SEMI-ANNUAL REMEDIAL ACTION PROGRESS REPORT

FORMER ROBERT BOSCH TOOL CORPORATION
BOONE DIVISION
BOONE, NORTH CAROLINA
NONCD0001139

March 2016

Prepared For:

Robert Bosch Tool Corporation
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Prepared By:

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Amec Foster Wheeler Project 6251121001.03.04

June 21, 2016

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Ms. Janet K. Macdonald, P.G.
Inactive Hazardous Sites Branch
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North Carolina Department of Environment and Natural Resources
217 West Jones Street
Raleigh, North Carolina 27603

Subject: **Semi-Annual Remedial Action Progress Report (March 2016)**
Robert Bosch Tool Corporation
NONCD0001139
Boone, Watauga County, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Dear Ms. Macdonald:

Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler), formerly AMEC Environment & Infrastructure, Inc., is pleased to submit this Semi-Annual Remedial Action Progress Report (March 2015) for the Robert Bosch Tool Corporation, Former Boone Division facility in Boone, Watauga County, North Carolina. This work has been conducted in accordance with the Administrative Agreement For Registered Environmental Consultant-Directed Assessment and Remedial Action, effective September 25, 2008, pursuant to N.C.G.S. 130A-310.9(c) and 15A NCAC 13C .0300.

Should you have any questions or require any additional information, please do not hesitate to contact Timothy S. Renn or Paul S. Johnstone at (864) 552-9624.

Sincerely,

Amec Foster Wheeler

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1.0 INTRODUCTION

The Robert Bosch Tool Corporation, Former Boone Division (RBTC-FBD) is located at 482 State Farm Road in Boone, Watauga County, North Carolina (the "Site"). The latitude and longitude for the Site are North 36º 12' 22.79" and West 81º 39' 49.04", respectively. The location of the Site is depicted on the United States Geological Survey (USGS), 7.5-minute topographic map, Boone, North Carolina Quadrangle that is submitted as **Figure 1**.

The RBTC-FBD is located on a 6.86-acre tract of land. The property is developed with a 75,000-square foot former tool manufacturing facility and associated driveways and parking areas. Access to the Site is from an asphalt drive off State Farm Road. The Site is bounded by State Farm Road to the north, by multi-family residential and institutional buildings to the south, and undeveloped woodlands to the east and west.

Robert Bosch Tool Corporation (RBTC) entered into an Administrative Agreement For Registered Environmental Consultant-Directed Assessment and Remedial Action with the North Carolina Department of Environmental Quality (NCDEQ), formerly the North Carolina Department of Environment and Natural Resources (NCDENR), Registered Environmental Consultant (REC) program, effective September 25, 2008, pursuant to N.C.G.S. 130A-310.9(c) and 15A NCAC 13C .0300.

A Phase I Remedial Investigation (RI) was completed and certified on September 23, 2011. A Phase II RI was completed and certified on July 9, 2014. A Proposed Remedial Action Plan (RAP) for Groundwater was completed and certified on August 13, 2013. After a public comment period and with no comments received from interested parties, the Proposed RAP for Groundwater was certified as complete and the appropriate document certification statements and work phase completion statement were submitted to the REC Program on October 1, 2013.

The selected remedy presented in the Proposed RAP for Groundwater was the continuation of operation of the existing groundwater extraction and treatment system. As part of the Proposed RAP for Groundwater, Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler), formerly AMEC Environment & Infrastructure, Inc., proposed to implement a quarterly groundwater sampling program for the first year following implementation of remedial action with a semi-annual groundwater sampling program to commence after the first year.

The initial quarterly sampling event occurred between December 3 and 9, 2013, and the results were summarized in the July 9, 2014 Remedial Investigation Addendum #3 report. The second

quarterly sampling event occurred between March 18 and 26, 2014, and the results were summarized in the Remedial Action Progress Report (RAPR) for the 1st Quarter of 2014. The third quarterly sampling event occurred between June 2 and 4, 2014, and the results were summarized in the RAPR for the 2nd Quarter of 2014. Between September 9 and 11, 2014, the fourth quarterly sampling event was conducted, and the results were summarized in the RAPR for the 3rd Quarter of 2014. The final quarterly sampling event was conducted December 1 through 4, 2014 with the results summarized in the RAPR for the 4th Quarter 2014.

Based on a recommendation made in the 4th Quarter 2014 RAPR, semi-annual monitoring was initiated at the Site in 2015. The first semi-annual sampling event was conducted March 9-11, 2015, and the results were presented in the Semi-Annual RAPR (March 2015). The second semi-annual sampling event was conducted September 21-23, 2015, and the results were presented in the Semi-Annual RAPR (September 2015).

This document presents a summary of Site groundwater treatment system operation and maintenance (O&M) activities conducted between October 1, 2015 and March 31, 2016 and a performance summary for the groundwater treatment system. Additionally, a description of groundwater sampling activities conducted in March 2016 for the Site and the associated results are presented. Responsible Party and Registered Site Manager Document Certification Statements (Forms DC-I and DC-II) for the RAPR are included in **Appendix A**.

2.0 REMEDIATION SYSTEM OPERATIONS AND MAINTENANCE

As described in the Proposed RAP for Groundwater, the selected remedy for source area groundwater (i.e., on-Site in overburden and shallow bedrock) incorporated the existing Site groundwater extraction system (recovery wells RW-2 and RW-3) and treatment system (air stripper and ion exchange units). Recovery well RW-1, which is located in the eastern portion of the Site and had been inoperable since 2000, was rehabilitated in September 2013 and subsequently has been used to hydraulically control Site-related groundwater contaminant migration to the east.

Based on the discovery of 1,4-dioxane in the treatment system influent and effluent in late June 2013 and subsequent pilot testing, Amec Foster Wheeler added a full-scale hydrogen peroxide/ultraviolet (H_2O_2/UV) light system as part of the overall Site groundwater treatment system in the spring of 2014 to treat 1,4-dioxane-impacted groundwater to below the 2 micrograms per liter (µg/L) discharge limit established by the Town of Boone Publicly Owned Treatment Works (POTW), Pretreatment Section. Treated water continues to be discharged to the Town of Boone POTW under Industrial User Permit No. R006. The current permit was issued on April 20, 2015 by the Town of Boone POTW, Pretreatment Section, and it authorizes discharge from the Site groundwater treatment system between June 1, 2015 and May 31, 2020.

2.1 GROUNDWATER EXTRACTION WELLS O&M SUMMARY

During the reporting period (October 1, 2015 through March 31, 2016), all three recovery wells (RW-1, RW-2, and RW-3) operated without issues. No major O&M activities were required for the extraction wells during the reporting period.

2.2 GROUNDWATER TREATMENT SYSTEM O&M SUMMARY

Figure 2 provides an as-built drawing for the current Site groundwater treatment system. The following general O&M activities were completed for the groundwater treatment system during periodic Site O&M visits conducted during the reporting period:

- Replacement of dirty pre-filters;
- Addition of H_2O_2 to the 55-gallon plastic storage drum;
- Adjustment of system pressure and flow rate;
- Completion of hazardous waste inspection forms; and
- Completion of groundwater remediation system O&M Logs.

O&M activities that were required in addition to routine O&M activities during the reporting period included:

- Replacement of the four UV lights associated with the H_2O_2/UV light system with four new 185 nanometer UV lights in November 2015;
- Cleaned the air stripper in November 2015; and
- Replaced the feed pump tubing for the 55-gallon drum of H_2O_2 with new tubing in February 2016.

Copies of the completed hazardous waste inspection forms and groundwater treatment system O&M logs for the reporting period are included in **Appendix B**.

2.3 GROUNDWATER TREATMENT SYSTEM PERFORMANCE SUMMARY

Approximately 197,000 gallons of groundwater were extracted and processed through the treatment system during the reporting period. This quantity was greater than the 135,000 gallons processed during the previous reporting period (March 1, 2015 through September 30, 2015). The reason for more groundwater being treated was because the flow rate being processed through the H_2O_2/UV light system was increased slightly during the current reporting period.

As dictated by the Town of Boone POTW Industrial User Permit No. R006, an effluent sample is required to be collected from the treatment system on a quarterly basis and analyzed for volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 8260 and 1,4-dioxane by USEPA Method 8260 with Selective Ion Monitoring (SIM). An influent sample is also required to be collected from the treatment system on a semi-annual basis (June and December) and analyzed for VOCs and 1,4-dioxane.

Amec Foster Wheeler conducted a sampling event of the treatment system influent and effluent for VOCs and 1,4-dioxane on December 8, 2015. A mid-fluent sample was also collected on December 8, 2015 and analyzed for 1,4-dioxane only. The purpose of the mid-fluent sample was to verify that 1,4-dioxane continued to be successfully removed to below its discharge standard by the H_2O_2/UV light system. The results of the December 2015 sampling event were reported to the Town of Boone POTW, Pretreatment Section in a separate groundwater treatment system quarterly summary report that was submitted on December 28, 2015. There were no reported detections of 1,4-dioxane in the mid-fluent and effluent samples. VOCs were also not detected in the effluent sample.

Amec Foster Wheeler conducted a sampling event of the treatment system effluent for VOCs and 1,4-dioxane on March 24, 2016. A mid-fluent sample was also collected on March 24, 2016 and analyzed for 1,4-dioxane only. The results of the March 2016 sampling event were reported to the Town of Boone POTW, Pretreatment Section in a separate groundwater treatment system quarterly summary report that was submitted on April 7, 2016. There were no reported detections of VOCs and 1,4-dioxane in the effluent sample; and no detection of 1,4-dioxane in the mid-fluent sample.

3.0 MONITORING ACTIVITIES

The monitoring wells to be sampled during the 1st semi-annual sampling event in 2016 were based on Table 2 that was presented in the 4th Quarter 2014 RAPR. These wells included MW-4, MW-4D, MW-5, MW-5D, MW-12, MW-12D, MW-12DD, MW-12D3, MW-21, MW-31, MW-34, and MW-35. The monitoring well locations are presented on **Figure 3,** and monitoring well construction information is summarized on **Table 1**. The Site semi-annual monitoring program is summarized on **Table 2**.

Groundwater samples were collected from the Site monitoring wells between March 22, 2016 and March 24, 2016. Prior to purging and sampling, depth to groundwater were measured in monitoring wells with an electronic water level indicator on March 22, 2016. The water level meter was decontaminated with an Alconox® and water mixture and rinsed with potable water prior to each use. Depth to groundwater was measured from a marked survey reference point at the top of casing to the groundwater surface in the well. Measurements were recorded to the nearest 0.01 foot. The depth to the groundwater was subtracted from the surveyed elevation of the top of well casing reference point to determine groundwater elevation. Groundwater elevation data for the monitoring wells is presented on **Table 3**. A summary of historical groundwater levels and hydrographs are included in **Appendix C**. A more detailed discussion of groundwater elevation, flow direction and gradient calculations is included in Section 4.1.

The monitoring wells were purged prior to sampling to provide fresh formation water for sampling. Purging was conducted using the low flow/low stress purging method. The low flow/low stress method consists of removing water from a monitoring well at a rate that does not exceed the recharge rate of the monitoring well. The monitoring wells were purged using a Monsoon™ pump except for wells MW-5D, MW-12DD, MW-21, and MW-31 where a Geosub pump was used. Purging was conducted until the pH, specific conductance (SC), dissolved oxygen (DO), oxidation reduction potential (ORP), turbidity, and temperature measurements stabilized.

The field water quality parameters (temperature, pH, SC, DO, and ORP) were measured with a YSI Pro Plus water quality meter. Purging was terminated when the water quality parameters were stabilized. Stabilization of parameters was defined as three consecutive readings having acceptable variations as indicated below:

- pH of +/- 0.1 standard unit (s.u.)
- Temperature +/- 0.5 degrees Celsius (ºC)
- Specific Conductance of +/- 3 % variation

- ORP of +/- 10 millivolts (mV)
- DO of +/-10 % milligrams per liter (mg/L)
- Turbidity of +/- 10 % nephelometric turbidity units (NTUs).

Stabilization parameters were based on the USEPA "Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures (USEPA, 1996)." Field data records for groundwater sampling are included in **Appendix D**.

To minimize the potential for cross-contamination between sampling locations, the pumps were decontaminated with a solution of Alconox® and water followed by a potable water rinse. New tubing was used for each well. A new pair of disposable gloves was used during the purging and sampling of each well.

Groundwater samples were collected from March 22 through March 24, 2016 from the monitoring wells included in the semi-annual sampling program (**Table 2**). Each well was sampled through the dedicated tubing attached to the submersible pump. Groundwater samples were collected into laboratory-prepared and preserved sample containers and marked with a unique identifying number. The samples were packed in a cooler with ice and transported under chain of custody protocol to Pace Analytical Services, Inc. (Pace) for analysis. The samples were analyzed for Site-related VOCs by USEPA Method 8260, 1,4-dioxane by USEPA Method 8260 SIM, and amenable cyanide by Standard Method (SM) 4500-CN-G (2011).

4.0 MONITORING RESULTS

The results for the March 2016 semi-annual groundwater sampling event are discussed in the following sections.

4.1 GROUNDWATER MONITORING

A semi-annual Site-wide groundwater monitoring event was conducted in March 2016. Depth to groundwater measurements, monitoring well purging, and sampling were conducted during the period from March 22 to 24, 2016.

4.1.1 Groundwater Gradients and Flow Direction

Groundwater elevations were measured in the Site monitoring wells on March 22, 2016. The uppermost water-bearing zone is an unconfined aquifer in overburden material. Groundwater elevations of the water table in the unconfined aquifer ranged from 3211.61 feet above mean sea level (MSL) in monitoring well MW-36 to 3269.05 feet above MSL in monitoring well MW-7. The second water-bearing zone is a semi-confined aquifer in upper bedrock. The groundwater elevations in upper bedrock monitoring wells ranged from 3183.31 feet above MSL in monitoring well MW-36D to 3266.40 feet above MSL in monitoring well MW-7D (see **Table 3**). A water table contour map for wells screened in the unconfined aquifer is presented as **Figure 4**. A potentiometric surface contour map for the upper bedrock wells is presented as **Figure 5**. Groundwater flow in both the overburden and bedrock aquifers beneath the Site appears to generally follow Site topography. In the overburden aquifer, groundwater flow is generally to the south and southeast. In the upper bedrock aquifer, the groundwater flow is semi-radial to the southwest, south, and southeast.

The vertical gradient at the Site was evaluated using the groundwater elevations from monitoring well pairs screened in different zones of the aquifer. Groundwater elevations were measured in well pairs MW-4/MW-4D, MW-5/MW-5D, MW-10/MW-10D, MW-12D/MW-12DD, MW-12DD/MW-12D3, MW-17/MW-17D, and MW-36/MW-36D. A downward flow gradient was noted for each well pair. The average downward flow was 0.359, indicating that the Site is predominantly an area of recharge. Vertical gradient calculations are included in **Appendix E**.

The average horizontal gradient of the overburden aquifer is 0.126. The average horizontal gradient in the upper bedrock aquifer is 0.092. Horizontal gradient calculations are included in **Appendix E**.

Water level elevations in monitoring wells screened across the water table aquifer all increased from the previous measurements collected in September 2015. Water level elevations in monitoring wells screened within the upper bedrock aquifer also all increased except for MW-36D since September 2015. These changes are evident in the hydrographs included in **Appendix C.** The increases in water level elevations that were observed were most likely due to the large rainfall events that occurred in the fall of 2015.

4.1.2 Groundwater Flow Rates

The hydraulic conductivity estimate and gradients were used to estimate average groundwater flow rates at the Site using Darcy's equation:

$$V = Ki/ne$$

Where: V = velocity of groundwater (feet/day)
K = hydraulic conductivity (feet/day)
i = gradient in (unitless)
ne = effective porosity (percent)

Based on field hydraulic conductivities calculated in the Corrective Action Plan for the Vermont American Corporation Property, Boone, North Carolina, ESE Biosciences, Inc. Project File Number J248-3, dated March 19, 1993, the coefficient of hydraulic conductivity (K) was estimated in the overburden to range from 0.485 feet/day to 1.2 feet/day and in the upper bedrock aquifer from 0.00000022 feet/day to 0.031 feet/day. The groundwater velocity can be expected to vary due to heterogeneity in the hydrogeologic conditions at individual locations. In addition, the velocity of dissolved VOCs in groundwater will be less than the velocity of water alone due to sorption (retardation) of VOCs onto aquifer materials.

Based on the aforementioned estimates of K, minimum and maximum groundwater seepage velocity in the overburden portion of the aquifer at the Site is approximately 168 feet/year and 415 feet/year, respectively. In the upper bedrock portion of the aquifer the minimum and maximum groundwater seepage velocity is approximately 0.0129 feet/year and 21,568 feet/year, respectively. Groundwater seepage velocity calculations are presented in **Appendix E**.

4.1.3 Laboratory Analytical Results

Concentrations of VOC constituents of concern (CoCs) were detected above the laboratory Reporting Limit (RL) in the groundwater samples from nine of the 12 monitoring wells sampled

during the March 2016 sampling event. VOCs were detected above the North Carolina Ground Water Quality Standards promulgated in Title 15A, Subchapter 2L, Section .0202 of the North Carolina Administrative Code ("2L Standards") in eight of the 12 wells sampled during the March 2016 sampling event. The VOCs detected at concentrations above the 2L Standard include 1,1-dichloroethane (1,1-DCA), cis-1,2-dichloroethene (c-1,2-DCE), tetrachloroethene (perchloroethylene, or PCE), and trichloroethene (TCE). 1,4-Dioxane was detected above the 2L Standard in six of the 12 monitoring wells sampled. Amenable cyanide was detected above the 2L Standard in two of the 12 monitoring wells sampled. A summary of laboratory analytical results is shown below:

Compound	2L Standard (µg/L)	No. of Wells > 2L Standard	Wells > 2L Standard	Concentration Range (µg/L)
1,1-DCA	6	3	MW-4, MW-12D, and MW-34	6.1 (MW-12D) to 133 (MW-4)
c-1,2-DCE	70	3	MW-4, MW-12DD, and MW-34	106 (MW-12DD) to 590 (MW-4)
PCE	0.7	6	MW-4, MW-5, MW-12D, MW-12DD, MW-21, and MW-31	1.6 (MW-5) to 135 (MW-4)
TCE	3	6	MW-4, MW-12D, MW-12DD, MW-12D3, MW-31, and MW-34	3.5 (MW-12D3) to 255 (MW-12DD)
1,4-dioxane	3	6	MW-4, MW-12, MW-12D, MW-12DD, MW-12D3, and MW-31	3.0 (MW-12) to 34.6 (MW-12DD)
Cyanide	70	2	MW-4, MW-12, and MW12D	26 (MW-12D) to 801 (MW-4)

Notes: µg/L = micrograms per liter

A summary of groundwater laboratory analytical results is presented on **Table 4**. Select historical groundwater laboratory analytical results and water table elevations are presented on **Table 5**. Isoconcentration contour maps for VOC CoCs with concentrations above the applicable 2L Standards are shown on **Figures 6 through 12**. The laboratory report of analyses and chain-of-custody record are included in **Appendix F**. Complete historical groundwater laboratory analytical results are summarized in **Appendix G**.

4.2 DATA VALIDATION

Groundwater samples were collected during sampling completed in March 2016 at Site. The groundwater samples were analyzed by Pace in Charlotte, North Carolina and by Waypoint Analytical, Inc. in Memphis, Tennessee (under contract to Pace). Sample results were submitted from Pace in one sample delivery group (SDG): 92291474.

Samples reviewed in this report were analyzed for one or more of the following United States Environmental Protection Agency (USEPA) SW-846 (USEPA, 1996) methods:

- VOCs in water by USEPA Method 8260
- 1,4-Dioxane by USEPA Method 8260B SIM
- Amenable cyanide by SM 4500-CN-G

Sample results were validated using general procedures in the USEPA National Data Validation Guidelines. Project data quality criteria for the VOCs, 1,4-dioxane, and amenable cyanide analyses are identified based on laboratory quality control (QC) goals and the professional judgment of the project chemist. The laboratory QC limits were used during data validation. A Level II validation was performed on the laboratory analysis data. During the Level II validation the major quality assurance (QA)/QC indicators of analytical data are reviewed, but review of calculations and raw laboratory data is not included. QC data checks are completed using QC summary forms provided in the laboratory packages. The following parameters are checked during the Level II review:

- laboratory narrative
- sample chain of custody/sample condition upon receipt form
- sample preservation
- QC blanks (method, rinse, field, and trip)
- laboratory control sample (LCS) results
- matrix spike and matrix spike duplicate (MS/MSD) sample results
- surrogate recovery
- field replicate sample results
- sample results summary
- verification of electronic data deliverable (EDD) results

Validation reason codes are applied to the results to document the reason for necessary data qualification. Data validation qualifiers were added to results if associated quality control data did not meet goals in the validation guidelines or project work plan. The following data quality flags shown below are generally used to qualify data that did not meet project specific QC goals.

J	Estimated value
R	Unusable
U	Undetected
UJ	Undetected and reporting limit is estimated

With the exception of the data qualification identified below, results are interpreted to be usable as reported by the laboratory. Qualification was required for the following: the trichloroethene result for sample MW-12D3 was qualified as estimated and flagged "J" due to high recovery in a matrix spike sample.

The data validation report is included in **Appendix F**.

4.3 REMEDIAL ACTION DERIVED WASTE

Remedial action derived waste (RADW) consisted of well purging water and decontamination water from the March 2016 semi-annual sampling event. The RADW was containerized in an on-Site 250-gallon polyethylene tank. The tank was labelled with the contents and date of generation, sealed, and staged on Site in a secured area.

On April 22, 2016, Veolia ES Technical Solutions, LLC (Veolia) arrived at the Site to pick up the RADW. The purge and decontamination water in the 250-gallon polyethylene tank was pumped into one 55-gallon drums (400 pounds total). The drum of water was subsequently transported by Veolia to their facility located in Creedmoor, North Carolina. A copy of the final signed uniform hazardous waste manifest is provided in **Appendix H**.

5.0 FINDINGS AND RECOMMENDATIONS

A summary of remediation system performance, groundwater sampling results, and recommendations for the reporting period covered in this report is presented in the following subsections.

5.1 REMEDIATION SYSTEM PERFORMANCE

Based on the results of remediation system performance monitoring conducted during the reporting period (October 1, 2015 through March 31, 2016), Amec Foster Wheeler determined the following:

- An estimated 197,000 gallons of water were extracted by the three Site recovery wells.
- Groundwater samples were collected for 1,4-dioxane analysis from the mid-fluent (after the H_2O_2/UV light system but before the activated carbon vessels) and effluent (following the activated carbon vessels) of the groundwater treatment system on March 24, 2016. The results indicated no detections of VOCs or 1,4-dioxane in the effluent being discharged to the Town of Boone POTW. Additionally, 1,4-dioxane was not detected in the mid-fluent sample.
- The groundwater treatment system is successfully treating concentrations of VOCs and 1,4-dioxane to below the Town of Boone POTW discharge limits.

5.2 MONITORING WELLS

Based on the results of the March 2016 semi-annual groundwater sampling event, Amec Foster Wheeler determined the following:

- Groundwater flow in the unconfined overburden aquifer is strongly influenced by Site-wide topography and generally flows horizontally to the south and southeast. Vertical groundwater flow continues to be predominantly downward, which is indicative of an area of recharge.
- Groundwater flow in the upper bedrock aquifer is also influenced by Site-wide topography, and flow is semi-radial from the Site to the southwest, south, and southeast.
- Water level elevations in monitoring wells screened across the unconfined overburden aquifer all increased since the previous sampling event in September 2015. Water level elevations in monitoring wells screened within the upper bedrock aquifer all increased with the exception of MW-36D since the September 2015 sampling event. The increases in water level elevations that were observed were most likely due to the large rainfall events that occurred in the fall of 2015.
- In general, CoC concentrations remained consistent with the levels observed during the September 2015 sampling event.

- Based on the results of analyses of groundwater samples collected during the current sampling event, the horizontal extent of the contaminant plume in the unconfined aquifer remains delineated.
- Based on the results of analyses of groundwater samples collected during the current sampling event, the horizontal extent of the contaminant plume in the upper bedrock aquifer also remains delineated.
- Based on concentrations of 1,4-dioxane in the groundwater sample collected from well MW-12D3, contamination in the deeper bedrock is not defined to the 2L Standard. However, due to the extended interval of unfractured bedrock encountered during installation of well MW-12D3, Amec Foster Wheeler contends that the vertical extent of contamination is defined, to the extent practical.
- The configuration of the contaminated groundwater plume from this quarterly groundwater sampling event was generally similar to the configuration of the plume interpreted from the September 2015 sampling event and previous sampling events.

5.3 RECOMMENDATIONS

Amec Foster Wheeler offers the following recommendations with respect to the semi-annual groundwater sampling and remediation system performance monitoring:

- Semi-annual groundwater monitoring should continue to be conducted in 2016 with the next sampling event proposed for September 2016 (see **Table 2**). RADW generated during the next sampling event should be removed from the Site as soon as reasonably possible following the event and disposed at a permitted off-site facility.
- The results of semi-annual groundwater monitoring will continue to be summarized in RAPRs and submitted to the NCDENR REC Program.
- During the 2nd semi-annual sampling event of 2016, an influent, mid-fluent, and effluent sample should be collected to verify that 1,4-dioxane continues to be successfully removed to below its discharge standard of 2 µg/L by the H_2O_2/UV light treatment. The two activated carbon vessels associated with the treatment system should continue to remain in place to ensure backup treatment for all extracted Site groundwater.
- Monthly O&M Site visits should continue to be conducted to check on system operation, perform system O&M as needed, and to conduct hazardous waste storage inspections. The completed logs and forms should be included in an appendix of the next RAPR.
- Per the Town of Boone POTW Industrial User Permit No. R006, quarterly sampling of the groundwater treatment system effluent port and semi-annual sampling of the treatment system influent port should continue to be conducted. A quarterly summary report should be prepared and submitted to the Town of Boone POTW, Pretreatment Section by the 30th day of the month following the collection of the samples to document compliance with the terms of Industrial User Permit No. R006.

6.0 QUALIFICATIONS OF REPORT

The activities and evaluative approaches used in this assessment are consistent with those normally employed in environmental assessments and waste-management projects of this type. Our evaluation of Site conditions has been based on our understanding of the Site and project information and the data obtained in our assessments. The general subsurface conditions utilized in our evaluation have been based on interpolation of subsurface data between the sampling locations. Regardless of the thoroughness of an environmental Site assessment, there is always the possibility that conditions between sampling locations will be different from that at specific locations due to the variability of subsurface conditions. Therefore, it was not possible to identify all conceivable forms of contamination.

This report has been prepared on behalf of and exclusively for the use of Robert Bosch Tool Corporation, Robert Bosch, LLC, and the NCDENR. This report and the findings contained herein shall not, in whole or in part, be disseminated or conveyed to any other party or used or relied upon by any other party without Amec Foster Wheeler's prior written consent.

TABLES

Table 1
Summary of Monitoring Well Construction Data
Robert Bosch Tool Corporation, Former Boone Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Monitoring Well	Date Installed	Ground Elevation (ft, msl)	TOC Elevation (ft, msl)	Boring Depth (ft, bgs)	Casing Depth (ft, bgs)	Well Depth (ft, bgs)	Screened Interval (ft, bgs)	Screen Length (ft)	Top of Sand (ft, bgs)	Top of Bentonite (ft, bgs)
MW-1	8/14/1991	3294.42	3294.27	45.0	NA	45.0	25.0 - 45.0	20.0	23.0	21.0
MW-2	8/14/1991	3295.45	3295.05	55.0	NA	55.0	35.0 - 55.0	20.0	33.0	31.0
MW-3	8/15/1991	3295.66	3295.46	55.0	NA	55.0	35.0 - 55.0	20.0	33.0	31.0
MW-3R	6/5/1992	NM	NM	70.0	38.0	70.0	40.0 - 70.0	30.0	38.0	37.0
MW-4	8/15/1991	3295.14	3294.94	55.0	NA	55.0	40.0 55.0	15.0	38.0	36.0
MW-4D	6/2/1992	3295.16	3294.77	98.0	63.0	96.0	91.0 - 96.0	5.0	89.0	88.0
MW-5	8/16/1991	3292.78	3292.51	80.0	NA	80.0	60.0 - 80.0	20.0	58.0	56.0
MW-5D	5/29/1992	3292.83	3292.61	128.0	52.0	120.0	115.0 - 120.0	5.0	113.0	112.0
MW-5DD	8/9/2011	3292.97	3292.83	160.0	90,130	160.0	155.0 160.0	5.0	153.0	142.0
MW-7	5/14/1992	3295.45	3295.25	37.0	NA	37.0	22.0 - 37.0	15.0	19.0	15.0
MW-7D	6/9/1992	3295.41	3296.21	77.0	20.5	72.0	67.0 - 72.0	5.0	65.0	64.0
MW-8	5/22/1992	3294.25	3294.09	50.0	NA	50.0	30.0 - 50.0	20.0	28.0	25.0
MW-8D	5/21/1992	3294.33	3294.20	96.0	50.0	96.0	81.0 - 96.0	15.0	79.0	78.0
MW-9D	6/9/1992	3295.79	3295.46	118.0	59.0	118.0	98.0 - 118.0	20.0	96.0	95.0
MW-10	5/27/1992	3288.47	3288.20	50.0	NA	50.0	26.0 - 50.0	24.0	24.0	20.0
MW-10D	6/10/1992	3288.54	3288.39	108.0	59.0	108.0	98.0 - 108.0	10.0	96.0	95.0
MW-11	5/14/1992	3293.94	3293.76	35.0	16.0	35.0	20.0 - 35.0	15.0	18.0	18.0
MW-12	5/22/1992	3294.02	3293.71	60.0	NA	60.0	40.0 - 60.0	20.0	38.0	34.0
MW-12D	7/27/2011	NM	3293.49	100.0	70.0	100.0	95.0 - 100.0	5.0	93.0	88.0
MW-12DD	3/12/2012	NM	3293.98	150.0	70, 120	135.0	130.0 - 135.0	5.0	128.0	120.0
MW-12D3	1/29/2013	3294.68	3294.53	201.0	146.0	201.0	191.0 201.0	10.0	189.0	183.0
MW-13	6/1/1993	3179.48	3179.15	60.0	NA	59.0	24.0 - 59.0	35.0	22.0	18.0
MW-13D	5/25/1993	3179.50	3179.26	125.0	83.0	120.0	110.0 - 120.0	10.0	108.0	105.0
MW-14	5/25/1993	3172.73	3172.41	60.0	NA	60.0	55.0 - 60.0	5.0	53.0	50.0
MW-15	6/2/1993	3132.36	NM	20.0	NA	19.0	4.0 - 19.0	15.0	2.0	1.0
MW-15D	5/26/1993	3132.62	NM	68.5	28.5	68.5	58.5 - 68.5	10.0	56.5	52.1
MW-16	6/2/1993	3128.57	NM	20.0	NA	19.0	4.0 - 19.0	15.0	2.0	1.0
MW-17	2/25/1997	3268.86	3268.52	46.5	14.0	45.9	36.4 - 45.9	9.5	34.4	32.8
MW-17D	2/27/1997	3269.12	3269.04	101.0	40.0	100.3	80.8 - 100.3	19.5	78.3	65.0
MW-18D	2/28/1997	3260.15	3259.85	91.0	15.0	90.4	80.9 - 90.4	9.9	78.9	74.0
MW-19	9/26/1998	NM	3179.66	49.0	NA	49.0	39.0 - 49.0	10.0	37.0	35.0
MW-19D	9/26/1998	NM	3180.05	120.0	107.0	120.0	115.0 - 120.0	5.0	113.0	101.0
MW-20	7/26/2011	NM	3295.52	60.0	NA	60.0	45.0 - 60.0	15.0	43.0	38.7
MW-20D	7/28/2011	NM	3295.69	82.0	60.0	82.0	77.0 - 82.0	5.0	75.0	70.0
MW-21	8/9/2011	NM	3275.55	47.0	NA	47.0	32.0 - 47.0	15.0	30.0	26.0
MW-22	2/11/2012	NM	3293.28	55.0	NA	55.0	45.0 - 55.0	10.0	42.0	39.0
MW-23	2/11/2012	NM	3295.44	55.0	NA	55.0	45.0 - 55.0	10.0	43.0	40.0
MW-24	2/11/2012	NM	3295.27	52.0	NA	52.0	42.0 - 52.0	10.0	39.0	36.0
MW-25	2/11/2012	NM	3294.39	60.0	NA	60.0	50.0 - 60.0	10.0	47.0	44.0
MW-26	3/13/2012	NM	3269.87	48.0	NA	48.0	38.0 - 48.0	10.0	36.0	29.0
MW-27	3/9/2012	NM	3267.37	50.0	NA	45.0	35.0 - 45.0	10.0	33.0	29.0
MW-28	1/21/2013	3261.30	3261.07	50.0	NA	42.0	32.0 - 42.0	10.0	30.0	27.0
MW-29D	1/24/2013	3264.50	3264.46	86.0	60.0	86.0	76.0 - 86.0	10.0	74.0	59.0
MW-30	1/23/2013	3242.90	3242.68	24.5	NA	24.5	14.5 - 24.5	10.0	12.0	10.0
MW-31	1/29/2013	3257.60	3257.42	45.0	NA	42.75	32.75 - 42.75	10.0	30.0	27.0
MW-32	4/10/2013	3257.20	3256.80	49.0	NA	45.0	35.0 - 45.0	10.0	33.0	27.0
MW-32D	1/30/2013	3256.10	3255.87	77.0	65.0	77.0	72.0 - 77.0	5.0	70.0	63.0
MW-33	4/10/2013	3256.30	3255.60	48.0	NA	47.0	37.0 - 47.0	10.0	35.0	29.0
MW-34	4/10/2013	3260.50	3260.24	51.0	NA	51.0	41.0 - 51.0	10.0	39.0	33.0
MW-35	6/20/2013	3227.40	3227.17	20.0	NA	20.0	10.0 - 20.0	10.0	8.0	5.0
MW-36	12/4/2013	3251.11	3250.93	47.0	NA	47.0	37.0 47.0	10.0	34.0	30.0
MW-36D	12/4/2013	3251.01	3250.57	69.0	50.0	69.0	64.0 69.0	5.0	62.0	58.0
RW-1	6/5/1992	3293.19	NM	75.0	40.0	75.0	40.0 - 75.0	35.0	33.0	32.0
RW-2	6/5/1992	3295.08	NM	71.0	41.0	71.0	41.0 - 71.0	30.0	38.0	37.0
RW-3	6/5/1992	3295.61	3295.36	70.0	38.0	70.0	40.0 - 70.0	30.0	38.00	37.0

Notes:
1. Elevations for wells MW-1 through MW-18D and RW-3 adapted from "Table 1. New Monitor Well Construction Details" contained in *Groundwater Assessment Report* for the Property at 665 State Farm Road, Boone, North Carolina dated September 9, 1997 and prepared by QST Environmental.
2. Elevations expressed in feet above North American Vertical Datum 1988.
3. TOC = top of casing
4. ft = feet
5. msl = mean sea level
6. bgs = below ground surface
7. NA = Not available. No casing was constructed during the well installation process.
8. NM = Not measured; ground surface and/or TOC elevations were not measured by the surveyor.

Prepared By/Date: SS 3/21/2014
Checked By/Date: MPF 3/25/2014

Table 2
Summary of Semi-Annual Groundwater Monitoring Program
Robert Bosch Tool Corporation, Former Boone Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Monitoring Frequency	First Semi-Annual Event						Second Semi-Annual Event					
Estimated Sampling Date	March 2016						September 2016					
Well ID	Groundwater Level Measurements	Field Parameters	Site-Specific VOCs	Free Cyanide	1,4-Dioxane	Duplicate	Groundwater Level Measurements	Field Parameters	Site-Specific VOCs	Free Cyanide	1,4-Dioxane	Duplicate
MW-1	•	--	--	--	--	--	•	--	--	--	--	--
MW-2	•	--	--	--	--	--	•	--	--	--	--	--
MW-3	•	--	--	--	--	--	•	--	--	--	--	--
MW-4	•	•	•	•	•	--	•	•	•	•	•	•
MW-4D	•	•	•	•	•	--	•	•	•	•	•	--
MW-5	•	•	•	•	•	--	•	•	•	•	•	--
MW-5D	•	•	•	•	•	--	•	•	•	•	•	--
MW-7	•	--	--	--	--	--	•	--	--	--	--	--
MW-7D	•	--	--	--	--	--	•	--	--	--	--	--
MW-8	•	--	--	--	--	--	•	--	--	--	--	--
MW-8D	•	--	--	--	--	--	•	--	--	--	--	--
MW-9D	•	--	--	--	--	--	•	--	--	--	--	--
MW-10	•	--	--	--	--	--	•	•	•	•	•	--
MW-10D	•	--	--	--	--	--	•	•	•	•	•	--
MW-12	•	•	•	•	•	--	•	•	•	•	•	--
MW-12D	•	•	•	•	•	--	•	•	•	•	•	--
MW-12DD	•	•	•	•	•	•	•	•	•	•	•	--
MW-12D3	•	•	•	•	•	--	•	•	•	•	•	•
MW-13	•	--	--	--	--	--	•	--	--	--	--	--
MW-13D	•	--	--	--	--	--	•	--	--	--	--	--
MW-14	•	--	--	--	--	--	•	--	--	--	--	--
MW-17	•	--	--	--	--	--	•	•	•	•	•	--
MW-17D	•	--	--	--	--	--	•	•	•	•	•	--
MW-18D	•	--	--	--	--	--	•	--	--	--	--	--
MW-19	•	--	--	--	--	--	•	--	--	--	--	--
MW-19D	•	--	--	--	--	--	•	--	--	--	--	--
MW-20	•	--	--	--	--	--	•	•	•	•	•	--
MW-20D	•	--	--	--	--	--	•	•	•	•	•	--
MW-21	•	•	•	•	•	--	•	•	•	•	•	--
MW-22	•	--	--	--	--	--	•	--	--	--	--	--
MW-23	•	--	--	--	--	--	•	--	--	--	--	--
MW-24	•	--	--	--	--	--	•	--	--	--	--	--
MW-25	•	--	--	--	--	--	•	--	--	--	--	--
MW-26	•	--	--	--	--	--	•	--	--	--	--	--
MW-27	•	--	--	--	--	--	•	--	--	--	--	--
MW-28	•	--	--	--	--	--	•	•	•	•	•	--
MW-29D	•	--	--	--	--	--	•	•	•	•	•	--
MW-31	•	•	•	•	•	--	•	•	•	•	•	--
MW-32D	•	--	--	--	--	--	•	--	--	--	--	--
MW-33	•	--	--	--	--	--	•	--	--	--	--	--
MW-34	•	•	•	•	•	--	•	•	•	•	•	--
MW-35	•	•	•	•	•	--	•	•	•	•	•	--
MW-36	•	--	--	--	--	--	•	•	•	•	•	--
MW-36D	•	--	--	--	--	--	•	•	•	•	•	--

Notes:

1. Field parameters include pH, temperature, specific conductance, dissolved oxygen and oxidation-reduction potential; field measurements will be recorded during purging activities or using a down-well water quality meter such as a Horiba U-52 or similar.
2. Samples will be analyzed for site-related VOCs using USEPA Method 8260B, 1,4-dioxane using USEPA 8260 SIM, and free cyanide using USEPA 9014.
3. Site-related VOCs include: chloroform, 1,1-DCA, 1,2-DCA, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, Methylene Chloride, PCE, 1,1,1-TCA, 1,1,2-TCA, TCE, and VC.
4. Wells MW-11, MW-15, MW-15D, and MW-16 could not be located and are presumed to have been destroyed.

Prepared By/Date: PSJ 03/24/15
Checked By/Date: TSR 03/24/15

Table 3
Summary of Groundwater Elevation Data
Robert Bosch Tool Corporation, Former Boone Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Monitoring Well	TOC Elevation (ft, msl)	Date	Depth to Ground Water (ft, bgs)	Water Table Elevation (ft, msl)	Screen Placement
MW-1	3294.27	3/22/2016	29.91	3264.36	Overburden
MW-2	3295.05	3/22/2016	45.90	3249.15	Overburden
MW-3	3295.46	3/22/2016	45.85	3249.61	Overburden
MW-4	3294.94	3/22/2016	46.15	3248.79	Overburden
MW-4D	3294.77	3/22/2016	46.74	3248.03	Upper Bedrock
MW-5	3292.51	3/22/2016	55.39	3237.12	Upper Bedrock
MW-5D	3292.61	3/22/2016	65.37	3227.24	Upper Bedrock
MW-5DD	3292.83	3/22/2016	66.49	3226.34	Middle Bedrock
MW-7	3295.25	3/22/2016	26.20	3269.05	Overburden
MW-7D	3296.21	3/22/2016	29.81	3266.40	Upper Bedrock
MW-8	3294.09	3/22/2016	41.89	3252.20	Overburden
MW-8D	3294.20	3/22/2016	46.82	3247.38	Upper Bedrock
MW-9D	3295.46	3/22/2016	45.17	3250.29	Upper Bedrock
MW-10	3288.20	3/22/2016	30.51	3257.69	Overburden
MW-10D	3288.39	3/22/2016	58.74	3229.65	Upper Bedrock
MW-11	3293.76	3/22/2016	26.51	3267.25	Overburden
MW-12	3293.71	3/22/2016	52.12	3241.59	Overburden
MW-12D	3293.49	3/22/2016	63.95	3229.54	Upper Bedrock
MW-12DD	3293.98	3/22/2016	68.63	3225.35	Middle Bedrock
MW-12D3	3294.53	3/22/2016	93.72	3200.81	Lower Bedrock
MW-13	3179.15	3/22/2016	32.29	3146.86	Overburden
MW-13D	3179.26	3/22/2016	33.74	3145.52	Upper Bedrock
MW-14	3272.44	3/22/2016	27.86	3244.58	Overburden
MW-17	3268.52	3/22/2016	34.61	3233.91	Upper Bedrock
MW-17D	3269.04	3/22/2016	44.89	3224.15	Middle Bedrock
MW-18D	3259.85	3/22/2016	36.53	3223.32	Middle Bedrock
MW-19	3179.66	3/22/2016	22.94	3156.72	Overburden
MW-19D	3180.05	3/22/2016	26.35	3153.70	Upper Bedrock
MW-20	3295.52	3/22/2016	46.21	3249.31	Overburden
MW-20D	3295.69	3/22/2016	79.80	3215.89	Upper Bedrock
MW-21	3275.55	3/22/2016	38.33	3237.22	Overburden
MW-22	3293.28	3/22/2016	41.04	3252.24	Overburden
MW-23	3295.44	3/22/2016	35.40	3260.04	Overburden
MW-24	3295.27	3/22/2016	42.57	3252.70	Overburden
MW-25	3294.39	3/22/2016	45.80	3248.59	Overburden
MW-26	3269.87	3/22/2016	38.03	3231.84	Overburden
MW-27	3267.37	3/22/2016	35.94	3231.43	Overburden
MW-28	3261.07	3/22/2016	30.11	3230.96	Overburden
MW-29D	3264.46	3/22/2016	40.41	3224.05	Upper Bedrock
MW-30	3242.68	3/22/2016	21.91	3220.77	Overburden
MW-31	3257.42	3/22/2016	31.53	3225.89	Overburden
MW-32	3256.80	3/22/2016	36.79	3220.01	Overburden
MW-32D	3255.87	3/22/2016	47.31	3208.56	Upper Bedrock
MW-33	3255.60	3/22/2016	39.81	3215.79	Overburden
MW-34	3260.24	3/22/2016	41.82	3218.42	Overburden
MW-35	3227.17	3/22/2016	12.22	3214.95	Overburden
MW-36	3250.93	3/22/2016	39.32	3211.61	Overburden
MW-36D	3250.57	3/22/2016	67.26	3183.31	Upper Bedrock

Notes:
1. Elevations for wells MW-1 through MW-18D and RW-3 adapted from "Table 1. New Monitor Well Construction Details" contained in Groundwater Assessment *Report* for the Property at 665 State Farm Road, Boone, North Carolina, dated September 9, 1997 and prepared by QST Environmental; elevations for wells MW-20 through MW-27 surveyed by R.B. Pharr Associates in 2012; elevations for wells MW-28, MW-30 through MW-35, MW-29D and MW-32D surveyed by KCI Associates in July 2013.
2. Elevations expressed in feet above North American Vertical Datum 1988.
3. TOC = top of casing
4. ft = feet
5. msl = mean sea level
6. bgs = below ground surface
7. NM = Not measured; wells MW-15, MW-15D and MW-16 have been destroyed
8. Overburden = Partially weathered rock

Prepared By/Date: LLM 03/28/16
Checked By/Date: ZJD 04/01/16

Table 4

Summary of Laboratory Analytical Results
Robert Bosch Tool Corporation, Former Boone Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Well ID	Date	1,1-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	PCE	1,1,1-TCA	TCE	Vinyl Chloride	1,4-dioxane	Amenable Cyanide
NCAC 2L		6	350	70	100	0.7	200	3	0.03	3	0.07
MW-4	3/23/16	**267**	**7.5**	**1,390**	**7.0**	**197**	**25**	**210**	***0.92J***	**4.5**	**0.801**
MW-4D	3/23/16	<1.0	<1.0	*0.57J*	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.005
MW-5	3/23/16	<1.0	<1.0	<1.0	<1.0	**1.7**	<1.0	<1.0	<1.0	<2.0	<0.005
MW-5D	3/23/16	<1.0	<1.0	*0.66J*	<1.0	<1.0	<1.0	*0.90J*	<1.0	<2.0	<0.005
MW-12	3/23/16	**39.5**	<1.0	**44.0**	**1.0**	**4.2**	**2.2**	**5.2**	<1.0	**3.0**	**0.080**
MW-12D	3/24/16	**13.3**	<1.0	**52.0**	*0.60J*	**7.5**	**1.2**	**10.2**	<1.0	**3.5**	**0.026**
MW-12DD	3/23/16	**1.8**	**10.3**	**114**	**4.1**	**8.6**	**3.1**	**182**	<1.0	**34.6**	<0.005
MW-12D3	3/24/16	**1.2**	<1.0	**4.5**	<1.0	<1.0	<1.0	*2.2J*	<1.0	**14.6**	<0.005
MW-21	3/23/16	*0.42J*	<1.0	**1.5**	<1.0	**2.8**	<1.0	*0.85J*	<1.0	<2.0	<0.005
MW-31	3/22/16	**1.9**	<1.0	**11.6**	<1.0	**1.8**	<1.0	**3.3**	<1.0	**3.6**	<0.005
MW-34	3/22/16	**13.6**	<1.0	**112**	**1.5**	*0.92J*	<1.0	**8.3**	<1.0	*2.0J*	<0.005
MW-35	3/23/16	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.005

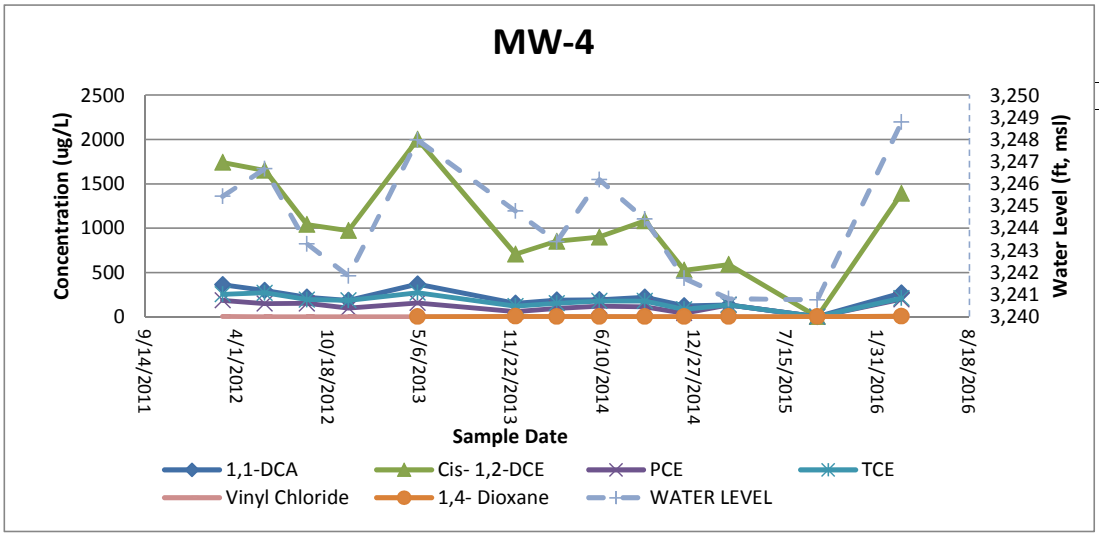
Notes:
1. All Concentrations in micrograms per liter (µg/L), with the exception of amenable cyanide, which is reported in milligrams per liter (mg/L).
2. NCAC 2L = North Carolina Administrative Code 2L Standards.
3. Bold values indicate detections above the laboratory RL.
4. Italic values indicate estimated concentrations below the laboratory Reporting Limit and Method Detection Limit (J Flag)
5. Bold Red Values Exceed NCAC 2L Standard
6. Constituent abbreviatic DCA = dichloroethane PCE = tetrachloroethene TCE = trichloroethene
DCE = dichloroethene TCA = trichloroethane

Prepared By/Date: LLM 04/07/16
Checked By/Date: ZJD 04/08/16

Table 5

Historical Groundwater Sampling Laboratory Analytical Results
RBTC Former Boone Manufacturing Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Well ID	Sample Date	Units	WATER LEVEL	1,1-DCA	Cis-1,2-DCE	PCE	TCE	Vinyl Chloride	1,4-Dioxane
2L Standard		µg/L		6.0	70	0.7	3.0	0.03	3.0
MW-4	3/1/2012	µg/L	3245.44	**362**	**1740**	**186**	**254**	**3.0**	--
	6/1/2012	µg/L	3246.67	**298**	**1650**	**149**	**270**	<10.0	--
	9/1/2012	µg/L	3243.29	**222**	**1040**	**151**	**194**	<1.0	--
	12/1/2012	µg/L	3241.84	**186**	**973**	**97.3**	**186**	**1.6**	--
	5/1/2013	µg/L	3247.98	**369**	**2000**	**155**	**271**	**2.1**	***2.0***
	12/1/2013	µg/L	3244.77	**152**	**705**	**59.2**	**120**	<5.0	**4.4**
	3/1/2014	µg/L	3243.38	**190**	**851**	**94**	**152**	<5.0	**2.4**
	6/2/2014	µg/L	3246.18	**191**	**898**	**121**	**179**	<5.0	<2.0
	9/9/2014	µg/L	3244.41	**222**	**1080**	**114**	**177**	<5.0	**2.4**
	12/4/2014	µg/L	3241.74	**125**	**524**	**40.6**	**84.9**	<10.0	<2.0
	3/11/2015	µg/L	3240.81	**133**	**590**	**135**	**135**	<5.0	<2.0
	9/21/2015	µg/L	3240.76	NS	NS	NS	NS	NS	NS
	3/23/2016	µg/L	3248.79	**267**	**1390**	**197**	**210**	***0.92***	**4.5**



Notes:
2L Standard = NCAC 15A 02L.0202 Groundwater Quality Standards
µg/L = micrograms per liter
Water Level = Feet mean sea level elevation
1,1-DCA = 1,1-dichloroethane
cis-1,2-DCE = cis-1,2-dichloroethene
PCE = tetrachloroethene (perchloroethylene)
TCE = trichloroethene
Bold Italic values are estimated between the Minimum Detection Limit and Reporting Limit ("J" Flag)
Bold values indicate detections above the Reporting Limit
Bold Shaded values indicate detections above the 2L Standard
-- = Parameter not analyzed
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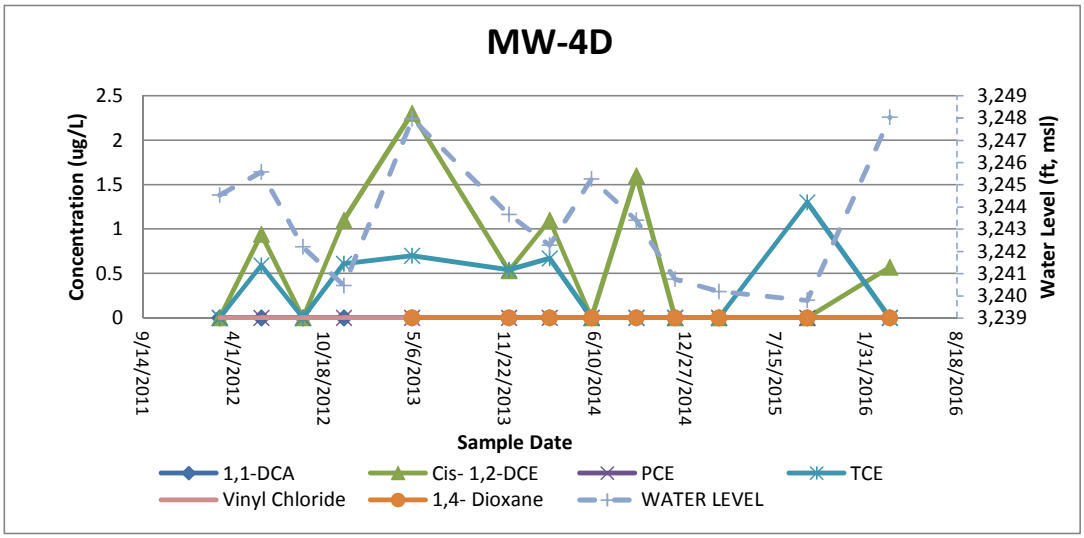
Prepared By/Date:LLM 04/07/16
Checked By/Date: ZJD 04/08/16

Table 5

Historical Groundwater Sampling Laboratory Analytical Results
RBTC Former Boone Manufacturing Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Well ID	Sample Date	Units	WATER LEVEL	1,1-DCA	Cis-1,2-DCE	PCE	TCE	Vinyl Chloride	1,4-Dioxane
2L Standard		µg/L		6.0	70	0.7	3.0	0.03	3.0
MW-4D	3/1/2012	µg/L	3244.53	<1.0	<1.0	<1.0	<1.0	<1.0	--
	6/1/2012	µg/L	3245.57	<1.0	***0.94***	<1.0	***0.59***	<1.0	--
	9/1/2012	µg/L	3242.20	<1.0	<1.0	<1.0	<1.0	<1.0	--
	12/1/2012	µg/L	3240.46	<1.0	**1.1**	<1.0	***0.61***	<1.0	--
	5/1/2013	µg/L	3247.96	<1.0	**2.3**	<1.0	***0.70***	<1.0	<3.0
	12/1/2013	µg/L	3243.65	<1.0	***0.53***	<1.0	***0.54***	<1.0	<2.0
	3/1/2014	µg/L	3242.27	<1.0	**1.1**	<1.0	***0.67***	<1.0	<2.0
	6/2/2014	µg/L	3245.26	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
	9/9/2014	µg/L	3243.40	<1.0	**1.6**	<1.0	<1.0	<1.0	<2.0
	12/4/2014	µg/L	3240.75	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
	3/11/2015	µg/L	3240.19	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
	9/22/2015	µg/L	3239.79	<1.0	<1.0	<1.0	**1.3**	<1.0	<2.0
	3/23/2016	µg/L	3248.03	<1.0	***0.57***	<1.0	<1.0	<1.0	<2.0



Notes:
2L Standard = NCAC 15A 02L.0202 Groundwater Quality Standards
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Water Level = Feet mean sea level elevation
1,1-DCA = 1,1-dichloroethane
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PCE = tetrachloroethene (perchloroethylene)
TCE = trichloroethene
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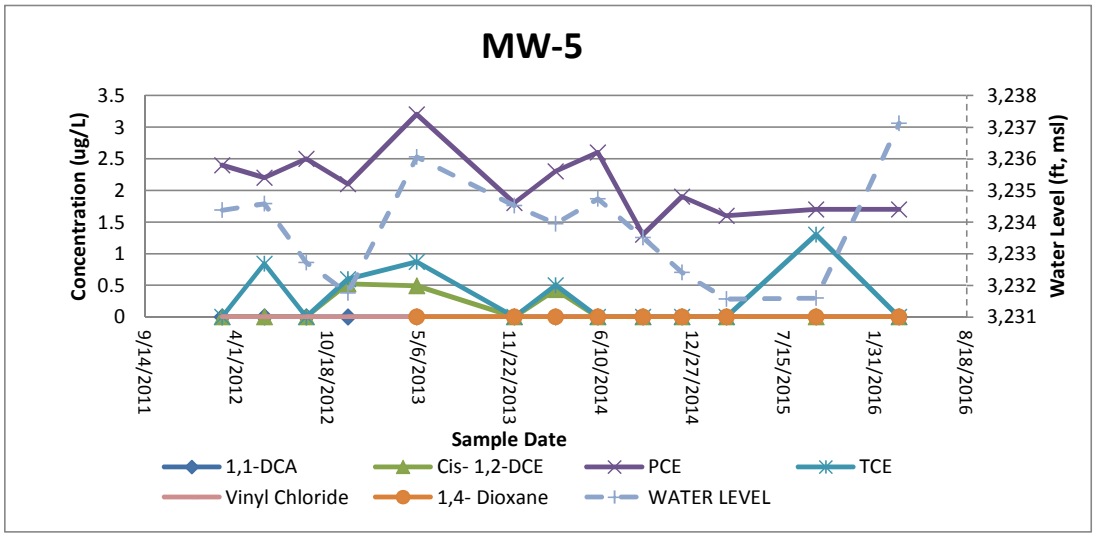
Prepared By/Date:LLM 04/07/16
Checked By/Date: ZJD 04/08/16

Table 5

Historical Groundwater Sampling Laboratory Analytical Results
RBTC Former Boone Manufacturing Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Well ID	Sample Date	Units	WATER LEVEL	1,1-DCA	Cis-1,2-DCE	PCE	TCE	Vinyl Chloride	1,4-Dioxane
2L Standard		µg/L		6.0	70	0.7	3.0	0.03	3.0
MW-5	3/1/2012	µg/L	3234.38	<1.0	<1.0	**2.4**	<1.0	<1.0	--
	6/1/2012	µg/L	3234.58	<1.0	<1.0	**2.2**	***0.84***	<1.0	--
	9/1/2012	µg/L	3232.72	<1.0	<1.0	**2.5**	<1.0	<1.0	--
	12/1/2012	µg/L	3231.76	<1.0	***0.52***	**2.1**	***0.60***	<1.0	--
	5/1/2013	µg/L	3236.06	<1.0	***0.49***	**3.2**	***0.87***	<1.0	<3.0
	12/1/2013	µg/L	3234.52	<1.0	<1.0	**1.8**	<1.0	<1.0	<2.0
	3/1/2014	µg/L	3233.95	<1.0	***0.43***	**2.3**	***0.50***	<1.0	<2.0
	6/2/2014	µg/L	3234.73	<1.0	<1.0	**2.6**	<1.0	<1.0	<2.0
	9/9/2014	µg/L	3233.51	<1.0	<1.0	**1.3**	<1.0	<1.0	<2.0
	12/3/2014	µg/L	3232.41	<1.0	<1.0	**1.9**	<1.0	<1.0	<2.0
	3/11/2015	µg/L	3231.57	<1.0	<1.0	**1.6**	<1.0	<1.0	<2.0
	9/23/2015	µg/L	3231.60	<1.0	<1.0	**1.7**	**1.3**	<1.0	<2.0
	3/23/2016	µg/L	3237.12	<1.0	<1.0	**1.7**	<1.0	<1.0	<2.0



Notes:
2L Standard = NCAC 15A 02L.0202 Groundwater Quality Standards
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Water Level = Feet mean sea level elevation
1,1-DCA = 1,1-dichloroethane
cis-1,2-DCE = cis-1,2-dichloroethene
PCE = tetrachloroethene (perchloroethylene)
TCE = trichloroethene
Bold Italic values are estimated between the Minimum Detection Limit and Reporting Limit ("J" Flag)
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Bold Shaded values indicate detections above the 2L Standard
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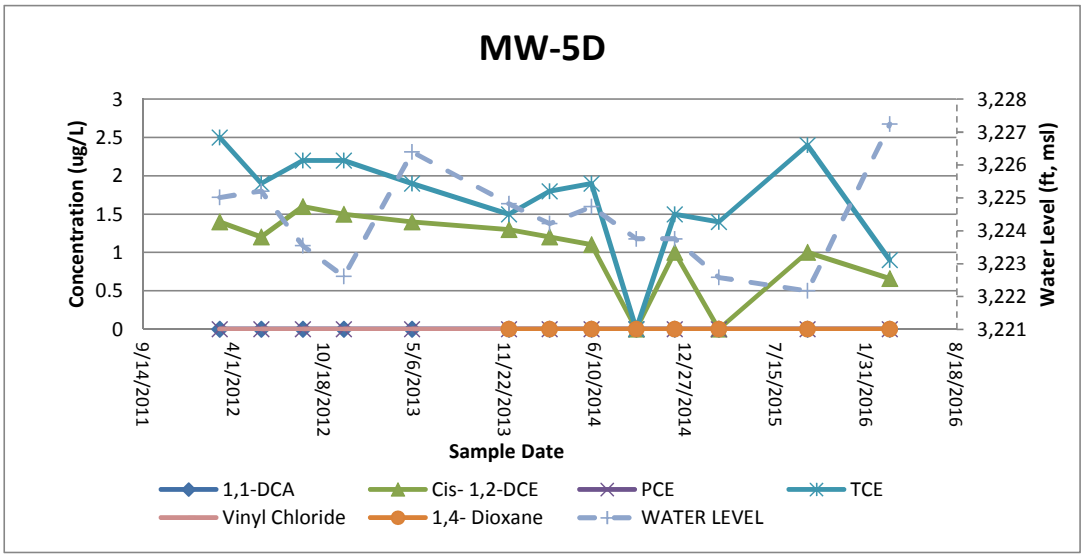
Checked By/Date: ZJD 04/08/16

Table 5

Historical Groundwater Sampling Laboratory Analytical Results
RBTC Former Boone Manufacturing Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Well ID	Sample Date	Units	WATER LEVEL	1,1-DCA	Cis-1,2-DCE	PCE	TCE	Vinyl Chloride	1,4-Dioxane
2L Standard		µg/L		6.0	70	0.7	3.0	0.03	3.0
MW-5D	3/1/2012	µg/L	3225.01	<1.0	**1.4**	<1.0	**2.5**	<1.0	--
	6/1/2012	µg/L	3225.20	<1.0	**1.2**	<1.0	**1.9**	<1.0	--
	9/1/2012	µg/L	3223.54	<1.0	**1.6**	<1.0	**2.2**	<1.0	--
	12/1/2012	µg/L	3222.61	<1.0	**1.5**	<1.0	**2.2**	<1.0	--
	5/1/2013	µg/L	3226.39	<1.0	**1.4**	<1.0	**1.9**	<1.0	<3.0
	12/1/2013	µg/L	3224.82	<1.0	**1.3**	<1.0	**1.5**	<1.0	<2.0
	3/1/2014	µg/L	3224.21	<1.0	**1.2**	<1.0	**1.8**	<1.0	<2.0
	6/2/2014	µg/L	3224.73	<1.0	**1.1**	<1.0	**1.9**	<1.0	<2.0
	9/9/2014	µg/L	3223.75	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
	12/3/2014	µg/L	3223.75	<1.0	**1.0**	<1.0	**1.5**	<1.0	<2.0
	3/11/2015	µg/L	3222.58	<1.0	<1.0	<1.0	**1.4**	<1.0	<2.0
	9/23/2015	µg/L	3222.17	<1.0	**1.0**	<1.0	**2.4**	<1.0	<2.0
	3/23/2016	µg/L	3227.24	<1.0	***0.66***	<1.0	***0.90***	<1.0	<2.0



Notes:
2L Standard = NCAC 15A 02L.0202 Groundwater Quality Standards
µg/L = micrograms per liter
Water Level = Feet mean sea level elevation
1,1-DCA = 1,1-dichloroethane
cis-1,2-DCE = cis-1,2-dichloroethene
PCE = tetrachloroethene (perchloroethylene)
TCE = trichloroethene
Bold Italic values are estimated between the Minimum Detection Limit and Reporting Limit ("J" Flag)
Bold values indicate detections above the Reporting Limit
Bold Shaded values indicate detections above the 2L Standard
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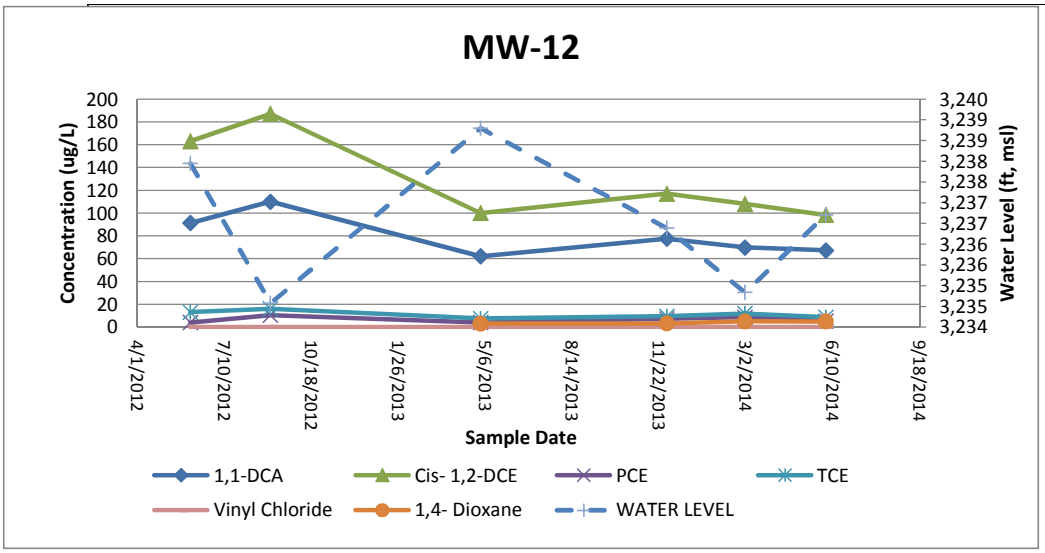
Prepared By/Date:LLM 04/07/16
Checked By/Date: ZJD 04/08/16

Table 5

Historical Groundwater Sampling Laboratory Analytical Results
RBTC Former Boone Manufacturing Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Well ID	Sample Date	Units	WATER LEVEL	1,1-DCA	Cis-1,2-DCE	PCE	TCE	Vinyl Chloride	1,4-Dioxane
2L Standard		µg/L		6.0	70	0.7	3.0	0.03	3.0
MW-12	6/1/2012	µg/L	3237.95	**91.3**	**163**	**4.1**	**13.2**	<2.0	--
	9/1/2012	µg/L	3234.58	**110**	**187**	**10.5**	**16.1**	<2.0	--
	5/1/2013	µg/L	3238.80	**62.2**	**100**	**4.1**	**7.6**	<1.0	**3.1**
	12/1/2013	µg/L	3236.39	**77.6**	**117**	**7.3**	**9.6**	<1.0	**3.3**
	3/1/2014	µg/L	3234.84	**69.9**	**108**	**8.7**	**11.9**	<1.0	**5.0**
	6/2/2014	µg/L	3236.71	**67.3**	**98.4**	**5.3**	**8.7**	<1.0	**4.9**
	9/9/2014	µg/L	3234.77	NS	NS	NS	NS	NS	NS
	12/4/2014	µg/L	Dry	NS	NS	NS	NS	NS	NS
	3/11/2015	µg/L	Dry	NS	NS	NS	NS	NS	NS
	9/21/2015	µg/L	3233.96	NS	NS	NS	NS	NS	NS
	3/23/2016	µg/L	3241.59	**39.5**	**44.0**	**4.2**	**5.2**	<1.0	**3.0**



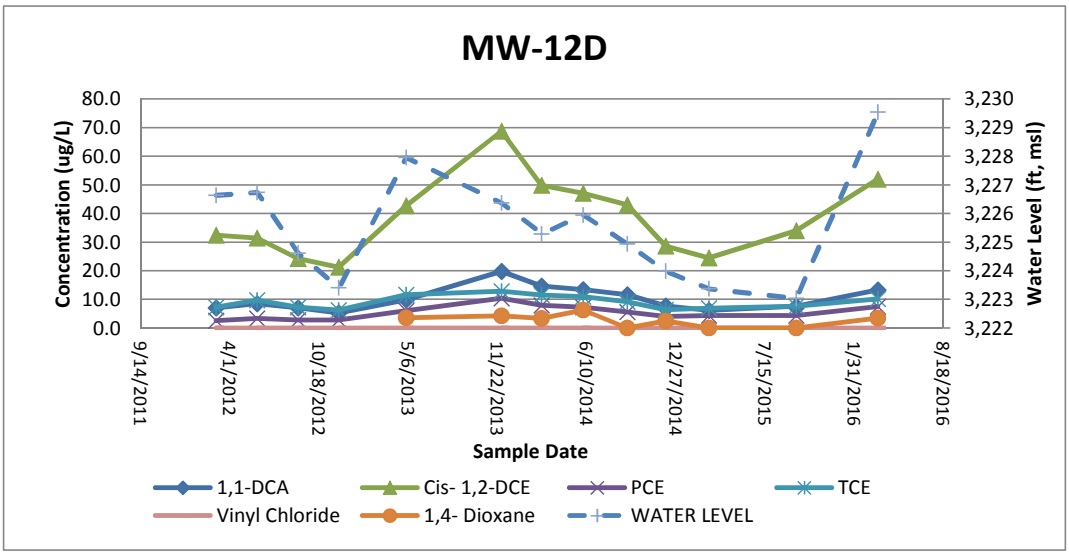
Notes:
2L Standard = NCAC 15A 02L.0202 Groundwater Quality Standards
µg/L = micrograms per liter
Water Level = Feet mean sea level elevation
1,1-DCA = 1,1-dichloroethane
cis-1,2-DCE = cis-1,2-dichloroethene
PCE = tetrachloroethene (perchloroethylene)
TCE = trichloroethene
Bold Italic values are estimated between the Minimum Detection Limit and Reporting Limit ("J" Flag)
Bold values indicate detections above the Reporting Limit
Bold Shaded values indicate detections above the 2L Standard
NS = Not sampled due to insufficient groundwater
-- = Parameter not analyzed
* = Sample not collected; well is not included in the Quarterly Groundwater Monitoring Program

Prepared By/Date:LLM 04/07/16
Checked By/Date: ZJD 04/08/16

Table 5

Historical Groundwater Sampling Laboratory Analytical Results
RBTC Former Boone Manufacturing Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Well ID	Sample Date	Units	WATER LEVEL	1,1-DCA	Cis-1,2-DCE	PCE	TCE	Vinyl Chloride	1,4-Dioxane
2L Standard		µg/L		6.0	70	0.7	3.0	0.03	3.0
MW-12D	3/1/2012	µg/L	3226.64	**7.0**	**32.4**	**2.6**	**7.3**	<1.0	--
	6/1/2012	µg/L	3226.74	**8.5**	**31.4**	**3.4**	**9.7**	<1.0	--
	9/1/2012	µg/L	3224.61	**7.0**	**24.3**	**2.8**	**7.3**	<1.0	--
	12/1/2012	µg/L	3223.41	**5.3**	**21.2**	**2.8**	**6.3**	<1.0	--
	5/1/2013	µg/L	3227.96	**9.8**	**42.7**	**6.0**	**11.6**	<1.0	**3.6**
	12/1/2013	µg/L	3226.37	**19.8**	**68.7**	**10.4**	**12.9**	<1.0	**4.2**
	3/1/2014	µg/L	3225.29	**14.6**	**49.8**	**7.9**	**11.5**	<1.0	**3.4**
	6/2/2014	µg/L	3225.95	**13.4**	**47.1**	**7.3**	**10.9**	<1.0	**6.3**
	9/9/2014	µg/L	3224.94	**11.6**	**43.0**	**5.6**	**9.2**	<1.0	<3.1
	12/4/2014	µg/L	3223.99	**7.7**	**28.6**	**4.0**	**6.4**	<1.0	**2.4**
	3/11/2015	µg/L	3223.37	**6.1**	**24.5**	**4.4**	**6.9**	<1.0	<2.0
	9/23/2015	µg/L	3223.04	**7.6**	**34.0**	**4.4**	**7.6**	<1.0	<2.0
	3/24/2016	µg/L	3229.54	**13.3**	**52.0**	**7.5**	**10.2**	<1.0	**3.5**



Notes:
2L Standard = NCAC 15A 02L.0202 Groundwater Quality Standards
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1,1-DCA = 1,1-dichloroethane
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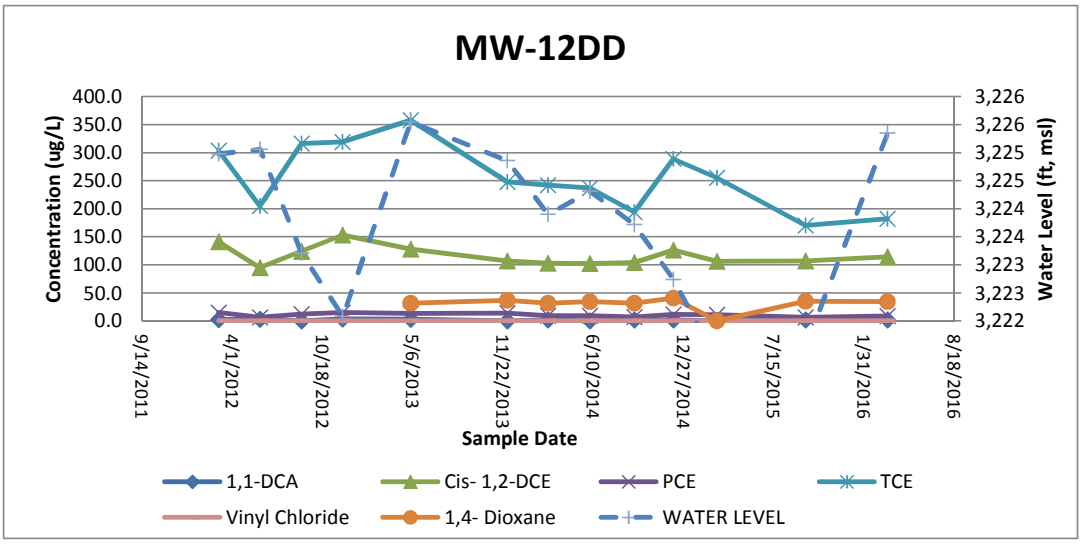
Table 5

Historical Groundwater Sampling Laboratory Analytical Results
RBTC Former Boone Manufacturing Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Well ID	Sample Date	Units	WATER LEVEL	1,1-DCA	Cis-1,2-DCE	PCE	TCE	Vinyl Chloride	1,4-Dioxane
2L Standard		µg/L		6.0	70	0.7	3.0	0.03	3.0
MW-12DD	3/1/2012	µg/L	3224.98	**2.3**	**141**	**15.2**	**304**	<1.0	--
	6/1/2012	µg/L	3225.06	**3.0**	**94.8**	**6.5**	**205**	<2.5	--
	9/1/2012	µg/L	3223.21	<2.5	**124**	**12.2**	**316**	<2.5	--
	12/1/2012	µg/L	3222.08	**3.5**	**153**	**15.2**	**319**	<1.0	--
	5/1/2013	µg/L	3225.55	**2.7**	**128**	**13.1**	**358**	<1.0	**31.7**
	12/1/2013	µg/L	3224.86	<2.0	**107**	**13.6**	**248**	<2.0	**36.5**
	3/1/2014	µg/L	3223.90	**2.0**	**103**	**9.4**	**242**	<2.0	**31.8**
	6/2/2014	µg/L	3224.31	<2.0	**102**	**9.4**	**237**	<2.0	**34.3**
	9/9/2014	µg/L	3223.72	**2.0**	**104**	**6.9**	**194**	<2.0	**31.6**
	12/4/2014	µg/L	3222.74	**2.1**	**126**	**11.3**	**289**	<2.0	**40.6**
	3/11/2015	µg/L	3221.29	<2.5	**106**	**10.7**	**255**	<2.5	<2.0
	9/23/2015	µg/L	3221.55	***1.7***	**107**	**6.6**	**170**	<2.5	**34.7**
	3/23/2016	µg/L	3225.35	**1.8**	**114**	**8.6**	**182**	<2.5	**34.6**



Notes:
2L Standard = NCAC 15A 02L.0202 Groundwater Quality Standards
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Water Level = Feet mean sea level elevation
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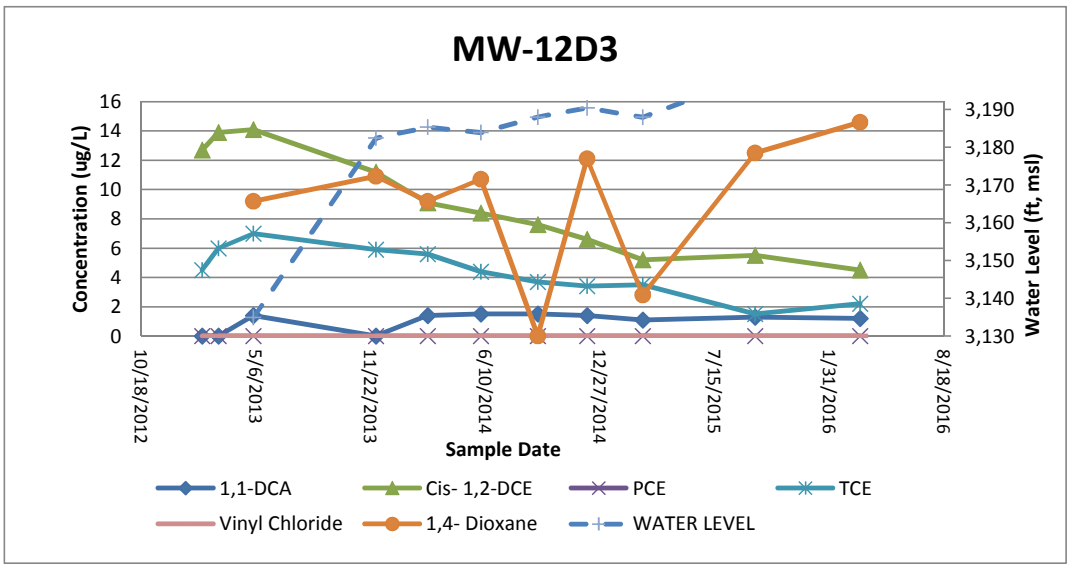
Prepared By/Date:LLM 04/07/16
Checked By/Date: ZJD 04/08/16

Table 5

Historical Groundwater Sampling Laboratory Analytical Results
RBTC Former Boone Manufacturing Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Well ID	Sample Date	Units	WATER LEVEL	1,1-DCA	Cis-1,2-DCE	PCE	TCE	Vinyl Chloride	1,4-Dioxane
2L Standard		µg/L		6.0	70	0.7	3.0	0.03	3.0
MW-12D3	2/1/2013	µg/L	--	<1.0	**12.7**	<1.0	**4.5**	<1.0	--
	3/1/2013	µg/L	--	<1.0	**13.9**	<1.0	**6.0**	<1.0	--
	5/1/2013	µg/L	3134.91	**1.4**	**14.1**	<1.0	**7.0**	<1.0	**9.2**
	12/1/2013	µg/L	3182.44	<1.0	**11.2**	<1.0	**5.9**	<1.0	**10.9**
	3/1/2014	µg/L	3185.34	**1.4**	**9.1**	<1.0	**5.6**	<1.0	**9.2**
	6/2/2014	µg/L	3183.85	**1.5**	**8.4**	<1.0	**4.4**	<1.0	**10.7**
	9/9/2014	µg/L	3187.97	**1.5**	**7.6**	<1.0	**3.7**	<1.0	<6.6
	12/4/2014	µg/L	3190.38	**1.4**	**6.6**	<1.0	**3.4**	<1.0	**12.1**
	3/11/2015	µg/L	3187.90	**1.1**	**5.2**	<1.0	**3.5**	<1.0	**2.8**
	9/23/2015	µg/L	3199.23	**1.3**	**5.5**	<1.0	***1.5***	<1.0	**12.5**
	3/24/2016	µg/L	3200.81	**1.2**	**4.5**	<1.0	***2.2***	<1.0	**14.6**



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2L Standard = NCAC 15A 02L.0202 Groundwater Quality Standards
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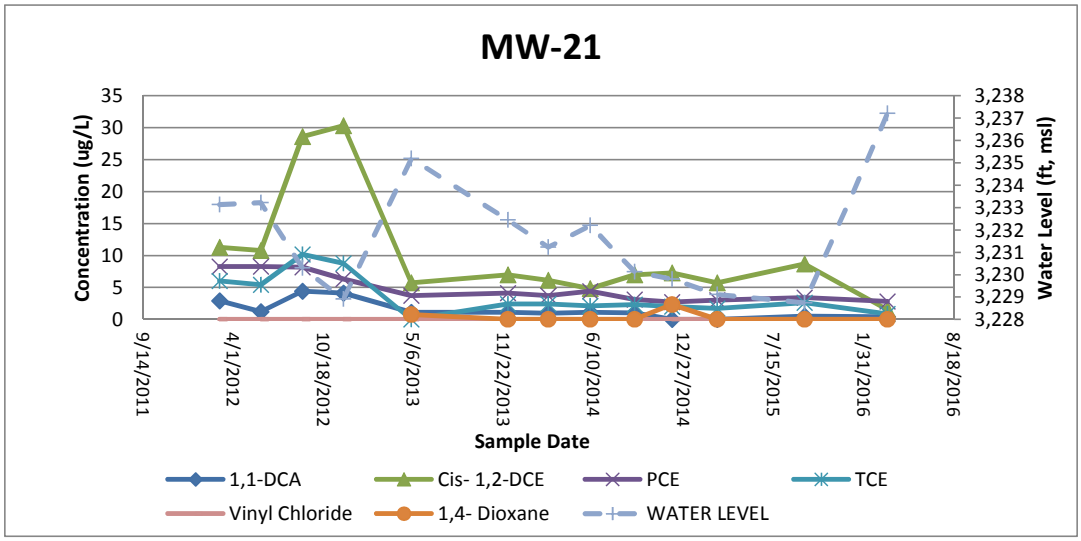
Checked By/Date: ZJD 04/08/16

Table 5

Historical Groundwater Sampling Laboratory Analytical Results
RBTC Former Boone Manufacturing Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Well ID	Sample Date	Units	WATER LEVEL	1,1-DCA	Cis-1,2-DCE	PCE	TCE	Vinyl Chloride	1,4-Dioxane
2L Standard		µg/L		6.0	70	0.7	3.0	0.03	3.0
MW-21	3/1/2012	µg/L	3233.14	**2.9**	**11.3**	**8.3**	**6.0**	<1.0	--
	6/1/2012	µg/L	3233.22	**1.2**	**10.8**	**8.3**	**5.4**	<1.0	--
	9/1/2012	µg/L	3230.31	**4.4**	**28.6**	**8.2**	**10.2**	<1.0	--
	12/1/2012	µg/L	3228.92	**4.1**	**30.3**	**6.3**	**8.8**	<1.0	--
	5/1/2013	µg/L	3235.20	**1.1**	**5.7**	**3.7**	<1.0	<1.0	***0.78***
	12/1/2013	µg/L	3232.45	**1.1**	**7.0**	**4.1**	**2.4**	<1.0	<2.0
	3/1/2014	µg/L	3231.24	***0.94***	**6.1**	**3.7**	**2.4**	<1.0	<2.0
	6/2/2014	µg/L	3232.21	**1.1**	**4.8**	**4.4**	**2.1**	<1.0	<2.0
	9/9/2014	µg/L	3230.14	**1.0**	**7.0**	**3.1**	**2.3**	<1.0	<2.0
	12/1/2014	µg/L	3229.80	<1.0	**7.3**	**2.7**	**2.0**	<1.0	**2.3**
	3/11/2015	µg/L	3229.12	<1.0	**5.7**	**3.0**	**1.7**	<1.0	<2.0
	9/21/2015	µg/L	3228.75	***0.52***	**8.7**	**3.4**	**2.6**	<1.0	<2.0
	3/23/2016	µg/L	3237.22	***0.42***	**1.5**	**2.8**	***0.85***	<1.0	<2.0



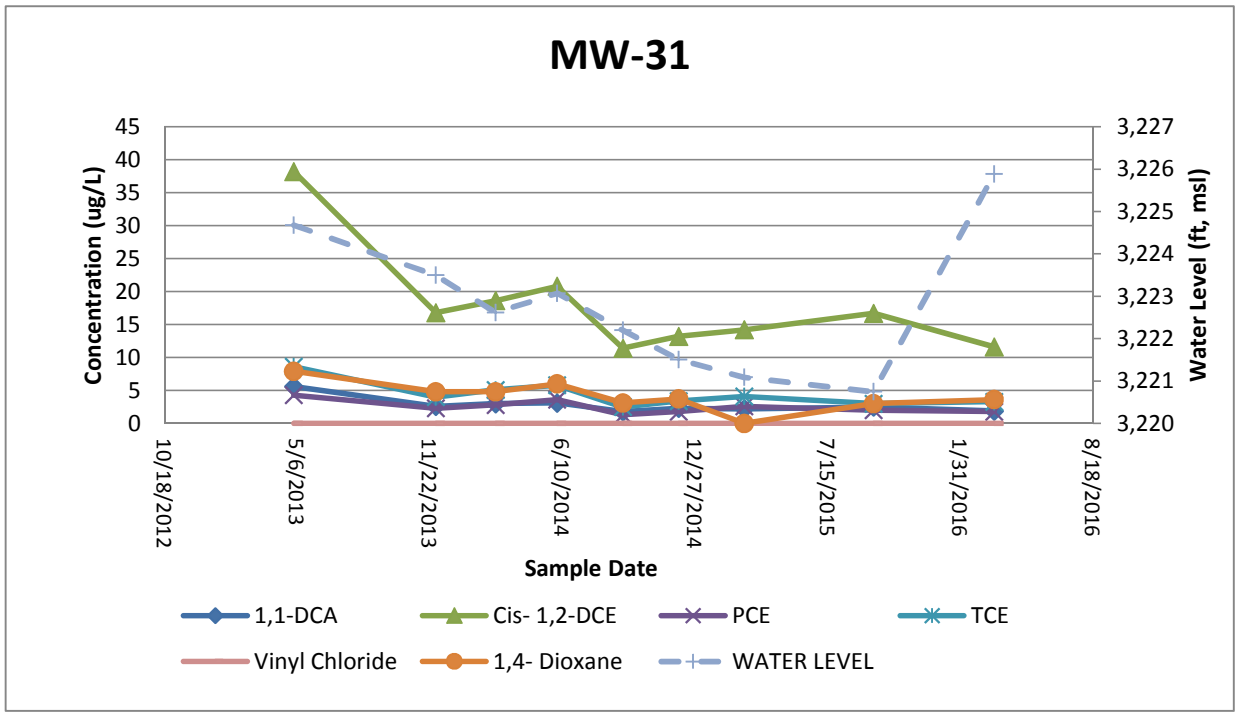
Notes:
2L Standard = NCAC 15A 02L.0202 Groundwater Quality Standards
µg/L = micrograms per liter
Water Level = Feet mean sea level elevation
1,1-DCA = 1,1-dichloroethane
cis-1,2-DCE = cis-1,2-dichloroethene
PCE = tetrachloroethene (perchloroethylene)
TCE = trichloroethene
Bold Italic values are estimated between the Minimum Detection Limit and Reporting Limit ("J" Flag)
Bold values indicate detections above the Reporting Limit
Bold Shaded values indicate detections above the 2L Standard
-- = Parameter not analyzed
* = Sample not collected; well is not included in the Quarterly Groundwater Monitoring Program

Prepared By/Date:LLM 04/07/16
Checked By/Date: ZJD 04/08/16

Table 5

Historical Groundwater Sampling Laboratory Analytical Results
RBTC Former Boone Manufacturing Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Well ID	Sample Date	Units	WATER LEVEL	1,1-DCA	Cis-1,2-DCE	PCE	TCE	Vinyl Chloride	1,4-Dioxane
2L Standard		µg/L		6.0	70	0.7	3.0	0.03	3.0
MW-31	5/1/2013	µg/L	3224.68	**5.6**	**38.2**	**4.3**	**8.6**	<1.0	**7.9**
	12/1/2013	µg/L	3223.50	**2.6**	**16.8**	**2.3**	**4.0**	<1.0	**4.8**
	3/1/2014	µg/L	3222.62	**3.0**	**18.6**	**2.8**	**5.1**	<1.0	**4.8**
	6/2/2014	µg/L	3223.07	**3.1**	**20.8**	**3.6**	**5.8**	<1.0	**6.0**
	9/9/2014	µg/L	3222.20	**1.8**	**11.4**	**1.3**	**2.5**	<1.0	**3.1**
	12/2/2014	µg/L	3221.51	**2.3**	**13.2**	**1.8**	**3.4**	<1.0	**3.7**
	3/11/2015	µg/L	3221.09	**2.2**	**14.2**	**2.6**	**4.1**	<1.0	<2.0
	9/22/2015	µg/L	3220.75	**2.5**	**16.7**	**2.0**	**3.0**	<1.0	**3.0**
	3/22/2016	µg/L	3225.89	**1.9**	**11.6**	**1.8**	**3.3**	<1.0	**3.6**



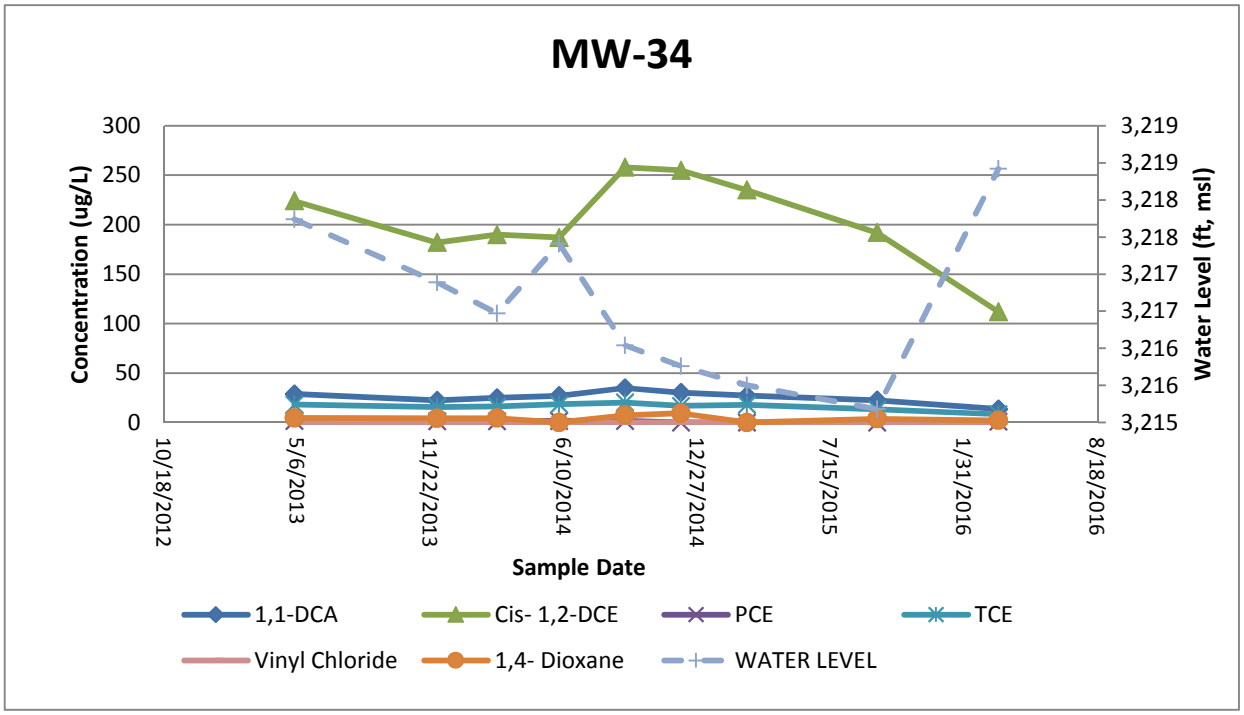
Notes:
2L Standard = NCAC 15A 02L.0202 Groundwater Quality Standards
µg/L = micrograms per liter
Water Level = Feet mean sea level elevation
1,1-DCA = 1,1-dichloroethane
cis-1,2-DCE = cis-1,2-dichloroethene
PCE = tetrachloroethene (perchloroethylene)
TCE = trichloroethene
Bold Italic values are estimated between the Minimum Detection Limit and Reporting Limit ("J" Flag)
Bold values indicate detections above the Reporting Limit
Bold Shaded values indicate detections above the 2L Standard
-- = Parameter not analyzed
* = Sample not collected; well is not included in the Quarterly Groundwater Monitoring Program

Prepared By/Date:LLM 04/07/16
Checked By/Date: ZJD 04/08/16

Table 5

Historical Groundwater Sampling Laboratory Analytical Results
RBTC Former Boone Manufacturing Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Well ID	Sample Date	Units	WATER LEVEL	1,1-DCA	Cis-1,2-DCE	PCE	TCE	Vinyl Chloride	1,4-Dioxane
2L Standard		µg/L		6.0	70	0.7	3.0	0.03	3.0
MW-34	5/1/2013	µg/L	3217.74	**28.7**	**224**	**1.5**	**18.1**	<1.0	**4.5**
	12/1/2013	µg/L	3216.89	**22.3**	**182**	**1.3**	**15.6**	<1.0	**4.2**
	3/1/2014	µg/L	3216.47	**24.9**	**190**	**1.1**	**16.1**	<1.0	**4.3**
	6/2/2014	µg/L	3217.41	**27.0**	**187**	**1.6**	**18.4**	<1.0	<2.0
	9/9/2014	µg/L	3216.04	**34.8**	**258**	**1.6**	**20.2**	<1.0	**7.2**
	12/2/2014	µg/L	3215.76	**30.2**	**255**	<2.0	**16.8**	<1.0	**9.3**
	3/11/2015	µg/L	3215.5	**27.1**	**235**	<2.5	**17.9**	<2.5	<2.0
	9/22/2015	µg/L	3215.18	**22.4**	**192**	<2.5	**13.3**	<2.5	**3.7**
	3/22/2016	µg/L	3218.42	**13.6**	**112**	***0.92***	**8.3**	<1.0	***2.0***



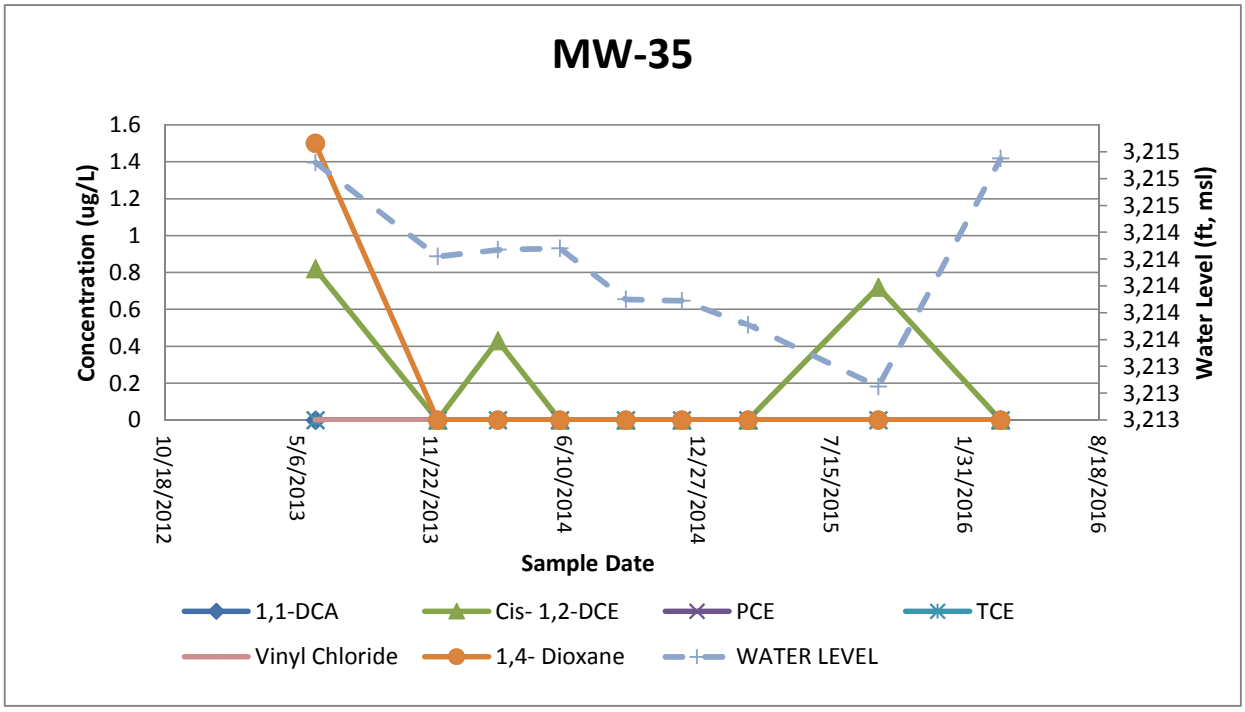
Notes:
2L Standard = NCAC 15A 02L.0202 Groundwater Quality Standards
µg/L = micrograms per liter
Water Level = Feet mean sea level elevation
1,1-DCA = 1,1-dichloroethane
cis-1,2-DCE = cis-1,2-dichloroethene
PCE = tetrachloroethene (perchloroethylene)
TCE = trichloroethene
Bold Italic values are estimated between the Minimum Detection Limit and Reporting Limit ("J" Flag)
Bold values indicate detections above the Reporting Limit
Bold Shaded values indicate detections above the 2L Standard
-- = Parameter not analyzed
* = Sample not collected; well is not included in the Quarterly Groundwater Monitoring Program

Prepared By/Date:LLM 04/07/16
Checked By/Date: ZJD 04/08/16

Table 5

Historical Groundwater Sampling Laboratory Analytical Results
RBTC Former Boone Manufacturing Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

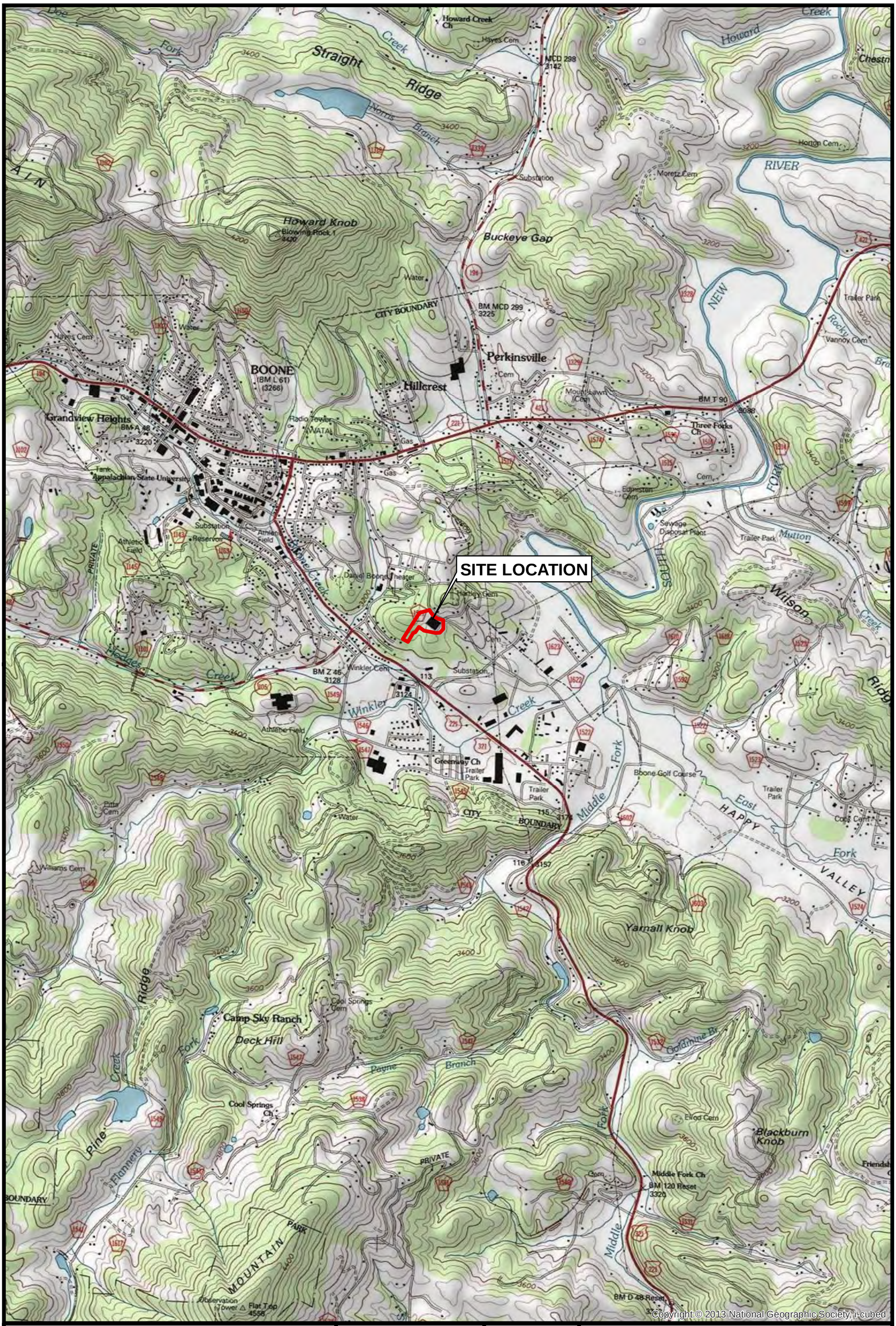
Well ID	Sample Date	Units	WATER LEVEL	1,1-DCA	Cis-1,2-DCE	PCE	TCE	Vinyl Chloride	1,4-Dioxane
2L Standard		µg/L		6.0	70	0.7	3.0	0.03	3.0
MW-35	6/1/2013	µg/L	3214.92	<1.0	***0.82***	<1.0	<1.0	<1.0	***1.5***
	12/1/2013	µg/L	3214.22	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
	3/1/2014	µg/L	3214.27	<1.0	***0.43***	<1.0	<1.0	<1.0	<2.0
	6/2/2014	µg/L	3214.28	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
	9/9/2014	µg/L	3213.90	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
	12/2/2014	µg/L	3213.89	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
	3/11/2015	µg/L	3213.71	NS	NS	NS	NS	NS	NS
	9/22/2015	µg/L	3213.25	<1.0	***0.72***	<1.0	<1.0	<1.0	<1.0
	3/23/2016	µg/L	3214.95	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0



Notes:
2L Standard = NCAC 15A 02L.0202 Groundwater Quality Standards
µg/L = micrograms per liter
Water Level = Feet mean sea level elevation
1,1-DCA = 1,1-dichloroethane
cis-1,2-DCE = cis-1,2-dichloroethene
PCE = tetrachloroethene (perchloroethylene)
TCE = trichloroethene
Bold Italic values are estimated between the Minimum Detection Limit and Reporting Limit ("J" Flag)
Bold values indicate detections above the Reporting Limit
Bold Shaded values indicate detections above the 2L Standard
-- = Parameter not analyzed
* = Sample not collected; well is not included in the Quarterly Groundwater Monitoring Program

Prepared By/Date:LLM 04/07/16
Checked By/Date: ZJD 04/08/16

FIGURES



Data Source: 2009 National Geographic Society, http://goto.arcgisonline.com/maps/USA_Topo_Maps.

0 1,000 2,000 4,000 Feet

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Amec Foster Wheeler
37 VILLA ROAD
SUITE 201
GREENVILLE, SC 29615

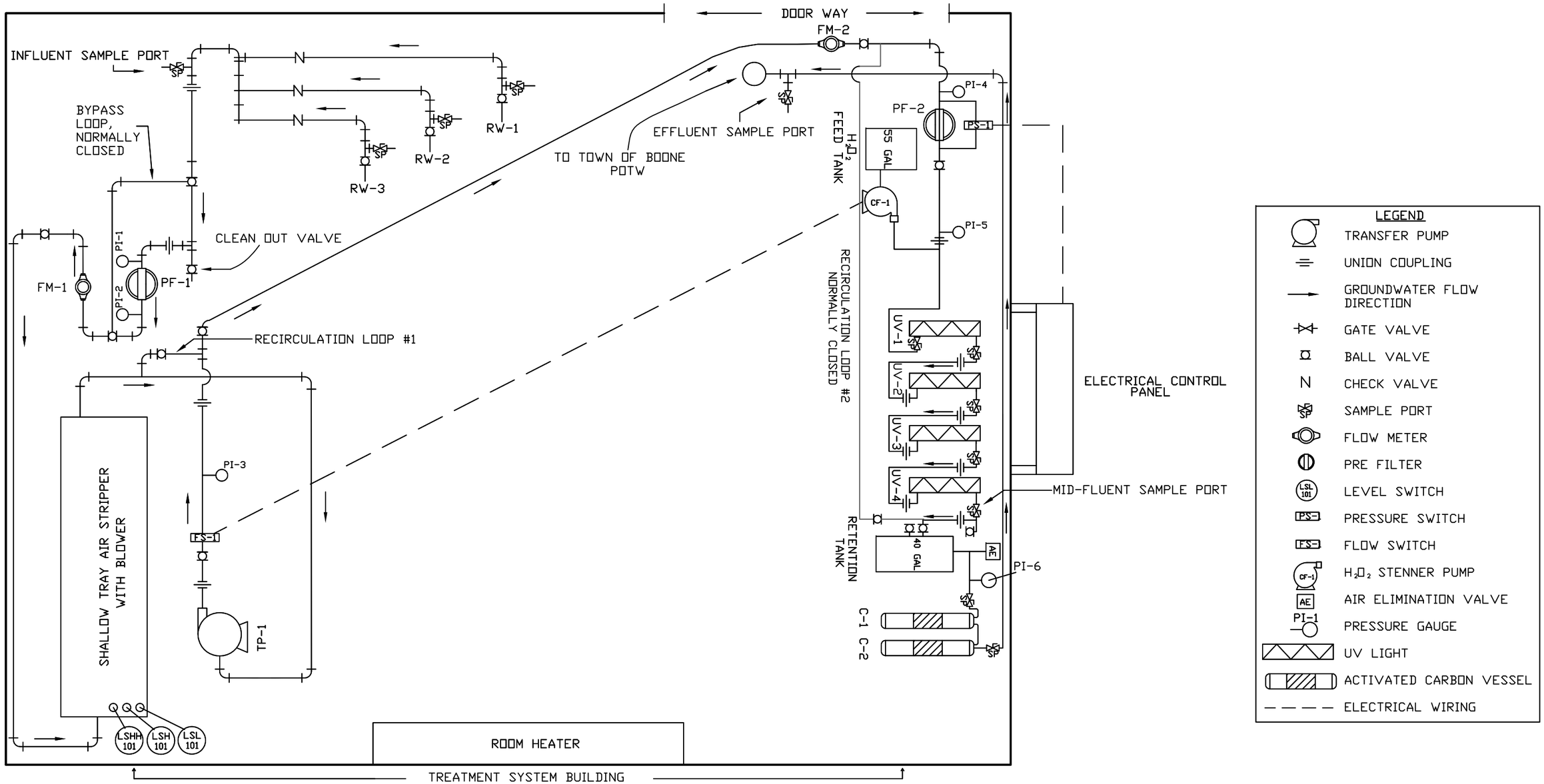
JOB:	6251-12-1001
DATE:	3/19/15
SCALE:	AS SHOWN
DRAWN:	KEC
REVD:	MJF
CHKD:	TSR
DATE:	3/19/15

SITE LOCATION MAP

RBTC FORMER BOONE DIVISION
BOONE, NORTH CAROLINA

FIGURE NO. 1

PROJECT NO. 6251-12-1001



DRAWN	RAA	DATE	10/22/14	REVISIONS			
CHECKED	TSR	FILE	BOONE P&ID_As Built	No.	DESCRIPTION	BY	
APPROVED	PSJ	JOB NO:	6251121001.02.02				

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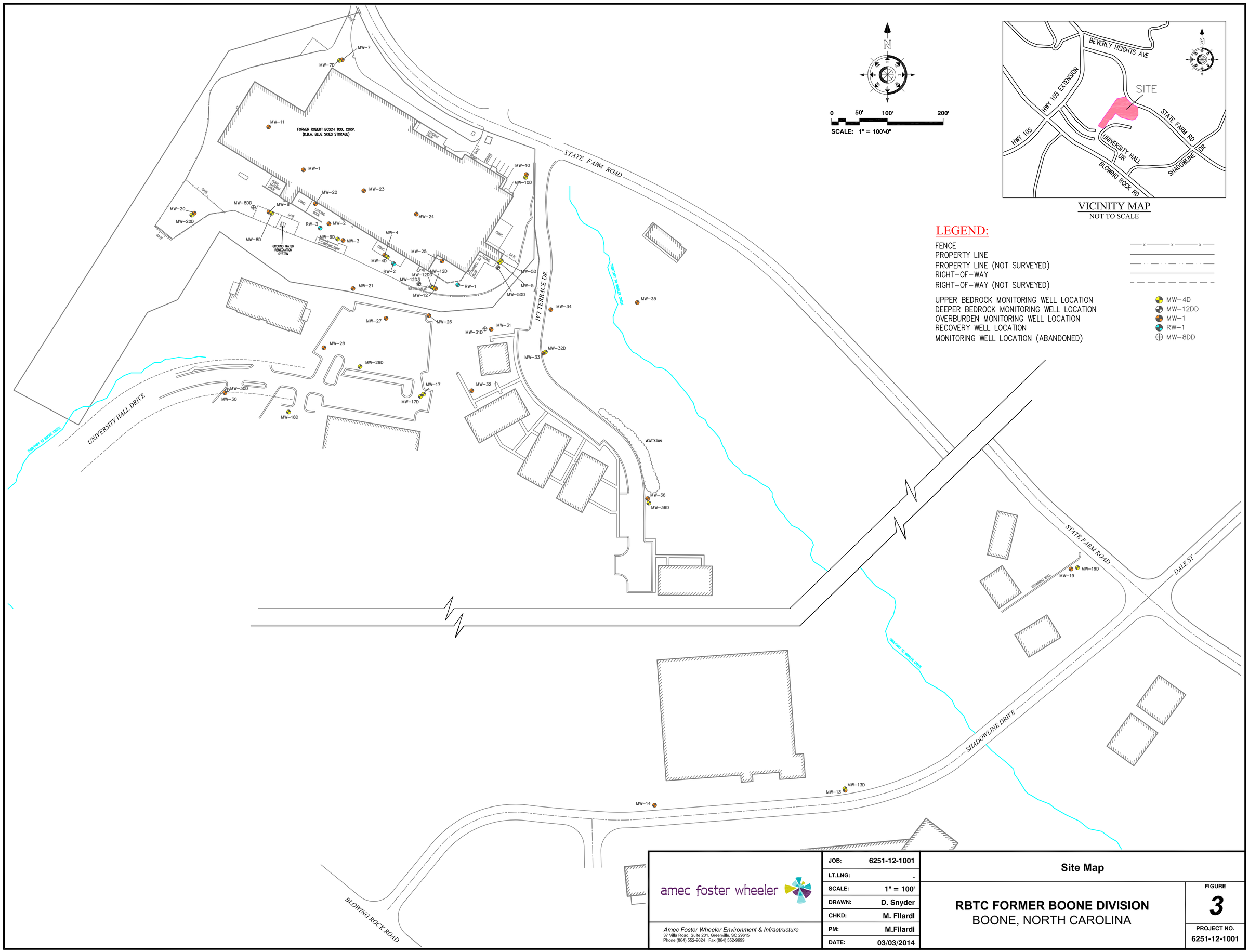
37 VILLA ROAD
SUITE 201
GREENVILLE, S.C. 29615
Phone: (864) 552-9624
Fax: (864) 552-9699

GROUNDWATER TREATMENT SYSTEM AS-BUILT DIAGRAM
FORMER RBTC BOONE DIVISION
BOONE, NORTH CAROLINA

FIGURE 2



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Amec Foster Wheeler Environment & Infrastructure
37 Villa Road, Suite 201, Greenville, SC 29615
Phone (864) 552-9624 Fax (864) 552-9699

JOB:	6251-12-1001
LT,LNG:	.
SCALE:	1" = 100'
DRAWN:	D. Snyder
CHKD:	M. Filardi
PM:	M.Filardi
DATE:	03/03/2014

Site Map

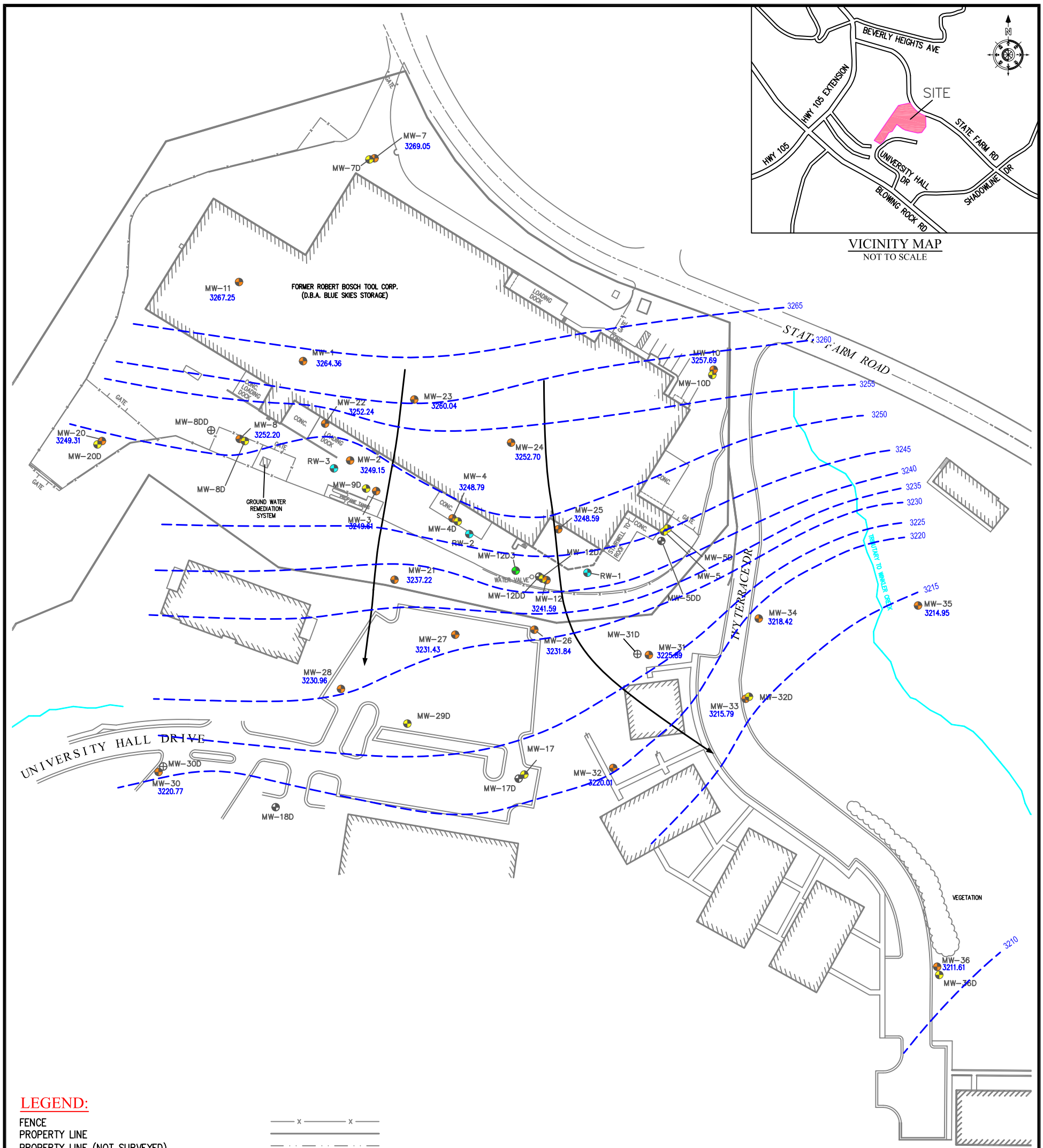
RBTC FORMER BOONE DIVISION
BOONE, NORTH CAROLINA

FIGURE
3

PROJECT NO.
6251-12-1001

Path: P:\Environmental\2012\1001 RBTC Boone\Phase 03 2015 Activities\Task 04 Semi-Annual Groundwater Monitoring\2nd Semi-Annual\Figures\FIG 3 Site Map.dwg [18 X 24]
Date: January 07, 2016 - 6:57am By: paul.johnstone

Path: P:\Environmental\2012\1001 RBTC Boone\Phase 03 2015 Activities\Task 04 Semi-Annual Groundwater Monitoring\1st Semi-Annual - 2016\FIFIG 4 Overburden Aquifer Water Table Contour Map_1Q16.dwg [17x11]
Date: June 21, 2016 - 7:16am By: paul.johnstone



Notes:
1. Inferred water level contours based on groundwater data obtained from monitoring wells completed in overburden aquifer only.
2. Elevations measured in feet above mean sea level (ft MSL).

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37 Villa Road, Suite 201, Greenville, SC 29615
Phone (864) 552-9624 Fax (864) 552-9699

Overburden Aquifer, Water Level Elevation Contour Map
March 2015

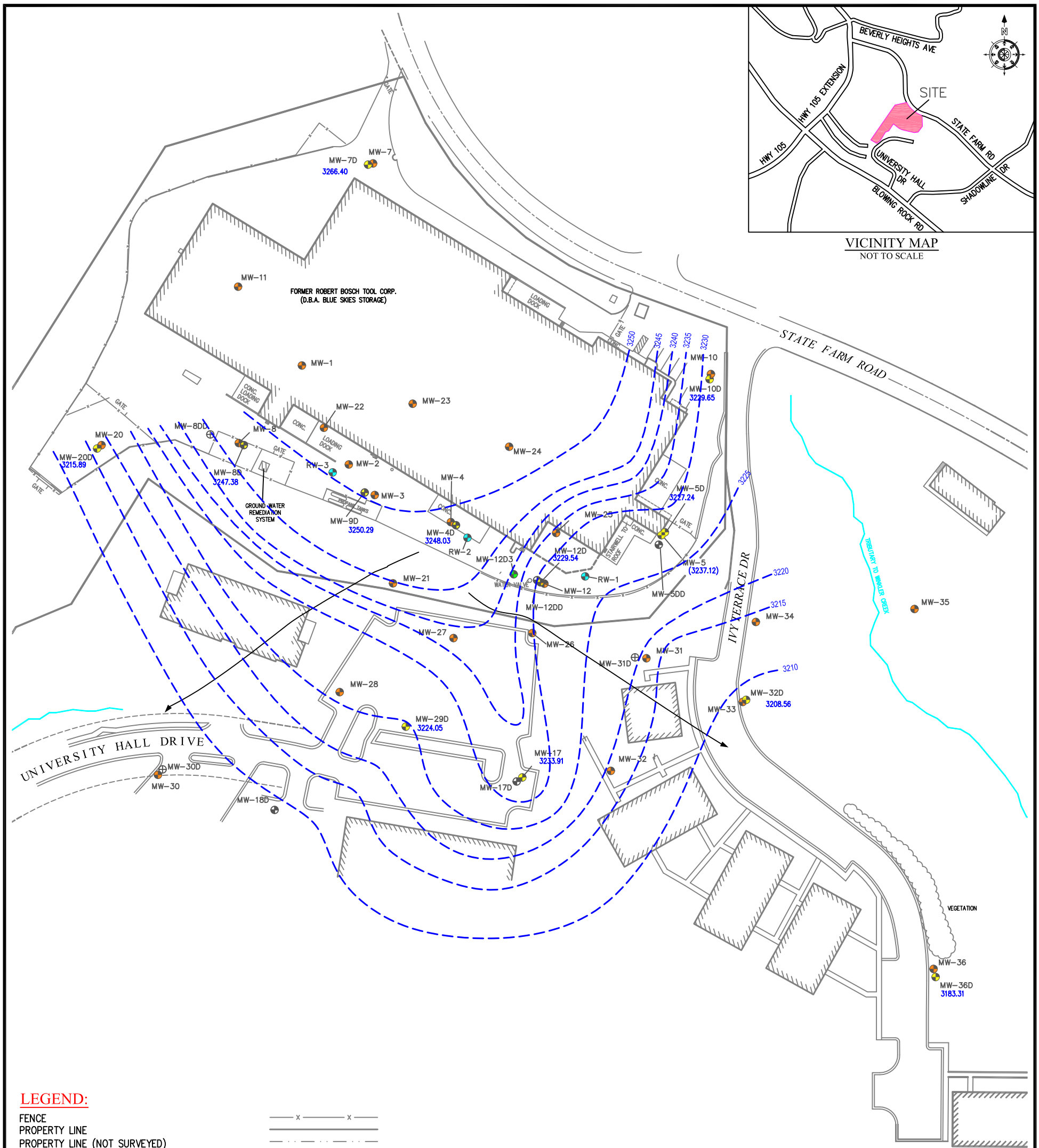
JOB:	6251-12-1001
LT,LNG:	.
SCALE:	1" = 100'
DRAWN:	Z. Downes
CHKD:	C. Bruce
PM:	P. Johnstone
DATE:	04/01/2016

RBTC FORMER BOONE DIVISION
BOONE, NORTH CAROLINA

FIGURE NO.
4

PROJECT NO.
6251-12-1001

Path: P:\Environmental\2012\1001 RBTC Boone\Phase 03 2015 Activities\Task 04 Semi-Annual Groundwater Monitoring\1st Semi-Annual - 2016\FIFIG 5 Upper Bedrock Potentiometric Surface Contour Map_1Q16.dwg [17x11]
Date: June 21, 2016 - 7:17am By: paul.johnstone



LEGEND:

FENCE	x x
PROPERTY LINE	
PROPERTY LINE (NOT SURVEYED)	
RIGHT-OF-WAY	
RIGHT-OF-WAY (NOT SURVEYED)	
UPPER BEDROCK MONITORING WELL LOCATION	MW-4D
MIDDLE BEDROCK MONITORING WELL LOCATION	MW-12DD (NOT USED FOR CONTOURING)
LOWER BEDROCK MONITORING WELL LOCATION	MW-12D3 (NOT USED FOR CONTOURING)
OVERBURDEN MONITORING WELL LOCATION	MW-1 (NOT USED FOR CONTOURING)
RECOVERY WELL LOCATION	RW-1 (NOT USED FOR CONTOURING)
MONITORING WELL LOCATION (ABANDONED)	MW-8DD
POTENTIOMETRIC CONTOUR	3240
GROUNDWATER ELEVATION (FT MSL)	3190.85
GROUNDWATER FLOW DIRECTION	

Notes:
1. Inferred potentiometric contours based on groundwater data obtained from monitoring wells completed in upper bedrock aquifer only.
2. Elevations measured in feet above mean sea level (ft MSL).
3. MW-5 and MW-5D are both screened in the upper bedrock. Contours reflect data from MW-5.

N

0 50' 100' 200'

SCALE: 1" = 100'-0"

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37 Villa Road, Suite 201, Greenville, SC 29615
Phone (864) 552-9624 Fax (864) 552-9699

Upper Bedrock Aquifer, Water Level Elevation Contour Map
March 2015

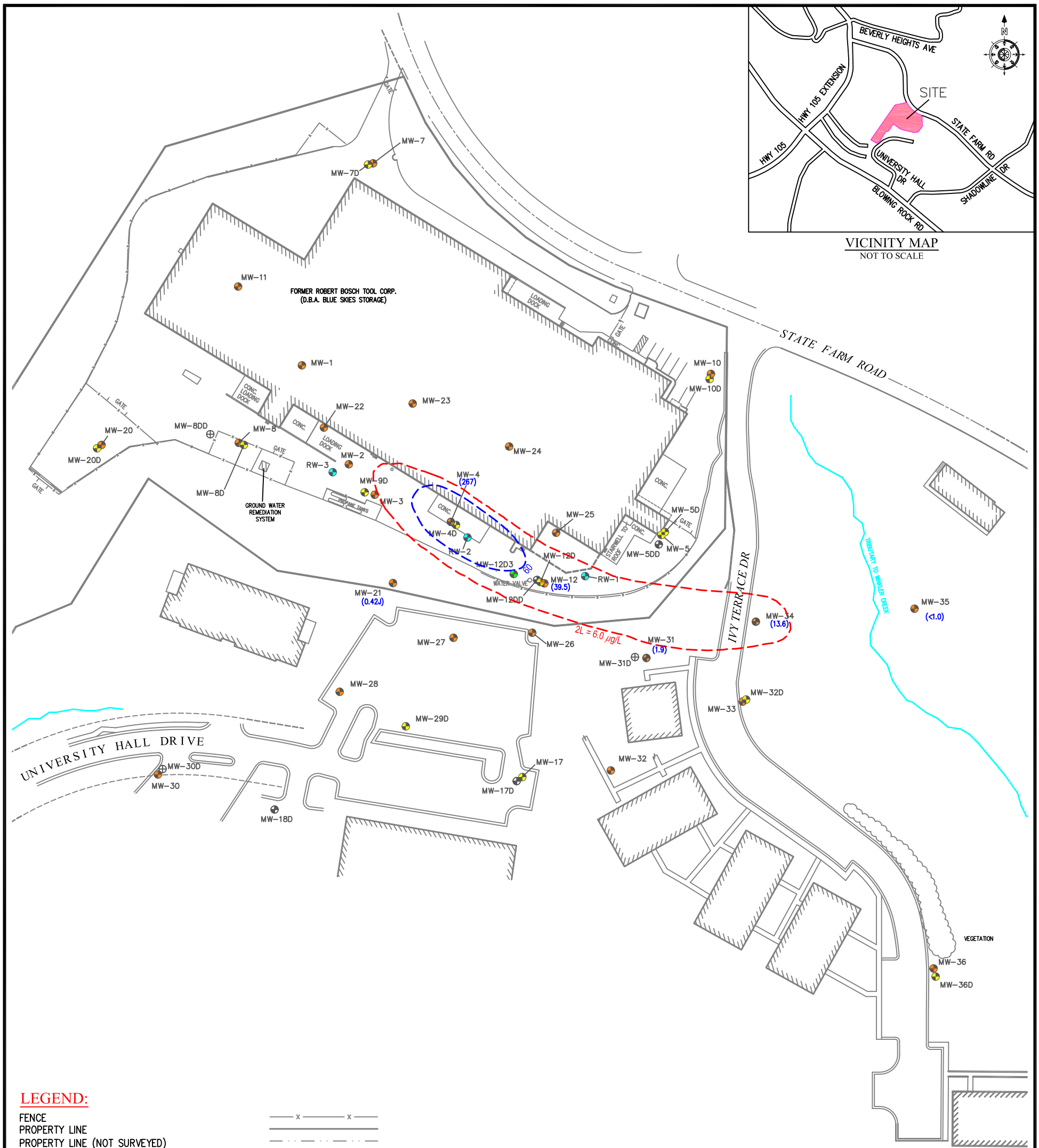
JOB:	6251-12-1001
LT,LNG:	.
SCALE:	1" = 100'
DRAWN:	Z. Downes
CHKD:	C. Bruce
PM:	P. Johnstone
DATE:	04/01/2016

RBTC FORMER BOONE DIVISION
BOONE, NORTH CAROLINA

FIGURE NO. 5

PROJECT NO. 6251-12-1001

Path: P:\Environmental\2012\1001 RBTC Boone\Phase 03 2015 Activities\Task 04 Semi-Annual Groundwater Monitoring\1st Semi-Annual - 2016\FIFIG 6 Overburden 1,1-DCA Isoconcentration Map_1Q16.dwg [17x11]
Date: June 21, 2016 - 7:18am By: paul.johnstone



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37 Villa Road, Suite 201, Greenville, SC 29615
Phone (864) 552-9624 Fax (864) 552-9699

Overburden 1,1-DCA Isoconcentration Contour Map - March 2016

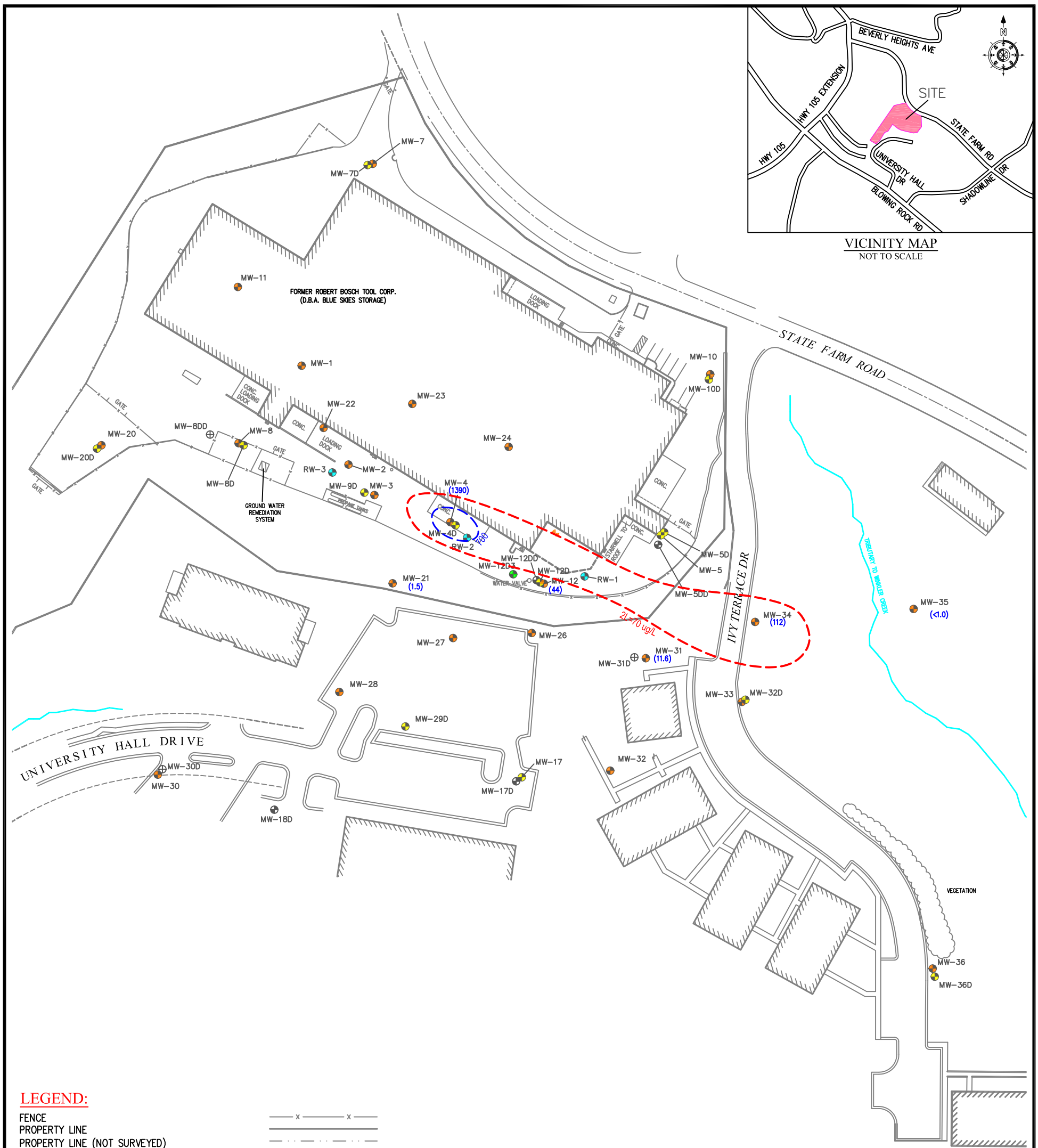
JOB:	6251-12-1001
LT,LNG:	.
SCALE:	1" = 100'
DRAWN:	Z. Downes
CHKD:	C. Bruce
PM:	P. Johnstone
DATE:	04/08/2016

RBTC FORMER BOONE DIVISION
BOONE, NORTH CAROLINA

FIGURE NO. 6

PROJECT NO. 6251-12-1001

Path: P:\Environmental\2012\1001 RBTC Boone\Phase 03 2015 Activities\Task 04 Semi-Annual Groundwater Monitoring\1st Semi-Annual - 2016\FIFIG 7 Overburden cis-1,2-DCE Isoconcentration Map_1Q16.dwg [17x11]
Date: June 21, 2016 - 7:19am By: paul.johnstone



LEGEND:

FENCE	x — x
PROPERTY LINE	
PROPERTY LINE (NOT SURVEYED)	
RIGHT-OF-WAY	
RIGHT-OF-WAY (NOT SURVEYED)	
UPPER BEDROCK MONITORING WELL LOCATION	MW-4D
MIDDLE BEDROCK MONITORING WELL LOCATION	MW-12DD
LOWER BEDROCK MONITORING WELL LOCATION	MW-12D3
OVERBURDEN MONITORING WELL LOCATION	MW-1
RECOVERY WELL LOCATION	RW-1
MONITORING WELL LOCATION (ABANDONED)	MW-8DD
cis-1,2-DICHLOROETHENE (cis-1,2-DCE) CONCENTRATION IN µg/L	(255)
cis-1,2-DCE ISOCONCENTRATION CONTOUR IN µg/L	700

Notes:
1. Inferred isoconcentration contours based on groundwater quality data obtained from monitoring wells completed in overburden aquifer only.
2. Contour lines in µg/L (logarithmic).
3. 2L standard for cis-1,2-DCE is 70µg/L (red contour line).
4. NS = not sampled.

0 50' 100' 200'
SCALE: 1" = 100'-0"

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37 Villa Road, Suite 201, Greenville, SC 29615
Phone (864) 552-9624 Fax (864) 552-9699

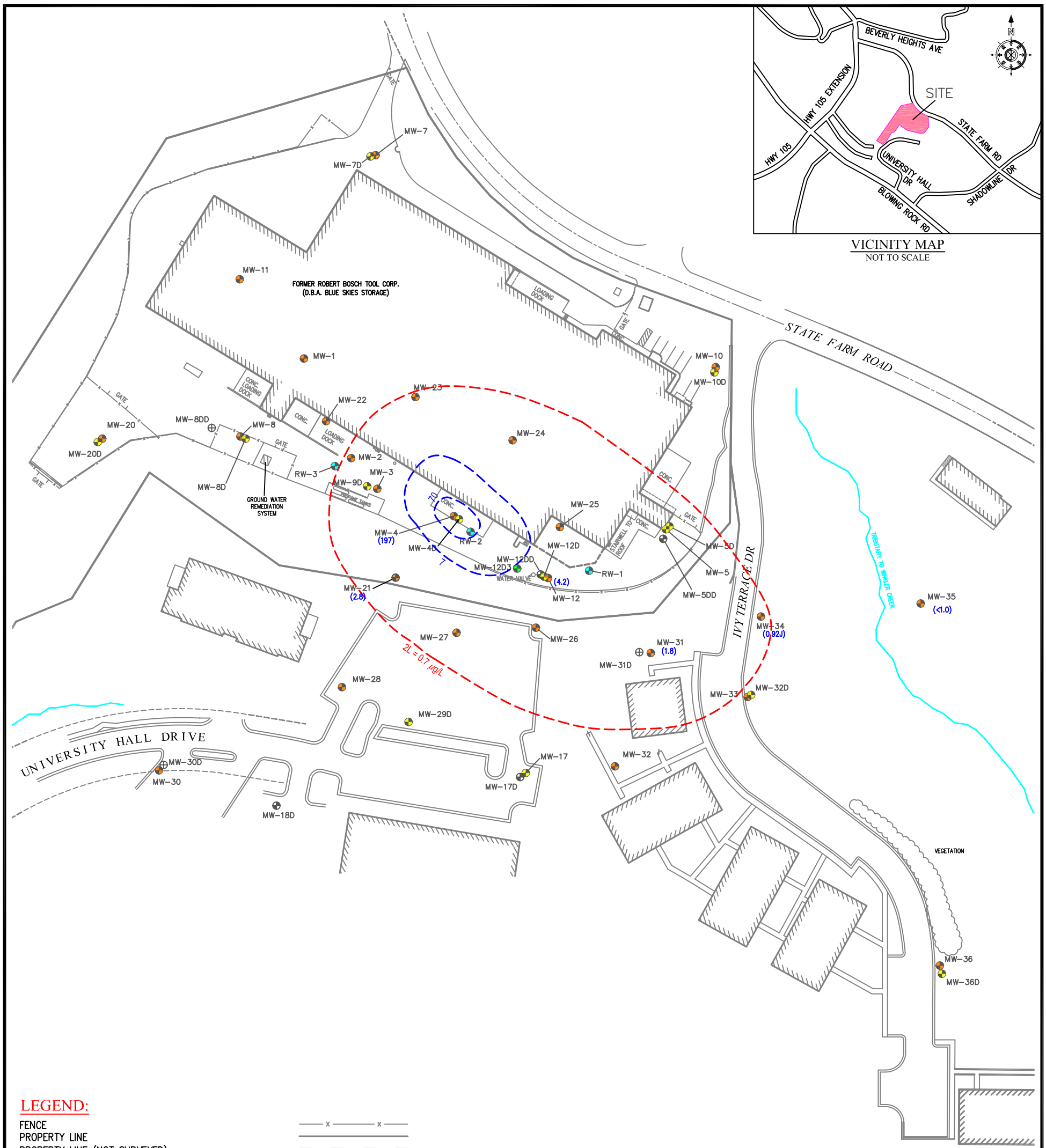
Overburden cis-1,2-DCE Isoconcentration Contour Map - March 2016

JOB:	6251-12-1001
LT,LNG:	.
SCALE:	1" = 100'
DRAWN:	Z. Downes
CHKD:	C. Bruce
PM:	P. Johnstone
DATE:	04/08/2016

RBTC FORMER BOONE DIVISION
BOONE, NORTH CAROLINA

FIGURE NO. 7
PROJECT NO. 6251-12-1001

Path: P:\Environmental\2012\1001 RBTC Boone\Phase 03 2015 Activities\Task 04 Semi-Annual Groundwater Monitoring\1st Semi-Annual - 2016\FIFIG 8 Overburden PCE Isoconcentration Map_1Q16.dwg [17x11]
Date: June 21, 2016 - 7:20am By: paul.johnstone



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PROPERTY LINE	
PROPERTY LINE (NOT SURVEYED)	
RIGHT-OF-WAY	
RIGHT-OF-WAY (NOT SURVEYED)	
UPPER BEDROCK MONITORING WELL LOCATION	MW-4D
MIDDLE BEDROCK MONITORING WELL LOCATION	MW-12DD
LOWER BEDROCK MONITORING WELL LOCATION	MW-12D3
OVERBURDEN MONITORING WELL LOCATION	MW-1
RECOVERY WELL LOCATION	RW-1
MONITORING WELL LOCATION (ABANDONED)	MW-8DD
TETRACHLOROETHENE (PCE) CONCENTRATION IN µg/L	(2.7)
PCE ISOCONCENTRATION CONTOUR	7

Notes:
1. Inferred isoconcentration contours based on groundwater quality data obtained from monitoring wells completed in overburden aquifer only.
2. Contour lines in µg/L (logarithmic).
3. 2L standard for PCE is 0.7µg/L (red contour line).
4. NS = not sampled.

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37 Villa Road, Suite 201, Greenville, SC 29615
Phone (864) 552-9624 Fax (864) 552-9699

Overburden PCE Isoconcentration Contour Map - March 2016

JOB:	6251-12-1001
LT,LNG:	.
SCALE:	1" = 100'
DRAWN:	Z. Downes
CHKD:	C. Bruce
PM:	P. Johnstone
DATE:	04/08/2016

RBTC FORMER BOONE DIVISION
BOONE, NORTH CAROLINA

FIGURE NO.
8

PROJECT NO.
6251-12-1001

Path: P:\Environmental\2012\1001 RBTC Boone\Phase 03 2015 Activities\Task 04 Semi-Annual Groundwater Monitoring\1st Semi-Annual - 2016\FIFIG 9 Overburden TCE Isoconcentration Map_1Q16.dwg [17x11]
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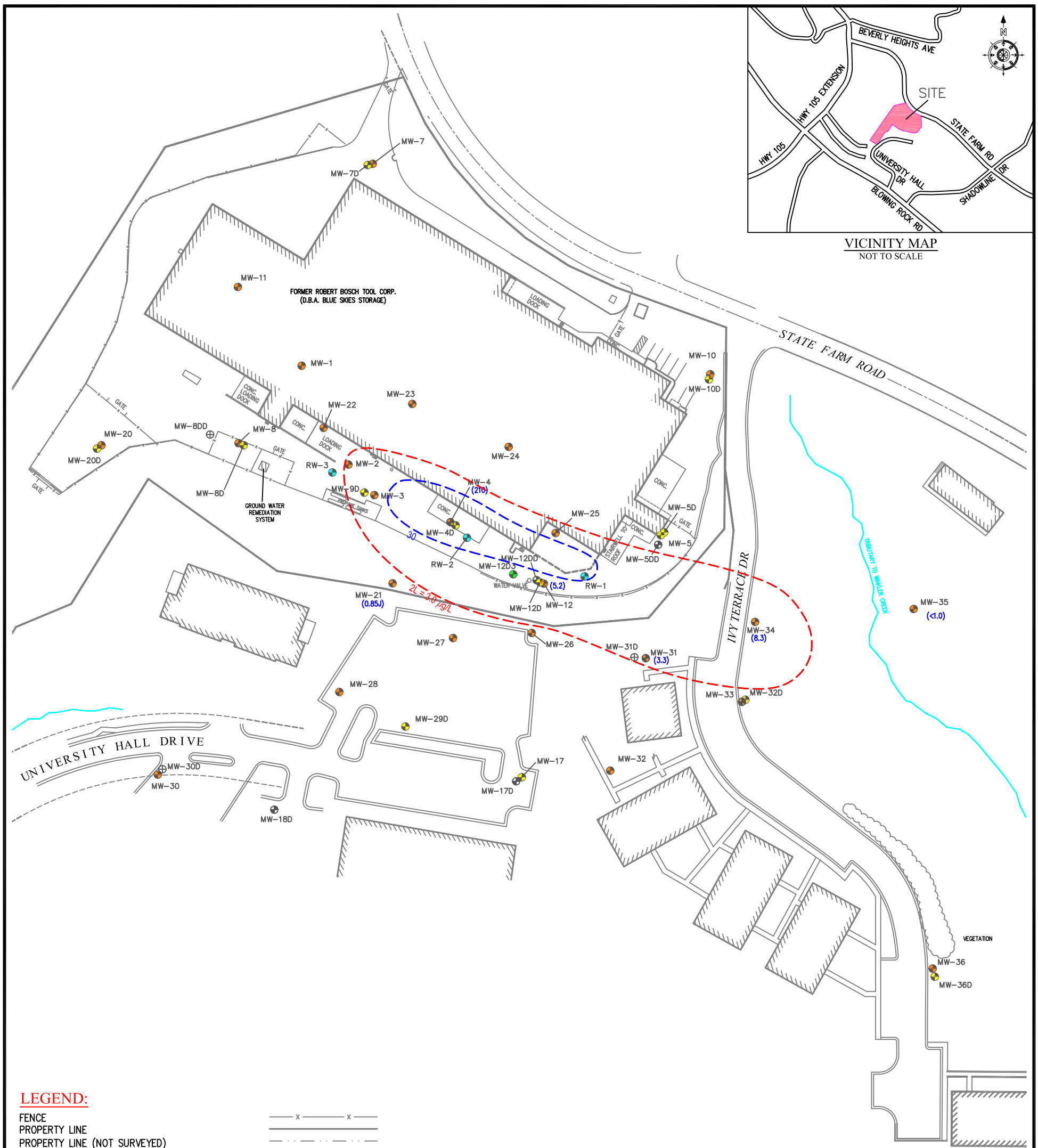


LEGEND:

FENCE	x — x
PROPERTY LINE	
PROPERTY LINE (NOT SURVEYED)	
RIGHT-OF-WAY	
RIGHT-OF-WAY (NOT SURVEYED)	
UPPER BEDROCK MONITORING WELL LOCATION	MW-4D
MIDDLE BEDROCK MONITORING WELL LOCATION	MW-12DD
LOWER BEDROCK MONITORING WELL LOCATION	MW-12D3
OVERBURDEN MONITORING WELL LOCATION	MW-1
RECOVERY WELL LOCATION	RW-1
MONITORING WELL LOCATION (ABANDONED)	MW-8DD
TRICHLOROETHENE (TCE) CONCENTRATION IN µg/L	(16.8)
TCE ISOCONCENTRATION CONTOUR IN µg/L	30

Notes:
1. Inferred isoconcentration contours based on groundwater quality data obtained from monitoring wells completed in overburden aquifer only.
2. Contour lines in µg/L (logarithmic).
3. 2L standard for TCE is 3.0µg/L (red contour line).
4. NS = not sampled.

N

0 50' 100' 200'

SCALE: 1" = 100'-0"

amec foster wheeler

Amec Foster Wheeler Environment & Infrastructure
37 Villa Road, Suite 201, Greenville, SC 29615
Phone (864) 552-9624 Fax (864) 552-9699

Overburden TCE Isoconcentration Contour Map - March 2016

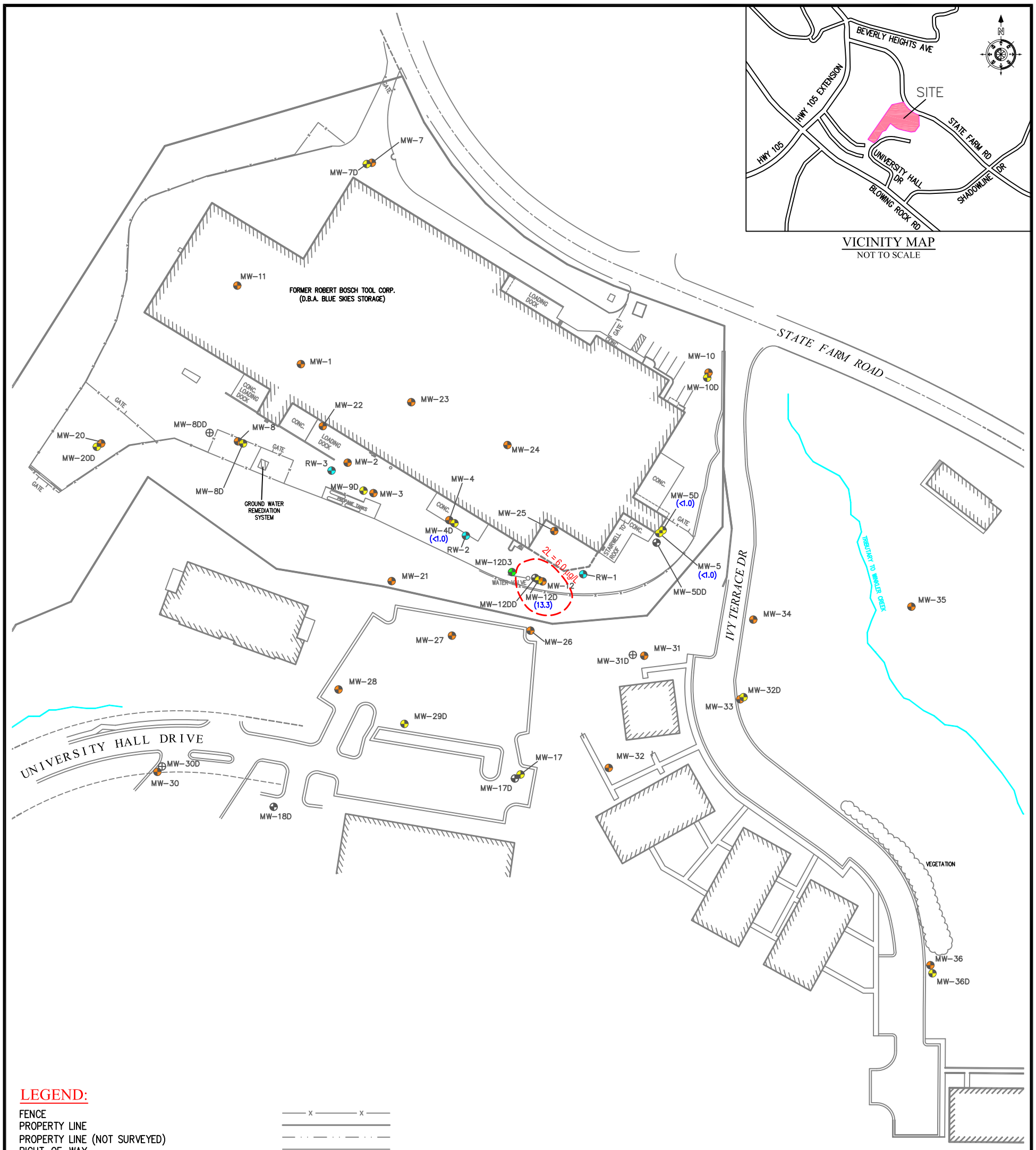
JOB:	6251-12-1001
LT,LNG:	.
SCALE:	1" = 100'
DRAWN:	Z. Downes
CHKD:	C. Bruce
PM:	P. Johnstone
DATE:	04/08/2016

RBTC FORMER BOONE DIVISION
BOONE, NORTH CAROLINA

FIGURE NO. 9

PROJECT NO. 6251-12-1001

Path: P:\Environmental\2012\1001 RBTC Boone\Phase 03 2015 Activities\Task 04 Semi-Annual Groundwater Monitoring\1st Semi-Annual - 2016\FIFIG 10 Upper Bedrock 1,1-DCA Isoconcentration Map_1Q16.dwg [17x11]
Date: June 21, 2016 - 7:22am By: paul.johnstone



LEGEND:

FENCE	x — x
PROPERTY LINE	
PROPERTY LINE (NOT SURVEYED)	
RIGHT-OF-WAY	
RIGHT-OF-WAY (NOT SURVEYED)	
UPPER BEDROCK MONITORING WELL LOCATION	MW-4D
MIDDLE BEDROCK MONITORING WELL LOCATION	MW-12DD
LOWER BEDROCK MONITORING WELL LOCATION	MW-12D3
OVERBURDEN MONITORING WELL LOCATION	MW-1
RECOVERY WELL LOCATION	RW-1
MONITORING WELL LOCATION (ABANDONED)	MW-8DD
1,1-DICHLOROETHANE (DCA) CONCENTRATION IN µg/L	(7.7)
1,1-DCA ISOCONCENTRATION CONTOUR	6.0

Notes:
1. Inferred isoconcentration contours based on groundwater quality data obtained from monitoring wells completed in upper bedrock aquifer only.
2. Contour lines in µg/L (logarithmic).
3. 2L standard for 1,1-DCA is 6.0µg/L (red contour line).

amec foster wheeler

Amec Foster Wheeler Environment & Infrastructure
37 Villa Road, Suite 201, Greenville, SC 29615
Phone (864) 552-9624 Fax (864) 552-9699

Upper Bedrock 1,1-DCA Isoconcentration Contour Map - March 2016

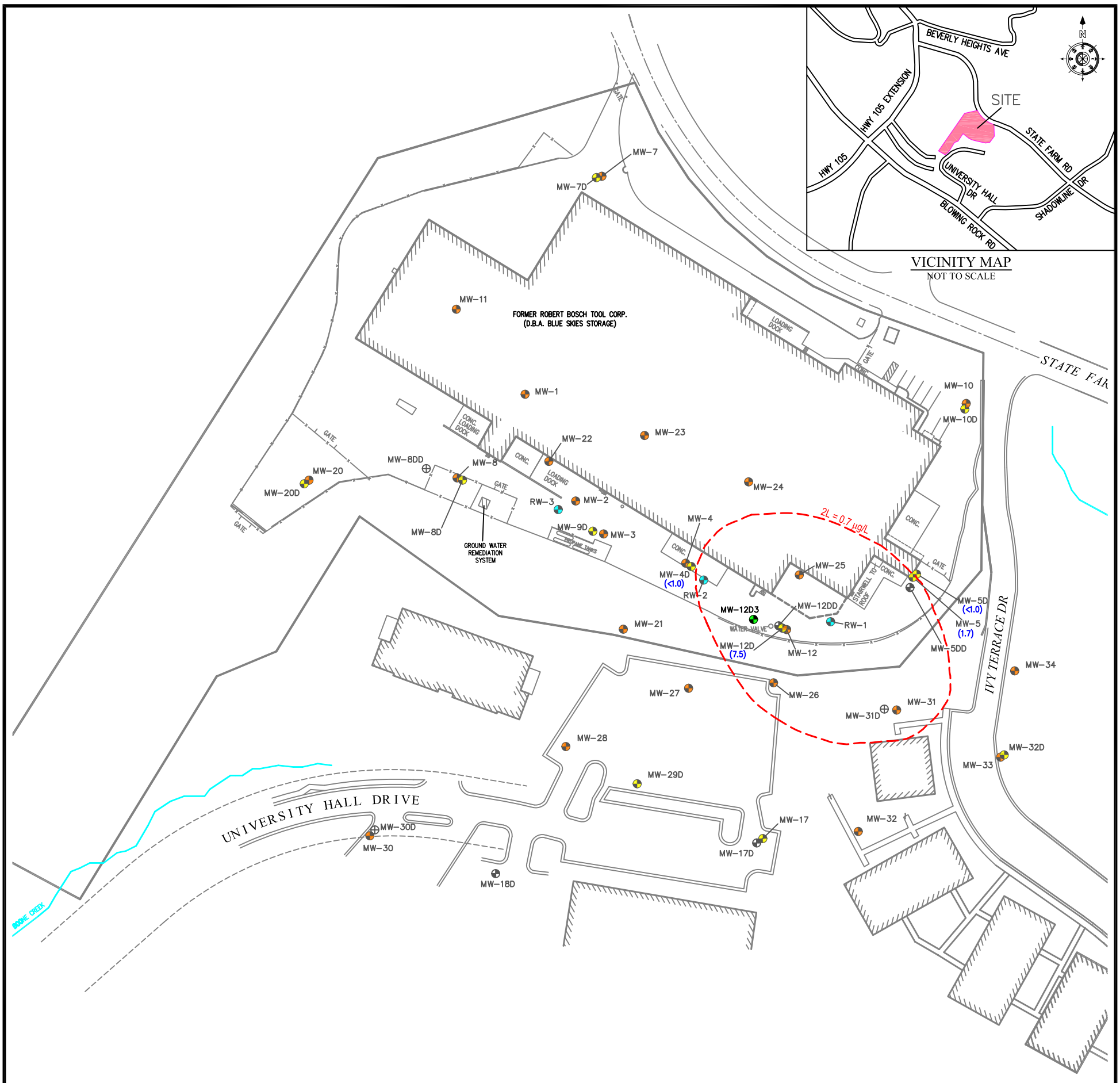
JOB:	6251-12-1001
LT,LNG:	.
SCALE:	1" = 100'
DRAWN:	Z. Downes
CHKD:	C. Bruce
PM:	P. Johnstone
DATE:	04/08/2016

RBTC FORMER BOONE DIVISION
BOONE, NORTH CAROLINA

FIGURE NO. **10**

PROJECT NO. 6251-12-1001

Path: P:\Environmental\2012\1001 RBTC Boone\Phase 03 2015 Activities\Task 04 Semi-Annual Groundwater Monitoring\1st Semi-Annual - 2016\FIFIG 11 Upper Bedrock PCE Isoconcentration Map_1Q16.dwg [17x11]
Date: June 21, 2016 - 7:23am By: paul.johnstone



LEGEND:

FENCE	—— x —— x ——
PROPERTY LINE	
PROPERTY LINE (NOT SURVEYED)	
RIGHT-OF-WAY	
RIGHT-OF-WAY (NOT SURVEYED)	
UPPER BEDROCK MONITORING WELL LOCATION	MW-4D
MIDDLE BEDROCK MONITORING WELL LOCATION	MW-12DD
LOWER BEDROCK MONITORING WELL LOCATION	MW-12D3
OVERBURDEN MONITORING WELL LOCATION	MW-1
RECOVERY WELL LOCATION	RW-1
MONITORING WELL LOCATION (ABANDONED)	MW-8DD
TETRACHLOROETHENE (PCE) CONCENTRATION IN µg/L	(4.0)
PCE ISOCONCENTRATION CONTOUR	0.7

Notes:
1. Inferred isoconcentration contours based on groundwater quality data obtained from monitoring wells completed in upper bedrock aquifer only.
2. Contour lines in µg/L (logarithmic).
3. 2L standard for PCE is 0.7µg/L (red contour line).

N

0 50' 100' 200'

SCALE: 1" = 100'-0"

amec foster wheeler

Amec Foster Wheeler Environment & Infrastructure
37 Villa Road, Suite 201, Greenville, SC 29615
Phone (864) 552-9624 Fax (864) 552-9699

Upper Bedrock PCE Isoconcentration Contour Map - March 2016

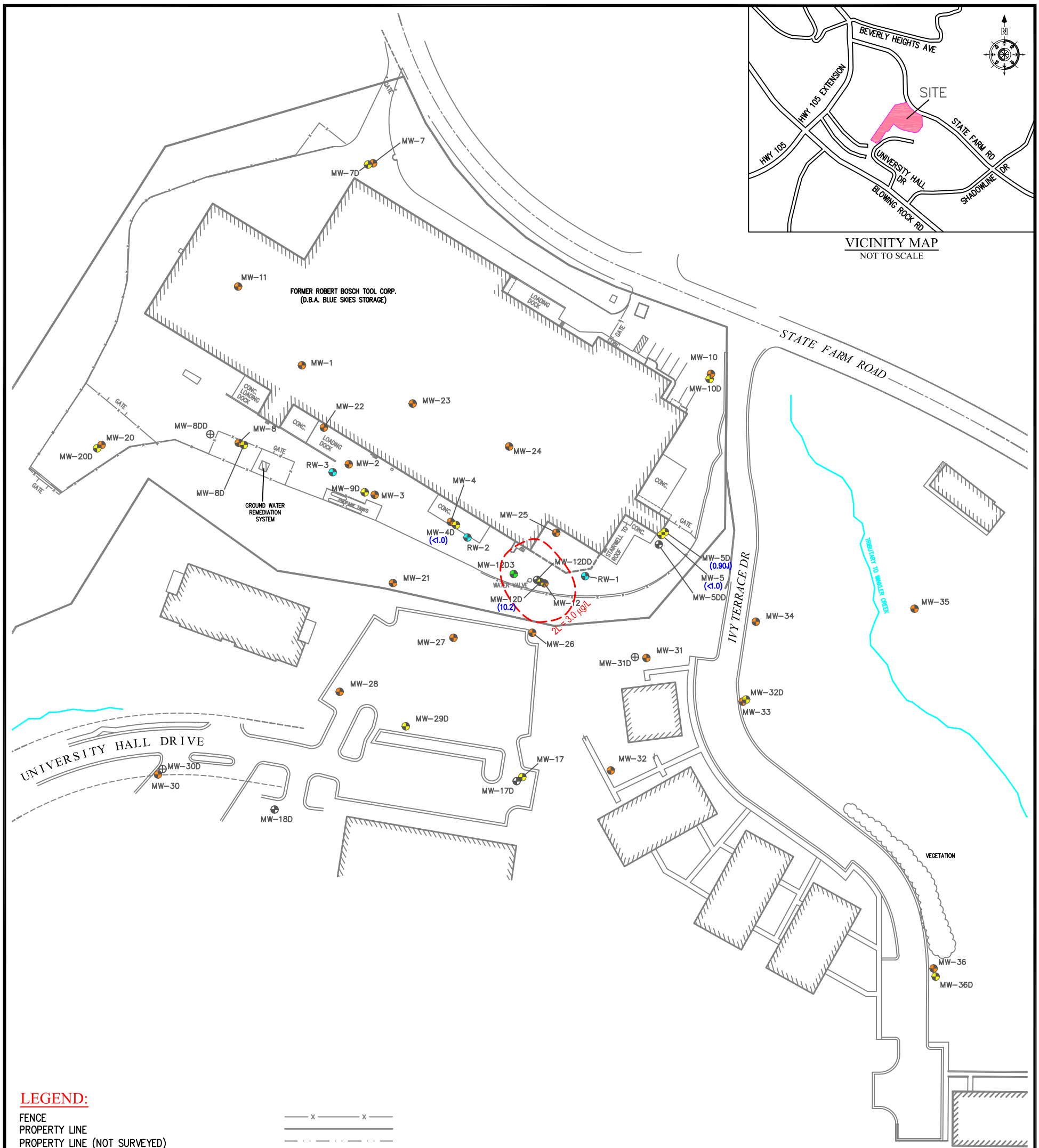
JOB:	6251-12-1001
LT,LNG:	,
SCALE:	1" = 100'
DRAWN:	Z. Downes
CHKD:	C. Bruce
PM:	P. Johnstone
DATE:	04/08/2016

RBTC FORMER BOONE DIVISION
BOONE, NORTH CAROLINA

FIGURE NO. **11**

PROJECT NO. 6251-12-1001

Path: P:\Environmental\2012\1001 RBTC Boone\Phase 03 2015 Activities\Task 04 Semi-Annual Groundwater Monitoring\1st Semi-Annual - 2016\FIFIG 12 Upper Bedrock TCE Isoconcentration Map_1Q16.dwg [17x11]
Date: June 21, 2016 - 7:24am By: paul.johnstone



Notes:
1. Inferred isoconentration contours based on groundwater quality data obtained from monitoring wells completed in upper bedrock aquifer only.
2. Contour lines in µg/L (logarithmic).
3. 2L standard for TCE is 3.0µg/L (red contour line).

amec foster wheeler

Amec Foster Wheeler Environment & Infrastructure
37 Villa Road, Suite 201, Greenville, SC 29615
Phone (864) 552-9624 Fax (864) 552-9699

Upper Bedrock TCE Isoconcentration Contour Map - March 2016

JOB:	6251-12-1001
LT,LNG:	.
SCALE:	1" = 100'
DRAWN:	Z. Downes
CHKD:	C. Bruce
PM:	P. Johnstone
DATE:	04/08/2016

RBTC FORMER BOONE DIVISION
BOONE, NORTH CAROLINA

FIGURE NO. **12**

PROJECT NO. 6251-12-1001

APPENDICES

APPENDIX A

DOCUMENT CERTIFICATION STATEMENTS

REC PROGRAM DOCUMENT CERTIFICATION FORM - PAGE 1 OF 2
IHSB SITE NAME Vermont American Corporation (NONCD00039), Boone, NC
DATE & NAME OF DOCUMENT 6/21/16 Semi-Annual Remedial Action Progress Report (1Q16)
TYPE OF SUBMITTAL (circle all that apply): Report, Work plan, Work Phase Comp. Statement, Schedule Change

REMEDIATING PARTY DOCUMENT CERTIFICATION STATEMENT (.0306(B)(2))

"I certify under penalty of law that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this certification, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material and information contained herein is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for willfully submitting false, inaccurate or incomplete information."

Aromake Afiegbe
Name of Remediating Party

Signature of Remediating Party

07/12/16
Date

NOTARIZATION

ILLINOIS (Enter State)

COOK **COUNTY**

I, CARLA WARNER, a Notary Public of said County and State, do hereby certify that Aromake Afiegbe did personally appear and sign before me this day, produced proper identification in the form of Company ID, was duly sworn or affirmed, and declared that, to the best of his or her knowledge and belief, after thorough investigation, the information contained in the above certification is true and accurate, and he or she then signed this Certification in my presence.

WITNESS my hand and official seal this 12 day of JULY, 2016.

Carla Warner
Notary Public (signature)

(OFFICIAL SEAL)

My commission expires: 7/29/18.

OFFICIAL SEAL
CARLA WARNER
NOTARY PUBLIC - STATE OF ILLINOIS
MY COMMISSION EXPIRES:07/29/18

REC PROGRAM DOCUMENT CERTIFICATION FORM - PAGE 2 OF 2
IHSB SITE NAME Vermont American Corporation (NONCD00039), Boone, NC
DATE & NAME OF DOCUMENT 6/21/16 Semi-Annual Remedial Action Progress Report (1Q16)
TYPE OF SUBMITTAL (circle all that apply): Report, Work plan, Work Phase Comp. Statement, Schedule Change

REGISTERED SITE MANAGER CERTIFICATION OF SIGNATURES

As the Registered Environmental Consultant for the Site for which this filing is made, I certify that the signatures included herewith are genuine and authentic original handwritten signatures and/or true, accurate, and complete copies of the genuine and authentic original handwritten signatures of the persons who purport to sign for this filing. I further certify that I have collected through reliable means the originals and/or copies of said signatures from the persons authorized to sign for this filing who, in fact, signed the originals thereof. Those persons and I understand and agree that any copies of signatures have the same legally binding effect as original handwritten signatures, and I certify that any person for whom I am submitting a copy of their signature has provided me with their express consent to submit said copy. Additionally, I certify that I am authorized to attest to the genuineness and authenticity of the signatures, both originals and any copies, being submitted herewith and that by signing below, I do in fact attest to the genuineness and authenticity of all the signatures, both originals and copies, being submitted for this filing.

Paul S. Johnstone
Name of Registered Site Manager

Signature of Registered Site Manager

July 13, 2016
Date

REGISTERED SITE MANAGER DOCUMENT CERTIFICATION STATEMENT (.0306(b)(1))

"I certify under penalty of law that I am personally familiar with the information contained in this submittal, including any and all supporting documents accompanying this certification, and that the material and information contained herein is, to the best of my knowledge and belief, true, accurate and complete and complies with the Inactive Hazardous Sites Response Act N.C.G.S. 130A-310, et seq, and the remedial action program Rules 15A NCAC 13C .0300. I am aware that there are significant penalties for willfully submitting false, inaccurate or incomplete information."

Paul S. Johnstone
Name of Registered Site Manager

Signature of Registered Site Manager

July 13, 2016
Date

NOTARIZATION

South Carolina (Enter State)

Greenville **COUNTY**

I, Serah J. Roy, a Notary Public of said County and State, do hereby certify that Paul S. Johnstone did personally appear and sign before me this day, produced proper identification in the form of SC Driver License, was duly sworn or affirmed, and declared that, he or she is the duly authorized environmental consultant of the remediating party of the property referenced above and that, to the best of his or her knowledge and belief, after thorough investigation, the information contained in the above certifications is true and accurate, and he or she then signed these Certifications in my presence.

WITNESS my hand and official seal this 13 day of July, 2016.

Serah J Roy
Notary Public (signature)

(OFFICIAL SEAL)

SERAH J. ROY NOTARY PUBLIC SOUTH CAROLINA

My commission expires: 1/22/20

Document Certification Form No. DC - II
(Revised 8/11)

APPENDIX B

HAZARDOUS WASTE INSPECTION FORMS
AND
GROUNDWATER TREATMENT SYSTEM O&M LOGS

BOSCH
ROBERT BOSCH TOOL CORPORATION

EHS DOCUMENT

HAZARDOUS WASTE WEEKLY INSPECTION

DATE 11 / 03 / 15 TIME 7:30 am / pm

FACILITY LOCATION: **Boone NC**

INSPECTOR NAME: DWAIN D. SNYDER

TYPE OF WASTE: **Remediation Site Cleanup**

TYPE OF STORAGE: **180 Day** EPA ID#: NCD095458964

ITEMS TO INSPECT:

	Pass	Fail
1. No sign of leakage or deterioration of containers	✓	
2. Container labeled with words: "Hazardous Waste"	✓	
3. Accumulation start date on container	✓	
4. Proper aisle space	✓	
5. Area secured	✓	
6. No evidence of stressed vegetation around storage area	✓	

Non-compliance items found:

Corrective actions to non-compliance items above:

Date of corrections: ____/____/____

Comments:

INSPECTOR'S SIGNATURE:

If printed, this is an uncontrolled document. The user must verify this is an authorized edition prior to use.

BOSCH
ROBERT BOSCH TOOL CORPORATION

EHS DOCUMENT

HAZARDOUS WASTE WEEKLY INSPECTION

DATE 11 / 06 / 15 TIME 7.16 am / pm

FACILITY LOCATION: **Boone NC**

INSPECTOR NAME: Dwain D. Snyder

TYPE OF WASTE: **Remediation Site Cleanup**

TYPE OF STORAGE: **180 Day** EPA ID#: NCD095458964

ITEMS TO INSPECT:

	Pass	Fail
1. No sign of leakage or deterioration of containers	✓	
2. Container labeled with words: "Hazardous Waste"	✓	
3. Accumulation start date on container	✓	
4. Proper aisle space	✓	
5. Area secured	✓	
6. No evidence of stressed vegetation around storage area	✓	

Non-compliance items found:

Corrective actions to non-compliance items above:

Date of corrections: ____/____/____

Comments:

INSPECTOR'S SIGNATURE:

If printed, this is an uncontrolled document. The user must verify this is an authorized edition prior to use.

GROUNDWATER PUMP AND TREAT SYSTEM O&M LOG
FORMER RBTC BOONE DIVISION
BOONE, WATAUGA COUNTY, NORTH CAROLINA

Name: DUWAIN D. SNYDER Date/Time: 10-03-15

Site Weather Conditions: 54° FOG

GENERAL GROUNDWATER EXTRACTION SYSTEM INFORMATION

System Status Upon Arrival: on / (off) (circle)* * If off, state issue & when system re-started at bottom of the page.

RW-1 Pump Status: yes / (no)

RW-2 Pump Status: yes / (no)

RW-3 Pump Status: yes / (no)

PI-2 Pressure: 0 psi

FM-1 Reading: 1,947,913.9 gallons

Influent Sample Collected: yes / (no)

Effluent Sample Collected: yes / (no)

PI-1 Pressure 6 psi

Prefilter-1 (PF-1) Changed: yes / no

Magnehelic Reading 0 in. H_2O

CARBONAIR® STAT 30 AIR STRIPPER INFORMATION

Blower Flow Rate: 0 scfm

Float Switch Pressure: 0 psi

FM-2 Reading: 0416485.3 gallons

Air Stripper Trays Cleaned: (yes) / no

PI-3 Reading: 0 psi

FM-2 Flowrate: 0 gallons per minute

H_2O_2 / UV LIGHT TREATMENT SYSTEM INFORMATION

PI-4 Pressure: 6 psi

Prefilter-2 Changed: (yes) / no

H_2O_2 Pump Setting: 5 (list pump setting number)

H_2O_2 added to Drum: (yes) / no

Power to UV Lights: (yes) / no (check for green lights)

PI-5 Pressure 0 psi

Concentration of H_2O_2: _____ ppm (after last UV light)

~Amount of H_2O_2 in Drum: FULL gallons

PI-6 Pressure: 0 psi

UV Lights Cleaned: (yes) / no

MAINTENANCE / OTHER NOTES

HYDROGEN PEROXIDE DRUM EMPTY SYSTEM SHUT DOWN EXCEPT BLOWER.

1DW TANK 130 GAL

RESTART TIME: 16:30 EFFLUENT OUT TO CITY

03 04 SAMPLING

P.O. C012503612 03 02 04

BOSCH
ROBERT BOSCH TOOL CORPORATION

EHS DOCUMENT

HAZARDOUS WASTE WEEKLY INSPECTION

DATE 12 / 08 / 15 TIME 11:00 am / pm

FACILITY LOCATION: **Boone NC**

INSPECTOR NAME: DWAIN D. SNYDER

TYPE OF WASTE: **Remediation Site Cleanup**

TYPE OF STORAGE: **180 Day** EPA ID#: NCD095458964

ITEMS TO INSPECT:

	Pass	Fail
1. No sign of leakage or deterioration of containers	✓	
2. Container labeled with words: "Hazardous Waste"	✓	
3. Accumulation start date on container	✓	
4. Proper aisle space	✓	
5. Area secured	✓	
6. No evidence of stressed vegetation around storage area	✓	

Non-compliance items found:

Corrective actions to non-compliance items above:

Date of corrections: ____/____/____

Comments:

INSPECTOR'S SIGNATURE:

If printed, this is an uncontrolled document. The user must verify this is an authorized edition prior to use.

GROUNDWATER PUMP AND TREAT SYSTEM O&M LOG
FORMER RBTC BOONE DIVISION
BOONE, WATAUGA COUNTY, NORTH CAROLINA

Name: DWAIN D. SNYDER Date/Time: 11-06-15

Site Weather Conditions: 58° FAIR

GENERAL GROUNDWATER EXTRACTION SYSTEM INFORMATION

System Status Upon Arrival: **on / off** (circle)* * if off, state issue & when system re-started at bottom of the page.

RW-1 Pump Status: (yes) / no

RW-2 Pump Status: (yes) / no

RW-3 Pump Status: (yes) / no

PI-2 Pressure: 0 psi

FM-1 Reading: 1,950,490.7 gallons @ 7:16

~~Influent~~ MIDFLUENT Sample Collected: (yes) / no

Effluent Sample Collected: (yes) / no

PI-1 Pressure 0 psi

Prefilter-1 (PF-1) Changed: yes / (no)

Magnehelic Reading 18 in. H_2O

CARBONAIR® STAT 30 AIR STRIPPER INFORMATION

Blower Flow Rate: 150.5 scfm

Float Switch Pressure: 19 psi

FM-2 Reading: 041932.03 gallons @ 7:16

Air Stripper Trays Cleaned: yes / (no)

PI-3 Reading: 32 psi

FM-2 Flowrate: 1.2 gallons per minute

H_2O_2 / UV LIGHT TREATMENT SYSTEM INFORMATION

PI-4 Pressure: 7 psi

Prefilter-2 Changed: yes / (no)

H_2O_2 Pump Setting: 5 (list pump setting number)

H_2O_2 added to Drum: yes / (no)

Power to UV Lights: (yes) / no (check for green lights)

PI-5 Pressure 5 psi

Concentration of H_2O_2: 30 ppm (after last UV light)

~Amount of H_2O_2 in Drum: Full gallons

PI-6 Pressure: 0 psi

UV Lights Cleaned: yes / (no)

MAINTENANCE / OTHER NOTES

EFFLUENT 7:20

MIDFLUENT 7:25

BOSCH
ROBERT BOSCH TOOL CORPORATION

EHS DOCUMENT

HAZARDOUS WASTE WEEKLY INSPECTION

DATE 01 / 06 / 16 TIME 9:00 (am) pm

FACILITY LOCATION: **Boone NC**

INSPECTOR NAME: DWAIN D. SNYDER

TYPE OF WASTE: **Remediation Site Cleanup**

TYPE OF STORAGE: **180 Day** **EPA ID#: NCD095458964**

ITEMS TO INSPECT:

	Pass	Fail
1. No sign of leakage or deterioration of containers	✓	
2. Container labeled with words: "Hazardous Waste"	✓	
3. Accumulation start date on container	✓	
4. Proper aisle space	✓	
5. Area secured	✓	
6. No evidence of stressed vegetation around storage area	✓	

Non-compliance items found:

Corrective actions to non-compliance items above:

Date of corrections: ___/___/___

Comments:

INSPECTOR'S SIGNATURE:

If printed, this is an uncontrolled document. The user must verify this is an authorized edition prior to use.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

BOSCH
ROBERT BOSCH TOOL CORPORATION

EHS DOCUMENT

HAZARDOUS WASTE WEEKLY INSPECTION

DATE 02 / 05 / 16 TIME ____ am pm

FACILITY LOCATION: **Boone NC**

INSPECTOR NAME: DKWAIN D. SNYDER

TYPE OF WASTE: **Remediation Site Cleanup**

TYPE OF STORAGE: **180 Day** EPA ID#: NCD095458964

ITEMS TO INSPECT:

	Pass	Fail
1. No sign of leakage or deterioration of containers	✓	
2. Container labeled with words: "Hazardous Waste"	✓	
3. Accumulation start date on container	✓	
4. Proper aisle space	✓	
5. Area secured	✓	
6. No evidence of stressed vegetation around storage area	✓	

Non-compliance items found:

Corrective actions to non-compliance items above:

Date of corrections: ____/____/____

Comments:

INSPECTOR'S SIGNATURE:

If printed, this is an uncontrolled document. The user must verify this is an authorized edition prior to use.

GROUNDWATER PUMP AND TREAT SYSTEM O&M LOG

FORMER RBTC BOONE DIVISION

BOONE, WATAUGA COUNTY, NORTH CAROLINA

Name: DWAIN D. SNYDER Date/Time: 01-06-16 / 9:00

Site Weather Conditions: 28° SUNNY

GENERAL GROUNDWATER EXTRACTION SYSTEM INFORMATION

System Status Upon Arrival: (on) / off (circle)* * if off, state issue & when system re-started at bottom of the page.

RW-1 Pump Status: (yes) / no

RW-2 Pump Status: (yes) / no

RW-3 Pump Status: (yes) / no

PI-2 Pressure: 0 psi

FM-1 Reading: 2016,873.5 gallons

Influent Sample Collected: yes / (no)

Effluent Sample Collected: yes / (no)

PI-1 Pressure 0 psi

Prefilter-1 (PF-1) Changed: yes / (no)

Magnehelic Reading 15 in. H_2O

CARBONAIR® STAT 30 AIR STRIPPER INFORMATION

Blower Flow Rate: 150.2 scfm

Float Switch Pressure: 19 psi

FM-2 Reading: 049204.6 gallons

Air Stripper Trays Cleaned: yes / (no)

PI-3 Reading: 32 psi

FM-2 Flowrate: 1.1 gallons per minute

H_2O_2 / UV LIGHT TREATMENT SYSTEM INFORMATION

PI-4 Pressure: 5.5 psi

Prefilter-2 Changed: yes (no)

H_2O_2 Pump Setting: 5 (list pump setting number)

H_2O_2 added to Drum: (yes) / no

Power to UV Lights: (yes) no (check for green lights)

PI-5 Pressure 5 psi

Concentration of H_2O_2: 30 ppm (after last UV light)

~Amount of H_2O_2 in Drum: >1/3 gallons

PI-6 Pressure: 0 psi

UV Lights Cleaned: yes / (no)

MAINTENANCE / OTHER NOTES

BOSCH
ROBERT BOSCH TOOL CORPORATION

EHS DOCUMENT

HAZARDOUS WASTE WEEKLY INSPECTION

DATE 03 / 22 / 16 TIME 8:40 am / pm

FACILITY LOCATION: **Boone NC**

INSPECTOR NAME: DUANE D. SNYDER

TYPE OF WASTE: **Remediation Site Cleanup**

TYPE OF STORAGE: **180 Day** EPA ID#: NCD095458964

ITEMS TO INSPECT:

	Pass	Fail
1. No sign of leakage or deterioration of containers	✓	
2. Container labeled with words: "Hazardous Waste"	✓	
3. Accumulation start date on container	✓	
4. Proper aisle space	✓	
5. Area secured	✓	
6. No evidence of stressed vegetation around storage area	✓	

Non-compliance items found:

Corrective actions to non-compliance items above:

Date of corrections: ____/____/____

Comments:

INSPECTOR'S SIGNATURE:

If printed, this is an uncontrolled document. The user must verify this is an authorized edition prior to use.

GROUNDWATER PUMP AND TREAT SYSTEM O&M LOG
FORMER RBTC BOONE DIVISION
BOONE, WATAUGA COUNTY, NORTH CAROLINA

Name: DUANE D. SNYDER Date/Time: 02-05-16

Site Weather Conditions: 25° SUNNY / WIND

GENERAL GROUNDWATER EXTRACTION SYSTEM INFORMATION

System Status Upon Arrival: (on) / off (circle)* * if off, state issue & when system re-started at bottom of the page.

RW-1 Pump Status:	(yes) / no	Influent Sample Collected:	yes / (no)
RW-2 Pump Status:	(yes) / no	Effluent Sample Collected:	yes / (no)
RW-3 Pump Status:	(yes) / no	PI-1 Pressure	0 psi
PI-2 Pressure:	0 psi	Prefilter-1 (PF-1) Changed:	yes / (no)
FM-1 Reading:	2,051,934.0 gallons	Magnehelic Reading	17 in. H_2O

CARBONAIR® STAT 30 AIR STRIPPER INFORMATION

Blower Flow Rate:	154 scfm	Air Stripper Trays Cleaned:	yes / (no)
Float Switch Pressure:	20 psi	PI-3 Reading:	33 psi
FM-2 Reading:	05297375 gallons	FM-2 Flowrate:	1.2 gallons per minute

H_2O_2 / UV LIGHT TREATMENT SYSTEM INFORMATION

PI-4 Pressure:	5 psi	PI-5 Pressure	4 psi
Prefilter-2 Changed:	yes / no	Concentration of H_2O_2:	30 ppm (after last UV light)
H_2O_2 Pump Setting:	5 (list pump setting number)	~Amount of H_2O_2 in Drum:	1/3 gallons
H_2O_2 added to Drum:	(yes) / no	PI-6 Pressure:	0 psi
Power to UV Lights:	(yes) / no (check for green lights)	UV Lights Cleaned:	yes / (no)

MAINTENANCE / OTHER NOTES

REPLACED THE #1 PUMP TUBE (STENNER PUMP CO.)
FLOWRATE AT SPICKET APPROX. 37.5 GPM
LOCATED MW-1 (INSIDE UNIT # 541

BOSCH
ROBERT BOSCH TOOL CORPORATION

EHS DOCUMENT

HAZARDOUS WASTE WEEKLY INSPECTION

DATE 03 / 24 / 16 TIME 10:20 am pm

FACILITY LOCATION: **Boone NC**

INSPECTOR NAME: Dwain D. Snyder

TYPE OF WASTE: **Remediation Site Cleanup**

TYPE OF STORAGE: **180 Day** EPA ID#: NCD095458964

ITEMS TO INSPECT:

	Pass	Fail
1. No sign of leakage or deterioration of containers	✓	
2. Container labeled with words: "Hazardous Waste"	✓	
3. Accumulation start date on container	✓	
4. Proper aisle space	✓	
5. Area secured	✓	
6. No evidence of stressed vegetation around storage area	✓	

Non-compliance items found:

Corrective actions to non-compliance items above:

Date of corrections: ____/____/____

Comments:

INSPECTOR'S SIGNATURE:

If printed, this is an uncontrolled document. The user must verify this is an authorized edition prior to use.

GROUNDWATER PUMP AND TREAT SYSTEM O&M LOG
FORMER RBTC BOONE DIVISION
BOONE, WATAUGA COUNTY, NORTH CAROLINA

Name: DWAIN D. SNYDER Date/Time: 03-22-16

Site Weather Conditions: _____

GENERAL GROUNDWATER EXTRACTION SYSTEM INFORMATION

System Status Upon Arrival: (on) / off (circle)* * if off, state issue & when system re-started at bottom of the page.

RW-1 Pump Status:	yes / no	Influent Sample Collected:	yes / (no)
RW-2 Pump Status:	yes / no	Effluent Sample Collected:	yes / (no)
RW-3 Pump Status:	yes / no	PI-1 Pressure	0 psi
PI-2 Pressure:	0 psi	Prefilter-1 (PF-1) Changed:	yes / (no)
FM-1 Reading:	2,106,935.1 gallons 8:36	Magnehelic Reading	19 in. H_2O

CARBONAIR® STAT 30 AIR STRIPPER INFORMATION

Blower Flow Rate:	150.5 scfm	Air Stripper Trays Cleaned:	yes / (no)
Float Switch Pressure:	19.5 psi	PI-3 Reading:	33 psi
FM-2 Reading:	058851.4 gallons @ 8:37	FM-2 Flowrate:	1.2 gallons per minute

H_2O_2 / UV LIGHT TREATMENT SYSTEM INFORMATION

PI-4 Pressure:	5.5 psi	PI-5 Pressure	5 psi
Prefilter-2 Changed:	yes / (no)	Concentration of H_2O_2:	30 ppm (after last UV light)
H_2O_2 Pump Setting:	5 (list pump setting number)	~Amount of H_2O_2 in Drum:	1/3+ gallons
H_2O_2 added to Drum:	yes / (no)	PI-6 Pressure:	0 psi
Power to UV Lights:	(yes) / no (check for green lights)	UV Lights Cleaned:	(yes) / (no)

MAINTENANCE / OTHER NOTES

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GROUNDWATER PUMP AND TREAT SYSTEM O&M LOG
FORMER RBTC BOONE DIVISION
BOONE, WATAUGA COUNTY, NORTH CAROLINA

Name: DWAIN D. SNYDER Date/Time: 03-24-16

Site Weather Conditions: 56° SUNNY

GENERAL GROUNDWATER EXTRACTION SYSTEM INFORMATION

System Status Upon Arrival: (on) / off (circle)* * if off, state issue & when system re-started at bottom of the page.

RW-1 Pump Status: (yes) / no

RW-2 Pump Status: (yes) / no

RW-3 Pump Status: (yes) / no

PI-2 Pressure: 0 psi

FM-1 Reading: 2,109,461.1 gallons @ 10:20

Influent Sample Collected: yes / (no)

Effluent Sample Collected: (yes) / no

PI-1 Pressure 0 psi

Prefilter-1 (PF-1) Changed: (yes) / no

Magnehelic Reading 19 in. H_2O

CARBONAIR® STAT 30 AIR STRIPPER INFORMATION

Blower Flow Rate: 150.5 scfm

Float Switch Pressure: 19.5 psi

FM-2 Reading: 059120.4 gallons @ 10:21

Air Stripper Trays Cleaned: yes / (no)

PI-3 Reading: 33 psi

FM-2 Flowrate: 1.2 gallons per minute

H_2O_2 / UV LIGHT TREATMENT SYSTEM INFORMATION

PI-4 Pressure: 5.5 psi

Prefilter-2 Changed: (yes) / no

H_2O_2 Pump Setting: 5 (list pump setting number)

H_2O_2 added to Drum: (yes) / no

Power to UV Lights: (yes) / no (check for green lights)

PI-5 Pressure 5 psi

Concentration of H_2O_2: 30 ppm (after last UV light)

~Amount of H_2O_2 in Drum: 45 gallons

PI-6 Pressure: 0 psi

UV Lights Cleaned: yes / (no)

MAINTENANCE / OTHER NOTES

50 GAL OF PURGE IN POLY TANK

APPENDIX C

HISTORICAL GROUNDWATER ELEVATION DATA AND HYDROGRAPHS

Appendix C
Historical Groundwater Elevation Data
Former Robert Bosch Tool Corporation Boone Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Monitoring Well	TOC Elevation (ft, msl)	Date	Depth to Ground Water (ft, bgs)	Water Table Elevation (ft, msl)	Screen Placement
MW-1	3294.27	3/14/2012	34.71	3259.56	Overburden
		6/18/2012	34.01	3260.26	
		9/24/2012	37.50	3256.77	
		12/10/2012	39.86	3254.41	
		5/20/2013	30.76	3263.51	
		12/3/2013	NM		
		3/4/2014	35.89	3258.38	
		6/2/2014	31.59	3262.68	
		9/9/2014	37.45	3256.82	
		3/9/2015	40.14	3254.13	
		9/21/2015	39.82	3254.45	
		3/22/2016	29.91	3264.36	
MW-2	3295.05	3/14/2012	49.82	3245.23	Overburden
		6/18/2012	48.36	3246.69	
		9/24/2012	51.74	3243.31	
		12/10/2012	54.58	3240.47	
		5/20/2013	45.75	3249.30	
		12/3/2013	NM		
		3/4/2014	53.57	3241.48	
		6/2/2014	47.75	3247.30	
		9/9/2014	49.75	3245.30	
		3/9/2015	54.58	3240.47	
		9/21/2015	54.51	3240.54	
		3/22/2016	45.90	3249.15	
MW-3	3295.46	3/14/2012	49.75	3245.71	Overburden
		6/18/2012	48.24	3247.22	
		9/24/2012	51.86	3243.60	
		12/10/2012	54.59	3240.87	
		5/20/2013	46.82	3248.64	
		12/3/2013	NM		
		3/4/2014	52.89	3242.57	
		6/2/2014	48.40	3247.06	
		9/9/2014	50.29	3245.17	
		3/9/2015	54.53	3240.93	
		9/21/2015	Dry		
		3/22/2016	45.85	3249.61	
MW-4	3294.94	3/14/2012	49.50	3245.44	Overburden
		6/18/2012	48.27	3246.67	
		9/24/2012	51.65	3243.29	
		12/10/2012	53.10	3241.84	
		5/20/2013	46.96	3247.98	
		12/3/2013	50.17	3244.77	
		3/4/2014	51.56	3243.38	
		6/2/2014	48.76	3246.18	
		9/9/2014	50.53	3244.41	
		12/1/2014	53.20	3241.74	
		3/9/2015	54.13	3240.81	
		9/21/2015	54.18	3240.76	
		3/22/2016	46.15	3248.79	
MW-4D	3294.77	3/14/2012	50.24	3244.53	Upper Bedrock
		6/18/2012	49.20	3245.57	
		9/24/2012	52.57	3242.20	
		12/10/2012	54.31	3240.46	
		5/20/2013	46.81	3247.96	
		12/3/2013	51.12	3243.65	
		3/4/2014	52.50	3242.27	
		6/2/2014	49.51	3245.26	
		9/9/2014	51.37	3243.40	
		12/1/2014	54.02	3240.75	
		3/9/2015	54.58	3240.19	
		9/21/2015	54.98	3239.79	
		3/22/2016	46.74	3248.03	

Prepared By/Date: LLM 04/04/16
Checked By/Date: ZJD 04/04/16

Appendix C
Historical Groundwater Elevation Data
Former Robert Bosch Tool Corporation Boone Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Monitoring Well	TOC Elevation (ft, msl)	Date	Depth to Ground Water (ft, bgs)	Water Table Elevation (ft, msl)	Screen Placement
MW-5	3292.51	3/14/2012	58.03	3234.48	Upper Bedrock
		6/18/2012	57.93	3234.58	
		9/24/2012	59.79	3232.72	
		12/10/2012	60.75	3231.76	
		5/20/2013	56.45	3236.06	
		12/3/2013	57.99	3234.52	
		3/4/2014	58.56	3233.95	
		6/2/2014	57.78	3234.73	
		9/9/2014	59.00	3233.51	
		12/1/2014	60.10	3232.41	
		3/9/2015	60.94	3231.57	
		9/21/2015	60.91	3231.60	
		3/22/2016	55.39	3237.12	
MW-5D	3292.61	3/14/2012	67.60	3225.01	Upper Bedrock
		6/18/2012	67.41	3225.20	
		9/24/2012	69.07	3223.54	
		12/10/2012	70.00	3222.61	
		5/20/2013	66.22	3226.39	
		12/3/2013	67.79	3224.82	
		3/4/2014	68.40	3224.21	
		6/2/2014	67.88	3224.73	
		9/9/2014	68.86	3223.75	
		12/1/2014	69.50	3223.11	
		3/9/2015	70.03	3222.58	
		9/21/2015	70.44	3222.17	
		3/22/2016	65.37	3227.24	
MW-5DD	3292.83	3/14/2012	68.12	3224.71	Middle Bedrock
		6/18/2012	58.00	3234.83	
		9/24/2012	69.60	3223.23	
		12/10/2012	70.63	3222.20	
		5/20/2013	66.85	3225.98	
		12/3/2013	NM		
		3/4/2014	69.20	3223.63	
		6/2/2014	68.72	3224.11	
		9/9/2014	59.77	3233.06	
		3/9/2015	71.26	3221.57	
		9/21/2015	71.39	3221.44	
		3/22/2016	66.49	3226.34	
MW-7	3295.25	3/14/2012	27.39	3267.86	Overburden
		6/18/2012	28.50	3266.75	
		9/24/2012	30.44	3264.81	
		12/10/2012	32.13	3263.12	
		5/20/2013	22.11	3273.14	
		12/3/2013	NM		
		3/4/2014	27.93	3267.32	
		6/2/2014	28.21	3267.04	
		9/9/2014	30.07	3265.18	
		3/9/2015	28.48	3266.77	
		9/21/2015	32.29	3262.96	
		3/22/2016	26.20	3269.05	
MW-7D	3296.21	3/14/2012	33.07	3263.14	Upper Bedrock
		6/18/2012	33.11	3263.10	
		9/24/2012	36.29	3259.92	
		12/10/2012	38.27	3257.94	
		5/20/2013	27.79	3268.42	
		12/3/2013	NM		
		3/4/2014	34.16	3262.05	
		6/2/2014	33.50	3262.71	
		9/9/2014	36.31	3259.90	
		3/9/2015	37.05	3259.16	
		9/21/2015	38.45	3257.76	
		3/22/2016	29.81	3266.40	

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Former Robert Bosch Tool Corporation Boone Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Monitoring Well	TOC Elevation (ft, msl)	Date	Depth to Ground Water (ft, bgs)	Water Table Elevation (ft, msl)	Screen Placement
MW-8	3294.09	3/14/2012	46.74	3247.35	Overburden
		6/18/2012	45.10	3248.99	
		9/24/2012	49.31	3244.78	
		12/10/2012	Dry	Dry	
		5/20/2013	43.29	3250.80	
		12/3/2013	NM		
		3/4/2014	49.12	3244.97	
		6/2/2014	45.54	3248.55	
		9/9/2014	47.76	3246.33	
		3/9/2015	49.81	3244.28	
		9/21/2015	49.79	3244.30	
		3/22/2016	41.89	3252.20	
MW-8D	3294.20	3/14/2012	47.26	3246.94	Upper Bedrock
		6/18/2012	49.48	3244.72	
		9/24/2012	49.79	3244.41	
		12/10/2012	52.55	3241.65	
		5/20/2013	43.29	3250.91	
		12/3/2013	NM		
		3/4/2014	51.18	3243.02	
		6/2/2014	47.01	3247.19	
		9/9/2014	49.15	3245.05	
		3/9/2015	52.32	3241.88	
		9/21/2015	52.88	3241.32	
		3/22/2016	46.82	3247.38	
MW-9D	3295.46	3/14/2012	49.35	3246.11	Upper Bedrock
		6/18/2012	48.20	3247.26	
		9/24/2012	51.78	3243.68	
		12/10/2012	53.78	3241.68	
		5/20/2013	46.05	3249.41	
		12/3/2013	NM		
		3/4/2014	52.11	3243.35	
		6/2/2014	48.41	3247.05	
		9/9/2014	50.36	3245.10	
		3/9/2015	54.32	3241.14	
		9/21/2015	54.31	3241.15	
		3/22/2016	45.17	3250.29	
MW-10	3288.20	3/14/2012	35.42	3252.78	Overburden
		6/18/2012	34.85	3253.35	
		9/24/2012	38.51	3249.69	
		12/10/2012	40.52	3247.68	
		5/20/2013	30.12	3258.08	
		12/3/2013	36.09	3252.11	
		3/4/2014	35.97	3252.23	
		6/2/2014	35.01	3253.19	
		9/9/2014	37.86	3250.34	
		12/1/2014	39.15	3249.05	
		3/9/2015	39.80	3248.40	
		9/21/2015	40.30	3247.90	
		3/22/2016	30.51	3257.69	
MW-10D	3288.39	3/14/2012	61.41	3226.98	Upper Bedrock
		6/18/2012	61.08	3227.31	
		9/24/2012	62.88	3225.51	
		12/10/2012	63.79	3224.60	
		5/20/2013	59.21	3229.18	
		12/3/2013	61.59	3226.80	
		3/4/2014	62.19	3226.20	
		6/2/2014	61.68	3226.71	
		9/9/2014	62.72	3225.67	
		12/1/2014	65.20	3223.19	
		3/9/2015	65.55	3222.84	
		9/21/2015	67.72	3220.67	
		3/22/2016	58.74	3229.65	

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Checked By/Date: ZJD 04/04/16

Appendix C
Historical Groundwater Elevation Data
Former Robert Bosch Tool Corporation Boone Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Monitoring Well	TOC Elevation (ft, msl)	Date	Depth to Ground Water (ft, bgs)	Water Table Elevation (ft, msl)	Screen Placement
MW-11	3293.76	3/14/2012	NM		Overburden
		6/18/2012	NM		
		9/24/2012	NM		
		12/10/2012	NM		
		5/20/2013	NM		
		12/3/2013	NM		
		3/4/2014	NM		
		6/2/2014	NM		
		9/9/2014	NM		
		3/9/2015	NM		
		9/21/2015	NM		
		3/22/2016	26.51	3267.25	
MW-12	3293.71	3/14/2012	56.43	3237.28	Overburden
		6/18/2012	55.76	3237.95	
		9/24/2012	59.13	3234.58	
		12/10/2012	Dry		
		5/20/2013	54.91	3238.80	
		12/3/2013	57.32	3236.39	
		3/4/2014	58.87	3234.84	
		6/2/2014	57.00	3236.71	
		9/9/2014	58.94	3234.77	
		12/1/2014	Dry		
		3/9/2015	Dry		
		9/21/2015	59.75	3233.96	
		3/22/2016	52.12	3241.59	
MW-12D	3293.49	3/14/2012	66.85	3226.64	Upper Bedrock
		6/18/2012	66.75	3226.74	
		9/24/2012	68.88	3224.61	
		12/10/2012	70.08	3223.41	
		5/20/2013	65.53	3227.96	
		12/3/2013	67.12	3226.37	
		3/4/2014	68.20	3225.29	
		6/2/2014	67.54	3225.95	
		9/9/2014	68.55	3224.94	
		12/1/2014	69.50	3223.99	
		3/9/2015	70.12	3223.37	
		9/21/2015	70.45	3223.04	
		3/22/2016	63.95	3229.54	
MW-12DD	3293.98	3/14/2012	69.00	3224.98	Middle Bedrock
		6/18/2012	68.92	3225.06	
		9/24/2012	70.77	3223.21	
		12/10/2012	71.90	3222.08	
		5/20/2013	68.43	3225.55	
		12/3/2013	69.12	3224.86	
		3/4/2014	70.08	3223.90	
		6/2/2014	69.67	3224.31	
		9/9/2014	70.26	3223.72	
		12/1/2014	71.24	3222.74	
		3/9/2015	72.69	3221.29	
		9/21/2015	72.43	3221.55	
		3/22/2016	68.63	3225.35	
MW-12D3	3294.53	5/20/2013	159.62	3134.91	Lower Bedrock
		12/3/2013	112.09	3182.44	
		3/4/2014	109.19	3185.34	
		6/2/2014	110.68	3183.85	
		9/9/2014	106.56	3187.97	
		12/1/2014	104.15	3190.38	
		3/9/2015	106.63	3187.90	
		9/21/2015	95.30	3199.23	
		3/22/2016	93.72	3200.81	

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Appendix C
Historical Groundwater Elevation Data
Former Robert Bosch Tool Corporation Boone Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Monitoring Well	TOC Elevation (ft, msl)	Date	Depth to Ground Water (ft, bgs)	Water Table Elevation (ft, msl)	Screen Placement
MW-13	3179.15	3/14/2012	37.51	3141.64	Overburden
		6/18/2012	38.04	3141.11	
		9/24/2012	41.12	3138.03	
		12/10/2012	42.52	3136.63	
		5/20/2013	34.75	3144.40	
		12/3/2013	NM		
		3/4/2014	37.46	3141.69	
		6/2/2014	37.86	3141.29	
		9/9/2014	39.71	3139.44	
		3/9/2015	40.43	3138.72	
		9/21/2015	41.19	3137.96	
		3/22/2016	32.29	3146.86	
MW-13D	3179.26	3/14/2012	38.30	3140.96	Upper Bedrock
		6/18/2012	38.64	3140.62	
		9/24/2012	41.75	3137.51	
		12/10/2012	43.38	3135.88	
		5/20/2013	34.53	3144.73	
		12/3/2013	NM		
		3/4/2014	38.13	3141.13	
		6/2/2014	38.70	3140.56	
		9/9/2014	40.45	3138.81	
		3/9/2015	41.23	3138.03	
		9/21/2015	42.15	3137.11	
		3/22/2016	33.74	3145.52	
MW-14	3272.44	3/14/2012	32.62	3239.82	Overburden
		6/18/2012	32.96	3239.48	
		9/24/2012	36.31	3236.13	
		5/20/2013	NM		
		12/3/2013	NM		
		3/4/2014	32.30	3240.14	
		6/2/2014	33.22	3239.22	
		9/9/2014	35.09	3237.35	
		3/9/2015	35.72	3236.72	
		9/21/2015	36.94	3235.50	
		3/22/2016	27.86	3244.58	
MW-17	3268.52	3/14/2012	40.20	3228.32	Upper Bedrock
		6/18/2012	42.01	3226.51	
		9/24/2012	33.92	3234.60	
		12/10/2012	39.57	3228.95	
		5/20/2013	46.84	3222.20	
		12/3/2013	38.55	3230.49	
		3/4/2014	38.51	3230.01	
		6/2/2014	38.06	3230.46	
		9/9/2014	40.20	3228.32	
		12/1/2014	40.18	3228.34	
		3/9/2015	40.08	3228.44	
		9/21/2015	40.15	3228.37	
		3/22/2016	34.61	3233.91	
MW-17D	3269.04	3/14/2012	48.20	3220.84	Middle Bedrock
		6/18/2012	49.12	3219.92	
		9/24/2012	45.17	3223.87	
		12/10/2012	47.30	3221.74	
		5/20/2013	38.55	3221.30	
		12/3/2013	38.21	3221.64	
		3/4/2014	47.34	3221.70	
		6/2/2014	47.33	3221.71	
		9/9/2014	48.19	3220.85	
		12/1/2014	48.44	3220.60	
		3/9/2015	48.43	3220.61	
		9/21/2015	48.73	3220.31	
		3/22/2016	44.89	3224.15	

Prepared By/Date: LLM 04/04/16
Checked By/Date: ZJD 04/04/16

Appendix C
Historical Groundwater Elevation Data
Former Robert Bosch Tool Corporation Boone Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Monitoring Well	TOC Elevation (ft, msl)	Date	Depth to Ground Water (ft, bgs)	Water Table Elevation (ft, msl)	Screen Placement
MW-18D	3259.85	3/14/2012	39.53	3220.32	Middle Bedrock
		6/18/2012	40.20	3219.65	
		9/24/2012	36.86	3222.99	
		12/10/2012	NM	NM	
		5/20/2013	27.18	3152.48	
		12/3/2013	25.85	3153.81	
		3/4/2014	38.68	3221.17	
		6/2/2014	38.68	3221.17	
		9/9/2014	39.38	3220.47	
		3/9/2015	39.69	3220.16	
		9/21/2015	39.98	3219.87	
		3/22/2016	36.53	3223.32	
MW-19	3179.66	3/14/2012	27.43	3152.23	Overburden
		6/18/2012	28.18	3151.48	
		9/24/2012	23.57	3156.09	
		12/10/2012	NM		
		5/20/2013	29.17	3150.88	
		12/3/2013	29.10	3150.95	
		3/4/2014	25.57	3154.09	
		6/2/2014	25.58	3154.08	
		9/9/2014	27.10	3152.56	
		3/9/2015	27.09	3152.57	
		9/21/2015	27.88	3151.78	
		3/22/2016	22.94	3156.72	
MW-19D	3180.05	3/14/2012	30.98	3149.07	Upper Bedrock
		6/18/2012	31.47	3148.58	
		9/24/2012	26.41	3153.64	
		12/10/2012	NM		
		5/20/2013	51.43	3244.09	
		12/3/2013	50.61	3244.91	
		3/4/2014	28.60	3151.45	
		6/2/2014	28.74	3151.31	
		9/9/2014	30.54	3149.51	
		3/9/2015	30.02	3150.03	
		9/21/2015	31.33	3148.72	
		3/22/2016	26.35	3153.70	
MW-20	3295.52	3/14/2012	55.04	3240.48	Overburden
		6/18/2012	57.44	3238.08	
		9/24/2012	47.71	3247.81	
		12/10/2012	52.96	3242.56	
		5/20/2013	42.41	3253.11	
		12/3/2013	42.33	3253.19	
		3/4/2014	54.21	3241.31	
		6/2/2014	50.01	3245.51	
		9/9/2014	53.56	3241.96	
		12/1/2014	56.11	3239.41	
		3/9/2015	56.90	3238.62	
		9/21/2015	57.03	3238.49	
		3/22/2016	46.21	3249.31	
MW-20D	3295.69	3/14/2012	81.06	3214.63	Upper Bedrock
		6/18/2012	79.91	3215.78	
		9/24/2012	81.52	3214.17	
		12/10/2012	Dry		
		5/20/2013	80.18	3215.51	
		12/3/2013	82.50	3213.19	
		3/4/2014	81.80	3213.89	
		6/2/2014	79.98	3215.71	
		9/9/2014	81.44	3214.25	
		12/1/2014	81.17	3214.52	
		3/9/2015	81.68	3214.01	
		9/21/2015	81.34	3214.35	
		3/22/2016	79.80	3215.89	

Prepared By/Date: LLM 04/04/16
Checked By/Date: ZJD 04/04/16

Appendix C
Historical Groundwater Elevation Data
Former Robert Bosch Tool Corporation Boone Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Monitoring Well	TOC Elevation (ft, msl)	Date	Depth to Ground Water (ft, bgs)	Water Table Elevation (ft, msl)	Screen Placement
MW-21	3275.55	3/14/2012	42.41	3233.14	Overburden
		6/18/2012	42.33	3233.22	
		9/24/2012	45.24	3230.31	
		12/10/2012	46.63	3228.92	
		5/20/2013	40.35	3235.20	
		12/3/2013	43.10	3232.45	
		3/4/2014	44.31	3231.24	
		6/2/2014	43.34	3232.21	
		9/9/2014	45.41	3230.14	
		12/1/2014	45.75	3229.80	
		3/9/2015	46.43	3229.12	
		9/21/2015	46.80	3228.75	
		3/22/2016	38.33	3237.22	
MW-22	3293.28	3/14/2012	45.00	3248.28	Overburden
		6/18/2012	44.13	3249.15	
		9/24/2012	47.09	3246.19	
		12/10/2012	49.02	3244.26	
		5/20/2013	42.38	3250.90	
		12/3/2013	NM		
		3/4/2014	46.79	3246.49	
		6/2/2014	44.52	3248.76	
		9/9/2014	46.06	3247.22	
		3/9/2015	49.52	3243.76	
		9/21/2015	49.37	3243.91	
		3/22/2016	41.04	3252.24	
MW-23	3295.44	3/14/2012	39.45	3255.99	Overburden
		6/18/2012	38.82	3256.62	
		9/24/2012	42.18	3253.26	
		12/10/2012	44.07	3251.37	
		5/20/2013	36.71	3258.73	
		12/3/2013	NM		
		3/4/2014	44.71	3250.73	
		6/2/2014	39.69	3255.75	
		9/9/2014	41.92	3253.52	
		3/9/2015	44.35	3251.09	
		9/21/2015	44.24	3251.20	
		3/22/2016	35.40	3260.04	
MW-24	3295.27	3/14/2012	45.89	3249.38	Overburden
		6/18/2012	45.53	3249.74	
		9/24/2012	48.84	3246.43	
		12/10/2012	50.70	3244.57	
		5/20/2013	42.38	3252.01	
		12/3/2013	NM		
		3/4/2014	47.52	3247.75	
		6/2/2014	45.98	3249.29	
		9/9/2014	47.99	3247.28	
		3/9/2015	50.87	3244.40	
		9/21/2015	50.86	3244.41	
		3/22/2016	42.57	3252.70	
MW-25	3294.39	3/14/2012	49.45	3244.94	Overburden
		6/18/2012	48.85	3245.54	
		9/24/2012	51.88	3242.51	
		12/10/2012	53.83	3240.56	
		5/20/2013	46.98	3222.89	
		12/3/2013	NM		
		3/4/2014	50.94	3243.45	
		6/2/2014	NM		
		9/9/2014	NM		
		3/9/2015	53.60	3240.79	
		9/21/2015	53.69	3240.70	
		3/22/2016	45.80	3248.59	

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Checked By/Date: ZJD 04/04/16

Appendix C
Historical Groundwater Elevation Data
Former Robert Bosch Tool Corporation Boone Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Monitoring Well	TOC Elevation (ft, msl)	Date	Depth to Ground Water (ft, bgs)	Water Table Elevation (ft, msl)	Screen Placement
MW-26	3269.87	3/14/2012	41.21	3228.66	Overburden
		6/18/2012	41.25	3228.62	
		9/24/2012	43.53	3226.34	
		12/10/2012	44.75	3225.12	
		5/20/2013	40.02	3227.35	
		12/3/2013	NM		
		3/4/2014	42.73	3227.14	
		6/2/2014	42.13	3227.74	
		9/9/2014	43.11	3226.76	
		3/9/2015	44.76	3225.11	
		9/21/2015	45.20	3224.67	
		3/22/2016	38.03	3231.84	
MW-27	3267.37	3/14/2012	37.28	3230.09	Overburden
		6/18/2012	37.50	3229.87	
		9/24/2012	39.61	3227.76	
		12/10/2012	40.75	3226.62	
		5/20/2013	35.89	3231.48	
		12/3/2013	NM		
		3/4/2014	38.61	3228.76	
		6/2/2014	37.95	3229.42	
		9/9/2014	38.90	3228.47	
		3/9/2015	39.98	3227.39	
		9/21/2015	40.73	3226.64	
		3/22/2016	35.94	3231.43	
MW-28	3261.07	5/20/2013	29.94	3231.13	Overburden
		12/3/2013	32.88	3228.19	
		3/4/2014	32.70	3228.37	
		6/2/2014	32.39	3228.68	
		9/9/2014	33.39	3227.68	
		12/1/2014	33.79	3227.28	
		3/9/2015	33.08	3227.99	
		9/21/2015	34.29	3226.78	
		3/22/2016	30.11	3230.96	
MW-29D	3264.46	5/20/2013	40.88	3223.58	Upper Bedrock
		12/3/2013	42.41	3222.05	
		3/4/2014	42.90	3221.56	
		6/2/2014	42.60	3221.86	
		9/9/2014	43.51	3220.95	
		12/1/2014	43.74	3220.72	
		3/9/2015	43.70	3220.76	
		9/21/2015	44.11	3220.35	
		3/22/2016	40.41	3224.05	
MW-30	3242.68	5/20/2013	21.98	3220.70	Overburden
		12/3/2013	NM		
		3/4/2014	22.48	3220.20	
		6/2/2014	22.47	3220.21	
		9/9/2014	22.76	3219.92	
		3/9/2015	22.71	3219.97	
		9/21/2015	23.03	3219.65	
		3/22/2016	21.91	3220.77	
MW-31	3257.42	5/20/2013	32.74	3224.68	Overburden
		12/3/2013	33.92	3223.50	
		3/4/2014	34.80	3222.62	
		6/2/2014	34.35	3223.07	
		9/9/2014	35.22	3222.20	
		12/1/2014	35.91	3221.51	
		3/9/2015	36.33	3221.09	
		9/21/2015	36.67	3220.75	
		3/22/2016	31.53	3225.89	

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Appendix C
Historical Groundwater Elevation Data
Former Robert Bosch Tool Corporation Boone Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Monitoring Well	TOC Elevation (ft, msl)	Date	Depth to Ground Water (ft, bgs)	Water Table Elevation (ft, msl)	Screen Placement
MW-32	3256.8	5/20/2013	32.97	3223.83	Overburden
		12/3/2013	NM		
		3/4/2014	39.20	3217.60	
		6/2/2014	39.00	3217.80	
		9/9/2014	42.10	3214.70	
		3/9/2015	42.00	3214.80	
		9/21/2015	42.84	3213.96	
		3/22/2016	36.79	3220.01	
MW-32D	3255.87	5/20/2013	48.97	3206.90	Upper Bedrock
		12/3/2013	NM		
		3/4/2014	48.33	3207.54	
		6/2/2014	48.28	3207.59	
		9/9/2014	49.75	3206.12	
		3/9/2015	49.70	3206.17	
		9/21/2015	50.68	3205.19	
		3/22/2016	47.31	3208.56	
MW-33	3255.60	5/20/2013	40.89	3214.71	Overburden
		12/3/2013	NM		
		3/4/2014	43.20	3212.40	
		6/2/2014	43.04	3212.56	
		9/9/2014	44.77	3210.83	
		12/1/2014	45.52	3210.08	
		3/9/2015	45.92	3209.68	
		9/21/2015	Dry		
		3/22/2016	39.81	3215.79	
MW-34	3260.24	5/20/2013	42.50	3217.74	Overburden
		12/3/2013	43.35	3216.89	
		3/4/2014	43.77	3216.47	
		6/2/2014	42.83	3217.41	
		9/9/2014	44.20	3216.04	
		12/1/2014	44.48	3215.76	
		3/9/2015	44.74	3215.50	
		9/21/2015	45.06	3215.18	
		3/22/2016	41.82	3218.42	
MW-35	3227.17	6/21/2013	12.25	3214.92	Overburden
		12/3/2013	12.95	3214.22	
		3/4/2014	12.90	3214.27	
		6/2/2014	12.89	3214.28	
		9/9/2014	13.27	3213.90	
		12/1/2014	13.28	3213.89	
		3/9/2015	13.46	3213.71	
		9/21/2015	13.92	3213.25	
		3/22/2016	12.22	3214.95	

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Appendix C
Historical Groundwater Elevation Data
Former Robert Bosch Tool Corporation Boone Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Monitoring Well	TOC Elevation (ft, msl)	Date	Depth to Ground Water (ft, bgs)	Water Table Elevation (ft, msl)	Screen Placement
MW-36	3250.93	12/6/2013	40.80	3210.13	Overburden
		3/4/2014	41.03	3209.90	
		6/2/2014	40.50	3210.43	
		9/9/2014	41.88	3209.05	
		12/1/2014	41.89	3209.04	
		3/9/2015	41.92	3209.01	
		9/21/2015	42.14	3208.79	
		3/22/2016	39.32	3211.61	
MW-36D	3250.57	12/6/2013	67.15	3183.42	Upper Bedrock
		3/4/2014	67.23	3183.34	
		6/2/2014	67.10	3183.47	
		9/9/2014	67.31	3183.26	
		12/1/2014	67.25	3183.32	
		3/9/2015	67.25	3183.32	
		9/21/2015	67.23	3183.34	
		3/22/2016	67.26	3183.31	

Notes:
1. Elevations for wells MW-1 through MW-18D and RW-3 adapted from "Table 1. New Monitor Well Construction Details" contained in Groundwater Assessment *Report* for the Property at 665 State Farm Road, Boone, North Carolina, dated September 9, 1997 and prepared by QST Environmental; elevations for wells MW-20 through MW-27 surveyed by R.B. Pharr Associates in 2012; elevations for wells MW-28, MW-30 through MW-35, MW-29D and MW-32D surveyed by KCI Associates in July 2013.
2. Elevations expressed in feet above North American Vertical Datum 1988.
3. TOC = top of casing
4. ft = feet
5. msl = mean sea level
6. bgs = below ground surface
7. NM = Not measured; wells MW-15, MW-15D and MW-16 have been destroyed; TOCs for wells MW-12D3, MW-36 and MW-36D not surveyed.
8. Overburden = Partially weathered rock

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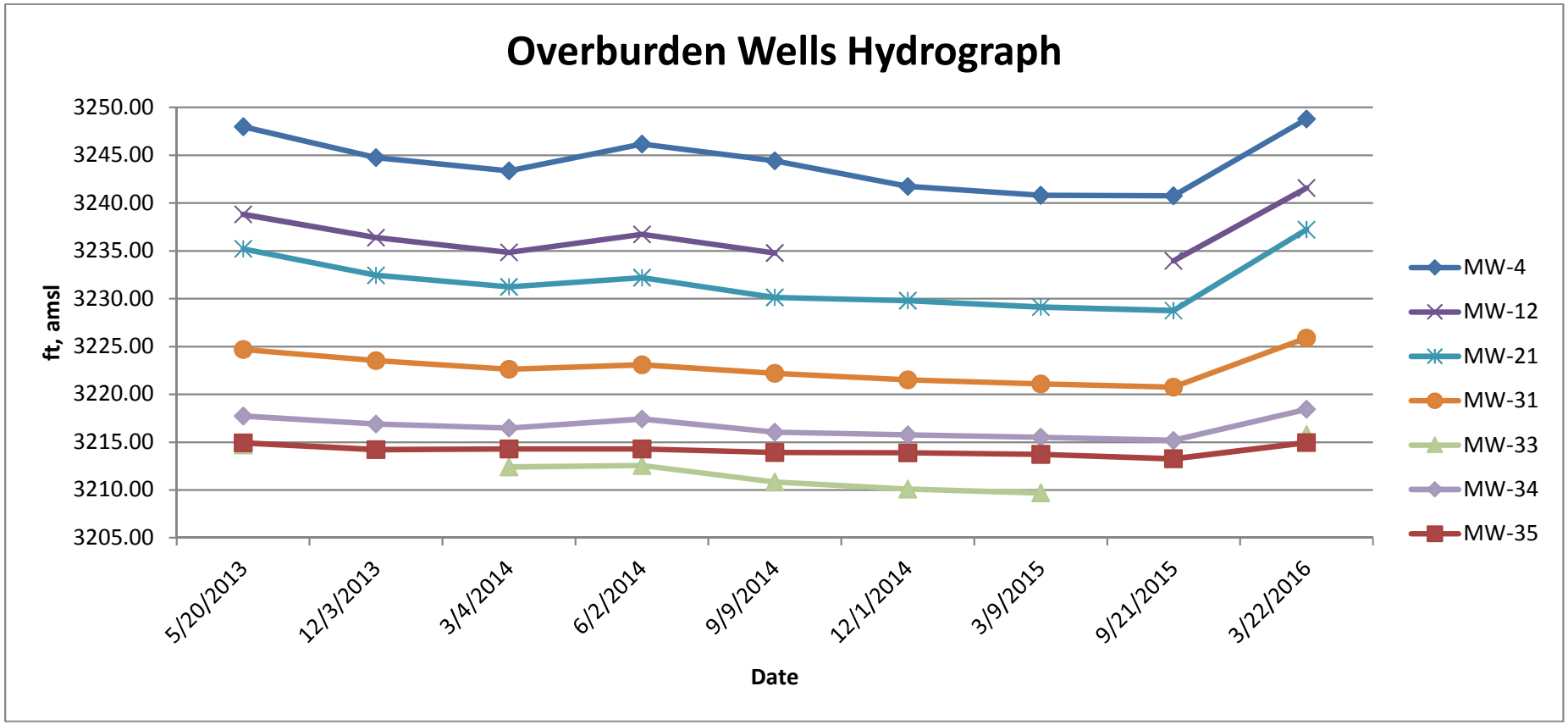
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3245.00
3240.00
3235.00
3230.00
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3220.00
3215.00
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ft, amsl
5/20/2013
12/3/2013
3/4/2014
6/2/2014
9/9/2014
12/1/2014
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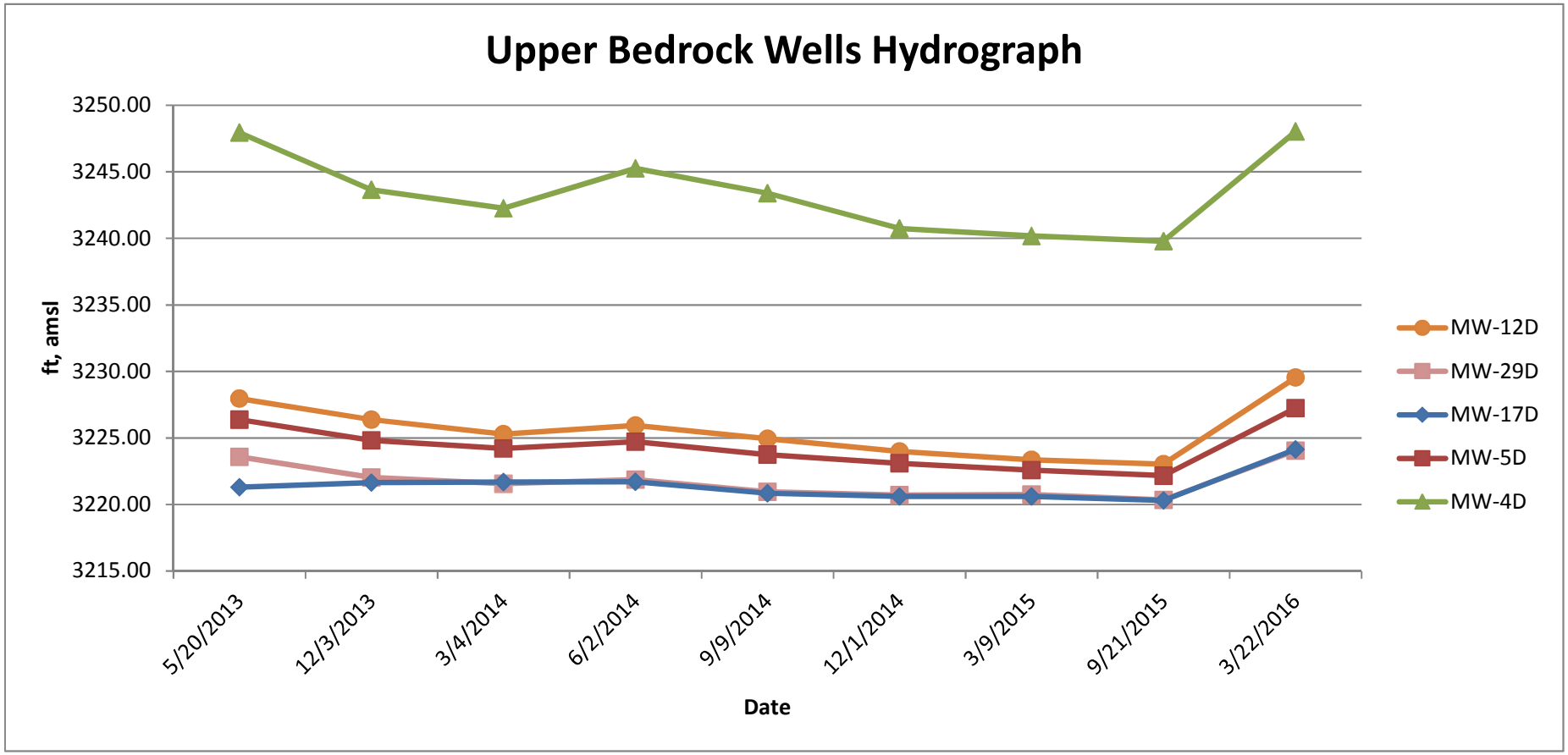
MW-21
MW-31
MW-33
MW-34
MW-35


Upper Bedrock Wells Hydrograph
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3245.00
3240.00
3235.00
3230.00
3225.00
3220.00
3215.00
ft, amsl
5/20/2013
12/3/2013
3/4/2014
6/2/2014
9/9/2014
12/1/2014
3/9/2015
9/21/2015
3/22/2016
Date
MW-12D
MW-29D
MW-17D
MW-5D
MW-4D

APPENDIX D

WATER LEVELS AND FIELD DATA RECORDS FOR GROUNDWATER SAMPLING

WATER LEVEL MONITORING FORM

Project No. 6251-12-1001 Site Name RBTC – Boone, NC

Date _____ Location Boone, NC

Reference Point TOC Measured by: _____

Well No.	Depth to Water (ft btoc)	Well Depth (ft. bls)	Sample Date	Sample Time
MW-1	29.91	45		
MW-2	45.90	55		
MW-3	45.85	55		
MW-4	46.15	55	03-23-16	10:55
MW-4D	46.74	96	03-23-16	11:55
MW-5	55.39	80	3-23-16 77.5 TD	14:20
MW-5D	65.37	120	03-23-16	11:50
MW-5DD	66.49	160		
MW-7	26.20	37		
MW-7D	29.81	45		
MW-8	41.89	50		
MW-8D	46.82	96		
MW-9D	45.17	118		
MW-10	30.51	50		
MW-10D	58.74	108		
MW-11	26.51	35		
MW-12	52.12	60	03-23-16	15:55
MW-12D	63.95	100	03-24-16	8:10
DUP-1 — MW-12DD	68.63	135	03-23-16	14:50
MW-12-D3	93.72	201.6	03-24-16	8:50
MW-13	32.29	59		
MW-13D	33.74	120		
MW-14	27.86	60		
MW-15		19		
MW-15D		68.5		

MW-16		19		
MW-17	34.61	46.5		
MW-17D	44.89	100.3		
MW-18D	36.53	91		
MW-19	22.94	49		
MW-19D	26.35	120		
MW-20	46.21	60		
MW-20D	79.8	82.45		
MW-21	38.33	47	03-23-16	9:35
MW-22	41.04	52		
MW-23	35.4	52		
MW-24	42.57	52		
MW-25	45.80	61		
MW-26	38.03	48		
MW-27	35.94	45		
RW-1	NM	75		
MW-28	30.11	42		
MW-29D	40.41	86.2		
MW-30	21.91	24.37		
MW-31	31.53	42.60	03-22-16	16:00
MW-32	36.79	43.80		
MW-32D	47.31	77.48		
MW-33	39.81	46.62		
MW-34	41.82	50.60	03-22-16	16:00
MW-35	12.22	20	03-23-16	9:00
MW-36	39.32	47		
MW-36D	67.26	69		

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MONITORING WELL SAMPLING FIELD DATA WORKSHEET

amec foster wheeler

PROJECT NUMBER 6251-12-1001 MONITORING WELL NUMBER MW-4

SITE NAME RBTC - Boone DATE 3-23-16 TIME OF SAMPLE 1055

FIELD PERSONNEL Zach Downes WEATHER CONDITIONS Sunny 53°F

TOTAL WELL DEPTH (TWD) 55 FT. (measured / well tag / drillers log/ previous report – **circle one**)

SCREENED INTERVAL 40-55 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 46.15

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 8.85

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 1.442 gal.

(NOTE ½" = 0.0102G/FT: ¾" = 0.023 G/FT: 1"= 0.041G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 4.327 FIVE STANDING WELL VOLUMES = 7.21

METHOD OF WELL EVACUATION: BAILER (PUMP) / OTHER: TYPE Monsoon Pump

TOTAL VOLUME OF WATER REMOVED: 2.0 GAL. FLOW RATE 120 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS pump at 49 ft.

LOCKING CAP YES ✓ NO

PROTECTIVE POST/ABUTMENT YES NO ✓

NONPOTABLE LABEL YES ✓ NO

ID PLATE YES ✓ NO

WELL INTEGRITY SATISFACTORY YES ✓ NO

WELL YIELD LOW MODERATE ✓ HIGH

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O_2 (mg/L)	Temp (°C)	ORP (mV)	Notes
1005 Initial Reading	46.09	5.47	456.2	96.38	3.03	15.0	321.4	
1015	46.78	6.46	458.3	56.51	2.80	15.8	336.1	
1025	47.19	5.46	470.8	26.88	2.70	16.6	309.4	
1035	47.31	5.46	473.7	15.69	2.65	16.5	334.0	
1045	47.53	5.45	475.9	13.82	2.71	16.7	327.2	
1055	47.67	5.44	477.5	9.85	2.53	16.6	327.9	Sampled

MONITORING WELL SAMPLING FIELD DATA WORKSHEET

amec foster wheeler

PROJECT NUMBER 6251-12-1001 MONITORING WELL NUMBER MW-4D

SITE NAME RBTC - Boone DATE 3-23-16 TIME OF SAMPLE 1155

FIELD PERSONNEL Zach Downes WEATHER CONDITIONS Sunny 60°F

TOTAL WELL DEPTH (TWD) 96 FT. (measured / well tag / drillers log/ previous report – **circle one**)

SCREENED INTERVAL 91-96 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 46.74

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 49.26

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 8.029 gal.

(NOTE ½" = 0.0102G/FT: ¾" = 0.023 G/FT: 1"= 0.041G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 24.088 FIVE STANDING WELL VOLUMES = 40.145

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Monsoon Pump

TOTAL VOLUME OF WATER REMOVED: 2.5 GAL. FLOW RATE 200 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS pump at 93 ft.

LOCKING CAP YES ✓ NO

PROTECTIVE POST/ABUTMENT YES NO ✓

NONPOTABLE LABEL YES ✓ NO

ID PLATE YES ✓ NO

WELL INTEGRITY SATISFACTORY YES ✓ NO

WELL YIELD LOW MODERATE ✓ HIGH

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O_2 (mg/L)	Temp (°C)	ORP (mV)	Notes
1125 Initial Reading	46.74	5.89	502.1	2.99	4.89	15.3	253.7	
1135	47.89	5.84	518.6	7.94	4.06	15.4	230.2	
1145	47.95	5.85	519.9	4.04	3.72	15.6	223.9	
1150	47.88	5.85	519.2	3.10	3.60	15.9	223.0	
1155	47.85	5.85	518.9	2.98	3.79	16.0	222.5	Sampled

MONITORING WELL SAMPLING FIELD DATA WORKSHEET

amec foster wheeler

PROJECT NUMBER 6251-12-1001 MONITORING WELL NUMBER MW-5

SITE NAME RBTC - Boone DATE 3-23-16 TIME OF SAMPLE 1420

FIELD PERSONNEL Zach Downes WEATHER CONDITIONS Sunny 66°F

TOTAL WELL DEPTH (TWD) 70 FT. (measured / well tag / drillers log/ previous report – **circle one**)

SCREENED INTERVAL 50-70 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 55.39

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 14.61

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 2.381 gal.

(NOTE ½" = 0.0102G/FT: ¾" = 0.023 G/FT: 1"= 0.041G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 7.144 FIVE STANDING WELL VOLUMES = 11.905

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Monsoon Pump

TOTAL VOLUME OF WATER REMOVED: 4 GAL. FLOW RATE 150 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS

LOCKING CAP YES ✓ NO

PROTECTIVE POST/ABUTMENT YES NO ✓

NONPOTABLE LABEL YES ✓ NO

ID PLATE YES ✓ NO

WELL INTEGRITY SATISFACTORY YES ✓ NO

WELL YIELD LOW MODERATE ✓ HIGH

pump at 61 ft.

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O_2 (mg/L)	Temp (°C)	ORP (mV)	Notes
1320 Initial Reading	55.39	6.14	129.4	691.2	4.80	20.6	299.1	
1330	56.81	5.93	123.6	935.8	3.83	17.2	219.0	
1340	56.87	5.90	124.9	817.9	3.27	17.9	206.7	
1350	57.15	5.89	122.8	732.7	3.06	18.5	196.5	
1400	58.09	5.85	112.2	702.4	3.22	16.9	193.4	
1410	57.89	5.85	109.3	532.8	3.24	17.0	190.5	
1420	58.01	5.84	107.2	472.4	3.42	17.4	187.6	Sampled

amec foster wheeler

MONITORING WELL SAMPLING FIELD DATA WORKSHEET

PROJECT NUMBER 6251-12-1001 MONITORING WELL NUMBER MW-5D

SITE NAME RBTC DATE 03-23-16 TIME OF SAMPLE 11:50

FIELD PERSONNEL DONALD D. SNYDER WEATHER CONDITIONS 57° SUNNY

TOTAL WELL DEPTH (TWD) 120 FT. (measured / well tag / drillers log/ previous report – **circle one**)

SCREENED INTERVAL 115-120 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 65.37

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 54.63

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 8.90 gal.

(NOTE ½" = 0.0102G/FT: ¾" = 0.023 G/FT: 1"= 0.041G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 26.71 FIVE STANDING WELL VOLUMES = 44.5

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE ~~Monsoon Pump~~ GEOSUB

TOTAL VOLUME OF WATER REMOVED: 3.75 GAL. FLOW RATE 210 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS

LOCKING CAP YES ✓ NO

PROTECTIVE POST/ABUTMENT YES NO ✓

NONPOTABLE LABEL YES ✓ NO

ID PLATE YES NO ✓

WELL INTEGRITY SATISFACTORY YES ✓ NO

WELL YIELD LOW MODERATE ✓ HIGH

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O_2 (mg/L)	Temp (°C)	ORP (mV)	Notes
10:50 Initial Reading	66.22	5.60	290.4	2.06	3.49	15.8	256.7	
11:00	66.25	5.62	437.9	5.40	2.83	15.7	248.9	
11:10	66.25	5.68	458.1	3.37	2.70	15.9	240.9	
11:20	67.21	5.68	455.0	2.07	2.82	15.7	232.5	FLOW RATE JUMP READJUSTED
11:30	66.26	5.71	435.6	3.16	2.42	17.1	233.4	
11:40	66.21	5.71	445.5	2.19	2.51	16.5	230.4	210 ml/min
11:50	66.27	5.71	447.8	1.86	2.65	17.0	228.4	

MONITORING WELL SAMPLING FIELD DATA WORKSHEET

amec foster wheeler

PROJECT NUMBER 6251-12-1001 MONITORING WELL NUMBER MW-12

SITE NAME RBTC - Boone DATE 3-23-16 TIME OF SAMPLE 1555

FIELD PERSONNEL Zach Downes WEATHER CONDITIONS Sunny 68° F

TOTAL WELL DEPTH (TWD) 59.72 FT. (measured / well tag / drillers log/ previous report – **circle one**)

SCREENED INTERVAL 39.72-59.72 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 52.12

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 7.6

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 1.23 gal.

(NOTE ½" = 0.0102G/FT: ¾" = 0.023 G/FT: 1"= 0.041G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 3.71 FIVE STANDING WELL VOLUMES = [redacted] 6.19

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Monsoon Pump

TOTAL VOLUME OF WATER REMOVED: 2.5 GAL. FLOW RATE 250 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS pump at 57 ft.

LOCKING CAP YES ✓ NO

PROTECTIVE POST/ABUTMENT YES NO ✓

NONPOTABLE LABEL YES ✓ NO

ID PLATE YES ✓ NO

WELL INTEGRITY SATISFACTORY YES ✓ NO

WELL YIELD LOW MODERATE ✓ HIGH

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O_2 (mg/L)	Temp (°C)	ORP (mV)	Notes
1455 Initial Reading	52.12	5.51	256.2	170.3	3.76	18.4	238.6	
1505	52.81	5.49	250.7	123.4	3.82	17.4	231.7	
1515	52.81	5.52	[redacted] 253.9	75.64	3.58	18.6	219.5	
1525	52.81	5.53	259.8	59.82	3.61	19.3	211.7	
1535	52.81	5.54	261.5	38.71	3.35	19.5	202.8	
1545	52.82	5.54	265.4	27.73	3.39	18.8	197.1	
1555	52.82	5.54	267.3	24.81	3.31	19.0	192.7	Sampled

MONITORING WELL SAMPLING FIELD DATA WORKSHEET

amec foster wheeler

PROJECT NUMBER 6251-12-1001 MONITORING WELL NUMBER MW-12D

SITE NAME RBTC - Boone DATE 3-24-16 TIME OF SAMPLE 810

FIELD PERSONNEL Zach Downes WEATHER CONDITIONS Cloudy 42°F

TOTAL WELL DEPTH (TWD) 100 FT. (measured / well tag / drillers log/ previous report – **circle one**)

SCREENED INTERVAL 95-100 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 63.95

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 36.05

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 5.876 gal.

(NOTE ½" = 0.0102G/FT: ¾" = 0.023 G/FT: 1"= 0.041G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 17.628 FIVE STANDING WELL VOLUMES = 29.38

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Monsoon Pump

TOTAL VOLUME OF WATER REMOVED: 2.5 GAL. FLOW RATE 200 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS pump at 97 ft.

LOCKING CAP YES ✓ NO

PROTECTIVE POST/ABUTMENT YES NO ✓

NONPOTABLE LABEL YES ✓ NO

ID PLATE YES ✓ NO

WELL INTEGRITY SATISFACTORY YES ✓ NO

WELL YIELD LOW MODERATE ✓ HIGH

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O_2 (mg/L)	Temp (°C)	ORP (mV)	Notes
735 Initial Reading	63.95	6.36	429.1	9.24	4.52	12.6	230.7	
745	64.19	5.63	430.9	33.53	3.66	11.7	229.0	
755	64.21	5.66	429.9	29.52	3.55	12.0	233.4	
805	64.24	5.70	429.6	11.88	3.50	12.5	239.2	
810	64.25	5.72	428.8	9.21	3.45	12.7	241.4	Sampled

MONITORING WELL SAMPLING FIELD DATA WORKSHEET

amec foster wheeler

PROJECT NUMBER 6251-12-1001 MONITORING WELL NUMBER MW-12DD / DUP-1

SITE NAME RBTC DATE 3-23-16 TIME OF SAMPLE 14:50

FIELD PERSONNEL Dakkin D. Sudoz WEATHER CONDITIONS 68° SUNNY

TOTAL WELL DEPTH (TWD) 135 FT. (measured / well tag / drillers log/ previous report – **circle one**)

SCREENED INTERVAL 130-135 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 68.63

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 66.37

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 10.81 gal.

(NOTE ½" = 0.0102G/FT: ¾" = 0.023 G/FT: 1"= 0.041G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 32.43 FIVE STANDING WELL VOLUMES = 54.05

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE ~~Monsoon Pump~~ GEOSUB

TOTAL VOLUME OF WATER REMOVED: 3 GAL. FLOW RATE 100 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS

LOCKING CAP YES ✓ NO

PROTECTIVE POST/ABUTMENT YES NO ✓

NONPOTABLE LABEL YES ✓ NO

ID PLATE YES ✓ NO

WELL INTEGRITY SATISFACTORY YES ✓ NO

WELL YIELD LOW ✓ MODERATE HIGH

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O_2 (mg/L)	Temp (°C)	ORP (mV)	Notes
13:15° Initial Reading	66.8	11.13	1386	1.35	2.47	21.0	-70.7	
14:00	69.85	10.98	1440	6.20	95.07	17.7	-64.9	160 ml/min
14:10	70.19	11.25	103.20	3.94	95.53	18.4	-59.4	
14:20								STOPPED PUMPING
14:30	71.55	11.35	1210	2.14	148.32	16.8	-50.1	180 ml/min - 140
14:40	71.60	11.34	1139	1.37	170.61	17.4	-45.7	100 ml/min
14:50	72.21	11.26	1020	0.89	144.07	16.5	-40.0	

MONITORING WELL SAMPLING FIELD DATA WORKSHEET

amec foster wheeler

PROJECT NUMBER 6251-12-1001 MONITORING WELL NUMBER MW-12-D3

SITE NAME RBTC DATE 3/24/16 TIME OF SAMPLE 8:50

FIELD PERSONNEL DWAIN D. SNYDER WEATHER CONDITIONS 38° SUNNY

TOTAL WELL DEPTH (TWD) 201 FT. (measured / well tag / drillers log/ previous report – **circle one**)

SCREENED INTERVAL 191-201 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 93.72

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 107.28

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 17.48 gal.

(NOTE ½" = 0.0102G/FT: ¾" = 0.023 G/FT: 1"= 0.041G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 52.44 FIVE STANDING WELL VOLUMES = 87.4

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Monsoon Pump

TOTAL VOLUME OF WATER REMOVED: 2.5 GAL. FLOW RATE _____ mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES ✓ NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO ✓

NONPOTABLE LABEL YES ✓ NO _____

ID PLATE YES ✓ NO _____

WELL INTEGRITY SATISFACTORY YES ✓ NO _____

WELL YIELD LOW ✓ MODERATE _____ HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O_2 (mg/L)	Temp (°C)	ORP (mV)	Notes
7:50 Initial Reading	95.95	12.98	10484	2.72	5.14	11.9	-71.3	
8:00	97.91	13.06	10464	58.99	3.37	12.0	-92.1	250 ml/min
8:10	99.88	13.07	10422	30.55	2.14	12.3	-93.3	230
8:20	102.9	13.10	10425	10.06	2.08	11.7	-93.4	140
8:30	105.45	13.10	10401	8.92	1.87	11.5	-91.2	
8:40	108.0	13.07	10350	8.39	1.88	12.2	-90.1	
8:50	108.4	13.05	10339	6.55	1.87	12.0	-88.8	70ml/min

MONITORING WELL SAMPLING FIELD DATA WORKSHEET

amec foster wheeler

PROJECT NUMBER 6251-12-1001 MONITORING WELL NUMBER MW-21

SITE NAME RBTC DATE 03-23-16 TIME OF SAMPLE 9:35

FIELD PERSONNEL DAWN D. SNYDER WEATHER CONDITIONS 33° SUNNY

TOTAL WELL DEPTH (TWD) 47 FT. (measured / well tag / drillers log/ previous report – **circle one**)

SCREENED INTERVAL 32-47 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 38.33

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 8.67

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 1.41 gal.

(NOTE ½" = 0.0102G/FT: ¾" = 0.023 G/FT: 1"= 0.041G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 4.23 FIVE STANDING WELL VOLUMES = 7.05

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE ~~Monsoon Pump~~ GEOSUB

TOTAL VOLUME OF WATER REMOVED: 4 GAL. FLOW RATE _____ mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES ✓ NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO ✓

NONPOTABLE LABEL YES ✓ NO _____

ID PLATE YES ✓ NO _____

WELL INTEGRITY SATISFACTORY YES ✓ NO _____

WELL YIELD LOW _____ MODERATE ✓ HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O_2 (mg/L)	Temp (°C)	ORP (mV)	Notes
8:35 Initial Reading	38.35	5.12	112.2	43.13	8:35	9.6	266.8	
8:45	38.45	4.80	111.8	12.26	9.15	12.2	418.4	275 ml/min
8:55	38.42	4.82	114.8	7.34	8.92	12.3	248.4	250 ml/min
9:05	38.42	4.79	114.0	2.57	8.80	12.4	298.6	
9:15	38.45	4.78	112.0	1.95	8.62	12.6	148.4	
9:25	38.43	4.78	109.2	2.68	8.52	12.7	130.2	
9:35	38.45	4.77	111.4	0.98	8.43	12.8	131.7	

MONITORING WELL SAMPLING FIELD DATA WORKSHEET

amec foster wheeler

PROJECT NUMBER 6251-12-1001 MONITORING WELL NUMBER MW-31

SITE NAME RBTC DATE 03-22-16 TIME OF SAMPLE 16:00

FIELD PERSONNEL DRIAN D. SNYDER WEATHER CONDITIONS 58° SUNNY

~~TOTAL WELL DEPTH (TWD) 42.60 FT. (measured / well tag / drillers log/ previous report – **circle one**)~~

SCREENED INTERVAL 32.60-42.60 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 31.53

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = _____

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = _____ gal.

(NOTE ½" = 0.0102G/FT: ¾" = 0.023 G/FT: 1"= 0.041G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = _____ FIVE STANDING WELL VOLUMES = _____

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE ~~Monsoon Pump~~ GEOSUB

TOTAL VOLUME OF WATER REMOVED: 3 GAL. FLOW RATE 220 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE COMMENTS _____

LOCKING CAP YES ✓ NO _____

PROTECTIVE POST/ABUTMENT YES _____ NO ✓

NONPOTABLE LABEL YES ✓ NO _____

ID PLATE YES ✓ NO _____

WELL INTEGRITY SATISFACTORY YES ✓ NO _____

WELL YIELD LOW _____ MODERATE ✓ HIGH _____

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O_2 (mg/L)	Temp (°C)	ORP (mV)	Notes
14:55 Initial Reading	32.55	4.90	696	33.65	4.66	14.4	-23.8	
15:05	31.9	5.04	765	19.68	3.38	16.0	-43.5	
15:20	31.54	5.09	810	12.18	3.22	18.9	0.9	
15:30	32.05	5.11	887	16.73	3.92	14.9	-14.2	180ml/min
15:40	32.42	5.17	828	9.55	4.15	15.9	-19.4	160ml/min
15:50	32.33	5.17	876	5.90	4.05	15.9	-8.7	
16:00	32.29	5.17	895	4.79	4.11	15.8	-5.2	

MONITORING WELL SAMPLING FIELD DATA WORKSHEET

amec foster wheeler

PROJECT NUMBER 6251-12-1001 MONITORING WELL NUMBER MW-34

SITE NAME RBTC - Boone DATE 3-22-16 TIME OF SAMPLE 1600

FIELD PERSONNEL Zach Downer WEATHER CONDITIONS Sunny 58°F

TOTAL WELL DEPTH (TWD) 51 FT. (measured / (well tag) / drillers log/ previous report – **circle one**)

SCREENED INTERVAL 41-51 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 41.82

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 9.18

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 1.496 gal.

(NOTE ½" = 0.0102G/FT: ¾" = 0.023 G/FT: 1"= 0.041G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 4.489 FIVE STANDING WELL VOLUMES = 7.48

METHOD OF WELL EVACUATION: BAILER / (PUMP) / OTHER: TYPE Monsoon Pump

TOTAL VOLUME OF WATER REMOVED: 4 GAL. FLOW RATE 300 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS pump at 45.5 ft.

LOCKING CAP YES ✓ NO

PROTECTIVE POST/ABUTMENT YES NO ✓

NONPOTABLE LABEL YES ✓ NO

ID PLATE YES ✓ NO

WELL INTEGRITY SATISFACTORY YES ✓ NO

WELL YIELD LOW MODERATE HIGH

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O_2 (mg/L)	Temp (°C)	ORP (mV)	Notes
1500 Initial Reading	41.82	5.13	575.0	1100	5.34	14.2	304.4	
1510	43.13	5.13	543.6	133.9	5.11	15.2	294.0	
1520	43.14	5.17	513.7	315.5	4.37	15.8	284.8	
1530	42.90	5.14	512.4	84.61	4.01	15.6	273.9	
1540	43.10	5.16	486.4	41.44	4.35	16.1	268.0	
1550	43.11	5.15	503.3	15.24	4.39	15.7	264.5	
1555	43.14	5.17	497.7	12.51	4.29	15.8	263.8	
1600	43.15	5.16	499.4	11.99	4.21	16.2	263.9	Sampled

MONITORING WELL SAMPLING FIELD DATA WORKSHEET

amec foster wheeler

PROJECT NUMBER 6251-12-1001 MONITORING WELL NUMBER MW-35

SITE NAME RBTC - Boone DATE 3-23-16 TIME OF SAMPLE 900

FIELD PERSONNEL Zach Downes WEATHER CONDITIONS Sunny 32°F

TOTAL WELL DEPTH (TWD) 20 FT. (measured / well tag / drillers log/ previous report – **circle one**)

SCREENED INTERVAL 10-20 MEASURING POINT FOR DEPTH TOC

DEPTH TO GROUNDWATER (DGW) 12.22

LENGTH OF WATER COLUMN (LWC) = TWD – DGW = 7.78

CASING DIAMETER 2 IN.

ONE STANDING WELL VOLUME = 1.268 gal.

(NOTE ½" = 0.0102G/FT: ¾" = 0.023 G/FT: 1"= 0.041G/FT: 2" = 0.163 G/FT: 4" = 0.653 G/FT: 6" = 1.46 G/FT)

THREE STANDING WELL VOLUMES = 3.80 FIVE STANDING WELL VOLUMES = 6.34

METHOD OF WELL EVACUATION: BAILER / PUMP / OTHER: TYPE Monsoon Pump

TOTAL VOLUME OF WATER REMOVED: 2.5 GAL. FLOW RATE 190 mL/min

WELL TYPE: FLUSH MOUNT / ABOVE GRADE

COMMENTS pump at 15 ft.

LOCKING CAP YES ✓ NO

PROTECTIVE POST/ABUTMENT YES NO ✓

NONPOTABLE LABEL YES ✓ NO

ID PLATE YES ✓ NO

WELL INTEGRITY SATISFACTORY YES ✓ NO

WELL YIELD LOW MODERATE ✓ HIGH

Elapsed Purge Time (in minutes)	Depth to Groundwater	pH	Cond. (µS/cm)	Turbidity (NTU)	Dis. O_2 (mg/L)	Temp (°C)	ORP (mV)	Notes
800 Initial Reading	12.24	5.39	138.9	204.8	8.16	9.3	256.4	
810	12.60	5.14	157.1	113.4	7.33	10.0	282.6	
820	12.41	5.39	164.7	74.79	7.62	7.6	290.8	
830	12.53	5.38	192.0	63.75	5.52	8.2	300.8	
840	12.55	5.50	204.4	31.55	5.29	10.4	297.3	
850	12.62	5.48	179.9	20.60	5.16	11.2	298.9	
900	12.69	5.50	200.9	14.72	5.08	11.3	302.8	Sampled

APPENDIX E

HYDRAULIC GRADIENT AND GROUNDWATER VELOCITY CALCULATIONS

Appendix E
Summary of Groundwater Gradient and Velocity Calculations
Former RBTC Boone Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Vertical Hydaulic Gradients			
Wells	Δ head (feet)	Δ screen midpoint (feet)	vertical gradient
MW-4/MW-4D	0.76	45.98	0.017
MW-5/MW-5D	9.88	47.45	0.208
MW-10/MW-10D	28.04	64.93	0.432
MW-12D/MW-12DD	4.19	35.00	0.120
MW-12DD/MW-12D3	24.54	62.84	0.391
MW-17/MW-17D	9.76	49.14	0.199
MW-36/MW-36D	28.30	24.60	1.150
Average Downward Vertical Gradient			0.359
Average Upward Vertical Gradient			NA
Notes:			
Negative head values indicates upward vertical gradient			

Groundwater Velocity (V)				
where *V (ft/day) = K*i/ne*				
Overburden	K = 0.485	K = 1.2	*V (ft/year)*	
Wells	ne = 0.14	ne = 0.14	Minimum	Maximum
MW-10 to MW-5	0.460	1.138	168	415
Upper Bedrock	K = 0.00000022	K = 0.031	*V (ft/year)*	
MW-4D to MW-12D	0.0004	59.092	0.15	21568
MW-10D to MW-5D	0.000035	4.981	0.0129	1818
MW-29D to MW-17D	0.0002	22.756	0.06	8306

Horizontal Hydraulic Gradients (i)			
Wells	Δ L (feet)	Δ head (feet)	horizontal gradient
MW-10 to MW-5	155	20.57	0.133
MW-4 to MW-21	80	11.57	0.145
MW-10 to MW-34	232	39.27	0.169
MW-20 to MW-28	328	18.35	0.056
MW-4D to MW-12D	97	18.49	0.191
MW-10D to MW-5D	150	2.41	0.016
MW-5D to MW-36D	495	43.93	0.089
MW-29D to MW-36D	555	40.74	0.073
Average Horizontal Gradient in Overburden			0.126
Average Horizontal Gradient in Upper Bedrock			0.092

Prepared By/Date: LLM 04/07/16
Checked By/Date: TSR 04/07/16

APPENDIX F

LABORATORY REPORT OF ANALYSIS
AND
CHAIN-OF-CUSTODY RECORDS

Laboratory Data

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
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(704)875-9092

April 11, 2016

Timothy Renn
Amec Foster Wheeler
37 Villa Road
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Greenville, SC 29615

RE: Project: RBTC-BOONE
Pace Project No.: 92291474

Dear Timothy Renn:
Enclosed are the analytical results for sample(s) received by the laboratory on March 25, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Dale Ingram
dale.ingram@pacelabs.com
Project Manager

Enclosures

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9800 Kincey Ave. Suite 100
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(704)875-9092

CERTIFICATIONS

Project: RBTC-BOONE
Pace Project No.: 92291474

Charlotte Certification IDs

9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

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SAMPLE SUMMARY

Project: RBTC-BOONE
Pace Project No.: 92291474

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92291474001	**MW-4**	Water	03/23/16 10:55	03/25/16 09:34
92291474002	**MW-4 D**	Water	03/23/16 11:55	03/25/16 09:34
92291474003	**MW-5**	Water	03/23/16 14:20	03/25/16 09:34
92291474004	**MW-5 D**	Water	03/23/16 11:50	03/25/16 09:34
92291474005	**MW-12**	Water	03/23/16 15:55	03/25/16 09:34
92291474006	**MW-12D**	Water	03/24/16 08:10	03/25/16 09:34
92291474007	**MW-12DD**	Water	03/23/16 14:50	03/25/16 09:34
92291474008	**MW-12D3**	Water	03/24/16 08:50	03/25/16 09:34
92291474009	**MW-21**	Water	03/23/16 09:35	03/25/16 09:34
92291474010	**MW-31**	Water	03/22/16 16:00	03/25/16 09:34
92291474011	**MW-34**	Water	03/22/16 16:00	03/25/16 09:34
92291474012	**MW-35**	Water	03/23/16 09:00	03/25/16 09:34
92291474013	**DUP-1**	Water	03/23/16 00:00	03/25/16 09:34
92291474014	**EQUIP BLANK**	Water	03/23/16 16:20	03/25/16 09:34

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SAMPLE ANALYTE COUNT

Project: RBTC-BOONE
Pace Project No.: 92291474

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92291474001	**MW-4**	EPA 8260	NB	14	PASI-C
		EPA 8260B Mod.	DLK	3	PASI-C
92291474002	**MW-4 D**	EPA 8260	NB	14	PASI-C
		EPA 8260B Mod.	DLK	3	PASI-C
92291474003	**MW-5**	EPA 8260	NB	14	PASI-C
		EPA 8260B Mod.	DLK	3	PASI-C
92291474004	**MW-5 D**	EPA 8260	NB	14	PASI-C
		EPA 8260B Mod.	DLK	3	PASI-C
92291474005	**MW-12**	EPA 8260	NB	14	PASI-C
		EPA 8260B Mod.	DLK	3	PASI-C
92291474006	**MW-12D**	EPA 8260	NB	14	PASI-C
		EPA 8260B Mod.	DLK	3	PASI-C
92291474007	**MW-12DD**	EPA 8260	NB	14	PASI-C
		EPA 8260B Mod.	DLK	3	PASI-C
92291474008	**MW-12D3**	EPA 8260	NB	14	PASI-C
		EPA 8260B Mod.	DLK	3	PASI-C
92291474009	**MW-21**	EPA 8260	NB	14	PASI-C
		EPA 8260B Mod.	DLK	3	PASI-C
92291474010	**MW-31**	EPA 8260	NB	14	PASI-C
		EPA 8260B Mod.	DLK	3	PASI-C
92291474011	**MW-34**	EPA 8260	NB	14	PASI-C
		EPA 8260B Mod.	DLK	3	PASI-C
92291474012	**MW-35**	EPA 8260	NB	14	PASI-C
		EPA 8260B Mod.	DLK	3	PASI-C
92291474013	**DUP-1**	EPA 8260	NB	14	PASI-C
		EPA 8260B Mod.	DLK	3	PASI-C
92291474014	**EQUIP BLANK**	EPA 8260	NB	14	PASI-C
		EPA 8260B Mod.	DLK	3	PASI-C

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PROJECT NARRATIVE

Project: RBTC-BOONE
Pace Project No.: 92291474

Method: **EPA 8260**
Description: 8260 MSV Low Level
Client: Amec Foster Wheeler, Greenville, SC
Date: April 11, 2016

General Information:
14 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSV/36139

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92291458001,92291474008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1696032)
  - Trichloroethene

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: RBTC-BOONE
Pace Project No.: 92291474

Method: **EPA 8260B Mod.**
Description: 8260 MSV SIM
Client: Amec Foster Wheeler, Greenville, SC
Date: April 11, 2016

General Information:
14 samples were analyzed for EPA 8260B Mod.. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: RBTC-BOONE
Pace Project No.: 92291474

Sample: MW-4 **Lab ID: 92291474001** Collected: 03/23/16 10:55 Received: 03/25/16 09:34 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,1-Dichloroethane	**267**	ug/L	10.0	3.2	10		03/28/16 18:00	75-34-3	
1,2-Dichloroethane	**1.1**	ug/L	1.0	0.24	1		03/28/16 06:21	107-06-2	
1,1-Dichloroethene	**7.5**	ug/L	1.0	0.56	1		03/28/16 06:21	75-35-4	
cis-1,2-Dichloroethene	**1390**	ug/L	10.0	1.9	10		03/28/16 18:00	156-59-2	
trans-1,2-Dichloroethene	**7.0**	ug/L	1.0	0.49	1		03/28/16 06:21	156-60-5	
Methylene Chloride	ND	ug/L	2.0	0.97	1		03/28/16 06:21	75-09-2	
Tetrachloroethene	**197**	ug/L	1.0	0.46	1		03/28/16 06:21	127-18-4	
1,1,1-Trichloroethane	**25.0**	ug/L	1.0	0.48	1		03/28/16 06:21	71-55-6	
1,1,2-Trichloroethane	**3.0**	ug/L	1.0	0.29	1		03/28/16 06:21	79-00-5	
Trichloroethene	**210**	ug/L	10.0	4.7	10		03/28/16 18:00	79-01-6	
Vinyl chloride	**0.92J**	ug/L	1.0	0.62	1		03/28/16 06:21	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	98	%	70-130		1		03/28/16 06:21	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		03/28/16 06:21	17060-07-0	
Toluene-d8 (S)	98	%	70-130		1		03/28/16 06:21	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.								
1,4-Dioxane (p-Dioxane)	**4.5**	ug/L	2.0	1.9	1		04/03/16 05:18	123-91-1	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%	50-150		1		04/03/16 05:18	17060-07-0	
Toluene-d8 (S)	104	%	50-150		1		04/03/16 05:18	2037-26-5	

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ANALYTICAL RESULTS

Project: RBTC-BOONE
Pace Project No.: 92291474

Sample: MW-4 D **Lab ID: 92291474002** Collected: 03/23/16 11:55 Received: 03/25/16 09:34 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		03/27/16 09:09	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.24	1		03/27/16 09:09	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/27/16 09:09	75-35-4	
cis-1,2-Dichloroethene	**0.57J**	ug/L	1.0	0.19	1		03/27/16 09:09	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		03/27/16 09:09	156-60-5	
Methylene Chloride	ND	ug/L	2.0	0.97	1		03/27/16 09:09	75-09-2	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		03/27/16 09:09	127-18-4	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		03/27/16 09:09	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/27/16 09:09	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		03/27/16 09:09	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/27/16 09:09	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	97	%	70-130		1		03/27/16 09:09	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	70-130		1		03/27/16 09:09	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		03/27/16 09:09	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.								
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1.9	1		04/03/16 05:36	123-91-1	
Surrogates									
1,2-Dichloroethane-d4 (S)	100	%	50-150		1		04/03/16 05:36	17060-07-0	
Toluene-d8 (S)	105	%	50-150		1		04/03/16 05:36	2037-26-5	

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ANALYTICAL RESULTS

Project: RBTC-BOONE
Pace Project No.: 92291474

Sample: MW-5 **Lab ID: 92291474003** Collected: 03/23/16 14:20 Received: 03/25/16 09:34 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		03/27/16 09:25	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.24	1		03/27/16 09:25	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/27/16 09:25	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		03/27/16 09:25	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		03/27/16 09:25	156-60-5	
Methylene Chloride	ND	ug/L	2.0	0.97	1		03/27/16 09:25	75-09-2	
Tetrachloroethene	**1.7**	ug/L	1.0	0.46	1		03/27/16 09:25	127-18-4	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		03/27/16 09:25	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/27/16 09:25	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		03/27/16 09:25	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/27/16 09:25	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	98	%	70-130		1		03/27/16 09:25	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	70-130		1		03/27/16 09:25	17060-07-0	
Toluene-d8 (S)	98	%	70-130		1		03/27/16 09:25	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.								
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1.9	1		04/03/16 05:54	123-91-1	
Surrogates									
1,2-Dichloroethane-d4 (S)	101	%	50-150		1		04/03/16 05:54	17060-07-0	
Toluene-d8 (S)	106	%	50-150		1		04/03/16 05:54	2037-26-5	

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ANALYTICAL RESULTS

Project: RBTC-BOONE
Pace Project No.: 92291474

Sample: MW-5 D **Lab ID: 92291474004** Collected: 03/23/16 11:50 Received: 03/25/16 09:34 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		03/28/16 04:58	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.24	1		03/28/16 04:58	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/28/16 04:58	75-35-4	
cis-1,2-Dichloroethene	**0.66J**	ug/L	1.0	0.19	1		03/28/16 04:58	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		03/28/16 04:58	156-60-5	
Methylene Chloride	ND	ug/L	2.0	0.97	1		03/28/16 04:58	75-09-2	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		03/28/16 04:58	127-18-4	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		03/28/16 04:58	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/28/16 04:58	79-00-5	
Trichloroethene	**0.90J**	ug/L	1.0	0.47	1		03/28/16 04:58	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/28/16 04:58	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		1		03/28/16 04:58	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		03/28/16 04:58	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		03/28/16 04:58	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.								
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1.9	1		04/03/16 06:13	123-91-1	
Surrogates									
1,2-Dichloroethane-d4 (S)	100	%	50-150		1		04/03/16 06:13	17060-07-0	
Toluene-d8 (S)	106	%	50-150		1		04/03/16 06:13	2037-26-5	

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ANALYTICAL RESULTS

Project: RBTC-BOONE
Pace Project No.: 92291474

Sample: MW-12 **Lab ID: 92291474005** Collected: 03/23/16 15:55 Received: 03/25/16 09:34 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,1-Dichloroethane	**39.5**	ug/L	1.0	0.32	1		03/28/16 11:04	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.24	1		03/28/16 11:04	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/28/16 11:04	75-35-4	
cis-1,2-Dichloroethene	**44.0**	ug/L	1.0	0.19	1		03/28/16 11:04	156-59-2	
trans-1,2-Dichloroethene	**1.0**	ug/L	1.0	0.49	1		03/28/16 11:04	156-60-5	
Methylene Chloride	ND	ug/L	2.0	0.97	1		03/28/16 11:04	75-09-2	
Tetrachloroethene	**4.2**	ug/L	1.0	0.46	1		03/28/16 11:04	127-18-4	
1,1,1-Trichloroethane	**2.2**	ug/L	1.0	0.48	1		03/28/16 11:04	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/28/16 11:04	79-00-5	
Trichloroethene	**5.2**	ug/L	1.0	0.47	1		03/28/16 11:04	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/28/16 11:04	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	97	%	70-130		1		03/28/16 11:04	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	70-130		1		03/28/16 11:04	17060-07-0	
Toluene-d8 (S)	98	%	70-130		1		03/28/16 11:04	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.								
1,4-Dioxane (p-Dioxane)	**3.0**	ug/L	2.0	1.9	1		04/03/16 06:32	123-91-1	
Surrogates									
1,2-Dichloroethane-d4 (S)	102	%	50-150		1		04/03/16 06:32	17060-07-0	
Toluene-d8 (S)	106	%	50-150		1		04/03/16 06:32	2037-26-5	

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ANALYTICAL RESULTS

Project: RBTC-BOONE
Pace Project No.: 92291474

Sample: MW-12D **Lab ID: 92291474006** Collected: 03/24/16 08:10 Received: 03/25/16 09:34 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,1-Dichloroethane	**13.3**	ug/L	1.0	0.32	1		03/28/16 05:15	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.24	1		03/28/16 05:15	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/28/16 05:15	75-35-4	
cis-1,2-Dichloroethene	**52.0**	ug/L	1.0	0.19	1		03/28/16 05:15	156-59-2	
trans-1,2-Dichloroethene	**0.60J**	ug/L	1.0	0.49	1		03/28/16 05:15	156-60-5	
Methylene Chloride	ND	ug/L	2.0	0.97	1		03/28/16 05:15	75-09-2	
Tetrachloroethene	**7.5**	ug/L	1.0	0.46	1		03/28/16 05:15	127-18-4	
1,1,1-Trichloroethane	**1.2**	ug/L	1.0	0.48	1		03/28/16 05:15	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/28/16 05:15	79-00-5	
Trichloroethene	**10.2**	ug/L	1.0	0.47	1		03/28/16 05:15	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/28/16 05:15	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	96	%	70-130		1		03/28/16 05:15	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	70-130		1		03/28/16 05:15	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		03/28/16 05:15	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.								
1,4-Dioxane (p-Dioxane)	**3.5**	ug/L	2.0	1.9	1		04/03/16 06:50	123-91-1	
Surrogates									
1,2-Dichloroethane-d4 (S)	100	%	50-150		1		04/03/16 06:50	17060-07-0	
Toluene-d8 (S)	105	%	50-150		1		04/03/16 06:50	2037-26-5	

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ANALYTICAL RESULTS

Project: RBTC-BOONE
Pace Project No.: 92291474

Sample: MW-12DD **Lab ID: 92291474007** Collected: 03/23/16 14:50 Received: 03/25/16 09:34 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,1-Dichloroethane	**1.8**	ug/L	1.0	0.32	1		03/28/16 06:05	75-34-3	
1,2-Dichloroethane	**0.31J**	ug/L	1.0	0.24	1		03/28/16 06:05	107-06-2	
1,1-Dichloroethene	**10.3**	ug/L	1.0	0.56	1		03/28/16 06:05	75-35-4	
cis-1,2-Dichloroethene	**114**	ug/L	1.0	0.19	1		03/28/16 06:05	156-59-2	
trans-1,2-Dichloroethene	**4.1**	ug/L	1.0	0.49	1		03/28/16 06:05	156-60-5	
Methylene Chloride	ND	ug/L	2.0	0.97	1		03/28/16 06:05	75-09-2	
Tetrachloroethene	**8.6**	ug/L	1.0	0.46	1		03/28/16 06:05	127-18-4	
1,1,1-Trichloroethane	**3.1**	ug/L	1.0	0.48	1		03/28/16 06:05	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/28/16 06:05	79-00-5	
Trichloroethene	**182**	ug/L	2.0	0.94	2		03/28/16 17:43	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/28/16 06:05	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	97	%	70-130		1		03/28/16 06:05	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	70-130		1		03/28/16 06:05	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		03/28/16 06:05	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.								
1,4-Dioxane (p-Dioxane)	**34.6**	ug/L	2.0	1.9	1		04/03/16 07:09	123-91-1	
Surrogates									
1,2-Dichloroethane-d4 (S)	97	%	50-150		1		04/03/16 07:09	17060-07-0	
Toluene-d8 (S)	104	%	50-150		1		04/03/16 07:09	2037-26-5	

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ANALYTICAL RESULTS

Project: RBTC-BOONE
Pace Project No.: 92291474

Sample: MW-12D3 **Lab ID: 92291474008** Collected: 03/24/16 08:50 Received: 03/25/16 09:34 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,1-Dichloroethane	**1.2**	ug/L	1.0	0.32	1		03/27/16 22:21	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.24	1		03/27/16 22:21	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/27/16 22:21	75-35-4	
cis-1,2-Dichloroethene	**4.5**	ug/L	1.0	0.19	1		03/27/16 22:21	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		03/27/16 22:21	156-60-5	
Methylene Chloride	ND	ug/L	2.0	0.97	1		03/27/16 22:21	75-09-2	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		03/27/16 22:21	127-18-4	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		03/27/16 22:21	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/27/16 22:21	79-00-5	
Trichloroethene	**2.2**	ug/L	1.0	0.47	1		03/27/16 22:21	79-01-6	M1
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/27/16 22:21	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	96	%	70-130		1		03/27/16 22:21	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	70-130		1		03/27/16 22:21	17060-07-0	
Toluene-d8 (S)	98	%	70-130		1		03/27/16 22:21	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.								
1,4-Dioxane (p-Dioxane)	**14.6**	ug/L	2.0	1.9	1		04/03/16 07:28	123-91-1	
Surrogates									
1,2-Dichloroethane-d4 (S)	106	%	50-150		1		04/03/16 07:28	17060-07-0	
Toluene-d8 (S)	106	%	50-150		1		04/03/16 07:28	2037-26-5	

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ANALYTICAL RESULTS

Project: RBTC-BOONE
Pace Project No.: 92291474

Sample: MW-21 **Lab ID: 92291474009** Collected: 03/23/16 09:35 Received: 03/25/16 09:34 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,1-Dichloroethane	**0.42J**	ug/L	1.0	0.32	1		03/27/16 22:37	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.24	1		03/27/16 22:37	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/27/16 22:37	75-35-4	
cis-1,2-Dichloroethene	**1.5**	ug/L	1.0	0.19	1		03/27/16 22:37	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		03/27/16 22:37	156-60-5	
Methylene Chloride	ND	ug/L	2.0	0.97	1		03/27/16 22:37	75-09-2	
Tetrachloroethene	**2.8**	ug/L	1.0	0.46	1		03/27/16 22:37	127-18-4	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		03/27/16 22:37	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/27/16 22:37	79-00-5	
Trichloroethene	**0.85J**	ug/L	1.0	0.47	1		03/27/16 22:37	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/27/16 22:37	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	97	%	70-130		1		03/27/16 22:37	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	70-130		1		03/27/16 22:37	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		03/27/16 22:37	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.								
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1.9	1		04/03/16 07:46	123-91-1	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%	50-150		1		04/03/16 07:46	17060-07-0	
Toluene-d8 (S)	106	%	50-150		1		04/03/16 07:46	2037-26-5	

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ANALYTICAL RESULTS

Project: RBTC-BOONE
Pace Project No.: 92291474

Sample: MW-31 **Lab ID: 92291474010** Collected: 03/22/16 16:00 Received: 03/25/16 09:34 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,1-Dichloroethane	**1.9**	ug/L	1.0	0.32	1		03/28/16 04:09	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.24	1		03/28/16 04:09	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/28/16 04:09	75-35-4	
cis-1,2-Dichloroethene	**11.6**	ug/L	1.0	0.19	1		03/28/16 04:09	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		03/28/16 04:09	156-60-5	
Methylene Chloride	ND	ug/L	2.0	0.97	1		03/28/16 04:09	75-09-2	
Tetrachloroethene	**1.8**	ug/L	1.0	0.46	1		03/28/16 04:09	127-18-4	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		03/28/16 04:09	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/28/16 04:09	79-00-5	
Trichloroethene	**3.3**	ug/L	1.0	0.47	1		03/28/16 04:09	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/28/16 04:09	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		03/28/16 04:09	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	70-130		1		03/28/16 04:09	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		03/28/16 04:09	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.								
1,4-Dioxane (p-Dioxane)	**3.6**	ug/L	2.0	1.9	1		04/03/16 08:41	123-91-1	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%	50-150		1		04/03/16 08:41	17060-07-0	
Toluene-d8 (S)	106	%	50-150		1		04/03/16 08:41	2037-26-5	

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ANALYTICAL RESULTS

Project: RBTC-BOONE
Pace Project No.: 92291474

Sample: MW-34 **Lab ID: 92291474011** Collected: 03/22/16 16:00 Received: 03/25/16 09:34 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,1-Dichloroethane	**13.6**	ug/L	1.0	0.32	1		03/28/16 09:24	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.24	1		03/28/16 09:24	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/28/16 09:24	75-35-4	
cis-1,2-Dichloroethene	**112**	ug/L	1.0	0.19	1		03/28/16 09:24	156-59-2	
trans-1,2-Dichloroethene	**1.5**	ug/L	1.0	0.49	1		03/28/16 09:24	156-60-5	
Methylene Chloride	ND	ug/L	2.0	0.97	1		03/28/16 09:24	75-09-2	
Tetrachloroethene	**0.92J**	ug/L	1.0	0.46	1		03/28/16 09:24	127-18-4	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		03/28/16 09:24	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/28/16 09:24	79-00-5	
Trichloroethene	**8.3**	ug/L	1.0	0.47	1		03/28/16 09:24	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/28/16 09:24	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		1		03/28/16 09:24	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		03/28/16 09:24	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		03/28/16 09:24	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.								
1,4-Dioxane (p-Dioxane)	**2.0J**	ug/L	2.0	1.9	1		04/03/16 09:00	123-91-1	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%	50-150		1		04/03/16 09:00	17060-07-0	
Toluene-d8 (S)	105	%	50-150		1		04/03/16 09:00	2037-26-5	

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ANALYTICAL RESULTS

Project: RBTC-BOONE
Pace Project No.: 92291474

Sample: MW-35 **Lab ID: 92291474012** Collected: 03/23/16 09:00 Received: 03/25/16 09:34 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		03/28/16 04:25	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.24	1		03/28/16 04:25	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/28/16 04:25	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		03/28/16 04:25	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		03/28/16 04:25	156-60-5	
Methylene Chloride	ND	ug/L	2.0	0.97	1		03/28/16 04:25	75-09-2	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		03/28/16 04:25	127-18-4	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		03/28/16 04:25	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/28/16 04:25	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		03/28/16 04:25	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/28/16 04:25	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	98	%	70-130		1		03/28/16 04:25	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	70-130		1		03/28/16 04:25	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		03/28/16 04:25	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.								
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1.9	1		04/03/16 09:18	123-91-1	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%	50-150		1		04/03/16 09:18	17060-07-0	
Toluene-d8 (S)	105	%	50-150		1		04/03/16 09:18	2037-26-5	

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ANALYTICAL RESULTS

Project: RBTC-BOONE
Pace Project No.: 92291474

Sample: DUP-1 **Lab ID: 92291474013** Collected: 03/23/16 00:00 Received: 03/25/16 09:34 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,1-Dichloroethane	**1.9**	ug/L	1.0	0.32	1		03/28/16 10:30	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.24	1		03/28/16 10:30	107-06-2	
1,1-Dichloroethene	**10.5**	ug/L	1.0	0.56	1		03/28/16 10:30	75-35-4	
cis-1,2-Dichloroethene	**118**	ug/L	1.0	0.19	1		03/28/16 10:30	156-59-2	
trans-1,2-Dichloroethene	**4.3**	ug/L	1.0	0.49	1		03/28/16 10:30	156-60-5	
Methylene Chloride	ND	ug/L	2.0	0.97	1		03/28/16 10:30	75-09-2	
Tetrachloroethene	**8.7**	ug/L	1.0	0.46	1		03/28/16 10:30	127-18-4	
1,1,1-Trichloroethane	**3.0**	ug/L	1.0	0.48	1		03/28/16 10:30	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/28/16 10:30	79-00-5	
Trichloroethene	**196**	ug/L	2.0	0.94	2		03/28/16 17:26	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/28/16 10:30	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	97	%	70-130		1		03/28/16 10:30	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	70-130		1		03/28/16 10:30	17060-07-0	
Toluene-d8 (S)	98	%	70-130		1		03/28/16 10:30	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.								
1,4-Dioxane (p-Dioxane)	**34.6**	ug/L	2.0	1.9	1		04/03/16 09:37	123-91-1	
Surrogates									
1,2-Dichloroethane-d4 (S)	100	%	50-150		1		04/03/16 09:37	17060-07-0	
Toluene-d8 (S)	105	%	50-150		1		04/03/16 09:37	2037-26-5	

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ANALYTICAL RESULTS

Project: RBTC-BOONE
Pace Project No.: 92291474

Sample: EQUIP BLANK **Lab ID: 92291474014** Collected: 03/23/16 16:20 Received: 03/25/16 09:34 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260								
1,1-Dichloroethane	ND	ug/L	1.0	0.32	1		03/27/16 04:26	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.24	1		03/27/16 04:26	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.56	1		03/27/16 04:26	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.19	1		03/27/16 04:26	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.49	1		03/27/16 04:26	156-60-5	
Methylene Chloride	ND	ug/L	2.0	0.97	1		03/27/16 04:26	75-09-2	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		03/27/16 04:26	127-18-4	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		03/27/16 04:26	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		03/27/16 04:26	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		03/27/16 04:26	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.62	1		03/27/16 04:26	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	96	%	70-130		1		03/27/16 04:26	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	70-130		1		03/27/16 04:26	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		03/27/16 04:26	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.								
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1.9	1		04/03/16 09:56	123-91-1	
Surrogates									
1,2-Dichloroethane-d4 (S)	99	%	50-150		1		04/03/16 09:56	17060-07-0	
Toluene-d8 (S)	106	%	50-150		1		04/03/16 09:56	2037-26-5	

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QUALITY CONTROL DATA

Project: RBTC-BOONE
Pace Project No.: 92291474

QC Batch: MSV/36139 | Analysis Method: EPA 8260
QC Batch Method: EPA 8260 | Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 92291474008, 92291474009

METHOD BLANK: 1695694 | Matrix: Water
Associated Lab Samples: 92291474008, 92291474009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.48	03/27/16 15:44	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.29	03/27/16 15:44	
1,1-Dichloroethane	ug/L	ND	1.0	0.32	03/27/16 15:44	
1,1-Dichloroethene	ug/L	ND	1.0	0.56	03/27/16 15:44	
1,2-Dichloroethane	ug/L	ND	1.0	0.24	03/27/16 15:44	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.19	03/27/16 15:44	
Methylene Chloride	ug/L	ND	2.0	0.97	03/27/16 15:44	
Tetrachloroethene	ug/L	ND	1.0	0.46	03/27/16 15:44	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.49	03/27/16 15:44	
Trichloroethene	ug/L	ND	1.0	0.47	03/27/16 15:44	
Vinyl chloride	ug/L	ND	1.0	0.62	03/27/16 15:44	
1,2-Dichloroethane-d4 (S)	%	97	70-130		03/27/16 15:44	
4-Bromofluorobenzene (S)	%	101	70-130		03/27/16 15:44	
Toluene-d8 (S)	%	101	70-130		03/27/16 15:44	

LABORATORY CONTROL SAMPLE: 1695695

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	42.3	85	70-130	
1,1,2-Trichloroethane	ug/L	50	43.7	87	70-130	
1,1-Dichloroethane	ug/L	50	41.6	83	70-130	
1,1-Dichloroethene	ug/L	50	43.4	87	70-132	
1,2-Dichloroethane	ug/L	50	40.8	82	70-130	
cis-1,2-Dichloroethene	ug/L	50	43.1	86	70-131	
Methylene Chloride	ug/L	50	41.4	83	63-130	
Tetrachloroethene	ug/L	50	43.8	88	70-130	
trans-1,2-Dichloroethene	ug/L	50	43.7	87	70-130	
Trichloroethene	ug/L	50	41.5	83	70-130	
Vinyl chloride	ug/L	50	44.4	89	50-150	
1,2-Dichloroethane-d4 (S)	%			97	70-130	
4-Bromofluorobenzene (S)	%			104	70-130	
Toluene-d8 (S)	%			99	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1695696 1695697

Parameter	Units	92291458001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	20	20	18.1	22.5	90	113	70-130	22	30	

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QUALITY CONTROL DATA

Project: RBTC-BOONE
Pace Project No.: 92291474

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1695696 1695697

Parameter	Units	92291458001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichloroethane	ug/L	ND	20	20	18.6	21.7	93	108	70-130	16	30	
1,1-Dichloroethane	ug/L	ND	20	20	18.0	22.4	90	112	70-130	22	30	
1,1-Dichloroethene	ug/L	ND	20	20	19.6	24.0	98	120	70-166	20	30	
1,2-Dichloroethane	ug/L	ND	20	20	16.9	20.9	85	105	70-130	21	30	
cis-1,2-Dichloroethene	ug/L	ND	20	20	19.0	22.8	95	114	70-130	18	30	
Methylene Chloride	ug/L	ND	20	20	17.5	21.8	88	109	70-130	22	30	
Tetrachloroethene	ug/L	ND	20	20	18.2	21.7	91	109	70-130	18	30	
trans-1,2-Dichloroethene	ug/L	ND	20	20	19.3	23.1	97	116	70-130	18	30	
Trichloroethene	ug/L	ND	20	20	18.2	22.3	91	112	69-151	21	30	
Vinyl chloride	ug/L	ND	20	20	21.1	25.4	105	127	70-130	18	30	
1,2-Dichloroethane-d4 (S)	%						99	97	70-130			
4-Bromofluorobenzene (S)	%						97	98	70-130			
Toluene-d8 (S)	%						100	98	70-130			

MATRIX SPIKE SAMPLE: 1696032

Parameter	Units	92291474008 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	20	22.7	113	70-130	
1,1,2-Trichloroethane	ug/L	ND	20	20.4	102	70-130	
1,1-Dichloroethane	ug/L	1.2	20	23.7	113	70-130	
1,1-Dichloroethene	ug/L	ND	20	23.8	119	70-166	
1,2-Dichloroethane	ug/L	ND	20	19.9	99	70-130	
cis-1,2-Dichloroethene	ug/L	4.5	20	26.7	111	70-130	
Methylene Chloride	ug/L	ND	20	21.9	110	70-130	
Tetrachloroethene	ug/L	ND	20	21.6	108	70-130	
trans-1,2-Dichloroethene	ug/L	ND	20	23.6	118	70-130	
Trichloroethene	ug/L	2.2	20	41.0	194	69-151	M1
Vinyl chloride	ug/L	ND	20	24.5	122	70-130	
1,2-Dichloroethane-d4 (S)	%				98	70-130	
4-Bromofluorobenzene (S)	%				100	70-130	
Toluene-d8 (S)	%				99	70-130	

SAMPLE DUPLICATE: 1696033

Parameter	Units	92291474009 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	ND		30	
1,1,2-Trichloroethane	ug/L	ND	ND		30	
1,1-Dichloroethane	ug/L	0.42J	0.54J		30	
1,1-Dichloroethene	ug/L	ND	ND		30	
1,2-Dichloroethane	ug/L	ND	ND		30	
cis-1,2-Dichloroethene	ug/L	1.5	1.5	1	30	
Methylene Chloride	ug/L	ND	ND		30	
Tetrachloroethene	ug/L	2.8	3.1	10	30	

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QUALITY CONTROL DATA

Project: RBTC-BOONE
Pace Project No.: 92291474

SAMPLE DUPLICATE: 1696033

Parameter	Units	92291474009 Result	Dup Result	RPD	Max RPD	Qualifiers
trans-1,2-Dichloroethene	ug/L	ND	ND		30	
Trichloroethene	ug/L	0.85J	0.79J		30	
Vinyl chloride	ug/L	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	96	96	0		
4-Bromofluorobenzene (S)	%	97	97	0		
Toluene-d8 (S)	%	101	99	2		

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QUALITY CONTROL DATA

Project: RBTC-BOONE
Pace Project No.: 92291474

QC Batch: MSV/36147 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 92291474002, 92291474003, 92291474014

METHOD BLANK: 1695956 Matrix: Water
Associated Lab Samples: 92291474002, 92291474003, 92291474014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.48	03/27/16 00:18	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.29	03/27/16 00:18	
1,1-Dichloroethane	ug/L	ND	1.0	0.32	03/27/16 00:18	
1,1-Dichloroethene	ug/L	ND	1.0	0.56	03/27/16 00:18	
1,2-Dichloroethane	ug/L	ND	1.0	0.24	03/27/16 00:18	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.19	03/27/16 00:18	
Methylene Chloride	ug/L	ND	2.0	0.97	03/27/16 00:18	
Tetrachloroethene	ug/L	ND	1.0	0.46	03/27/16 00:18	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.49	03/27/16 00:18	
Trichloroethene	ug/L	ND	1.0	0.47	03/27/16 00:18	
Vinyl chloride	ug/L	ND	1.0	0.62	03/27/16 00:18	
1,2-Dichloroethane-d4 (S)	%	97	70-130		03/27/16 00:18	
4-Bromofluorobenzene (S)	%	98	70-130		03/27/16 00:18	
Toluene-d8 (S)	%	101	70-130		03/27/16 00:18	

LABORATORY CONTROL SAMPLE: 1695957

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	44.5	89	70-130	
1,1,2-Trichloroethane	ug/L	50	45.5	91	70-130	
1,1-Dichloroethane	ug/L	50	43.8	88	70-130	
1,1-Dichloroethene	ug/L	50	45.8	92	70-132	
1,2-Dichloroethane	ug/L	50	42.4	85	70-130	
cis-1,2-Dichloroethene	ug/L	50	45.0	90	70-131	
Methylene Chloride	ug/L	50	45.4	91	63-130	
Tetrachloroethene	ug/L	50	45.1	90	70-130	
trans-1,2-Dichloroethene	ug/L	50	45.6	91	70-130	
Trichloroethene	ug/L	50	43.3	87	70-130	
Vinyl chloride	ug/L	50	48.6	97	50-150	
1,2-Dichloroethane-d4 (S)	%			99	70-130	
4-Bromofluorobenzene (S)	%			100	70-130	
Toluene-d8 (S)	%			99	70-130	

MATRIX SPIKE SAMPLE: 1695959

Parameter	Units	92291429003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	20	20.1	100	70-130	
1,1,2-Trichloroethane	ug/L	ND	20	19.1	95	70-130	

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QUALITY CONTROL DATA

Project: RBTC-BOONE
Pace Project No.: 92291474

MATRIX SPIKE SAMPLE: 1695959

Parameter	Units	92291429003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethane	ug/L	ND	20	19.2	96	70-130	
1,1-Dichloroethene	ug/L	ND	20	21.1	106	70-166	
1,2-Dichloroethane	ug/L	ND	20	18.4	92	70-130	
cis-1,2-Dichloroethene	ug/L	ND	20	20.5	103	70-130	
Methylene Chloride	ug/L	ND	20	19.9	100	70-130	
Tetrachloroethene	ug/L	ND	20	19.3	97	70-130	
trans-1,2-Dichloroethene	ug/L	ND	20	20.7	104	70-130	
Trichloroethene	ug/L	ND	20	19.3	97	69-151	
Vinyl chloride	ug/L	ND	20	22.2	111	70-130	
1,2-Dichloroethane-d4 (S)	%				98	70-130	
4-Bromofluorobenzene (S)	%				97	70-130	
Toluene-d8 (S)	%				99	70-130	

SAMPLE DUPLICATE: 1695958

Parameter	Units	92291242003 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	ND		30	
1,1,2-Trichloroethane	ug/L	ND	ND		30	
1,1-Dichloroethane	ug/L	ND	ND		30	
1,1-Dichloroethene	ug/L	ND	ND		30	
1,2-Dichloroethane	ug/L	ND	ND		30	
cis-1,2-Dichloroethene	ug/L	ND	ND		30	
Methylene Chloride	ug/L	ND	ND		30	
Tetrachloroethene	ug/L	ND	ND		30	
trans-1,2-Dichloroethene	ug/L	ND	ND		30	
Trichloroethene	ug/L	ND	ND		30	
Vinyl chloride	ug/L	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	98	95	4		
4-Bromofluorobenzene (S)	%	98	97	0		
Toluene-d8 (S)	%	101	100	1		

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QUALITY CONTROL DATA

Project: RBTC-BOONE
Pace Project No.: 92291474

QC Batch: MSV/36153 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 92291474001, 92291474004, 92291474006, 92291474007, 92291474010, 92291474012

METHOD BLANK: 1696034 Matrix: Water
Associated Lab Samples: 92291474001, 92291474004, 92291474006, 92291474007, 92291474010, 92291474012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.48	03/28/16 03:02	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.29	03/28/16 03:02	
1,1-Dichloroethane	ug/L	ND	1.0	0.32	03/28/16 03:02	
1,1-Dichloroethene	ug/L	ND	1.0	0.56	03/28/16 03:02	
1,2-Dichloroethane	ug/L	ND	1.0	0.24	03/28/16 03:02	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.19	03/28/16 03:02	
Methylene Chloride	ug/L	ND	2.0	0.97	03/28/16 03:02	
Tetrachloroethene	ug/L	ND	1.0	0.46	03/28/16 03:02	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.49	03/28/16 03:02	
Trichloroethene	ug/L	ND	1.0	0.47	03/28/16 03:02	
Vinyl chloride	ug/L	ND	1.0	0.62	03/28/16 03:02	
1,2-Dichloroethane-d4 (S)	%	99	70-130		03/28/16 03:02	
4-Bromofluorobenzene (S)	%	97	70-130		03/28/16 03:02	
Toluene-d8 (S)	%	100	70-130		03/28/16 03:02	

LABORATORY CONTROL SAMPLE: 1696035

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	45.4	91	70-130	
1,1,2-Trichloroethane	ug/L	50	47.2	94	70-130	
1,1-Dichloroethane	ug/L	50	44.7	89	70-130	
1,1-Dichloroethene	ug/L	50	46.4	93	70-132	
1,2-Dichloroethane	ug/L	50	41.7	83	70-130	
cis-1,2-Dichloroethene	ug/L	50	45.3	91	70-131	
Methylene Chloride	ug/L	50	44.4	89	63-130	
Tetrachloroethene	ug/L	50	46.9	94	70-130	
trans-1,2-Dichloroethene	ug/L	50	47.8	96	70-130	
Trichloroethene	ug/L	50	45.7	91	70-130	
Vinyl chloride	ug/L	50	47.7	95	50-150	
1,2-Dichloroethane-d4 (S)	%			97	70-130	
4-Bromofluorobenzene (S)	%			102	70-130	
Toluene-d8 (S)	%			99	70-130	

MATRIX SPIKE SAMPLE: 1696036

Parameter	Units	92291474010 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	20	20.7	104	70-130	
1,1,2-Trichloroethane	ug/L	ND	20	18.9	94	70-130	

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QUALITY CONTROL DATA

Project: RBTC-BOONE
Pace Project No.: 92291474

MATRIX SPIKE SAMPLE: 1696036

Parameter	Units	92291474010 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethane	ug/L	1.9	20	22.3	102	70-130	
1,1-Dichloroethene	ug/L	ND	20	20.9	104	70-166	
1,2-Dichloroethane	ug/L	ND	20	18.0	89	70-130	
cis-1,2-Dichloroethene	ug/L	11.6	20	32.9	107	70-130	
Methylene Chloride	ug/L	ND	20	20.0	100	70-130	
Tetrachloroethene	ug/L	1.8	20	20.8	95	70-130	
trans-1,2-Dichloroethene	ug/L	ND	20	21.7	108	70-130	
Trichloroethene	ug/L	3.3	20	22.5	96	69-151	
Vinyl chloride	ug/L	ND	20	22.4	112	70-130	
1,2-Dichloroethane-d4 (S)	%				97	70-130	
4-Bromofluorobenzene (S)	%				96	70-130	
Toluene-d8 (S)	%				101	70-130	

SAMPLE DUPLICATE: 1696037

Parameter	Units	92291474012 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	ND		30	
1,1,2-Trichloroethane	ug/L	ND	ND		30	
1,1-Dichloroethane	ug/L	ND	ND		30	
1,1-Dichloroethene	ug/L	ND	ND		30	
1,2-Dichloroethane	ug/L	ND	ND		30	
cis-1,2-Dichloroethene	ug/L	ND	ND		30	
Methylene Chloride	ug/L	ND	ND		30	
Tetrachloroethene	ug/L	ND	ND		30	
trans-1,2-Dichloroethene	ug/L	ND	ND		30	
Trichloroethene	ug/L	ND	ND		30	
Vinyl chloride	ug/L	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	95	96	1		
4-Bromofluorobenzene (S)	%	98	97	1		
Toluene-d8 (S)	%	100	98	2		

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QUALITY CONTROL DATA

Project: RBTC-BOONE
Pace Project No.: 92291474

QC Batch: MSV/36154 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 92291474005, 92291474011, 92291474013

METHOD BLANK: 1696038 Matrix: Water
Associated Lab Samples: 92291474005, 92291474011, 92291474013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.48	03/28/16 03:19	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.29	03/28/16 03:19	
1,1-Dichloroethane	ug/L	ND	1.0	0.32	03/28/16 03:19	
1,1-Dichloroethene	ug/L	ND	1.0	0.56	03/28/16 03:19	
1,2-Dichloroethane	ug/L	ND	1.0	0.24	03/28/16 03:19	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.19	03/28/16 03:19	
Methylene Chloride	ug/L	ND	2.0	0.97	03/28/16 03:19	
Tetrachloroethene	ug/L	ND	1.0	0.46	03/28/16 03:19	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.49	03/28/16 03:19	
Trichloroethene	ug/L	ND	1.0	0.47	03/28/16 03:19	
Vinyl chloride	ug/L	ND	1.0	0.62	03/28/16 03:19	
1,2-Dichloroethane-d4 (S)	%	97	70-130		03/28/16 03:19	
4-Bromofluorobenzene (S)	%	98	70-130		03/28/16 03:19	
Toluene-d8 (S)	%	101	70-130		03/28/16 03:19	

LABORATORY CONTROL SAMPLE: 1696039

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	46.0	92	70-130	
1,1,2-Trichloroethane	ug/L	50	48.4	97	70-130	
1,1-Dichloroethane	ug/L	50	45.7	91	70-130	
1,1-Dichloroethene	ug/L	50	47.1	94	70-132	
1,2-Dichloroethane	ug/L	50	43.8	88	70-130	
cis-1,2-Dichloroethene	ug/L	50	46.9	94	70-131	
Methylene Chloride	ug/L	50	46.2	92	63-130	
Tetrachloroethene	ug/L	50	45.5	91	70-130	
trans-1,2-Dichloroethene	ug/L	50	47.7	95	70-130	
Trichloroethene	ug/L	50	45.7	91	70-130	
Vinyl chloride	ug/L	50	49.4	99	50-150	
1,2-Dichloroethane-d4 (S)	%			96	70-130	
4-Bromofluorobenzene (S)	%			98	70-130	
Toluene-d8 (S)	%			99	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1696040 1696041

Parameter	Units	92291421001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	20	20	19.8	22.0	99	110	70-130	11	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: RBTC-BOONE
Pace Project No.: 92291474

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1696040 1696041

Parameter	Units	92291421001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,2-Trichloroethane	ug/L	ND	20	20	18.7	20.2	94	101	70-130	8	30	
1,1-Dichloroethane	ug/L	ND	20	20	20.1	22.3	100	111	70-130	10	30	
1,1-Dichloroethene	ug/L	ND	20	20	21.0	24.6	105	123	70-166	16	30	
1,2-Dichloroethane	ug/L	ND	20	20	18.2	20.3	90	101	70-130	11	30	
cis-1,2-Dichloroethene	ug/L	ND	20	20	20.7	22.5	103	113	70-130	9	30	
Methylene Chloride	ug/L	ND	20	20	20.2	22.1	101	111	70-130	9	30	
Tetrachloroethene	ug/L	ND	20	20	19.0	21.4	95	107	70-130	12	30	
trans-1,2-Dichloroethene	ug/L	ND	20	20	20.9	23.5	105	118	70-130	12	30	
Trichloroethene	ug/L	ND	20	20	19.5	21.3	98	106	69-151	9	30	
Vinyl chloride	ug/L	ND	20	20	22.8	24.7	114	123	70-130	8	30	
1,2-Dichloroethane-d4 (S)	%						98	98	70-130			
4-Bromofluorobenzene (S)	%						99	100	70-130			
Toluene-d8 (S)	%						99	99	70-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: RBTC-BOONE
Pace Project No.: 92291474

QC Batch: MSV/36222 | Analysis Method: EPA 8260B Mod.
QC Batch Method: EPA 8260B Mod. | Analysis Description: 8260 MSV SIM
Associated Lab Samples: 92291474001, 92291474002, 92291474003, 92291474004, 92291474005, 92291474006, 92291474007, 92291474008

METHOD BLANK: 1700675 | Matrix: Water
Associated Lab Samples: 92291474001, 92291474002, 92291474003, 92291474004, 92291474005, 92291474006, 92291474007, 92291474008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	1.9	04/02/16 23:40	
1,2-Dichloroethane-d4 (S)	%	98	50-150		04/02/16 23:40	
Toluene-d8 (S)	%	104	50-150		04/02/16 23:40	

LABORATORY CONTROL SAMPLE: 1700676

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	20.3	101	71-125	
1,2-Dichloroethane-d4 (S)	%			100	50-150	
Toluene-d8 (S)	%			105	50-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1700677 1700678

Parameter	Units	92291414010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	ND	20	20	20.1	20.1	101	101	50-150	0	30	
1,2-Dichloroethane-d4 (S)	%						101	100	50-150		150	
Toluene-d8 (S)	%						105	106	50-150		150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: RBTC-BOONE
Pace Project No.: 92291474

QC Batch: MSV/36223 Analysis Method: EPA 8260B Mod.
QC Batch Method: EPA 8260B Mod. Analysis Description: 8260 MSV SIM
Associated Lab Samples: 92291474009, 92291474010, 92291474011, 92291474012, 92291474013, 92291474014

METHOD BLANK: 1700679 Matrix: Water
Associated Lab Samples: 92291474009, 92291474010, 92291474011, 92291474012, 92291474013, 92291474014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	1.9	04/02/16 23:21	
1,2-Dichloroethane-d4 (S)	%	102	50-150		04/02/16 23:21	
Toluene-d8 (S)	%	105	50-150		04/02/16 23:21	

LABORATORY CONTROL SAMPLE: 1700680

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	20.0	100	71-125	
1,2-Dichloroethane-d4 (S)	%			101	50-150	
Toluene-d8 (S)	%			105	50-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1700681 1700682

Parameter	Units	92291474009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	ND	20	20	20.2	18.4	101	92	50-150	9	30	
1,2-Dichloroethane-d4 (S)	%						98	98	50-150		150	
Toluene-d8 (S)	%						105	106	50-150		150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: RBTC-BOONE
Pace Project No.: 92291474

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether, Styrene, and Vinyl chloride.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-C	Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RBTC-BOONE
Pace Project No.: 92291474

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92291474001	**MW-4**	EPA 8260	MSV/36153		
92291474002	**MW-4 D**	EPA 8260	MSV/36147		
92291474003	**MW-5**	EPA 8260	MSV/36147		
92291474004	**MW-5 D**	EPA 8260	MSV/36153		
92291474005	**MW-12**	EPA 8260	MSV/36154		
92291474006	**MW-12D**	EPA 8260	MSV/36153		
92291474007	**MW-12DD**	EPA 8260	MSV/36153		
92291474008	**MW-12D3**	EPA 8260	MSV/36139		
92291474009	**MW-21**	EPA 8260	MSV/36139		
92291474010	**MW-31**	EPA 8260	MSV/36153		
92291474011	**MW-34**	EPA 8260	MSV/36154		
92291474012	**MW-35**	EPA 8260	MSV/36153		
92291474013	**DUP-1**	EPA 8260	MSV/36154		
92291474014	**EQUIP BLANK**	EPA 8260	MSV/36147		
92291474001	**MW-4**	EPA 8260B Mod.	MSV/36222		
92291474002	**MW-4 D**	EPA 8260B Mod.	MSV/36222		
92291474003	**MW-5**	EPA 8260B Mod.	MSV/36222		
92291474004	**MW-5 D**	EPA 8260B Mod.	MSV/36222		
92291474005	**MW-12**	EPA 8260B Mod.	MSV/36222		
92291474006	**MW-12D**	EPA 8260B Mod.	MSV/36222		
92291474007	**MW-12DD**	EPA 8260B Mod.	MSV/36222		
92291474008	**MW-12D3**	EPA 8260B Mod.	MSV/36222		
92291474009	**MW-21**	EPA 8260B Mod.	MSV/36223		
92291474010	**MW-31**	EPA 8260B Mod.	MSV/36223		
92291474011	**MW-34**	EPA 8260B Mod.	MSV/36223		
92291474012	**MW-35**	EPA 8260B Mod.	MSV/36223		
92291474013	**DUP-1**	EPA 8260B Mod.	MSV/36223		
92291474014	**EQUIP BLANK**	EPA 8260B Mod.	MSV/36223		

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Page 2 of 2 for Internal Use ONLY

Sample Condition Upon Receipt

Client Name: Amec Foster Wheeler

Project WO# : 92291474

92291474

Courier: ☐ Commercial ☐ Fed Ex ☑ Pace ☐ UPS ☐ USPS ☐ Other:____ ☐ Client

Custody Seal Present? ☐ Yes ☐ No **Seals Intact?** ☐ Yes ☐ No

Date/Initials Person Examining Contents: [illegible]

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other:____

Thermometer: ☑ T1505 ☐ ____ **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☑ Samples on ice, cooling process has begun

Correction Factor: 0.0°C **Cooler Temp Corrected (°C):** 4.7 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C

USDA Regulated Soil (☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC? 9TH 3-25-16	~~☐ Yes~~	☑ No	☐ N/A	4. NO
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr.)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	12.
-Includes Date/Time/ID/Analysis Matrix: WT				
All containers needing acid/base preservation have been checked?	☑ Yes	☐ No	☐ N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	☑ Yes	☐ No	☐ N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC,LLHg	☑ Yes	☐ No	☐ N/A	
Samples checked for dechlorination	☑ Yes	☐ No	☐ N/A	14.
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☑ No	☐ N/A	15.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	16.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased): ____				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: ____ Date/Time: ____

Comments/Resolution: ____

Project Manager SCURF Review: [signature] **Date:** 3/25/16

Project Manager SRF Review: [signature] **Date:** 3/28/16

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers)

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 2

2040834

Section A Required Client Information:

Company: AMEC FOSTER WHEELER
Address: 37 VILLA RD STE 201
GREENVILLE, SC 29615
Email To: TIMOTHY.REHN@AMECFW.COM
Phone: 864-552-9624 Fax: 864-552-9699
Requested Due Date/TAT:

Section B Required Project Information:

Report To: TIMOTHY REHN
Copy To: PAUL JOHNSTONE
Purchase Order No.: C0125053 85
Project Name: RBTC-BOONE
Project Number: 6251-12-1001

Section C Invoice Information:

Attention:
Company Name: AMEC FOSTER WHEELER
Address: ALPHARETTA
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☑ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: NC

Section D Required Client Information

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	COLLECTED Composite Start TIME	COLLECTED Composite End/Grab DATE	COLLECTED Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N): 8260 Specific List	8260 Sim 1,4-dioxane	Free Cyanide	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 92291474
1	MW-4	WT	G			3/23	10:55															001
2	MW-4D	WT	G			3/23	11:55															002
3	MW-5	WT	G			3/23	14:20															003
4	MW-5D	WT	G			3/23	11:50															004
5	MW-12	WT	G			3/23	15:55															005
6	MW-12D	WT	G			3/24	8:10															006
7	MW-12DD	WT	G			3/23	14:50															007
8	MW-12D3	WT	G			3/24	8:50															008
9	MW-21	WT	G			3/23	9:35															009
10	MW-31	WT	G			3/22	16:00															010
11	MW-34	WT	G			3/22	16:00															011
12	MW-35	WT	G			3/23	9:00															012

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
8260-1,1-DCA, 1,2-DCA, 1,1-DCE	M. McDonn	3-25-16	0934	[illegible] pace	3-25-16	0934				
Cis-1,2-DCE, trans-1,2-DCE	[illegible] pace	3-25-16	1618	[illegible] pace AJ	3-25-16	1618	4.7	Y	N	Y
Methylene Chloride, PCE, TCE, 1,1,1-TCA										
1,1,2-TCA + Vinyl Chloride										

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER:
SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY):

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 2 of 2

2003318

Section A Required Client Information:

Company: AMEC FOSTER WHEELER
Address: 37 VILLA RD. STE 201
GREENVILLE, SC 29615
Email To: TIMOTHY.RENN@AMECFW.COM
Phone: 864-552-9624 Fax: 864-552-9699
Requested Due Date/TAT: STANDARD

Section B Required Project Information:

Report To: TIMOTHY RENN
Copy To: PAUL JOHNSTONE
Purchase Order No.: C012505385
Project Name: RBTC BOONE
Project Number: 6251-12-1001

Section C Invoice Information:

Attention:
Company Name: AMEC FOSTER WHEELER
Address: ALPHARETTA
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☑ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: NC

Section D Required Client Information

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N): 8260 Sterile List; 8260 SIM 1,4-dioxane; Free Cyanide

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start Date	Composite Start Time	Composite End/Grab Date	Composite End/Grab Time	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	8260 Sterile List	8260 SIM 1,4-dioxane	Free Cyanide	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	DUP-1	WT	G			3/23	—		7				6					X	X	X		92291474
2	EQUIP BLANK	WT	G			3/23	16:20		6				6					X	X			813
3																						814
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
8260-1,1-DCA, 1,2-DCA, 1,1-DCE	M. McCann	3-25-16	0934	[signature]	3-25-16	0934				
Cis-1,2-DCE, trans-1,2-DCE	[signature]	3-25-16	2015	[signature]	3-25-16	1018	4.7	Y	N	Y
Methylene Chloride, PCE, TCE, 1,1,1-TCA										
1,1,2-TCA + Vinyl Chloride										

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER:
SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY):

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Waypoint ANALYTICAL
2790 Whitten Road, Memphis, TN 38133
Main 901.213.2400 ° Fax 901.213.2440
www.waypointanalytical.com

4/7/2016

Pace Analytical Sevices, Inc. -Carolinas
Mr. Dale Ingram
9800 Kincey Ave
Suite 100
Huntersville, NC, 28078

Ref: Analytical Testing
Lab Report Number: 16-090-0235
Client Project Description: RBTC-Boone

Dear Mr. Dale Ingram:
Waypoint Analytical, Inc. received sample(s) on 3/30/2016 for the analyses presented in the following report.

The above referenced project has been analyzed per your instructions. The analyses were performed in accordance with the applicable analytical method.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters (NELAP and non-NELAP) were performed in accordance with guidelines established by the USEPA (including 40 CFR 136 Method Update Rule May 2012) and NELAC unless otherwise indicated. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for. Additional certifications may be held/are available for parameters, where NELAP accreditation is not required or applicable. A full list of certifications is available upon request.

Certain parameters (chlorine, pH, dissolved oxygen, sulfite...) are required to be analyzed within 15 minutes of sampling. Usually, but not always, any field parameter analyzed at the laboratory is outside of this holding time. Refer to sample analysis time for confirmation of holding time compliance.

The results are shown on the attached Report of Analysis(s). Results for solid matrices are reported on an as-received basis unless otherwise indicated. This report shall not be reproduced except in full and relates only to the samples included in this report.

Please do not hesitate to contact me or client services if you have any questions or need additional information.

Sincerely,

Andy Parrish
Project Manager

Laboratory's liability in any claim relating to analyses performed shall be limited to, at laboratory's option, repeating the analysis in question at laboratory's expense, or the refund of the charges paid for performance of said analysis.

Alabama	#40750	Louisiana	#04015	VA NELAP	#460181	Texas	#T104704180-11-6	Arkansas	#88-0650
Mississippi		California	#2904	NC	#415	Oklahoma	#9311	Virginia	#00106
Kentucky	#90047	Tennessee	#TN02027	EPA	#TN00012	Kentucky UST	#41	Kansas	#E-10396

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Client: Pace Analytical Sevices, Inc. -Carolinas
Project: RBTC-Boone
Lab Report Number: 16-090-0235
Date: 4/7/2016

CASE NARRATIVE

Revised Report
This report is revised to include Level II QC Data within the body of the final assembled report per client request.

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Sample Summary Table

Report Number: **16-090-0235**

Client Project Description: **RBTC-Boone**

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
93287	MW-4	Aqueous	03/23/2016 10:55	03/30/2016	4500CNG-2011	WTN
93288	MW-4D	Aqueous	03/23/2016 11:55	03/30/2016	4500CNG-2011	WTN
93289	MW-5	Aqueous	03/23/2016 14:20	03/30/2016	4500CNG-2011	WTN
93290	MW-5D	Aqueous	03/23/2016 11:50	03/30/2016	4500CNG-2011	WTN
93291	MW-12	Aqueous	03/23/2016 15:55	03/30/2016	4500CNG-2011	WTN
93292	MW-12D	Aqueous	03/24/2016 08:10	03/30/2016	4500CNG-2011	WTN
93293	MW-12DD	Aqueous	03/23/2016 14:50	03/30/2016	4500CNG-2011	WTN
93294	MW-12D3	Aqueous	03/24/2016 08:50	03/30/2016	4500CNG-2011	WTN
93295	MW-21	Aqueous	03/23/2016 09:35	03/30/2016	4500CNG-2011	WTN
93296	MW-31	Aqueous	03/22/2016 16:00	03/30/2016	4500CNG-2011	WTN
93297	MW-34	Aqueous	03/22/2016 16:00	03/30/2016	4500CNG-2011	WTN
93298	MW-35	Aqueous	03/23/2016 09:00	03/30/2016	4500CNG-2011	WTN
93299	DUP-1	Aqueous	03/23/2016	03/30/2016	4500CNG-2011	WTN

WTN: Waypoint Analytical, Inc.

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16254
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Mr. Dale Ingram
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Project Information : RBTC-Boone

Revised Report Date: 04/08/2016
Received : 3/30/2016

Andy Parrish
Project Manager

Report Number : **16-090-0235**

REPORT OF ANALYSIS

Lab No : **93287**
Sample ID : **MW-4**

Matrix: **Aqueous**
Sampled: **3/23/2016 10:55**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Cyanide, Amenable	**0.801**	mg/L	0.005	1	04/05/16 12:40	EWB	4500CNG-2011

Qualifiers/ Definitions DF Dilution Factor MQL Method Quantitation Limit

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Project Information : RBTC-Boone

Revised Report Date: 04/08/2016
Received : 3/30/2016

Andy Parrish
Project Manager

Report Number : **16-090-0235**

REPORT OF ANALYSIS

Lab No : **93288**
Sample ID : **MW-4D**

Matrix: **Aqueous**
Sampled: **3/23/2016 11:55**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Cyanide, Amenable	<0.005	mg/L	0.005	1	04/04/16 11:00	EWB	4500CNG-2011

Qualifiers/ Definitions DF Dilution Factor MQL Method Quantitation Limit

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Revised Report Date: 04/08/2016
Received : 3/30/2016

Andy Parrish
Project Manager

Report Number : **16-090-0235**

REPORT OF ANALYSIS

Lab No : **93289**
Sample ID : **MW-5**

Matrix: **Aqueous**
Sampled: **3/23/2016 14:20**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Cyanide, Amenable	<0.005	mg/L	0.005	1	04/04/16 11:00	EWB	4500CNG-2011

Qualifiers/ Definitions DF Dilution Factor MQL Method Quantitation Limit

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Received : 3/30/2016

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Project Manager

Report Number : **16-090-0235**

REPORT OF ANALYSIS

Lab No : **93290**
Sample ID : **MW-5D**

Matrix: **Aqueous**
Sampled: **3/23/2016 11:50**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Cyanide, Amenable	<0.005	mg/L	0.005	1	04/04/16 11:00	EWB	4500CNG-2011

Qualifiers/ Definitions DF Dilution Factor MQL Method Quantitation Limit

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Report Number : **16-090-0235**

REPORT OF ANALYSIS

Lab No : **93291**
Sample ID : **MW-12**

Matrix: **Aqueous**
Sampled: **3/23/2016 15:55**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Cyanide, Amenable	**0.080**	mg/L	0.005	1	04/05/16 12:40	EWB	4500CNG-2011

Qualifiers/ Definitions DF Dilution Factor MQL Method Quantitation Limit

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Project Manager

Report Number : **16-090-0235**

REPORT OF ANALYSIS

Lab No : **93292**
Sample ID : **MW-12D**

Matrix: **Aqueous**
Sampled: **3/24/2016 8:10**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Cyanide, Amenable	**0.026**	mg/L	0.005	1	04/05/16 12:40	EWB	4500CNG-2011

Qualifiers/ Definitions DF Dilution Factor MQL Method Quantitation Limit

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Project Information : RBTC-Boone

Revised Report Date: 04/08/2016
Received : 3/30/2016

Andy Parrish
Project Manager

Report Number : **16-090-0235**

REPORT OF ANALYSIS

Lab No : **93293**
Sample ID : **MW-12DD**

Matrix: **Aqueous**
Sampled: **3/23/2016 14:50**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Cyanide, Amenable	<0.005	mg/L	0.005	1	04/04/16 11:00	EWB	4500CNG-2011

Qualifiers/ Definitions DF Dilution Factor MQL Method Quantitation Limit

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Project Information : RBTC-Boone

Revised Report Date: 04/08/2016
Received : 3/30/2016

Andy Parrish
Project Manager

Report Number : **16-090-0235**

REPORT OF ANALYSIS

Lab No : **93294**
Sample ID : **MW-12D3**

Matrix: **Aqueous**
Sampled: **3/24/2016 8:50**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Cyanide, Amenable	<0.005	mg/L	0.005	1	04/04/16 11:00	EWB	4500CNG-2011

Qualifiers/ Definitions DF Dilution Factor MQL Method Quantitation Limit

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Revised Report Date: 04/08/2016
Received : 3/30/2016

Andy Parrish
Project Manager

Report Number : **16-090-0235**

REPORT OF ANALYSIS

Lab No : **93295**
Sample ID : **MW-21**

Matrix: **Aqueous**
Sampled: **3/23/2016 9:35**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Cyanide, Amenable	<0.005	mg/L	0.005	1	04/04/16 11:00	EWB	4500CNG-2011

Qualifiers/ Definitions DF Dilution Factor MQL Method Quantitation Limit

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Project Information : RBTC-Boone

Revised Report Date: 04/08/2016
Received : 3/30/2016

Andy Parrish
Project Manager

Report Number : **16-090-0235**

REPORT OF ANALYSIS

Lab No : **93296**
Sample ID : **MW-31**

Matrix: **Aqueous**
Sampled: **3/22/2016 16:00**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Cyanide, Amenable	<0.005	mg/L	0.005	1	04/04/16 11:00	EWB	4500CNG-2011

Qualifiers/ Definitions DF Dilution Factor MQL Method Quantitation Limit

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Project Information : RBTC-Boone

Revised Report Date: 04/08/2016
Received : 3/30/2016

Andy Parrish
Project Manager

Report Number : **16-090-0235**

REPORT OF ANALYSIS

Lab No : **93297**
Sample ID : **MW-34**

Matrix: **Aqueous**
Sampled: **3/22/2016 16:00**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Cyanide, Amenable	<0.005	mg/L	0.005	1	04/04/16 11:00	EWB	4500CNG-2011

Qualifiers/ Definitions DF Dilution Factor MQL Method Quantitation Limit

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Project Information : RBTC-Boone

Revised Report Date: 04/08/2016
Received : 3/30/2016

Andy Parrish
Project Manager

Report Number : **16-090-0235**

REPORT OF ANALYSIS

Lab No : **93298**
Sample ID : **MW-35**

Matrix: **Aqueous**
Sampled: **3/23/2016 9:00**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Cyanide, Amenable	<0.005	mg/L	0.005	1	04/04/16 11:00	EWB	4500CNG-2011

Qualifiers/ Definitions DF Dilution Factor MQL Method Quantitation Limit

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Project Information : RBTC-Boone

Revised Report Date: 04/08/2016
Received : 3/30/2016

Andy Parrish
Project Manager

Report Number : **16-090-0235**

REPORT OF ANALYSIS

Lab No : **93299**
Sample ID : **DUP-1**

Matrix: **Aqueous**
Sampled: **3/23/2016 0:00**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Cyanide, Amenable	<0.005	mg/L	0.005	1	04/05/16 12:40	EWB	4500CNG-2011

Qualifiers/ Definitions DF Dilution Factor MQL Method Quantitation Limit

QAQC Report

QC Batch No: **L281489**
Date/Time: 4/4/16 11:00
Equipment:

Analyst: EWB
Method: SM-4500CNE

Continuing Calibration Verification - CCV
QC Measurement: % Recovery

Analyte	QC Result		Criteria	CCV Result	CCV Conc.	Dilution
CN	91.00000	%	90-110%	0.182	0.200	1

Continuing Calibration Verification - CCV2
QC Measurement: % Recovery

Analyte	QC Result		Criteria	CCV Result	CCV Conc.	Dilution
CN	90.50000	%	90-110%	0.181	0.200	1

Duplicate - L 94111-DUP
QC Measurement: RPD

Analyte	QC Result		Criteria	DUP Result	Sample Conc.	Dilution
CN	13.47150	%	< 20	0.180	0.206	20

Lab Reagent Blank - LRB
QC Measurement: Limit

Analyte	Criteria	LRB Result	Dilution
CN	< 0.005	< 0.005	1

Laboratory Control Sample - LCS
QC Measurement: % Recovery

Analyte	QC Result		Criteria	LCS Result	LCS Conc.	Dilution
CN	93.50000	%	90-110%	0.187	0.2	1

Matrix Spike - L 94111-MS
QC Measurement: % Recovery

Analyte	QC Result		Criteria	MS Result	MS Conc.	Sample Conc.	Dilution
CN	92.10000	%	70-130%	3.89	4.00	0.206	20

QAQC Report

QC Batch No: **L281646**
Date/Time: 4/5/2016 12:40
Equipment:

Analyst: EWB
Method: SM-4500CNE

Continuing Calibration Verification - CCV
QC Measurement: % Recovery

Analyte	QC Result		Criteria	CCV Result	CCV Conc.	Dilution
CN	91.00000	%	90-110%	0.182	0.200	1

Continuing Calibration Verification - CCV2
QC Measurement: % Recovery

Analyte	QC Result		Criteria	CCV Result	CCV Conc.	Dilution
CN	90.50000	%	90-110%	0.181	0.200	1

Duplicate - L 94369-DUP
QC Measurement: RPD

Analyte	QC Result		Criteria	DUP Result	Sample Conc.	Dilution
CN	4.10742	%	< 20	0.310	0.323	20

Lab Reagent Blank - LRB
QC Measurement: Limit

Analyte	Criteria	LRB Result	Dilution
CN	< 0.005	< 0.005	1

Laboratory Control Sample - LCS
QC Measurement: % Recovery

Analyte	QC Result		Criteria	LCS Result	LCS Conc.	Dilution
CN	91.50000	%	90-110%	0.183	0.2	1

Matrix Spike - L 94369-MS
QC Measurement: % Recovery

Analyte	QC Result		Criteria	MS Result	MS Conc.	Sample Conc.	Dilution
CN	89.17500	%	70-130%	3.89	4.00	0.323	20

Waypoint ANALYTICAL
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Cooler Receipt Form

Customer Number: **16254**
Customer Name: **Pace Analytical Sevices, Inc. -Carolinas**
Report Number: **16-090-0235**

Shipping Method

● Fed Ex ○ US Postal ○ Lab ○ Other :
○ UPS ○ Client ○ Courier Thermometer ID: #7

Shipping container/cooler uncompromised?	● Yes	○ No	
Number of coolers received	1		
Custody seals intact on shipping container/cooler?	○ Yes	○ No	● Not Required
Custody seals intact on sample bottles?	○ Yes	○ No	● Not Required
Chain of Custody (COC) present?	● Yes	○ No	
COC agrees with sample label(s)?	● Yes	○ No	
COC properly completed	● Yes	○ No	
Samples in proper containers?	● Yes	○ No	
Sample containers intact?	● Yes	○ No	
Sufficient sample volume for indicated test(s)?	● Yes	○ No	
All samples received within holding time?	● Yes	○ No	
Cooler temperature in compliance?	● Yes	○ No	
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	● Yes	○ No	
Water - Sample containers properly preserved	● Yes	○ No	○ N/A
Water - VOA vials free of headspace	○ Yes	○ No	● N/A
Trip Blanks received with VOAs	○ Yes	○ No	● N/A
Soil VOA method 5035 – compliance criteria met	○ Yes	○ No	● N/A

☐ High concentration container (48 hr) ☐ Low concentration EnCore samplers (48 hr)
☐ High concentration pre-weighed (methanol -14 d) ☐ Low conc pre-weighed vials (Sod Bis -14 d)

Special precautions or instructions included? ○ Yes ● No

Comments:

Any regulatory non-compliance issues will be recorded on non-compliance report.

Signature: Rebekah Ross Date & Time: 03/30/2016 10:01:37

Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 92291474 Workorder Name: RBTC-BOONE Results Requested 4/1/2016

Report / Invoice To	Subcontract To
Dale Ingram Pace Analytical Charlotte 9800 Kincey Ave. Suite 100 Huntersville, NC 28078 Phone (704)875-9092 Email: dale.ingram@pacelabs.com	P.O. 15303 ETC 2790 Whitten Rd Memphis, TN 38133

Requested Analysis

Pace Analytical Sevices, Inc. -Carolinas
RBTC-Boone
16-090-0235
16254
03-30-2016
09:56:30

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: MeCl						Free Cyanide												LAB USE ONLY
1	MW-4	3/23/2016 10:55	92291474001	Water	1						X												
2	MW-4 D	3/23/2016 11:55	92291474002	Water	1						X												
3	MW-5	3/23/2016 14:20	92291474003	Water	1						X												
4	MW-5 D	3/23/2016 11:50	92291474004	Water	1						X												
5	MW-12	3/23/2016 15:55	92291474005	Water	1						X												
6	MW-12D	3/24/2016 08:10	92291474006	Water	1						X												
7	MW-12DD	3/23/2016 14:50	92291474007	Water	1						X												
8	MW-12D3	3/24/2016 08:50	92291474008	Water	1						X												
9	MW-21	3/23/2016 09:35	92291474009	Water	1						X												
10	MW-31	3/22/2016 16:00	92291474010	Water	1						X												
11	MW-34	3/22/2016 16:00	92291474011	Water	1						X												
12	MW-35	3/23/2016 09:00	92291474012	Water	1						X												
13	DUP-1	3/23/2016 00:00	92291474013	Water	1						X												
14																							
15																							
16																							
17																							

Cooler T7
1.2°C BJ

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible] pace Hel	3/29/16 1700	[illegible]	3/30/16 0835
2				
3				

Cooler Temperature on Receipt °C	Custody Seal Y or N	Received on Ice Y or N	Samples Intact Y or N

16-090-0235
16254
03-30-2016
09:56:30
Pace Analytical Sevices, Inc. -Carolinas
RBTC-Boone

cooler T7
1.2°c
BJ

Data Validation

DATA VALIDATION REPORT
FIRST QUARTER 2016 GROUNDWATER SAMPLING
RBTC BOONE

1.0 INTRODUCTION

Groundwater samples were collected during sampling completed in March 2016 at the former Robert Bosch Tool Corporation Boone Facility located in Boone, North Carolina. The groundwater samples were analyzed by Pace Analytical Services, Inc. (Pace) in Charlotte, North Carolina and by Waypoint Analytical, Inc. in Memphis, Tennessee (under contract to Pace). A summary of the sample delivery group (SDG) and field samples included in this review is presented in Table 1. Samples reviewed in this report were analyzed for one or more of the following United States Environmental Protection Agency (USEPA) SW-846 (USEPA, 1996) methods:

- Volatile organic compounds (VOCs) in water by USEPA Method 8260
- 1,4-Dioxane by USEPA Method 8260B Modified using Selective Ion Monitoring (SIM)
- Amenable cyanide by Standard Method (SM) 4500-CN-G

Sample results were submitted from Pace in one sample delivery group (SDG): 92291474.

Sample results were validated using general procedures in the USEPA National Data Validation Guidelines (USEPA, 2008; USEPA, 2010). Project data quality criteria for the VOCs, 1,4-dioxane, and amenable cyanide analyses are identified based on laboratory quality control (QC) goals and the professional judgment of the project chemist. The laboratory QC limits were used during data validation. A Level II validation was performed on the laboratory analysis data. During the Level II validation the major quality assurance (QA)/QC indicators of analytical data are reviewed, but review of calculations and raw laboratory data is not included. QC data checks are completed using QC summary forms provided in the laboratory packages. The following parameters are checked during the Level II review:

- laboratory narrative
- sample chain of custody/sample condition upon receipt form
- sample preservation
- QC blanks (method, rinse, field, and trip)
- laboratory control sample (LCS) results
- matrix spike and matrix spike duplicate (MS/MSD) sample results
- surrogate recovery
- field replicate sample results
- sample results summary
- verification of electronic data deliverable (EDD) results

Validation reason codes are applied to the results to document the reason for necessary data qualification. Data validation qualifiers were added to results if associated quality control data did not meet goals in the validation guidelines or project work plan. The following data quality flags shown below are generally used to qualify data that did not meet project specific QC goals.

J	Estimated value
R	Unusable
U	Undetected
UJ	Undetected and reporting limit is estimated

2.0 VALIDATION OBSERVATION AND ACTIONS

With the exception of the data qualification actions discussed in the sections below, results are interpreted to be usable as reported by the laboratory. Qualification was required for the following: the trichloroethene result for sample MW-12D3 was qualified as estimated and flagged "J" due to high recovery in a matrix spike sample.

2.1 VOCs in Water

Based on the project scope, results were reported for eleven VOCs (1,1-dichloroethane; 1,2-dichloroethane; 1,1-dichloroethene; cis-1,2-dichloroethene; trans-1,2-dichloroethene; methylene chloride; tetrachloroethene; 1,1,1-trichloroethane; 1,1,2-trichloroethane; trichloroethene; and vinyl chloride) by Method 8260. During the Level II review, the data quality indicators listed below were reviewed. Checks that included validation actions are marked with an asterisk (*) and discussed in the following sections.

- laboratory narrative
- sample chain of custody/sample receipt records
- sample preservation
- holding times
- QC Blanks
- LCS results
- MS/MSD sample results*
- surrogate recovery
- field replicate result
- sample result reporting
- verification of EDD results

Validation actions required are presented in each section.

<u>Holding Times</u>

All VOC samples were analyzed within the required holding time.

<u>QC Blanks</u>

QC blanks for VOCs include method blanks, field blanks, trip blanks, and rinse blanks. Any result less than 5 times (10 times for common contaminants like methylene chloride and acetone) the concentration detected in the method blank was considered a possible laboratory artifact. Any result less than 5 times (10 times for common contaminants) the concentration detected in the field blank, rinse blank, and/or trip blank was considered a possible field artifact. Field blanks and trip blanks were not collected for this data set. The method blanks and rinse blanks were non-detect. Therefore, data qualification was not required.

<u>LCS Results</u>

Four LCS samples were analyzed in the analytical sequences. In these LCS analyses, target compound recoveries were within limits indicating good confirmation of data accuracy. Therefore, data qualification was not required.

MS/MSD Sample Results

MS/MSD performance indicates matrix effects of the sample on the target compounds and/or analytes analyzed. Some of the MS/MSD samples were performed on non-project samples. No discussion of MS/MSDs is necessary for non-project samples since no qualification would be applied to project samples based on recoveries that are outside of recovery limits. The following project MS or MS/MSD samples were analyzed:

An MS was performed on project sample MW-31; recoveries were within QC limits. Therefore, data qualification was not required.

An MS was performed on project sample MW-12D3: recoveries were outside (above) QC limits for trichloroethene. The trichloroethene result for this sample was qualified as estimated and flagged "J".

Field Duplicates Results

Field duplicates were collected on one sample: Sample MW-12DD/DUP-1. Field duplicate precision, expressed as relative percent difference (RPD), is evaluated for results detected above the reporting limit in both the parent and duplicate samples.

VOCs were detected in the parent/duplicate samples MW-12DD/ DUP-1; RPDs were less than 30 percent; therefore, no data qualification was required.

2.2 1,4-Dioxane

Based on the project scope, results were reported for 1,4-dioxane by Method 8260B Modified. During the Level II review the data quality indicators listed below were reviewed. Checks that included validation actions are marked with an asterisk (*) and discussed in the following sections.

- sample chain of custody/sample receipt records
- sample preservation
- holding times
- QC Blanks
- LCS results
- MS/MSD sample results
- field duplicates result
- sample result reporting
- verification of EDD results

Validation actions required are presented in each section.

Holding Times

All 1,4-dioxane samples were analyzed within the required holding time.

QC Blanks

QC blanks for 1,4-dioxane include method blanks, field blanks, trip blanks, and rinse blanks. Any result less than 5 times the concentration detected in the method blank was considered a possible laboratory artifact. Any result less than 5 times (10 times for common contaminants) the concentration detected in

the field blank and/or rinse blank was considered a possible field artifact. Associated sample results were qualified non-detect (U) in the final data. Field blanks and trip blanks were not collected for this data set. The method blanks and rinse (equipment) blanks were non-detect. Therefore, no data qualification was required.

LCS Results

Two LCS samples were analyzed in analytical sequences. In these LCS analyses, 1,4-dioxane recoveries were within limits indicating good confirmation of data accuracy.

MS/MSD Sample Results

MS/MSD performance indicates matrix effects of the sample on the target compounds and/or analytes analyzed. Some of the MS/MSD samples were performed on non-project samples. No discussion of MS/MSDs is necessary for non-project samples since no qualification would be applied to project samples based on recoveries that are outside of recovery limits. The following project MS or MS/MSD samples were analyzed:

An MS was performed on project sample MW-21; recoveries were within QC limits. Therefore, data qualification was not required.

Field Duplicate Results

Field duplicates were collected on one sample: Sample MW-12DD/DUP-1. Field duplicate precision, expressed as RPD, is evaluated for results detected above the reporting limit in both the parent and duplicate samples.

1,4-Dioxane was detected in the parent/duplicate samples (MW-12DD/DUP-1); the RPD was less than 30 percent; therefore, no data qualification was required.

2.3 Amendable Cyanide

Based on the project scope, results were reported for amenable cyanide by Method SM 4500-CN-G. During the Level II review the data quality indicators listed below were reviewed. Checks that included validation actions are marked with an asterisk (*) and discussed in the following sections.

- laboratory narrative
- sample chain of custody/sample receipt records
- sample preservation
- holding times
- QC Blanks
- LCS results
- MS/MSD sample results
- field duplicates result
- sample result reporting
- verification of EDD results

Validation actions required are presented in each section.

Holding Times

All amenable cyanide samples were analyzed within the required holding time.

QC Blanks

QC blanks for amenable cyanide include method blanks, field blanks, and rinse blanks. Any result less than 5 times the concentration detected in the method blank was considered a possible laboratory artifact. Any result less than 5 times (10 times for common contaminants) the concentration detected in the field blank and/or rinse blank was considered a possible field artifact. Associated sample results were qualified non-detect (U) in the final data. Field blanks, rinse blanks, and trip blanks were not collected for this data set. The method blanks were non-detect. Therefore, data qualification was not required.

LCS Results

Two LCS samples were analyzed in analytical sequences. In these LCS analyses, amenable cyanide recoveries were within limits indicating good confirmation of data accuracy.

MS/MSD Sample Results

MS/MSD performance indicates matrix effects of the sample on the target compounds and/or analytes analyzed. MS/MSD recoveries and/or RPD performance were within QC limits for the four MS/MSD samples. Project MS or MS/MSD samples were not analyzed.

Field Duplicate Results

Field duplicates were collected on one sample: Sample MW-12DD/DUP-1. Field duplicate precision, expressed as RPD, is evaluated for results detected above the reporting limit in both the parent and duplicate samples.

Amenable cyanide was not detected in the parent/duplicate samples MW-12DD/DUP-1; therefore, duplicate precision could not be assessed due to the lack of detections above the reporting limit.

3.0 SUMMARY

The data are usable with the qualification identified for the trichloroethene (MW-12D3 was “J” flagged).

References:

U.S. Environmental Protection Agency (USEPA), 1996. "Test Methods for Evaluating Solid Waste"; Laboratory Manual Physical/Chemical Methods; Office of Solid Waste and Emergency Response; Washington, DC; SW-846; November 1986; Revision 4 -December 1996.

U.S. Environmental Protection Agency (USEPA), 2008. "USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review"; Office of Superfund Remediation and Technology Innovation; EPA-540/R-08-01; June 2008.

U.S. Environmental Protection Agency (USEPA), 2010. "USEPA Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Data Review"; Office of Superfund Remediation and Technology Innovation; EPA-540-R-10-011; January 2010.

Prepared By/Date: Lynne Clem 4/18/16
Checked By/Date: Terrell Parker 5/12/16

TABLE 1
SUMMARY OF SAMPLES AND ANALYTICAL PARAMETERS
DATA VALIDATION REPORT
FIRST SEMI-ANUUAL 2016 - GROUNDWATER
RBTC-BOONE FACILITY
NORTH CAROLINA

Boring	Sample ID	Date	Parameters	Methods	SDG
GROUNDWATER SAMPLES					
MW-4	MW-4	3/23/2016	VOCs	8260	92291474
	MW-4	3/23/2016	1,4-Dioxane	8260B Mod	92291474
	MW-4	3/23/2016	Free Cyanide	SM 4500-CN-G	92291474
MW-4D	MW-4D	3/23/2016	VOCs	8260	92291474
	MW-4D	3/23/2016	1,4-Dioxane	8260B Mod	92291474
	MW-4D	3/23/2016	Free Cyanide	SM 4500-CN-G	92291474
MW-5	MW-5	3/23/2016	VOCs	8260	92291474
	MW-5	3/23/2016	1,4-Dioxane	8260B Mod	92291474
	MW-5	3/23/2016	Free Cyanide	SM 4500-CN-G	92291474
MW-5D	MW-5D	3/23/2016	VOCs	8260	92291474
	MW-5D	3/23/2016	1,4-Dioxane	8260B Mod	92291474
	MW-5D	3/23/2016	Free Cyanide	SM 4500-CN-G	92291474
MW-12	MW-12	3/23/2016	VOCs	8260	92291474
	MW-12	3/23/2016	1,4-Dioxane	8260B Mod	92291474
	MW-12	3/23/2016	Free Cyanide	SM 4500-CN-G	92291474
MW-12D	MW-12D	3/24/2016	VOCs	8260	92291474
	MW-12D	3/24/2016	1,4-Dioxane	8260B Mod	92291474
	MW-12D	3/24/2016	Free Cyanide	SM 4500-CN-G	92291474
MW-12DD	MW-12DD	3/23/2016	VOCs	8260	92291474
	MW-12DD	3/23/2016	1,4-Dioxane	8260B Mod	92291474
	MW-12DD	3/23/2016	Free Cyanide	SM 4500-CN-G	92291474
	DUP-1	3/23/2016	VOCs	8260	92291474
	DUP-1	3/23/2016	1,4-Dioxane	8260B Mod	92291474
	DUP-1	3/23/2016	Free Cyanide	SM 4500-CN-G	92291474
MW-12D3	MW-12D3 [(a)]	3/24/2016	VOCs	8260	92291474
	MW-12D3	3/24/2016	1,4-Dioxane	8260B Mod	92291474
	MW-12D3	3/24/2016	Free Cyanide	SM 4500-CN-G	92291474
MW-21	MW-21	3/23/2016	VOCs	8260	92291474
	MW-21 [(b)]	3/23/2016	1,4-Dioxane	8260B Mod	92291474
	MW-21	3/23/2016	Free Cyanide	SM 4500-CN-G	92291474
MW-31	MW-31 [(a)]	3/22/2016	VOCs	8260	92291474
	MW-31	3/22/2016	1,4-Dioxane	8260B Mod	92291474
	MW-31	3/22/2016	Free Cyanide	SM 4500-CN-G	92291474
MW-34	MW-34	3/22/2016	VOCs	8260	92291474
	MW-34	3/22/2016	1,4-Dioxane	8260B Mod	92291474
	MW-34	3/22/2016	Free Cyanide	SM 4500-CN-G	92291474
MW-35	MW-35	3/23/2016	VOCs	8260	92291474
	MW-35	3/23/2016	1,4-Dioxane	8260B Mod	92291474
	MW-35	3/23/2016	Free Cyanide	SM 4500-CN-G	92291474
--	Equip Blank	3/23/2016	VOCs	8260	92291474
--	Equip Blank	3/23/2016	1,4-Dioxane	8260B Mod	92291474

Notes:

[(a)] This sample was selected for matrix spike/matrix spike duplicate (MS/MSD) analyses (VOCs).
[(b)] This sample was selected for matrix spike/matrix spike duplicate (MS/MSD) analyses (1,4-Dioxane).
Samples were analyzed by Pace Analytical Laboratories located in Charlotte, North Carolina and Waypoint Analytical located in Memphis, Tennessee.
SDG = Sample Delivery Group
VOCs = Volatile Organic Compounds

Prepared by/Date: LWC 4-7-16
Checked by/Date: JTP 5-12-16

TABLE 2
VALIDATION QUALIFIER SUMMARY
FIRST SEMI-ANNUAL 2016 - GROUNDWATER
RBTC-BOONE FACILITY
NORTH CAROLINA

MATRIX	SAMPLE ID	SAMPLE DATE	SDG_ID	METHOD	PARAMETER	UNITS	LAB RESULT	LAB QUALIFIER	VALIDATION RESULT	VALIDATION QUALIFIER	REASON CODE
W	MW-12D3	3/24/2016	92291474	8260	Trichloroethene	µg/L	2.2	M1	2.2	J	MS-H

Notes:
Laboratory qualifiers that *did not change* as a result of the data validation are not shown on this table.
J - Value is estimated.
M1 - Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MS-H - Matrix Spike percent recovery was above QC limits.
W - Water
µg/L - microgram per liter

Prepared by / Date: LWC 4/11/16
Checked by / Date: JTP 5/12/2016

Relative Percent Difference (RPD) on Duplicate Samples - 1st Semi-Annual 2016
Former Robert Bosch Tool Corporation Boone Division
Boone, North Carolina
AMEC Project 6251121001.03.04

Constituents	MW-12DD	DUP-1	RPD (%)
1,1-Dichloroethane	1.8	1.9	5.4
1,2-Dichloroethane	0.31 J	ND	--
1,1-Dichloroethene	10.3	10.5	1.9
cis-1,2-Dichloroethene	114	118	3.4
trans-1,2-Dichloroethene	4.1	4.3	4.8
Methylene Chloride	ND	ND	--
Tetrachloroethene	8.6	8.7	1.2
1,1,1-Trichloroethane	3.1	3.0	3.3
1,1,2-Trichloroethane	ND	ND	--
Trichloroethene	182	196	7.4
Vinyl Chloride	ND	ND	--
1,4-Dioxane	34.6	34.6	0
Cyanide (mg/L)	ND	ND	--

Notes:
Units in micrograms per liter (µg/L), except as noted.
mg/L = milligrams per liter

Prepared By/Date: LWC 4/12/16
Checked By/Date: JTP 5/12/16

DATA VALIDATION RECORD

Method SW8260 for VOCs
Project Name and No: RBTC Boone; 6251121001.03.04
Laboratory and SDG: PACE Analytical, 92291474
Data Validation Level: II
Date: 4/7/2016
Reviewer: L. Clem Senior Reviewer: T. Parker 5/12/2016

Samples Reviewed: Water: MW-4, MW-4D, MW-5, MW-5D, MW-12, MW-12D, MW-12DD, MW-12D3, MW-21, MW-31, MW-34, MW-35, DUP-1, and Equip Blank.

1. Case Narrative and COC review

Narrative (pg. 5 of Summary) & COC (pgs. 35-36 of Summary) present for all samples in this SDG. The first page of the COC did not include which analyses were to be performed for each sample. The samples on the first page were analyzed for VOCs by SW8260.

2. Sample Collection, Preservation (preserved; Cool to 6 ºC±2 ºC), Holding time (14 days)

VOCs in water and preserved with HCl; cooler temp 4.7ºC per "Sample Condition Upon Receipt" checklist pg. 34 of Summary. Samples collected: 3/22/16, 3/23/16, and 3/24/16; Prepped and analyzed: 3/27/16 and 3/28/16.

3. Instrument Tuning

Not required for Level II validation.

4. Instrument Calibration

Not required for Level II validation.

5. QC Blanks

Method Blanks:

Pg. 21, 3/27/16, MB-1695694, No Detects.
Pg. 24, 3/27/16, MB-1695956, No Detects.
Pg. 26, 3/28/16, MB-1696034, No Detects.
Pg. 28, 3/28/16, MB-1696038, No Detects.

Rinse (Equipment) Blanks:

Equip Blank (Equipment Blank), pg. 20; No Detects.

Field Blanks:

No field blanks for this data set.

Trip Blank:

No trip blank for this data set.

6. Laboratory Control Sample (LCS) Results (Lab limits)

Pg. 21, LCS-1695695, LCS are within required QC limits.
Pg. 24, LCS-1695957, LCS are within required QC limits.
Pg. 26, LCS-1696035, LCS are within required QC limits.
Pg. 28, LCS-1696039, LCS are within required QC limits.

7. Internal Standards (50 - 200 %)

Not required for Level II validation.

8. Surrogate Recovery (70-130%)

All surrogates within lab limits.

9. Field Duplicate Precision (≤ 30 %)

MW-12DD/DUP-1

Compound	Sample	Duplicate	RPD	Flag	Reason Code
1,1-Dichloroethane	1.8	1.9	5.4	none	
1,2-Dichloroethane	0.31 J	ND	--		
1,1-Dichloroethene	10.3	10.5	1.9	none	
cis-1,2-Dichloroethene	114	118	3.4	none	
trans-1,2-Dichloroethene	4.1	4.3	4.8	none	
Tetrachloroethene	8.6	8.7	1.2	none	
1,1,1-Trichloroethane	3.1	3.0	3.3	none	
Trichloroethene	182	196	7.4	none	

10. Laboratory Duplicate Precision (≤ 30 %)

1696033 (project sample 92291474009 [MW-21])/ MW-21Dup

Compound	Sample	Duplicate	RPD	Flag	Reason Code
1,1-Dichloroethane	0.42 J	0.54 J	--	none	
cis-1,2-Dichloroethene	1.5	1.5	1	none	
Tetrachloroethene	2.8	3.1	10	none	
Trichloroethene	0.85 J	0.79 J	--	none	

The VOC results for parent and duplicate sample pairs 1695958 (non-project sample 92291242003)/1695958Dup and MW-35/ MW-35Dup were non-detect, so Relative Percent Difference calculations could not be made.

11. Matrix Spike/Matrix Spike Duplicate (MS/MSD) (70-130 %/RPD ≤ 30 %)

Pgs. 21-22, MS- 1695696/MSD-1695697, non-project sample 92291458001.
Pgs. 24-25, MS- 1695959, non-project sample 92291429003.
Pgs. 26-27, MS- 1696036, project sample 92291474010 (MW-31).
Pgs. 28-29, MS- 1696040/MSD-1696041, non-project sample 92291421001.

Above MS/MSD were within QC limits.

Pg. 22, MS- 1696032, project sample 92291474008 (MW-12D3).

Compound	MS %Rec	Flag	Reason Code
Trichloroethene	194	J	MS-H

12. Raw Calculations

Not required for Level II validation.

13. Electronic Data Review

10 percent of the results listed in summary package were compared to EDD. Sample results for MW-4 and MW-12DD were compared to the EDD and the results matched.

DATA VALIDATION RECORD

Method SW8260B Mod for 1,4-Dioxane
Project Name and No: RBTC Boone; 6251121001.03.04
Laboratory and SDG: Pace Analytical, 92291474
Data Validation Level: II
Date: 4/8/2016
Reviewer: L. Clem Senior Reviewer: T. Parker 5/12/2016

Samples Reviewed: Water: MW-4, MW-4D, MW-5, MW-5D, MW-12, MW-12D, MW-12DD, MW-12D3, MW-21, MW-31, MW-34, MW-35, DUP-1, and Equip Blank.

1. Case Narrative and COC review

Narrative (pg. 6 of Summary) & COC (pgs. 35-36 of Summary) present for all samples in this SDG. The first page of the COC did not include which analyses were to be performed for each sample. The samples on the first page were analyzed for 1,4-Dioxane by SW8260B Mod.

2. Sample Collection, Preservation (preserved; Cool to 6 ºC±2 ºC), Holding time (14 days)

1,4-Dioxane in water and preserved with HCl; cooler temp 4.7ºC per "Sample Condition Upon Receipt" checklist pg. 34 of Summary. Samples collected: 3/22/16, 3/23/16, and 3/24/16; Prepped and analyzed: 4/3/16.

3. Instrument Tuning

Not required for Level II validation.

4. Instrument Calibration

Not required for Level II validation.

5. QC Blanks

Method Blanks:

Pg. 30, 4/2/16, 1700675, No Detects.
Pg. 31, 4/2/16, 1700679, No Detects.

Rinse (Equipment) Blanks:

Equip Blank (Equipment Blank), pg. 20; No Detects.

Field Blanks:

No field blanks for this data set.

Trip Blank:

No trip blank for this data set.

6. Laboratory Control Sample (LCS) Results (Lab limits)

Pg. 30, 1700676, LCS are within required QC limits.
Pg. 31, 1700680, LCS are within required QC limits.

7. Internal Standards (50 - 200 %)

Not required for Level II validation.

8. Surrogate Recovery (50-150%)

All surrogates within lab limits.

9. Field Duplicate Precision (≤ 30 %)

MW-12DD/DUP-1

Compound	Sample	Duplicate	RPD	Flag	Reason Code
1,4-Dioxane	34.6	34.6	0	none	

10. Matrix Spike/Matrix Spike Duplicate (MS/MSD) (50-150 %/RPD ≤ 30 %)

Pg. 30, MS-1700677 /MSD- 1700678, non-project sample 92291414010
Pg. 31, MS-1700681 /MSD- 1700682, project sample 92291474009 (MW-21)

Above MS/MSD were within QC limits.

11. Raw Calculations

Not required for Level II validation.

12. Electronic Data Review

Results listed in summary package were compared to EDD – all ok.

DATA VALIDATION RECORD

Method SM 4500-CN-G for Amenable Cyanide
Project Name and No: RBTC Boone; 6251121001.03.04
Laboratory and SDG: Pace Analytical, 92291474
Data Validation Level: II
Date: 4/12/2016
Reviewer: L. Clem Senior Reviewer: T. Parker 5/12/2016

Samples Reviewed: Water: MW-4, MW-4D, MW-5, MW-5D, MW-12, MW-12D, MW-12DD, MW-12D3, MW-21, MW-31, MW-34, MW-35, and DUP-1. The first page of the COC did not include which analyses were to be performed for each sample. The samples on the first page were analyzed for cyanide by SM 4500-CN-G.

1. Case Narrative and COC review

COC (pgs. 35-36 and 56 of Summary) present for all samples in this SDG. The first page of the COC did not include which analyses were to be performed for each sample. The samples on the first page were analyzed for cyanide by SM 4500-CN-G.

2. Sample Collection, Preservation (preserved; Cool to 6 ºC±2 ºC), Holding time (14 days)

Cyanide in water and preserved with NaOH; cooler temps 4.7 ºC and 1.2ºC per "Sample Condition Upon Receipt checklist pg. 34 of Summary and Cooler Receipt Form pg. 55 of Summary. Samples collected: 3/22/16, 3/23/16, and 3/24/16; Prepped and analyzed: 4/4/16 and 4/5/16.

3. Instrument Tuning

Not required for Level II validation.

4. Instrument Calibration

Not required for Level II validation.

5. QC Blanks

Method Blanks:

Pg. 53, 4/4/16, Lab Reagent Blank-LRB, No Detects
Pg. 54, 4/5/16, Lab Reagent Blank-LRB, No Detects

Rinse (Equipment) Blanks:

Rinse (Equipment) Blank for cyanide not included in this SDG.

Field Blanks:

No field blanks for this data set.
Trip Blank:

No Trip Blank for this data set.

6. Laboratory Control Sample (LCS) Results (Lab limits)

Pg. 53, LCS are within required QC limits.
Pg. 54, LCS are within required QC limits.

7. Internal Standards (50 - 200 %)

Not required for Level II validation.

8. Surrogate Recovery (70-130%)

Surrogates are not required for CN analyses.

9. Field Duplicate Precision (≤ 30 %)

The cyanide results for parent and duplicate sample pair MW-12DD/DUP-1 were non-detect, so Relative Percent Difference calculations could not be made.

10. Matrix Spike/Matrix Spike Duplicate (MS/MSD) (75-125 %/RPD ≤ 20 %)

Pg. 53, L 94111-MS, non-project sample.
Pg. 54, L 94369-MS, non-project sample.

Project matrix MS/MSDs above were within QC limits.

11. Raw Calculations

Not required for Level II validation.

12. Electronic Data Review

An Electronic Data Deliverable was not included for cyanide analyses.

APPENDIX G

HISTORICAL GROUNDWATER LABORATORY ANALYTICAL RESULTS

Appendix G
Historical Grounwater Sampling Laboratory Results
Robert Bosch Tool Corporation, Former Boone Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Well ID	Date	1,1-DCA	cis-1,2-DCE	PCE	TCE	Vinyl Chloride	1,4-dioxane	Free Cyanide
NCAC 2L		6	70	0.7	3	0.03	3	0.07
MW-1	12/1991	BDL	--	BDL	17	BDL	--	--
	10/1992	BDL	--	BDL	4.7	BDL	--	--
	1/1996	BDL	--	BDL	2.2	BDL	--	--
	10/1997	BDL	BDL	BDL	BDL	BDL	--	--
	12/2000	BDL	BDL	BDL	BDL	BDL	--	--
	6/2007	<1.0	<1.0	<1.0	<2.0	<2.0	--	--
	8/2011	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	3/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	6/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	9/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	0.0067
	12/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	5/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	--
MW-2	12/1991	180	--	33	350	39	--	--
	10/1992	170	--	2.0	730	7.6	--	--
	1/1996	10	--	18	810	BDL	--	--
	10/1997	7.0	760	15	550	BDL	--	--
	12/2000	--	--	--	--	--	--	--
	6/2007	3.0	270	7.2	140	<2	--	--
	8/2011	2.5	189	6.5	138	<1.0	--	0.0100
	3/2012	<1.0	137	3.3	68.9	<1.0	--	<0.0050
	6/2012	<1.0	125	3.3	71.8	<1.0	--	0.0065
	9/2012	<1.0	57.6	1.8	34.8	<1.0	--	<0.0050
	12/2012	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	5/2013	1.8	<1.0	4.8	101	<1.0	41.5	--
MW-3	12/1991	45	--	36	155	6.0	--	--
	10/1992	46	--	25	352	2.0	--	--
	1/1996	22	--	9.0	91	BDL	--	--
	10/1997	8.0	78	14	180	BDL	--	--
	12/2000	17	62	28	66	BDL	--	--
	6/2007	52	290	40	300	<2.0	--	--
	8/2011	39	269	31.5	217	<1.0	--	0.0087
	3/2012	34.1	318	25.3	244	<1.0	--	0.0051
	6/2012	26.1	320	19.6	261	<2.5	--	<0.0050
	9/2012	25.9	317	11.1	205	<2.5	--	<0.0050
	12/2012	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	4/2013	--	--	--	--	--	17.3	--
	5/2013	27.1	362	22	301	<1.0	35.7	--
MW-4	12/1991	200	--	160	575	5.0	--	--
	10/1992	1,500	--	160	2,700	14	--	--
	1/1996	160	--	95	1,000	17	--	--
	10/1997	240	4,600	130	1,000	8.0	--	--
	12/2000	520	5,900	190	820	19	--	--
	6/2007	430	2,700	210	500	13	--	--
	8/2011	490	2,690	209	315	3.9	--	0.860
	3/2012	362	1,740	186	254	3.0	--	1.100
	6/2012	298	1,650	149	270	<10.0	--	0.900
	9/2012	222	1,040	151	194	<1.0	--	0.220
	12/2012	186	973	97.3	186	1.6	--	1.800
	4/2013	--	--	--	--	--	*1.5J*	--
	5/2013	369	2,000	155	271	2.1	*2.0J*	--
	12/2013	152	705	59.2	120	<5.0	4.4	0.480
	3/2014	190	851	94.0	152	<5.0	2.4	0.460
	6/2014	191	898	121	179	<5.0	<2.0	0.330
	9/2014	222	1,080	114	177	<5.0	2.4	0.520
	12/2014	125	524	40.6	84.9	<10.0	<2.0	0.150
	3/2015	133	590	135	135	<5.0	<2.0	0.033
	9/2015	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	3/2016	267	1,390	197	210	0.92J	4.5	0.801

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Appendix G
Historical Grounwater Sampling Laboratory Results
Robert Bosch Tool Corporation, Former Boone Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Well ID	Date	1,1-DCA	cis-1,2-DCE	PCE	TCE	Vinyl Chloride	1,4-dioxane	Free Cyanide
NCAC 2L		6	70	0.7	3	0.03	3	0.07
MW-4D	10/1992	BDL	--	BDL	16	BDL	--	--
	1/1996	BDL	--	BDL	24	BDL	--	--
	10/1997	BDL	32	BDL	7.0	BDL	--	--
	12/2000	BDL	14	BDL	5.0	BDL	--	--
	6/2007	<1.0	1.8	<1.0	*1.9J*	<2.0	--	--
	8/2011	<1.0	2.5	<1.0	1.2	<1.0	--	<0.0050
	3/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	6/2012	<1.0	*0.94J*	<1.0	*0.59J*	<1.0	--	<0.0050
	9/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	12/2012	<1.0	1.1	<1.0	*0.61J*	<1.0	--	<0.0050
	5/2013	<1.0	2.3	<1.0	*0.7J*	<1.0	<3.0	--
	12/2013	<1.0	*0.53J*	<1.0	*0.54J*	<1.0	<2.0	<0.0050
	3/2014	<1.0	1.1	<1.0	*0.67J*	<1.0	<2.0	0.0053
	6/2014	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.0050
	9/2014	<1.0	1.6	<1.0	<1.0	<1.0	<2.0	<0.0050
	12/2014	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.0050
	3/2015	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.008
	9/2015	<1.0	<1.0	<1.0	1.3	<1.0	<2.0	--
	3/2016	<1.0	*0.57J*	<1.0	<1.0	<1.0	<2.0	<0.005
MW-5	12/1991	23	--	12	59	BDL	--	--
	10/1992	21	--	7.7	42	BDL	--	--
	1/1996	38	--	6.2	23	BDL	--	--
	10/1997	23	33	8	27	BDL	--	--
	12/2000	18	21	8.2	18	BDL	--	--
	6/2007	<1.0	*0.85J*	2.3	*1.1J*	<2.0	--	--
	8/2011	<1.0	<1.0	1.5	*0.62J*	<1.0	--	0.0064
	3/2012	<1.0	<1.0	2.4	<1.0	<1.0	--	<0.0050
	6/2012	<1.0	<1.0	2.2	*0.84J*	<1.0	--	<0.0050
	9/2012	<1.0	<1.0	2.5	<1.0	<1.0	--	<0.0050
	12/2012	<1.0	*0.52J*	2.1	*0.60J*	<1.0	--	<0.0050
	4/2013	--	--	--	--	--	*1.8J*	--
	5/2013	<1.0	*0.49J*	3.2	*0.87J*	<1.0	<3.0	--
	12/2013	<1.0	<1.0	1.8	<1.0	<1.0	<2.0	<0.0050
	3/2014	<1.0	*0.43J*	2.3	*0.50J*	<1.0	<2.0	0.0067
	6/2014	<1.0	<1.0	2.6	<1.0	<1.0	<2.0	<0.0050
	9/2014	<1.0	<1.0	1.3	<1.0	<1.0	<2.0	<0.0050
	12/2014	<1.0	<1.0	1.9	<1.0	<1.0	<2.0	<0.0050
	3/2015	<1.0	<1.0	1.6	<1.0	<1.0	<2.0	<0.008
	9/2015	<1.0	<1.0	1.7	1.3	<1.0	<2.0	--
	3/2016	<1.0	<1.0	1.7	<1.0	<1.0	<2.0	<0.005
MW-5D	10/1992	BDL	--	BDL	21	BDL	--	--
	1/1996	BDL	--	12	25	BDL	--	--
	10/1997	BDL	13	BDL	21	BDL	--	--
	12/2000	1.2	8.2	BDL	8.7	BDL	--	--
	6/2007	<1.0	2.9	<1.0	4.9	<2.0	--	--
	8/2011	*0.44J*	2	<1.0	2.4	<1.0	--	<0.0050
	3/2012	<1.0	1.4	<1.0	2.5	<1.0	--	<0.0050
	6/2012	<1.0	1.2	<1.0	1.9	<1.0	--	0.0056
	9/2012	<1.0	1.6	<1.0	2.2	<1.0	--	<0.0050
	12/2012	<1.0	1.5	<1.0	2.2	<1.0	--	<0.0050
	5/2013	<1.0	1.4	<1.0	1.9	<1.0	<3.0	--
	12/2013	<1.0	1.3	<1.0	1.5	<1.0	<2.0	0.0064
	3/2014	<1.0	1.2	<1.0	1.8	<1.0	<2.0	0.0055
	6/2014	<1.0	1.1	<1.0	1.9	<1.0	<2.0	<0.0050
	9/2014	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.0050
	12/2014	<1.0	1.0	<1.0	1.5	<1.0	<2.0	<0.0050
	3/2015	<1.0	<1.0	<1.0	1.4	<1.0	<2.0	<0.008
	9/2015	<1.0	1.0	<1.0	2.4	<1.0	<2.0	--
	3/2016	<1.0	*0.66J*	<1.0	*0.90J*	<1.0	<2.0	<0.005
MW-5DD	8/2011	--	--	--	--	--	--	<0.0050
	3/2012	<1.0	*0.54J*	<1.0	*0.65J*	<1.0	--	<0.0050
	6/2012	<1.0	<1.0	<1.0	*0.50J*	<1.0	--	<0.0050
	9/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	12/2012	<1.0	*0.50J*	<1.0	*0.49J*	<1.0	--	<0.0050
	5/2013	<1.0	*0.82J*	<1.0	*0.63J*	<1.0	<3.0	--

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Appendix G
Historical Grounwater Sampling Laboratory Results
Robert Bosch Tool Corporation, Former Boone Division
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Well ID	Date	1,1-DCA	cis-1,2-DCE	PCE	TCE	Vinyl Chloride	1,4-dioxane	Free Cyanide
NCAC 2L		**6**	**70**	**0.7**	**3**	**0.03**	**3**	**0.07**
MW-7	10/1992	BDL	--	BDL	BDL	BDL	--	--
	1/1996	BDL	--	BDL	BDL	BDL	--	--
	10/1997	BDL	BDL	BDL	BDL	BDL	--	--
	12/2000	BDL	BDL	BDL	BDL	BDL	--	--
	6/2007	<1.0	<1.0	<1.0	<2.0	<2.0	--	--
	8/2011	<1.0	<1.0	<1.0	<1.0	<1.0	--	**0.0055**
	3/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	6/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	9/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	12/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	5/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	--
MW-7D	10/1992	BDL	--	BDL	BDL	BDL	--	--
	1/1996	BDL	--	BDL	BDL	BDL	--	--
	10/1997	BDL	BDL	BDL	BDL	BDL	--	--
	12/2000	BDL	BDL	BDL	BDL	BDL	--	--
	6/2007	<1.0	<1.0	<1.0	<2.0	<2.0	--	--
	8/2011	<1.0	<1.0	<1.0	<1.0	<1.0	--	**0.0050**
	3/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	6/2012	<1.0	<1.0	**1.3**	<1.0	<1.0	--	<0.0050
	9/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	12/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	5/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	--
MW-8	10/1992	**2**	--	BDL	**7**	**70**	--	--
	1/1996	BDL	--	BDL	**4.9**	**76**	--	--
	10/1997	BDL	**740**	BDL	**3**	**46**	--	--
	12/2000	--	--	--	--	--	--	--
	6/2007	<1	**120**	<1.0	**2.1**	**51**	--	--
	8/2011	<1.0	**34.3**	<1.0	<1.0	**48.5**	--	**0.0054**
	3/2012	<1.0	**72**	<1.0	<1.0	**34.8**	--	<0.0050
	6/2012	<1.0	**70.7**	<1.0	<1.0	**29.9**	--	**0.0088**
	9/2012	<1.0	**91.5**	<1.0	<1.0	**31.5**	--	<0.0050
	12/2012	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	5/2013	<1.0	**31.2**	<1.0	<1.0	**34.2**	<3.0	--
MW-8D	10/1992	**1.5**	--	**2.8**	**200**	BDL	--	--
	1/1996	BDL	--	**2.9**	**670**	BDL	--	--
	10/1997	BDL	**120**	BDL	**23**	BDL	--	--
	12/2000	BDL	**32**	BDL	**4.6**	BDL	--	--
	6/2007	<1.0	**12**	<1.0	**4.6**	<2.0	--	--
	8/2011	<1.0	**37.5**	<1.0	**4.9**	**1.5**	--	<0.0050
	3/2012	<1.0	**32.2**	<1.0	**4.5**	<1.0	--	<0.0050
	6/2012	<1.0	**24.2**	<1.0	**4.4**	<1.0	--	<0.0050
	9/2012	<1.0	**17.6**	<1.0	**4.7**	<1.0	--	<0.0050
	12/2012	<1.0	**21.1**	<1.0	**4.3**	<1.0	--	<0.0050
	5/2013	<1.0	**8.0**	<1.0	<1.0	<1.0	<3.0	--
MW-9D	10/1992	BDL	…	BDL	**14**	BDL	--	--
	1/1996	BDL	--	**1.1**	**40**	BDL	--	--
	10/1997	BDL	**53**	BDL	**17**	BDL	--	--
	12/2000	BDL	**27**	BDL	**6.3**	BDL	--	--
	6/2007	<1.0	**4.4**	<1.0	**2.1**	<2.0	--	--
	8/2011	<1.0	**2.4**	<1.0	**2.3**	<1.0	--	<0.0050
	3/2012	<1.0	**1.3**	<1.0	**1.0**	<1.0	--	<0.0050
	6/2012	<1.0	*0.97J*	<1.0	<1.0	<1.0	--	<0.0050
	9/2012	<1.0	**2.1**	<1.0	**1.4**	<1.0	--	<0.0050
	12/2012	<1.0	**1.6**	<1.0	**1.4**	<1.0	--	<0.0050
	5/2013	<1.0	**1.4**	<1.0	**1.2**	<1.0	*1.2J*	--

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Appendix G
Historical Grounwater Sampling Laboratory Results
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Well ID	Date	1,1-DCA	cis-1,2-DCE	PCE	TCE	Vinyl Chloride	1,4-dioxane	Free Cyanide
NCAC 2L		**6**	**70**	**0.7**	**3**	**0.03**	**3**	**0.07**
MW-10	10/1992	BDL	--	BDL	BDL	BDL	--	--
	1/1996	BDL	--	BDL	BDL	BDL	--	--
	10/1997	BDL	BDL	BDL	BDL	BDL	--	--
	12/2000	BDL	BDL	BDL	BDL	BDL	--	--
	6/2007	<1.0	<1.0	<1.0	<2.0	<2.0	--	--
	8/2011	<1.0	<1.0	<1.0	<1.0	<1.0	--	**0.0140**
	3/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	**0.0130**
	6/2012	<1.0	<1.0	**1.0**	<1.0	<1.0	--	**0.0350**
	9/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	**0.0090**
	12/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	5/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	--
	12/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	**0.0110**
	3/2014	*	*	*	*	*	*	*
	6/2014	*	*	*	*	*	*	*
	9/2014	*	*	*	*	*	*	*
	12/2014	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.0050
	3/2015	*	*	*	*	*	*	*
	9/2015	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	--
	3/2016	*	*	*	*	*	*	--
MW-10D	10/1992	BDL	--	BDL	BDL	BDL	--	--
	1/1996	BDL	--	BDL	BDL	BDL	--	--
	10/1997	BDL	BDL	BDL	BDL	BDL	--	--
	12/2000	BDL	BDL	BDL	BDL	BDL	--	--
	6/2007	<1.0	<1.0	<1.0	<2.0	<2.0	--	--
	8/2011	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	3/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	6/2012	<1.0	<1.0	*0.67J*	<1.0	<1.0	--	**0.0078**
	9/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	12/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	5/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	--
	12/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	**0.0063**
	3/2014	*	*	*	*	*	*	*
	6/2014	*	*	*	*	*	*	*
	9/2014	*	*	*	*	*	*	*
	12/2014	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.0050
	3/2015	*	*	*	*	*	*	*
	9/2015	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	--
	3/2016	*	*	*	*	*	*	*
MW-12	10/1992	**1,800**	--	BDL	**1,300**	**3.8**	--	--
	1/1996	**1,600**	--	**63**	**530**	**5.6**	--	--
	10/1997	**1,500**	**2,200**	**47**	**410**	BDL	--	--
	12/2000	--	--	--	--	--	--	--
	6/2007	**320**	**650**	**8.8**	**46**	**2.3**	--	--
	8/2011	**161**	**217**	**8.2**	**20.1**	<1.0	--	**0.0610**
	3/2012	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	6/2012	**91.3**	**163**	**4.1**	**13.2**	<2.0	--	**0.0410**
	9/2012	**110**	**187**	**10.5**	**16.1**	<2.0	--	**0.0540**
	12/2012**	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	5/2013	**62.2**	**100**	**4.1**	**7.6**	<1.0	**3.1**	--
	12/2013	**77.6**	**117**	**7.3**	**9.6**	<1.0	**3.3**	**0.0410**
	3/2014	**69.9**	**108**	**8.7**	**11.9**	<1.0	**5.0**	**0.0260**
	6/2014	**67.3**	**98.4**	**5.3**	**8.7**	<1.0	**4.9**	**0.0420**
	9/2014	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	12/2014	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	3/2015	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	9/2015	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	3/2016	**39.5**	**44.0**	**4.2**	**5.2**	<1.0	**3.0**	**0.080**

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Appendix G
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Well ID	Date	1,1-DCA	cis-1,2-DCE	PCE	TCE	Vinyl Chloride	1,4-dioxane	Free Cyanide
NCAC 2L		6	70	0.7	3	0.03	3	0.07
MW-12D	8/2011	10	49.8	4.2	10.9	<1.0	--	0.0200
	3/2012	7.0	32.4	2.6	7.3	<1.0	--	0.0320
	6/2012	8.5	31.4	3.4	9.7	<1.0	--	0.0260
	9/2012	7.0	24.3	2.8	7.3	<1.0	--	0.0120
	12/2012	5.3	21.2	2.8	6.3	<1.0	--	0.0160
	4/2013	--	--	--	--	--	*2.7J*	--
	5/2013	9.8	42.7	6.0	11.6	<1.0	3.6	--
	12/2013	19.8	68.7	10.4	12.9	<1.0	4.2	0.0340
	3/2014	14.6	49.8	7.9	11.5	<1.0	3.4	0.0220
	6/2014	13.4	47.1	7.3	10.9	<1.0	6.3	0.0180
	9/2014	11.6	43	5.6	9.2	<1.0	3.1	0.0220
	12/2014	7.7	28.6	4.0	6.4	<1.0	2.4	0.0260
	3/2015	6.1	24.5	4.4	6.9	<1.0	<2.0	0.0190
	9/2015	7.6	34	4.4	7.6	<1.0	<2.0	--
	3/2016	13.3	52.0	7.5	10.2	<1.0	3.5	0.0260
MW-12DD	3/2012	2.3	141	15.2	304	<1.0	--	<0.0050
	6/2012	3.0	94.8	6.5	205	<2.5	--	0.0076
	9/2012	<2.5	124	12.2	316	<2.5	--	0.0089
	12/2012	3.5	153	15.2	319	<1.0	--	0.0097
	4/2013	--	--	--	--	--	41.4	--
	5/2013	2.7	128	13.1	358	<1.0	31.7	--
	12/2013	<2.0	107	13.6	248	<2.0	36.5	<0.0050
	3/2014	2.0	103	9.4	242	<2.0	31.7	<0.0050
	6/2014	<2.0	102	9.4	237	<2.0	34.3	<0.0050
	9/2014	2.0	104	6.9	194	<2.0	31.6	<0.0050
	12/2014	2.1	126	11.3	289	<2.0	40.6	<0.0050
	3/2015	<2.5	106	10.7	255	<2.5	<2.0	<0.0080
	9/2015	*1.7J*	107	6.6	170	<2.5	34.7	--
	3/2016	1.8	114	8.6	182	<1.0	34.6	<0.005
MW-12D3	2/2013	<1.0	12.7	<1.0	4.5	<1.0	--	--
	3/2013	<1.0	13.9	<1.0	6	<1.0	--	--
	5/2013	1.4	14.1	<1.0	7	<1.0	9.2	--
	12/2013	<1.0	11.2	<1.0	5.9	<1.0	10.9	<0.0050
	3/2014	1.4	9.1	<1.0	5.6	<1.0	9.2	<0.0050
	6/2014	1.5	8.4	<1.0	4.4	<1.0	10.7	<0.0050
	9/2014	1.5	7.6	<1.0	3.7	<1.0	6.6	<0.0050
	12/2014	1.4	6.6	<1.0	3.4	<1.0	12.1	<0.0050
	3/2015	1.1	5.2	<1.0	3.5	<1.0	2.8	<0.0080
	9/2015	1.3	5.5	<1.0	1.5	<1.0	12.5	--
	3/2016	1.2	4.5	<1.0	*2.2J*	<1.0	14.6	<0.005
MW-13	10/1992	BDL	--	BDL	BDL	BDL	--	--
	1/1996	BDL	--	BDL	BDL	BDL	--	--
	10/1997	*	*	*	*	*	*	--
	12/2000	BDL	BDL	BDL	BDL	BDL	--	--
	6/2007	<1.0	<1.0	<1.0	<2.0	<2.0	--	--
	8/2011	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	3/2012	*	*	*	*	*	*	*
	6/2012	*	*	*	*	*	*	*
	9/2012	*	*	*	*	*	*	*
	12/2012	*	*	*	*	*	*	*
	5/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	*
MW-13D	10/1992	BDL	--	BDL	BDL	BDL	--	--
	1/1996	BDL	--	BDL	BDL	BDL	--	--
	10/1997	*	*	*	*	*	*	--
	12/2000	BDL	BDL	BDL	BDL	BDL	--	--
	6/2007	<1.0	<1.0	<1.0	<2.0	<2.0	--	--
	8/2011	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	3/2012	*	*	*	*	*	*	*
	6/2012	*	*	*	*	*	*	*
	9/2012	*	*	*	*	*	*	*
	12/2012	*	*	*	*	*	*	*
	5/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	*

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Checked By/Date: ZJD 04/08/16

Appendix G
Historical Grounwater Sampling Laboratory Results
Robert Bosch Tool Corporation, Former Boone Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Well ID	Date	1,1-DCA	cis-1,2-DCE	PCE	TCE	Vinyl Chloride	1,4-dioxane	Free Cyanide
NCAC 2L		**6**	**70**	**0.7**	**3**	**0.03**	**3**	**0.07**
MW-14	10/1992	BDL	--	BDL	BDL	BDL	--	--
	1/1996	BDL	--	BDL	BDL	BDL	--	--
	10/1997	*	*	*	*	*	*	--
	12/2000	BDL	BDL	BDL	BDL	BDL	--	--
	6/2007	<1.0	<1.0	<1.0	<2.0	<2.0	--	--
	8/2011	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
MW-17	2/1997	BDL	--	BDL	BDL	BDL	--	--
	10/1997	BDL	BDL	BDL	BDL	BDL	--	--
	12/2000	BDL	BDL	BDL	BDL	BDL	--	--
	6/2007	<1.0	<1.0	<1.0	<2.0	<2.0	--	--
	8/2011	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	3/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	6/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	**0.0068**
	9/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	12/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	5/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
	12/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.0050
	3/2014	*	*	*	*	*	*	*
	6/2014	*	*	*	*	*	*	*
	9/2014	*	*	*	*	*	*	*
	12/2014	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.0050
	3/2015	*	*	*	*	*	*	*
	9/2015	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	--
	3/2016	*	*	*	*	*	*	*
MW-17D	2/1997	BDL	--	BDL	BDL	BDL	--	--
	12/2000	BDL	BDL	BDL	BDL	BDL	--	--
	12/2000	BDL	BDL	BDL	BDL	BDL	--	--
	6/2007	<1.0	<1.0	<1.0	<2.0	<2.0	--	--
	8/2011	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	3/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	6/2012	<1.0	<1.0	*0.51J*	<1.0	<1.0	--	<0.0050
	9/2012	<1.0	<1.0	*0.51J*	<1.0	<1.0	--	<0.0050
	12/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	**0.0053**
	5/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
	12/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.0050
	3/2014	*	*	*	*	*	*	*
	6/2014	*	*	*	*	*	*	*
	9/2014	*	*	*	*	*	*	*
	12/2014	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.0050
	3/2015	*	*	*	*	*	*	*
	9/2015	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	--
	3/2016	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	--
MW-18D	2/1997	BDL	--	BDL	**6.0**	BDL	--	--
	12/2000	BDL	BDL	BDL	**1.0**	BDL	--	--
	12/2000	BDL	BDL	BDL	**1.5**	BDL	--	--
	6/2007	<1.0	<1.0	<1.0	<2.0	<2.0	--	--
	8/2011	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	3/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	6/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	9/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	12/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	5/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	--
MW-19	9/1998	BDL	BDL	BDL	BDL	BDL	--	--
	12/2000	BDL	BDL	BDL	BDL	BDL	--	--
	6/2007	<1.0	<1.0	<1.0	<2.0	<2.0	--	--
	8/2011	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	3/2012	*	*	*	*	*	*	*
	6/2012	*	*	*	*	*	*	*
	9/2012	*	*	*	*	*	*	*
	12/2012	*	*	*	*	*	*	*
	5/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	--

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Appendix G
Historical Grounwater Sampling Laboratory Results
Robert Bosch Tool Corporation, Former Boone Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Well ID	Date	1,1-DCA	cis-1,2-DCE	PCE	TCE	Vinyl Chloride	1,4-dioxane	Free Cyanide
NCAC 2L		**6**	**70**	**0.7**	**3**	**0.03**	**3**	**0.07**
MW-19D	9/1998	BDL	BDL	BDL	BDL	BDL	--	--
	12/2000	BDL	BDL	BDL	BDL	BDL	--	--
	6/2007	<1.0	<1.0	<1.0	<2.0	<2.0	--	--
	8/2011	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	3/2012	*	*	*	*	*	*	*
	6/2012	*	*	*	*	*	*	*
	9/2012	*	*	*	*	*	*	*
	12/2012	*	*	*	*	*	*	*
	5/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	--
MW-20	8/2011	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	3/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	6/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	9/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	12/2012	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	5/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	--
	12/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.0050
	3/2014	*	*	*	*	*	*	*
	6/2014	*	*	*	*	*	*	*
	9/2014	*	*	*	*	*	*	*
	12/2014	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.0050
	3/2015	*	*	*	*	*	*	*
	9/2015	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	--
	3/2016	*	*	*	*	*	*	*
MW-20D	8/2011	<1.0	<1.0	*0.54J*	<1.0	<1.0	--	**0.0550**
	3/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	6/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	9/2012	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	12/2012	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	5/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	--
	12/2013	<1.0	<1.0	<1.0	<1.0	<1.0	--	--
MW-21	8/2011	**2.7**	**11**	**7.6**	**5.2**	<1.0	--	<0.0050
	3/2012	**2.9**	**11.3**	**8.3**	**6.0**	<1.0	--	<0.0050
	6/2012	**1.2**	**10.8**	**8.3**	**5.4**	<1.0	--	<0.0050
	9/2012	**4.4**	**28.6**	**8.2**	**10.2**	<1.0	--	<0.0050
	12/2012	**4.1**	**30.3**	**6.3**	**8.8**	<1.0	--	<0.0050
	5/2013	**1.1**	**5.7**	**3.7**	<1.0	<1.0	*0.78J*	--
	12/2013	**1.1**	**7.0**	**4.1**	**2.4**	<1.0	<2.0	**0.0051**
	3/2014	*0.94J*	**6.1**	**3.7**	**2.4**	<1.0	<2.0	<0.0050
	6/2014	**1.1**	**4.8**	**4.4**	**2.1**	<1.0	<2.0	<0.0050
	9/2014	**1.0**	**7.0**	**3.1**	**2.3**	<1.0	<2.0	<0.0050
	12/2014	<1.0	**7.3**	**2.7**	**2.0**	<1.0	2.3	<0.0050
	3/2015	<1.0	**5.7**	**3.0**	**1.7**	<1.0	<2.0	<0.0080
	9/2015	*0.52J*	**8.7**	**3.4**	**2.6**	<1.0	<2.0	--
	3/2016	*0.42J*	**1.5**	**2.8**	*0.85J*	<1.0	<2.0	<0.005
MW-22	3/2012	<1.0	**18.4**	<1.0	**4.1**	<1.0	--	<0.0050
	6/2012	<1.0	**17**	<1.0	**5.5**	<1.0	--	<0.0050
	9/2012	<1.0	**19.2**	<1.0	**6.0**	<1.0	--	<0.0050
	12/2012	<1.0	**10.4**	<1.0	**4.0**	<1.0	--	<0.0050
	5/2013	<1.0	**26.6**	<1.0	**4.7**	<1.0	**15**	--
MW-23	3/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	6/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	9/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	12/2012	<1.0	<1.0	<1.0	<1.0	<1.0	--	<0.0050
	5/2013	<1.0	*0.36J*	<1.0	<1.0	<1.0	<3.0	--
MW-24	3/2012	**3.8**	**35**	<1.0	**11.4**	<1.0	--	<0.0050
	6/2012	**1.9**	**32.9**	*0.78J*	**15**	<1.0	--	**0.0099**
	9/2012	<1.0	**29.2**	<1.0	**16.7**	<1.0	--	**0.0120**
	12/2012	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	5/2013	**1.3**	**13.2**	*0.57J*	**7.1**	<1.0	**4.7**	--
MW-25	3/2012	**1.2**	**3.2**	<1.0	**1.7**	<1.0	--	<0.0050
	6/2012	<1.0	**3.9**	**1.1**	**2.4**	<1.0	--	<0.0050
	9/2012	<1.0	**2.7**	<1.0	**2**	<1.0	--	<0.0050
	12/2012	**1.7**	**5.3**	**1.0**	**2.9**	<1.0	--	**0.0120**
	5/2013	**1.2**	**2**	*0.54J*	<1.0	<1.0	<3.0	--

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Appendix G
Historical Grounwater Sampling Laboratory Results
Robert Bosch Tool Corporation, Former Boone Division
Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Well ID	Date	1,1-DCA	cis-1,2-DCE	PCE	TCE	Vinyl Chloride	1,4-dioxane	Free Cyanide
NCAC 2L		**6**	**70**	**0.7**	**3**	**0.03**	**3**	**0.07**
MW-26	3/2012	<1.0	**2.4**	<1.0	<1.0	<1.0	--	<0.0050
	6/2012	<1.0	**2.3**	*0.68J*	<1.0	<1.0	--	<0.0050
	9/2012	<1.0	**1.8**	<1.0	<1.0	<1.0	--	<0.0050
	12/2012	<1.0	**1.5**	<1.0	<1.0	<1.0	--	<0.0050
	4/2013	--	--	--	--	--	*0.75J*	--
	5/2013	<1.0	**1.4**	<1.0	<1.0	<1.0	<3.0	--
MW-27	3/2012	<1.0	**1.3**	<1.0	<1	<1.0	--	<0.0050
	6/2012	<1.0	**1.4**	<1.0	<1	<1.0	--	**0.0064**
	9/2012	<1.0	**1.6**	<1.0	<1	<1.0	--	<0.0050
	12/2012	<1.0	**1.6**	<1.0	*0.52J*	<1.0	--	<0.0050
	4/2013	--	--	--	--	--	*0.70J*	--
	5/2013	<1.0	*0.91J*	<1.0	<1.0	<1.0	<3.0	--
MW-28	2/2013	<1.0	<1.0	<1.0	<1.0	<1.0	--	--
	5/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	--
	12/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	**0.0093**
	3/2014	*	*	*	*	*	*	*
	6/2014	*	*	*	*	*	*	*
	9/2014	*	*	*	*	*	*	*
	12/2014	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.0050
	3/2015	*	*	*	*	*	*	*
	9/2015	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	--
	3/2016	*	*	*	*	*	*	*
MW-29D	2/2013	<1.0	*0.52J*	<1.0	**1.2**	<1.0	--	--
	5/2013	<1.0	*0.48J*	<1.0	**1.2**	<1.0	<3.0	--
	12/2013	<1.0	*0.20J*	<1.0	*0.57J*	<1.0	<2.0	<0.0050
	3/2014	*	*	*	*	*	*	*
	6/2014	*	*	*	*	*	*	*
	9/2014	*	*	*	*	*	*	*
	12/2014	<1.0	<1.0	<1.0	1.1	<1.0	<2.0	<0.0050
	3/2015	*	*	*	*	*	*	*
	9/2015	<1.0	<1.0	<1.0	<1.0	<1.0	*2.0J*	--
	3/2016	*	*	*	*	*	*	*
MW-30	2/2013	<1.0	<1.0	<1.0	<1.0	<1.0	--	--
	5/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	--
MW-31	2/2013	**3.3**	**21.7**	**2.4**	**5.0**	<1.0	--	--
	5/2013	**5.6**	**38.2**	**4.3**	**8.6**	<1.0	**7.9**	--
	12/2013	**2.6**	**16.8**	**2.3**	**4.0**	<1.0	**4.8**	**0.0078**
	3/2014	**3.0**	**18.6**	**2.8**	**5.1**	<1.0	**4.8**	**0.0210**
	6/2014	**3.1**	**20.8**	**3.6**	**5.8**	<1.0	**6.0**	**0.0086**
	9/2014	**1.8**	**11.4**	**1.3**	**2.5**	<1.0	**3.1**	**0.0057**
	12/2014	**2.3**	**13.2**	**1.8**	**3.4**	<1.0	**3.7**	**0.0081**
	3/2015	**2.2**	**14.2**	**2.6**	**4.1**	<1.0	<2.0	**0.013**
	9/2015	**2.5**	**16.7**	**2.0**	**3.0**	<1.0	**3.0**	--
	3/2016	**1.9**	**11.6**	**1.8**	**3.3**	<1.0	**3.6**	<0.005
MW-32	4/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	--
	5/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	--
MW-32D	2/2013	<1.0	*0.67J*	<1.0	**2.4**	<1.0	--	--
	3/2013	<1.0	*0.43J*	<1.0	**2.2**	<1.0	--	--
	5/2013	<1.0	*0.37J*	<1.0	**3.2**	<1.0	*1.0J*	--
MW-33	4/2013	**1.6**	**12.7**	**0.92J**	**3.4**	<1.0	**5.7**	--
	5/2013	**1.7**	**14.6**	**1.5**	**4.5**	<1.0	**5.4**	--
	12/2013	*	*	*	*	*	*	*
	3/2014	**3.1**	**22.7**	**2.3**	**6.3**	<1.0	**7.7**	<0.0050
	6/2014	**3.3**	**24.9**	**2.3**	**5.9**	<1.0	**8.7**	<0.0050
	9/2014	**3.3**	**24.6**	**1.6**	**4.7**	<1.0	**8.1**	<0.0050
	12/2014	**2.5**	**18.1**	<1.0	**3.5**	<1.0	**7.4**	<0.0050

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Checked By/Date: ZJD 04/08/16

Appendix G
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Boone, North Carolina
Amec Foster Wheeler Project 6251121001.03.04

Well ID	Date	1,1-DCA	cis-1,2-DCE	PCE	TCE	Vinyl Chloride	1,4-dioxane	Free Cyanide
NCAC 2L		**6**	**70**	**0.7**	**3**	**0.03**	**3**	**0.07**
MW-34	4/2013	**36.1**	**231**	**1.4**	**20.6**	<1.0	**5.4**	--
	5/2013	**28.7**	**224**	**1.5**	**18.1**	<1.0	**4.5**	--
	12/2013	**22.3**	**182**	**1.3**	**15.6**	<1.0	**4.2**	**0.0061**
	3/2014	**24.9**	**190**	**1.1**	**16.1**	<1.0	**4.3**	<0.0050
	6/2014	**27.0**	**187**	**1.6**	**18.4**	<1.0	<2.0	<0.0050
	9/2014	**34.8**	**258**	**1.6**	**20.2**	<1.0	**7.2**	<0.0050
	12/2014	**30.2**	**255**	<2.0	**16.8**	<1.0	**9.3**	<0.0050
	3/2015	**27.1**	**235**	<2.5	**17.9**	<2.5	<2.0	<0.0080
	9/2015	**22.4**	**192**	<2.5	**13.3**	<2.5	**3.7**	--
	3/2016	**13.6**	**112**	*0.92J*	**8.3**	<1.0	*2.0J*	<0.005
MW-35	6/2013	<1.0	*0.82J*	<1.0	<1.0	<1.0	*1.5J*	--
	12/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.0050
	3/2014	<1.0	*0.43J*	<1.0	<1.0	<1.0	<2.0	<0.0050
	6/2014	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.0050
	9/2014	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.0050
	12/2014	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.0050
	3/2015	*	*	*	*	*	*	*
	9/2015	<1.0	*0.72J*	<1.0	<1.0	<1.0	<2.0	--
	3/2016	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.005
MW-36	12/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.0050
	3/2014	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.0050
	6/2014	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.0050
	9/2014	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.0050
	12/2014	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.0050
	3/2015	*	*	*	*	*	*	*
	9/2015	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	--
	3/2016	*	*	*	*	*	*	*
	12/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	**0.0620**
	3/2014	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	**0.0160**
	6/2014	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	**0.0060**
	9/2014	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.0050
	12/2014	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.0050
	3/2015	*	*	*	*	*	*	*
	9/2015	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	--
	3/2016	*	*	*	*	*	*	*
RW-1	3/2012	**71.4**	**237**	**3.0**	**13.7**	<1.0	--	<0.0050
	6/2012	**76.5**	**229**	**3.1**	**11.6**	<1.0	--	<0.0050
	9/2012	**31.1**	**133**	**1.2**	**6.1**	<1.0	--	**0.0140**
	12/2012	**34.4**	**165**	**2.0**	**8.2**	<1.0	--	**0.0060**
	5/2013	**63.9**	**211**	**2.2**	**9.4**	<1.0	*1.2J*	--

Notes:

1. All Concentrations except cyanide in micrograms per liter (µg/L). Cyanide is recorded in milligrams per liter (mg/L).
2. Bold values indicate detections above the laboratory RL.
3. -- Parameter not analyzed.
4. * Sample not collected; well is not included in the current Groundwater Monitoring Program.
5. DRY = Indicates that a sample was to be collected but there was insufficient groundwater.
6. NE = No standard established.
7. Italic values indicate estimated concentrations below the laboratory Reporting Limit and Method Detection Limit (J Flag)
8. Bolded Red Values Exceed NCAC 2L Standard.
9. Constituent abbreviations:
   BDL = below detection limit
   DCE = dichloroethene
   DCA = dichloroethane
   PCE = tetrachloroethene
   TCE = trichloroethene
10. Wells MW-11 could not be accessed.
11. MW-15, MW-15D, and MW-16 could not be located and are presumed to have been destroyed.

Prepared By/Date: LLM 04/7/16
Checked By/Date: ZJD 04/08/16

APPENDIX H

HAZARDOUS WASTE UNIFORM MANIFEST

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
N C D 0 9 5 4 5 8 9 6 4	1	(877) 818-0087	000871545 VES

5. Generator's Name and Mailing Address
JON HALL (ROBERT BOSCH CORP)
P.O. BOX 298
HAMILTON, NC 27840
Generator's Phone:

Generator's Site Address (if different than mailing address)
ROBERT BOSCH TOOL CORPORATION
STATE FARM ROAD
BOONE, NC 28607

6. Transporter 1 Company Name: VEOLIA ES TECHNICAL SOLUTIONS — U.S. EPA ID Number: N J D 0 8 0 6 3 1 3 6 9

7. Transporter 2 Company Name: FREEHOLD CARTAGE INC — U.S. EPA ID Number: N J D 0 5 4 1 2 6 1 6 4

8. Designated Facility Name and Site Address
VEOLIA ES TECHNICAL SOLUTIONS, L.L.C.
2176 WILL SUITT ROAD
CREEDMOOR, NC 27522
Facility's Phone: 919 528-3996
U.S. EPA ID Number: N C D 9 8 6 1 6 6 3 3 8

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. NA3082, HAZARDOUS WASTE, LIQUID, n.o.s., (TRICHLOROETHENE), 9, III	1	D M	4 0 0	P	F001
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
ER Service Contracted by VESTS + 1) IDW WASTEWATER WITH TRICHLOROETHENE

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: X DWAIN D. SNYDER — Signature: X [signature] — Month 0 4 Day 2 2 Year 1 6

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: BRIAN BIGGERS — Signature: [signature] — Month 0 4 Day 2 2 Year 1 6
Transporter 2 Printed/Typed Name: Timothy Stump — Signature: [signature] — Month 4 Day 22 Year 16

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H141 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: LEONARD BECK — Signature: [signature] — Month 04 Day 29 Year 16

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

A&D Environmental Services — Bill of Lading / Material Manifest

A&D Job No:	Generator ID Number	Page 1 of 1	Emergency Response Phone	Tracking Number
217983			803-957-9175	

Generator's Name and Mailing Address: RBTC - Former Boone Division Facility, 482 State Farm Road, Boone, NC

Generator's site address (if different from mailing address):

Transporter 1 [X] 2 [ ] Company Name: A&D Environmental Services, Inc. — US EPA ID No: NCD986232221

Transporter 1 [ ] 2 [ ] Company Name: A&D Environmental Services (SC), LLC — US EPA ID No: SCD987598331

[X] Designated Facility	[ ] Designated Facility	[ ] Designated Facility	[ ] Designated Facility
A&D Environmental Services, Inc. 2718 Uwharrie Road Archdale, NC 27263 336-434-7750 NCD986232221	A&D Environmental Services, Inc. 3149 Lear Drive Burlington, NC 27215 336-229-0058 NCR000138628	A&D Environmental Services (SC), LLC 1741 Calks Ferry Road Lexington, SC 29073 803-957-9175 SCD987598331	A&D Environmental Services (SC), LLC 1321 White Horse Road, Suite C Greenville, SC 29605 864-234-6055

HM	Hazardous Materials Shipping Name and Description (if applicable)	No.	Type	QTY	Wt/Vol	Profile Number
	Non-Hazardous Soil	3	DM	1200	P	20160192

	Petroleum Products for Recycle		No.	Type	QTY	Wt/Vol	Profile Number
X	NA1993, Diesel fuel, 3, III	ERG# 128					
X	NA1993, Fuel oil (No.1,2,4,5 or 6), 3, III	ERG# 128					
X	UN1203, Gasoline, 3, II	ERG# 128					
	USED OIL (Not a USDOT Hazardous Material)						
	Petroleum Contact Water (Not a USDOT Hazardous Material)						

Universal Waste Lamps, Batteries, Ballasts, and Electronics for Recycle

HM	No.	Type	Est. Wt.	Count	Shipping Name and Description (if applicable)		Common Name	Discrepancy
X					RQ, UN2809, Mercury contained in manufactured articles, 8, III	ERG# 172	Mercury Containing Articles	
X					RQ, UN3432, Polychlorinated biphenyls, solid, 9, II	ERG# 171	TSCA Exempt PCB Lamp Ballasts	
X					UN2800, Batteries, wet, nonspillable, 8, III	ERG# 154	Sealed Lead Acid Batteries	
X					UN2794, Batteries, wet, filled with acid, 8, III	ERG# 154	Lead Acid Batteries	
X					UN2795, Batteries, wet, filled with alkali, 8, III	ERG# 154	Wet NiCad Batteries	
X					UN3090, Lithium batteries, 9, II	ERG# 138	Lithium Batteries	
X					UN3028, Batteries, dry, containing potassium hydroxide solid, 8, III	ERG# 154	Alkaline Batteries	
					UN3028, Batteries, dry, containing potassium hydroxide solid, 8, III	ERG# 154	NiCad Batteries	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164(e)		Fluorescent lamps 4' or <	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164(e)		Fluorescent lamps 4'	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164(e)		Circular/U-tube lamps	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164(e)		Compact Lamps	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164(e)		Shattershield	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164(e)		HID/MV/UV Lamps	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164(e)		Incandescent Lamps	
					Non-PCB Light Ballasts for Recycle (Not DOT-Regulated)		Non-PCB Light Ballasts	
					Electronic Equipment for Recycle (Not DOT-Regulated)		Electronics	

Generator's Certification: This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. I further certify that none of the materials described above are a hazardous waste as defined by EPA 40CFR Part 261 or any applicable state law, and unless specifically identified above the materials contain less than 1,000 ppm total halogens and do not contain quantifiable levels (20ppm) of PCBs as defined by EPA 40 CFR Parts 279 and 761.

	Printed/Typed Name	Signature	Month	Day	Year
Generator's/Offeror's	RBTC Jon Hall	Jon Hall	4	21	16
Transporter 1	Matt Wray	Matt Wray	04	22	16
Transporter 2					

Discrepancy Indication / Additional Information:

Designated Facility Certification: I hereby acknowledge receipt of the materials covered by this manifest except for any discrepancy indicated above.

Travis Clapp — Travis Clapp — 4/22/16