobenzene	ND	5.0	1.0	ug/kg	
75-00-3	Chloroethane	ND	5.0	2.0	ug/kg	
67-66-3	Chloroform	ND	5.0	1.0	ug/kg	
124-48-1	Dibromochloromethane	ND	5.0	1.0	ug/kg	
75-34-3	1,1-Dichloroethane	ND	5.0	1.0	ug/kg	
107-06-2	1,2-Dichloroethane	ND	5.0	1.0	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	5.0	1.3	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	5.0	1.0	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	5.0	1.0	ug/kg	
78-87-5	1,2-Dichloropropane	ND	5.0	1.0	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	1.0	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	1.0	ug/kg	
100-41-4	Ethylbenzene	ND	5.0	1.0	ug/kg	
591-78-6	2-Hexanone	ND	25	8.2	ug/kg	
74-83-9	Methyl Bromide	ND	5.0	2.2	ug/kg	
74-87-3	Methyl Chloride	ND	5.0	2.0	ug/kg	
75-09-2	Methylene Chloride	ND	10	4.0	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	25	5.4	ug/kg	
100-42-5	Styrene	ND	5.0	1.0	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.0	1.1	ug/kg	
127-18-4	Tetrachloroethylene	ND	5.0	1.6	ug/kg	
108-88-3	Toluene	ND	5.0	1.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	5.0	1.3	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	5.0	1.3	ug/kg	
79-01-6	Trichloroethylene	ND	5.0	1.0	ug/kg	
75-01-4	Vinyl Chloride	ND	5.0	1.6	ug/kg	
1330-20-7	Xylene (total)	ND	15	2.1	ug/kg	

Method Blank Summary

Job Number: FA29626
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VF2538-MB	F0074243.D	1	12/02/15	EP	n/a	n/a	VF2538

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29626-1, FA29626-2, FA29626-3

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	101%	75-124%
17060-07-0	1,2-Dichloroethane-D4	103%	72-135%
2037-26-5	Toluene-D8	105%	75-126%
460-00-4	4-Bromofluorobenzene	95%	71-133%

Blank Spike Summary

Job Number: FA29626
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VF2538-BS	F0074242.D	1	12/02/15	EP	n/a	n/a	VF2538

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29626-1, FA29626-2, FA29626-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
67-64-1	Acetone	250	236	94	61-152
71-43-2	Benzene	50	50.2	100	76-126
75-27-4	Bromodichloromethane	50	49.6	99	74-130
75-25-2	Bromoform	50	63.8	128*	76-127
78-93-3	2-Butanone (MEK)	250	235	94	75-137
75-15-0	Carbon Disulfide	50	51.6	103	72-122
56-23-5	Carbon Tetrachloride	50	52.5	105	78-133
108-90-7	Chlorobenzene	50	51.2	102	81-129
75-00-3	Chloroethane	50	47.8	96	68-133
67-66-3	Chloroform	50	48.9	98	72-123
124-48-1	Dibromochloromethane	50	57.2	114	76-127
75-34-3	1,1-Dichloroethane	50	47.5	95	73-125
107-06-2	1,2-Dichloroethane	50	48.1	96	74-128
75-35-4	1,1-Dichloroethylene	50	46.4	93	81-136
156-59-2	cis-1,2-Dichloroethylene	50	48.9	98	74-126
156-60-5	trans-1,2-Dichloroethylene	50	47.6	95	70-127
78-87-5	1,2-Dichloropropane	50	47.2	94	74-125
10061-01-5	cis-1,3-Dichloropropene	50	44.6	89	80-123
10061-02-6	trans-1,3-Dichloropropene	50	52.4	105	75-131
100-41-4	Ethylbenzene	50	51.4	103	77-123
591-78-6	2-Hexanone	250	247	99	72-133
74-83-9	Methyl Bromide	50	49.0	98	65-139
74-87-3	Methyl Chloride	50	49.3	99	71-144
75-09-2	Methylene Chloride	50	46.7	93	74-137
108-10-1	4-Methyl-2-pentanone (MIBK)	250	254	102	76-132
100-42-5	Styrene	50	50.1	100	78-125
79-34-5	1,1,2,2-Tetrachloroethane	50	55.1	110	71-126
127-18-4	Tetrachloroethylene	50	49.8	100	79-130
108-88-3	Toluene	50	50.6	101	76-124
71-55-6	1,1,1-Trichloroethane	50	47.5	95	70-129
79-00-5	1,1,2-Trichloroethane	50	53.7	107	74-124
79-01-6	Trichloroethylene	50	49.7	99	75-128
75-01-4	Vinyl Chloride	50	44.6	89	76-141
1330-20-7	Xylene (total)	150	149	99	80-129

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA29626
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VF2538-BS	F0074242.D	1	12/02/15	EP	n/a	n/a	VF2538

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29626-1, FA29626-2, FA29626-3

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	101%	75-124%
17060-07-0	1,2-Dichloroethane-D4	95%	72-135%
2037-26-5	Toluene-D8	97%	75-126%
460-00-4	4-Bromofluorobenzene	94%	71-133%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA29626
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA29619-1MS	F0074250.D	1	12/02/15	EP	n/a	n/a	VF2538
FA29619-1MSD	F0074251.D	1	12/02/15	EP	n/a	n/a	VF2538
FA29619-1	F0074244.D	1	12/02/15	EP	n/a	n/a	VF2538

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29626-1, FA29626-2, FA29626-3

CAS No.	Compound	FA29619-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	42	U	272	277	102	266	267	100	4	61-152/27
71-43-2	Benzene	4.2	U	54.3	53.7	99	53.3	53.9	101	0	76-126/26
75-27-4	Bromodichloromethane	4.2	U	54.3	59.0	109	53.3	59.4	111	1	74-130/25
75-25-2	Bromoform	4.2	U	54.3	66.3	122	53.3	68.1	128*	3	76-127/26
78-93-3	2-Butanone (MEK)	21	U	272	258	95	266	242	91	6	75-137/25
75-15-0	Carbon Disulfide	4.2	U	54.3	50.3	93	53.3	49.7	93	1	72-122/29
56-23-5	Carbon Tetrachloride	4.2	U	54.3	64.5	119	53.3	54.6	102	17	78-133/29
108-90-7	Chlorobenzene	4.2	U	54.3	51.2	94	53.3	52.5	99	3	81-129/29
75-00-3	Chloroethane	4.2	U	54.3	63.8	117	53.3	61.7	116	3	68-133/29
67-66-3	Chloroform	4.2	U	54.3	62.2	114	53.3	51.9	97	18	72-123/26
124-48-1	Dibromochloromethane	4.2	U	54.3	61.7	114	53.3	62.8	118	2	76-127/27
75-34-3	1,1-Dichloroethane	4.2	U	54.3	62.0	114	53.3	61.4	115	1	73-125/27
107-06-2	1,2-Dichloroethane	4.2	U	54.3	52.2	96	53.3	52.8	99	1	74-128/23
75-35-4	1,1-Dichloroethylene	4.2	U	54.3	56.7	104	53.3	57.4	108	1	81-136/28
156-59-2	cis-1,2-Dichloroethylene	4.2	U	54.3	58.3	107	53.3	51.7	97	12	74-126/26
156-60-5	trans-1,2-Dichloroethylene	4.2	U	54.3	62.3	115	53.3	61.0	114	2	70-127/27
78-87-5	1,2-Dichloropropane	4.2	U	54.3	54.3	100	53.3	55.4	104	2	74-125/25
10061-01-5	cis-1,3-Dichloropropene	4.2	U	54.3	55.0	101	53.3	57.3	108	4	80-123/26
10061-02-6	trans-1,3-Dichloropropene	4.2	U	54.3	59.0	109	53.3	60.3	113	2	75-131/28
100-41-4	Ethylbenzene	4.2	U	54.3	51.4	95	53.3	52.4	98	2	77-123/31
591-78-6	2-Hexanone	21	U	272	233	86	266	235	88	1	72-133/26
74-83-9	Methyl Bromide	4.2	U	54.3	67.9	125	53.3	60.0	113	12	65-139/31
74-87-3	Methyl Chloride	4.2	U	54.3	60.5	111	53.3	62.8	118	4	71-144/27
75-09-2	Methylene Chloride	8.4	U	54.3	62.0	114	53.3	60.5	114	2	74-137/28
108-10-1	4-Methyl-2-pentanone (MIBK)	21	U	272	250	92	266	253	95	1	76-132/26
100-42-5	Styrene	4.2	U	54.3	48.7	90	53.3	50.8	95	4	78-125/30
79-34-5	1,1,2,2-Tetrachloroethane	4.2	U	54.3	57.5	106	53.3	58.8	110	2	71-126/30
127-18-4	Tetrachloroethylene	4.2	U	54.3	57.4	106	53.3	61.4	115	7	79-130/31
108-88-3	Toluene	4.2	U	54.3	52.8	97	53.3	53.7	101	2	76-124/30
71-55-6	1,1,1-Trichloroethane	4.2	U	54.3	54.1	100	53.3	49.2	92	9	70-129/27
79-00-5	1,1,2-Trichloroethane	4.2	U	54.3	55.9	103	53.3	57.0	107	2	74-124/28
79-01-6	Trichloroethylene	4.2	U	54.3	52.5	97	53.3	53.0	99	1	75-128/27
75-01-4	Vinyl Chloride	4.2	U	54.3	59.1	109	53.3	59.5	112	1	76-141/27
1330-20-7	Xylene (total)	13	U	163	147	90	160	153	96	4	80-129/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA29626
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA29619-1MS	F0074250.D	1	12/02/15	EP	n/a	n/a	VF2538
FA29619-1MSD	F0074251.D	1	12/02/15	EP	n/a	n/a	VF2538
FA29619-1	F0074244.D	1	12/02/15	EP	n/a	n/a	VF2538

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29626-1, FA29626-2, FA29626-3

CAS No.	Surrogate Recoveries	MS	MSD	FA29619-1	Limits
1868-53-7	Dibromofluoromethane	117%	100%	101%	75-124%
17060-07-0	1,2-Dichloroethane-D4	99%	97%	102%	72-135%
2037-26-5	Toluene-D8	98%	100%	125%	75-126%
460-00-4	4-Bromofluorobenzene	98%	97%	103%	71-133%

* = Outside of Control Limits.

Southeast
ACCUTEST LABORATORIES

12/18/15

Technical Report for

United Technologies Corporation

AECOMSCG: Delavan Spray Technologies; Bamberg, SC

60314964

Accutest Job Number: FA29657

Sampling Date: 12/02/15

Report to:

AECOM Environment
10 Patewood Dr Bldg VI, Suite 500
Greenville, SC 29615
doria.cullom@aecom.com

ATTN: Doria Cullom

Total number of pages in report: **58**

NELAP ACCREDITED TNI LABORATORY

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Heather Wandrey 407-425-6700

Certifications: FL (E83510), LA (03051), KS (E-10327), IA (366), IL (200063), NC (573), NJ (FL002), SC (96038001) DoD ELAP (L-A-B L2229), CA (2937), TX (T104704404), PA (68-03573), VA (460177), AK, AR, GA, KY, MA, NV, OK, UT, WA

Sections: 1 2 3 4 5 6

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Sample Summary

United Technologies Corporation

Job No: FA29657

AECOMSCG: Delavan Spray Technologies; Bamberg, SC
Project No: 60314964

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
FA29657-1	12/02/15	12:05	LARM	12/03/15	SO	Trip Blank Soil	DPT-59-3-C
FA29657-2	12/02/15	12:05	LARM	12/03/15	SO	Soil	DPT-59-3
FA29657-2D	12/02/15	12:05	LARM	12/03/15	SO	Soil Dup/MSD	DPT-59-3
FA29657-2S	12/02/15	12:05	LARM	12/03/15	SO	Soil Matrix Spike	DPT-59-3
FA29657-3	12/02/15	12:30	LARM	12/03/15	SO	Soil	DPT-59-10
FA29657-4	12/02/15	15:30	LARM	12/03/15	SO	Soil	DPT-60-1
FA29657-5	12/02/15	15:35	LARM	12/03/15	AQ	Equipment Blank	DPT-60-8-D
FA29657-6	12/02/15	15:40	LARM	12/03/15	SO	Soil	DPT-60-8
FA29657-7	12/02/15	16:40	LARM	12/03/15	SO	Soil	DPT-61-6
FA29657-8	12/02/15	16:50	LARM	12/03/15	SO	Soil	DPT-61-8
FA29657-9	12/02/15	16:50	LARM	12/03/15	SO	Soil	DPT-61-8-A

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: United Technologies Corporation **Job No:** FA29657

Site: AECOMSCG: Delavan Spray Technologies; Bamberg, SC **Report Date** 12/18/2015 10:15:56 AM

8 Samples and 1 Trip Blank were collected on 12/02/2015 and were received at Accutest SE on 12/03/2015 properly preserved, at 3.6 Deg. C and intact. These Samples received an Accutest job number of FA29657. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix: AQ **Batch ID:** VP1389

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA29420-7MS, FA29420-7MSD were used as the QC samples indicated.

Matrix Spike Recovery(s) for Bromoform, Chlorobenzene, Dibromochloromethane are outside control limits. Probable cause is due to matrix interference. For method performance in a clean matrix, refer to Blank Spike.

Matrix Spike Duplicate Recovery(s) for Bromoform, Chlorobenzene, cis-1,3-Dichloropropene, Dibromochloromethane, trans-1,3-Dichloropropene are outside control limits. Probable cause is due to matrix interference. For method performance in a clean matrix, refer to Blank Spike.

Matrix: SO **Batch ID:** VC4481

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA29657-9MS, FA29657-9MSD were used as the QC samples indicated.

Matrix Spike / Matrix Spike Duplicate Recovery(s) for Tetrachloroethylene are outside control limits. Outside control limits due to high level in sample relative to spike amount.

FA29657-9 for Tetrachloroethylene: Results from different vials are not consistent; higher results were reported.

Matrix: SO **Batch ID:** VF2539

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA29644-7MS, FA29644-7MSD were used as the QC samples indicated.

Blank Spike Recovery(s) for Bromoform, Chloroform, Dibromochloromethane are outside control limits. Recoveries are biased high. Analytes are non-detect in associated samples; therefore data is not adversely affected.

FA29657-6 for Bromoform: Associated BS recovery outside control limits.

FA29657-6 for Chloroform: Associated BS recovery outside control limits.

FA29657-6 for Dibromochloromethane: Associated BS recovery outside control limits.

FA29657-7 for Bromoform: Associated BS recovery outside control limits.

FA29657-7 for Chloroform: Associated BS recovery outside control limits.

FA29657-7 for Dibromochloromethane: Associated BS recovery outside control limits.

Matrix: SO **Batch ID:** VF2540

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA29644-12MS, FA29644-12MSD were used as the QC samples indicated.

Matrix Spike / Matrix Spike Duplicate Recovery(s) for Tetrachloroethylene are outside control limits. Probable cause is due to matrix interference. For method performance in a clean matrix, refer to Blank Spike.

RPD(s) for MSD for Tetrachloroethylene are outside control limits for sample FA29644-12MSD. Probable cause is due to sample non-homogeneity.

Sample(s) FA29644-12MSD has surrogates outside control limits. Probable cause is due to matrix interference.

Volatiles by GCMS By Method SW846 8260B

Matrix: SO **Batch ID:** VY1033

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA29657-2MS, FA29657-2MSD were used as the QC samples indicated.

Matrix Spike Recovery(s) for 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethylene, 1,2-Dichloropropane, 4-Methyl-2-pentanone (MIBK), Bromoform, Carbon Disulfide, Carbon Tetrachloride, Chlorobenzene, Chloroethane, cis-1,2-Dichloroethylene, cis-1,3-Dichloropropene, Dibromochloromethane, Ethylbenzene, Methylene Chloride, Styrene, Tetrachloroethylene, Toluene, trans-1,3-Dichloropropene, Vinyl Chloride, Xylene (total) are outside control limits. Probable cause is due to matrix interference. For method performance in a clean matrix, refer to Blank Spike.

Matrix Spike Duplicate Recovery(s) for 1,1-Dichloroethylene, 4-Methyl-2-pentanone (MIBK), Chloroethane, Styrene are outside control limits. Probable cause is due to matrix interference. For method performance in a clean matrix, refer to Blank Spike.

RPD(s) for MSD for Tetrachloroethylene are outside control limits for sample FA29657-2MSD. Probable cause is due to sample non-homogeneity.

Wet Chemistry By Method SM19 2540G

Matrix: SO **Batch ID:** GN68885

Sample(s) FA29657-2DUP was used as the QC samples for Solids, Percent.

Matrix: SO **Batch ID:** GN68903

Sample(s) FA29674-1DUP was used as the QC samples for Solids, Percent.

Accutest Laboratories Southeast (ALSE) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALSE and as stated on the COC. ALSE certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALSE Quality Manual except as noted above. This report is to be used in its entirety. ALSE is not responsible for any assumptions of data quality if partial data packages are used

Narrative prepared by:

_____

Lovelie Metzgar, QA Officer (signature on file)

Date: December 18, 2015

Summary of Hits

Job Number: FA29657
Account: United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC
Collected: 12/02/15

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
FA29657-1	**DPT-59-3-C**					
No hits reported in this sample.						
FA29657-2	**DPT-59-3**					
Acetone		19.0 J	41	12	ug/kg	SW846 8260B
Tetrachloroethylene		21.3	4.1	1.3	ug/kg	SW846 8260B
FA29657-3	**DPT-59-10**					
Tetrachloroethylene		2.4 J	4.8	1.6	ug/kg	SW846 8260B
FA29657-4	**DPT-60-1**					
Tetrachloroethylene		75.9	3.7	1.2	ug/kg	SW846 8260B
FA29657-5	**DPT-60-8-D**					
No hits reported in this sample.						
FA29657-6	**DPT-60-8**					
cis-1,2-Dichloroethylene		1.0 J	4.1	0.81	ug/kg	SW846 8260B
Tetrachloroethylene		70.9	4.1	1.3	ug/kg	SW846 8260B
FA29657-7	**DPT-61-6**					
Tetrachloroethylene		343	300	98	ug/kg	SW846 8260B
1,1,1-Trichloroethane		1.4 J	4.5	1.2	ug/kg	SW846 8260B
FA29657-8	**DPT-61-8**					
cis-1,2-Dichloroethylene		1.4 J	4.6	0.92	ug/kg	SW846 8260B
Tetrachloroethylene		178 J	260	84	ug/kg	SW846 8260B
1,1,1-Trichloroethane		2.5 J	4.6	1.2	ug/kg	SW846 8260B
1,1,2-Trichloroethane		1.7 J	4.6	1.2	ug/kg	SW846 8260B
Trichloroethylene		1.0 J	4.6	0.92	ug/kg	SW846 8260B
FA29657-9	**DPT-61-8-A**					
cis-1,2-Dichloroethylene		1.2 J	4.4	0.87	ug/kg	SW846 8260B
Tetrachloroethylene [a]		699	250	83	ug/kg	SW846 8260B
1,1,1-Trichloroethane		1.2 J	4.4	1.1	ug/kg	SW846 8260B
1,1,2-Trichloroethane		1.4 J	4.4	1.1	ug/kg	SW846 8260B

Summary of Hits

Job Number: FA29657
Account: United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC
Collected: 12/02/15

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method

(a) Results from different vials are not consistent; higher results were reported.

Southeast ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: DPT-59-3-C
Lab Sample ID: FA29657-1
Matrix: SO - Trip Blank Soil
Method: SW846 8260B
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Date Sampled: 12/02/15
Date Received: 12/03/15
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Y24508.D	1	12/03/15	AD	n/a	n/a	VY1033
Run #2							

	Initial Weight	Final Volume
Run #1	5.00 g	5.0 ml
Run #2		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	15	ug/kg	
71-43-2	Benzene	ND	5.0	1.0	ug/kg	
75-27-4	Bromodichloromethane	ND	5.0	1.0	ug/kg	
75-25-2	Bromoform	ND	5.0	1.0	ug/kg	
78-93-3	2-Butanone (MEK)	ND	25	8.5	ug/kg	
75-15-0	Carbon Disulfide	ND	5.0	1.5	ug/kg	
56-23-5	Carbon Tetrachloride	ND	5.0	1.0	ug/kg	
108-90-7	Chlorobenzene	ND	5.0	1.0	ug/kg	
75-00-3	Chloroethane	ND	5.0	2.0	ug/kg	
67-66-3	Chloroform	ND	5.0	1.0	ug/kg	
124-48-1	Dibromochloromethane	ND	5.0	1.0	ug/kg	
75-34-3	1,1-Dichloroethane	ND	5.0	1.0	ug/kg	
107-06-2	1,2-Dichloroethane	ND	5.0	1.0	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	5.0	1.3	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	5.0	1.0	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	5.0	1.0	ug/kg	
78-87-5	1,2-Dichloropropane	ND	5.0	1.0	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	1.0	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	1.0	ug/kg	
100-41-4	Ethylbenzene	ND	5.0	1.0	ug/kg	
591-78-6	2-Hexanone	ND	25	8.2	ug/kg	
74-83-9	Methyl Bromide	ND	5.0	2.2	ug/kg	
74-87-3	Methyl Chloride	ND	5.0	2.0	ug/kg	
75-09-2	Methylene Chloride	ND	10	4.0	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	25	5.4	ug/kg	
100-42-5	Styrene	ND	5.0	1.0	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.0	1.1	ug/kg	
127-18-4	Tetrachloroethylene	ND	5.0	1.6	ug/kg	
108-88-3	Toluene	ND	5.0	1.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	5.0	1.3	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	5.0	1.3	ug/kg	
79-01-6	Trichloroethylene	ND	5.0	1.0	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DPT-59-3-C		
Lab Sample ID:	FA29657-1	**Date Sampled:**	12/02/15
Matrix:	SO - Trip Blank Soil	**Date Received:**	12/03/15
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	AECOMSCG: Delavan Spray Technologies; Bamberg, SC		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl Chloride	ND	5.0	1.6	ug/kg	
1330-20-7	Xylene (total)	ND	15	2.1	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		75-124%
17060-07-0	1,2-Dichloroethane-D4	100%		72-135%
2037-26-5	Toluene-D8	100%		75-126%
460-00-4	4-Bromofluorobenzene	98%		71-133%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: DPT-59-3
Lab Sample ID: FA29657-2 **Date Sampled:** 12/02/15
Matrix: SO - Soil **Date Received:** 12/03/15
Method: SW846 8260B **Percent Solids:** 83.7
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Y24509.D	1	12/03/15	AD	n/a	n/a	VY1033
Run #2							

	Initial Weight	Final Volume
Run #1	7.23 g	5.0 ml
Run #2		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	19.0	41	12	ug/kg	J
71-43-2	Benzene	ND	4.1	0.83	ug/kg	
75-27-4	Bromodichloromethane	ND	4.1	0.83	ug/kg	
75-25-2	Bromoform	ND	4.1	0.83	ug/kg	
78-93-3	2-Butanone (MEK)	ND	21	7.0	ug/kg	
75-15-0	Carbon Disulfide	ND	4.1	1.2	ug/kg	
56-23-5	Carbon Tetrachloride	ND	4.1	0.83	ug/kg	
108-90-7	Chlorobenzene	ND	4.1	0.83	ug/kg	
75-00-3	Chloroethane	ND	4.1	1.7	ug/kg	
67-66-3	Chloroform	ND	4.1	0.83	ug/kg	
124-48-1	Dibromochloromethane	ND	4.1	0.83	ug/kg	
75-34-3	1,1-Dichloroethane	ND	4.1	0.83	ug/kg	
107-06-2	1,2-Dichloroethane	ND	4.1	0.83	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	4.1	1.1	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	4.1	0.83	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	4.1	0.83	ug/kg	
78-87-5	1,2-Dichloropropane	ND	4.1	0.83	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	4.1	0.83	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	4.1	0.83	ug/kg	
100-41-4	Ethylbenzene	ND	4.1	0.83	ug/kg	
591-78-6	2-Hexanone	ND	21	6.7	ug/kg	
74-83-9	Methyl Bromide	ND	4.1	1.8	ug/kg	
74-87-3	Methyl Chloride	ND	4.1	1.7	ug/kg	
75-09-2	Methylene Chloride	ND	8.3	3.3	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	21	4.4	ug/kg	
100-42-5	Styrene	ND	4.1	0.83	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	4.1	0.92	ug/kg	
127-18-4	Tetrachloroethylene	21.3	4.1	1.3	ug/kg	
108-88-3	Toluene	ND	4.1	0.83	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	4.1	1.1	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	4.1	1.0	ug/kg	
79-01-6	Trichloroethylene	ND	4.1	0.83	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DPT-59-3		
Lab Sample ID:	FA29657-2	**Date Sampled:**	12/02/15
Matrix:	SO - Soil	**Date Received:**	12/03/15
Method:	SW846 8260B	**Percent Solids:**	83.7
Project:	AECOMSCG: Delavan Spray Technologies; Bamberg, SC		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl Chloride	ND	4.1	1.3	ug/kg	
1330-20-7	Xylene (total)	ND	12	1.7	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		75-124%
17060-07-0	1,2-Dichloroethane-D4	108%		72-135%
2037-26-5	Toluene-D8	99%		75-126%
460-00-4	4-Bromofluorobenzene	102%		71-133%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: DPT-59-10
Lab Sample ID: FA29657-3
Matrix: SO - Soil
Method: SW846 8260B
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Date Sampled: 12/02/15
Date Received: 12/03/15
Percent Solids: 88.5

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Y24512.D	1	12/03/15	AD	n/a	n/a	VY1033
Run #2							

	Initial Weight	Final Volume
Run #1	5.92 g	5.0 ml
Run #2		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	48	14	ug/kg	
71-43-2	Benzene	ND	4.8	0.95	ug/kg	
75-27-4	Bromodichloromethane	ND	4.8	0.95	ug/kg	
75-25-2	Bromoform	ND	4.8	0.95	ug/kg	
78-93-3	2-Butanone (MEK)	ND	24	8.1	ug/kg	
75-15-0	Carbon Disulfide	ND	4.8	1.4	ug/kg	
56-23-5	Carbon Tetrachloride	ND	4.8	0.95	ug/kg	
108-90-7	Chlorobenzene	ND	4.8	0.95	ug/kg	
75-00-3	Chloroethane	ND	4.8	1.9	ug/kg	
67-66-3	Chloroform	ND	4.8	0.95	ug/kg	
124-48-1	Dibromochloromethane	ND	4.8	0.95	ug/kg	
75-34-3	1,1-Dichloroethane	ND	4.8	0.95	ug/kg	
107-06-2	1,2-Dichloroethane	ND	4.8	0.95	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	4.8	1.3	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	4.8	0.95	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	4.8	0.95	ug/kg	
78-87-5	1,2-Dichloropropane	ND	4.8	0.95	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	4.8	0.95	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	4.8	0.95	ug/kg	
100-41-4	Ethylbenzene	ND	4.8	0.95	ug/kg	
591-78-6	2-Hexanone	ND	24	7.8	ug/kg	
74-83-9	Methyl Bromide	ND	4.8	2.1	ug/kg	
74-87-3	Methyl Chloride	ND	4.8	1.9	ug/kg	
75-09-2	Methylene Chloride	ND	9.5	3.8	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	24	5.1	ug/kg	
100-42-5	Styrene	ND	4.8	0.95	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	4.8	1.1	ug/kg	
127-18-4	Tetrachloroethylene	2.4	4.8	1.6	ug/kg	J
108-88-3	Toluene	ND	4.8	0.95	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	4.8	1.3	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	4.8	1.2	ug/kg	
79-01-6	Trichloroethylene	ND	4.8	0.95	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DPT-59-10		
Lab Sample ID:	FA29657-3	**Date Sampled:**	12/02/15
Matrix:	SO - Soil	**Date Received:**	12/03/15
Method:	SW846 8260B	**Percent Solids:**	88.5
Project:	AECOMSCG: Delavan Spray Technologies; Bamberg, SC		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl Chloride	ND	4.8	1.5	ug/kg	
1330-20-7	Xylene (total)	ND	14	2.0	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		75-124%
17060-07-0	1,2-Dichloroethane-D4	105%		72-135%
2037-26-5	Toluene-D8	101%		75-126%
460-00-4	4-Bromofluorobenzene	103%		71-133%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: DPT-60-1
Lab Sample ID: FA29657-4
Matrix: SO - Soil
Method: SW846 8260B
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Date Sampled: 12/02/15
Date Received: 12/03/15
Percent Solids: 97.1

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Y24513.D	1	12/03/15	AD	n/a	n/a	VY1033
Run #2							

	Initial Weight	Final Volume
Run #1	6.94 g	5.0 ml
Run #2		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	37	11	ug/kg	
71-43-2	Benzene	ND	3.7	0.74	ug/kg	
75-27-4	Bromodichloromethane	ND	3.7	0.74	ug/kg	
75-25-2	Bromoform	ND	3.7	0.74	ug/kg	
78-93-3	2-Butanone (MEK)	ND	19	6.3	ug/kg	
75-15-0	Carbon Disulfide	ND	3.7	1.1	ug/kg	
56-23-5	Carbon Tetrachloride	ND	3.7	0.74	ug/kg	
108-90-7	Chlorobenzene	ND	3.7	0.74	ug/kg	
75-00-3	Chloroethane	ND	3.7	1.5	ug/kg	
67-66-3	Chloroform	ND	3.7	0.74	ug/kg	
124-48-1	Dibromochloromethane	ND	3.7	0.74	ug/kg	
75-34-3	1,1-Dichloroethane	ND	3.7	0.74	ug/kg	
107-06-2	1,2-Dichloroethane	ND	3.7	0.74	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	3.7	0.98	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	3.7	0.74	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	3.7	0.74	ug/kg	
78-87-5	1,2-Dichloropropane	ND	3.7	0.74	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	3.7	0.74	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	3.7	0.74	ug/kg	
100-41-4	Ethylbenzene	ND	3.7	0.74	ug/kg	
591-78-6	2-Hexanone	ND	19	6.0	ug/kg	
74-83-9	Methyl Bromide	ND	3.7	1.6	ug/kg	
74-87-3	Methyl Chloride	ND	3.7	1.5	ug/kg	
75-09-2	Methylene Chloride	ND	7.4	3.0	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	19	4.0	ug/kg	
100-42-5	Styrene	ND	3.7	0.74	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	3.7	0.82	ug/kg	
127-18-4	Tetrachloroethylene	75.9	3.7	1.2	ug/kg	
108-88-3	Toluene	ND	3.7	0.74	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	3.7	0.97	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	3.7	0.93	ug/kg	
79-01-6	Trichloroethylene	ND	3.7	0.74	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DPT-60-1		
Lab Sample ID:	FA29657-4	**Date Sampled:**	12/02/15
Matrix:	SO - Soil	**Date Received:**	12/03/15
Method:	SW846 8260B	**Percent Solids:**	97.1
Project:	AECOMSCG: Delavan Spray Technologies; Bamberg, SC		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl Chloride	ND	3.7	1.2	ug/kg	
1330-20-7	Xylene (total)	ND	11	1.5	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		75-124%
17060-07-0	1,2-Dichloroethane-D4	108%		72-135%
2037-26-5	Toluene-D8	101%		75-126%
460-00-4	4-Bromofluorobenzene	105%		71-133%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: DPT-60-8-D
Lab Sample ID: FA29657-5
Matrix: AQ - Equipment Blank
Method: SW846 8260B
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Date Sampled: 12/02/15
Date Received: 12/03/15
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P37485.D	1	12/03/15	KM	n/a	n/a	VP1389
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.20	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.32	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	1.2	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.29	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.28	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.20	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.20	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.27	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.21	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.25	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	
74-83-9	Methyl Bromide	ND	2.0	0.50	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.28	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.22	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.33	ug/l	
108-88-3	Toluene	ND	1.0	0.40	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.26	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.31	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.22	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DPT-60-8-D		
Lab Sample ID:	FA29657-5	**Date Sampled:**	12/02/15
Matrix:	AQ - Equipment Blank	**Date Received:**	12/03/15
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	AECOMSCG: Delavan Spray Technologies; Bamberg, SC		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl Chloride	ND	1.0	0.25	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.51	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		83-118%
17060-07-0	1,2-Dichloroethane-D4	105%		79-125%
2037-26-5	Toluene-D8	102%		85-112%
460-00-4	4-Bromofluorobenzene	102%		83-118%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: DPT-60-8
Lab Sample ID: FA29657-6
Matrix: SO - Soil
Method: SW846 8260B
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Date Sampled: 12/02/15
Date Received: 12/03/15
Percent Solids: 90.4

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F0074289.D	1	12/03/15	EP	n/a	n/a	VF2539
Run #2							

	Initial Weight	Final Volume
Run #1	6.82 g	5.0 ml
Run #2		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	41	12	ug/kg	
71-43-2	Benzene	ND	4.1	0.81	ug/kg	
75-27-4	Bromodichloromethane	ND	4.1	0.81	ug/kg	
75-25-2	Bromoform [a]	ND	4.1	0.81	ug/kg	
78-93-3	2-Butanone (MEK)	ND	20	6.9	ug/kg	
75-15-0	Carbon Disulfide	ND	4.1	1.2	ug/kg	
56-23-5	Carbon Tetrachloride	ND	4.1	0.81	ug/kg	
108-90-7	Chlorobenzene	ND	4.1	0.81	ug/kg	
75-00-3	Chloroethane	ND	4.1	1.6	ug/kg	
67-66-3	Chloroform [a]	ND	4.1	0.81	ug/kg	
124-48-1	Dibromochloromethane [a]	ND	4.1	0.81	ug/kg	
75-34-3	1,1-Dichloroethane	ND	4.1	0.81	ug/kg	
107-06-2	1,2-Dichloroethane	ND	4.1	0.81	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	4.1	1.1	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	1.0	4.1	0.81	ug/kg	J
156-60-5	trans-1,2-Dichloroethylene	ND	4.1	0.81	ug/kg	
78-87-5	1,2-Dichloropropane	ND	4.1	0.81	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	4.1	0.81	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	4.1	0.81	ug/kg	
100-41-4	Ethylbenzene	ND	4.1	0.81	ug/kg	
591-78-6	2-Hexanone	ND	20	6.6	ug/kg	
74-83-9	Methyl Bromide	ND	4.1	1.8	ug/kg	
74-87-3	Methyl Chloride	ND	4.1	1.6	ug/kg	
75-09-2	Methylene Chloride	ND	8.1	3.2	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	20	4.3	ug/kg	
100-42-5	Styrene	ND	4.1	0.81	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	4.1	0.90	ug/kg	
127-18-4	Tetrachloroethylene	70.9	4.1	1.3	ug/kg	
108-88-3	Toluene	ND	4.1	0.81	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	4.1	1.1	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	4.1	1.0	ug/kg	
79-01-6	Trichloroethylene	ND	4.1	0.81	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DPT-60-8		
Lab Sample ID:	FA29657-6	**Date Sampled:**	12/02/15
Matrix:	SO - Soil	**Date Received:**	12/03/15
Method:	SW846 8260B	**Percent Solids:**	90.4
Project:	AECOMSCG: Delavan Spray Technologies; Bamberg, SC		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl Chloride	ND	4.1	1.3	ug/kg	
1330-20-7	Xylene (total)	ND	12	1.7	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		75-124%
17060-07-0	1,2-Dichloroethane-D4	104%		72-135%
2037-26-5	Toluene-D8	101%		75-126%
460-00-4	4-Bromofluorobenzene	98%		71-133%

(a) Associated BS recovery outside control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: DPT-61-6
Lab Sample ID: FA29657-7
Matrix: SO - Soil
Method: SW846 8260B
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Date Sampled: 12/02/15
Date Received: 12/03/15
Percent Solids: 86.6

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F0074290.D	1	12/03/15	EP	n/a	n/a	VF2539
Run #2	F0074313.D	1	12/04/15	EP	n/a	n/a	VF2540

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	6.46 g	5.0 ml	
Run #2	5.49 g	5.0 ml	100 ul

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	45	13	ug/kg	
71-43-2	Benzene	ND	4.5	0.89	ug/kg	
75-27-4	Bromodichloromethane	ND	4.5	0.89	ug/kg	
75-25-2	Bromoform [a]	ND	4.5	0.89	ug/kg	
78-93-3	2-Butanone (MEK)	ND	22	7.6	ug/kg	
75-15-0	Carbon Disulfide	ND	4.5	1.3	ug/kg	
56-23-5	Carbon Tetrachloride	ND	4.5	0.89	ug/kg	
108-90-7	Chlorobenzene	ND	4.5	0.89	ug/kg	
75-00-3	Chloroethane	ND	4.5	1.8	ug/kg	
67-66-3	Chloroform [a]	ND	4.5	0.89	ug/kg	
124-48-1	Dibromochloromethane [a]	ND	4.5	0.89	ug/kg	
75-34-3	1,1-Dichloroethane	ND	4.5	0.89	ug/kg	
107-06-2	1,2-Dichloroethane	ND	4.5	0.89	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	4.5	1.2	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	4.5	0.89	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	4.5	0.89	ug/kg	
78-87-5	1,2-Dichloropropane	ND	4.5	0.89	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	4.5	0.89	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	4.5	0.89	ug/kg	
100-41-4	Ethylbenzene	ND	4.5	0.89	ug/kg	
591-78-6	2-Hexanone	ND	22	7.3	ug/kg	
74-83-9	Methyl Bromide	ND	4.5	1.9	ug/kg	
74-87-3	Methyl Chloride	ND	4.5	1.8	ug/kg	
75-09-2	Methylene Chloride	ND	8.9	3.6	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	22	4.8	ug/kg	
100-42-5	Styrene	ND	4.5	0.89	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	4.5	0.99	ug/kg	
127-18-4	Tetrachloroethylene	343 [b]	300	98	ug/kg	
108-88-3	Toluene	ND	4.5	0.89	ug/kg	
71-55-6	1,1,1-Trichloroethane	1.4	4.5	1.2	ug/kg	J
79-00-5	1,1,2-Trichloroethane	ND	4.5	1.1	ug/kg	
79-01-6	Trichloroethylene	ND	4.5	0.89	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DPT-61-6		
Lab Sample ID:	FA29657-7	**Date Sampled:**	12/02/15
Matrix:	SO - Soil	**Date Received:**	12/03/15
Method:	SW846 8260B	**Percent Solids:**	86.6
Project:	AECOMSCG: Delavan Spray Technologies; Bamberg, SC		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl Chloride	ND	4.5	1.4	ug/kg	
1330-20-7	Xylene (total)	ND	13	1.9	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%	100%	75-124%
17060-07-0	1,2-Dichloroethane-D4	105%	105%	72-135%
2037-26-5	Toluene-D8	100%	104%	75-126%
460-00-4	4-Bromofluorobenzene	97%	95%	71-133%

(a) Associated BS recovery outside control limits.
(b) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DPT-61-8		
Lab Sample ID:	FA29657-8	**Date Sampled:**	12/02/15
Matrix:	SO - Soil	**Date Received:**	12/03/15
Method:	SW846 8260B	**Percent Solids:**	84.9
Project:	AECOMSCG: Delavan Spray Technologies; Bamberg, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0112433.D	1	12/04/15	EP	n/a	n/a	VC4481
Run #2	C0112438.D	1	12/04/15	EP	n/a	n/a	VC4481

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	6.41 g	5.0 ml	
Run #2	6.95 g	5.0 ml	100 ul

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	46	14	ug/kg	
71-43-2	Benzene	ND	4.6	0.92	ug/kg	
75-27-4	Bromodichloromethane	ND	4.6	0.92	ug/kg	
75-25-2	Bromoform	ND	4.6	0.92	ug/kg	
78-93-3	2-Butanone (MEK)	ND	23	7.8	ug/kg	
75-15-0	Carbon Disulfide	ND	4.6	1.4	ug/kg	
56-23-5	Carbon Tetrachloride	ND	4.6	0.92	ug/kg	
108-90-7	Chlorobenzene	ND	4.6	0.92	ug/kg	
75-00-3	Chloroethane	ND	4.6	1.8	ug/kg	
67-66-3	Chloroform	ND	4.6	0.92	ug/kg	
124-48-1	Dibromochloromethane	ND	4.6	0.92	ug/kg	
75-34-3	1,1-Dichloroethane	ND	4.6	0.92	ug/kg	
107-06-2	1,2-Dichloroethane	ND	4.6	0.92	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	4.6	1.2	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	1.4	4.6	0.92	ug/kg	J
156-60-5	trans-1,2-Dichloroethylene	ND	4.6	0.92	ug/kg	
78-87-5	1,2-Dichloropropane	ND	4.6	0.92	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	4.6	0.92	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	4.6	0.92	ug/kg	
100-41-4	Ethylbenzene	ND	4.6	0.92	ug/kg	
591-78-6	2-Hexanone	ND	23	7.5	ug/kg	
74-83-9	Methyl Bromide	ND	4.6	2.0	ug/kg	
74-87-3	Methyl Chloride	ND	4.6	1.8	ug/kg	
75-09-2	Methylene Chloride	ND	9.2	3.7	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	23	4.9	ug/kg	
100-42-5	Styrene	ND	4.6	0.92	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	4.6	1.0	ug/kg	
127-18-4	Tetrachloroethylene	178 [a]	260	84	ug/kg	J
108-88-3	Toluene	ND	4.6	0.92	ug/kg	
71-55-6	1,1,1-Trichloroethane	2.5	4.6	1.2	ug/kg	J
79-00-5	1,1,2-Trichloroethane	1.7	4.6	1.2	ug/kg	J
79-01-6	Trichloroethylene	1.0	4.6	0.92	ug/kg	J

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DPT-61-8		
Lab Sample ID:	FA29657-8	**Date Sampled:**	12/02/15
Matrix:	SO - Soil	**Date Received:**	12/03/15
Method:	SW846 8260B	**Percent Solids:**	84.9
Project:	AECOMSCG: Delavan Spray Technologies; Bamberg, SC		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl Chloride	ND	4.6	1.5	ug/kg	
1330-20-7	Xylene (total)	ND	14	1.9	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%	105%	75-124%
17060-07-0	1,2-Dichloroethane-D4	110%	105%	72-135%
2037-26-5	Toluene-D8	96%	95%	75-126%
460-00-4	4-Bromofluorobenzene	97%	99%	71-133%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DPT-61-8-A		
Lab Sample ID:	FA29657-9	**Date Sampled:**	12/02/15
Matrix:	SO - Soil	**Date Received:**	12/03/15
Method:	SW846 8260B	**Percent Solids:**	85.7
Project:	AECOMSCG: Delavan Spray Technologies; Bamberg, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0112434.D	1	12/04/15	EP	n/a	n/a	VC4481
Run #2	C0112444.D	1	12/04/15	EP	n/a	n/a	VC4481

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	6.69 g	5.0 ml	
Run #2	6.88 g	5.0 ml	100 ul

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	44	13	ug/kg	
71-43-2	Benzene	ND	4.4	0.87	ug/kg	
75-27-4	Bromodichloromethane	ND	4.4	0.87	ug/kg	
75-25-2	Bromoform	ND	4.4	0.87	ug/kg	
78-93-3	2-Butanone (MEK)	ND	22	7.4	ug/kg	
75-15-0	Carbon Disulfide	ND	4.4	1.3	ug/kg	
56-23-5	Carbon Tetrachloride	ND	4.4	0.87	ug/kg	
108-90-7	Chlorobenzene	ND	4.4	0.87	ug/kg	
75-00-3	Chloroethane	ND	4.4	1.7	ug/kg	
67-66-3	Chloroform	ND	4.4	0.87	ug/kg	
124-48-1	Dibromochloromethane	ND	4.4	0.87	ug/kg	
75-34-3	1,1-Dichloroethane	ND	4.4	0.87	ug/kg	
107-06-2	1,2-Dichloroethane	ND	4.4	0.87	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	4.4	1.2	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	1.2	4.4	0.87	ug/kg	J
156-60-5	trans-1,2-Dichloroethylene	ND	4.4	0.87	ug/kg	
78-87-5	1,2-Dichloropropane	ND	4.4	0.87	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	4.4	0.87	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	4.4	0.87	ug/kg	
100-41-4	Ethylbenzene	ND	4.4	0.87	ug/kg	
591-78-6	2-Hexanone	ND	22	7.1	ug/kg	
74-83-9	Methyl Bromide	ND	4.4	1.9	ug/kg	
74-87-3	Methyl Chloride	ND	4.4	1.7	ug/kg	
75-09-2	Methylene Chloride	ND	8.7	3.5	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	22	4.7	ug/kg	
100-42-5	Styrene	ND	4.4	0.87	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	4.4	0.97	ug/kg	
127-18-4	Tetrachloroethylene [a]	699 [b]	250	83	ug/kg	
108-88-3	Toluene	ND	4.4	0.87	ug/kg	
71-55-6	1,1,1-Trichloroethane	1.2	4.4	1.1	ug/kg	J
79-00-5	1,1,2-Trichloroethane	1.4	4.4	1.1	ug/kg	J
79-01-6	Trichloroethylene	ND	4.4	0.87	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DPT-61-8-A		
Lab Sample ID:	FA29657-9	**Date Sampled:**	12/02/15
Matrix:	SO - Soil	**Date Received:**	12/03/15
Method:	SW846 8260B	**Percent Solids:**	85.7
Project:	AECOMSCG: Delavan Spray Technologies; Bamberg, SC		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl Chloride	ND	4.4	1.4	ug/kg	
1330-20-7	Xylene (total)	ND	13	1.8	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%	97%	75-124%
17060-07-0	1,2-Dichloroethane-D4	110%	105%	72-135%
2037-26-5	Toluene-D8	97%	94%	75-126%
460-00-4	4-Bromofluorobenzene	99%	98%	71-133%

(a) Results from different vials are not consistent; higher results were reported.
(b) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Southeast ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

Accutest Laboratories Southeast
Chain of Custody

ACCUTEST LABORATORIES

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 • FAX: 407-425-0707
www.accutest.com

Accutest JOB # FA29657 PAGE 1 OF 1

Accutest Quote # | SKIFF#

Client / Reporting Information

Company Name: AECOM
Address: 10 PATEWOOD DR BLDG VI #500
City: GREENVILLE State: SC Zip: 29615
Project Contact: DORIA.CULLUM@AECOM.COM E-mail
Phone#: 864-234-3000
Sampler(s) Name(s) (Printed): Janice Alexander / Randy Morgan

Project Information

Project Name: UTC Delavan Spray Technologies Site
Street: 4331 Main HWY
City: BAMBERG State: SC
Project #: 60314964
Fax #:
Client Purchase Order #:

Analytical Information

8260 TCL
% Solids

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe

Accutest Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	CONTAINER INFORMATION OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZnAc	DI WATER	MEOH	8260 TCL	% Solids	LAB USE ONLY
1	DPT-59-3-c (trip blank)	12/2/15	1205	LA	SO	3								2	1	X		
2	DPT-59-3	12/2/15	1205	LA	SO	4		1						2	1	X	X	2-3'
2	DPT-59-3-ms/msd	12/2/15	1205	LA	SO	8		2						4	2	X	X	2-3'
3	DPT-59-10	12/2/15	1230	LA	SO	4		1						2	1	X	X	9-10'
4	DPT-60-1	12/2/15	1530	LA	SO	4		1						2	1	X	X	0-1'
5	DPT-60-8-d	12/2/15	1535	LA	AQ	3		3								X		equip blank
6	DPT-60-8	12/2/15	1540	LA	SO	4		1						2	1	X	X	7-8'
7	DPT-61-6	12/2/15	1610	LA	SO	4		1						2	1	X	X	5-6'
8	DPT-61-8	12/2/15	1650	LA	SO	4		1						2	1	X	X	7-8'
9	DPT-61-8-a	12/2/15	1650	LA	SO	4		1						2	1	X	X	7-8'
	temp blank	12/2/15						1										

TURNAROUND TIME (Business Days)

Approved By: / Rush Code

- [X] 10 Days Standard
- [ ] 7 Day RUSH
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] OTHER

Emergency or Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULT1 (EPA LEVEL 4)
- [X] EDD'S UTC - per SDW

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished by:	Date Time:	Received By:
1	12/2/15 1730	2 FedEx 8020459471 39	3 FedEx	12-3-15	4 J. Copal (ATSE) 10:00
Relinquished by:	Date Time:	Received By:	Relinquished by:	Date Time:	Received By:
5		6	7		8

Lab Use Only: Custody Seal in Place: Y N Temp Blank Provided: Y N Preserved where Applicable: Y N Total # of Coolers: 1 Cooler Temperature (s) Celsius: 3.6

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FA29657: Chain of Custody
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ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION

ACCUTEST'S JOB NUMBER: FA29657 CLIENT: AECOM PROJECT: 60314964

DATE/TIME RECEIVED: 12-3-15 10:00 {MM/DD/YY 24:00} NUMBER OF COOLERS RECEIVED: 1

METHOD OF DELIVERY: (FEDEX) UPS ACCUTEST COURIER DELIVERY OTHER:

AIRBILL NUMBERS: 8020 4594 7139

COOLER INFORMATION

- [ ] CUSTODY SEAL NOT PRESENT OR NOT INTACT
- [ ] CHAIN OF CUSTODY NOT RECEIVED (COC)
- [ ] ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- [ ] SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- [ ] TEMPERATURE CRITERIA NOT MET

TRIP BLANK INFORMATION

- [X] TRIP BLANK PROVIDED
- [ ] TRIP BLANK NOT PROVIDED
- [ ] TRIP BLANK NOT ON COC
- [X] TRIP BLANK INTACT
- [ ] TRIP BLANK NOT INTACT
- [ ] RECEIVED WATER TRIP BLANK
- [X] RECEIVED SOIL TRIP BLANK

MISC. INFORMATION

NUMBER OF ENCORES ? 25-GRAM_____ 5-GRAM_____

NUMBER OF 5035 FIELD KITS ? 8+TB

NUMBER OF LAB FILTERED METALS ? _____

TEMPERATURE INFORMATION

- [ ] IR THERM ID 1 CORR. FACTOR -0.1
- [ ] OBSERVED TEMPS: 4.0
- [ ] CORRECTED TEMPS: 3.6 (USED FOR LIMS)

SAMPLE INFORMATION

- [ ] INCORRECT NUMBER OF CONTAINERS USED
- [ ] SAMPLE RECEIVED IMPROPERLY PRESERVED
- [ ] INSUFFICIENT VOLUME FOR ANALYSIS
- [ ] DATES/TIMES ON COC DO NOT MATCH SAMPLE LABEL
- [ ] ID'S ON COC DO NOT MATCH LABEL
- [ ] VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- [ ] BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- [ ] NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- [ ] UNCLEAR FILTERING OR COMPOSITING INSTRUCTIONS
- [ ] SAMPLE CONTAINER(S) RECEIVED BROKEN
- [ ] 5035 FIELD KITS NOT RECEIVED WITHIN 48 HOURS
- [ ] BULK VOA SOIL JARS NOT RECEIVED WITHIN 48 HOURS
- [ ] % SOLIDS JAR NOT RECEIVED
- [ ] RESIDUAL CHLORINE PRESENT LOT#_____

{APPLICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS}

TEST STRIP LOT#s pH 0-3 204413A pH 10-12 219813A OTHER (specify) _____

SUMMARY OF COMMENTS:

TECHNICIAN SIGNATURE/DATE: JE 12-3-15 REVIEWER SIGNATURE/DATE: 12-3-15

NF 11/15 receipt confirmation 111015.xls

5.1 5

FA29657: Chain of Custody
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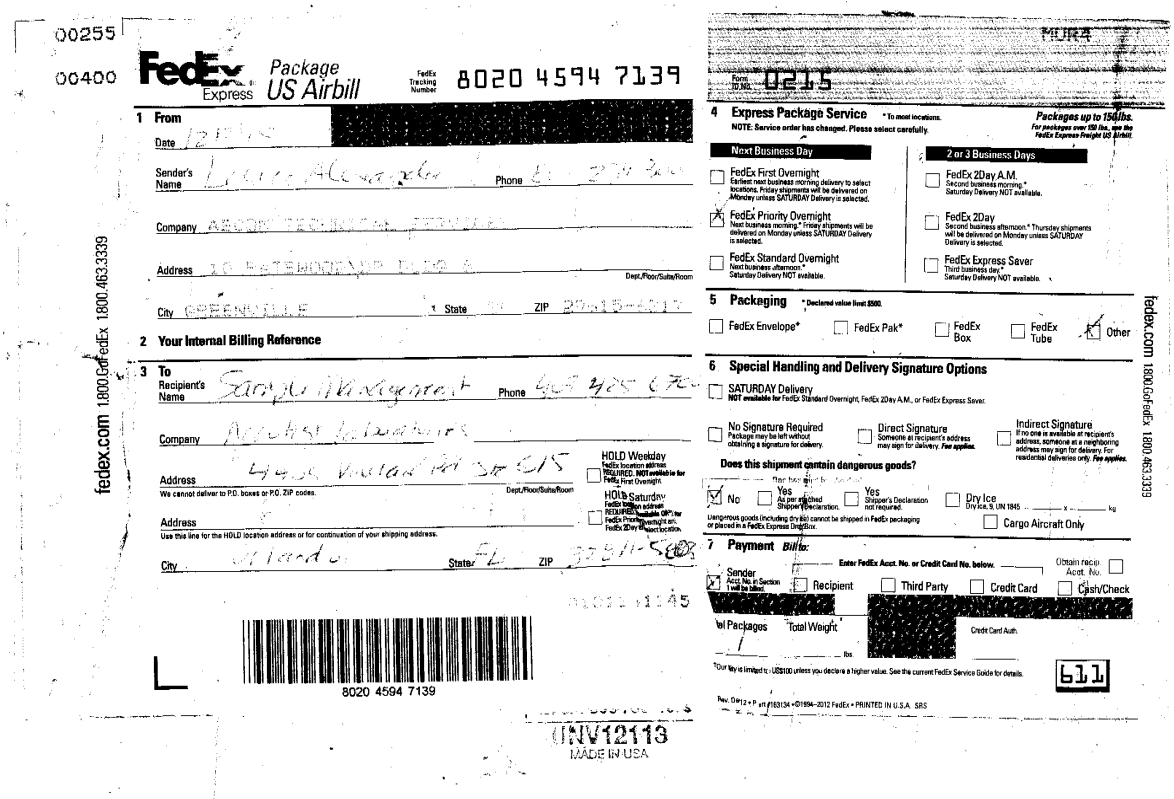

FA29657: Chain of Custody

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Southeast ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: FA29657
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VP1389-MB	P37465.D	1	12/03/15	KM	n/a	n/a	VP1389

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29657-5

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.20	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.32	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	1.2	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.29	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.28	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.20	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.20	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.27	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.21	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.25	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	
74-83-9	Methyl Bromide	ND	2.0	0.50	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.28	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.22	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.33	ug/l	
108-88-3	Toluene	ND	1.0	0.40	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.26	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.31	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.22	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.25	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.51	ug/l	

Method Blank Summary

Job Number: FA29657
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VP1389-MB	P37465.D	1	12/03/15	KM	n/a	n/a	VP1389

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29657-5

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	98%	83-118%
17060-07-0	1,2-Dichloroethane-D4	103%	79-125%
2037-26-5	Toluene-D8	102%	85-112%
460-00-4	4-Bromofluorobenzene	103%	83-118%

Method Blank Summary

Job Number: FA29657
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY1033-MB	Y24493.D	1	12/03/15	AD	n/a	n/a	VY1033

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29657-1, FA29657-2, FA29657-3, FA29657-4

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	15	ug/kg	
71-43-2	Benzene	ND	5.0	1.0	ug/kg	
75-27-4	Bromodichloromethane	ND	5.0	1.0	ug/kg	
75-25-2	Bromoform	ND	5.0	1.0	ug/kg	
78-93-3	2-Butanone (MEK)	ND	25	8.5	ug/kg	
75-15-0	Carbon Disulfide	ND	5.0	1.5	ug/kg	
56-23-5	Carbon Tetrachloride	ND	5.0	1.0	ug/kg	
108-90-7	Chlorobenzene	ND	5.0	1.0	ug/kg	
75-00-3	Chloroethane	ND	5.0	2.0	ug/kg	
67-66-3	Chloroform	ND	5.0	1.0	ug/kg	
124-48-1	Dibromochloromethane	ND	5.0	1.0	ug/kg	
75-34-3	1,1-Dichloroethane	ND	5.0	1.0	ug/kg	
107-06-2	1,2-Dichloroethane	ND	5.0	1.0	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	5.0	1.3	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	5.0	1.0	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	5.0	1.0	ug/kg	
78-87-5	1,2-Dichloropropane	ND	5.0	1.0	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	1.0	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	1.0	ug/kg	
100-41-4	Ethylbenzene	ND	5.0	1.0	ug/kg	
591-78-6	2-Hexanone	ND	25	8.2	ug/kg	
74-83-9	Methyl Bromide	ND	5.0	2.2	ug/kg	
74-87-3	Methyl Chloride	ND	5.0	2.0	ug/kg	
75-09-2	Methylene Chloride	ND	10	4.0	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	25	5.4	ug/kg	
100-42-5	Styrene	ND	5.0	1.0	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.0	1.1	ug/kg	
127-18-4	Tetrachloroethylene	ND	5.0	1.6	ug/kg	
108-88-3	Toluene	ND	5.0	1.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	5.0	1.3	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	5.0	1.3	ug/kg	
79-01-6	Trichloroethylene	ND	5.0	1.0	ug/kg	
75-01-4	Vinyl Chloride	ND	5.0	1.6	ug/kg	
1330-20-7	Xylene (total)	ND	15	2.1	ug/kg	

Method Blank Summary

Job Number: FA29657
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY1033-MB	Y24493.D	1	12/03/15	AD	n/a	n/a	VY1033

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29657-1, FA29657-2, FA29657-3, FA29657-4

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	103%	75-124%
17060-07-0	1,2-Dichloroethane-D4	99%	72-135%
2037-26-5	Toluene-D8	104%	75-126%
460-00-4	4-Bromofluorobenzene	101%	71-133%

Method Blank Summary

Job Number: FA29657
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VF2539-MB	F0074276.D	1	12/03/15	EP	n/a	n/a	VF2539

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29657-6, FA29657-7

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	15	ug/kg	
71-43-2	Benzene	ND	5.0	1.0	ug/kg	
75-27-4	Bromodichloromethane	ND	5.0	1.0	ug/kg	
75-25-2	Bromoform	ND	5.0	1.0	ug/kg	
78-93-3	2-Butanone (MEK)	ND	25	8.5	ug/kg	
75-15-0	Carbon Disulfide	ND	5.0	1.5	ug/kg	
56-23-5	Carbon Tetrachloride	ND	5.0	1.0	ug/kg	
108-90-7	Chlorobenzene	ND	5.0	1.0	ug/kg	
75-00-3	Chloroethane	ND	5.0	2.0	ug/kg	
67-66-3	Chloroform	ND	5.0	1.0	ug/kg	
124-48-1	Dibromochloromethane	ND	5.0	1.0	ug/kg	
75-34-3	1,1-Dichloroethane	ND	5.0	1.0	ug/kg	
107-06-2	1,2-Dichloroethane	ND	5.0	1.0	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	5.0	1.3	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	5.0	1.0	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	5.0	1.0	ug/kg	
78-87-5	1,2-Dichloropropane	ND	5.0	1.0	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	1.0	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	1.0	ug/kg	
100-41-4	Ethylbenzene	ND	5.0	1.0	ug/kg	
591-78-6	2-Hexanone	ND	25	8.2	ug/kg	
74-83-9	Methyl Bromide	ND	5.0	2.2	ug/kg	
74-87-3	Methyl Chloride	ND	5.0	2.0	ug/kg	
75-09-2	Methylene Chloride	ND	10	4.0	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	25	5.4	ug/kg	
100-42-5	Styrene	ND	5.0	1.0	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.0	1.1	ug/kg	
127-18-4	Tetrachloroethylene	ND	5.0	1.6	ug/kg	
108-88-3	Toluene	ND	5.0	1.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	5.0	1.3	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	5.0	1.3	ug/kg	
79-01-6	Trichloroethylene	ND	5.0	1.0	ug/kg	
75-01-4	Vinyl Chloride	ND	5.0	1.6	ug/kg	
1330-20-7	Xylene (total)	ND	15	2.1	ug/kg	

Method Blank Summary

Job Number: FA29657
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VF2539-MB	F0074276.D	1	12/03/15	EP	n/a	n/a	VF2539

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29657-6, FA29657-7

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	100%	75-124%
17060-07-0	1,2-Dichloroethane-D4	103%	72-135%
2037-26-5	Toluene-D8	103%	75-126%
460-00-4	4-Bromofluorobenzene	95%	71-133%

Method Blank Summary

Job Number: FA29657
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC4481-MB	C0112432.D	1	12/04/15	EP	n/a	n/a	VC4481

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29657-8, FA29657-9

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	15	ug/kg	
71-43-2	Benzene	ND	5.0	1.0	ug/kg	
75-27-4	Bromodichloromethane	ND	5.0	1.0	ug/kg	
75-25-2	Bromoform	ND	5.0	1.0	ug/kg	
78-93-3	2-Butanone (MEK)	ND	25	8.5	ug/kg	
75-15-0	Carbon Disulfide	ND	5.0	1.5	ug/kg	
56-23-5	Carbon Tetrachloride	ND	5.0	1.0	ug/kg	
108-90-7	Chlorobenzene	ND	5.0	1.0	ug/kg	
75-00-3	Chloroethane	ND	5.0	2.0	ug/kg	
67-66-3	Chloroform	ND	5.0	1.0	ug/kg	
124-48-1	Dibromochloromethane	ND	5.0	1.0	ug/kg	
75-34-3	1,1-Dichloroethane	ND	5.0	1.0	ug/kg	
107-06-2	1,2-Dichloroethane	ND	5.0	1.0	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	5.0	1.3	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	5.0	1.0	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	5.0	1.0	ug/kg	
78-87-5	1,2-Dichloropropane	ND	5.0	1.0	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	1.0	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	1.0	ug/kg	
100-41-4	Ethylbenzene	ND	5.0	1.0	ug/kg	
591-78-6	2-Hexanone	ND	25	8.2	ug/kg	
74-83-9	Methyl Bromide	ND	5.0	2.2	ug/kg	
74-87-3	Methyl Chloride	ND	5.0	2.0	ug/kg	
75-09-2	Methylene Chloride	ND	10	4.0	ug/kg	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	25	5.4	ug/kg	
100-42-5	Styrene	ND	5.0	1.0	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.0	1.1	ug/kg	
127-18-4	Tetrachloroethylene	ND	5.0	1.6	ug/kg	
108-88-3	Toluene	ND	5.0	1.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	5.0	1.3	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	5.0	1.3	ug/kg	
79-01-6	Trichloroethylene	ND	5.0	1.0	ug/kg	
75-01-4	Vinyl Chloride	ND	5.0	1.6	ug/kg	
1330-20-7	Xylene (total)	ND	15	2.1	ug/kg	

Method Blank Summary

Job Number: FA29657
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC4481-MB	C0112432.D	1	12/04/15	EP	n/a	n/a	VC4481

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29657-8, FA29657-9

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	102%	75-124%
17060-07-0	1,2-Dichloroethane-D4	107%	72-135%
2037-26-5	Toluene-D8	96%	75-126%
460-00-4	4-Bromofluorobenzene	96%	71-133%

Method Blank Summary

Job Number: FA29657
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VF2540-MB	F0074302.D	1	12/04/15	EP	n/a	n/a	VF2540

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29657-7

CAS No.	Compound	Result	RL	MDL	Units	Q
127-18-4	Tetrachloroethylene	ND	5.0	1.6	ug/kg	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	102%	75-124%
17060-07-0	1,2-Dichloroethane-D4	104%	72-135%
2037-26-5	Toluene-D8	103%	75-126%
460-00-4	4-Bromofluorobenzene	95%	71-133%

Blank Spike Summary

Job Number: FA29657
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VP1389-BS	P37464.D	1	12/03/15	KM	n/a	n/a	VP1389

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29657-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	104	83	50-147
71-43-2	Benzene	25	24.8	99	81-122
75-27-4	Bromodichloromethane	25	24.5	98	79-123
75-25-2	Bromoform	25	22.0	88	66-123
78-93-3	2-Butanone (MEK)	125	103	82	56-143
75-15-0	Carbon Disulfide	25	25.6	102	66-148
56-23-5	Carbon Tetrachloride	25	25.2	101	76-136
108-90-7	Chlorobenzene	25	23.3	93	82-124
75-00-3	Chloroethane	25	27.4	110	62-144
67-66-3	Chloroform	25	24.6	98	80-124
124-48-1	Dibromochloromethane	25	22.3	89	78-122
75-34-3	1,1-Dichloroethane	25	25.4	102	81-122
107-06-2	1,2-Dichloroethane	25	23.7	95	75-125
75-35-4	1,1-Dichloroethylene	25	24.8	99	78-137
156-59-2	cis-1,2-Dichloroethylene	25	22.9	92	78-120
156-60-5	trans-1,2-Dichloroethylene	25	26.0	104	76-127
78-87-5	1,2-Dichloropropane	25	23.7	95	76-124
10061-01-5	cis-1,3-Dichloropropene	25	24.0	96	75-118
10061-02-6	trans-1,3-Dichloropropene	25	25.3	101	80-120
100-41-4	Ethylbenzene	25	24.8	99	81-121
591-78-6	2-Hexanone	125	98.3	79	61-129
74-83-9	Methyl Bromide	25	28.8	115	59-143
74-87-3	Methyl Chloride	25	24.1	96	50-159
75-09-2	Methylene Chloride	25	23.4	94	69-135
108-10-1	4-Methyl-2-pentanone (MIBK)	125	105	84	66-122
100-42-5	Styrene	25	23.6	94	78-119
79-34-5	1,1,2,2-Tetrachloroethane	25	22.0	88	72-120
127-18-4	Tetrachloroethylene	25	26.4	106	76-135
108-88-3	Toluene	25	24.5	98	80-120
71-55-6	1,1,1-Trichloroethane	25	24.8	99	75-130
79-00-5	1,1,2-Trichloroethane	25	23.5	94	76-119
79-01-6	Trichloroethylene	25	24.0	96	81-126
75-01-4	Vinyl Chloride	25	26.6	106	69-159
1330-20-7	Xylene (total)	75	74.8	100	80-126

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA29657
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VP1389-BS	P37464.D	1	12/03/15	KM	n/a	n/a	VP1389

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29657-5

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	98%	83-118%
17060-07-0	1,2-Dichloroethane-D4	103%	79-125%
2037-26-5	Toluene-D8	100%	85-112%
460-00-4	4-Bromofluorobenzene	96%	83-118%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA29657
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY1033-BS	Y24492.D	1	12/03/15	AD	n/a	n/a	VY1033

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29657-1, FA29657-2, FA29657-3, FA29657-4

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
67-64-1	Acetone	250	261	104	61-152
71-43-2	Benzene	50	56.1	112	76-126
75-27-4	Bromodichloromethane	50	54.9	110	74-130
75-25-2	Bromoform	50	59.4	119	76-127
78-93-3	2-Butanone (MEK)	250	259	104	75-137
75-15-0	Carbon Disulfide	50	47.1	94	72-122
56-23-5	Carbon Tetrachloride	50	55.4	111	78-133
108-90-7	Chlorobenzene	50	57.2	114	81-129
75-00-3	Chloroethane	50	50.2	100	68-133
67-66-3	Chloroform	50	54.5	109	72-123
124-48-1	Dibromochloromethane	50	56.3	113	76-127
75-34-3	1,1-Dichloroethane	50	55.3	111	73-125
107-06-2	1,2-Dichloroethane	50	53.2	106	74-128
75-35-4	1,1-Dichloroethylene	50	52.1	104	81-136
156-59-2	cis-1,2-Dichloroethylene	50	53.1	106	74-126
156-60-5	trans-1,2-Dichloroethylene	50	57.5	115	70-127
78-87-5	1,2-Dichloropropane	50	51.0	102	74-125
10061-01-5	cis-1,3-Dichloropropene	50	55.9	112	80-123
10061-02-6	trans-1,3-Dichloropropene	50	60.1	120	75-131
100-41-4	Ethylbenzene	50	57.4	115	77-123
591-78-6	2-Hexanone	250	285	114	72-133
74-83-9	Methyl Bromide	50	57.3	115	65-139
74-87-3	Methyl Chloride	50	54.3	109	71-144
75-09-2	Methylene Chloride	50	53.1	106	74-137
108-10-1	4-Methyl-2-pentanone (MIBK)	250	254	102	76-132
100-42-5	Styrene	50	55.1	110	78-125
79-34-5	1,1,2,2-Tetrachloroethane	50	52.7	105	71-126
127-18-4	Tetrachloroethylene	50	58.7	117	79-130
108-88-3	Toluene	50	56.3	113	76-124
71-55-6	1,1,1-Trichloroethane	50	52.6	105	70-129
79-00-5	1,1,2-Trichloroethane	50	53.9	108	74-124
79-01-6	Trichloroethylene	50	54.9	110	75-128
75-01-4	Vinyl Chloride	50	56.8	114	76-141
1330-20-7	Xylene (total)	150	174	116	80-129

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA29657
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY1033-BS	Y24492.D	1	12/03/15	AD	n/a	n/a	VY1033

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29657-1, FA29657-2, FA29657-3, FA29657-4

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	98%	75-124%
17060-07-0	1,2-Dichloroethane-D4	92%	72-135%
2037-26-5	Toluene-D8	98%	75-126%
460-00-4	4-Bromofluorobenzene	95%	71-133%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA29657
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VF2539-BS	F0074275.D	1	12/03/15	EP	n/a	n/a	VF2539

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29657-6, FA29657-7

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
67-64-1	Acetone	250	311	124	61-152
71-43-2	Benzene	50	52.7	105	76-126
75-27-4	Bromodichloromethane	50	58.4	117	74-130
75-25-2	Bromoform	50	72.4	145*	76-127
78-93-3	2-Butanone (MEK)	250	295	118	75-137
75-15-0	Carbon Disulfide	50	54.4	109	72-122
56-23-5	Carbon Tetrachloride	50	59.1	118	78-133
108-90-7	Chlorobenzene	50	53.2	106	81-129
75-00-3	Chloroethane	50	64.9	130	68-133
67-66-3	Chloroform	50	61.8	124*	72-123
124-48-1	Dibromochloromethane	50	64.0	128*	76-127
75-34-3	1,1-Dichloroethane	50	62.4	125	73-125
107-06-2	1,2-Dichloroethane	50	52.8	106	74-128
75-35-4	1,1-Dichloroethylene	50	58.5	117	81-136
156-59-2	cis-1,2-Dichloroethylene	50	56.9	114	74-126
156-60-5	trans-1,2-Dichloroethylene	50	62.4	125	70-127
78-87-5	1,2-Dichloropropane	50	53.4	107	74-125
10061-01-5	cis-1,3-Dichloropropene	50	56.8	114	80-123
10061-02-6	trans-1,3-Dichloropropene	50	60.4	121	75-131
100-41-4	Ethylbenzene	50	52.2	104	77-123
591-78-6	2-Hexanone	250	268	107	72-133
74-83-9	Methyl Bromide	50	62.2	124	65-139
74-87-3	Methyl Chloride	50	64.0	128	71-144
75-09-2	Methylene Chloride	50	62.6	125	74-137
108-10-1	4-Methyl-2-pentanone (MIBK)	250	278	111	76-132
100-42-5	Styrene	50	50.3	101	78-125
79-34-5	1,1,2,2-Tetrachloroethane	50	59.9	120	71-126
127-18-4	Tetrachloroethylene	50	46.1	92	79-130
108-88-3	Toluene	50	51.2	102	76-124
71-55-6	1,1,1-Trichloroethane	50	52.2	104	70-129
79-00-5	1,1,2-Trichloroethane	50	56.7	113	74-124
79-01-6	Trichloroethylene	50	49.8	100	75-128
75-01-4	Vinyl Chloride	50	62.3	125	76-141
1330-20-7	Xylene (total)	150	150	100	80-129

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA29657
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VF2539-BS	F0074275.D	1	12/03/15	EP	n/a	n/a	VF2539

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29657-6, FA29657-7

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	111%	75-124%
17060-07-0	1,2-Dichloroethane-D4	103%	72-135%
2037-26-5	Toluene-D8	99%	75-126%
460-00-4	4-Bromofluorobenzene	91%	71-133%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA29657
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC4481-BS	C0112431.D	1	12/04/15	EP	n/a	n/a	VC4481

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29657-8, FA29657-9

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
67-64-1	Acetone	250	268	107	61-152
71-43-2	Benzene	50	52.2	104	76-126
75-27-4	Bromodichloromethane	50	52.3	105	74-130
75-25-2	Bromoform	50	55.1	110	76-127
78-93-3	2-Butanone (MEK)	250	246	98	75-137
75-15-0	Carbon Disulfide	50	50.1	100	72-122
56-23-5	Carbon Tetrachloride	50	53.9	108	78-133
108-90-7	Chlorobenzene	50	53.8	108	81-129
75-00-3	Chloroethane	50	58.4	117	68-133
67-66-3	Chloroform	50	58.1	116	72-123
124-48-1	Dibromochloromethane	50	57.6	115	76-127
75-34-3	1,1-Dichloroethane	50	53.4	107	73-125
107-06-2	1,2-Dichloroethane	50	50.7	101	74-128
75-35-4	1,1-Dichloroethylene	50	54.0	108	81-136
156-59-2	cis-1,2-Dichloroethylene	50	54.6	109	74-126
156-60-5	trans-1,2-Dichloroethylene	50	54.7	109	70-127
78-87-5	1,2-Dichloropropane	50	52.1	104	74-125
10061-01-5	cis-1,3-Dichloropropene	50	54.4	109	80-123
10061-02-6	trans-1,3-Dichloropropene	50	58.1	116	75-131
100-41-4	Ethylbenzene	50	54.0	108	77-123
591-78-6	2-Hexanone	250	268	107	72-133
74-83-9	Methyl Bromide	50	57.2	114	65-139
74-87-3	Methyl Chloride	50	50.4	101	71-144
75-09-2	Methylene Chloride	50	55.6	111	74-137
108-10-1	4-Methyl-2-pentanone (MIBK)	250	256	102	76-132
100-42-5	Styrene	50	56.2	112	78-125
79-34-5	1,1,2,2-Tetrachloroethane	50	53.5	107	71-126
127-18-4	Tetrachloroethylene	50	52.2	104	79-130
108-88-3	Toluene	50	54.0	108	76-124
71-55-6	1,1,1-Trichloroethane	50	51.8	104	70-129
79-00-5	1,1,2-Trichloroethane	50	53.9	108	74-124
79-01-6	Trichloroethylene	50	52.0	104	75-128
75-01-4	Vinyl Chloride	50	53.8	108	76-141
1330-20-7	Xylene (total)	150	160	107	80-129

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA29657
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VC4481-BS	C0112431.D	1	12/04/15	EP	n/a	n/a	VC4481

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29657-8, FA29657-9

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	96%	75-124%
17060-07-0	1,2-Dichloroethane-D4	95%	72-135%
2037-26-5	Toluene-D8	100%	75-126%
460-00-4	4-Bromofluorobenzene	102%	71-133%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA29657
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VF2540-BS	F0074301.D	1	12/04/15	EP	n/a	n/a	VF2540

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29657-7

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
127-18-4	Tetrachloroethylene	50	47.1	94	79-130

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	102%	75-124%
17060-07-0	1,2-Dichloroethane-D4	101%	72-135%
2037-26-5	Toluene-D8	98%	75-126%
460-00-4	4-Bromofluorobenzene	91%	71-133%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA29657
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA29644-7MS	F0074287.D	1	12/03/15	EP	n/a	n/a	VF2539
FA29644-7MSD	F0074288.D	1	12/03/15	EP	n/a	n/a	VF2539
FA29644-7	F0074277.D	1	12/03/15	EP	n/a	n/a	VF2539

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29657-6, FA29657-7

CAS No.	Compound	FA29644-7 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	46	U	367	382	104	397	348	88	9	61-152/27
71-43-2	Benzene	4.6	U	73.5	69.9	95	79.3	76.0	96	8	76-126/26
75-27-4	Bromodichloromethane	4.6	U	73.5	78.9	107	79.3	84.5	107	7	74-130/25
75-25-2	Bromoform	4.6	U	73.5	90.0	123	79.3	97.4	123	8	76-127/26
78-93-3	2-Butanone (MEK)	23	U	367	328	89	397	353	89	7	75-137/25
75-15-0	Carbon Disulfide	4.6	U	73.5	75.7	103	79.3	71.7	90	5	72-122/29
56-23-5	Carbon Tetrachloride	4.6	U	73.5	70.9	97	79.3	74.7	94	5	78-133/29
108-90-7	Chlorobenzene	4.6	U	73.5	69.0	94	79.3	76.2	96	10	81-129/29
75-00-3	Chloroethane	4.6	U	73.5	83.6	114	79.3	77.1	97	8	68-133/29
67-66-3	Chloroform	4.6	U	73.5	70.2	96	79.3	75.1	95	7	72-123/26
124-48-1	Dibromochloromethane	4.6	U	73.5	82.9	113	79.3	91.5	115	10	76-127/27
75-34-3	1,1-Dichloroethane	4.6	U	73.5	70.7	96	79.3	73.9	93	4	73-125/27
107-06-2	1,2-Dichloroethane	4.6	U	73.5	72.8	99	79.3	72.4	91	1	74-128/23
75-35-4	1,1-Dichloroethylene	4.6	U	73.5	74.4	101	79.3	69.7	88	7	81-136/28
156-59-2	cis-1,2-Dichloroethylene	4.6	U	73.5	63.6	87	79.3	72.6	92	13	74-126/26
156-60-5	trans-1,2-Dichloroethylene	4.6	U	73.5	78.1	106	79.3	74.5	94	5	70-127/27
78-87-5	1,2-Dichloropropane	4.6	U	73.5	70.0	95	79.3	78.8	99	12	74-125/25
10061-01-5	cis-1,3-Dichloropropene	4.6	U	73.5	74.3	101	79.3	78.7	99	6	80-123/26
10061-02-6	trans-1,3-Dichloropropene	4.6	U	73.5	78.0	106	79.3	88.4	111	13	75-131/28
100-41-4	Ethylbenzene	4.6	U	73.5	70.2	96	79.3	77.2	97	9	77-123/31
591-78-6	2-Hexanone	23	U	367	337	92	397	370	93	9	72-133/26
74-83-9	Methyl Bromide	4.6	U	73.5	88.0	120	79.3	78.2	99	12	65-139/31
74-87-3	Methyl Chloride	4.6	U	73.5	80.1	109	79.3	74.0	93	8	71-144/27
75-09-2	Methylene Chloride	9.2	U	73.5	81.5	111	79.3	75.5	95	8	74-137/28
108-10-1	4-Methyl-2-pentanone (MIBK)	23	U	367	357	97	397	422	106	17	76-132/26
100-42-5	Styrene	4.6	U	73.5	65.0	88	79.3	72.9	92	11	78-125/30
79-34-5	1,1,2,2-Tetrachloroethane	4.6	U	73.5	83.0	113	79.3	85.5	108	3	71-126/30
127-18-4	Tetrachloroethylene	4.6	U	73.5	62.5	85	79.3	77.4	98	21	79-130/31
108-88-3	Toluene	4.6	U	73.5	70.2	96	79.3	87.9	111	22	76-124/30
71-55-6	1,1,1-Trichloroethane	4.6	U	73.5	67.7	92	79.3	70.5	89	4	70-129/27
79-00-5	1,1,2-Trichloroethane	4.6	U	73.5	74.4	101	79.3	83.3	105	11	74-124/28
79-01-6	Trichloroethylene	4.6	U	73.5	67.3	92	79.3	72.2	91	7	75-128/27
75-01-4	Vinyl Chloride	4.6	U	73.5	78.6	107	79.3	73.3	92	7	76-141/27
1330-20-7	Xylene (total)	14	U	220	205	93	238	223	94	8	80-129/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA29657
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA29644-7MS	F0074287.D	1	12/03/15	EP	n/a	n/a	VF2539
FA29644-7MSD	F0074288.D	1	12/03/15	EP	n/a	n/a	VF2539
FA29644-7	F0074277.D	1	12/03/15	EP	n/a	n/a	VF2539

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29657-6, FA29657-7

CAS No.	Surrogate Recoveries	MS	MSD	FA29644-7	Limits
1868-53-7	Dibromofluoromethane	98%	98%	101%	75-124%
17060-07-0	1,2-Dichloroethane-D4	102%	100%	105%	72-135%
2037-26-5	Toluene-D8	100%	117%	110%	75-126%
460-00-4	4-Bromofluorobenzene	100%	94%	127%	71-133%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA29657
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA29420-7MS	P37486.D	5	12/03/15	KM	n/a	n/a	VP1389
FA29420-7MSD	P37487.D	5	12/03/15	KM	n/a	n/a	VP1389
FA29420-7	P37471.D	5	12/03/15	KM	n/a	n/a	VP1389

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29657-5

CAS No.	Compound	FA29420-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	130 U		625	619	99	625	617	99	0	50-147/21
71-43-2	Benzene	5.0 U		125	122	98	125	118	94	3	81-122/14
75-27-4	Bromodichloromethane	5.0 U		125	114	91	125	105	84	8	79-123/19
75-25-2	Bromoform	5.0 U		125	80.2	64* [a]	125	79.1	63* [a]	1	66-123/21
78-93-3	2-Butanone (MEK)	25 U		625	614	98	625	614	98	0	56-143/18
75-15-0	Carbon Disulfide	10 U		125	111	89	125	101	81	9	66-148/23
56-23-5	Carbon Tetrachloride	5.0 U		125	125	100	125	107	86	16	76-136/23
108-90-7	Chlorobenzene	192		125	279	70* [a]	125	272	64* [a]	3	82-124/14
75-00-3	Chloroethane	10 U		125	154	123	125	149	119	3	62-144/20
67-66-3	Chloroform	5.0 U		125	121	97	125	115	92	5	80-124/15
124-48-1	Dibromochloromethane	5.0 U		125	95.9	77* [a]	125	90.5	72* [a]	6	78-122/19
75-34-3	1,1-Dichloroethane	10.1		125	130	96	125	125	92	4	81-122/15
107-06-2	1,2-Dichloroethane	5.0 U		125	118	94	125	114	91	3	75-125/14
75-35-4	1,1-Dichloroethylene	5.0 U		125	123	98	125	125	100	2	78-137/18
156-59-2	cis-1,2-Dichloroethylene	1.1	J	125	111	88	125	107	85	4	78-120/15
156-60-5	trans-1,2-Dichloroethylene	5.0 U		125	123	98	125	118	94	4	76-127/17
78-87-5	1,2-Dichloropropane	5.0 U		125	116	93	125	113	90	3	76-124/14
10061-01-5	cis-1,3-Dichloropropene	5.0 U		125	105	84	125	87.7	70* [a]	18	75-118/23
10061-02-6	trans-1,3-Dichloropropene	5.0 U		125	108	86	125	90.1	72* [a]	18	80-120/22
100-41-4	Ethylbenzene	5.0 U		125	121	97	125	118	94	3	81-121/14
591-78-6	2-Hexanone	50 U		625	574	92	625	596	95	4	61-129/18
74-83-9	Methyl Bromide	10 U		125	161	129	125	155	124	4	59-143/19
74-87-3	Methyl Chloride	10 U		125	123	98	125	125	100	2	50-159/19
75-09-2	Methylene Chloride	25 U		125	113	90	125	112	90	1	69-135/16
108-10-1	4-Methyl-2-pentanone (MIBK)	25 U		625	621	99	625	635	102	2	66-122/16
100-42-5	Styrene	5.0 U		125	104	83	125	99.3	79	5	78-119/23
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U		125	103	82	125	106	85	3	72-120/14
127-18-4	Tetrachloroethylene	5.0 U		125	125	100	125	120	96	4	76-135/16
108-88-3	Toluene	5.0 U		125	118	94	125	113	90	4	80-120/14
71-55-6	1,1,1-Trichloroethane	5.0 U		125	118	94	125	114	91	3	75-130/16
79-00-5	1,1,2-Trichloroethane	5.0 U		125	111	89	125	113	90	2	76-119/14
79-01-6	Trichloroethylene	5.0 U		125	119	95	125	111	89	7	81-126/15
75-01-4	Vinyl Chloride	1.5	J	125	137	108	125	135	107	1	69-159/18
1330-20-7	Xylene (total)	15 U		375	359	96	375	347	93	3	80-126/15

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA29657
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA29420-7MS	P37486.D	5	12/03/15	KM	n/a	n/a	VP1389
FA29420-7MSD	P37487.D	5	12/03/15	KM	n/a	n/a	VP1389
FA29420-7	P37471.D	5	12/03/15	KM	n/a	n/a	VP1389

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29657-5

CAS No.	Surrogate Recoveries	MS	MSD	FA29420-7	Limits
1868-53-7	Dibromofluoromethane	100%	98%	97%	83-118%
17060-07-0	1,2-Dichloroethane-D4	103%	104%	105%	79-125%
2037-26-5	Toluene-D8	98%	99%	101%	85-112%
460-00-4	4-Bromofluorobenzene	93%	94%	99%	83-118%

(a) Outside control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA29657
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA29657-2MS	Y24510.D	1	12/03/15	AD	n/a	n/a	VY1033
FA29657-2MSD	Y24511.D	1	12/03/15	AD	n/a	n/a	VY1033
FA29657-2	Y24509.D	1	12/03/15	AD	n/a	n/a	VY1033

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29657-1, FA29657-2, FA29657-3, FA29657-4

CAS No.	Compound	FA29657-2 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	19.0	J	205	168	73	207	179	77	6	61-152/27
71-43-2	Benzene	ND		40.9	32.0	78	41.5	35.5	86	10	76-126/26
75-27-4	Bromodichloromethane	ND		40.9	30.6	75	41.5	33.7	81	10	74-130/25
75-25-2	Bromoform	ND		40.9	30.8	75*	41.5	33.6	81	9	76-127/26
78-93-3	2-Butanone (MEK)	ND		205	160	78	207	160	77	0	75-137/25
75-15-0	Carbon Disulfide	ND		40.9	28.1	69*	41.5	30.5	74	8	72-122/29
56-23-5	Carbon Tetrachloride	ND		40.9	29.4	72*	41.5	33.2	80	12	78-133/29
108-90-7	Chlorobenzene	ND		40.9	31.0	76*	41.5	35.0	84	12	81-129/29
75-00-3	Chloroethane	ND		40.9	24.2	59*	41.5	27.0	65*	11	68-133/29
67-66-3	Chloroform	ND		40.9	30.2	74	41.5	33.4	81	10	72-123/26
124-48-1	Dibromochloromethane	ND		40.9	30.5	75*	41.5	34.1	82	11	76-127/27
75-34-3	1,1-Dichloroethane	ND		40.9	30.0	73	41.5	33.5	81	11	73-125/27
107-06-2	1,2-Dichloroethane	ND		40.9	31.1	76	41.5	32.8	79	5	74-128/23
75-35-4	1,1-Dichloroethylene	ND		40.9	28.2	69*	41.5	31.2	75*	10	81-136/28
156-59-2	cis-1,2-Dichloroethylene	ND		40.9	30.0	73*	41.5	33.4	81	11	74-126/26
156-60-5	trans-1,2-Dichloroethylene	ND		40.9	30.3	74	41.5	34.2	82	12	70-127/27
78-87-5	1,2-Dichloropropane	ND		40.9	29.6	72*	41.5	32.7	79	10	74-125/25
10061-01-5	cis-1,3-Dichloropropene	ND		40.9	31.1	76*	41.5	34.4	83	10	80-123/26
10061-02-6	trans-1,3-Dichloropropene	ND		40.9	29.9	73*	41.5	33.9	82	13	75-131/28
100-41-4	Ethylbenzene	ND		40.9	29.8	73*	41.5	34.3	83	14	77-123/31
591-78-6	2-Hexanone	ND		205	161	79	207	170	82	5	72-133/26
74-83-9	Methyl Bromide	ND		40.9	30.6	75	41.5	32.1	77	5	65-139/31
74-87-3	Methyl Chloride	ND		40.9	28.9	71	41.5	32.0	77	10	71-144/27
75-09-2	Methylene Chloride	ND		40.9	28.9	71*	41.5	32.4	78	11	74-137/28
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		205	140	68*	207	150	72*	7	76-132/26
100-42-5	Styrene	ND		40.9	28.1	69*	41.5	32.1	77*	13	78-125/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		40.9	28.5	70*	41.5	30.6	74	7	71-126/30
127-18-4	Tetrachloroethylene	21.3		40.9	45.4	59*	41.5	68.0	113	40*	79-130/31
108-88-3	Toluene	ND		40.9	29.3	72*	41.5	34.1	82	15	76-124/30
71-55-6	1,1,1-Trichloroethane	ND		40.9	29.5	72	41.5	32.8	79	11	70-129/27
79-00-5	1,1,2-Trichloroethane	ND		40.9	29.9	73*	41.5	33.6	81	12	74-124/28
79-01-6	Trichloroethylene	ND		40.9	30.5	75	41.5	34.1	82	11	75-128/27
75-01-4	Vinyl Chloride	ND		40.9	29.3	72*	41.5	32.3	78	10	76-141/27
1330-20-7	Xylene (total)	ND		123	91.8	75*	124	107	86	15	80-129/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA29657
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA29657-2MS	Y24510.D	1	12/03/15	AD	n/a	n/a	VY1033
FA29657-2MSD	Y24511.D	1	12/03/15	AD	n/a	n/a	VY1033
FA29657-2	Y24509.D	1	12/03/15	AD	n/a	n/a	VY1033

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29657-1, FA29657-2, FA29657-3, FA29657-4

CAS No.	Surrogate Recoveries	MS	MSD	FA29657-2	Limits
1868-53-7	Dibromofluoromethane	102%	101%	102%	75-124%
17060-07-0	1,2-Dichloroethane-D4	101%	92%	108%	72-135%
2037-26-5	Toluene-D8	94%	97%	99%	75-126%
460-00-4	4-Bromofluorobenzene	99%	100%	102%	71-133%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA29657
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA29657-9MS	C0112436.D	1	12/04/15	EP	n/a	n/a	VC4481
FA29657-9MSD	C0112437.D	1	12/04/15	EP	n/a	n/a	VC4481
FA29657-9	C0112434.D	1	12/04/15	EP	n/a	n/a	VC4481
FA29657-9	C0112444.D	1	12/04/15	EP	n/a	n/a	VC4481

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29657-8, FA29657-9

CAS No.	Compound	FA29657-9 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		364	347	95	365	387	106	11	61-152/27
71-43-2	Benzene	ND		72.7	60.6	83	72.9	65.6	90	8	76-126/26
75-27-4	Bromodichloromethane	ND		72.7	61.5	85	72.9	67.3	92	9	74-130/25
75-25-2	Bromoform	ND		72.7	62.8	86	72.9	69.3	95	10	76-127/26
78-93-3	2-Butanone (MEK)	ND		364	315	87	365	346	95	9	75-137/25
75-15-0	Carbon Disulfide	ND		72.7	58.0	80	72.9	66.8	92	14	72-122/29
56-23-5	Carbon Tetrachloride	ND		72.7	58.3	80	72.9	62.9	86	8	78-133/29
108-90-7	Chlorobenzene	ND		72.7	62.5	86	72.9	68.4	94	9	81-129/29
75-00-3	Chloroethane	ND		72.7	56.5	78	72.9	70.2	96	22	68-133/29
67-66-3	Chloroform	ND		72.7	68.4	94	72.9	69.6	95	2	72-123/26
124-48-1	Dibromochloromethane	ND		72.7	65.6	90	72.9	72.4	99	10	76-127/27
75-34-3	1,1-Dichloroethane	ND		72.7	62.5	86	72.9	68.3	94	9	73-125/27
107-06-2	1,2-Dichloroethane	ND		72.7	61.4	84	72.9	66.7	91	8	74-128/23
75-35-4	1,1-Dichloroethylene	ND		72.7	58.7	81	72.9	65.3	90	11	81-136/28
156-59-2	cis-1,2-Dichloroethylene	1.2	J	72.7	68.0	92	72.9	74.1	100	9	74-126/26
156-60-5	trans-1,2-Dichloroethylene	ND		72.7	61.5	85	72.9	68.1	93	10	70-127/27
78-87-5	1,2-Dichloropropane	ND		72.7	60.1	83	72.9	66.2	91	10	74-125/25
10061-01-5	cis-1,3-Dichloropropene	ND		72.7	63.3	87	72.9	69.2	95	9	80-123/26
10061-02-6	trans-1,3-Dichloropropene	ND		72.7	64.2	88	72.9	70.0	96	9	75-131/28
100-41-4	Ethylbenzene	ND		72.7	62.3	86	72.9	67.7	93	8	77-123/31
591-78-6	2-Hexanone	ND		364	340	93	365	365	100	7	72-133/26
74-83-9	Methyl Bromide	ND		72.7	55.3	76	72.9	70.7	97	24	65-139/31
74-87-3	Methyl Chloride	ND		72.7	57.8	79	72.9	63.9	88	10	71-144/27
75-09-2	Methylene Chloride	ND		72.7	72.9	100	72.9	78.5	108	7	74-137/28
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		364	333	92	365	351	96	5	76-132/26
100-42-5	Styrene	ND		72.7	64.8	89	72.9	71.2	98	9	78-125/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		72.7	64.7	89	72.9	68.5	94	6	71-126/30
127-18-4	Tetrachloroethylene	699 [b]		72.7	58.3	-881* [a]	72.9	65.8	-868* [a]	12	79-130/31
108-88-3	Toluene	ND		72.7	61.7	85	72.9	68.2	94	10	76-124/30
71-55-6	1,1,1-Trichloroethane	1.2	J	72.7	58.5	79	72.9	62.9	85	7	70-129/27
79-00-5	1,1,2-Trichloroethane	1.4	J	72.7	64.6	87	72.9	69.3	93	7	74-124/28
79-01-6	Trichloroethylene	ND		72.7	59.3	82	72.9	65.0	89	9	75-128/27
75-01-4	Vinyl Chloride	ND		72.7	55.9	77	72.9	64.2	88	14	76-141/27
1330-20-7	Xylene (total)	ND		218	185	85	219	203	93	9	80-129/30

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA29657
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA29657-9MS	C0112436.D	1	12/04/15	EP	n/a	n/a	VC4481
FA29657-9MSD	C0112437.D	1	12/04/15	EP	n/a	n/a	VC4481
FA29657-9	C0112434.D	1	12/04/15	EP	n/a	n/a	VC4481
FA29657-9	C0112444.D	1	12/04/15	EP	n/a	n/a	VC4481

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29657-8, FA29657-9

CAS No.	Surrogate Recoveries	MS	MSD	FA29657-9	FA29657-9	Limits
1868-53-7	Dibromofluoromethane	100%	97%	106%	97%	75-124%
17060-07-0	1,2-Dichloroethane-D4	97%	95%	110%	105%	72-135%
2037-26-5	Toluene-D8	100%	101%	97%	94%	75-126%
460-00-4	4-Bromofluorobenzene	103%	104%	99%	98%	71-133%

(a) Outside control limits due to high level in sample relative to spike amount.
(b) Result is from Run #2.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA29657
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA29644-12MS	F0074306.D	1	12/04/15	EP	n/a	n/a	VF2540
FA29644-12MSD	F0074307.D	1	12/04/15	EP	n/a	n/a	VF2540
FA29644-12	F0074303.D	1	12/04/15	EP	n/a	n/a	VF2540

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29657-7

CAS No.	Compound	FA29644-12 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
127-18-4	Tetrachloroethylene	4.1		66.3	49.3	68*	54.7	25.6	39*	63*	79-130/31

CAS No.	Surrogate Recoveries	MS	MSD	FA29644-12	Limits
1868-53-7	Dibromofluoromethane	106%	134%*	103%	75-124%
17060-07-0	1,2-Dichloroethane-D4	110%	116%	106%	72-135%
2037-26-5	Toluene-D8	100%	97%	112%	75-126%
460-00-4	4-Bromofluorobenzene	114%	97%	124%	71-133%

* = Outside of Control Limits.

Southeast
ACCUTEST LABORATORIES

12/23/15

Technical Report for

United Technologies Corporation

AECOMSCG: Delavan Spray Technologies; Bamberg, SC

60314964

Accutest Job Number: FA29765

Sampling Date: 12/04/15

Report to:

AECOM Environment
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Greenville, SC 29615
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Total number of pages in report: **92**

NELAP ACCREDITED TNI LABORATORY

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Heather Wandrey 407-425-6700

Certifications: FL (E83510), LA (03051), KS (E-10327), IA (366), IL (200063), NC (573), NJ (FL002), SC (96038001) DoD ELAP (L-A-B L2229), CA (2937), TX (T104704404), PA (68-03573), VA (460177), AK, AR, GA, KY, MA, NV, OK, UT, WA

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Sample Summary

United Technologies Corporation

Job No: FA29765

AECOMSCG: Delavan Spray Technologies; Bamberg, SC
Project No: 60314964

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA29765-1	12/04/15	11:03	RM	12/08/15	AQ	Ground Water	MW-26D
FA29765-2	12/04/15	12:27	RM	12/08/15	AQ	Ground Water	MW-25D
FA29765-3	12/04/15	12:27	RM	12/08/15	AQ	Ground Water	MW-25D-A
FA29765-4	12/04/15	13:27	RM	12/08/15	AQ	Ground Water	MW-24
FA29765-5	12/04/15	14:20	RM	12/08/15	AQ	Water	AQUEOUS IDW-1
FA29765-6	12/04/15	14:15	RM	12/08/15	SO	Soil	SOLID IDW-1
FA29765-7	12/04/15	00:00	RM	12/08/15	AQ	Trip Blank Water	TRIP BLANK

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: United Technologies Corporation **Job No:** FA29765

Site: AECOMSCG: Delavan Spray Technologies; Bamberg, SC **Report Date** 12/23/2015 1:11:53 PM

6 Samples and 1 Trip Blank were collected on 12/04/2015 and were received at Accutest SE on 12/08/2015 properly preserved, at 3.2 Deg. C and intact. These Samples received an Accutest job number of FA29765. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix: AQ **Batch ID:** VP1393

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA29776-2MS, FA29776-2MSD were used as the QC samples indicated.

RPD(s) for MSD for Acetone are outside control limits for sample FA29776-2MSD. Probable cause is due to sample non-homogeneity.

FA29765-1: Sample was not preserved to a pH < 2.

FA29765-2: Sample was not preserved to a pH < 2.

FA29765-3: Sample was not preserved to a pH < 2.

FA29765-4: Sample was not preserved to a pH < 2.

Matrix: AQ **Batch ID:** VP1395

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA29677-3MS, FA29677-3MSD were used as the QC samples indicated.

Matrix Spike Recovery(s) for 1,1-Dichloroethane, trans-1,2-Dichloroethylene are outside control limits. Probable cause is due to matrix interference. For method performance in a clean matrix, refer to Blank Spike.

FA29765-2: Sample was not preserved to a pH < 2.

FA29765-3: Sample was not preserved to a pH < 2.

FA29765-5: Sample was not preserved to a pH < 2. Sample was treated with an anti-foaming agent.

Matrix: LEACHATE **Batch ID:** VN4102

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA29765-6MS, FA29765-6MSD were used as the QC samples indicated.

Matrix Spike Recovery(s) for 1,1-Dichloroethylene are outside control limits. Probable cause is due to matrix interference. For method performance in a clean matrix, refer to Blank Spike.

Extractables by GCMS By Method SW846 8270D

Matrix: AQ **Batch ID:** OP58654

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA29841-3MS, FA29841-3MSD were used as the QC samples indicated.

Matrix Spike Recovery(s) for 3,3'-Dichlorobenzidine, 4-Nitrophenol, Chrysene, Phenol are outside control limits. Probable cause is due to matrix interference. For method performance in a clean matrix, refer to Blank Spike.

Extractables by GCMS By Method SW846 8270D

Matrix: AQ **Batch ID:** OP58654

Matrix Spike Duplicate Recovery(s) for 3,3'-Dichlorobenzidine, 3-Nitroaniline are outside control limits. Probable cause is due to matrix interference. For method performance in a clean matrix, refer to Blank Spike.

RPD(s) for MSD for 1,2,4-Trichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4,5-Trichlorophenol, 2,4,6-Trichlorophenol, 2,4-Dichlorophenol, 2,4-Dinitrotoluene, 2-Chloronaphthalene, 2-Methylnaphthalene, 4-Chlorophenyl Phenyl Ether, Acenaphthene, Benzyl Alcohol, bis(2-Chloroethoxy)methane, Dibenzofuran, Dimethyl Phthalate, Fluorene, Hexachlorobutadiene, Hexachlorocyclopentadiene, Isophorone are outside control limits for sample OP58654-MSD. Probable cause is due to sample non-homogeneity.

Sample(s) OP58654-MS has surrogates outside control limits. Probable cause is due to matrix interference.

OP58654-MS for Phenol-d5: Outside control limits. Sample was ND.

FA29765-5 for 2-Nitroaniline: Associated ICV outside control limits.

Matrix: LEACHATE **Batch ID:** OP58696

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA29695-1MS, FA29695-1MSD, FA29765-6DUP, FA29902-6LS were used as the QC samples indicated.

Metals By Method SW846 6010C

Matrix: AQ **Batch ID:** MP29784

All samples were digested within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA30018-1DUP, FA30018-1MS, FA30018-1MSD, FA30018-1PS, FA30018-1SDL were used as the QC samples for metals.

RPD(s) for Duplicate for Antimony, Lead are outside control limits for sample MP29784-D1. RPD acceptable due to low duplicate and sample concentrations.

RPD(s) for Serial Dilution for Antimony, Lead are outside control limits for sample MP29784-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Matrix: LEACHATE **Batch ID:** MP29771

All samples were digested within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA29694-1MS, FA29694-1MSD, FA29694-1SDL, FA29765-6DUP were used as the QC samples for metals.

RPD(s) for Duplicate for Selenium are outside control limits for sample MP29771-D2. RPD acceptable due to low duplicate and sample concentrations.

RPD(s) for Serial Dilution for Lead, Selenium are outside control limits for sample MP29771-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Metals By Method SW846 7470A

Matrix: AQ **Batch ID:** MP29747

All samples were digested within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA29760-17FDUP, FA29760-17FMS, FA29760-17FMSD, FA29760-17FSDL were used as the QC samples for metals.

Matrix: LEACHATE **Batch ID:** MP29758

All samples were digested within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA29696-1MS, FA29696-1MSD, FA29696-1SDL, FA29765-6DUP were used as the QC samples for metals.

Accutest Laboratories Southeast (ALSE) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALSE and as stated on the COC. ALSE certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALSE Quality Manual except as noted above. This report is to be used in its entirety. ALSE is not responsible for any assumptions of data quality if partial data packages are used

Narrative prepared by:

_____ Date: December 23, 2015

Lovelie Metzgar, QA Officer (signature on file)

Laboratory Report Glossary

Client Sample ID: Normally refers to a point of collection – a monitoring well, discharge outfall, treatment facility intake, soil core grid location and depth, or any other identification client assigns to a sample.
Lab Sample ID: Letter prefix identifies one of Accutest laboratories and the rest is a consecutive number of the job (or SDG) received. Number after dash is a sample number and it is unequivocally linked in the LIMS to the Client Sample ID (see above).
Matrix (Matrix Code):

- **AQ- Water Samples**
- **SO- Soil/Solid Samples**
- **LIQ- Non-Water Liquid Samples**
- **OIL- Oil Samples**

Matrix Type:

- **SW for Surface Water**
- **SO for Soil/Sediment**
- **GW for Ground Water**
- **DW for Drinking Water**

All available definitions are found on Chain of Custody form.

Deg. C: Degrees Celsius, measurement of temperature.
Method: Analytical and preparation methods used for the analysis, with the version or revision identified.
Date Sampled: This information is entered from Chain of Custody at the time of login for every sample.
Date Received: When the job was received by Accutest Laboratories.
Percent Solids: Applicable only to SO matrix. For other matrices this field defaults to "n/a".
Run #: Provides information how many attempts were made in the analysis of the sample. LIMS can merge information from several attempts and lists all of them, including dilution, confirmation, etc. #1 designation is assigned to the analytical run with majority of analytes reported from it, not necessarily in chronological order.
File ID: Actual instrument data acquisition file that produced the final result. Letter prefix identifies the instrument; the rest is a consecutive injection number for that instrument.
DF (Dilution Factor): Most common reasons are either to fit into the range of the calibration, or alleviate matrix interference. DF other than 1 are accompanied with a comment at the end of the sample report.
Analyzed: Date of analysis.
By: Field Technician or Analyst uniquely identified by initials.
Prep Date: Date of sample preparation. If hold time is 72 hours or less, time of preparation is also indicated.
Prep Batch: Letter prefix OP followed by a consecutive number. For VOC analysis preparation happens at the time of analysis, therefore analytical batch and preparation batch are the same. Size of prep batch is limited to 20 field samples of similar matrix and the entire batch should be completed within 12 hour time.
Analytical Batch: Letter prefix identifies the instrument and is followed by a consecutive number. Not limited by a number of samples.
Initial Weight or Initial Volume: Raw sample size used for preparation.
Final Volume: Final volume of extract. If different from method-prescribed volume, reasons are reflected in the comments at the end of the report form.
CAS Number: *Chemical Abstracts Service* (CAS), a division of the *American Chemical Society*.
Compound: Most commonly used names of chemical compounds.
Result: Depending on project requirements, this field could be set up as text, such as ND (for Non Detected) or a number. The number may be reported with a qualifier.
MDL (Method Detection Limit): This value is defined as 99% probability that analyte above this concentration is positively (qualitatively) identified.
RL (Reporting Limit): This value is supported by the low calibration standard and defines lowest point of quantitative identification of analyte.
DL (Detection Limit): The smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration with 99% confidence. At the DL, the false positive rate (Type I error) is 1%.
LOD (Limit of Detection): The smallest concentration of a substance that must be present in a sample in order to be detected at the DL with 99% confidence. At the LOD, the false negative rate (Type II error) is 1%.
LOQ (Limit of Quantitation): The smallest concentration that produces a quantitative result with known and recorded precision and bias.

Units: ug/l (micrograms per liter) for aqueous samples and ug/kg (micrograms per kilogram) for solids (or ppb – parts per billion). The units could be set according to project or state-specific requirements, such as mg/l (milligrams per liter), or mg/kg (milligrams per kilogram).
Qualifiers (Q): Definitions of most often used qualifiers are found at the bottom of each result page. Applied depending on the program – state-specific (Florida A.C. 62-160), CLP-like, AFCEE, DOD QSM, etc.
Tentatively Identified Compound (TIC): Used when client requests a search for analytes that are not part of instrument calibration. Unknown peaks are compared with published spectral libraries and best match is reported as TIC.
Surrogate (S1, S2, S3 etc.): are positive controls that are used in most organics methods to ascertain preparation efficiency and matrix effect in individual samples. These chemicals mimic common method constituents but are unlikely to be found in real samples. Recoveries can be reported for every analytical run used in the analysis.
IS (Internal Standard IS1, IS2, IS3, etc): quantitative reference used to adjust for instrument performance fluctuations.
Area (of chromatographic peak): signal intensity directly related to compound concentration.
RT (Retention Time): time required for analyte to traverse the length of analytical column. Used for compound identification.
ICAL (Initial Calibration): Must pass calibration criteria established by method.
ICV (Independent Calibration Verification): Used to verify ICAL preparation and concentration of calibration points.
CCV (Continuing Calibration Verification): Used to assess calibration status of the instrument and must recover within established acceptance criteria.
MB (Method Blank): is a negative batch control. MB is an aliquot of matrix free of analyte of interest (either ASTM Type II water or appropriate solid substance) that is put through all the preparation and possible clean-up steps alongside investigative (field) samples. MB should be free of interferences above a set level.
BS (Blank Spike, Laboratory Fortified Blank - LFB, Laboratory Control Sample - LCS): is a positive control used to determine method accuracy - in clean matrix, i.e. matrix free of analytes of interest.
BSD (Blank Spike Duplicate): Used to assess recovery reproducibility - method precision – per analytical method requirement. %Recovery and Relative Percent Difference (%RPD) are compared with the established acceptance criteria.
MS and/or **MSD (Matrix Spike and Matrix Spike Duplicate):** positive batch controls which indicate matrix effect on the precision and accuracy of the method in given sample matrix. Results are expressed in %Recovery and Relative Percent Difference (%RPD), and compared with the established acceptance criteria.
DUP (Matrix Duplicate): Positive batch control, a way of assessing laboratory's precision; however, the composition of the samples is unknown and may not yield meaningful results.
REC (Recovery in Percent): expresses method accuracy.
RPD (Relative Percent Difference): expresses method precision.
Limits: Recovery limits for surrogates and spikes

Summary of Hits

Job Number: FA29765
Account: United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC
Collected: 12/04/15

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
FA29765-1	**MW-26D**					
1,1-Dichloroethylene [a]		1.9	1.0	0.27	ug/l	SW846 8260B
cis-1,2-Dichloroethylene [a]		1.1	1.0	0.22	ug/l	SW846 8260B
Tetrachloroethylene [a]		98.1	1.0	0.33	ug/l	SW846 8260B
Trichloroethylene [a]		1.1	1.0	0.22	ug/l	SW846 8260B
FA29765-2	**MW-25D**					
1,1-Dichloroethylene [a]		3.4	1.0	0.27	ug/l	SW846 8260B
cis-1,2-Dichloroethylene [a]		1.3	1.0	0.22	ug/l	SW846 8260B
Tetrachloroethylene [a]		129	2.5	0.81	ug/l	SW846 8260B
Trichloroethylene [a]		0.95 J	1.0	0.22	ug/l	SW846 8260B
FA29765-3	**MW-25D-A**					
1,1-Dichloroethylene [a]		3.5	1.0	0.27	ug/l	SW846 8260B
cis-1,2-Dichloroethylene [a]		1.3	1.0	0.22	ug/l	SW846 8260B
Tetrachloroethylene [a]		136	2.5	0.81	ug/l	SW846 8260B
Trichloroethylene [a]		0.97 J	1.0	0.22	ug/l	SW846 8260B
FA29765-4	**MW-24**					
cis-1,2-Dichloroethylene [a]		2.9 J	5.0	1.1	ug/l	SW846 8260B
Tetrachloroethylene [a]		344	5.0	1.6	ug/l	SW846 8260B
FA29765-5	**AQUEOUS IDW-1**					
cis-1,2-Dichloroethylene [b]		0.72 J	2.0	0.44	ug/l	SW846 8260B
Tetrachloroethylene [b]		86.9	2.0	0.65	ug/l	SW846 8260B
Antimony		1.5 J	6.0	1.0	ug/l	SW846 6010C
Beryllium		0.30 J	4.0	0.20	ug/l	SW846 6010C
Cadmium		1.0 J	5.0	0.20	ug/l	SW846 6010C
Chromium		12.8	10	1.0	ug/l	SW846 6010C
Copper		8.6 J	25	1.0	ug/l	SW846 6010C
Lead		5.5	5.0	1.1	ug/l	SW846 6010C
Nickel		3.4 J	40	0.40	ug/l	SW846 6010C
Zinc		34.1	20	4.4	ug/l	SW846 6010C
FA29765-6	**SOLID IDW-1**					
Barium		0.12 J	2.0	0.050	mg/l	SW846 6010C

Summary of Hits

Job Number: FA29765
Account: United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC
Collected: 12/04/15

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
FA29765-7	**TRIP BLANK**					
Methylene Chloride		5.4	5.0	2.0	ug/l	SW846 8260B

(a) Sample was not preserved to a pH < 2.
(b) Sample was not preserved to a pH < 2. Sample was treated with an anti-foaming agent.

Southeast ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: MW-26D
Lab Sample ID: FA29765-1
Matrix: AQ - Ground Water
Method: SW846 8260B
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Date Sampled: 12/04/15
Date Received: 12/08/15
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	P37602.D	1	12/09/15	KM	n/a	n/a	VP1393
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.20	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.32	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	1.2	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.29	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.28	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.20	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.20	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethylene	1.9	1.0	0.27	ug/l	
156-59-2	cis-1,2-Dichloroethylene	1.1	1.0	0.22	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.21	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.25	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	
74-83-9	Methyl Bromide	ND	2.0	0.50	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.28	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.22	ug/l	
127-18-4	Tetrachloroethylene	98.1	1.0	0.33	ug/l	
108-88-3	Toluene	ND	1.0	0.40	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.26	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.31	ug/l	
79-01-6	Trichloroethylene	1.1	1.0	0.22	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-26D		
Lab Sample ID:	FA29765-1	**Date Sampled:**	12/04/15
Matrix:	AQ - Ground Water	**Date Received:**	12/08/15
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	AECOMSCG: Delavan Spray Technologies; Bamberg, SC		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl Chloride	ND	1.0	0.25	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.51	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		83-118%
17060-07-0	1,2-Dichloroethane-D4	100%		79-125%
2037-26-5	Toluene-D8	100%		85-112%
460-00-4	4-Bromofluorobenzene	103%		83-118%

(a) Sample was not preserved to a pH < 2.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-25D
Lab Sample ID: FA29765-2
Matrix: AQ - Ground Water
Method: SW846 8260B
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Date Sampled: 12/04/15
Date Received: 12/08/15
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	P37603.D	1	12/09/15	KM	n/a	n/a	VP1393
Run #2 [a]	P37655.D	2.5	12/10/15	KM	n/a	n/a	VP1395

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.20	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.32	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	1.2	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.29	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.28	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.20	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.20	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethylene	3.4	1.0	0.27	ug/l	
156-59-2	cis-1,2-Dichloroethylene	1.3	1.0	0.22	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.21	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.25	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	
74-83-9	Methyl Bromide	ND	2.0	0.50	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.28	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.22	ug/l	
127-18-4	Tetrachloroethylene	129 [b]	2.5	0.81	ug/l	
108-88-3	Toluene	ND	1.0	0.40	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.26	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.31	ug/l	
79-01-6	Trichloroethylene	0.95	1.0	0.22	ug/l	J

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-25D		
Lab Sample ID:	FA29765-2	**Date Sampled:**	12/04/15
Matrix:	AQ - Ground Water	**Date Received:**	12/08/15
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	AECOMSCG: Delavan Spray Technologies; Bamberg, SC		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl Chloride	ND	1.0	0.25	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.51	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%	100%	83-118%
17060-07-0	1,2-Dichloroethane-D4	100%	102%	79-125%
2037-26-5	Toluene-D8	100%	98%	85-112%
460-00-4	4-Bromofluorobenzene	105%	105%	83-118%

(a) Sample was not preserved to a pH < 2.
(b) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-25D-A
Lab Sample ID: FA29765-3
Matrix: AQ - Ground Water
Method: SW846 8260B
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Date Sampled: 12/04/15
Date Received: 12/08/15
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	P37604.D	1	12/09/15	KM	n/a	n/a	VP1393
Run #2 [a]	P37656.D	2.5	12/10/15	KM	n/a	n/a	VP1395

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.20	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.32	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	1.2	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.29	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.28	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.20	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.20	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethylene	3.5	1.0	0.27	ug/l	
156-59-2	cis-1,2-Dichloroethylene	1.3	1.0	0.22	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.21	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.25	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	
74-83-9	Methyl Bromide	ND	2.0	0.50	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.28	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.22	ug/l	
127-18-4	Tetrachloroethylene	136 [b]	2.5	0.81	ug/l	
108-88-3	Toluene	ND	1.0	0.40	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.26	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.31	ug/l	
79-01-6	Trichloroethylene	0.97	1.0	0.22	ug/l	J

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-25D-A		
Lab Sample ID:	FA29765-3	**Date Sampled:**	12/04/15
Matrix:	AQ - Ground Water	**Date Received:**	12/08/15
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	AECOMSCG: Delavan Spray Technologies; Bamberg, SC		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl Chloride	ND	1.0	0.25	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.51	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%	101%	83-118%
17060-07-0	1,2-Dichloroethane-D4	102%	103%	79-125%
2037-26-5	Toluene-D8	100%	98%	85-112%
460-00-4	4-Bromofluorobenzene	101%	106%	83-118%

(a) Sample was not preserved to a pH < 2.
(b) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-24
Lab Sample ID: FA29765-4 **Date Sampled:** 12/04/15
Matrix: AQ - Ground Water **Date Received:** 12/08/15
Method: SW846 8260B **Percent Solids:** n/a
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	P37605.D	5	12/09/15	KM	n/a	n/a	VP1393
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	130	50	ug/l	
71-43-2	Benzene	ND	5.0	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	5.0	1.1	ug/l	
75-25-2	Bromoform	ND	5.0	1.6	ug/l	
78-93-3	2-Butanone (MEK)	ND	25	5.8	ug/l	
75-15-0	Carbon Disulfide	ND	10	1.5	ug/l	
56-23-5	Carbon Tetrachloride	ND	5.0	1.4	ug/l	
108-90-7	Chlorobenzene	ND	5.0	1.0	ug/l	
75-00-3	Chloroethane	ND	10	2.5	ug/l	
67-66-3	Chloroform	ND	5.0	1.5	ug/l	
124-48-1	Dibromochloromethane	ND	5.0	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	5.0	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	5.0	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	5.0	1.4	ug/l	
156-59-2	cis-1,2-Dichloroethylene	2.9	5.0	1.1	ug/l	J
156-60-5	trans-1,2-Dichloroethylene	ND	5.0	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	5.0	1.3	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	1.3	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	1.3	ug/l	
100-41-4	Ethylbenzene	ND	5.0	1.0	ug/l	
591-78-6	2-Hexanone	ND	50	10	ug/l	
74-83-9	Methyl Bromide	ND	10	2.5	ug/l	
74-87-3	Methyl Chloride	ND	10	2.5	ug/l	
75-09-2	Methylene Chloride	ND	25	10	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	25	5.0	ug/l	
100-42-5	Styrene	ND	5.0	1.4	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.0	1.1	ug/l	
127-18-4	Tetrachloroethylene	344	5.0	1.6	ug/l	
108-88-3	Toluene	ND	5.0	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	5.0	1.3	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	1.6	ug/l	
79-01-6	Trichloroethylene	ND	5.0	1.1	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-24		
Lab Sample ID:	FA29765-4	**Date Sampled:**	12/04/15
Matrix:	AQ - Ground Water	**Date Received:**	12/08/15
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	AECOMSCG: Delavan Spray Technologies; Bamberg, SC		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl Chloride	ND	5.0	1.3	ug/l	
1330-20-7	Xylene (total)	ND	15	2.6	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		83-118%
17060-07-0	1,2-Dichloroethane-D4	101%		79-125%
2037-26-5	Toluene-D8	102%		85-112%
460-00-4	4-Bromofluorobenzene	104%		83-118%

(a) Sample was not preserved to a pH < 2.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: AQUEOUS IDW-1
Lab Sample ID: FA29765-5 **Date Sampled:** 12/04/15
Matrix: AQ - Water **Date Received:** 12/08/15
Method: SW846 8260B **Percent Solids:** n/a
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	P37657.D	2	12/10/15	KM	n/a	n/a	VP1395
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	50	20	ug/l	
71-43-2	Benzene	ND	2.0	0.40	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	0.43	ug/l	
75-25-2	Bromoform	ND	2.0	0.65	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	2.3	ug/l	
75-15-0	Carbon Disulfide	ND	4.0	0.59	ug/l	
56-23-5	Carbon Tetrachloride	ND	2.0	0.56	ug/l	
108-90-7	Chlorobenzene	ND	2.0	0.40	ug/l	
75-00-3	Chloroethane	ND	4.0	1.0	ug/l	
67-66-3	Chloroform	ND	2.0	0.60	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	0.40	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	0.40	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	0.40	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	0.54	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.72	2.0	0.44	ug/l	J
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.42	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.51	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.52	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.40	ug/l	
591-78-6	2-Hexanone	ND	20	4.0	ug/l	
74-83-9	Methyl Bromide	ND	4.0	1.0	ug/l	
74-87-3	Methyl Chloride	ND	4.0	1.0	ug/l	
75-09-2	Methylene Chloride	ND	10	4.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	10	2.0	ug/l	
100-42-5	Styrene	ND	2.0	0.56	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.45	ug/l	
127-18-4	Tetrachloroethylene	86.9	2.0	0.65	ug/l	
108-88-3	Toluene	ND	2.0	0.80	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.51	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.63	ug/l	
79-01-6	Trichloroethylene	ND	2.0	0.43	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AQUEOUS IDW-1		
Lab Sample ID:	FA29765-5	**Date Sampled:**	12/04/15
Matrix:	AQ - Water	**Date Received:**	12/08/15
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	AECOMSCG: Delavan Spray Technologies; Bamberg, SC		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl Chloride	ND	2.0	0.50	ug/l	
1330-20-7	Xylene (total)	ND	6.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		83-118%
17060-07-0	1,2-Dichloroethane-D4	102%		79-125%
2037-26-5	Toluene-D8	98%		85-112%
460-00-4	4-Bromofluorobenzene	104%		83-118%

(a) Sample was not preserved to a pH < 2. Sample was treated with an anti-foaming agent.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: AQUEOUS IDW-1
Lab Sample ID: FA29765-5 **Date Sampled:** 12/04/15
Matrix: AQ - Water **Date Received:** 12/08/15
Method: SW846 8270D SW846 3510C **Percent Solids:** n/a
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U053444.D	1	12/14/15	MV	12/11/15	OP58654	SU2416
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

ABN TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	50	10	ug/l	
59-50-7	4-Chloro-3-methyl Phenol	ND	5.0	0.50	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.50	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	0.50	ug/l	
105-67-9	2,4-Dimethylphenol	ND	5.0	0.50	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	5.0	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	2.1	ug/l	
95-48-7	2-Methylphenol	ND	5.0	0.50	ug/l	
	3&4-Methylphenol	ND	5.0	1.0	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	0.88	ug/l	
100-02-7	4-Nitrophenol	ND	25	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	25	5.0	ug/l	
108-95-2	Phenol	ND	5.0	0.50	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	0.68	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	0.63	ug/l	
83-32-9	Acenaphthene	ND	5.0	0.50	ug/l	
208-96-8	Acenaphthylene	ND	5.0	0.50	ug/l	
120-12-7	Anthracene	ND	5.0	0.50	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	0.50	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	0.50	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	0.58	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	0.66	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	0.68	ug/l	
100-51-6	Benzyl Alcohol	ND	5.0	0.85	ug/l	
101-55-3	4-Bromophenyl Phenyl Ether	ND	5.0	0.64	ug/l	
85-68-7	Butyl Benzyl Phthalate	ND	5.0	1.0	ug/l	
86-74-8	Carbazole	ND	5.0	0.50	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	0.50	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.63	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.69	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.50	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.50	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: AQUEOUS IDW-1
Lab Sample ID: FA29765-5 **Date Sampled:** 12/04/15
Matrix: AQ - Water **Date Received:** 12/08/15
Method: SW846 8270D SW846 3510C **Percent Solids:** n/a
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

ABN TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
7005-72-3	4-Chlorophenyl Phenyl Ether	ND	5.0	0.57	ug/l	
218-01-9	Chrysene	ND	5.0	0.51	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	0.68	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	5.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	5.0	0.63	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	5.0	0.65	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.52	ug/l	
84-66-2	Diethyl Phthalate	ND	5.0	1.4	ug/l	
131-11-3	Dimethyl Phthalate	ND	5.0	1.0	ug/l	
84-74-2	Di-n-butyl Phthalate	ND	5.0	1.0	ug/l	
117-84-0	Di-n-octyl Phthalate	ND	5.0	1.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	0.58	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	0.69	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	1.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	0.50	ug/l	
86-73-7	Fluorene	ND	5.0	0.50	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.63	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.60	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	5.0	1.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.68	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	0.63	ug/l	
78-59-1	Isophorone	ND	5.0	0.51	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	0.50	ug/l	
91-20-3	Naphthalene	ND	5.0	0.50	ug/l	
88-74-4	2-Nitroaniline [a]	ND	5.0	0.50	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	0.53	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	0.99	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.52	ug/l	
621-64-7	N-Nitrosodi-n-propylamine	ND	5.0	0.58	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.59	ug/l	
85-01-8	Phenanthrene	ND	5.0	0.51	ug/l	
129-00-0	Pyrene	ND	5.0	0.55	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	40%		14-67%
4165-62-2	Phenol-d5	25%		10-50%
118-79-6	2,4,6-Tribromophenol	75%		33-118%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AQUEOUS IDW-1		
Lab Sample ID:	FA29765-5	**Date Sampled:**	12/04/15
Matrix:	AQ - Water	**Date Received:**	12/08/15
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	AECOMSCG: Delavan Spray Technologies; Bamberg, SC		

ABN TCL List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	69%		42-108%
321-60-8	2-Fluorobiphenyl	70%		40-106%
1718-51-0	Terphenyl-d14	89%		39-121%

(a) Associated ICV outside control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: AQUEOUS IDW-1
Lab Sample ID: FA29765-5
Matrix: AQ - Water
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Date Sampled: 12/04/15
Date Received: 12/08/15
Percent Solids: n/a

Total Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	1.5 J	6.0	1.0	ug/l	1	12/17/15	12/17/15	LM	SW846 6010C [2]	SW846 3010A [4]
Arsenic	1.3 U	10	1.3	ug/l	1	12/17/15	12/17/15	LM	SW846 6010C [2]	SW846 3010A [4]
Beryllium	0.30 J	4.0	0.20	ug/l	1	12/17/15	12/17/15	LM	SW846 6010C [2]	SW846 3010A [4]
Cadmium	1.0 J	5.0	0.20	ug/l	1	12/17/15	12/17/15	LM	SW846 6010C [2]	SW846 3010A [4]
Chromium	12.8	10	1.0	ug/l	1	12/17/15	12/17/15	LM	SW846 6010C [2]	SW846 3010A [4]
Copper	8.6 J	25	1.0	ug/l	1	12/17/15	12/17/15	LM	SW846 6010C [2]	SW846 3010A [4]
Lead	5.5	5.0	1.1	ug/l	1	12/17/15	12/17/15	LM	SW846 6010C [2]	SW846 3010A [4]
Mercury	0.030 U	0.50	0.030	ug/l	1	12/09/15	12/09/15	JL	SW846 7470A [1]	SW846 7470A [3]
Nickel	3.4 J	40	0.40	ug/l	1	12/17/15	12/17/15	LM	SW846 6010C [2]	SW846 3010A [4]
Selenium	2.9 U	10	2.9	ug/l	1	12/17/15	12/17/15	LM	SW846 6010C [2]	SW846 3010A [4]
Silver	0.70 U	5.0	0.70	ug/l	1	12/17/15	12/17/15	LM	SW846 6010C [2]	SW846 3010A [4]
Thallium	1.4 U	10	1.4	ug/l	1	12/17/15	12/17/15	LM	SW846 6010C [2]	SW846 3010A [4]
Zinc	34.1	20	4.4	ug/l	1	12/17/15	12/17/15	LM	SW846 6010C [2]	SW846 3010A [4]

(1) Instrument QC Batch: MA12826
(2) Instrument QC Batch: MA12844
(3) Prep QC Batch: MP29747
(4) Prep QC Batch: MP29784

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	SOLID IDW-1		
Lab Sample ID:	FA29765-6	**Date Sampled:**	12/04/15
Matrix:	SO - Soil	**Date Received:**	12/08/15
Method:	SW846 8260B SW846 1311	**Percent Solids:**	n/a
Project:	AECOMSCG: Delavan Spray Technologies; Bamberg, SC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0091109.D	10	12/22/15	RB	12/09/15	OP58627	VN4102
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCLP List **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
71-43-2	Benzene	ND	D018	0.50	0.010	0.0020	mg/l	
78-93-3	2-Butanone (MEK)	ND	D035	200	0.050	0.012	mg/l	
56-23-5	Carbon Tetrachloride	ND	D019	0.50	0.010	0.0028	mg/l	
108-90-7	Chlorobenzene	ND	D021	100	0.010	0.0020	mg/l	
67-66-3	Chloroform	ND	D022	6.0	0.010	0.0030	mg/l	
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.010	0.0025	mg/l	
107-06-2	1,2-Dichloroethane	ND	D028	0.50	0.010	0.0020	mg/l	
75-35-4	1,1-Dichloroethylene	ND	D029	0.70	0.010	0.0027	mg/l	
127-18-4	Tetrachloroethylene	ND	D039	0.70	0.010	0.0033	mg/l	
79-01-6	Trichloroethylene	ND	D040	0.50	0.010	0.0022	mg/l	
75-01-4	Vinyl Chloride	ND	D043	0.20	0.010	0.0025	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		83-118%
17060-07-0	1,2-Dichloroethane-D4	106%		79-125%
2037-26-5	Toluene-D8	99%		85-112%
460-00-4	4-Bromofluorobenzene	100%		83-118%

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 261 6/96)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SOLID IDW-1
Lab Sample ID: FA29765-6 **Date Sampled:** 12/04/15
Matrix: SO - Soil **Date Received:** 12/08/15
Method: SW846 8270D SW846 3510C **Percent Solids:** n/a
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X043950.D	1	12/16/15	MV	12/15/15	OP58696	SX1976
Run #2							

	Initial Volume	Final Volume
Run #1	100 ml	1.0 ml
Run #2		

ABN TCLP List **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	D023	200	0.050	0.0050	mg/l	
	3&4-Methylphenol	ND	D024	200	0.050	0.010	mg/l	
87-86-5	Pentachlorophenol	ND	D037	100	0.25	0.050	mg/l	
95-95-4	2,4,5-Trichlorophenol	ND	D041	400	0.050	0.0068	mg/l	
88-06-2	2,4,6-Trichlorophenol	ND	D042	2.0	0.050	0.0063	mg/l	
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.050	0.0065	mg/l	
121-14-2	2,4-Dinitrotoluene	ND	D030	0.13	0.050	0.0058	mg/l	
118-74-1	Hexachlorobenzene	ND	D032	0.13	0.050	0.0063	mg/l	
87-68-3	Hexachlorobutadiene	ND	D033	0.50	0.050	0.0060	mg/l	
67-72-1	Hexachloroethane	ND	D034	3.0	0.050	0.0068	mg/l	
98-95-3	Nitrobenzene	ND	D036	2.0	0.050	0.0052	mg/l	
110-86-1	Pyridine	ND	D038	5.0	0.10	0.020	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	44%		14-67%
4165-62-2	Phenol-d5	29%		10-50%
118-79-6	2,4,6-Tribromophenol	79%		33-118%
4165-60-0	Nitrobenzene-d5	78%		42-108%
321-60-8	2-Fluorobiphenyl	74%		40-106%
1718-51-0	Terphenyl-d14	101%		39-121%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 6/96) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SOLID IDW-1
Lab Sample ID: FA29765-6
Matrix: SO - Soil
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Date Sampled: 12/04/15
Date Received: 12/08/15
Percent Solids: n/a

Metals Analysis, TCLP Leachate SW846 1311

Analyte	Result	HW#	MCL	RL	MDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	0.013 U	D004	5.0	0.10	0.013	mg/l	1	12/15/15	12/15/15	LM	SW846 6010C [2]
Barium	0.12 J	D005	100	2.0	0.050	mg/l	1	12/15/15	12/15/15	LM	SW846 6010C [2]
Cadmium	0.0020 U	D006	1.0	0.050	0.0020	mg/l	1	12/15/15	12/15/15	LM	SW846 6010C [2]
Chromium	0.010 U	D007	5.0	0.10	0.010	mg/l	1	12/15/15	12/15/15	LM	SW846 6010C [2]
Lead	0.011 U	D008	5.0	0.050	0.011	mg/l	1	12/15/15	12/15/15	LM	SW846 6010C [2]
Mercury	0.00050 U	D009	0.20	0.0050	0.00050	mg/l	1	12/11/15	12/11/15	JL	SW846 7470A [1]
Selenium	0.029 U	D010	1.0	0.10	0.029	mg/l	1	12/15/15	12/15/15	LM	SW846 6010C [2]
Silver	0.0070 U	D011	5.0	0.10	0.0070	mg/l	1	12/15/15	12/15/15	LM	SW846 6010C [2]

(1) Instrument QC Batch: MA12831
(2) Instrument QC Batch: MA12837
(3) Prep QC Batch: MP29758
(4) Prep QC Batch: MP29771

RL = Reporting Limit MDL = Method Detection Limit U = Indicates a result < MDL
MCL = Maximum Contamination Level (40 CFR 261 6/96) J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: TRIP BLANK
Lab Sample ID: FA29765-7
Matrix: AQ - Trip Blank Water
Method: SW846 8260B
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Date Sampled: 12/04/15
Date Received: 12/08/15
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P37607.D	1	12/09/15	KM	n/a	n/a	VP1393
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.20	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.32	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	1.2	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.29	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.28	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.20	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.20	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.27	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.21	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.25	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	
74-83-9	Methyl Bromide	ND	2.0	0.50	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
75-09-2	Methylene Chloride	5.4	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.28	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.22	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.33	ug/l	
108-88-3	Toluene	ND	1.0	0.40	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.26	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.31	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.22	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	FA29765-7	**Date Sampled:**	12/04/15
Matrix:	AQ - Trip Blank Water	**Date Received:**	12/08/15
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	AECOMSCG: Delavan Spray Technologies; Bamberg, SC		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl Chloride	ND	1.0	0.25	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.51	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		83-118%
17060-07-0	1,2-Dichloroethane-D4	103%		79-125%
2037-26-5	Toluene-D8	99%		85-112%
460-00-4	4-Bromofluorobenzene	102%		83-118%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Southeast ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

Accutest Laboratories Southeast
Chain of Custody

ACCUTEST LABORATORIES

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 • FAX: 407-425-0707
www.accutest.com

FA29765

Accutest JOB # PAGE 1 OF 1

Accutest Quote # SKIFF#

Client / Reporting Information

Company Name: AECOM
Address: 10 Patewood Bldg VI Suite 500
City: Greenville State: SC Zip: 29615
Project Contact: Doria Cullom E-mail: doria.cullom@aecom.com
Phone#: 864-234-3008
Sampler(s) Name(s) (Printed): Randy Morgan

Project Information

Project Name: UTC Delavan Spray Technologies
Street: 4331 Main Hwy
City: Bamberg State: SC
Project #: 60354964
Fax #:
Client Purchase Order #: 69402CM

Analytical Information

Accutest Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZNAC	DI WATER	MeOH	TCL VOCs 8260C	TCL SVOCs 8270D	Metals + Hg PM13	TCLP VOCs 8260	TCLP SVOCs 8270	TCLP Metals
1	MW-26D	12/4/15	1103	KM	GW	3		3								X					
1	MW-26D-MS	12/4/15	1103	KM	GW	3		3								X					
1	MW-26D-MSD	12/4/15	1103	KM	GW	3		3								X					
2	MW-25D	12/4/15	1227	KM	GW	3		3								X					
3	MW-25D-EQ	12/4/15	1227	KM	GW	3		3								X					
4	MW-24	12/4/15	1327	KM	GW	3		3								X					
5	Aqueous IDW-1	12/4/15	1420	KM	WW	6		5			1					X	X	X			
6	Solid IDW-1	12/4/15	1415	KM	SO	2		2											X	X	X
7	Trip Blank					2										X					
	Temp Blank					1															

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe

LAB USE ONLY

TURNAROUND TIME (Business Days)

Approved By: / Rush Code

- [X] 10 Days Standard
- [ ] 7 Day RUSH
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] OTHER

Emergency or Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULT1 (EPA LEVEL 4)
- [X] EDD'S UTC per Scope of Work

Comments / Remarks

Saturday delivery

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished by:	Date Time:	Received By:
1	Randy Morgan	12/4/15 1700	2 FedEx 802045947106	3 FX		4 12/5/15 9:30
5	Relinquished by:	Date Time:	6 Received By:	7 Relinquished by:	Date Time:	8 Received By:

Lab Use Only: Custody Seal in Place: Y N Temp Blank Provided: Y N Preserved where Applicable: Y N Total # of Coolers: 1 Cooler Temperature (s) Celsius: 3.2

5.1 5

FA29765: Chain of Custody
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ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION

ACCUTEST'S JOB NUMBER: FA29765 CLIENT: AECOM PROJECT: 60314964

DATE/TIME RECEIVED: 12/5/15 9:30 {MM/DD/YY 24:00} NUMBER OF COOLERS RECEIVED: 1

METHOD OF DELIVERY: (FEDEX) UPS ACCUTEST COURIER DELIVERY OTHER:

AIRBILL NUMBERS: 8020 4594 7106

COOLER INFORMATION

- [ ] CUSTODY SEAL NOT PRESENT OR NOT INTACT
- [ ] CHAIN OF CUSTODY NOT RECEIVED (COC)
- [ ] ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- [ ] SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- [ ] TEMPERATURE CRITERIA NOT MET

TRIP BLANK INFORMATION

- [X] TRIP BLANK PROVIDED
- [ ] TRIP BLANK NOT PROVIDED
- [ ] TRIP BLANK NOT ON COC
- [X] TRIP BLANK INTACT
- [ ] TRIP BLANK NOT INTACT
- [X] RECEIVED WATER TRIP BLANK
- [ ] RECEIVED SOIL TRIP BLANK

MISC. INFORMATION

NUMBER OF ENCORES ? 25-GRAM_____ 5-GRAM_____

NUMBER OF 5035 FIELD KITS ? _____

NUMBER OF LAB FILTERED METALS ? _____

TEST STRIP LOT#s pH 0-3 204413A pH 10-12 219813A OTHER (specify) _____

TEMPERATURE INFORMATION

- [ ] IR THERM ID 1 CORR. FACTOR -0.4
- [ ] OBSERVED TEMPS: 3.6
- [ ] CORRECTED TEMPS: 3.2 (USED FOR LIMS)

SAMPLE INFORMATION

- [ ] INCORRECT NUMBER OF CONTAINERS USED
- [ ] SAMPLE RECEIVED IMPROPERLY PRESERVED
- [ ] INSUFFICIENT VOLUME FOR ANALYSIS
- [ ] DATES/TIMES ON COC DO NOT MATCH SAMPLE LABEL
- [ ] ID'S ON COC DO NOT MATCH LABEL
- [ ] VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- [ ] BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- [ ] NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- [ ] UNCLEAR FILTERING OR COMPOSITING INSTRUCTIONS
- [ ] SAMPLE CONTAINER(S) RECEIVED BROKEN
- [ ] 5035 FIELD KITS NOT RECEIVED WITHIN 48 HOURS
- [ ] BULK VOA SOIL JARS NOT RECEIVED WITHIN 48 HOURS
- [ ] % SOLIDS JAR NOT RECEIVED
- [ ] RESIDUAL CHLORINE PRESENT LOT#_____

{APPLICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS}

SUMMARY OF COMMENTS: _____

TECHNICIAN SIGNATURE/DATE 12/8/15 REVIEWER SIGNATURE/DATE 12-8-15

NF 11/15 receipt confirmation 111015.xls

5.1 5

FA29765: Chain of Custody

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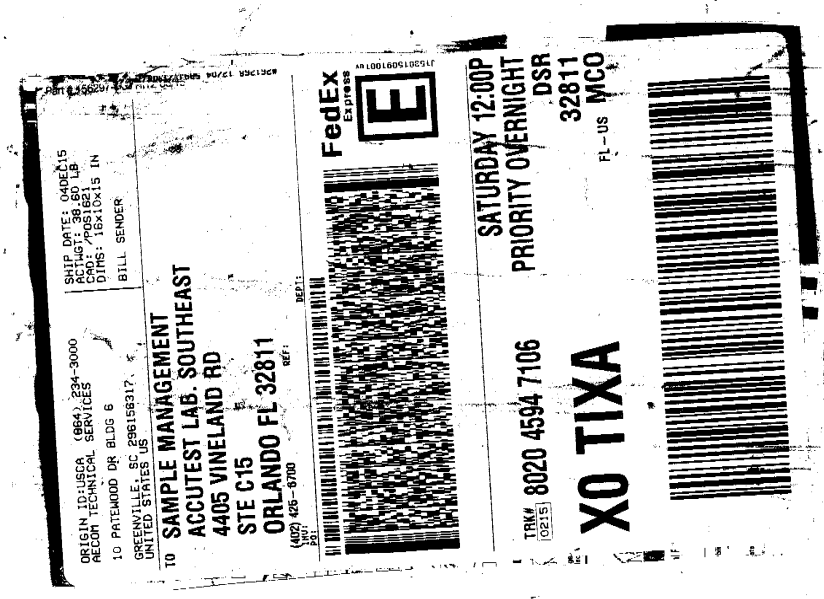

FA29765: Chain of Custody
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Southeast ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VP1393-MB	P37601.D	1	12/09/15	KM	n/a	n/a	VP1393

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29765-1, FA29765-2, FA29765-3, FA29765-4, FA29765-7

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.20	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.32	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	1.2	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.29	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.28	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.20	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.20	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.27	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.21	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.25	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	
74-83-9	Methyl Bromide	ND	2.0	0.50	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.28	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.22	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.33	ug/l	
108-88-3	Toluene	ND	1.0	0.40	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.26	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.31	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.22	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.25	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.51	ug/l	

Method Blank Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VP1393-MB	P37601.D	1	12/09/15	KM	n/a	n/a	VP1393

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29765-1, FA29765-2, FA29765-3, FA29765-4, FA29765-7

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	100%	83-118%
17060-07-0	1,2-Dichloroethane-D4	102%	79-125%
2037-26-5	Toluene-D8	100%	85-112%
460-00-4	4-Bromofluorobenzene	103%	83-118%

Method Blank Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VP1395-MB	P37652.D	1	12/10/15	KM	n/a	n/a	VP1395

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29765-2, FA29765-3, FA29765-5

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.20	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.22	ug/l	
75-25-2	Bromoform	ND	1.0	0.32	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	1.2	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.29	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.28	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.50	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.20	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.20	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.27	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.21	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.25	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	
74-83-9	Methyl Bromide	ND	2.0	0.50	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
100-42-5	Styrene	ND	1.0	0.28	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.22	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.33	ug/l	
108-88-3	Toluene	ND	1.0	0.40	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.26	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.31	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.22	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.25	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.51	ug/l	

Method Blank Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VP1395-MB	P37652.D	1	12/10/15	KM	n/a	n/a	VP1395

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29765-2, FA29765-3, FA29765-5

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	100%	83-118%
17060-07-0	1,2-Dichloroethane-D4	102%	79-125%
2037-26-5	Toluene-D8	99%	85-112%
460-00-4	4-Bromofluorobenzene	103%	83-118%

Leachate Blank Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP58627-LB	N0091098.D	10	12/22/15	RB	12/09/15	OP58627	VN4102

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29765-6

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	10	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	50	12	ug/l	
56-23-5	Carbon Tetrachloride	ND	10	2.8	ug/l	
108-90-7	Chlorobenzene	ND	10	2.0	ug/l	
67-66-3	Chloroform	ND	10	3.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	10	2.5	ug/l	
107-06-2	1,2-Dichloroethane	ND	10	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	10	2.7	ug/l	
127-18-4	Tetrachloroethylene	ND	10	3.3	ug/l	
79-01-6	Trichloroethylene	ND	10	2.2	ug/l	
75-01-4	Vinyl Chloride	ND	10	2.5	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	100%	83-118%
17060-07-0	1,2-Dichloroethane-D4	103%	79-125%
2037-26-5	Toluene-D8	98%	85-112%
460-00-4	4-Bromofluorobenzene	104%	83-118%

Blank Spike Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VP1393-BS	P37600.D	1	12/09/15	KM	n/a	n/a	VP1393

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29765-1, FA29765-2, FA29765-3, FA29765-4, FA29765-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	128	102	50-147
71-43-2	Benzene	25	25.1	100	81-122
75-27-4	Bromodichloromethane	25	26.5	106	79-123
75-25-2	Bromoform	25	23.3	93	66-123
78-93-3	2-Butanone (MEK)	125	116	93	56-143
75-15-0	Carbon Disulfide	25	23.8	95	66-148
56-23-5	Carbon Tetrachloride	25	29.1	116	76-136
108-90-7	Chlorobenzene	25	23.9	96	82-124
75-00-3	Chloroethane	25	27.7	111	62-144
67-66-3	Chloroform	25	25.1	100	80-124
124-48-1	Dibromochloromethane	25	25.9	104	78-122
75-34-3	1,1-Dichloroethane	25	25.8	103	81-122
107-06-2	1,2-Dichloroethane	25	25.2	101	75-125
75-35-4	1,1-Dichloroethylene	25	26.8	107	78-137
156-59-2	cis-1,2-Dichloroethylene	25	24.0	96	78-120
156-60-5	trans-1,2-Dichloroethylene	25	27.3	109	76-127
78-87-5	1,2-Dichloropropane	25	25.3	101	76-124
10061-01-5	cis-1,3-Dichloropropene	25	26.2	105	75-118
10061-02-6	trans-1,3-Dichloropropene	25	26.4	106	80-120
100-41-4	Ethylbenzene	25	24.1	96	81-121
591-78-6	2-Hexanone	125	109	87	61-129
74-83-9	Methyl Bromide	25	31.2	125	59-143
74-87-3	Methyl Chloride	25	28.1	112	50-159
75-09-2	Methylene Chloride	25	25.3	101	69-135
108-10-1	4-Methyl-2-pentanone (MIBK)	125	108	86	66-122
100-42-5	Styrene	25	23.2	93	78-119
79-34-5	1,1,2,2-Tetrachloroethane	25	22.7	91	72-120
127-18-4	Tetrachloroethylene	25	25.5	102	76-135
108-88-3	Toluene	25	24.0	96	80-120
71-55-6	1,1,1-Trichloroethane	25	26.1	104	75-130
79-00-5	1,1,2-Trichloroethane	25	23.4	94	76-119
79-01-6	Trichloroethylene	25	24.9	100	81-126
75-01-4	Vinyl Chloride	25	31.3	125	69-159
1330-20-7	Xylene (total)	75	73.7	98	80-126

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VP1393-BS	P37600.D	1	12/09/15	KM	n/a	n/a	VP1393

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29765-1, FA29765-2, FA29765-3, FA29765-4, FA29765-7

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	100%	83-118%
17060-07-0	1,2-Dichloroethane-D4	102%	79-125%
2037-26-5	Toluene-D8	98%	85-112%
460-00-4	4-Bromofluorobenzene	99%	83-118%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VP1395-BS	P37651.D	1	12/10/15	KM	n/a	n/a	VP1395

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29765-2, FA29765-3, FA29765-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	125	127	102	50-147
71-43-2	Benzene	25	28.0	112	81-122
75-27-4	Bromodichloromethane	25	29.0	116	79-123
75-25-2	Bromoform	25	25.4	102	66-123
78-93-3	2-Butanone (MEK)	125	118	94	56-143
75-15-0	Carbon Disulfide	25	29.3	117	66-148
56-23-5	Carbon Tetrachloride	25	33.2	133	76-136
108-90-7	Chlorobenzene	25	25.9	104	82-124
75-00-3	Chloroethane	25	24.3	97	62-144
67-66-3	Chloroform	25	28.1	112	80-124
124-48-1	Dibromochloromethane	25	28.0	112	78-122
75-34-3	1,1-Dichloroethane	25	29.1	116	81-122
107-06-2	1,2-Dichloroethane	25	27.5	110	75-125
75-35-4	1,1-Dichloroethylene	25	32.1	128	78-137
156-59-2	cis-1,2-Dichloroethylene	25	26.9	108	78-120
156-60-5	trans-1,2-Dichloroethylene	25	31.1	124	76-127
78-87-5	1,2-Dichloropropane	25	27.5	110	76-124
10061-01-5	cis-1,3-Dichloropropene	25	28.8	115	75-118
10061-02-6	trans-1,3-Dichloropropene	25	29.0	116	80-120
100-41-4	Ethylbenzene	25	26.2	105	81-121
591-78-6	2-Hexanone	125	104	83	61-129
74-83-9	Methyl Bromide	25	27.1	108	59-143
74-87-3	Methyl Chloride	25	25.0	100	50-159
75-09-2	Methylene Chloride	25	28.1	112	69-135
108-10-1	4-Methyl-2-pentanone (MIBK)	125	105	84	66-122
100-42-5	Styrene	25	25.4	102	78-119
79-34-5	1,1,2,2-Tetrachloroethane	25	24.1	96	72-120
127-18-4	Tetrachloroethylene	25	27.2	109	76-135
108-88-3	Toluene	25	25.8	103	80-120
71-55-6	1,1,1-Trichloroethane	25	29.3	117	75-130
79-00-5	1,1,2-Trichloroethane	25	25.1	100	76-119
79-01-6	Trichloroethylene	25	28.0	112	81-126
75-01-4	Vinyl Chloride	25	27.5	110	69-159
1330-20-7	Xylene (total)	75	79.2	106	80-126

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VP1395-BS	P37651.D	1	12/10/15	KM	n/a	n/a	VP1395

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29765-2, FA29765-3, FA29765-5

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	103%	83-118%
17060-07-0	1,2-Dichloroethane-D4	102%	79-125%
2037-26-5	Toluene-D8	97%	85-112%
460-00-4	4-Bromofluorobenzene	102%	83-118%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VN4102-BS	N0091097.D	10	12/22/15	RB	n/a	n/a	VN4102

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29765-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	250	284	114	81-122
78-93-3	2-Butanone (MEK)	1250	1070	86	56-143
56-23-5	Carbon Tetrachloride	250	263	105	76-136
108-90-7	Chlorobenzene	250	287	115	82-124
67-66-3	Chloroform	250	279	112	80-124
106-46-7	1,4-Dichlorobenzene	250	286	114	78-120
107-06-2	1,2-Dichloroethane	250	273	109	75-125
75-35-4	1,1-Dichloroethylene	250	296	118	78-137
127-18-4	Tetrachloroethylene	250	288	115	76-135
79-01-6	Trichloroethylene	250	278	111	81-126
75-01-4	Vinyl Chloride	250	235	94	69-159

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	99%	83-118%
17060-07-0	1,2-Dichloroethane-D4	98%	79-125%
2037-26-5	Toluene-D8	100%	85-112%
460-00-4	4-Bromofluorobenzene	99%	83-118%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA29776-2MS	P37622.D	1	12/09/15	KM	n/a	n/a	VP1393
FA29776-2MSD	P37623.D	1	12/09/15	KM	n/a	n/a	VP1393
FA29776-2 [a]	P37617.D	1	12/09/15	KM	n/a	n/a	VP1393

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29765-1, FA29765-2, FA29765-3, FA29765-4, FA29765-7

CAS No.	Compound	FA29776-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		125	156	125	125	123	98	24*	50-147/21
71-43-2	Benzene	0.24	J	25	27.8	110	25	27.6	109	1	81-122/14
75-27-4	Bromodichloromethane	ND		25	28.7	115	25	26.6	106	8	79-123/19
75-25-2	Bromoform	ND		25	23.2	93	25	22.3	89	4	66-123/21
78-93-3	2-Butanone (MEK)	ND		125	122	98	125	131	105	7	56-143/18
75-15-0	Carbon Disulfide	0.72	J	25	28.2	110	25	25.3	98	11	66-148/23
56-23-5	Carbon Tetrachloride	ND		25	30.9	124	25	29.1	116	6	76-136/23
108-90-7	Chlorobenzene	ND		25	25.5	102	25	25.3	101	1	82-124/14
75-00-3	Chloroethane	ND		25	26.4	106	25	22.0	88	18	62-144/20
67-66-3	Chloroform	ND		25	27.7	111	25	27.7	111	0	80-124/15
124-48-1	Dibromochloromethane	ND		25	25.9	104	25	24.5	98	6	78-122/19
75-34-3	1,1-Dichloroethane	ND		25	28.5	114	25	28.7	115	1	81-122/15
107-06-2	1,2-Dichloroethane	13.6		25	40.8	109	25	40.8	109	0	75-125/14
75-35-4	1,1-Dichloroethylene	ND		25	32.4	130	25	33.0	132 [b]	2	78-137/18
156-59-2	cis-1,2-Dichloroethylene	ND		25	27.0	108	25	26.4	106	2	78-120/15
156-60-5	trans-1,2-Dichloroethylene	ND		25	30.4	122	25	30.3	121	0	76-127/17
78-87-5	1,2-Dichloropropane	ND		25	27.7	111	25	27.7	111	0	76-124/14
10061-01-5	cis-1,3-Dichloropropene	ND		25	27.1	108	25	25.2	101	7	75-118/23
10061-02-6	trans-1,3-Dichloropropene	ND		25	27.4	110	25	25.2	101	8	80-120/22
100-41-4	Ethylbenzene	ND		25	26.1	104	25	25.7	103	2	81-121/14
591-78-6	2-Hexanone	ND		125	118	94	125	125	100	6	61-129/18
74-83-9	Methyl Bromide	ND		25	28.2	113	25	27.3	109	3	59-143/19
74-87-3	Methyl Chloride	ND		25	29.4	118	25	28.9	116	2	50-159/19
75-09-2	Methylene Chloride	ND		25	29.1	116	25	29.0	116	0	69-135/16
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		125	119	95	125	126	101	6	66-122/16
100-42-5	Styrene	ND		25	25.2	101	25	25.1	100	0	78-119/23
79-34-5	1,1,2,2-Tetrachloroethane	ND		25	24.5	98	25	24.8	99	1	72-120/14
127-18-4	Tetrachloroethylene	ND		25	26.6	106	25	25.7	103	3	76-135/16
108-88-3	Toluene	ND		25	25.5	102	25	25.5	102	0	80-120/14
71-55-6	1,1,1-Trichloroethane	ND		25	28.2	113	25	27.7	111	2	75-130/16
79-00-5	1,1,2-Trichloroethane	ND		25	24.9	100	25	25.1	100	1	76-119/14
79-01-6	Trichloroethylene	ND		25	27.7	111	25	27.1	108	2	81-126/15
75-01-4	Vinyl Chloride	ND		25	29.9	120	25	29.9	120	0	69-159/18
1330-20-7	Xylene (total)	ND		75	78.3	104	75	77.4	103	1	80-126/15

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA29776-2MS	P37622.D	1	12/09/15	KM	n/a	n/a	VP1393
FA29776-2MSD	P37623.D	1	12/09/15	KM	n/a	n/a	VP1393
FA29776-2 [a]	P37617.D	1	12/09/15	KM	n/a	n/a	VP1393

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29765-1, FA29765-2, FA29765-3, FA29765-4, FA29765-7

CAS No.	Surrogate Recoveries	MS	MSD	FA29776-2	Limits
1868-53-7	Dibromofluoromethane	101%	102%	99%	83-118%
17060-07-0	1,2-Dichloroethane-D4	104%	105%	106%	79-125%
2037-26-5	Toluene-D8	96%	97%	100%	85-112%
460-00-4	4-Bromofluorobenzene	100%	102%	104%	83-118%

(a) Sample was not preserved to a pH < 2.
(b) Outside DOD QSM control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA29677-3MS	P37673.D	1	12/10/15	KM	n/a	n/a	VP1395
FA29677-3MSD	P37674.D	1	12/10/15	KM	n/a	n/a	VP1395
FA29677-3	P37662.D	1	12/10/15	KM	n/a	n/a	VP1395

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29765-2, FA29765-3, FA29765-5

CAS No.	Compound	FA29677-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	25 U		125	126	101	125	130	104	3	50-147/21
71-43-2	Benzene	1.0 U		25	30.0	120	25	28.9	116	4	81-122/14
75-27-4	Bromodichloromethane	1.0 U		25	29.3	117	25	28.0	112	5	79-123/19
75-25-2	Bromoform	1.0 U		25	19.9	80	25	20.9	84	5	66-123/21
78-93-3	2-Butanone (MEK)	5.0 U		125	124	99	125	128	102	3	56-143/18
75-15-0	Carbon Disulfide	2.0 U		25	23.2	93	25	22.4	90	4	66-148/23
56-23-5	Carbon Tetrachloride	1.0 U		25	34.1	136	25	31.6	126	8	76-136/23
108-90-7	Chlorobenzene	1.0 U		25	26.4	106	25	25.6	102	3	82-124/14
75-00-3	Chloroethane	2.0 U		25	25.1	100	25	25.5	102	2	62-144/20
67-66-3	Chloroform	1.0 U		25	29.4	118	25	28.8	115	2	80-124/15
124-48-1	Dibromochloromethane	1.0 U		25	24.5	98	25	24.1	96	2	78-122/19
75-34-3	1,1-Dichloroethane	19.5		25	50.5	124*	25	49.8	121	1	81-122/15
107-06-2	1,2-Dichloroethane	1.0 U		25	30.0	120	25	29.4	118	2	75-125/14
75-35-4	1,1-Dichloroethylene	8.9		25	43.1	137	25	41.6	131	4	78-137/18
156-59-2	cis-1,2-Dichloroethylene	71.8		25	101	117	25	97.8	104	3	78-120/15
156-60-5	trans-1,2-Dichloroethylene	0.87	J	25	33.1	129*	25	32.0	125	3	76-127/17
78-87-5	1,2-Dichloropropane	1.0 U		25	29.4	118	25	28.6	114	3	76-124/14
10061-01-5	cis-1,3-Dichloropropene	1.0 U		25	25.4	102	25	24.2	97	5	75-118/23
10061-02-6	trans-1,3-Dichloropropene	1.0 U		25	25.0	100	25	24.0	96	4	80-120/22
100-41-4	Ethylbenzene	1.0 U		25	26.5	106	25	26.3	105	1	81-121/14
591-78-6	2-Hexanone	10 U		125	124	99	125	125	100	1	61-129/18
74-83-9	Methyl Bromide	2.0 U		25	26.6	106	25	26.0	104	2	59-143/19
74-87-3	Methyl Chloride	2.0 U		25	29.3	117	25	28.5	114	3	50-159/19
75-09-2	Methylene Chloride	5.0 U		25	30.1	120	25	30.1	120	0	69-135/16
108-10-1	4-Methyl-2-pentanone (MIBK)	5.0 U		125	123	98	125	125	100	2	66-122/16
100-42-5	Styrene	1.0 U		25	23.1	92	25	21.4	86	8	78-119/23
79-34-5	1,1,2,2-Tetrachloroethane	1.0 U		25	25.0	100	25	25.4	102	2	72-120/14
127-18-4	Tetrachloroethylene	0.53	J	25	27.5	108	25	26.6	104	3	76-135/16
108-88-3	Toluene	1.0 U		25	26.1	104	25	25.8	103	1	80-120/14
71-55-6	1,1,1-Trichloroethane	1.0 U		25	30.9	124	25	30.2	121	2	75-130/16
79-00-5	1,1,2-Trichloroethane	1.0 U		25	25.5	102	25	25.8	103	1	76-119/14
79-01-6	Trichloroethylene	6.4		25	36.0	118	25	36.2	119	1	81-126/15
75-01-4	Vinyl Chloride	2.3		25	31.0	115	25	29.4	108	5	69-159/18
1330-20-7	Xylene (total)	3.0 U		75	79.9	107	75	78.7	105	2	80-126/15

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA29677-3MS	P37673.D	1	12/10/15	KM	n/a	n/a	VP1395
FA29677-3MSD	P37674.D	1	12/10/15	KM	n/a	n/a	VP1395
FA29677-3	P37662.D	1	12/10/15	KM	n/a	n/a	VP1395

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29765-2, FA29765-3, FA29765-5

CAS No.	Surrogate Recoveries	MS	MSD	FA29677-3	Limits
1868-53-7	Dibromofluoromethane	106%	105%	103%	83-118%
17060-07-0	1,2-Dichloroethane-D4	109%	107%	104%	79-125%
2037-26-5	Toluene-D8	96%	96%	97%	85-112%
460-00-4	4-Bromofluorobenzene	102%	102%	104%	83-118%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA29765-6MS	N0091118.D	10	12/22/15	RB	n/a	n/a	VN4102
FA29765-6MSD	N0091119.D	10	12/22/15	RB	n/a	n/a	VN4102
FA29765-6	N0091109.D	10	12/22/15	RB	12/09/15	OP58627	VN4102

The QC reported here applies to the following samples: **Method:** SW846 8260B

FA29765-6

CAS No.	Compound	FA29765-6 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		250	299	120	250	271	108	10	81-122/14
78-93-3	2-Butanone (MEK)	ND		1250	1240	99	1250	1230	98	1	56-143/18
56-23-5	Carbon Tetrachloride	ND		250	271	108	250	237	95	13	76-136/23
108-90-7	Chlorobenzene	ND		250	302	121	250	281	112	7	82-124/14
67-66-3	Chloroform	ND		250	290	116	250	267	107	8	80-124/15
106-46-7	1,4-Dichlorobenzene	ND		250	295	118	250	279	112	6	78-120/15
107-06-2	1,2-Dichloroethane	ND		250	305	122	250	290	116	5	75-125/14
75-35-4	1,1-Dichloroethylene	ND		250	365	146*	250	313	125	15	78-137/18
127-18-4	Tetrachloroethylene	ND		250	292	117	250	264	106	10	76-135/16
79-01-6	Trichloroethylene	ND		250	302	121	250	267	107	12	81-126/15
75-01-4	Vinyl Chloride	ND		250	269	108	250	234	94	14	69-159/18

CAS No.	Surrogate Recoveries	MS	MSD	FA29765-6	Limits
1868-53-7	Dibromofluoromethane	98%	100%	99%	83-118%
17060-07-0	1,2-Dichloroethane-D4	104%	104%	106%	79-125%
2037-26-5	Toluene-D8	97%	97%	99%	85-112%
460-00-4	4-Bromofluorobenzene	91%	95%	100%	83-118%

* = Outside of Control Limits.

Southeast ACCUTEST LABORATORIES

GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP58654-MB	U053439.D	1	12/14/15	MV	12/11/15	OP58654	SU2416

The QC reported here applies to the following samples: **Method:** SW846 8270D

FA29765-5

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	50	10	ug/l	
59-50-7	4-Chloro-3-methyl Phenol	ND	5.0	0.50	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.50	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	0.50	ug/l	
105-67-9	2,4-Dimethylphenol	ND	5.0	0.50	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	5.0	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	2.1	ug/l	
95-48-7	2-Methylphenol	ND	5.0	0.50	ug/l	
	3&4-Methylphenol	ND	5.0	1.0	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	0.88	ug/l	
100-02-7	4-Nitrophenol	ND	25	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	25	5.0	ug/l	
108-95-2	Phenol	ND	5.0	0.50	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	0.68	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	0.63	ug/l	
83-32-9	Acenaphthene	ND	5.0	0.50	ug/l	
208-96-8	Acenaphthylene	ND	5.0	0.50	ug/l	
120-12-7	Anthracene	ND	5.0	0.50	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	0.50	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	0.50	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	0.58	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	0.66	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	0.68	ug/l	
100-51-6	Benzyl Alcohol	ND	5.0	0.85	ug/l	
101-55-3	4-Bromophenyl Phenyl Ether	ND	5.0	0.64	ug/l	
85-68-7	Butyl Benzyl Phthalate	ND	5.0	1.0	ug/l	
86-74-8	Carbazole	ND	5.0	0.50	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	0.50	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.63	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.69	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.50	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.50	ug/l	
7005-72-3	4-Chlorophenyl Phenyl Ether	ND	5.0	0.57	ug/l	
218-01-9	Chrysene	ND	5.0	0.51	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	0.68	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.50	ug/l	

Method Blank Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP58654-MB	U053439.D	1	12/14/15	MV	12/11/15	OP58654	SU2416

The QC reported here applies to the following samples: **Method:** SW846 8270D

FA29765-5

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	1,2-Dichlorobenzene	ND	5.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	5.0	0.63	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	5.0	0.65	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.52	ug/l	
84-66-2	Diethyl Phthalate	ND	5.0	1.4	ug/l	
131-11-3	Dimethyl Phthalate	ND	5.0	1.0	ug/l	
84-74-2	Di-n-butyl Phthalate	ND	5.0	1.0	ug/l	
117-84-0	Di-n-octyl Phthalate	ND	5.0	1.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	0.58	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	0.69	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	1.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	0.50	ug/l	
86-73-7	Fluorene	ND	5.0	0.50	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.63	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.60	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	5.0	1.0	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.68	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	0.63	ug/l	
78-59-1	Isophorone	ND	5.0	0.51	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	0.50	ug/l	
91-20-3	Naphthalene	ND	5.0	0.50	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	0.50	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	0.53	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	0.99	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.52	ug/l	
621-64-7	N-Nitrosodi-n-propylamine	ND	5.0	0.58	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.59	ug/l	
85-01-8	Phenanthrene	ND	5.0	0.51	ug/l	
129-00-0	Pyrene	ND	5.0	0.55	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.50	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	44%	14-67%
4165-62-2	Phenol-d5	30%	10-50%

Method Blank Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP58654-MB	U053439.D	1	12/14/15	MV	12/11/15	OP58654	SU2416

The QC reported here applies to the following samples: **Method:** SW846 8270D

FA29765-5

CAS No.	Surrogate Recoveries		Limits
118-79-6	2,4,6-Tribromophenol	61%	33-118%
4165-60-0	Nitrobenzene-d5	64%	42-108%
321-60-8	2-Fluorobiphenyl	62%	40-106%
1718-51-0	Terphenyl-d14	83%	39-121%

Leachate Blank Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP58696-LB	X043944.D	1	12/15/15	MV	12/15/15	OP58696	SX1976

The QC reported here applies to the following samples: **Method:** SW846 8270D

FA29765-6

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	50	5.0	ug/l	
	3&4-Methylphenol	ND	50	10	ug/l	
87-86-5	Pentachlorophenol	ND	250	50	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	50	6.8	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	50	6.3	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	50	6.5	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	50	5.8	ug/l	
118-74-1	Hexachlorobenzene	ND	50	6.3	ug/l	
87-68-3	Hexachlorobutadiene	ND	50	6.0	ug/l	
67-72-1	Hexachloroethane	ND	50	6.8	ug/l	
98-95-3	Nitrobenzene	ND	50	5.2	ug/l	
110-86-1	Pyridine	ND	100	20	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	43%	14-67%
4165-62-2	Phenol-d5	29%	10-50%
118-79-6	2,4,6-Tribromophenol	80%	33-118%
4165-60-0	Nitrobenzene-d5	73%	42-108%
321-60-8	2-Fluorobiphenyl	73%	40-106%
1718-51-0	Terphenyl-d14	100%	39-121%

Blank Spike Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP58654-BS	U053438.D	1	12/14/15	MV	12/11/15	OP58654	SU2416

The QC reported here applies to the following samples: **Method:** SW846 8270D

FA29765-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
65-85-0	Benzoic Acid	100	17.9	18	10-69
59-50-7	4-Chloro-3-methyl Phenol	50	34.6	69	54-103
95-57-8	2-Chlorophenol	50	31.9	64	52-98
120-83-2	2,4-Dichlorophenol	50	37.0	74	53-103
105-67-9	2,4-Dimethylphenol	50	31.5	63	43-90
51-28-5	2,4-Dinitrophenol	100	67.5	68	44-112
534-52-1	4,6-Dinitro-o-cresol	100	78.4	78	66-121
95-48-7	2-Methylphenol	50	25.9	52	43-90
	3&4-Methylphenol	100	51.2	51	36-88
88-75-5	2-Nitrophenol	50	35.0	70	53-102
100-02-7	4-Nitrophenol	100	33.1	33	18-62
87-86-5	Pentachlorophenol	100	83.0	83	61-115
108-95-2	Phenol	50	15.3	31	19-56
95-95-4	2,4,5-Trichlorophenol	50	39.3	79	62-109
88-06-2	2,4,6-Trichlorophenol	50	38.8	78	59-107
83-32-9	Acenaphthene	50	44.3	89	61-107
208-96-8	Acenaphthylene	50	38.7	77	60-104
120-12-7	Anthracene	50	44.6	89	65-108
56-55-3	Benzo(a)anthracene	50	46.7	93	66-111
50-32-8	Benzo(a)pyrene	50	44.4	89	62-107
205-99-2	Benzo(b)fluoranthene	50	45.2	90	65-114
191-24-2	Benzo(g,h,i)perylene	50	47.9	96	66-116
207-08-9	Benzo(k)fluoranthene	50	45.9	92	65-114
100-51-6	Benzyl Alcohol	50	26.1	52	46-94
101-55-3	4-Bromophenyl Phenyl Ether	50	40.3	81	65-109
85-68-7	Butyl Benzyl Phthalate	50	41.6	83	65-112
86-74-8	Carbazole	50	38.4	77	59-113
106-47-8	4-Chloroaniline	50	34.6	69	49-105
111-91-1	bis(2-Chloroethoxy)methane	50	36.6	73	51-102
111-44-4	bis(2-Chloroethyl)ether	50	33.6	67	53-100
108-60-1	bis(2-Chloroisopropyl)ether	50	38.5	77	45-106
91-58-7	2-Chloronaphthalene	50	39.0	78	57-103
7005-72-3	4-Chlorophenyl Phenyl Ether	50	36.0	72	62-105
218-01-9	Chrysene	50	48.8	98	66-111
53-70-3	Dibenzo(a,h)anthracene	50	45.4	91	66-119
132-64-9	Dibenzofuran	50	37.9	76	61-106

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP58654-BS	U053438.D	1	12/14/15	MV	12/11/15	OP58654	SU2416

The QC reported here applies to the following samples: **Method:** SW846 8270D

FA29765-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
95-50-1	1,2-Dichlorobenzene	50	32.8	66	48-97
541-73-1	1,3-Dichlorobenzene	50	33.0	66	45-95
106-46-7	1,4-Dichlorobenzene	50	33.3	67	45-98
91-94-1	3,3'-Dichlorobenzidine	50	38.6	77	46-117
84-66-2	Diethyl Phthalate	50	37.0	74	64-108
131-11-3	Dimethyl Phthalate	50	36.6	73	63-106
84-74-2	Di-n-butyl Phthalate	50	38.8	78	65-107
117-84-0	Di-n-octyl Phthalate	50	38.7	77	62-118
121-14-2	2,4-Dinitrotoluene	50	37.4	75	61-110
606-20-2	2,6-Dinitrotoluene	50	34.6	69	63-108
117-81-7	bis(2-Ethylhexyl)phthalate	50	41.7	83	61-117
206-44-0	Fluoranthene	50	36.9	74	63-106
86-73-7	Fluorene	50	42.8	86	62-108
118-74-1	Hexachlorobenzene	50	36.6	73	63-108
87-68-3	Hexachlorobutadiene	50	38.2	76	42-102
77-47-4	Hexachlorocyclopentadiene	50	39.9	80	39-102
67-72-1	Hexachloroethane	50	33.3	67	42-100
193-39-5	Indeno(1,2,3-cd)pyrene	50	47.7	95	64-119
78-59-1	Isophorone	50	35.5	71	43-87
91-57-6	2-Methylnaphthalene	50	35.5	71	51-102
91-20-3	Naphthalene	50	37.8	76	47-100
88-74-4	2-Nitroaniline	50	51.0	102	54-128
99-09-2	3-Nitroaniline	50	32.6	65	56-106
100-01-6	4-Nitroaniline	50	35.5	71	55-120
98-95-3	Nitrobenzene	50	38.2	76	50-104
621-64-7	N-Nitrosodi-n-propylamine	50	35.1	70	52-104
86-30-6	N-Nitrosodiphenylamine	50	40.0	80	64-108
85-01-8	Phenanthrene	50	44.2	88	66-110
129-00-0	Pyrene	50	49.8	100	64-113
120-82-1	1,2,4-Trichlorobenzene	50	36.1	72	45-97

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	41%	14-67%
4165-62-2	Phenol-d5	25%	10-50%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP58654-BS	U053438.D	1	12/14/15	MV	12/11/15	OP58654	SU2416

The QC reported here applies to the following samples: **Method:** SW846 8270D

FA29765-5

CAS No.	Surrogate Recoveries	BSP	Limits
118-79-6	2,4,6-Tribromophenol	77%	33-118%
4165-60-0	Nitrobenzene-d5	73%	42-108%
321-60-8	2-Fluorobiphenyl	75%	40-106%
1718-51-0	Terphenyl-d14	90%	39-121%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP58696-LBS	X043943.D	1	12/15/15	MV	12/15/15	OP58696	SX1976

The QC reported here applies to the following samples: **Method:** SW846 8270D

FA29765-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
95-48-7	2-Methylphenol	500	324	65	43-90
	3&4-Methylphenol	1000	598	60	36-88
87-86-5	Pentachlorophenol	1000	861	86	61-115
95-95-4	2,4,5-Trichlorophenol	500	440	88	62-109
88-06-2	2,4,6-Trichlorophenol	500	420	84	59-107
106-46-7	1,4-Dichlorobenzene	500	356	71	45-98
121-14-2	2,4-Dinitrotoluene	500	427	85	61-110
118-74-1	Hexachlorobenzene	500	409	82	63-108
87-68-3	Hexachlorobutadiene	500	386	77	42-102
67-72-1	Hexachloroethane	500	352	70	42-100
98-95-3	Nitrobenzene	500	403	81	50-104
110-86-1	Pyridine	500	147	29	23-74

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	45%	14-67%
4165-62-2	Phenol-d5	30%	10-50%
118-79-6	2,4,6-Tribromophenol	82%	33-118%
4165-60-0	Nitrobenzene-d5	78%	42-108%
321-60-8	2-Fluorobiphenyl	78%	40-106%
1718-51-0	Terphenyl-d14	88%	39-121%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP58654-MS	U053446.D	1	12/14/15	MV	12/11/15	OP58654	SU2416
OP58654-MSD	U053447.D	1	12/14/15	MV	12/11/15	OP58654	SU2416
FA29841-3	U053445.D	1	12/14/15	MV	12/11/15	OP58654	SU2416

The QC reported here applies to the following samples: **Method:** SW846 8270D

FA29765-5

CAS No.	Compound	FA29841-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic Acid	48	U	192	118	61	192	92.8	48	24	10-69/39
59-50-7	4-Chloro-3-methyl Phenol	4.8	U	96.2	84.7	88	96.2	68.8	72	21	54-103/23
95-57-8	2-Chlorophenol	4.8	U	96.2	75.2	78	96.2	58.6	61	25	52-98/25
120-83-2	2,4-Dichlorophenol	4.8	U	96.2	85.6	89	96.2	63.3	66	30*	53-103/26
105-67-9	2,4-Dimethylphenol	4.8	U	96.2	78.2	81	96.2	60.0	62	26	43-90/27
51-28-5	2,4-Dinitrophenol	24	U	192	159	83	192	144	75	10	44-112/25
534-52-1	4,6-Dinitro-o-cresol	9.5	U	192	181	94	192	153	80	17	66-121/23
95-48-7	2-Methylphenol	4.8	U	96.2	72.2	75	96.2	55.5	58	26	43-90/28
	3&4-Methylphenol	4.8	U	192	149	77	192	116	60	25	36-88/28
88-75-5	2-Nitrophenol	4.8	U	96.2	82.6	86	96.2	61.8	64	29	53-102/29
100-02-7	4-Nitrophenol	24	U	192	128	67*	192	106	55	19	18-62/33
87-86-5	Pentachlorophenol	24	U	192	184	96	192	158	82	15	61-115/26
108-95-2	Phenol	4.8	U	96.2	57.8	60*	96.2	42.1	44	31	19-56/35
95-95-4	2,4,5-Trichlorophenol	4.8	U	96.2	89.3	93	96.2	69.9	73	24*	62-109/22
88-06-2	2,4,6-Trichlorophenol	4.8	U	96.2	87.8	91	96.2	67.9	71	26*	59-107/23
83-32-9	Acenaphthene	4.8	U	96.2	99.2	103	96.2	78.4	82	23*	61-107/22
208-96-8	Acenaphthylene	4.8	U	96.2	87.4	91	96.2	69.9	73	22	60-104/22
120-12-7	Anthracene	4.8	U	96.2	100	104	96.2	82.0	85	20	65-108/20
56-55-3	Benzo(a)anthracene	4.8	U	96.2	103	107	96.2	84.8	88	19	66-111/22
50-32-8	Benzo(a)pyrene	4.8	U	96.2	101	105	96.2	82.2	85	21	62-107/23
205-99-2	Benzo(b)fluoranthene	4.8	U	96.2	102	106	96.2	85.3	89	18	65-114/23
191-24-2	Benzo(g,h,i)perylene	4.8	U	96.2	111	115	96.2	90.0	94	21	66-116/23
207-08-9	Benzo(k)fluoranthene	4.8	U	96.2	102	106	96.2	85.2	89	18	65-114/24
100-51-6	Benzyl Alcohol	4.8	U	96.2	75.5	79	96.2	57.0	59	28*	46-94/27
101-55-3	4-Bromophenyl Phenyl Ether	4.8	U	96.2	91.8	95	96.2	73.5	76	22	65-109/23
85-68-7	Butyl Benzyl Phthalate	4.8	U	96.2	94.2	98	96.2	74.6	78	23	65-112/24
86-74-8	Carbazole	4.8	U	96.2	87.8	91	96.2	73.0	76	18	59-113/21
106-47-8	4-Chloroaniline	4.8	U	96.2	62.8	65	96.2	53.5	56	16	49-105/27
111-91-1	bis(2-Chloroethoxy)methane	4.8	U	96.2	85.6	89	96.2	63.9	66	29*	51-102/28
111-44-4	bis(2-Chloroethyl)ether	4.8	U	96.2	77.4	80	96.2	60.1	63	25	53-100/27
108-60-1	bis(2-Chloroisopropyl)ether	4.8	U	96.2	91.3	95	96.2	70.9	74	25	45-106/26
91-58-7	2-Chloronaphthalene	4.8	U	96.2	87.9	91	96.2	66.2	69	28*	57-103/23
7005-72-3	4-Chlorophenyl Phenyl Ether	4.8	U	96.2	83.6	87	96.2	66.1	69	23*	62-105/20
218-01-9	Chrysene	4.8	U	96.2	109	113*	96.2	89.0	93	20	66-111/22
53-70-3	Dibenzo(a,h)anthracene	4.8	U	96.2	109	113	96.2	86.0	89	24	66-119/24
132-64-9	Dibenzofuran	4.8	U	96.2	88.9	92	96.2	70.1	73	24*	61-106/21

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP58654-MS	U053446.D	1	12/14/15	MV	12/11/15	OP58654	SU2416
OP58654-MSD	U053447.D	1	12/14/15	MV	12/11/15	OP58654	SU2416
FA29841-3	U053445.D	1	12/14/15	MV	12/11/15	OP58654	SU2416

The QC reported here applies to the following samples: **Method:** SW846 8270D

FA29765-5

CAS No.	Compound	FA29841-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
95-50-1	1,2-Dichlorobenzene	4.8 U		96.2	76.7	80	96.2	60.7	63	23	48-97/24
541-73-1	1,3-Dichlorobenzene	4.8 U		96.2	77.4	80	96.2	59.8	62	26*	45-95/25
106-46-7	1,4-Dichlorobenzene	4.8 U		96.2	79.4	83	96.2	61.0	63	26*	45-98/25
91-94-1	3,3'-Dichlorobenzidine	4.8 U		96.2	43.7	45*	96.2	35.3	37*	21	46-117/29
84-66-2	Diethyl Phthalate	4.8 U		96.2	86.0	89	96.2	70.2	73	20	64-108/21
131-11-3	Dimethyl Phthalate	4.8 U		96.2	84.7	88	96.2	67.3	70	23*	63-106/22
84-74-2	Di-n-butyl Phthalate	4.8 U		96.2	89.9	93	96.2	73.0	76	21	65-107/21
117-84-0	Di-n-octyl Phthalate	4.8 U		96.2	87.9	91	96.2	71.2	74	21	62-118/24
121-14-2	2,4-Dinitrotoluene	4.8 U		96.2	88.4	92	96.2	70.9	74	22*	61-110/21
606-20-2	2,6-Dinitrotoluene	4.8 U		96.2	84.0	87	96.2	70.2	73	18	63-108/21
117-81-7	bis(2-Ethylhexyl)phthalate	4.8 U		96.2	93.6	97	96.2	76.3	79	20	61-117/23
206-44-0	Fluoranthene	4.8 U		96.2	84.8	88	96.2	71.5	74	17	63-106/21
86-73-7	Fluorene	4.8 U		96.2	98.7	103	96.2	79.9	83	21*	62-108/20
118-74-1	Hexachlorobenzene	4.8 U		96.2	85.1	89	96.2	68.1	71	22	63-108/22
87-68-3	Hexachlorobutadiene	4.8 U		96.2	87.7	91	96.2	63.9	66	31*	42-102/28
77-47-4	Hexachlorocyclopentadiene	4.8 U		96.2	79.7	83	96.2	54.5	57	38*	39-102/29
67-72-1	Hexachloroethane	4.8 U		96.2	79.3	82	96.2	60.7	63	27	42-100/29
193-39-5	Indeno(1,2,3-cd)pyrene	4.8 U		96.2	108	112	96.2	90.6	94	18	64-119/24
78-59-1	Isophorone	4.8 U		96.2	84.1	87	96.2	64.3	67	27*	43-87/25
91-57-6	2-Methylnaphthalene	4.8 U		96.2	84.3	88	96.2	63.8	66	28*	51-102/26
91-20-3	Naphthalene	4.8 U		96.2	86.8	90	96.2	66.1	69	27	47-100/29
88-74-4	2-Nitroaniline	4.8 U		96.2	94.0	98	96.2	79.0	82	17	54-128/24
99-09-2	3-Nitroaniline	4.8 U		96.2	59.2	62	96.2	52.8	55*	11	56-106/27
100-01-6	4-Nitroaniline	4.8 U		96.2	76.5	80	96.2	68.4	71	11	55-120/24
98-95-3	Nitrobenzene	4.8 U		96.2	84.7	88	96.2	66.5	69	24	50-104/28
621-64-7	N-Nitrosodi-n-propylamine	4.8 U		96.2	85.2	89	96.2	69.1	72	21	52-104/25
86-30-6	N-Nitrosodiphenylamine	4.8 U		96.2	90.3	94	96.2	72.4	75	22	64-108/23
85-01-8	Phenanthrene	4.8 U		96.2	100	104	96.2	82.6	86	19	66-110/21
129-00-0	Pyrene	4.8 U		96.2	106	110	96.2	87.4	91	19	64-113/23
120-82-1	1,2,4-Trichlorobenzene	4.8 U		96.2	83.5	87	96.2	61.4	64	31*	45-97/28

CAS No.	Surrogate Recoveries	MS	MSD	FA29841-3	Limits
367-12-4	2-Fluorophenol	67%	49%	37%	14-67%
4165-62-2	Phenol-d5	52%* [a]	37%	23%	10-50%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP58654-MS	U053446.D	1	12/14/15	MV	12/11/15	OP58654	SU2416
OP58654-MSD	U053447.D	1	12/14/15	MV	12/11/15	OP58654	SU2416
FA29841-3	U053445.D	1	12/14/15	MV	12/11/15	OP58654	SU2416

The QC reported here applies to the following samples: **Method:** SW846 8270D

FA29765-5

CAS No.	Surrogate Recoveries	MS	MSD	FA29841-3	Limits
118-79-6	2,4,6-Tribromophenol	93%	71%	79%	33-118%
4165-60-0	Nitrobenzene-d5	85%	66%		42-108%
321-60-8	2-Fluorobiphenyl	86%	66%		40-106%
1718-51-0	Terphenyl-d14	102%	83%		39-121%

(a) Outside control limits. Sample was ND.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP58696-MS	X043946.D	1	12/15/15	MV	12/15/15	OP58696	SX1976
OP58696-MSD	X043947.D	1	12/15/15	MV	12/15/15	OP58696	SX1976
FA29695-1	X043945.D	1	12/15/15	MV	12/15/15	OP58696	SX1976

The QC reported here applies to the following samples: **Method:** SW846 8270D

FA29765-6

CAS No.	Compound	FA29695-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
95-48-7	2-Methylphenol	ND		500	278	56	500	309	62	11	43-90/28
	3&4-Methylphenol	ND		1000	501	50	1000	559	56	11	36-88/28
87-86-5	Pentachlorophenol	ND		1000	764	76	1000	853	85	11	61-115/26
95-95-4	2,4,5-Trichlorophenol	ND		500	386	77	500	440	88	13	62-109/22
88-06-2	2,4,6-Trichlorophenol	ND		500	371	74	500	420	84	12	59-107/23
106-46-7	1,4-Dichlorobenzene	ND		500	309	62	500	317	63	3	45-98/25
121-14-2	2,4-Dinitrotoluene	ND		500	388	78	500	432	86	11	61-110/21
118-74-1	Hexachlorobenzene	ND		500	372	74	500	408	82	9	63-108/22
87-68-3	Hexachlorobutadiene	ND		500	340	68	500	355	71	4	42-102/28
67-72-1	Hexachloroethane	ND		500	304	61	500	306	61	1	42-100/29
98-95-3	Nitrobenzene	ND		500	364	73	500	381	76	5	50-104/28
110-86-1	Pyridine	ND		500	185	37	500	135	27	31	23-74/34

CAS No.	Surrogate Recoveries	MS	MSD	FA29695-1	Limits
367-12-4	2-Fluorophenol	37%	39%	38%	14-67%
4165-62-2	Phenol-d5	26%	28%	26%	10-50%
118-79-6	2,4,6-Tribromophenol	73%	82%	69%	33-118%
4165-60-0	Nitrobenzene-d5	70%	73%	67%	42-108%
321-60-8	2-Fluorobiphenyl	71%	78%	65%	40-106%
1718-51-0	Terphenyl-d14	81%	87%	90%	39-121%

* = Outside of Control Limits.

Leachate Spike Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP58696-LS	X043975.D	1	12/16/15	MV	12/15/15	OP58696	SX1976
FA29902-6	X043974.D	1	12/16/15	MV	12/15/15	OP58696	SX1976

The QC reported here applies to the following samples: **Method:** SW846 8270D

FA29765-6

CAS No.	Compound	FA29902-6 ug/l	Q	Spike ug/l	LS ug/l	LS %	Limits
95-48-7	2-Methylphenol	50 U		500	310	62	43-90
	3&4-Methylphenol	50 U		1000	562	56	36-88
87-86-5	Pentachlorophenol	250 U		1000	767	77	61-115
95-95-4	2,4,5-Trichlorophenol	50 U		500	384	77	62-109
88-06-2	2,4,6-Trichlorophenol	50 U		500	373	75	59-107
106-46-7	1,4-Dichlorobenzene	50 U		500	340	68	45-98
121-14-2	2,4-Dinitrotoluene	50 U		500	389	78	61-110
118-74-1	Hexachlorobenzene	50 U		500	367	73	63-108
87-68-3	Hexachlorobutadiene	50 U		500	340	68	42-102
67-72-1	Hexachloroethane	50 U		500	338	68	42-100
98-95-3	Nitrobenzene	50 U		500	383	77	50-104
110-86-1	Pyridine	100 U		500	188	38	23-74

CAS No.	Surrogate Recoveries	LS	FA29902-6	Limits
367-12-4	2-Fluorophenol	42%	38%	14-67%
4165-62-2	Phenol-d5	30%	27%	10-50%
118-79-6	2,4,6-Tribromophenol	73%	76%	33-118%
4165-60-0	Nitrobenzene-d5	72%	66%	42-108%
321-60-8	2-Fluorobiphenyl	72%	67%	40-106%
1718-51-0	Terphenyl-d14	79%	89%	39-121%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA29765
Account: UTC United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP58696-DUP	X043951.D	1	12/16/15	MV	12/15/15	OP58696	SX1976
FA29765-6	X043950.D	1	12/16/15	MV	12/15/15	OP58696	SX1976

The QC reported here applies to the following samples: **Method:** SW846 8270D

FA29765-6

CAS No.	Compound	FA29765-6 ug/l	Q	DUP ug/l	Q	RPD	Limits
95-48-7	2-Methylphenol	ND		ND		nc	28
	3&4-Methylphenol	ND		ND		nc	28
87-86-5	Pentachlorophenol	ND		ND		nc	26
95-95-4	2,4,5-Trichlorophenol	ND		ND		nc	22
88-06-2	2,4,6-Trichlorophenol	ND		ND		nc	23
106-46-7	1,4-Dichlorobenzene	ND		ND		nc	25
121-14-2	2,4-Dinitrotoluene	ND		ND		nc	21
118-74-1	Hexachlorobenzene	ND		ND		nc	22
87-68-3	Hexachlorobutadiene	ND		ND		nc	28
67-72-1	Hexachloroethane	ND		ND		nc	29
98-95-3	Nitrobenzene	ND		ND		nc	28
110-86-1	Pyridine	ND		ND		nc	34

CAS No.	Surrogate Recoveries	DUP	FA29765-6	Limits
367-12-4	2-Fluorophenol	41%	44%	14-67%
4165-62-2	Phenol-d5	30%	29%	10-50%
118-79-6	2,4,6-Tribromophenol	73%	79%	33-118%
4165-60-0	Nitrobenzene-d5	71%	78%	42-108%
321-60-8	2-Fluorobiphenyl	67%	74%	40-106%
1718-51-0	Terphenyl-d14	94%	101%	39-121%

* = Outside of Control Limits.

Southeast ACCUTEST LABORATORIES

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: FA29765
Account: UTC - United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

QC Batch ID: MP29747 Methods: SW846 7470A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 12/09/15

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.50	.03	.03	-0.033	<0.50

Associated samples MP29747: FA29765-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA29765
Account: UTC - United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

QC Batch ID: MP29747
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 12/09/15 12/09/15

Metal	FA29760-17F Original	DUP	RPD	QC Limits	FA29760-17F Original	MS	Spikelot HGFLWS1	% Rec	QC Limits
Mercury	0.0	0.0	NC	0-20	0.0	2.5	3	83.3	80-120

Associated samples MP29747: FA29765-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA29765
Account: UTC - United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

QC Batch ID: MP29747 Methods: SW846 7470A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 12/09/15

Metal	FA29760-17F Original	MSD	Spikelot HGFLWS1	% Rec	MSD RPD	QC Limit
Mercury	0.0	2.5	3	83.3	0.0	20

Associated samples MP29747: FA29765-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: FA29765
Account: UTC - United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

QC Batch ID: MP29747
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 12/09/15

Metal	BSP Result	Spikelot HGFLWS1	% Rec	QC Limits
Mercury	3.0	3	100.0	80-120

Associated samples MP29747: FA29765-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: FA29765
Account: UTC - United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

QC Batch ID: MP29747
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 12/09/15

Metal	FA29760-17F Original	SDL 1:5	%DIF	QC Limits
Mercury	0.00	0.00	NC	0-10

Associated samples MP29747: FA29765-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: FA29765
Account: UTC - United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

QC Batch ID: MP29758 Methods: SW846 7470A
Matrix Type: LEACHATE Units: mg/l

Prep Date:				12/11/15		12/11/15		12/11/15	
Metal	RL	IDL	MDL	MB raw	final	MB raw	final	MB raw	final
Mercury	0.00050	.00003	.00005	0.000029	<0.00050	-0.000043	<0.0050	-0.00010	<0.0050

Associated samples MP29758: FA29765-6

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: FA29765
Account: UTC - United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

QC Batch ID: MP29758 Methods: SW846 7470A
Matrix Type: LEACHATE Units: mg/l

Prep Date: 12/11/15

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.00050	.00003	.00005	0.000045	<0.0050

Associated samples MP29758: FA29765-6

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA29765
Account: UTC - United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

QC Batch ID: MP29758 Methods: SW846 7470A
Matrix Type: LEACHATE Units: mg/l

Prep Date: 12/11/15

Metal	FA29696-1 Original	MS	Spikelot HGFLWS1	% Rec	QC Limits
Mercury	0.0	0.030	0.030	100.0	80-120

Associated samples MP29758: FA29765-6

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA29765
Account: UTC - United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

QC Batch ID: MP29758
Matrix Type: LEACHATE

Methods: SW846 7470A
Units: mg/l

Prep Date:					12/11/15				12/11/15	
Metal	FA29696-1 Original	MSD	Spikelot HGFLWS1	% Rec	MSD RPD	QC Limit	FA29765-6 Original	DUP	RPD	QC Limits
Mercury	0.0	0.030	0.030	100.0	0.0	20	0.0	0.0	NC	0-20

Associated samples MP29758: FA29765-6

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: FA29765
Account: UTC - United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

QC Batch ID: MP29758
Matrix Type: LEACHATE

Methods: SW846 7470A
Units: mg/l

Prep Date:			12/11/15				12/11/15	
Metal	BSP Result	Spikelot HGFLWS1	% Rec	QC Limits	BSP Result	Spikelot HGFLWS1	% Rec	QC Limits
Mercury	0.0030	0.0030	100.0	80-120	0.031	0.030	103.3	80-120

Associated samples MP29758: FA29765-6

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

8.2.3

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SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: FA29765
Account: UTC - United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

QC Batch ID: MP29758
Matrix Type: LEACHATE

Methods: SW846 7470A
Units: mg/l

Prep Date:		12/11/15				12/11/15	
Metal	BSP Result	Spikelot HGFLWS1	% Rec	QC Limits	BSP Result	Spikelot HGFLWS1	% Rec	QC Limits
Mercury	0.030	0.030	100.0	80-120	0.029	0.030	96.7	80-120

Associated samples MP29758: FA29765-6

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: FA29765
Account: UTC - United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

QC Batch ID: MP29758
Matrix Type: LEACHATE

Methods: SW846 7470A
Units: ug/l

Prep Date: 12/11/15

Metal	FA29696-1 Original	SDL 1:5	%DIF	QC Limits
Mercury	0.00	0.00	NC	0-10

Associated samples MP29758: FA29765-6

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: FA29765
Account: UTC - United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

QC Batch ID: MP29771
Matrix Type: LEACHATE

Methods: SW846 6010C
Units: mg/l

Prep Date:					12/15/15		12/15/15		12/15/15
Metal	RL	IDL	MDL	MB raw	final	MB raw	final	MB raw	final
Aluminum	0.20	.014	.014						
Antimony	0.0060	.001	.001						
Arsenic	0.010	.0013	.0013	-0.0016	<0.010	-0.014	<0.10	-0.014	<0.10
Barium	0.20	.001	.005	-0.00030	<0.20	0.0010	<2.0	0.0030	<2.0
Beryllium	0.0040	.0002	.0002						
Cadmium	0.0050	.0002	.0002	-0.00010	<0.0050	-0.0010	<0.050	-0.0010	<0.050
Calcium	1.0	.05	.05						
Chromium	0.010	.001	.001	0.0	<0.010	-0.0020	<0.10	-0.0010	<0.10
Cobalt	0.050	.0002	.0002						
Copper	0.025	.001	.001						
Iron	0.30	.017	.017						
Lead	0.0050	.001	.0011	-0.00020	<0.0050	0.015	<0.050	0.0050	<0.050
Magnesium	5.0	.035	.035						
Manganese	0.015	.0005	.001						
Molybdenum	0.050	.0003	.0003						
Nickel	0.040	.0004	.0004						
Potassium	10	.2	.2						
Selenium	0.010	.0024	.0029	0.0014	<0.010	0.020	<0.10	0.025	<0.10
Silver	0.010	.0007	.0007	0.0	<0.010	-0.0010	<0.10	-0.0010	<0.10
Sodium	10	.5	.5						
Strontium	0.010	.0005	.0005						
Thallium	0.010	.0011	.0014						
Tin	0.050	.0009	.001						
Titanium	0.010	.0005	.001						
Vanadium	0.050	.0005	.0006						
Zinc	0.020	.003	.01						

Associated samples MP29771: FA29765-6

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: FA29765
Account: UTC - United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

QC Batch ID: MP29771
Matrix Type: LEACHATE

Methods: SW846 6010C
Units: mg/l

Prep Date:				12/15/15		12/15/15	
Metal	RL	IDL	MDL	MB raw	final	MB raw	final
Aluminum	0.20	.014	.014				
Antimony	0.0060	.001	.001				
Arsenic	0.010	.0013	.0013	-0.0090	<0.10	-0.0080	<0.10
Barium	0.20	.001	.005	0.0020	<2.0	0.0010	<2.0
Beryllium	0.0040	.0002	.0002				
Cadmium	0.0050	.0002	.0002	-0.0010	<0.050	-0.0010	<0.050
Calcium	1.0	.05	.05				
Chromium	0.010	.001	.001	-0.0010	<0.10	-0.0020	<0.10
Cobalt	0.050	.0002	.0002				
Copper	0.025	.001	.001				
Iron	0.30	.017	.017				
Lead	0.0050	.001	.0011	0.0030	<0.050	-0.0030	<0.050
Magnesium	5.0	.035	.035				
Manganese	0.015	.0005	.001				
Molybdenum	0.050	.0003	.0003				
Nickel	0.040	.0004	.0004				
Potassium	10	.2	.2				
Selenium	0.010	.0024	.0029	0.031	<0.10	0.024	<0.10
Silver	0.010	.0007	.0007	-0.0020	<0.10	-0.0010	<0.10
Sodium	10	.5	.5				
Strontium	0.010	.0005	.0005				
Thallium	0.010	.0011	.0014				
Tin	0.050	.0009	.001				
Titanium	0.010	.0005	.001				
Vanadium	0.050	.0005	.0006				
Zinc	0.020	.003	.01				

Associated samples MP29771: FA29765-6

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA29765
Account: UTC - United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

QC Batch ID: MP29771
Matrix Type: LEACHATE

Methods: SW846 6010C
Units: mg/l

Prep Date: 12/15/15

Metal	FA29694-1 Original	MS	Spikelot MPFLICP2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	0.0	21.3	20.0	106.5	80-120
Barium	0.32	22.0	20.0	108.4	80-120
Beryllium					
Cadmium	0.0	0.54	0.50	108.0	80-120
Calcium					
Chromium	0.0	2.2	2.0	110.0	80-120
Cobalt					
Copper					
Iron					
Lead	0.021	5.2	5.0	103.6	80-120
Magnesium					
Manganese					
Molybdenum					
Nickel					
Potassium					
Selenium	0.025	21.7	20.0	108.4	80-120
Silver	0.0	0.51	0.50	102.0	80-120
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Vanadium					
Zinc					

Associated samples MP29771: FA29765-6

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA29765
Account: UTC - United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

QC Batch ID: MP29771
Matrix Type: LEACHATE

Methods: SW846 6010C
Units: mg/l

Prep Date:					12/15/15				12/15/15	
Metal	FA29694-1 Original	MSD	Spikelot MPFLICP2	% Rec	MSD RPD	QC Limit	FA29765-6 Original	DUP	RPD	QC Limits
Aluminum										
Antimony										
Arsenic	0.0	21.3	20.0	106.5	0.0	20	0.0	0.0	NC	0-20
Barium	0.32	22.1	20.0	108.9	0.5	20	0.12	0.12	0.0	0-20
Beryllium										
Cadmium	0.0	0.54	0.50	108.0	0.0	20	0.0	0.0	NC	0-20
Calcium										
Chromium	0.0	2.2	2.0	110.0	0.0	20	0.0	0.0	NC	0-20
Cobalt										
Copper										
Iron										
Lead	0.021	5.2	5.0	103.6	0.0	20	0.0	0.0	NC	0-20
Magnesium										
Manganese										
Molybdenum										
Nickel										
Potassium										
Selenium	0.025	21.8	20.0	108.9	0.5	20	0.027	0.043	45.7 (a)	0-20
Silver	0.0	0.51	0.50	102.0	0.0	20	0.0	0.0	NC	0-20
Sodium										
Strontium										
Thallium										
Tin										
Titanium										
Vanadium										
Zinc										

Associated samples MP29771: FA29765-6

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) RPD acceptable due to low duplicate and sample concentrations.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: FA29765
Account: UTC - United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

QC Batch ID: MP29771
Matrix Type: LEACHATE

Methods: SW846 6010C
Units: mg/l

Prep Date:		12/15/15				12/15/15	
Metal	BSP Result	Spikelot MPFLICP2 % Rec	QC Limits	BSP Result	Spikelot MPFLICP2 % Rec	QC Limits	
Aluminum							
Antimony							
Arsenic	2.1	2.0	105.0	80-120	21.4	20.0	107.0	80-120
Barium	2.2	2.0	110.0	80-120	21.7	20.0	108.5	80-120
Beryllium							
Cadmium	0.055	0.050	110.0	80-120	0.54	0.50	108.0	80-120
Calcium							
Chromium	0.22	0.20	110.0	80-120	2.2	2.0	110.0	80-120
Cobalt							
Copper							
Iron							
Lead	0.52	0.50	104.0	80-120	5.2	5.0	104.0	80-120
Magnesium							
Manganese							
Molybdenum							
Nickel							
Potassium							
Selenium	2.1	2.0	105.0	80-120	21.9	20.0	109.5	80-120
Silver	0.051	0.050	102.0	80-120	0.51	0.50	102.0	80-120
Sodium							
Strontium							
Thallium							
Tin							
Titanium							
Vanadium							
Zinc							

Associated samples MP29771: FA29765-6

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: FA29765
Account: UTC - United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

QC Batch ID: MP29771
Matrix Type: LEACHATE

Methods: SW846 6010C
Units: mg/l

Prep Date:		12/15/15				12/15/15	
Metal	BSP Result	Spikelot MPFLICP2 % Rec	QC Limits	BSP Result	Spikelot MPFLICP2 % Rec	QC Limits	
Aluminum							
Antimony							
Arsenic	21.1	20.0	105.5	80-120	20.9	20.0	104.5	80-120
Barium	21.5	20.0	107.5	80-120	21.9	20.0	109.5	80-120
Beryllium							
Cadmium	0.54	0.50	108.0	80-120	0.54	0.50	108.0	80-120
Calcium							
Chromium	2.2	2.0	110.0	80-120	2.2	2.0	110.0	80-120
Cobalt							
Copper							
Iron							
Lead	5.2	5.0	104.0	80-120	5.2	5.0	104.0	80-120
Magnesium							
Manganese							
Molybdenum							
Nickel							
Potassium							
Selenium	21.7	20.0	108.5	80-120	21.4	20.0	107.0	80-120
Silver	0.51	0.50	102.0	80-120	0.50	0.50	100.0	80-120
Sodium							
Strontium							
Thallium							
Tin							
Titanium							
Vanadium							
Zinc							

Associated samples MP29771: FA29765-6

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: FA29765
Account: UTC - United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

QC Batch ID: MP29771
Matrix Type: LEACHATE

Methods: SW846 6010C
Units: mg/l

Prep Date: 12/15/15

Metal	BSP Result	Spikelot MPFLICP2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	20.8	20.0	104.0	80-120
Barium	21.8	20.0	109.0	80-120
Beryllium				
Cadmium	0.54	0.50	108.0	80-120
Calcium				
Chromium	2.2	2.0	110.0	80-120
Cobalt				
Copper				
Iron				
Lead	5.2	5.0	104.0	80-120
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium	21.1	20.0	105.5	80-120
Silver	0.51	0.50	102.0	80-120
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP29771: FA29765-6

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: FA29765
Account: UTC - United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

QC Batch ID: MP29771
Matrix Type: LEACHATE

Methods: SW846 6010C
Units: ug/l

Prep Date: 12/15/15

Metal	FA29694-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	0.00	0.00	NC	0-10
Barium	32.2	29.6	8.1	0-10
Beryllium				
Cadmium	0.00	0.00	NC	0-10
Calcium				
Chromium	0.00	0.00	NC	0-10
Cobalt				
Copper				
Iron				
Lead	2.10	0.00	100.0(a)	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium	2.50	0.00	100.0(a)	0-10
Silver	0.00	0.00	NC	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP29771: FA29765-6

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: FA29765
Account: UTC - United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

QC Batch ID: MP29784
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 12/17/15

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	14	14		
Antimony	6.0	1	1	-0.30	<6.0
Arsenic	10	1.3	1.3	-0.80	<10
Barium	200	1	1		
Beryllium	4.0	.2	.2	-0.30	<4.0
Cadmium	5.0	.2	.2	-0.20	<5.0
Calcium	1000	50	50		
Chromium	10	1	1	-0.30	<10
Cobalt	50	.2	.2		
Copper	25	1	1	-1.2	<25
Iron	300	17	17		
Lead	5.0	1	1.1	-0.30	<5.0
Magnesium	5000	35	35		
Manganese	15	.5	1		
Molybdenum	50	.3	.3		
Nickel	40	.4	.4	-0.40	<40
Potassium	10000	200	200		
Selenium	10	2.4	2.9	-0.50	<10
Silver	10	.7	.7	-0.50	<10
Sodium	10000	500	500		
Strontium	10	.5	.5		
Thallium	10	1.1	1.4	-1.6	<10
Tin	50	.9	1		
Titanium	10	.5	1		
Vanadium	50	.5	.6		
Zinc	20	3	4.4	-1.5	<20

Associated samples MP29784: FA29765-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA29765
Account: UTC - United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

QC Batch ID: MP29784
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date:			12/17/15					12/17/15	
Metal	FA30018-1 Original	DUP	RPD	QC Limits	FA30018-1 Original	MS	Spikelot MPFLICP2	% Rec	QC Limits
Aluminum									
Antimony	1.5	0.0	200.0(a)	0-20	1.5	524	500	104.5	80-120
Arsenic	0.0	0.0	NC	0-20	0.0	2070	2000	103.5	80-120
Barium	anr								
Beryllium	0.0	0.0	NC	0-20	0.0	54.1	50	108.2	80-120
Cadmium	0.0	0.0	NC	0-20	0.0	52.0	50	104.0	80-120
Calcium	anr								
Chromium	0.0	0.0	NC	0-20	0.0	213	200	106.5	80-120
Cobalt									
Copper	0.0	0.0	NC	0-20	0.0	265	250	106.0	80-120
Iron	anr								
Lead	3.8	5.1	29.2 (a)	0-20	3.8	520	500	103.2	80-120
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	0.0	0.0	NC	0-20	0.0	523	500	104.6	80-120
Potassium									
Selenium	0.0	0.0	NC	0-20	0.0	1960	2000	98.0	80-120
Silver	0.0	0.0	NC	0-20	0.0	50.8	50	101.6	80-120
Sodium	anr								
Strontium									
Thallium	0.0	0.0	NC	0-20	0.0	2060	2000	103.0	80-120
Tin									
Titanium									
Vanadium									
Zinc	0.0	0.0	NC	0-20	0.0	521	500	104.2	80-120

Associated samples MP29784: FA29765-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA29765
Account: UTC - United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

QC Batch ID: MP29784
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 12/17/15

Metal	FA30018-1 Original	MSD	Spikelot MPFLICP2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony	1.5	524	500	104.5	0.0	20
Arsenic	0.0	2060	2000	103.0	0.5	20
Barium	anr					
Beryllium	0.0	53.8	50	107.6	0.6	20
Cadmium	0.0	52.0	50	104.0	0.0	20
Calcium	anr					
Chromium	0.0	215	200	107.5	0.9	20
Cobalt						
Copper	0.0	266	250	106.4	0.4	20
Iron	anr					
Lead	3.8	522	500	103.6	0.4	20
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	0.0	522	500	104.4	0.2	20
Potassium						
Selenium	0.0	1960	2000	98.0	0.0	20
Silver	0.0	51.1	50	102.2	0.6	20
Sodium	anr					
Strontium						
Thallium	0.0	2070	2000	103.5	0.5	20
Tin						
Titanium						
Vanadium						
Zinc	0.0	520	500	104.0	0.2	20

Associated samples MP29784: FA29765-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: FA29765
Account: UTC - United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

QC Batch ID: MP29784
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 12/17/15

Metal	BSP Result	Spikelot MPFLICP2	% Rec	QC Limits
Aluminum				
Antimony	520	500	104.0	80-120
Arsenic	2020	2000	101.0	80-120
Barium	anr			
Beryllium	55.9	50	111.8	80-120
Cadmium	53.3	50	106.6	80-120
Calcium	anr			
Chromium	227	200	113.5	80-120
Cobalt				
Copper	273	250	109.2	80-120
Iron	anr			
Lead	522	500	104.4	80-120
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	529	500	105.8	80-120
Potassium				
Selenium	2050	2000	102.5	80-120
Silver	50.3	50	100.6	80-120
Sodium	anr			
Strontium				
Thallium	2100	2000	105.0	80-120
Tin				
Titanium				
Vanadium				
Zinc	533	500	106.6	80-120

Associated samples MP29784: FA29765-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: FA29765
Account: UTC - United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

QC Batch ID: MP29784
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 12/17/15

Metal	FA30018-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony	1.50	0.00	100.0(a)	0-10
Arsenic	0.00	0.00	NC	0-10
Barium	anr			
Beryllium	0.00	0.00	NC	0-10
Cadmium	0.00	0.00	NC	0-10
Calcium	anr			
Chromium	0.00	0.00	NC	0-10
Cobalt				
Copper	0.00	0.00	NC	0-10
Iron	anr			
Lead	3.80	0.00	100.0(a)	0-10
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	0.00	0.00	NC	0-10
Potassium				
Selenium	0.00	0.00	NC	0-10
Silver	0.00	0.00	NC	0-10
Sodium	anr			
Strontium				
Thallium	0.00	0.00	NC	0-10
Tin				
Titanium				
Vanadium				
Zinc	0.00	0.00	NC	0-10

Associated samples MP29784: FA29765-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

POST DIGESTATE SPIKE SUMMARY

Login Number: FA29765
Account: UTC - United Technologies Corporation
Project: AECOMSCG: Delavan Spray Technologies; Bamberg, SC

QC Batch ID: MP29784
Matrix Type: AQUEOUS

Methods: SW846 6010C
Units: ug/l

Prep Date: 12/17/15

Metal	Sample ml	Final ml	FA30018-1 Raw	Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Aluminum										
Antimony	9.8	10	1.5	1.47	112.9	0.2	5	100	111.4	80-120
Arsenic	9.8	10			108.7	0.2	5	100	108.7	80-120
Barium										
Beryllium	9.8	10			53.2	0.2	2.5	50	106.4	80-120
Cadmium	9.8	10			53.4	0.2	2.5	50	106.8	80-120
Calcium										
Chromium	9.8	10			53.9	0.2	2.5	50	107.8	80-120
Cobalt										
Copper	9.8	10			107	0.2	5	100	107.0	80-120
Iron										
Lead	9.8	10	3.8	3.724	55.7	0.2	2.5	50	104.0	80-120
Magnesium										
Manganese										
Molybdenum										
Nickel	9.8	10			107.2	0.2	5	100	107.2	80-120
Potassium										
Selenium	9.8	10			105.3	0.2	5	100	105.3	80-120
Silver	9.8	10			47.9	0.2	2.5	50	95.8	80-120
Sodium										
Strontium										
Thallium	9.8	10			103.1	0.2	5	100	103.1	80-120
Tin										
Titanium										
Vanadium										
Zinc	9.8	10			269.1	0.2	12.5	250	107.6	80-120

Associated samples MP29784: FA29765-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(**) Corr. sample result = Raw * (sample volume / final volume)
(anr) Analyte not requested

eurofins | Spectrum Analytical

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

Report Date:
05-Feb-16 09:54

Laboratory Report

AECOM Environmental
10 Patewood Drive, Building VI, Suite 500
Greenville, SC 29615
Attn: Doria R. Cullom

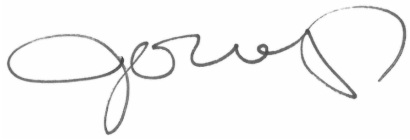
Project: UTC Delavan Spray Technologies - SC
Project #: 60314964

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SC15664-05	4-01 A.3	Waste Water	18-Dec-15 14:00	02-Dec-15 10:45
SC15664-06	4-02 A.3	Waste Water	18-Dec-15 14:00	02-Dec-15 10:45
SC15664-07	4-03 A.3	Waste Water	18-Dec-15 14:00	02-Dec-15 10:45
SC15664-08	4-04 A.3	Waste Water	18-Dec-15 14:00	02-Dec-15 10:45
SC15664-09	Control A.3	Waste Water	18-Dec-15 14:00	02-Dec-15 10:45
SC15664-10	4-01 A.1	Waste Water	21-Dec-15 00:00	02-Dec-15 10:45
SC15664-11	4-01 A.2	Waste Water	21-Dec-15 00:00	02-Dec-15 10:45
SC15664-12	4-02 A.1	Waste Water	21-Dec-15 00:00	02-Dec-15 10:45
SC15664-13	4-02 A.2	Waste Water	21-Dec-15 00:00	02-Dec-15 10:45
SC15664-14	4-03 A.1	Waste Water	21-Dec-15 00:00	02-Dec-15 10:45
SC15664-15	4-03 A.2	Waste Water	21-Dec-15 00:00	02-Dec-15 10:45
SC15664-16	4-04 A.1	Waste Water	21-Dec-15 00:00	02-Dec-15 10:45
SC15664-17	4-04 A.2	Waste Water	21-Dec-15 00:00	02-Dec-15 10:45
SC15664-18	Control A.2	Waste Water	21-Dec-15 00:00	02-Dec-15 10:45
SC15664-19	4-01 B.1	Waste Water	21-Dec-15 00:00	02-Dec-15 10:45
SC15664-20	4-01 B.2	Waste Water	21-Dec-15 00:00	02-Dec-15 10:45
SC15664-21	4-02 B.1	Waste Water	21-Dec-15 00:00	02-Dec-15 10:45
SC15664-22	4-02 B.2	Waste Water	21-Dec-15 00:00	02-Dec-15 10:45
SC15664-23	4-03 B.1	Waste Water	21-Dec-15 00:00	02-Dec-15 10:45
SC15664-24	4-03 B.2	Waste Water	21-Dec-15 00:00	02-Dec-15 10:45
SC15664-25	4-04 B.1	Waste Water	21-Dec-15 00:00	02-Dec-15 10:45
SC15664-26	4-04 B.2	Waste Water	21-Dec-15 00:00	02-Dec-15 10:45
SC15664-27	Control B.2	Waste Water	21-Dec-15 00:00	02-Dec-15 10:45

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87936
Maine # MA138
New Hampshire # 2538
New Jersey # MA011
New York # 11393
Pennsylvania # 68-04426/68-02924
Rhode Island # LAO00098
USDA # S-51435

Authorized by:



June O'Connor
Laboratory Director

Eurofins Spectrum Analytical holds certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.
Please note that this report contains 13 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Eurofins Spectrum Analytical, Inc.

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Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

CASE NARRATIVE:

Data has been reported to the RDL. This report excludes estimated concentrations detected below the RDL and above the MDL (J-Flag).

All non-detects and all results below the reporting limit are reported as "<" (less than) the reporting limit in this report.

The samples were received 1.5 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

There is no relevant protocol-specific QC and/or performance standards non-conformances to report.

Sample Acceptance Check Form

Client:	AECOM Environmental - Greenville, SC
Project:	UTC Delavan Spray Technologies - SC / 60314964
Work Order:	SC15664
Sample(s) received on:	12/2/2015

The following outlines the condition of samples for the attached Chain of Custody upon receipt.

	Yes	No	N/A
Were custody seals present?	☑	☐	☐
Were custody seals intact?	☑	☐	☐
Were samples received at a temperature of ≤ 6°C?	☑	☐	☐
Were samples cooled on ice upon transfer to laboratory representative?	☑	☐	☐
Were sample containers received intact?	☑	☐	☐
Were samples properly labeled (labels affixed to sample containers and include sample ID, site location, and/or project number and the collection date)?	☑	☐	☐
Were samples accompanied by a Chain of Custody document?	☑	☐	☐
Does Chain of Custody document include proper, full, and complete documentation, which shall include sample ID, site location, and/or project number, date and time of collection, collector's name, preservation type, sample matrix and any special remarks concerning the sample?	☑	☐	☐
Did sample container labels agree with Chain of Custody document?	☑	☐	☐
Were samples received within method-specific holding times?	☑	☐	☐

Summary of Hits

Lab ID: SC15664-05 **Client ID:** 4-01 A.3

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Hydrogen Peroxide	2650		18.0	mg/l	Spectrum SOP Mod.

Lab ID: SC15664-06 **Client ID:** 4-02 A.3

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Hydrogen Peroxide	2200		18.0	mg/l	Spectrum SOP Mod.

Lab ID: SC15664-07 **Client ID:** 4-03 A.3

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Hydrogen Peroxide	424		18.0	mg/l	Spectrum SOP Mod.

Lab ID: SC15664-08 **Client ID:** 4-04 A.3

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Hydrogen Peroxide	1820		18.0	mg/l	Spectrum SOP Mod.

Lab ID: SC15664-09 **Client ID:** Control A.3

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Hydrogen Peroxide	54.8		18.0	mg/l	Spectrum SOP Mod.

Lab ID: SC15664-10 **Client ID:** 4-01 A.1

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Persulfate	7900		25.0	mg/l	Spectrum SOP Mod.

Lab ID: SC15664-11 **Client ID:** 4-01 A.2

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Persulfate	17300		25.0	mg/l	Spectrum SOP Mod.

Lab ID: SC15664-12 **Client ID:** 4-02 A.1

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Persulfate	7770		25.0	mg/l	Spectrum SOP Mod.

Lab ID: SC15664-13 **Client ID:** 4-02 A.2

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Persulfate	17900		25.0	mg/l	Spectrum SOP Mod.

Lab ID: SC15664-14 **Client ID:** 4-03 A.1

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Persulfate	7770		25.0	mg/l	Spectrum SOP Mod.

Lab ID: SC15664-15 **Client ID:** 4-03 A.2

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Persulfate	18200		25.0	mg/l	Spectrum SOP Mod.

Lab ID: SC15664-16 **Client ID:** 4-04 A.1

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Persulfate	7900		25.0	mg/l	Spectrum SOP Mod.

Lab ID: SC15664-17 **Client ID:** 4-04 A.2

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Persulfate	18300		25.0	mg/l	Spectrum SOP Mod.

Lab ID: SC15664-18 **Client ID:** Control A.2

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Persulfate	18400		25.0	mg/l	Spectrum SOP Mod.

Lab ID: SC15664-19 **Client ID:** 4-01 B.1

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Potassium Permanganate	12500		0.75	mg/l	SM4500-KMNO4 B

Lab ID: SC15664-20 **Client ID:** 4-01 B.2

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Potassium Permanganate	18400		0.75	mg/l	SM4500-KMNO4 B

Lab ID: SC15664-21 **Client ID:** 4-02 B.1

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Potassium Permanganate	13600		0.75	mg/l	SM4500-KMNO4 B

Lab ID: SC15664-22 **Client ID:** 4-02 B.2

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Potassium Permanganate	19100		0.75	mg/l	SM4500-KMNO4 B

Lab ID: SC15664-23 **Client ID:** 4-03 B.1

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Potassium Permanganate	14300		0.75	mg/l	SM4500-KMNO4 B

Lab ID: SC15664-24 **Client ID:** 4-03 B.2

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Potassium Permanganate	20600		0.75	mg/l	SM4500-KMNO4 B

Lab ID: SC15664-25 **Client ID:** 4-04 B.1

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Potassium Permanganate	15100		0.75	mg/l	SM4500-KMNO4 B

Lab ID: SC15664-26 **Client ID:** 4-04 B.2

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Potassium Permanganate	21400		0.75	mg/l	SM4500-KMNO4 B

Lab ID: SC15664-27 **Client ID:** Control B.2

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Potassium Permanganate	30800		0.75	mg/l	SM4500-KMNO4 B

Please note that because there are no reporting limits associated with hazardous waste characterizations or micro analyses, this summary does not include hits from these analyses if included in this work order.

Sample Identification
4-01 A.3
SC15664-05

Client Project #	Matrix	Collection Date/Time	Received
60314964	Waste Water	18-Dec-15 14:00	02-Dec-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
7722-84-1	Hydrogen Peroxide	2,650		mg/l	18.0	17.0	1	Spectrum SOP Mod.	21-Dec-15	21-Dec-15	MJL	1524563	

Sample Identification
4-02 A.3
SC15664-06

Client Project #	Matrix	Collection Date/Time	Received
60314964	Waste Water	18-Dec-15 14:00	02-Dec-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
7722-84-1	Hydrogen Peroxide	2,200		mg/l	18.0	17.0	1	Spectrum SOP Mod.	21-Dec-15	21-Dec-15	MJL	1524563	

Sample Identification
4-03 A.3
SC15664-07

Client Project #	Matrix	Collection Date/Time	Received
60314964	Waste Water	18-Dec-15 14:00	02-Dec-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
7722-84-1	Hydrogen Peroxide	424		mg/l	18.0	17.0	1	Spectrum SOP Mod.	21-Dec-15	21-Dec-15	MJL	1524563	

Sample Identification
4-04 A.3
SC15664-08

Client Project #	Matrix	Collection Date/Time	Received
60314964	Waste Water	18-Dec-15 14:00	02-Dec-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
7722-84-1	Hydrogen Peroxide	1,820		mg/l	18.0	17.0	1	Spectrum SOP Mod.	21-Dec-15	21-Dec-15	MJL	1524563	

Sample Identification
Control A.3
SC15664-09

Client Project #	Matrix	Collection Date/Time	Received
60314964	Waste Water	18-Dec-15 14:00	02-Dec-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
7722-84-1	Hydrogen Peroxide	54.8		mg/l	18.0	17.0	1	Spectrum SOP Mod.	21-Dec-15	21-Dec-15	MJL	1524563	

Sample Identification
4-01 A.1
SC15664-10

Client Project #	Matrix	Collection Date/Time	Received
60314964	Waste Water	21-Dec-15 00:00	02-Dec-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
7775-27-1	Persulfate	7,900		mg/l	25.0	3.40	1	Spectrum SOP Mod.	28-Dec-15	28-Dec-15	VIA	1524454	

Sample Identification
4-01 A.2
SC15664-11

Client Project #	Matrix	Collection Date/Time	Received
60314964	Waste Water	21-Dec-15 00:00	02-Dec-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
7775-27-1	Persulfate	17,300		mg/l	25.0	3.40	1	Spectrum SOP Mod.	28-Dec-15	28-Dec-15	VIA	1524454	

Sample Identification
4-02 A.1
SC15664-12

Client Project #	Matrix	Collection Date/Time	Received
60314964	Waste Water	21-Dec-15 00:00	02-Dec-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
7775-27-1	Persulfate	7,770		mg/l	25.0	3.40	1	Spectrum SOP Mod.	28-Dec-15	28-Dec-15	VIA	1524454	

Sample Identification
4-02 A.2
SC15664-13

Client Project #	Matrix	Collection Date/Time	Received
60314964	Waste Water	21-Dec-15 00:00	02-Dec-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
7775-27-1	Persulfate	17,900		mg/l	25.0	3.40	1	Spectrum SOP Mod.	28-Dec-15	28-Dec-15	VIA	1524454	

Sample Identification
4-03 A.1
SC15664-14

Client Project #	Matrix	Collection Date/Time	Received
60314964	Waste Water	21-Dec-15 00:00	02-Dec-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
7775-27-1	Persulfate	7,770		mg/l	25.0	3.40	1	Spectrum SOP Mod.	28-Dec-15	28-Dec-15	VIA	1524454	

Sample Identification
4-03 A.2
SC15664-15

Client Project #	Matrix	Collection Date/Time	Received
60314964	Waste Water	21-Dec-15 00:00	02-Dec-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
7775-27-1	Persulfate	18,200		mg/l	25.0	3.40	1	Spectrum SOP Mod.	28-Dec-15	28-Dec-15	VIA	1524454	

Sample Identification
4-04 A.1
SC15664-16

Client Project #	Matrix	Collection Date/Time	Received
60314964	Waste Water	21-Dec-15 00:00	02-Dec-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
7775-27-1	Persulfate	7,900		mg/l	25.0	3.40	1	Spectrum SOP Mod.	28-Dec-15	28-Dec-15	VIA	1524454	

Sample Identification
4-04 A.2
SC15664-17

Client Project #	Matrix	Collection Date/Time	Received
60314964	Waste Water	21-Dec-15 00:00	02-Dec-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
7775-27-1	Persulfate	**18,300**		mg/l	25.0	3.40	1	Spectrum SOP Mod.	28-Dec-15	28-Dec-15	VIA	1524454	

Sample Identification
Control A.2
SC15664-18

Client Project #	Matrix	Collection Date/Time	Received
60314964	Waste Water	21-Dec-15 00:00	02-Dec-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
7775-27-1	Persulfate	**18,400**		mg/l	25.0	3.40	1	Spectrum SOP Mod.	28-Dec-15	28-Dec-15	VIA	1524454	

Sample Identification
4-01 B.1
SC15664-19

Client Project #	Matrix	Collection Date/Time	Received
60314964	Waste Water	21-Dec-15 00:00	02-Dec-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
7722-64-7	Potassium Permanganate	**12,500**		mg/l	0.75	0.20	1	SM4500-KMNO4 B	30-Dec-15	30-Dec-15	VIA	1524661	

Sample Identification
4-01 B.2
SC15664-20

Client Project #	Matrix	Collection Date/Time	Received
60314964	Waste Water	21-Dec-15 00:00	02-Dec-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
7722-64-7	Potassium Permanganate	**18,400**		mg/l	0.75	0.20	1	SM4500-KMNO4 B	30-Dec-15	30-Dec-15	VIA	1524661	

Sample Identification
4-02 B.1
SC15664-21

Client Project #	Matrix	Collection Date/Time	Received
60314964	Waste Water	21-Dec-15 00:00	02-Dec-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
7722-64-7	Potassium Permanganate	**13,600**		mg/l	0.75	0.20	1	SM4500-KMNO4 B	30-Dec-15	30-Dec-15	VIA	1524661	

Sample Identification
4-02 B.2
SC15664-22

Client Project #	Matrix	Collection Date/Time	Received
60314964	Waste Water	21-Dec-15 00:00	02-Dec-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
7722-64-7	Potassium Permanganate	**19,100**		mg/l	0.75	0.20	1	SM4500-KMNO4 B	30-Dec-15	30-Dec-15	VIA	1524661	

Sample Identification
4-03 B.1
SC15664-23

Client Project #	Matrix	Collection Date/Time	Received
60314964	Waste Water	21-Dec-15 00:00	02-Dec-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
7722-64-7	Potassium Permanganate	**14,300**		mg/l	0.75	0.20	1	SM4500-KMNO4 B	30-Dec-15	30-Dec-15	VIA	1524661	

Sample Identification
4-03 B.2
SC15664-24

Client Project #	Matrix	Collection Date/Time	Received
60314964	Waste Water	21-Dec-15 00:00	02-Dec-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
7722-64-7	Potassium Permanganate	**20,600**		mg/l	0.75	0.20	1	SM4500-KMNO4 B	30-Dec-15	30-Dec-15	VIA	1524661	

Sample Identification
4-04 B.1
SC15664-25

Client Project #	Matrix	Collection Date/Time	Received
60314964	Waste Water	21-Dec-15 00:00	02-Dec-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
7722-64-7	Potassium Permanganate	**15,100**		mg/l	0.75	0.20	1	SM4500-KMNO4 B	30-Dec-15	30-Dec-15	VIA	1524661	

Sample Identification
4-04 B.2
SC15664-26

Client Project #	Matrix	Collection Date/Time	Received
60314964	Waste Water	21-Dec-15 00:00	02-Dec-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
7722-64-7	Potassium Permanganate	**21,400**		mg/l	0.75	0.20	1	SM4500-KMNO4 B	30-Dec-15	30-Dec-15	VIA	1524661	

Sample Identification
Control B.2
SC15664-27

Client Project #	Matrix	Collection Date/Time	Received
60314964	Waste Water	21-Dec-15 00:00	02-Dec-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
7722-64-7	Potassium Permanganate	**30,800**		mg/l	0.75	0.20	1	SM4500-KMNO4 B	30-Dec-15	30-Dec-15	VIA	1524661	

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1524454 - General Prep - R&D										
Blank (1524454-BLK1)						Prepared & Analyzed: 28-Dec-15				
Persulfate	< 25.0		mg/l	25.0						
Blank (1524454-BLK2)						Prepared & Analyzed: 28-Dec-15				
Persulfate	< 25.0		mg/l	25.0						
Blank (1524454-BLK3)						Prepared & Analyzed: 28-Dec-15				
Persulfate	< 25.0		mg/l	25.0						
LCS (1524454-BS1)						Prepared & Analyzed: 28-Dec-15				
Persulfate	**478**		mg/l	25.0	500		96	80-120		
LCS (1524454-BS2)						Prepared & Analyzed: 28-Dec-15				
Persulfate	**470**		mg/l	25.0	500		94	80-120		
LCS (1524454-BS3)						Prepared & Analyzed: 28-Dec-15				
Persulfate	**474**		mg/l	25.0	500		95	80-120		
Duplicate (1524454-DUP1)			**Source: SC15664-10**			Prepared & Analyzed: 28-Dec-15				
Persulfate	**7520**		mg/l	25.0		7900			5	20
Matrix Spike (1524454-MS1)			**Source: SC15664-10**			Prepared & Analyzed: 28-Dec-15				
Persulfate	**109000**		mg/l	25.0	100000	7900	101	70-130		
Matrix Spike Dup (1524454-MSD1)			**Source: SC15664-10**			Prepared & Analyzed: 28-Dec-15				
Persulfate	**104000**		mg/l	25.0	100000	7900	96	70-130	5	20
Batch 1524563 - General Prep - R&D										
Blank (1524563-BLK1)						Prepared & Analyzed: 21-Dec-15				
Hydrogen Peroxide	< 18.0		mg/l	18.0						
LCS (1524563-BS1)						Prepared & Analyzed: 21-Dec-15				
Hydrogen Peroxide	**497**		mg/l	18.0	456		109	80-120		
Duplicate (1524563-DUP1)			**Source: SC15664-05**			Prepared & Analyzed: 21-Dec-15				
Hydrogen Peroxide	**2650**		mg/l	18.0		2650			0	20
Batch 1524661 - General Preparation										
Blank (1524661-BLK1)						Prepared & Analyzed: 30-Dec-15				
Potassium Permanganate	< 0.75		mg/l	0.75						
Blank (1524661-BLK2)						Prepared & Analyzed: 30-Dec-15				
Potassium Permanganate	< 0.75		mg/l	0.75						
Blank (1524661-BLK3)						Prepared & Analyzed: 30-Dec-15				
Potassium Permanganate	< 0.75		mg/l	0.75						
LCS (1524661-BS1)						Prepared & Analyzed: 30-Dec-15				
Potassium Permanganate	**24.0**		mg/l	0.75	25.0		96	80-120		
LCS (1524661-BS2)						Prepared & Analyzed: 30-Dec-15				
Potassium Permanganate	**23.8**		mg/l	0.75	25.0		95	80-120		
LCS (1524661-BS3)						Prepared & Analyzed: 30-Dec-15				
Potassium Permanganate	**23.8**		mg/l	0.75	25.0		95	80-120		
Duplicate (1524661-DUP1)			**Source: SC15664-19**			Prepared & Analyzed: 30-Dec-15				
Potassium Permanganate	**12600**		mg/l	0.75		12500			0.9	20
Matrix Spike (1524661-MS1)			**Source: SC15664-19**			Prepared & Analyzed: 30-Dec-15				
Potassium Permanganate	**38000**		mg/l	0.75	25000	12500	102	80-120		
Matrix Spike Dup (1524661-MSD1)			**Source: SC15664-19**			Prepared & Analyzed: 30-Dec-15				
Potassium Permanganate	**38000**		mg/l	0.75	25000	12500	102	80-120	0.2	20

Notes and Definitions

dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Validated by:
Rebecca Merz

SC 151664

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CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:

☐ Standard TAT - 7 to 10 business days

☐ Rush TAT - Date Needed: _____

All TATs subject to laboratory approval
Min. 24-hr notification needed for rushes
Samples disposed after 60 days unless otherwise instructed.

Report To: Doria Willom
10 Patewood Dr
Bldg VI Suite 500
Greenville SC 29615
Telephone #: 864-234-8923
Project Mgr: Walter Gerald 864-234-8925

Invoice To: USAPImaging@aecom.com

P.O No.: _____ Quote #: _____

Project No: 60314964
Site Name: VTC Delavan Spray Technologies Site
Location: Bamberg State: SC
Sampler(s): Leslie Alexander 864-787-6916
R Morgan

F=Field Filtered 1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH3OH 8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11=_____ 12=_____

DW=Dinking Water GW=Groundwater SW=Surface Water WW=Waste Water
O=Oil SO=Soil SL=Sludge A=Indoor/Ambient Air SG=Soil Gas
X1=_____ X2=_____ X3=_____

G= Grab C=Compsite

Lab ID:	Sample ID:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analysis: TOD	Check if chlorinated	
151664-01	BG-6-6	12/1/15	1055	C	SO		2			X	☐	4-6 Ft
-02	BG-6-10	12/1/15	1105	C	SO		2			X	☐	8-10 Ft
-03	BG-7-6	12/1/15	1025	C	SO		2			X	☐	4-6 Ft
-04	BG-7-10	12/1/15	1030	C	SO		2			X	☐	8-10 Ft
											☐	
											☐	
											☐	
											☐	
											☐	
											☐	

List Preservative Code below:

QA/QC Reporting Notes:
* additional charges may appply

MA DEP MCP CAM Report? ☐ Yes ☐ No
CT DPH RCP Report? ☐ Yes ☐ No
☐ Standard ☐ No QC ☐ DQA*
☐ ASP A* ☐ ASP B*
☐ NJ Reduced* ☐ NJ Full*
☐ Tier II* ☐ Tier IV*
☐ Other: _____
State-specific reporting standards:

L Alexander 12/1/15

Relinquished by:	Received by:	Date:	Time:
L Alexander/AECOM	FedEx 820459477091	12/1/15	1400
JAH fedex	JAH	12/2/15	1045
JAH 12/2			

Temp °C: Observed 1.5; Correction Factor 0; Corrected 1.5; IR ID # 01

☒ EDD format: _____
☒ E-mail to: doria.willom@aecom.com
leslie.alexander@aecom.com

Condition upon receipt: Custody Seals: ☐ Present ☒ Intact ☐ Broken
☐ Ambient ☒ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

FedEx Express Package US Airbill

FedEx Tracking Number 8020 4594 7091

Form ID No. 0215

MUR4

Recipient's Copy

1 From

Date 12/1/15

Sender's Name Leslie Alexander Phone 864 234-3000

Company AECOM TECHNICAL SERVICES

Address 10 PATEWOOD DR BLDG 6 Dept./Floor/Suite/Room

City GREENVILLE State SC ZIP 29615-4317

2 Your Internal Billing Reference 60314964.11

3 To

Recipient's Name Sample Recieving Phone 413 791-7018

Company Eurofins/Spectrum Analytical

Address 11 Almgren Dr

We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City Agawam State MA ZIP 01001

HOLD Weekday
FedEx location address REQUIRED. **NOT available for** FedEx First Overnight.

HOLD Saturday
FedEx location address REQUIRED. **Available ONLY for** FedEx Priority Overnight and FedEx 2Day to select locations.

4 Express Package Service * To most locations.

NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs.
For packages over 150 lbs., use the FedEx Express Freight US Airbill.

Next Business Day

- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [X] FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

- [ ] FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.
- [ ] FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

- [ ] FedEx Envelope*
- [ ] FedEx Pak*
- [ ] FedEx Box
- [ ] FedEx Tube
- [X] Other

6 Special Handling and Delivery Signature Options

- [ ] SATURDAY Delivery — **NOT available for** FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.
- [ ] No Signature Required — Package may be left without obtaining a signature for delivery.
- [ ] Direct Signature — Someone at recipient's address may sign for delivery. *Fee applies.*
- [ ] Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. *Fee applies.*

Does this shipment contain dangerous goods?

One box must be checked.

- [X] No
- [ ] Yes — As per attached Shipper's Declaration.
- [ ] Yes — Shipper's Declaration not required.
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

- [ ] Cargo Aircraft Only

7 Payment Bill to:

- [ ] Obtain recip. Acct. No.
- [ ] Cash/Check

WED - 02 DEC 10:30A
PRIORITY OVERNIGHT

01001
MA-US
BDL

611

FedEx TRK# 0215 8020 4594 7091

NC EHTA

8020 4594 7091

1.800.GoFedEx 1.800.463.3339 fedex.com

fedex.com 1.800.GoFedEx 1.800.463.3339

SC15664e

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CHAIN OF CUSTODY RECORD

Page 1 of 3

Special Handling:

- [x] Standard TAT - 7 to 10 business days
- [ ] Rush TAT - Date Needed: _____

All TATs subject to laboratory approval
Min. 24-hr notification needed for rushes
Samples disposed after 60 days unless otherwise instructed.

Report To: Christina White

Invoice To:

Project No: SC15664

Site Name:

Location: State:

Sampler(s):

Telephone #:

Project Mgr:

P.O No.: Quote #:

F=Field Filtered 1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH3OH 8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11= 12=

DW=Dinking Water GW=Groundwater SW=Surface Water WW=Waste Water
O=Oil SO=Soil SL=Sludge A=Indoor/Ambient Air SG=Soil Gas
X1= X2= X3=

G= Grab C=Compsite

Lab ID:	Sample ID:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analysis: Hydrogen Peroxide	Sodium Persulfate	Check if chlorinated
15664-05	4-01 A.3	12/18/15	1400	G	WW	1				X		☐
-06	4-02 A.3	↓	↓	G	WW	1				X		☐
-07	4-03 A.3			G	WW	1				X		☐
-04	4-04 A3			G	WW	1				X		☐
-09	Control A.3			G	WW	1				X		☐
-10	4-01 A.1	12/21/15		G	WW	1					X	☐
-11	4-01 A.2	↓		G	WW	1					X	☐
-12	4-02 A.1			G	WW	1					X	☐
-13	4-02 A.2			G	WW	1					X	☐
-14	4-03 A.1			G	WW	1					X	☐

List Preservative Code below:

QA/QC Reporting Notes:
* additional charges may appply

MA DEP MCP CAM Report? ☐ Yes ☐
CT DPH RCP Report? ☐ Yes ☐
☐ Standard ☐ No QC ☐ DQA*
☐ ASP A* ☐ ASP B*
☐ NJ Reduced* ☐ NJ Full*
☐ Tier II* ☐ Tier IV*
☐ Other:
State-specific reporting standards:

Relinquished by:	Received by:	Date:	Time:

Temp °C
Observed
Corecction Factor
Corrected
IR ID #

☐ EDD format:
☐ E-mail to:

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Froz

SC1SC664 2

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CHAIN OF CUSTODY RECORD

Page 2 of 3

Special Handling:

- [x] Standard TAT - 7 to 10 business days
- [ ] Rush TAT - Date Needed: _____

All TATs subject to laboratory approval
Min. 24-hr notification needed for rushes
Samples disposed after 60 days unless otherwise instructed.

Report To: Christina White
Telephone #:
Project Mgr:

Invoice To:
P.O No.: Quote #:

Project No: SC1SC664
Site Name:
Location: State:
Sampler(s):

F=Field Filtered 1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH3OH 8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11= 12=

List Preservative Code below:

QA/QC Reporting Notes:
* additional charges may appply

DW=Dinking Water GW=Groundwater SW=Surface Water WW=Waste Water
O=Oil SO=Soil SL=Sludge A=Indoor/Ambient Air SG=Soil Gas
X1= X2= X3=

G= Grab C=Compsite

Lab ID:	Sample ID:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analysis: Sodium Persulfate	Potassium Permanganate	Check if chlorinated
1SC664-15	4-03 A.2	12/21/15		G	WW	1				X		☐
-16	4-04 A.1			G	WW	1				X		☐
-17	4-04 A.2			G	WW	1				X		☐
-18	control A.2			G	WW	1				X		☐
-19	4-01 ~~A~~.B.1			G	WW	1					X	☐
-20	4-01 B.2			G	WW	1					X	☐
-21	4-02 B.1			G	WW	1					X	☐
-22	4-02 B.2			G	WW	1					X	☐
-23	4-03 B.1			G	WW	1					X	☐
-24	4-03 B.2	↓		G	WW	1					X	☐

MA DEP MCP CAM Report? ☐ Yes ☐ No
CT DPH RCP Report? ☐ Yes ☐ No
☐ Standard ☐ No QC ☐ DQA*
☐ ASP A* ☐ ASP B*
☐ NJ Reduced* ☐ NJ Full*
☐ Tier II* ☐ Tier IV*
☐ Other:
State-specific reporting standards:

Relinquished by:	Received by:	Date:	Time:	Temp °C
				Observed
				Correction Factor
				Corrected
				IR ID #

☐ EDD format:
☐ E-mail to:

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SC 15664

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CHAIN OF CUSTODY RECORD

Page 3 of 3

Special Handling:

- [x] Standard TAT - 7 to 10 business days
- [ ] Rush TAT - Date Needed: _____

All TATs subject to laboratory approval
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Report To: Christina White

Telephone #:

Project Mgr:

Invoice To:

P.O No.: Quote #:

Project No: SC15664

Site Name:

Location: State:

Sampler(s):

F=Field Filtered 1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH3OH 8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11= 12=

DW=Dinking Water GW=Groundwater SW=Surface Water WW=Waste Water
O=Oil SO=Soil SL=Sludge A=Indoor/Ambient Air SG=Soil Gas
X1= X2= X3=

G= Grab C=Compsite

Lab ID:	Sample ID:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analysis: Potassium permanganate	Check if chlorinated
15664-25	4-04 B.1	12/21/15		G	WW	1				X	☐
-26	4-04 B.2	↓		G	WW	1				X	☐
-27	control B.2	↓		G	WW	1				X	☐
				G	WW						☐
				G	WW						☐
				G	WW						☐
				G	WW						☐
				G	WW						☐
				G	WW						☐
				G	WW						☐

List Preservative Code below:

QA/QC Reporting Notes:
* additional charges may appply

MA DEP MCP CAM Report? ☐ Yes ☐ No
CT DPH RCP Report? ☐ Yes ☐ No
☐ Standard ☐ No QC ☐ DQA*
☐ ASP A* ☐ ASP B*
☐ NJ Reduced* ☐ NJ Full*
☐ Tier II* ☐ Tier IV*
☐ Other:
State-specific reporting standards:

Relinquished by:	Received by:	Date:	Time:	Temp °C
				Observed
				Correction Factor
				Corrected
				IR ID #

☐ EDD format:
☐ E-mail to:

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

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Total Oxidant Demand

The total oxidant demand (TOD) for persulfate, permanganate, and Fenton's reagent was done for site soils BG-6-6, BG-6-10, BG-7-6, and BG-7-10. Tests were done using Deionized (DI) water as the solvent.

The TOD of the site soil was determined using a series of jar experiments at on one or two oxidant/soil ratios depending on the oxidant under a water/soil ratio of 5:1 (by weight) at 23 ^{o}C. 250-mL jars were used for the experiments. The Fenton's Reagent tests were done at only one concentration. Each jar was capped and left at a temperature of 23 ^{o}C for a period of time depending on the oxidant. See Table 1 for details. All samples were measured for the oxidant level at the end of the test period. Consumption of the oxidant (at the two oxidant concentrations) by the soil was determined at the end of the tests. The TOD was determined using equation 1:

$$TOD = V(C_o - C_s)/m_{soil} \quad (1)$$

Where V = the total volume of oxidant solution in the reactor; C_o = initial oxidant concentration; C_s = the oxidant concentration at the reaction period; m_{soil} = the mass of soil used in the reaction.

The results of the TOD test are in shown in Table 2 grouped by oxidant. There was significant auto-decomposition seen in the control for the Fenton's Reagent tests. There was some auto-decomposition seen in the persuflate control test but none in the permanganate control. The oxidant demand for all soils was highest for the Fenton's Reagent and lowest for the persulfate.

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Table 1: Test Conditions

ID	soil used	amount of soil	amount of solution	oxidant	oxidant concentration	test days
4-01 A.3	BG-6-6	40 g	200 mL	Fenton's reagent	* see note	2
4-02 A.3	BG-6-10	40 g	200 mL	Fenton's reagent	* see note	2
4-03 A.3	BG-7-6	40 g	200 mL	Fenton's reagent	* see note	2
4-04 A.3	BG-7-10	40 g	200 mL	Fenton's reagent	* see note	2
Control A.3	none	none	200 mL	Fenton's reagent	* see note	2
4-01 A.1	BG-6-6	40 g	200 mL	persulfate	10 g/L	5
4-01 A.2	BG-6-6	40 g	200 mL	persulfate	20 g/L	5
4-02 A.1	BG-6-10	40 g	200 mL	persulfate	10 g/L	5
4-02 A.2	BG-6-10	40 g	200 mL	persulfate	20 g/L	5
4-03 A.1	BG-7-6	40 g	200 mL	persulfate	10 g/L	5
4-03 A.2	BG-7-6	40 g	200 mL	persulfate	20 g/L	5
4-04 A.1	BG-7-10	40 g	200 mL	persulfate	10 g/L	5
4-04 A.2	BG-7-10	40 g	200 mL	persulfate	20 g/L	5
Control A.2	none	none	200 mL	persulfate	20 g/L	5
4-01 B.1	BG-6-6	40 g	200 mL	permanganate	20 g/L	5
4-01 B.2	BG-6-6	40 g	200 mL	permanganate	30 g/L	5
4-02 B.1	BG-6-10	40 g	200 mL	permanganate	20 g/L	5
4-02 B.2	BG-6-10	40 g	200 mL	permanganate	30 g/L	5
4-03 B.1	BG-7-6	40 g	200 mL	permanganate	20 g/L	5
4-03 B.2	BG-7-6	40 g	200 mL	permanganate	30 g/L	5
4-04 B.1	BG-7-10	40 g	200 mL	permanganate	20 g/L	5
4-04 B.2	BG-7-10	40 g	200 mL	permanganate	30 g/L	5
Control B.2	none	none	200 mL	permanganate	30 g/L	5

* concentration of oxdidant is 100 mL/kg 30% peroxide with 2 g/kg ferrous sulfate

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Table 2: TOD results

	SC15664-05 4-01 A.3	SC15664-06 4-02 A.3	SC15664-07 4-03 A.3	SC15664-08 4-04 A.3	SC15664-09 Control A.3
soil used	BG-6-6	BG-6-10	BG-7-6	BG-7-10	none
additive	28.9 g/L of 30% peroxide and 2 g/kg of ferrous sulfate				
Hydrogen Peroxide, g/L	2.65	2.20	0.424	1.82	0.055
TOD peroxide, g/kg	131	134	142	135	144

	SC15664-10 4-01 A.1	SC15664-11 4-01 A.2	SC15664-12 4-02 A.1	SC15664-13 4-02 A.2	SC15664-14 4-03 A.1	SC15664-15 4-03 A.2	SC15664-16 4-04 A.1	SC15664-17 4-04 A.2	SC15664-18 Control A.2
soil used	BG-6-6		BG-6-10		BG-7-6		BG-7-10		none
persulfate added	10 g/L	20 g/L	10 g/L	20 g/L	10 g/L	20 g/L	10 g/L	20 g/L	20 g/L
Persulfate, g/L	7.90	17.3	7.77	17.9	7.77	18.2	7.90	18.3	18.4
TOD persulfate, g/kg	11	14	11	11	11	9.0	11	8.5	8.0

	SC15664-19 4-01 B.1	SC15664-20 4-01 B.2	SC15664-21 4-02 B.1	SC15664-22 4-02 B.2	SC15664-23 4-03 B.1	SC15664-24 4-03 B.2	SC15664-25 4-04 B.1	SC15664-26 4-04 B.2	SC15664-27 Control B.2
soil used	BG-6-6		BG-6-10		BG-7-6		BG-7-10		none
permanganate added	20 g/L	30 g/L	20 g/L	30 g/L	20 g/L	30 g/L	20 g/L	30 g/L	30 g/L
Permanganate, g/L	12.5	18.4	13.6	19.1	14.3	20.6	15.1	21.4	30.8
TOD permanganate, g/kg	38	58	32	55	29	47	25	43	0

DATA ASSESSMENT REPORT

Data assessment is a systematic process for reviewing a body of data against a predefined set of criteria to provide assurance that the data meet project Data Quality Objective (DQO) requirements. The purpose of the data assessment process is to determine if and how the usability of the analytical data is affected by the overall analytical processes and sample collection and handling procedures. If specific DQOs are not met, the data are qualified (i.e., data flags are assigned to sample results) in accordance with guidelines established by the United States Environmental Protection Agency (USEPA). Data assessment allows the data user to adequately determine if the data can be used for its intended purpose. The data acceptance criteria are established according to Standard Operating Procedures (SOPs) and Statements of Work (SOWs) provided to the contracted analytical laboratory. The assessment of data quality and usability involves five components, as described below.

1) **Field Sampling Check** is a process to ensure that all samples were collected and the laboratory analyses were performed as stipulated in the applicable site-specific Work Plan or Field Sampling Plan (FSP). Inspection of sample preservation procedures, sample handling, analysis requested, sample description and identification (ID), cooler receipt forms, holding time evaluation, and Chain of Custody procedures are all evaluated to ensure that the evidentiary nature of the samples and the resulting analytical data have not been compromised.

2) **Data Verification** is a process for determining the completeness, correctness, consistency, and compliance of a data package in accordance with requirements contained in the applicable SOW and/or contract-specific requirements. This is a review of the data package, electronic data deliverable (EDD), and invoice received from the contract laboratory to ensure that the contract required information is present and complete prior to data validation.

3) **Data Review** is a process of reviewing the primary quality control (QC) data provided by the laboratory and the results of any internal quality assurance (QA)/QC samples, such as field blanks, trip blanks, equipment blanks or ambient blanks, field split samples, and duplicate samples, to ascertain any effect the laboratory's procedures or the sample collection process has on the data.

4) **Data Evaluation** is a process to determine if the data meet project-specific DQOs and contract requirements. This evaluation may involve a review of field sampling and sample management procedures, laboratory audits, Performance Evaluation (PE) sample results, and any other data quality indicators that are available.

5) **Data Validation** is a process to determine the accuracy and precision of analytical data generated and to identify any anomalies encountered. The validation process is performed in accordance with USEPA regional or national functional guidelines, project-specific guidelines, and

compliance with the requirements of each analytical method. Two major components of data validation are laboratory performance and matrix interferences. Evaluation of laboratory performance is a check for compliance for each analytical method to determine if the samples were analyzed within the prescribed acceptance criteria of the method. Evaluation of matrix interferences involves the analysis of surrogate spike recoveries, matrix spike recoveries, and duplicate sample results. Data not meeting project-specific DQOs or the requirements of the analytical method are qualified with data flags according to referenced guidelines.

Data Assessment Procedures

AECOM performed independent QC checks of field and laboratory procedures that were used in collecting and analyzing the data. The QC checks verify that the data collected are of appropriate quality for the intended data use and that the DQOs were met. The steps and guidelines followed during the data validation process were modeled on the *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (USEPA, August 2014) and *USEPA National Functional Guidelines for Superfund Organic Data Review* (USEPA, August 2014). In addition, method-specific criteria set forth in the compendium of analytical methods found in the *Test Methods for Evaluation Solid Waste (SW-846*), *Update IV* (USEPA, February 2007) are also evaluated during the validation process. This validation process has been adapted to meet the DQO requirements for generation of definitive critical data.

Data Validation Results

The analytical data associated with analytical data package FA29626 were collected on December 1, 2015 for UTC - Delavan Spray Technologies located in Bamberg, South Carolina. The analytical data were validated according to the procedures outlined above. Where data flags have been applied to this data set, they are separated by a slash "/" and presented in the following format:

Laboratory Flag / Result Flags / Analysis Flags

- Laboratory Flag: This flag precedes the first slash and is added by the laboratory as a result of QC excursions from the analytical method. These flags are laboratory-specific and are described in the associated laboratory report.

- Result Flags: These are presented after the first slash and are added by AECOM based on data validation procedures and guidelines. They tell how and if the data should be used.

- Analysis Flags: These flags are presented after the second slash and are added by AECOM to inform the data user of any specific QA/QC problems that were encountered.

Any data requiring qualification as a result of the validation process were assigned data flags, as discussed below. The validation flags indicate how any QC excursions may have impacted the usability of the data.

Volatile Organic Compounds by Method 8260B

Results of the validation process indicate that the data analyzed for this method are acceptable for their intended use and no data flags are required.

Data Summary and Usability

No QC excursions were encountered during the validation of this data set. Therefore, the data associated with this laboratory batch should be considered compliant and adequate for its intended use.

References

United States Environmental Protection Agency (USEPA), February 2007. *Test Methods for Evaluating Solid Waste (SW-846), Update IV.*

United States Environmental Protection Agency (USEPA), August 2014. *USEPA National Functional Guidelines for Superfund Organic Data Review.* Publication #EPA540-R-014-002.

United States Environmental Protection Agency (USEPA), August 2014. *USEPA National Functional Guidelines for Inorganic Superfund Data Review.* Publication #USEPA540/R-013-001.

DATA ASSESSMENT REPORT

Data assessment is a systematic process for reviewing a body of data against a predefined set of criteria to provide assurance that the data meet project Data Quality Objective (DQO) requirements. The purpose of the data assessment process is to determine if and how the usability of the analytical data is affected by the overall analytical processes and sample collection and handling procedures. If specific DQOs are not met, the data are qualified (i.e., data flags are assigned to sample results) in accordance with guidelines established by the United States Environmental Protection Agency (USEPA). Data assessment allows the data user to adequately determine if the data can be used for its intended purpose. The data acceptance criteria are established according to Standard Operating Procedures (SOPs) and Statements of Work (SOWs) provided to the contracted analytical laboratory. The assessment of data quality and usability involves five components, as described below.

1) **Field Sampling Check** is a process to ensure that all samples were collected and the laboratory analyses were performed as stipulated in the applicable site-specific Work Plan or Field Sampling Plan (FSP). Inspection of sample preservation procedures, sample handling, analysis requested, sample description and identification (ID), cooler receipt forms, holding time evaluation, and Chain of Custody procedures are all evaluated to ensure that the evidentiary nature of the samples and the resulting analytical data have not been compromised.

2) **Data Verification** is a process for determining the completeness, correctness, consistency, and compliance of a data package in accordance with requirements contained in the applicable SOW and/or contract-specific requirements. This is a review of the data package, electronic data deliverable (EDD), and invoice received from the contract laboratory to ensure that the contract required information is present and complete prior to data validation.

3) **Data Review** is a process of reviewing the primary quality control (QC) data provided by the laboratory and the results of any internal quality assurance (QA)/QC samples, such as field blanks, trip blanks, equipment blanks or ambient blanks, field split samples, and duplicate samples, to ascertain any effect the laboratory's procedures or the sample collection process has on the data.

4) **Data Evaluation** is a process to determine if the data meet project-specific DQOs and contract requirements. This evaluation may involve a review of field sampling and sample management procedures, laboratory audits, Performance Evaluation (PE) sample results, and any other data quality indicators that are available.

5) **Data Validation** is a process to determine the accuracy and precision of analytical data generated and to identify any anomalies encountered. The validation process is performed in accordance with USEPA regional or national functional guidelines, project-specific guidelines, and

compliance with the requirements of each analytical method. Two major components of data validation are laboratory performance and matrix interferences. Evaluation of laboratory performance is a check for compliance for each analytical method to determine if the samples were analyzed within the prescribed acceptance criteria of the method. Evaluation of matrix interferences involves the analysis of surrogate spike recoveries, matrix spike recoveries, and duplicate sample results. Data not meeting project-specific DQOs or the requirements of the analytical method are qualified with data flags according to referenced guidelines.

Data Assessment Procedures

AECOM performed independent QC checks of field and laboratory procedures that were used in collecting and analyzing the data. The QC checks verify that the data collected are of appropriate quality for the intended data use and that the DQOs were met. The steps and guidelines followed during the data validation process were modeled on the *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (USEPA, August 2014) and *USEPA National Functional Guidelines for Superfund Organic Data Review* (USEPA, August 2014). In addition, method-specific criteria set forth in the compendium of analytical methods found in the *Test Methods for Evaluation Solid Waste (SW-846*), *Update IV* (USEPA, February 2007) are also evaluated during the validation process. This validation process has been adapted to meet the DQO requirements for generation of definitive critical data.

Data Validation Results

The analytical data associated with analytical data package FA29657 were collected on December 2, 2015 for UTC - Delavan Spray Technologies located in Bamberg, South Carolina. The analytical data were validated according to the procedures outlined above. Where data flags have been applied to this data set, they are separated by a slash "/" and presented in the following format:

Laboratory Flag / Result Flags / Analysis Flags

- Laboratory Flag: This flag precedes the first slash and is added by the laboratory as a result of QC excursions from the analytical method. These flags are laboratory-specific and are described in the associated laboratory report.

- Result Flags: These are presented after the first slash and are added by AECOM based on data validation procedures and guidelines. They tell how and if the data should be used.

- Analysis Flags: These flags are presented after the second slash and are added by AECOM to inform the data user of any specific QA/QC problems that were encountered.

Any data requiring qualification as a result of the validation process were assigned data flags, as discussed below. The validation flags indicate how any QC excursions may have impacted the usability of the data.

Volatile Organic Compounds by Method 8260B

Results of tetrachloroethylene in sample DPT-61-8-a were qualified "/M/m" due to low recovery in the associated matrix spike sample below the established criteria of 35-165% (-881%). These qualifiers indicate the results should be considered biased low.

Data Summary and Usability

The QC excursions encountered during the validation of this data set did not result in the rejection of any data. Therefore, the data associated with this laboratory batch should be considered compliant and adequate for its intended use.

References

United States Environmental Protection Agency (USEPA), February 2007. *Test Methods for Evaluating Solid Waste (SW-846), Update IV.*

United States Environmental Protection Agency (USEPA), August 2014. *USEPA National Functional Guidelines for Superfund Organic Data Review.* Publication #EPA540-R-014-002.

United States Environmental Protection Agency (USEPA), August 2014. *USEPA National Functional Guidelines for Inorganic Superfund Data Review*. Publication #USEPA540/R-013-001.

DATA ASSESSMENT REPORT

Data assessment is a systematic process for reviewing a body of data against a predefined set of criteria to provide assurance that the data meet project Data Quality Objective (DQO) requirements. The purpose of the data assessment process is to determine if and how the usability of the analytical data is affected by the overall analytical processes and sample collection and handling procedures. If specific DQOs are not met, the data are qualified (i.e., data flags are assigned to sample results) in accordance with guidelines established by the United States Environmental Protection Agency (USEPA). Data assessment allows the data user to adequately determine if the data can be used for its intended purpose. The data acceptance criteria are established according to Standard Operating Procedures (SOPs) and Statements of Work (SOWs) provided to the contracted analytical laboratory. The assessment of data quality and usability involves five components, as described below.

1) **Field Sampling Check** is a process to ensure that all samples were collected and the laboratory analyses were performed as stipulated in the applicable site-specific Work Plan or Field Sampling Plan (FSP). Inspection of sample preservation procedures, sample handling, analysis requested, sample description and identification (ID), cooler receipt forms, holding time evaluation, and Chain of Custody procedures are all evaluated to ensure that the evidentiary nature of the samples and the resulting analytical data have not been compromised.

2) **Data Verification** is a process for determining the completeness, correctness, consistency, and compliance of a data package in accordance with requirements contained in the applicable SOW and/or contract-specific requirements. This is a review of the data package, electronic data deliverable (EDD), and invoice received from the contract laboratory to ensure that the contract required information is present and complete prior to data validation.

3) **Data Review** is a process of reviewing the primary quality control (QC) data provided by the laboratory and the results of any internal quality assurance (QA)/QC samples, such as field blanks, trip blanks, equipment blanks or ambient blanks, field split samples, and duplicate samples, to ascertain any effect the laboratory's procedures or the sample collection process has on the data.

4) **Data Evaluation** is a process to determine if the data meet project-specific DQOs and contract requirements. This evaluation may involve a review of field sampling and sample management procedures, laboratory audits, Performance Evaluation (PE) sample results, and any other data quality indicators that are available.

5) **Data Validation** is a process to determine the accuracy and precision of analytical data generated and to identify any anomalies encountered. The validation process is performed in accordance with USEPA regional or national functional guidelines, project-specific guidelines, and

compliance with the requirements of each analytical method. Two major components of data validation are laboratory performance and matrix interferences. Evaluation of laboratory performance is a check for compliance for each analytical method to determine if the samples were analyzed within the prescribed acceptance criteria of the method. Evaluation of matrix interferences involves the analysis of surrogate spike recoveries, matrix spike recoveries, and duplicate sample results. Data not meeting project-specific DQOs or the requirements of the analytical method are qualified with data flags according to referenced guidelines.

Data Assessment Procedures

AECOM performed independent QC checks of field and laboratory procedures that were used in collecting and analyzing the data. The QC checks verify that the data collected are of appropriate quality for the intended data use and that the DQOs were met. The steps and guidelines followed during the data validation process were modeled on the *USEPA National Functional Guidelines for Inorganic Superfund Data Review* (USEPA, August 2014) and *USEPA National Functional Guidelines for Superfund Organic Data Review* (USEPA, August 2014). In addition, method-specific criteria set forth in the compendium of analytical methods found in the *Test Methods for Evaluation Solid Waste (SW-846*), *Update IV* (USEPA, February 2007) are also evaluated during the validation process. This validation process has been adapted to meet the DQO requirements for generation of definitive critical data.

Data Validation Results

The analytical data associated with analytical data package FA29765 were collected on December 4, 2015 for UTC - Delavan Spray Technologies located in Bamberg, South Carolina. The analytical data were validated according to the procedures outlined above. Where data flags have been applied to this data set, they are separated by a slash "/" and presented in the following format:

Laboratory Flag / Result Flags / Analysis Flags

- Laboratory Flag: This flag precedes the first slash and is added by the laboratory as a result of QC excursions from the analytical method. These flags are laboratory-specific and are described in the associated laboratory report.

- Result Flags: These are presented after the first slash and are added by AECOM based on data validation procedures and guidelines. They tell how and if the data should be used.

- Analysis Flags: These flags are presented after the second slash and are added by AECOM to inform the data user of any specific QA/QC problems that were encountered.

Any data requiring qualification as a result of the validation process were assigned data flags, as discussed below. The validation flags indicate how any QC excursions may have impacted the usability of the data.

Total and TCLP Volatile Organic Compounds by Method 8260B

Results of the validation process indicate that the data analyzed for this method are acceptable for their intended use and no data flags are required.

Total and TCLP Semivolatile Organic Compounds by Method 8270D

Non-detections of semivolatile organic compound benzoic acid in samples associated with preparatory batch OP58654 (sample Aqueous IDW) were qualified "/R/c" due to recovery in the associated laboratory control sample below the established criteria of 25-150% (18%). These qualifiers indicate the non-detections are biased low and should be rejected.

PP and TCLP Metals by Methods 6010C/7470B/7471B

Results of the validation process indicate that the data analyzed for this method are acceptable for their intended use and no data flags are required.

Data Summary and Usability

With the exception of the non-detections of semivolatile organic compound benzoic acid in samples associated with preparatory batch OP58654 (sample Aqueous IDW), the QC excursions encountered during the validation of this data set did not result in the rejection of any data. Therefore, the remaining data associated with this laboratory batch should be considered compliant and adequate for its intended use.

References

United States Environmental Protection Agency (USEPA), February 2007. *Test Methods for Evaluating Solid Waste (SW-846), Update IV.*

United States Environmental Protection Agency (USEPA), August 2014. *USEPA National Functional Guidelines for Superfund Organic Data Review.* Publication #EPA540-R-014-002.

United States Environmental Protection Agency (USEPA), August 2014. *USEPA National Functional Guidelines for Inorganic Superfund Data Review*. Publication #USEPA540/R-013-001.