PHASE 2 HYDROGEOLOGIC AND GROUNDWATER QUALITY ASSESSMENT REPORT
Central Carolina Tire Monofill Landfill Phases I/II
Harnett County, North Carolina
Permit # 43-04

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Contents

1.0 INTRODUCTION 1

2.0 SITE DESCRIPTION AND BACKGROUND 2

3.0 SCOPE OF INVESTIGATION 3

3.1 Installation of Groundwater Monitoring Wells 3

3.2 Soil Sampling and Laboratory Analysis 4

3.3 Groundwater Gauging 4

3.4 Groundwater Sampling and Laboratory Analysis 5

3.5 Aquifer Characterization 5

3.6 Potential Receptor Survey 6

4.0 REGIONAL GEOLOGY AND HYDROGEOLOGY 7

5.0 RESULTS OF HYDROGEOLOGIC INVESTIGATION 9

5.1 Site Reconnaissance 9

5.1.1 Topographic Setting and Drainage 9

5.1.2 Groundwater Discharge Features 9

5.2 Monitoring Well Boring and Geotechnical Laboratory Data 9

5.2.1 Monitoring Well Boring Data 9

5.2.2 Geotechnical Laboratory Data 10

5.3 Site Geology and Hydrogeology 10

5.3.1 Site Geology 10

5.3.2 Site Hydrogeology 11

6.0 RESULTS OF GROUNDWATER QUALITY ASSESSMENT 13

6.1 Results of Media Sampling and Analysis 13

6.1.1 Soil Samples 13

6.2.1 Groundwater Samples 13

6.2 Evaluation of Natural Attenuation Potential 15

6.2.1 Evidence from the Scientific Literature 15

6.2.2 Evidence from Empirical Site Data 18

6.3 Results of Potential Receptor Survey 20

7.0 CONCLUSIONS AND RECOMMENDATIONS 22

Figures

1 Site Location Map
2 Site Map
3 Excerpt from 1985 Geologic Map of North Carolina (In Text)
4 Locations of Geologic Cross Sections
5 Geologic Cross Section A-A'
6 Geologic Cross Section B-B'
7 Geologic Cross Section C-C'
8 Groundwater Elevation Contour Map: Shallow Surficial Aquifer April 2012
9 Groundwater Elevation Contour Map: Deep Aquifer April 2012
10 Tetrachloroethene Isoconcentration Contour Map: Shallow Surficial Aquifer April 2012

Tables

1 Monitoring Well Construction Data
2 Geotechnical Data
3 Hydrogeologic Properties of Lithologic Units
4 Horizontal Groundwater Gradient and Horizontal Flow: Shallow Surficial Aquifer
5 Groundwater Field Data
6 Summarized Laboratory Analytical Results for Groundwater Samples

Appendices

A Boring Logs and Well Construction Schematics
B Geotechnical Laboratory Data Sheets
C Slug Test Data
D Effective Porosity Estimates
E Laboratory Reports and Chain-of-Custody Forms
F Groundwater Sample Collection Forms
G Site and Surrounding Property Ownership Information

1.0 INTRODUCTION

This report presents the results of Phase 2 of a hydrogeologic and groundwater quality assessment conducted at the Central Carolina Tire Phase I/II Monofill landfill facility in Harnett County, North Carolina in April and May 2012 (**Figure 1**). Tetrachloroethene (PCE) has been detected in groundwater samples collected from monitoring well MW-8 at the Phase I/II landfill during semi-annual sampling conducted over the last several years (**Figure 2**). The concentrations of PCE have shown a generally increasing trend and are now in excess of the North Carolina 15A NCAC 2L .0202 groundwater quality standard.

The results of a preliminary environmental site assessment conducted at the site in November 2010, which involved sampling and analysis of soil and groundwater samples collected via direct-push techniques, indicated that a relatively narrow, elongated plume of dissolved-phase PCE originates in the vicinity of the maintenance shelter located approximately 250 feet north of MW-8 and extends to the south-southwest toward MW-8 and the Phase I/II monofill landfill. The results further indicate that the source of PCE in groundwater is likely located at or near the maintenance shelter. The maintenance shelter is used to maintain and repair equipment for the landfill, and the interior of the shelter is unpaved. Equipment maintenance and repair includes the use of parts cleaning solutions that contain PCE. Low volume incidental spills of parts cleaning solution onto the ground surface over time are the likely source of PCE in groundwater at the site. The results of the preliminary assessment are presented in the January 2011 *Preliminary Site Assessment Report* previously submitted to the NCDENR Division of Waste Management.

Based on the results of the preliminary assessment, a Phase 2 hydrogeologic and groundwater quality assessment was conducted to further delineate the extent and magnitude of PCE and associated environmental breakdown products in groundwater. The assessment included sampling and analysis of soil and groundwater samples collected from multiple drilling locations for installation of groundwater monitoring wells, aquifer testing to assess the hydraulic properties of the surficial aquifer, and a potential receptor survey to identify potable wells and any other receptors within 1,500 feet of the margins of the dissolved-phase PCE plume.

2.0 SITE DESCRIPTION AND BACKGROUND

The Central Carolina Tire facility is located approximately 10 miles southeast of Cameron, North Carolina on McKoy Town Road (NC Highway 1105), approximately 8,500 feet south of the intersection with NC Highway 24/27 (**Figure 1**). The topography at the area of investigation varies in elevation from approximately 340 feet msl in the southern area to approximately 355 msl feet in the western and northern areas (**Figure 2**). On-site surface drainage is primarily to the east-southeast and is conveyed by an east-southeast trending drainage feature to the north of the access road on the northern perimeter of the Phase I/II landfill to an unnamed creek surrounded by wetlands to the west and south of the landfill. The unnamed creek drains to an unnamed stream which borders the site approximately ¾-mile to the east and flows south. Site drainage ultimately discharges to the Cape Fear River.

Phase I/II of the Central Carolina Tire Monofill landfill is operated in accordance with Solid Waste Permit #43-04. The Phase I Area of the Central Carolina Tire Monofill landfill began operation in 1992 and the Phase II Area began operation in 1997. The combined footprint of the Phase I/II Monofill is approximately 37-acres. The Phase I/II Area reached capacity in the Fall of 2008, and closure activities have been completed and approved.

3.0 SCOPE OF INVESTIGATION

3.1 Installation of Groundwater Monitoring Wells

Eight Type II and seven Type III groundwater monitoring wells were installed for assessment of dissolved PCE in groundwater in the vicinity of the maintenance shelter and monitoring well MW-8. The locations and designations of the monitoring wells are shown in **Figure 2**. Shallow and deep well pairs were installed at seven locations (GW-1S/D through GW-7S/D) and one deep well was installed at the remaining drilling location (GW-8D). Originally a shallow and deep well pair was planned for the location of monitoring well GW-8, but water-yielding sediments were not encountered in the shallow zone during drilling and a single deep Type II well was installed following consultation with the NCDENR Division of Waste Management. Monitoring wells GW-1S/1D serve as up-gradient wells to monitor the quality of groundwater in the shallow and deep surficial aquifer entering the area of the maintenance shelter. The remaining monitoring wells are intended to delineate the horizontal and vertical extent of dissolved PCE and associated environmental breakdown products in groundwater in the vicinity of the maintenance shelter and monitoring well MW-8. All drilling locations were approved by the client prior to drilling.

The Type II monitoring wells were installed using a hollow-stem auger drilling rig. All Type II wells were installed to depths ranging from 16 to 47 feet below grade and are constructed of 2-inch ID Schedule 40 PVC well casing and 10 feet of machine-slotted well screen with 0.010" slots. The wells are finished with solid PVC risers extending approximately 2 to 3 feet above grade within steel, stickup protective casings with hinged, locking lids. The Type III wells are constructed with a 4-inch ID Schedule 40 PVC outer casing using a hollow-stem auger drilling rig; the outer casings were installed to depths ranging from 21 to 29 feet below grade. The Type III wells were installed through the outer casing to depths ranging from 40 to 52 feet below grade and are constructed of 2-inch ID Schedule 40 PVC well casing and 10 feet of machine-slotted well screen with 0.010" slots. The borings for the Type III wells were drilled using mud-rotary drilling. The Type III wells are finished with solid PVC risers extending approximately 2 to 3 feet above grade within steel, stickup protective casings with hinged, locking lids. All wells were installed and constructed in accordance with North Carolina Well Standards. Boring logs and well construction schematics are presented in **Appendix A**.

The augers, drill pipe and drill rig were decontaminated using a pressure washer prior to drilling at each location. Split-spoon samplers were decontaminated prior to and following each use with a non-phosphate soap and water wash followed by multiple rinses with distilled water. An area was set aside in the immediate vicinity of the maintenance shed for decontamination of the drilling equipment. Each well was developed after installation using a down hole pump or bailer

until the discharge water appeared to be free of suspended sediments or for a maximum of one hour.

Each well was surveyed relative to the existing site datum for horizontal position and elevation by a North Carolina licensed surveyor. At each well, elevations were measured of the ground surface and top of the solid PVC riser. A permanent mark was made on the top of the PVC riser at the point where the elevation measurement was made for future reference when collecting depth to water data.

3.2 Soil Sampling and Laboratory Analysis

Soil samples were collected at each drilling location for lithologic descriptions using the standard penetration test (SPT) method with a 140-lb sliding hammer and steel split-spoon samplers. Samples were collected in continuous 2-feet intervals until groundwater was encountered and approximately every five feet thereafter to the completion depth of the boring. The soil retained in each split-spoon sampler was logged by a geologist with respect to texture, composition, color and moisture content.

A representative portion of each soil sample collected above the water table at the locations of the shallow monitoring wells was placed in a re-sealable plastic bag and allowed to equilibrate with ambient conditions. After the equilibration period, a photoionization detector (PID) calibrated to an isobutylene standard was used to measure the headspace reading of total volatile organic compounds (VOCs) in the re-sealable plastic bag. The soil sample from each drilling location that exhibited the highest PID response value was retained and submitted for laboratory analysis. In the event that no PID response was elicited by any of the vadose zone samples collected from a boring, one sample was retained for laboratory analysis based on field judgment. The retained soil samples were analyzed at a DENR-approved laboratory for VOCs by SW 846 Method 8260B. This analytical method allows for the detection of PCE and its primary environmental breakdown products. In addition, one soil sample collected from the saturated zone at each drilling location was retained and submitted for grain size analysis at a geotechnical laboratory to allow for estimating the specific yield of the aquifer sediments.

3.3 Groundwater Gauging

Prior to well purging and groundwater sampling, groundwater levels were measured in the newly installed monitoring wells, as well as existing monitoring well MW-8, using an electronic water level meter which was thoroughly decontaminated before use at each well. The results of the groundwater gauging were used to develop a conceptual model of groundwater flow within the surficial aquifer in the study area, including groundwater recharge and discharge zones and zones of preferential groundwater flow.

3.4 Groundwater Sampling and Laboratory Analysis

Groundwater samples were collected for laboratory analysis from the newly installed monitoring wells and MW-8 using a low flow/low stress sampling technique. Prior to sampling, the wells were purged of stagnant water and the pH, temperature, specific conductance, turbidity, dissolved oxygen and oxidation-reduction potential (ORP) of the purge water was measured using a flow-through cell and a multi-parameter meter. With respect to the groundwater chemistry, an adequate purge was considered to have been achieved when the pH, specific conductance, and temperature of the groundwater have stabilized within 10% for three consecutive readings and the turbidity had either stabilized or is below 10 Nephelometric Turbidity Units (NTUs).

Following purging, groundwater samples were collected from each well using the low-flow assembly directly into laboratory-prepared containers. All groundwater samples were analyzed at a DENR-approved laboratory for VOCs by SW 846 Method 8260B. This analytical method allows for the detection of PCE and its primary environmental breakdown products. In addition, the groundwater samples were analyzed at the laboratory for dissolved organic carbon, chloride, nitrate, iron, methane, ethene and ethane to evaluate biogeochemical conditions in the surficial aquifer and potential biotransformation of PCE via natural attenuation mechanisms.

3.5 Aquifer Characterization

Following groundwater sampling and return of groundwater levels to static conditions, rising-head permeability ("slug") tests were conducted in the new monitoring wells and monitoring well MW-8. Static water level measurements were made at each well prior to beginning the slug tests. The slug tests were conducted by placing a combined data recorder-pressure transducer (In-Situ Mini Troll™) at the bottom of the well and rapidly removing a volume (slug) of water from the well using a submersible pump or centrifugal pump (whichever was appropriate given the depth to groundwater and yield) to lower the level of the water table below the level measured at static conditions. The data logger was used to measure the rate of influx of groundwater until water level equilibrium is reestablished. The measured rate of recovery of the water level is a function of the hydraulic conductivity of the aquifer material in the vicinity of the well. The slug test data were analyzed using the HydroSOLVE, Inc. AQTESOLV for Windows™ program according to the Bouwer-Rice procedure.

It is noted that the yield of groundwater to the deep monitoring wells (GW-1D through GW-8D) was observed to be extremely slow. Recovery of water levels to greater than 80% of static conditions required several days to achieve. Consequently, slug tests were not completed in the deep monitoring wells due to the slow rate of recovery and apparent very low permeability of the

deep aquifer sediments. Based on the observed rate of recovery, it is estimated that the hydraulic conductivity of the deep aquifer sediments is less than 10^{-6} cm/sec.

3.6 Potential Receptor Survey

The maintenance shelter and known areas of dissolved PCE at the site are located between the Phase I/II and Phase III landfills. Based on groundwater elevation data, the direction of shallow groundwater flow in the area of the maintenance shelter is to the southeast toward unnamed streams and associated wetlands that surround the eastern and southern boundaries of the Phase I/II landfill. Consequently, the spectrum of receptors that could potentially be impacted by dissolved PCE in groundwater is limited in scope. Based on the known site conditions, a receptor survey was conducted to identify water supply wells located within 1,500 feet of the maintenance shelter (source area of the PCE plume).

4.0 REGIONAL GEOLOGY AND HYDROGEOLOGY

The Central Carolina Tire landfill facility is located in the Atlantic Coastal Plain physiographic province in North Carolina (**Figure 3**). The area of the site is underlain by sediments of the Late Creataceous age Middendorf Formation, which are predominantly fluvial-deltaic intercalated, lensing, thick-bedded micaceous quartz sands and clays with local concentrations of clay clast conglomerates.[1] The sediments of the Middendorf Formation are typical of those deposited in a deltaic environment and commonly include cross-bedding, lenses, pinch-outs and facies changes. The Middendorf Formation deposits unconformably overlie sands and clays of the Late Cretaceous age Cape Fear Formation, which outcrop in primary stream valleys in Harnett County. The Cape Fear Formation sediments unconformably overlie crystalline basement rocks, the surface of which occurs at a depth of approximately 200 to 250 feet below grade near the site. Thin, discontinuous Neogene and Quaternary age sediments overlie the Cretaceous age deposits at some locations. Subsurface materials encountered during the preliminary environmental assessment and drilling conducted as part of the Phase 2 assessment that is the subject of this report are consistent with descriptions of Middendorf Formation sediments mapped in the area of the site.

Groundwater within the surficial aquifer at the site occurs under unconfined conditions within sandier zones of appreciable thickness of the Middendorf Formation sediments. Laterally extensive and thick clay beds within the Middendorf Formation form confining to semi-confining layers separating the surficial aquifer from deeper occurrences of groundwater. The surficial aquifer, which extends over a large part of the Coastal Plain, discharges water laterally to streams and rivers and provides the bulk of recharge to deeper aquifers. Recharge to the surficial aquifer occurs via rainfall. As discussed in Section *5.3.2*, shallow groundwater flow at the site is generally to the south and southeast toward unnamed streams and associated wetlands that surround the eastern and southern boundaries of the landfill.

[1] Sohl, Norman F. and James P. Owens, 1991; Cretaceous stratigraphy of the Carolina coastal plain, in *The Geology of the Carolinas*, J. W. Horton, Jr. and V. A. Zullo, eds., The University of Tennessee Press, pp. 191-220.

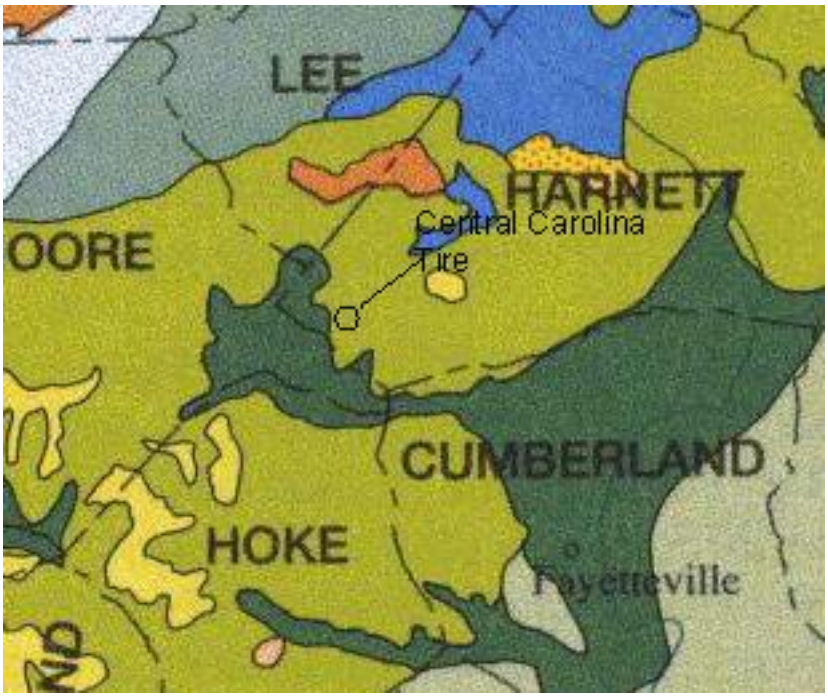

Figure 3. Excerpt from Generalized Geologic Map of North Carolina (1985)

5.0 RESULTS OF HYDROGEOLOGIC INVESTIGATION

5.1 Site Reconnaissance

5.1.1 Topographic Setting and Drainage

Land surface elevations in the vicinity of the assessment area range from approximately 340 feet msl in the southern area to approximately 355 feet msl in the western and northern areas (**Figure 2**). Surface drainage in the area follows the land surface contours. The main topographic features controlling the bulk of surface drainage in the assessment area are the topographically high ground in the immediate vicinity of the maintenance shelter and to the west along the main access road, and an east-southeastward sloping drainage feature that separates the assessment area to the north from the Phase I/II landfill to the south. The majority of surface drainage in the assessment area flows southeastward from the topographic upland area near the maintenance shelter to the southeast toward the east-southeast trending drainage feature. Surface drainage in the drainage feature is conveyed to an unnamed creek surrounded by wetlands to the west and south of the landfill. The unnamed creek drains to an unnamed stream which borders the site approximately ¾-mile to the east and flows south. Site drainage ultimately discharges to the Cape Fear River.

5.1.2 Groundwater Discharge Features

The primary groundwater discharge features in the Coastal Plain are dendritic streams that dissect the terrain and the associated wetlands within the floodplains of the streams. Other groundwater discharge occurs through evapotranspiration in areas where the water table is located in close proximity to the land surface and in topographically low features such as ponds and lakes. Additionally, groundwater may discharge through springs or seeps that occur in upland areas resulting from the presence of low permeability strata that divert groundwater flow laterally to areas where the strata intersect the land surface.

Ponds, lakes, springs, and seeps were not observed in the broader area of assessment. An unnamed creek surrounded by wetlands is present to the west and south of the Phase I/II landfill. The unnamed creek drains to an unnamed stream with associated wetlands which borders the landfill property approximately ¾-mile to the east and flows south. Groundwater discharge likely occurs as base flow to the unnamed creek and stream. In addition, groundwater discharge via evapotranspiration likely occurs in the immediate vicinity of the wetlands.

5.2 Monitoring Well Boring and Geotechnical Laboratory Data

5.2.1 Monitoring Well Boring Data

The Phase 2 hydrogeologic and groundwater quality assessment drilling program was conducted in accordance with the January 2012 work plan that was approved by the NCDENR Division of

Waste Management. Details of the drilling program, including monitoring well installations and soil sampling are presented in *Sections 3.1 and 3.2*.

Summaries of the test boring data, including completion depth, monitoring well construction specifications, ground surface elevations, top of casing elevations, and top and bottom of well screen elevations are presented in **Table 1**. Drilling logs for the borings that include relative density data (SPT), sample recovery, lithologic descriptions of soils encountered during drilling, USCS classifications, groundwater depths and well construction information are included in **Appendix A**.

Standard penetration tests were performed at designated intervals in the well borings in accordance with ASTM D 1586-84 to provide an index for estimating soil strength and relative density. In conjunction with the penetration testing, split-spoon soil samples were recovered for soil classification and laboratory testing as discussed in *Section 3.2*.

5.2.2 Geotechnical Laboratory Data

Grain size analyses of soil samples collected from the saturated zone of each well boring were conducted as part of the assessment. The results of the grain size analyses were used to estimate specific yield of the unconsolidated sediments in the surficial aquifer. Laboratory data sheets for the grain size analyses are included in **Appendix B**. The results of the grain size analyses are summarized in **Table 2**.

5.3 Site Geology and Hydrogeology

The evaluation of subsurface geology and hydrogeology presented below is based on published information regarding the regional geological and hydrogeological framework (discussed in **Section 4.0**) in conjunction with the descriptions of subsurface materials recorded in the drilling logs for the site monitoring wells (**Appendix A**) and the results of rising-head permeability ("slug") tests.

5.3.1 Site Geology

Natural subsurface materials encountered during drilling of the additional monitoring wells are consistent with descriptions of the regional geology presented in the published literature (see **Section 4.0**) and descriptions of soils encountered during previous drilling conducted at the site. The locations of the site monitoring wells are shown in **Figure 2**. A geologic cross section location map is presented as **Figure 4**, and geologic cross sections through the site are presented as **Figures 5, 6** and **7**. In general, based on the drilling logs, the shallow subsurface lithology is composed of an upper complex of interbedded layers of sandy clay and clayey sand (Unit 1),

overlying micaceous variably sandy clay and very stiff to hard clay (Unit 2), which in turn overlies medium dense to very dense sandy clay (Unit 3).

The upper sandy clay and clayey sand unit comprises the surficial aquifer at the site and averages approximately 22 feet thick. The unit contains frequent lenses and pinch-outs, and includes thin lenses of silty clay and relatively clean sand, typical of a deltaic environment. The underlying sandy clay and clay unit appears to average approximately 18.5 feet thick, frequently contains abundant mica, and varies in color from tan-orange-gray-brown (sandy clay) to gray and mottled gray-red-purple (clay). The sandy clay and clay unit appears to form a semi-confining to confining layer separating the surficial unconfined aquifer from deeper occurrences of groundwater and appears to be continuous under the entire area of assessment. Underlying the sandy clay and clay unit is generally dense sandy clay that frequently contains abundant weathered white feldspar and other weathered mineral grains. This unit comprises a deeper groundwater-bearing unit at the site, although groundwater yield from the unit is very low. The lower unit was not fully penetrated during drilling so the thickness of the unit is not known based on available site data.

5.3.2 Site Hydrogeology

Measured depths to groundwater in the Type II monitoring wells at the site ranged from 3.34 feet (MW-8) to 15.87 feet (GW-4S) below grade. The depths to groundwater measured in the Type III wells ranged from 33.28 feet (GW-8D) to 47.20 feet (GW-2D) below grade. Depths to groundwater measured in the site monitoring wells are included on the Groundwater Sample Collection Forms presented in **Appendix F** and groundwater elevation data are presented in **Table 5**.

Groundwater within the surficial unconfined aquifer at the site occurs under water-table (unconfined) conditions within the interstitial pore spaces of the sediments in the upper sandy clay and clayey sand unit (Unit 1). A water-table elevation contour map based on the April 2012 groundwater gauging data for the shallow monitoring wells is presented as **Figure 8**. The geometric configuration of the water-table elevation contours presented in **Figure 8** indicate that shallow groundwater flow at the site is generally to the south, which is consistent with the overall topography in the assessment area. The hydraulic gradient of the water table averages approximately 0.008 ft/ft in the assessment area based on the water-table elevations measured at the shallow monitoring wells in April 2012 (see **Table 5**).

Deeper groundwater at the site is present in the sandy clay unit (Unit 3) underlying the sandy clay and clay semi-confining to confining unit (Unit 2). A groundwater elevation contour map based on the April 2012 groundwater gauging data for the deep monitoring wells is presented as **Figure 9**. The geometric configuration of the water-table elevation contours presented in **Figure**

9 indicate that groundwater flow in the deep water-bearing unit at the site is generally to the east toward the unnamed stream that borders the landfill property approximately ¾-mile to the east of the assessment area. The hydraulic gradient of the potentiometric surface of the deeper water-bearing zone varies from approximately 0.06 ft/ft in the northern portion of the assessment area to approximately 0.15 ft/ft in the west-central portion of the assessment area based on the groundwater elevations measured at the deep monitoring wells in April 2012 (see **Table 5**).

Estimates of the hydraulic conductivity (K) of the shallow aquifer at the locations of the shallow monitoring wells were made based on analyses of the water level versus time data collected during the slug tests conducted in April 2012. The data analysis was conducted by the Bouwer and Rice (1976) solution method using AQTESOLV™ for Windows, an aquifer test data analysis program developed by HydroSOLVE, Inc. of Reston, Virginia. The data output and graphs generated by AQTESOLV™ are provided in **Appendix C**. Calculated values of K based on the slug test data are presented in **Table 3**. The calculated values of K for the shallow surficial aquifer (Unit 1) ranged from 3.46 ft/day (GW-6S) to 42.3 ft/day (GW-5S). The geometric mean value of K for the shallow surficial aquifer is 14.2 ft/day.

It is noted that the yield of groundwater to the deep monitoring wells (GW-1D through GW-8D) was observed to be extremely slow. Recovery of water levels to greater than 80% of static conditions required several days to achieve. Consequently, slug tests were not completed in the deep monitoring wells due to the slow rate of recovery and apparent very low permeability of the deep aquifer sediments. Based on the observed rate of recovery, it is estimated that the hydraulic conductivity of the deep aquifer sediments is less than 10^{-6} cm/sec.

The average interstitial groundwater flow velocity (v_w) can be expressed according the relation $v_w = Ki/\eta$, where i is the hydraulic gradient, and η is the effective porosity of the aquifer material. Estimates of the effective porosity (specific yield) of the surficial aquifer sediments were made based on the results of the grain size analyses using the method of Johnson (1967).[2] The results of the effective porosity analyses are presented in **Appendix D**. Calculations of the horizontal groundwater flow velocity are presented in **Table 4**. Based on the calculations presented in **Table 4**, the average interstitial groundwater flow velocity in the shallow aquifer is estimated to range from 0.08 ft/day (29.22 ft/yr) to 1.32 ft/day (482.13 ft/yr), and averages 0.53 ft/day (193.58 ft/yr).

[2] Johnson, A. I., 1967. Specific Yields for Geologic Materials. USGS Water Supply Paper 1662-D.

6.0 RESULTS OF GROUNDWATER QUALITY ASSESSMENT

6.1 Results of Media Sampling and Analysis

6.1.1 Soil Samples

Copies of the original laboratory reports for the results of VOC analyses by SW 846 Method 8260B of the soil samples collected from the borings of the shallow monitoring wells are presented in **Appendix E**. The results indicate that none of the soil samples contained PCE or other chlorinated VOCs that are known environmental breakdown products of PCE. Six of the eight samples were reported to contain low levels of acetonitrile, which is a common medium-polarity laboratory solvent and is also used as a mobile phase in high performance liquid chromatography (HPLC) and liquid chromatography-mass spectrometry (LCMS). The detected concentrations of acetonitrile fall within a very narrow range (22.8 to 26.2 µg/L) indicating likely laboratory contamination of the samples. In addition, acetone was detected at low concentrations in three soil samples and 2-butanone (methyl ethyl ketone) was detected at a low concentration in one soil sample. Acetone and 2-butanone are common laboratory solvents that are frequently introduced to environmental samples during preparation for analysis. Consequently, the presence of acetone and 2-butanone in the soil samples is considered laboratory contamination.

6.2.1 Groundwater Samples

During purging of groundwater from the monitoring wells and prior to sampling, measurements were made in the field of the pH, temperature, specific conductance, turbidity, oxidation-reduction potential (ORP), and dissolved oxygen (DO) concentrations. The results of the field analyses of these parameters are presented in **Table 5**. Copies of Groundwater Sample Collection Forms containing pertinent information recorded in the field during purging and sampling at each groundwater monitoring well are presented in **Appendix F**.

The results of the field-measured water-quality parameters indicate that the values measured in groundwater collected from the site monitoring wells were generally within applicable stabilization criteria (see Groundwater Sample Collection Forms. Shallow groundwater at the site is acidic to neutral based on the pH values measured in the field (2.90 to 4.65), and groundwater within the deeper water-bearing unit is slightly acidic to neutral (3.91 to 7.60). Specific conductance values ranged from 17.5 (GW-4D) to 161 (GW-6S) µS/cm in groundwater at the monitoring wells. Turbidity values in shallow groundwater ranged from 6.9 (GW-4S) to 9.91 (MW-8) NTUs. ORP values ranged from -10.7 (GW-4D) to 255.1 mV, with higher values generally observed in the shallow groundwater. DO concentrations ranged from 3.73 to 7.7 mg/L, indicating relatively oxidizing conditions in groundwater at the site.

Summarized results of laboratory analyses of the groundwater samples collected from the site monitoring wells during the Phase groundwater quality assessment are presented in **Table 6**. The analytical results indicate that acetone was detected at trace concentrations in six of the 16 samples analyzed within a narrow range (2.59 to 5.09 µg/L). Acetone is a common laboratory solvent that is frequently introduced to environmental samples during preparation for analysis. Consequently, based on the narrow range of low concentrations and the minimal number of samples in which it was detected, the presence of acetone in the groundwater samples is considered laboratory contamination. Trichlorofluoromethane (CFC-11) was detected at a trace concentration in the groundwater sample collected from monitoring well GW-2S. The concentration of trichlorofluoromethane detected (0.439 µg/L) is well below the corresponding 15A NCAC 2L groundwater quality standard (2,000 µg/L). Carbon disulfide was detected at trace concentrations in four of the sixteen groundwater samples collected from the site. The detected concentrations range from 0.641 to 0.823 µg/L, which are well below the corresponding 15A NCAC 2L groundwater quality standard (700 µg/L).

Several trihalomethanes (THMs) were detected at low concentrations in 10 of the 16 groundwater samples collected from the site. The THMs detected include bromodichloromethane, bromoform, chloroform, and dibromochloromethane. THMs are a common byproduct of disinfection of potable water in municipal water treatment plants. Potable water is provided to the Central Carolina facility by the Harnett County Water System. Potable water from the site was used to mix mud for mud rotary drilling used to install the deep monitoring wells, to mix grout to secure the well casings, and to provide hydraulic ballast during hollow stem auger drilling during installation of the shallow monitoring wells to prevent the influx of sand into the auger flight. Moreover, the total concentrations of THMs detected in the groundwater samples collected from the site fall well within the range to total THM concentrations reported in the 2011 Harnett County Water Quality Report (individual concentrations of THMs were not reported). Consequently, the presence of THMs in the groundwater samples collected from the site are attributed to the use of potable water from the site during drilling. It is anticipated that the concentrations of THMs detected in groundwater will decline over time.

The groundwater analytical data indicate that no VOCs were detected in the groundwater sample collected from background shallow monitoring well GW-1S. Carbon disulfide was detected at a trace concentration in background deep monitoring well GW-1D, well below the 15A NCAC 2L groundwater quality standard. THMs were also detected in the groundwater sample collected from background deep monitoring well GW-1D. However, as indicated above, the presence of THMs in groundwater at the site is attributed to the use of potable water from the site during drilling.

The groundwater laboratory analytical results further indicate that PCE, trichloroethene (TCE), and cis 1,2-dichloroethene (cis 1,2-DCE) were detected in groundwater samples collected from the site. The latter 2 compounds are environmental transformation products of the sequential anaerobic reductive biodegradation of PCE. Of these compounds, PCE was detected at the most well locations (6) and is the most widespread chlorinated ethene at the site. The concentrations of PCE detected in groundwater ranged from 0.869 µg/L (GW-3S) to 8.82 µg/L (GW-2S) and were all in excess of the 15A NCAC 2L groundwater quality standard (0.7µg/L). The concentrations of TCE and cis-1,2-DCE detected in groundwater were well below the corresponding NCAC 2L groundwater quality standards (60 and 3 µg/L, respectively).

An isoconcentration contour map of PCE in groundwater, based on the April 2012 groundwater analytical data, is presented as **Figure 10**. The configuration of the isoconcentration contours indicate that the dissolved PCE plume appears to emanate from the general area of the maintenance shelter and extends to the south of this area, in the general direction of shallow groundwater flow, and appears to extend beneath the Phase I/II landfill. The central axis of the plume appears to form a bow shape, extending from the general area of GW-2S to the southeast toward GW-3S and then bending to the south-southwest toward the location of GW-7S. The plume appears to migrate along a pathway of relatively high hydraulic conductivity as determined from the slug tests conducted in the shallow monitoring wells.

6.2 Evaluation of Natural Attenuation Potential

6.2.1 Evidence from the Scientific Literature

Potential mechanisms for the natural attenuation of organic contaminants in groundwater include biological processes, such as aerobic and anaerobic biodegradation; physical processes, such as hydrodynamic dispersion, volatilization and sorption; and chemical reactions, such as hydrolysis and dehydrohalogenation. With respect to dissolved organic contaminants, biodegradation is generally the most important attenuating factor under natural conditions, and is also the process most easily monitored. Most organic contaminants have the potential to degrade naturally in the presence of a viable microbial population, sufficient levels of inorganic nutrients, amenable oxidation-reduction conditions, as well as primary organic substrates and/or electron acceptors.

Microorganisms obtain the energy necessary for production and maintenance of cell material through an electron-transfer process. Naturally occurring organic material generally is utilized by the microorganisms as an electron donor (primary substrate) in the process, while naturally occurring elements or inorganic compounds are utilized as the terminal electron acceptors. Depending on the oxidation-reduction (oxidation-reduction) conditions of the aquifer, anthropogenic organic contaminants can be utilized by the naturally occurring microbes as either primary substrates or electron acceptors. In either case, the organic contaminants undergo

biological transformations. Moreover, biodegradation of organic contaminants may occur through co-metabolism, wherein fortuitous degradation is mediated by enzymes or enzymatic co-factors excreted by the microbes for other purposes. In such cases, the microbes are actively growing by utilizing a primary organic substrate other than the organic contaminant. Co-metabolism is an important mechanism in the natural biotransformation of chlorinated ethenes such as PCE and its environmental transformation products.

Biodegradation of organic contaminants under natural subsurface conditions is well documented in the literature. Relevant discussions of natural biodegradation processes are presented in Knox, Sabatini and Canter (1993)[3], Wiedemeier *et. al.* (1995)[4], Newell *et. al.* (1995)[5], Barbee (1994)[6] and U S. EPA Document EPA/540/R-96/509 (1996). In general, the results of field and laboratory studies have indicated that complete mineralization of organic contaminants to carbon dioxide and water can occur via aerobic and anaerobic biodegradation processes under suitable subsurface conditions.

Unlike petroleum hydrocarbons, dissolved chlorinated ethenes are generally not used as primary organic substrates (electron donors) by microbes during natural attenuation of chlorinated ethene-contaminated aquifers. In general, most chlorinated ethenes undergo degradation either via co-metabolic processes, which occur under both aerobic and anaerobic conditions, or via direct reductive transformation processes in which they are utilized by microbes as electron acceptors during energy metabolism under anaerobic conditions, just as aerobic organisms use oxygen as the electron acceptor under aerobic conditions (McCarty, 1996)[7]. Both co-metabolic and direct reductive degradation of chlorinated ethenes require the presence of separate primary organic substrates for use by the microbes. The extent to which biotransformation of the chlorinated ethenes occurs may be limited by the amount of the primary organic substrate present.

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[3] Knox, R. C., D. A. Sabatini, and L. W. Canter, 1993. *Subsurface Transport and Fate Processes*, Lewis Publishers, 430 p.

[4] Wiedemeier, T. H., R. N. Miller, J. T. Wilson, and D. H. Kampbell, 1995. Significance of anaerobic processes for the intrinsic bioremediation of fuel hydrocarbons, in *The Proceedings of the 1995 Petroleum Hydrocarbons and Organic Chemicals in Groundwater Conference and Exhibition*, Houston, Texas, November 1995, pp. 49-61.

[5] Newell, C. J., J. A. Winters, R. N. Miller, J. Gonzales, H. S. Rifai, and T. H. Wiedemeier, 1995. Modeling intrinsic remediation with multiple electron acceptors: Results from seven sites, in *The Proceedings of the 1995 Petroleum Hydrocarbons and Organic Chemicals in Groundwater Conference and Exhibition*, Houston, Texas, November 1995, pp. 33-47.

[6] Barbee, G. C., 1994. Fate of chlorinated aliphatic hydrocarbons in the vadose zone and groundwater. Groundwater Monitoring and Remediation, vol. IX, no. 1, pp. 129-140.

[7] McCarty, P.L., 1996. Biotic and abiotic transformations of chlorinated solvents in groundwater; in *Symposium on Natural Attenuation of Chlorinated Organics in Groundwater*, U. S. EPA Document EPA/504/R-96/509, pp. 5-8.

Natural biodegradation of PCE occurs by way of both co-metabolism and direct reductive transformation under anaerobic conditions. Biotransformation of PCE under aerobic conditions has not been documented. Under suitable oxidation-reduction conditions, anaerobic transformation of PCE via reductive dechlorination can proceed at least through the formation of ethene. The general transformation sequence is: PCE $\rightarrow$ TCE + Cl^- $\rightarrow$ DCE (1,1-DCE and 1,2-DCE isomers) + Cl^- $\rightarrow$ VC + Cl^- $\rightarrow$ ethene + Cl^-. Anaerobic transformation of PCE through DCE can occur under mildly reducing conditions, however, complete transformation through the production of ethene generally requires more strongly reducing conditions, such as those suitable for methane fermentation (methanogenesis). Consequently, the presence of VC in a PCE-contaminated aquifer is an indicator of methanogenic conditions.

TCE, DCE and VC, as well as other chlorinated ethenes, have been shown to be amenable to oxidative co-metabolic biodegradation under aerobic conditions (McCarty, 1996). The less chlorinated compounds tend to be more readily transformed under aerobic conditions. Oxidation of chlorinated ethenes results in the production of labile, and generally innocuous, end products. Aerobic co-metabolism of chlorinated ethenes can only occur if sufficient DO and suitable primary substrate are present. Such conditions are rare because rapid DO depletion is commonly observed in contaminated aquifers, leading to hypoxic or anoxic conditions. However, such conditions may be artificially created by introduction of oxygen to the subsurface through injection of air via air sparging or through injection of hydrogen peroxide. In addition, such conditions generally occur along the aerobic margins of dissolved contaminant plumes.

In addition to oxidative co-metabolic biodegradation, VC, and possibly the DCE isomers, can also be used as primary organic substrates and directly oxidized under aerobic conditions, or under anaerobic, iron (III)-reducing conditions (Chapelle, 1996). Therefore, natural biodegradation of VC and possibly DCE can occur along the aerobic fringes of a dissolved contaminant plume or in areas of the plume under mild, iron (III)-reducing conditions.

The biochemical energy associated with the various microbial metabolic pathways can be expressed by the oxidation-reduction potential of the alternative electron acceptors, with the more positive oxidation-reduction potentials representing the more thermodynamically favorable reactions (Newell *et. al.*, 1995). The following table shows the relative oxidation-reduction potential and reaction preference for the alternative electron acceptors (adapted from Newell *et. al.*, 1995).

Electron Acceptor	Type of Reaction	Metabolic By-Product	Oxidation-reduction Potential (pH=7; mV)	Reaction Preference
Oxygen	Aerobic	CO_2	+ 820	Most Preferred
Nitrate	Anaerobic	N_2, CO_2	+ 740	⇓
Ferric Iron (solid)	Anaerobic	Ferrous Iron (dissolved)	- 50	⇓
Sulfate	Anaerobic	H_2S	-220	⇓
Carbon Dioxide	Anaerobic	CH_4	-240	Least Preferred

In addition to the biochemical energy of the metabolic pathways, another principal factor influencing the preferential utilization of the various electron acceptors at a particular site is the availability of the specific electron acceptors. The distribution of electron acceptors is a function of site-specific hydrogeochemical processes and can vary significantly among sites.

To assess the potential for alternative biodegradation reactions in groundwater, and the potential for biologically mediated contaminant mass removal (i.e., biodegradation capacity) of the aquifer, the depletion of electron acceptors and accumulation of metabolic by-products in groundwater can be monitored in the field. This is most readily accomplished by measuring the concentrations of the dissolved electron acceptors oxygen, nitrate, and sulfate, and the concentrations of the metabolic by-products dissolved iron and methane in groundwater at background locations and within the area of the dissolved contaminant plume. Qualitatively, a pattern in which depletion of electron acceptor concentrations or accumulation of metabolic by-product concentrations is observed within a contaminant plume relative to background locations is a positive indicator of active microbial metabolism of the dissolved organic contaminants. In addition, the accumulation of dissolved ethene, ethane and chloride (Cl^-) within a dissolved chlorinated ethenes plume relative to background locations is a positive indicator of suitable aquifer conditions for the complete reductive dechlorination of the parent chlorinated ethene.

6.2.2 Evidence from Empirical Site Data

Inasmuch as PCE and its environmental transformation products were not detected in groundwater in the deep monitoring wells at the site, the discussion that follows focuses solely on the shallow surficial aquifer.

The ORP values measured in shallow groundwater at the site fall in the range of mild, nitrate-reducing conditions. Under such mildly reducing conditions, anaerobic reductive dechlorination of PCE typically proceeds only through the production of DCE. The results of analyses of

groundwater samples collected from the shallow surficial aquifer are consistent with anaerobic reductive dechlorination of PCE through the production of DCE as would be expected under mildly reducing conditions.

Dissolved oxygen (DO) concentrations measured in shallow groundwater at the site appear to indicate relatively oxidizing conditions in the shallow surficial aquifer. However, the apparent anaerobic reductive dechlorination of PCE through production of DCE is more consistent with mildly reducing conditions as indicated by the ORP measurements. Therefore, the DO concentrations measured in the field are not considered to be indicative of oxidation-reduction conditions in the surficial aquifer at the time of measurement.

Concentrations of dissolved nitrate, iron, organic carbon, chloride, methane, ethene, and ethane in groundwater measured via laboratory analyses of samples collected from the site monitoring wells on are presented in **Table 6**. The concentrations of dissolved nitrate detected in shallow groundwater in and near the dissolved PCE plume vary within a relatively narrow range of concentrations (with the exception of GW-6S) and do not appear to be depleted relative to background groundwater quality at GW-1S. In fact, nitrate concentrations within the plume appear to be higher than the concentration detected at background monitoring well GW-1S. The concentration of nitrate at GW-6S appears to be anomalously high compared to the concentrations of nitrate detected at the locations of the other shallow monitoring wells. It is noted that an agricultural field is located topographically up gradient to the west of GW-6S, which may be contributing to the observed elevated nitrate concentrations at that location. These results, together with those showing transformation of PCE through production of DCE, indicate that nitrate reduction, while likely occurring, is not vigorous.

Dissolved iron was detected at a trace concentration at GW-5S, but was not detected at any other shallow monitoring well location. These results indicate that iron-reducing conditions are not prominent in the shallow surficial aquifer and are consistent with the ORP measurements in shallow groundwater which indicated mild, nitrate-reducing conditions.

Dissolved organic carbon was detected in groundwater at all shallow monitoring well locations except GW-2S. Moreover, relative to the other shallow monitoring wells located within the PCE plume, the level of dissolved organic carbon measured at the location of GW-7S appears to be depleted. These results indicate that naturally occurring microbes are likely utilizing dissolved organic carbon as a primary carbon source at least within the main body of the dissolved PCE plume and are partially using dissolved chlorinated ethenes as terminal electron acceptors leading to anaerobic reductive dechlorination through the production of DCE.

Chloride was detected in groundwater at all shallow monitoring well locations. The concentrations of chloride detected at all monitoring wells located hydraulically down gradient of the maintenance shelter are approximately 1.85 to 5.3 times higher than the concentration measured at background shallow monitoring well GW-1S. These results are indicative of active anaerobic reductive dechlorination of dissolved chlorinated ethenes in the shallow surficial aquifer.

Dissolved methane, ethene, and ethane were not detected in groundwater at any of the shallow monitoring wells at the site. These results indicate that methanogenic conditions are not prominent in the shallow surficial aquifer and are consistent with the ORP measurements in shallow groundwater which indicated mild, nitrate-reducing conditions. These results are also consistent with the PCE transformation only through the production of DCE.

The results of analyses of groundwater for biotransformation indicator parameters indicate that oxidation-reduction conditions within the shallow surficial aquifer are dominated by mild, nitrate reduction. Anaerobic transformation of PCE through DCE can occur under mildly reducing conditions, however, complete mineralization of PCE generally requires more strongly reducing conditions, such as those suitable for methane fermentation (methanogenesis). Accumulation of DCE under mildly reducing conditions is commonly referred to as the "DCE stall" and further transformation toward complete mineralization requires more favorable oxidation-reduction conditions, as well as sufficient primary organic substrate and terminal electron acceptors within the aquifer. Such favorable geochemical conditions can be produced artificially through introduction to the aquifer of a readily degradable carbon source and other aquifer amendments (e.g., zero-valent iron).

6.3 Results of Potential Receptor Survey

The Central Carolina Tire facility is located in a rural area of Harnett County and encompasses approximately 344 acres. The facility is bordered by residential properties to the north and agricultural properties to the west, south and east. The maintenance shelter and area of assessment are located in the west-central area of the property near agricultural property to the west and the closed Phase I/II landfill to the south.

The maintenance shelter and known areas of dissolved PCE at the site are located between the Phase I/II and Phase III landfills. Based on groundwater elevation data, the direction of shallow groundwater flow in the area of the maintenance shelter is to the southeast toward unnamed streams and associated wetlands that surround the eastern and southern boundaries of the Phase I/II landfill. Consequently, the spectrum of receptors that could potentially be impacted by dissolved PCE in groundwater is limited in scope. Based on the known site conditions, a

receptor survey was conducted to identify water supply wells located within 1,500 feet of the maintenance shelter (source area of the PCE plume). A site map showing a radius of 1,500 feet surrounding the maintenance shelter is included in **Appendix G**.

It is noted that potable water is provided to the Central Carolina facility and surrounding area by the Harnett County Water System. No potable water supply wells are located on the facility property. In addition, no potable water supply wells are located within a 1,500 foot radius of the maintenance shelter. It is noted that well houses were observed at several residential properties to the north of the facility. However, these properties are located well outside a 1,500 foot radius surrounding the maintenance shelter and are also hydraulically up gradient of the area of assessment. Consequently, the wells observed at the residential properties are not considered to be at risk of impact from the PCE plume at the site.

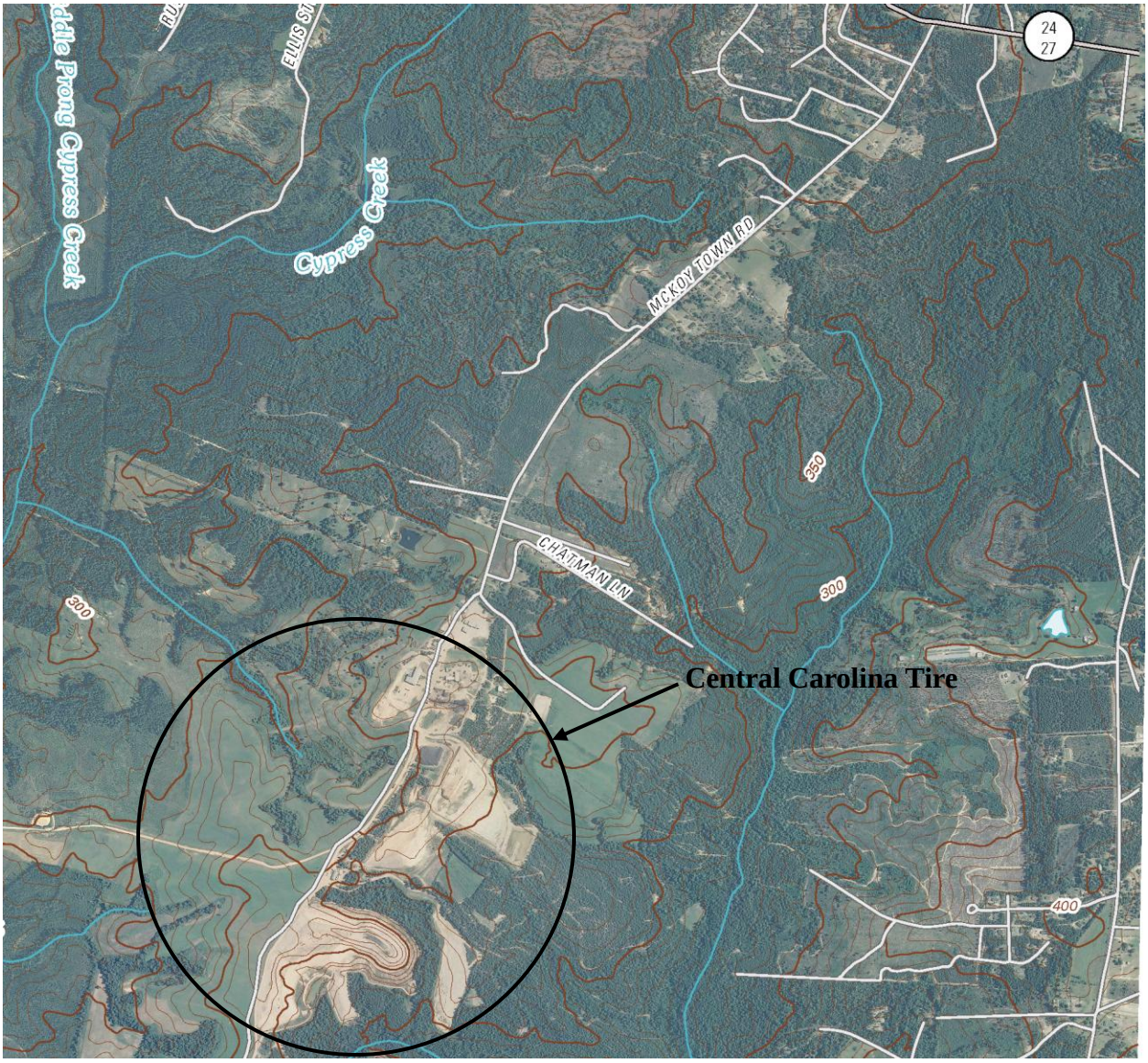
Information regarding the Central Carolina Tire facility and properties immediately surrounding the facility is presented in **Appendix G**. All properties immediately surrounding the facility are owned by Thomas A. Womble (President of Central Carolina Tire) and/or his wife, Diane T. Womble, except for the property located immediately northeast of the facility, which is owned by S. T. Wooten Corporation. The S. T. Wooten Corporation property is located hydraulically up gradient of the maintenance shelter and the area encompassed by the PCE plume and is not considered to be at risk of impact by the plume.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the Phase 2 Hydrogeologic and Groundwater Quality Assessment, an elongated plume of dissolved PCE originates within the shallow surficial aquifer in the vicinity of the facility maintenance shelter and extends to the south toward monitoring well GW-7S and continues under the Phase I/II monofill landfill. These results further indicate that the source of PCE in groundwater is likely located at the maintenance shelter. The maintenance shelter is used to maintain and repair equipment for the landfill, and the interior of the shelter is unpaved. Equipment maintenance and repair includes the use of parts cleaning solutions that contain PCE. Low volume incidental spills of parts cleaning solution onto the ground surface over time are likely the source of PCE in groundwater at the site. The dissolved PCE plume is confined to the shallow surficial aquifer and is not present in the deeper zone of groundwater occurrence monitored by the deep monitoring wells installed as part of the assessment. The dissolved PCE plume has been adequately delineated up gradient of the source area and to the west of monitoring well GW-7S by the existing monitoring well network. However, the plume has not been delineated to the west and east of the maintenance shelter or to the east of monitoring wells GW-5S and MW-8. Inasmuch as the plume extends beneath the closed Phase I/II landfill, delineation of the down gradient extent of the PCE plume will be challenging if not impractical as it would require installation of monitoring wells through the landfill.

Based on the results of the preliminary site assessment presented herein, it is recommended that an additional phase of assessment be conducted at the site to complete delineation of the horizontal extent of dissolved chlorinated ethenes plume in shallow groundwater. As part of the additional phase of assessment, it is recommended that permanent shallow monitoring wells be installed to the east and west of the maintenance shelter, as well as to the east of monitoring wells GW-5S and MW-8. It is further recommended that rising-head permeability (slug) tests be conducted at the monitoring wells to assess the hydraulic properties of the surficial aquifer at the locations of the newly installed wells. A site assessment work plan that presents the details of the proposed additional phase of assessment will be prepared and submitted to the NCDENR Solid Waste Section for review and approval following receipt of comments on this report and acceptance of the recommendations presented herein.

FIGURES AND TABLES



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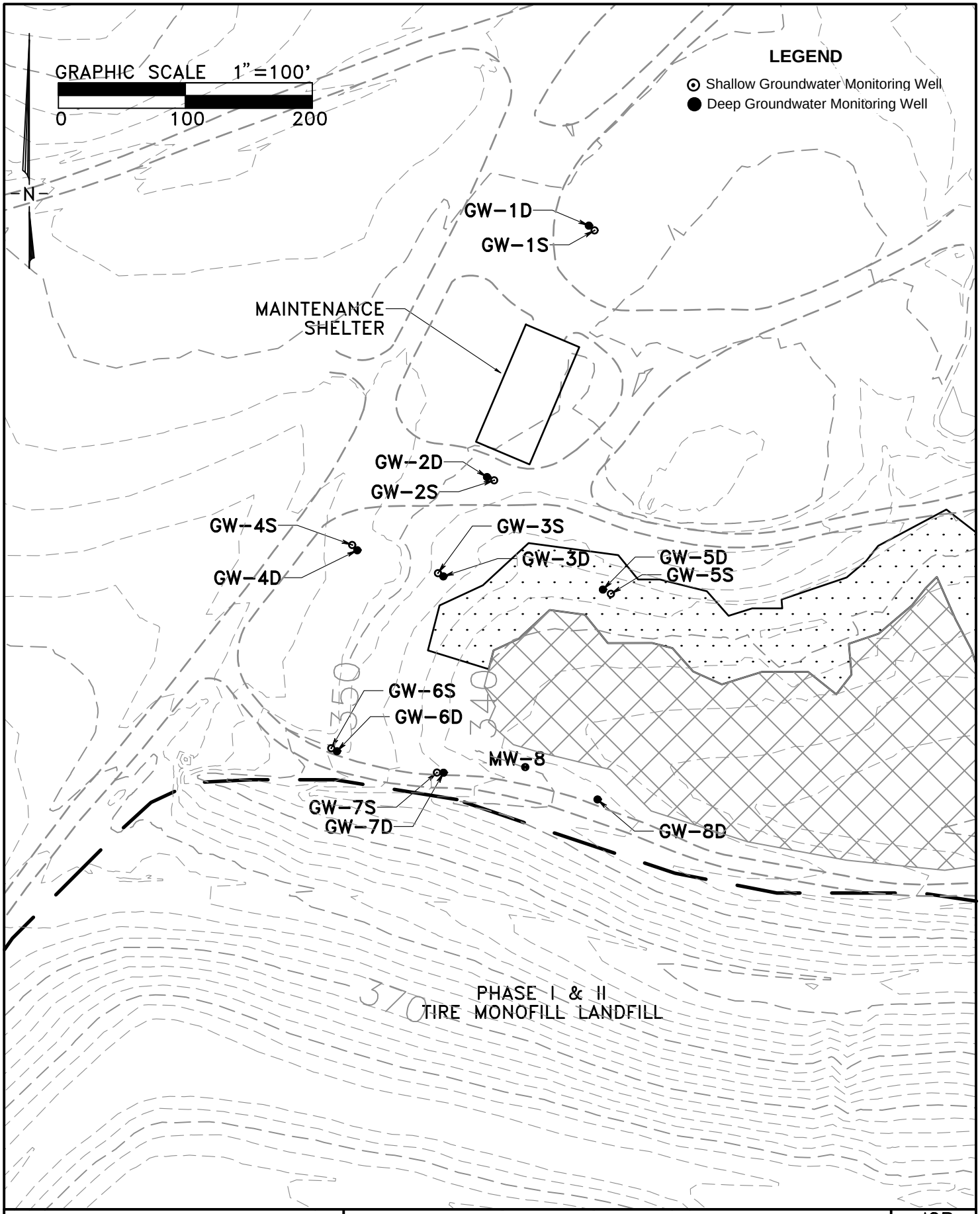
Source: USGS 7.5' Topographic Quadrangle Series
Murchisontown, NC 2010

Nautilus Geologic Consulting, PLLC
11112 Branding Iron Place
Wendell, NC 27591
Office: (919) 366-3663
Cell: (919) 995-0363

SITE LOCATION MAP

Central Carolina Tire Monofill Landfill
Harnett County, North Carolina

Drawn by:	Reviewed by:	Project #:	Drawing #:	Figure No.
USGS		Scale: 1:24,000	Drawing Date: 05/31/2012	1



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SITE MAP
Central Carolina Tire Monofill Landfill
Harnett County, NC
Permit #43-04

JOB

FIG
2

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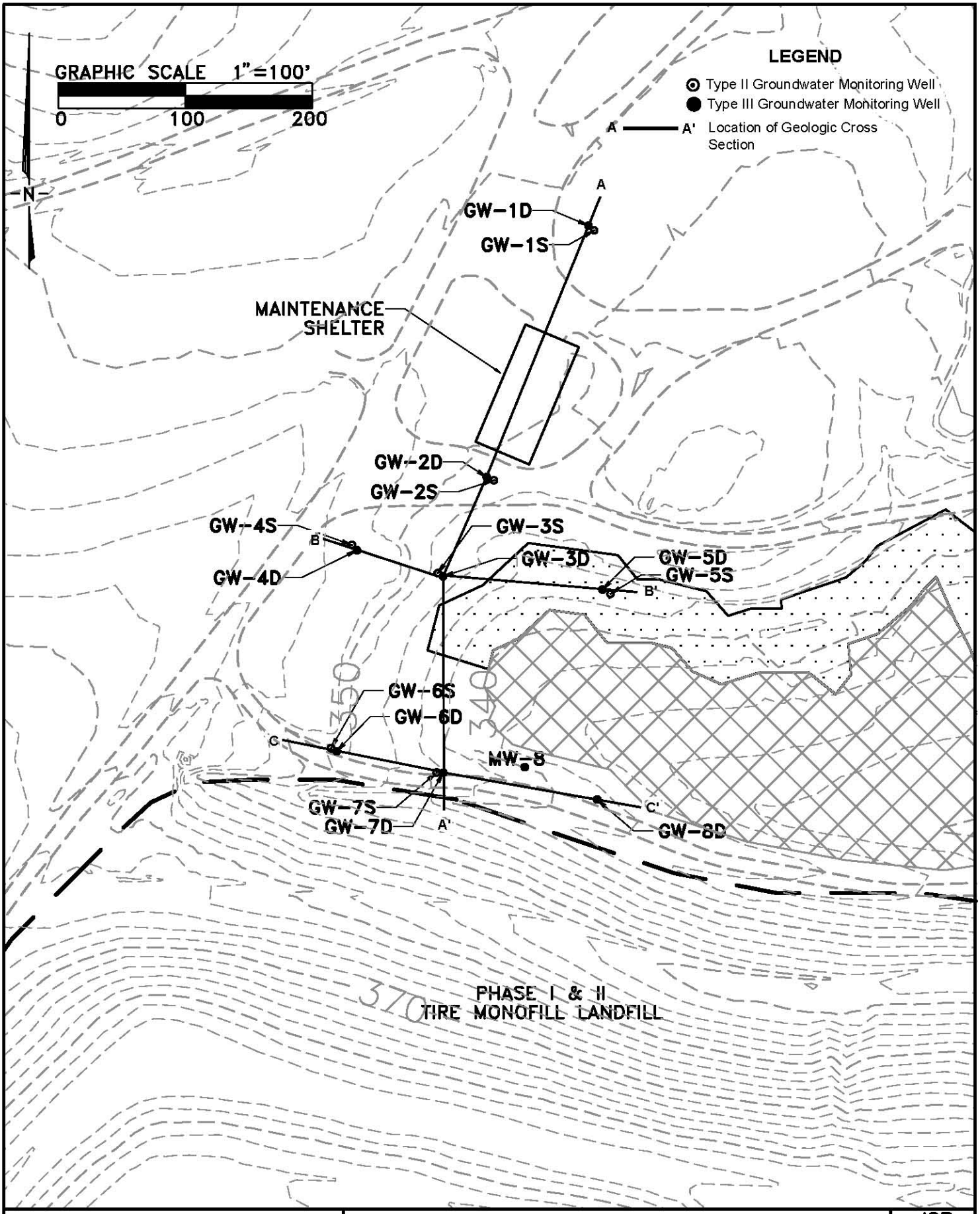

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Locations of Geologic Cross Sections
Central Carolina Tire Monofill Landfill
Harnett County, NC
Permit #43-04

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FIG
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Figure 5
Geologic Cross-Section A-A'

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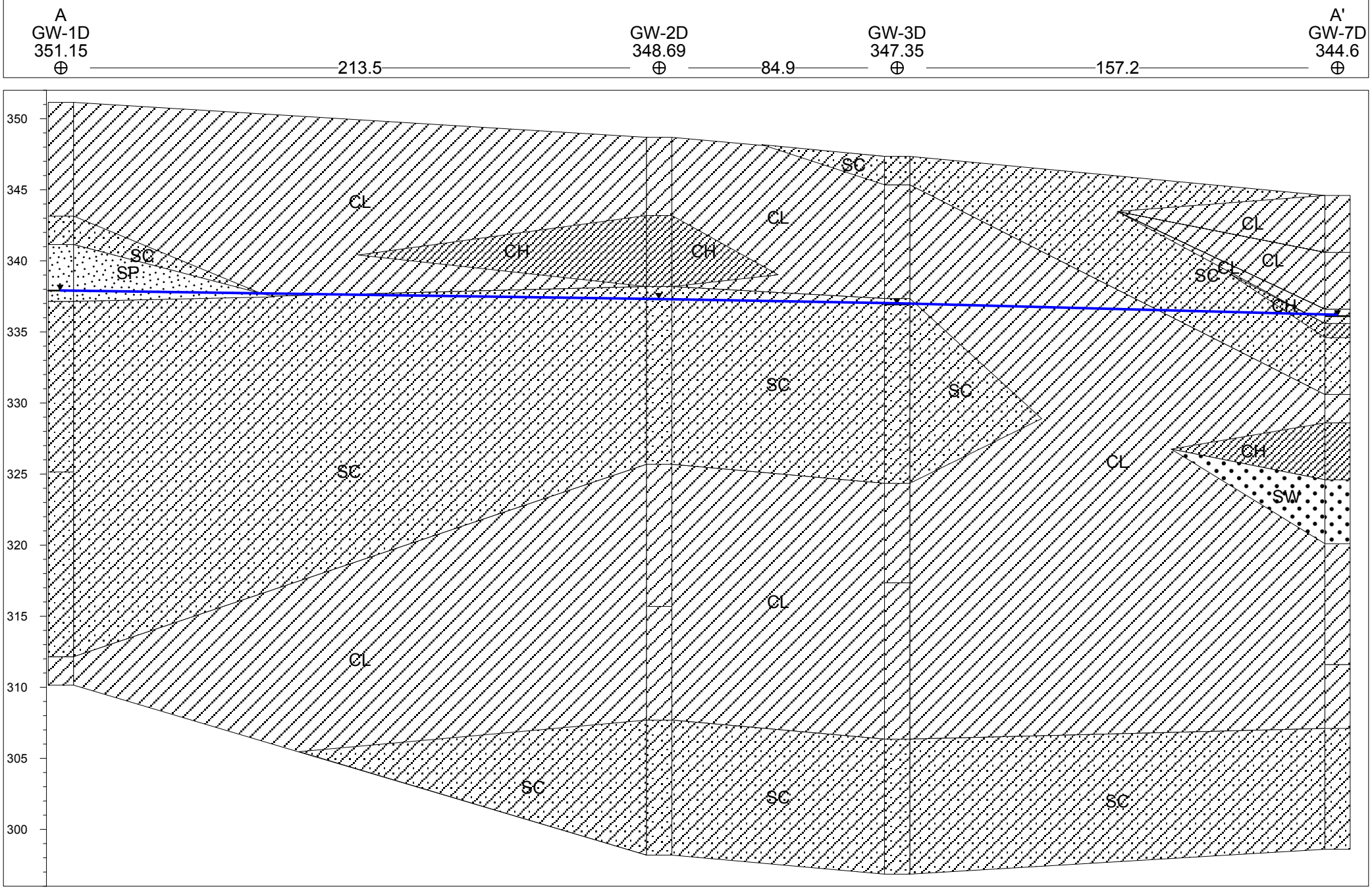

Figure 6
Geologic Cross-Section B-B'

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Water-table elevation in shallow aquifer as measured on 4/30/2012

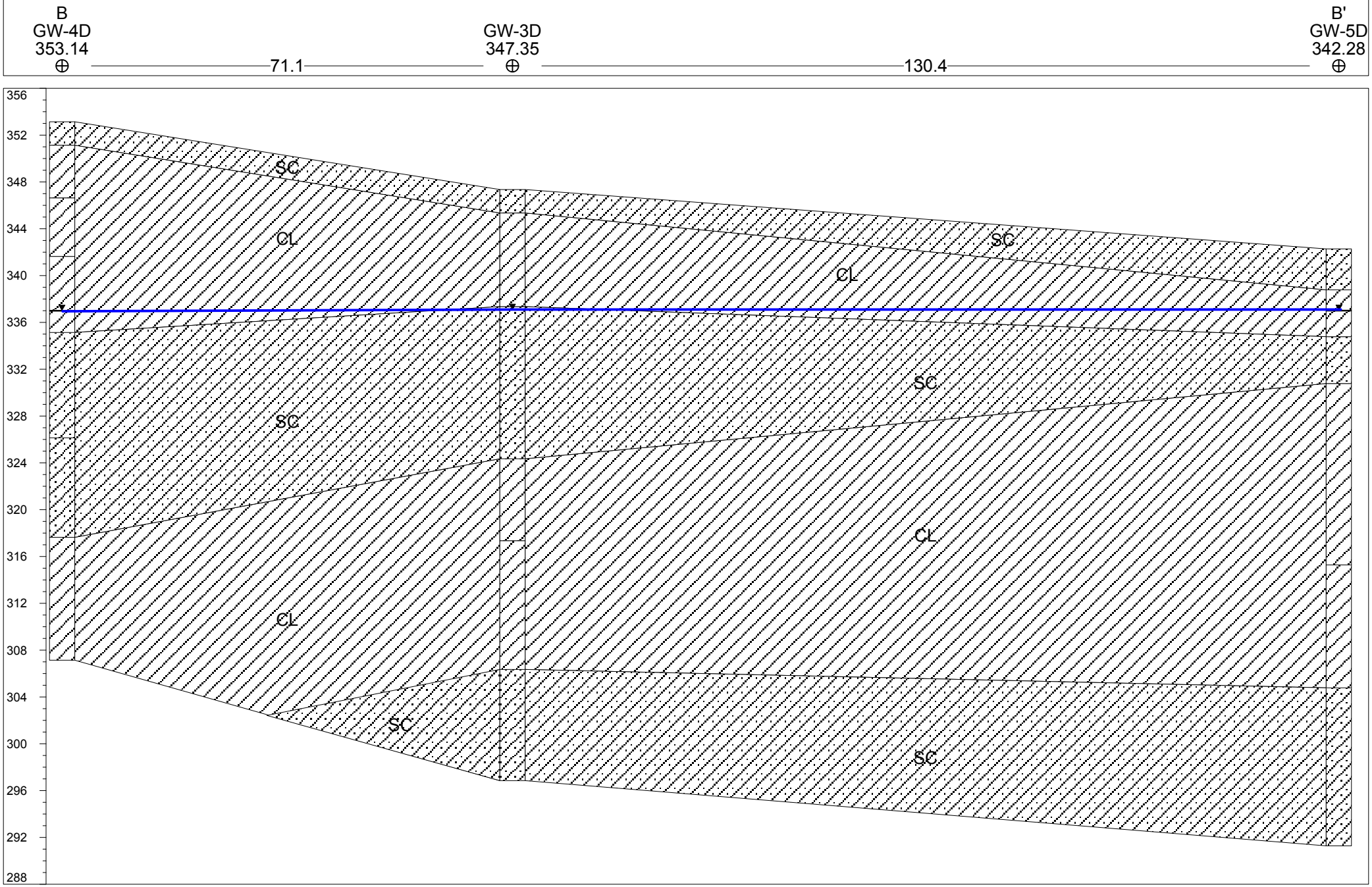

Figure 7
Geologic Cross-Section C-C'

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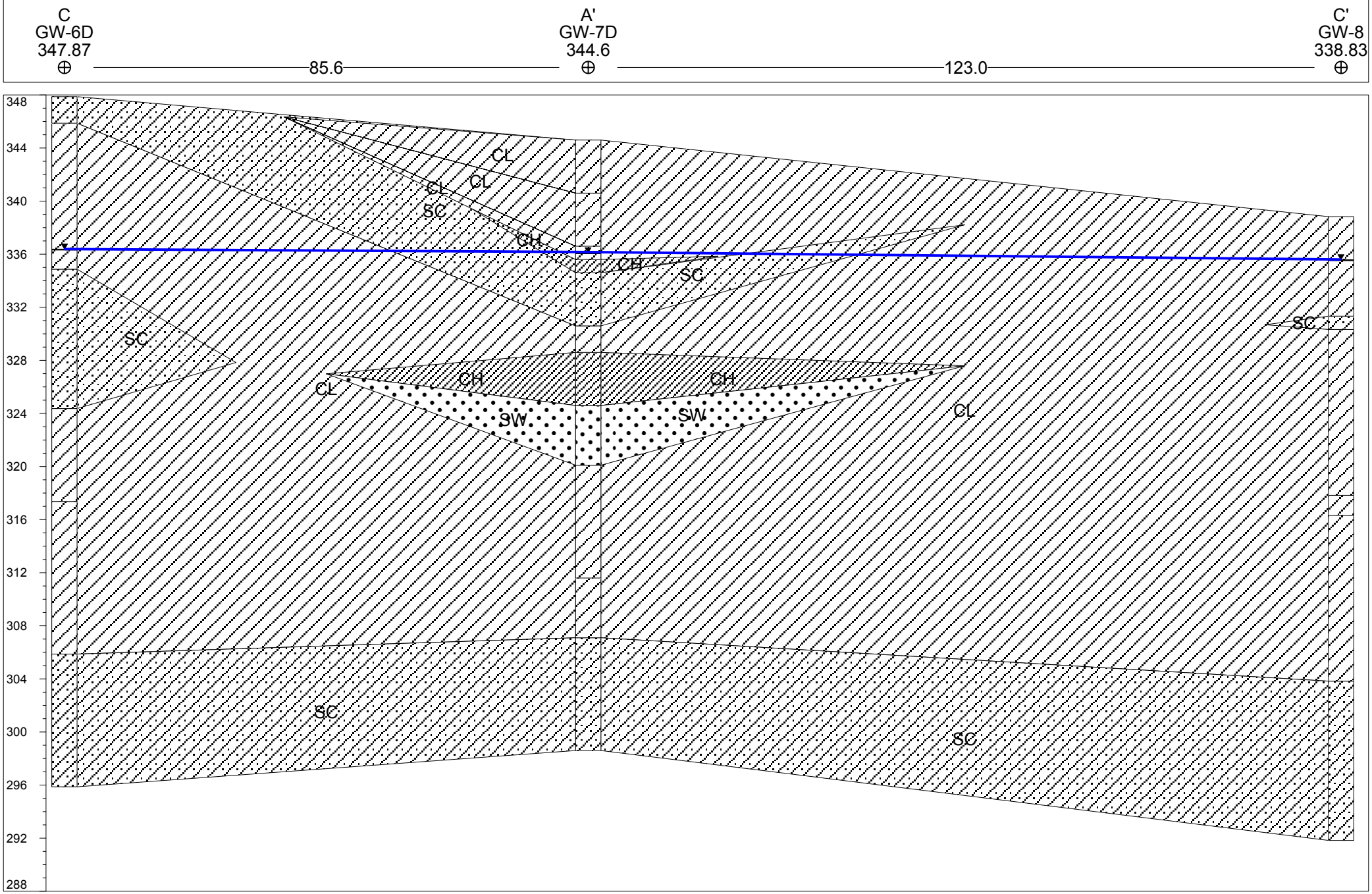
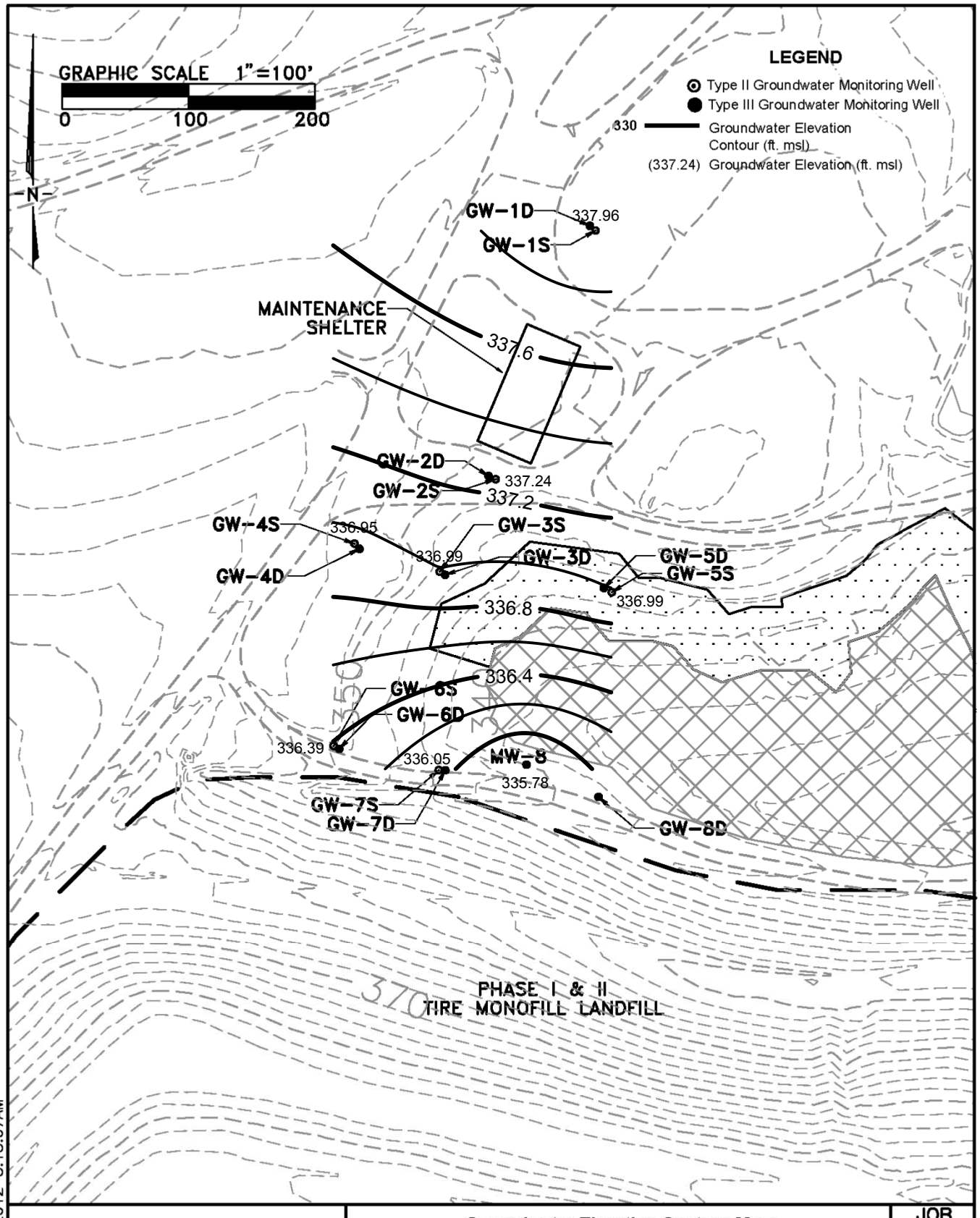
Water-table elevation in shallow aquifer as measured on 4/30/2012





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Groundwater Elevation Contour Map:
Shallow Surficial Aquifer April 2012
Central Carolina Tire Monofill Landfill
Harnett County, NC
Permit #43-04

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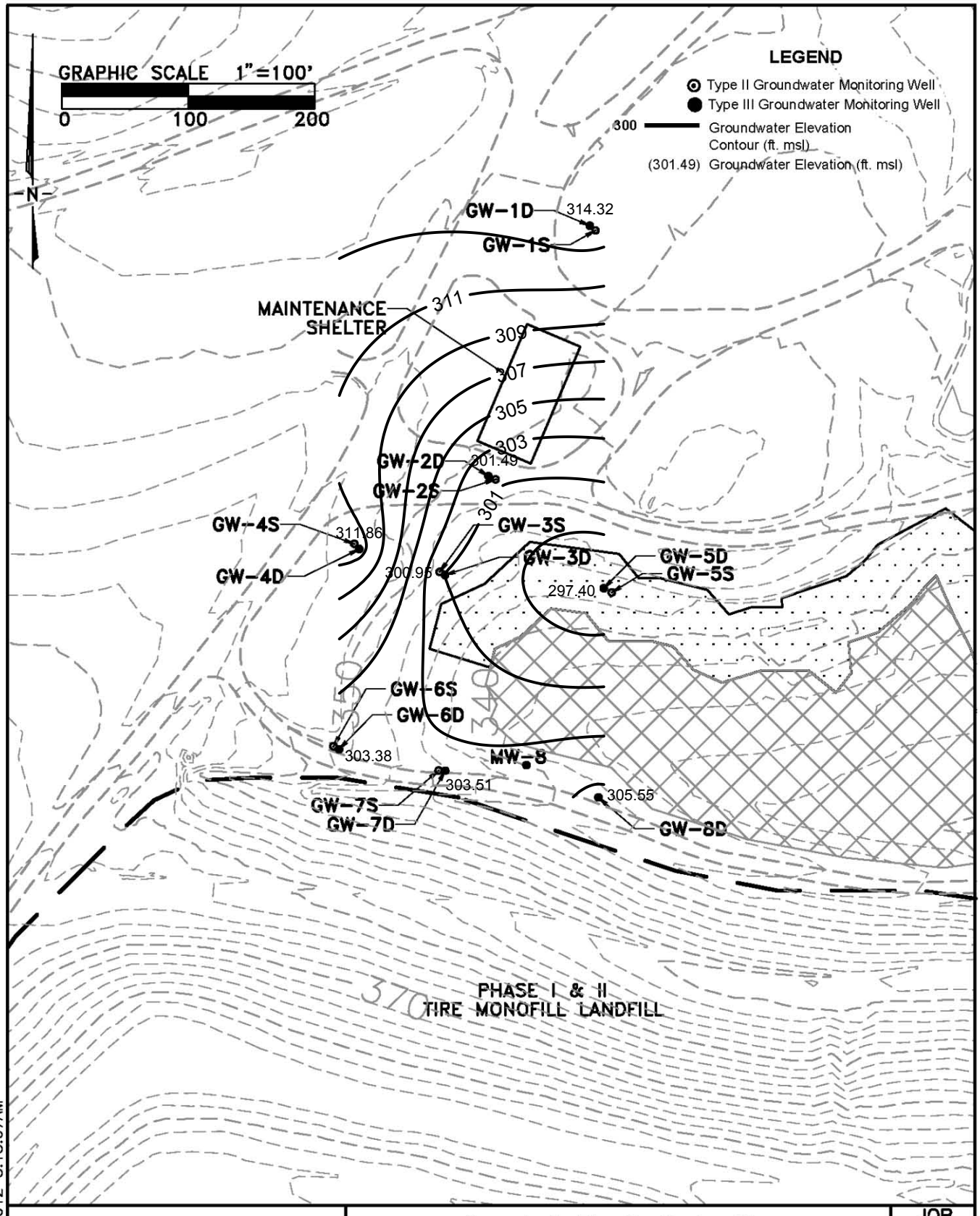
FIG
8



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Groundwater Elevation Contour Map:
Deep Aquifer April 2012
Central Carolina Tire Monofill Landfill
Harnett County, NC
Permit #43-04

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FIG
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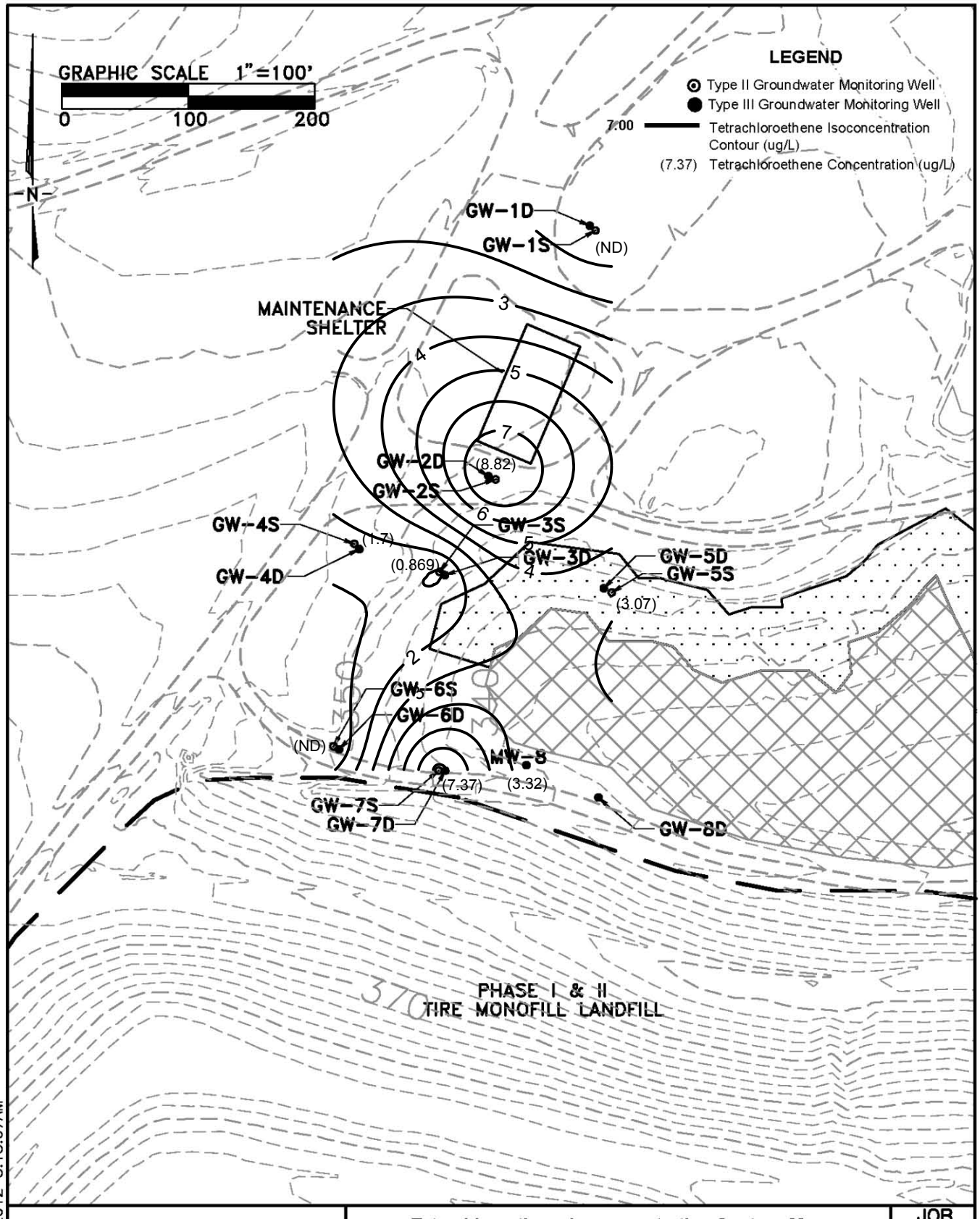

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Tetrachloroethene Isoconcentration Contour Map:
Shallow Surficial Aquifer April 2012
Central Carolina Tire Monofill Landfill
Harnett County, NC
Permit #43-04

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FIG
10

Table 1
Monitoring Well Data
Phase 2 Hydrogeologic and Groundwater Quality Assessment
Central Carolina Tire Monofill Landfill
Harnett County, North Carolina
Permit # 43-04

		Elevation Data			Test Boring Data		Monitoring Well Construction Data				Hydrogeological Unit
Boring Number	Boring Date	PVC Pipe Elev.	Ground Elev.	Stickup feet	Total Depth, ft.	Bottom Elevation	Top of Well Screen Depth, ft.	Top of Well Screen Elev.	Bottom of Well Screen Depth, ft.	Bottom of Well Screen Elev.	
GW-1S	4/10/2012	352.95	351.15	1.80	22.0	329.15	12.0	339.15	22.0	329.15	1
GW-1D	4/13/2012	353.30	351.15	2.15	40.0	311.15	30.0	321.15	40.0	311.15	3
GW-2S	4/10/2012	350.26	348.47	1.79	20.0	328.47	10.0	338.47	20.0	328.47	1
GW-2D	4/16/2012	350.63	348.69	1.94	50.0	298.69	40.0	308.69	50.0	298.69	3
GW-3S	4/10/2012	348.93	346.97	1.95	18.0	328.97	8.0	338.97	18.0	328.97	1
GW-3D	4/17/2012	349.45	347.35	2.10	50.0	297.35	40.0	307.35	50.0	297.35	3
GW-4S	4/11/2012	354.80	352.82	1.98	24.0	328.82	14.0	338.82	24.0	328.82	1
GW-4D	4/18/2012	355.00	353.14	1.86	44.0	309.14	34.0	319.14	44.0	309.14	3
GW-5S	4/11/2012	344.36	342.19	2.17	16.0	326.19	6.0	336.19	16.0	326.19	1
GW-5D	4/17/2012	345.42	342.28	3.14	49.0	293.28	39.0	303.28	20.0	322.28	3
GW-6S	4/11/2012	349.48	348.07	1.41	20.0	328.07	10.0	338.07	20.0	328.07	1
GW-6D	4/19/2012	349.65	347.87	1.78	52.0	295.87	42.0	305.87	52.0	295.87	3
GW-7S	4/12/2012	346.76	344.76	2.00	17.0	327.76	7.0	337.76	17.0	327.76	1
GW-7D	4/18/2012	346.58	344.60	1.98	45.0	299.60	35.0	309.60	45.0	299.60	3
GW-8D	4/13/2012	340.69	338.83	1.86	47.0	291.83	37.0	301.83	47.0	291.83	3
MW-8	ca. 10/2002	342.80	339.12	3.68	20.0	319.12	10.0	329.12	20.0	319.12	1

Notes:
1. All depths referenced from ground surface
2. Monitoring wells designated with "S" are shallow Type II wells; monitoring wells designated with "D" are deep Type III wells, with the exception of GW-8D which is a deep Type II well.

Table 2
Geotechnical Laboratory Data
Grain Size Distribution and Soil Classification
Phase 2 Hydrogeologic and Groundwater Quality Assessment
Central Carolina Tire Monofill Landfill
Harnett County, North Carolina
Permit # 43-04

Boring Number	Sample Depth, ft.	% Gravel >4.5 mm	%Sand 4.5 -- 0.075 mm	%Fines 0.075 mm>	%Silt 0.075 -- 0.005 mm	%Clay 0.005 mm>	Effective Porosity	USCS Class	Hydrogeologic Description
GW-1S	18.5-20	1.76	85.68	12.56	4.56	8.00	31%	SC	Clayey Sand
GW-2S	13-15	0.26	81.31	18.44	5.44	13.00	23%	SC	Clayey Sand
GW-3S	18-20	2.80	85.41	11.79	4.79	7.00	33%	SC	Clayey Sand
GW-4S	18-20	0.00	84.41	15.59	5.59	10.00	27%	SC	Clayey Sand
GW-5S	8-10	0.00	86.43	13.57	4.57	9.00	26%	SC	Clayey Sand
GW-6S	16-18	0.14	84.94	14.92	5.92	9.00	28%	SC	Clayey Sand
GW-7S	10-12	0.00	90.16	9.84	2.34	7.50	32%	SC	Clayey Sand
GW-8D	40-42	0.00	71.86	28.14	12.14	16.00	15%	SC	Clayey Sand
GW-1D	34-36	0.00	74.41	25.59	4.59	21.00	13.5%	SC	Clayey Sand
GW-2D	41.5-43.5	0.00	65.91	34.09	8.59	25.50	8%	SC	Clayey Sand
GW-3D	43.5-45.5	0.00	76.55	23.45	3.95	19.50	14%	SC	Clayey Sand
GW-4D	34-36	0.18	70.05	29.77	6.77	23.00	12%	SC	Clayey Sand
GW-5D	44-46	0.13	66.57	33.30	10.30	23.00	10%	SC	Clayey Sand
GW-6D	44-46	0.30	73.17	26.53	5.03	21.50	13%	SC	Clayey Sand
GW-7D	39-41	0.12	70.58	29.30	9.30	20.00	12.5%	SC	Clayey Sand

Notes to Above: Effective porosity values calculated from Textural Classification Triangle method referenced to A.I. Johnson, US Geological Survey Water Supply Paper 1662-D, 1967 (after C.W. Fetter, Applied Hydrogeology, 3rd ed. 1988)
Hydrogeologic descriptions based on field observations.

Table 3
Hydrogeologic Properties of Surficial Aquifer Sediments
Phase 2 Hydrogeologic and Groundwater Quality Assessment
Central Carolina Tire Monofill Landfill
Harnett County, North Carolina
Permit # 43-04

Piezometer Number	Hydrological Unit	Hydrogeologic Description [1]	Effective Porosity [2]	Hydraulic Conductivity (k)		
				ft/min	ft/day	cm/sec
GW-1S	1	Surficial Aquifer	31%	1.51E-02	2.17E+01	7.67E-03
GW-2S	1	Surficial Aquifer	23%	2.00E-02	2.88E+01	1.02E-02
GW-3S	1	Surficial Aquifer	33%	2.12E-02	3.05E+01	1.08E-02
GW-4S	1	Surficial Aquifer	27%	4.50E-03	6.48E+00	2.29E-03
GW-5S	1	Surficial Aquifer	26%	2.94E-02	4.23E+01	1.49E-02
GW-6S	1	Surficial Aquifer	28%	2.40E-03	3.46E+00	1.22E-03
GW-7S	1	Surficial Aquifer	32%	1.64E-02	2.36E+01	8.33E-03
MW-8	1	Surficial Aquifer	29%	2.70E-03	3.89E+00	1.37E-03
			Geometric Mean:	**9.87E-03**	**1.42E+01**	**5.01E-03**

Notes
(1) Surficial Aquifer (Middendorf Formation) - very fine to medium variably clayey sand
(2,3) Effective porosity values for soils assigned based on laboratory testing (see Table 2)

Table 4
Horizontal Ground Water Gradient and Velocity Calculations
Phase 2 Hydrogeologic and Groundwater Quality Assessment
Central Carolina Tire Monofill Landfill
Harnett County, North Carolina
Permit # 43-04

Well/Piez. No.	Hydrologic Unit	Hydraulic Conductivity (k)			Grd. Water Elevation*	Reference Elevation*	delta-Elev. in feet	Map Length in feet	Hydraulic Gradient (I)	Effective Porosity (n)	GW Velocity (V), ft/day	Unit Average Velocity, ft/day
		ft/min	ft/day	cm/sec								
GW-1S	Surficial Aq.	1.51E-02	2.17E+01	7.67E-03	337.96	337.6	0.36	106.74	0.003	0.31	0.24	
GW-2S	Surficial Aq.	2.00E-02	2.88E+01	1.02E-02	337.24	337.2	0.04	12.36	0.003	0.23	0.40	
GW-3S	Surficial Aq.	2.12E-02	3.05E+01	1.08E-02	336.99	336.8	0.19	29.21	0.006	0.33	0.59	
GW-4S	Surficial Aq.	4.50E-03	6.48E+00	2.29E-03	336.95	336.8	0.15	42.69	0.003	0.27	0.08	
GW-5S	Surficial Aq.	2.94E-02	4.23E+01	1.49E-02	336.99	336.8	0.19	23.6	0.008	0.26	1.32	
GW-6S	Surficial Aq.	2.40E-03	3.46E+00	1.22E-03	336.39	336.4	0.01	1.12	0.009	0.28	0.12	
GW-7S	Surficial Aq.	1.64E-02	2.36E+01	8.33E-03	336.05	336.2	0.15	11.24	0.013	0.32	0.99	
MW-8	Surficial Aq.	2.70E-03	3.89E+00	1.37E-03	335.78	336.2	0.42	23.6	0.018	0.29	0.24	0.53

Notes: Ground Water Velocity Calculated from Equation

$V=KI/n$ where K = Hydraulic Conductivity in units of ft/day
I = Hydraulic Gradient in units of ft/ft
n = Effective Porosity (unitless)

Hydraulic Conductivity values from aquifer slug testing using the Bouwer-Rice method
Hydraulic Gradient values were calculated from the potentiometric surface map
Effective Porosity values derived from Table 3
*Ground water elevations and potentiometric surfaces for reference elevations derived from water level observations made 4/30/2012.

Table 5
Groundwater Field Data
Phase 2 Hydrogeologic and Groundwater Quality Assessment
April 30 - May 1, 2012
Central Carolina Tire Monofill Landfill
Harnett County, North Carolina
Permit # 43-04

Well Identity	Well Depth (Feet BGS)	Well Diameter (Inches)	Top of Casing Elevation (Feet MSL)	Ground Surface Elevation (Feet MSL)	Depth to Groundwater (Feet BTOC)	Groundwater Elevation (Feet MSL)	Field Parameters					
							Temp. C°	pH	S.C. umhos/cm	Turbidity (ntu)	ORP (mV)	DO (mg/L)
GW-1S	22.0	2.0	352.95	351.15	14.99	337.96	20.4	4.19	27	8.4	235.7	5.6
GW-1D	40.0	2.0	353.30	351.15	38.98	314.32	18.3	3.94	160	NA	78.7	7.17
GW-2S	20.0	2.0	350.26	348.47	13.02	337.24	19.5	4.18	68	9.83	231.3	5.84
GW-2D	50.0	2.0	350.63	348.69	49.14	301.49	18.1	5.04	168	NA	41	6.28
GW-3S	18.0	2.0	348.93	346.97	11.94	336.99	20.1	4.03	59	8.74	217.2	6.38
GW-3D	50.0	2.0	349.45	347.35	48.50	300.95	17.8	3.91	86	NA	67.9	7.64
GW-4S	24.0	2.0	354.80	352.82	17.85	336.95	18.6	3.82	47	6.9	68.3	7.4
GW-4D	44.0	2.0	355.00	353.14	43.14	311.86	18.1	7.60	17.5	NA	-10.7	6.7
GW-5S	16.0	2.0	344.36	342.19	7.37	336.99	16.7	2.90	92	8.1	170.3	5.83
GW-5D	49.0	2.0	345.42	342.28	48.02	297.40	17.8	3.91	124	NA	53.1	6.29
GW-6S	20.0	2.0	349.48	348.07	13.09	336.39	25.2	4.65	161	9.28	186.9	3.73
GW-6D	52.0	2.0	349.65	347.87	46.27	303.38	18.0	6.84	149	NA	50.6	6.91
GW-7S	17.0	2.0	346.76	344.76	10.71	336.05	18.4	3.88	47	9.38	255.1	6.81
GW-7D	45.0	2.0	346.58	344.60	43.07	303.51	17.2	7.40	154	NA	12.6	4.97
GW-8D	47.0	2.0	340.69	338.83	35.14	305.55	17.3	6.04	154	NA	90.5	7.7
MW-8	20.0	2.0	342.80	339.12	7.02	335.78	22.9	4.33	57	9.91	216.9	4.05

Notes: BGS = Below Ground Surface
MSL = Mean Sea Level
BTOC = Below Top of Casing
GW = Groundwater
mV = millivolts
S.C. = Specific Conductance
ntu = Nephelometric Turbidity Units
Monitoring wells designated with "S" are shallow Type II wells; monitoring wells designated with "D" are deep Type III wells.
ORP = Oxidation-Reduction Potential
DO = Dissolved Oxygen

Table 6
Summarized Laboratory Analytical Results for Groundwater Samples
Phase 2 Hydrogeologic and Groundwater Quality Assessment
April 2012
Central Carolina Tire Monofill Landfill
Harnett County, North Carolina
Permit # 43-04

VOLATILE ORGANIC CONSTITUENTS SW 846 8260B (µg/L)	GW-1S	GW-1D	GW-2S	GW-2D	GW-3S	GW-3D	GW-4S	GW-4D	GW-5S	GW-5D	GW-6S	GW-6D	GW-7S	GW-7D	GW-8D	MW-8	NCAC 2L STD (ug/L)
Acetone	ND	5.00	ND	4.31	ND	5.09	ND	ND	ND	4.36	ND	3.08	ND	2.59	ND	ND	6000
Bromodichloromethane	ND	**8.07**	ND	**0.885**	ND	**2.04**	**5.29**	**1.92**	ND	**6.55**	**5.90**	**1.01**	ND	**3.63**	0.403	ND	0.6
Bromoform	ND	1.96	ND	ND	ND	1.08	0.831	ND	ND	1.68	0.871	0.937	ND	1.22	ND	ND	4
Carbon Disulfide	ND	0.641	ND	ND	ND	ND	ND	0.823	ND	0.71	ND	0.811	ND	ND	ND	ND	700
Chloroform (Trichloromethane)	ND	12.9	ND	4.79	ND	4.61	5.94	4.08	ND	11.5	6.09	2.86	ND	7.17	0.716	ND	70
Dibromochloromethane	ND	**6.50**	ND	**0.763**	ND	ND	**3.94**	**1.54**	ND	**5.46**	**4.59**	**1.08**	ND	**3.07**	**0.592**	ND	0.4
cis-1,2-Dichloroethene	ND	ND	8.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.83	ND	ND	ND	60
Tetrachloroethene (Tetrachloroethylene), (PCE)	ND	ND	**8.82**	ND	**0.869 J**	ND	**1.70**	ND	**3.07**	ND	ND	ND	**7.37**	ND	ND	**3.32**	0.7
Trichloroethene (Trichloroethylene), (TCE)	ND	ND	1.33	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.43	ND	ND	ND	3
Trichlorofluoromethane (CFC-11)	ND	ND	0.439	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2000
Dissolved Gases EPA 5021/RSK175 (µg/L)																	**NCAC 2L STD (ug/L)**
Methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.44 J	ND	NA
Ethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.44 J	ND	NA
Ethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.57 J	ND	NA
MISCELLANEOUS (µg/L)																	**NCAC 2L STD (ug/L)**
Dissolved Iron (EPA 6010 B)	ND	191	ND	249	ND	**456**	ND	**789**	57.9	**548**	ND	142	ND	**382**	**315**	ND	300
Chloride (EPA 325.2)	2170	9240	5590	8180	4240	8330	4700	3540	4240	9460	11500	3340	4010	5370	4940	8240	250000
Nitrate (EPA 353.2)	1490	101	4150	79	4500	149	1230	215	8620	228	**13000**	29	2340	135	2930	4280	10000
Dissolved Organic Carbon (EPA 415.1)	812 J	4800	ND	2740	1370	8970	2220	8250	2100	8750	1200	3880	891 J	5010	9850	1510	NA

Notes:
Values in boldface exceed the corresponding 15A NCAC 2L .0202 groundwater quality standard for Class GA groundwater.
NCAC 2L STD = North Carolina Groundwater Standard established in Title 15A of North Carolina Administrative Code Subchapter 2L
J = Estimated value above laboratory method detection limit.
B = Analyte found in associated field and/or laboratory blank. NA = Not applicable.
NS = Not Sampled, No sample exists for this sampling period ND = None detected above laboratory method detection limit.

APPENDIX A

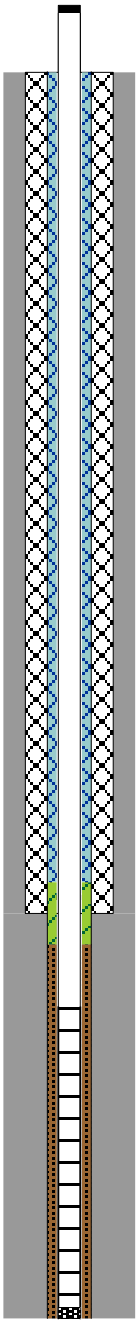
Boring Logs and Well Construction Schematics

Nautilus Geologic Consulting, PLLC
11112 Branding Iron Pl
Wendell, NC 27591
919-366-3663 (Office)
919-995-0363 (Cell)
bboutinpg@bellsouth.net

PROJECT: Central Carolina Tire		Well ID: GW-1D	
LOCATION: Cameron, NC		Client: Central Carolina Tire	
DRILLING CONTRACTOR: Soil Drilling Services		NORTHING: 548168.20863	EASTING: 1953595.95715
DRILLING EQUIPMENT: CME 55		GROUND SURFACE ELEV.: 351.15	TOC ELEVATION:
DRILLING METHOD: Mud Rotary		TOTAL DEPTH: 40	DEPTH TO WATER: 36.83
LOGGED BY: BSB	SAMPLING METHOD: 2-foot variable	DATE STARTED: 4/13/12	DATE COMPLETED: 4/13/12

Elev. (feet)	USCS	Graphic Log	Description	REC (in)	# Blows/ft
352					
350	CL		Sandy CLAY: little to some very fine to medium sand; tr. silt; dry; lt. brown.	18	3
348				15	2
346				4	2
344				3	2
342	SC		Clayey SAND: very fine to medium; little to some clay; trace silt; tan to light brown; moist.	12	9
340	SP		SAND: fine to medium; trace clay; tan; very moist.	4	10
338				4	14
336	SC		Clayey SAND: very fine to medium; little to some clay; few clay seams 18.5-20'; loose; tan; wet.	24	7
334					
332				24	6
330					
328					
326					
324			Clayey SAND: vf-med sand; micaceous; some clay; dense; med. plastic; sand abundance increases below appr. 35.5'; mottled or-tan-br-gray turning gray below 35.5'.		
322				23	31
320	SC				
318					
316				22	24
314					
312	CL		CLAY: very stiff; med. plastic; mottled red-gray.	24	34
310					

Well Construction



Finished within 6" steel, stickup well protector with hinged, locking lid.

4" ID Sch 40 PVC outer casing

2" ID Sch 40 PVC solid riser.

No. 2 Sand Filter Pack

2" ID Sch 40 PVC 0.010" machine slotted well screen.

Depth to GW measured on 4/30/12

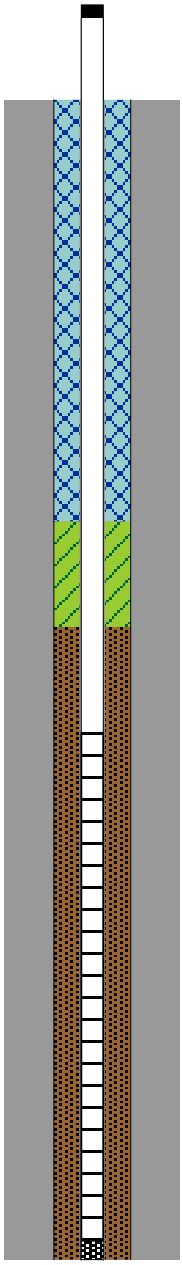
NOTES: Type III Well

Nautilus Geologic Consulting, PLLC
11112 Branding Iron Pl
Wendell, NC 27591
919-366-3663 (Office)
919-995-0363 (Cell)
bboutinpg@bellsouth.net

PROJECT: Central Carolina Tire		Well ID: GW-1S	
LOCATION: Cameron, NC		Client: Central Carolina Tire	
DRILLING CONTRACTOR: Soil Drilling Services		NORTHING: 548164.49659	EASTING: 1953600.46195
DRILLING EQUIPMENT: CME 55		GROUND SURFACE ELEV.: 351.15	TOC ELEVATION:
DRILLING METHOD: Hollow stem auger		TOTAL DEPTH: 22	DEPTH TO WATER: 13.19
LOGGED BY: BSB	SAMPLING METHOD: 2-foot variable	DATE STARTED: 4/10/12	DATE COMPLETED: 4/10/12

Elev. (feet)	USCS	Graphic Log	Description	REC (in)	# Blows/ft
352					
350	CL		Sandy CLAY: little to some very fine to medium sand; tr. silt; dry; lt. brown.	18	3
348				15	2
346				4	2
344				3	2
342	SC		Clayey SAND: very fine to medium; little to some clay; trace silt; tan to light brown; moist.	12	9
340	SP		SAND: fine to medium; trace clay; tan; very moist.	4	10
338				4	14
336	SC		Clayey SAND: very fine to medium; little to some clay; few clay seams 18.5-20'; loose; tan; wet.	24	7
334					
332				24	6
330					
328					

Well Construction



Finished within 4" steel, stickup well protector with hinged, locking lid.

2" ID Sch 40 PVC solid riser.

Depth to GW measured on 4/30/12

2" ID Sch 40 PVC 0.010" machine slotted well screen.

No. 2 Sand Filter Pack

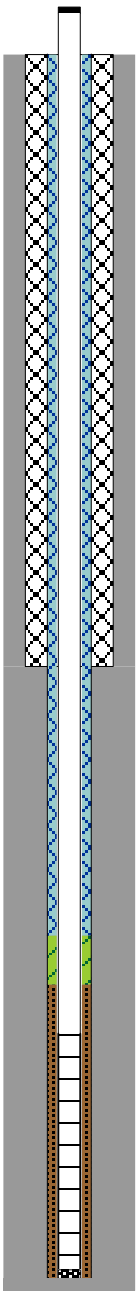
NOTES: Type II Well

Nautilus Geologic Consulting, PLLC
11112 Branding Iron Pl
Wendell, NC 27591
919-366-3663 (Office)
919-995-0363 (Cell)
bboutinpg@bellsouth.net

PROJECT: Central Carolina Tire		Well ID: GW-2D	
LOCATION: Cameron, NC		Client: Central Carolina Tire	
DRILLING CONTRACTOR: Soil Drilling Services		NORTHING: 547970.2699	EASTING: 1953515.82744
DRILLING EQUIPMENT: CME 55		GROUND SURFACE ELEV.: 348.69	TOC ELEVATION:
DRILLING METHOD: Mud Rotary		TOTAL DEPTH: 50	DEPTH TO WATER: 47.2
LOGGED BY: BSB	SAMPLING METHOD: 2-foot variable	DATE STARTED: 4/16/12	DATE COMPLETED: 4/16/12

Elev. (feet)	USCS	Graphic Log	Description	REC (in)	# Blows/ft
352					
348	CL		Sandy CLAY: some vf-f sand; tr. silt; dry; brittle; or-red-br.	17	15
				15	20
344				20	20
	CH		Silty Sandy CLAY; some vf-m sand; little silt; micaceous; plastic; tan-br-gray-red; some purple clay with depth; v. moist to we	18	23
340				22	18
			Clayey SAND: vf-m; some clay; little silt; tan-br; becomes tan-br-purple with depth; some clay seams 1-2" thck at bottom of section.	18	13
336				24	5
332	SC				
				24	3
328					
324			Sandy CLAY: little to some vf-m sand; med. plastic; micaceous; mottled tan-or-gr-br.		
320	CL			20	21
316					
			CLAY: very stiff; med. plastic; tr vf-f sand; micaceous; gray to mottled gray-red-purple with depth.	24	29
312	CL				
				24	31
308					
			Clayey SAND: vf-m sand; some clay; dense; weathered white feldspar grains; micaceous; gray; intermittent dense and loose layers to 46' then dense.	20	18
304	SC				
300				8	>100
296					

Well Construction



Finished within 6" steel, stickup well protector with hinged, locking lid.

4" ID Sch 40 PVC outer casing

2" ID Sch 40 PVC solid riser.

No. 2 Sand Filter Pack

2" ID Sch 40 PVC 0.010" machine slotted well screen.

Depth to GW measured on 4/30/12

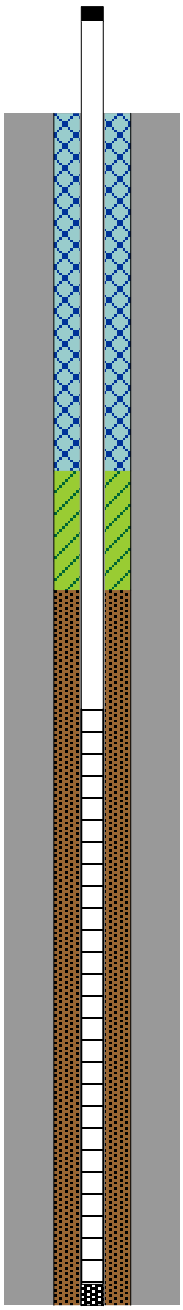
NOTES: Type III Well

Nautilus Geologic Consulting, PLLC
11112 Branding Iron Pl
Wendell, NC 27591
919-366-3663 (Office)
919-995-0363 (Cell)
bboutinpg@bellsouth.net

PROJECT: Central Carolina Tire		Well ID: GW-2S	
LOCATION: Cameron, NC		Client: Central Carolina Tire	
DRILLING CONTRACTOR: Soil Drilling Services		NORTHING: 547967.71974	EASTING: 1953521.45611
DRILLING EQUIPMENT: CME 55		GROUND SURFACE ELEV.: 348.47	TOC ELEVATION:
DRILLING METHOD: Hollow stem auger		TOTAL DEPTH: 20	DEPTH TO WATER: 11.23
LOGGED BY: BSB	SAMPLING METHOD: 2-foot variable	DATE STARTED: 4/10/12	DATE COMPLETED: 4/10/12

Elev. (feet)	USCS	Graphic Log	Description	REC (in)	# Blows/ft
349					
348	CL		Sandy CLAY: some vf-f sand; tr. silt; dry; brittle; or-red-br.	17	15
347					
346				15	20
345					
344				20	20
343	CH		Silty Sandy CLAY; some vf-m sand; little silt; micaceous; plastic; tan-br-gray-red; some purple clay with depth; v. moist to wet 8-10'.		
342				18	23
341					
340				22	18
339					
338	SC		Clayey SAND: vf-m; some clay; little silt; tan-br; becomes tan-br-purple with depth; some clay seams 1-2" thck at bottom of section.	18	13
337					
336					
335				24	5
334					
333					
332					
331					
330				24	3
329					
328					

Well Construction



Finished within 4" steel, stickup well protector with hinged, locking lid.

2" ID Sch 40 PVC solid riser.

Depth to GW measured on 4/30/12

No. 2 Sand Filter Pack

2" ID Sch 40 PVC 0.010" machine slotted well screen.

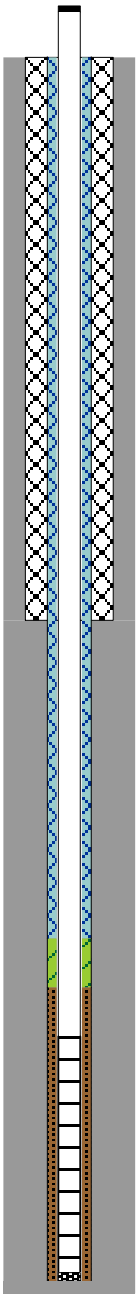
NOTES: Type II Well

Nautilus Geologic Consulting, PLLC
11112 Branding Iron Pl
Wendell, NC 27591
919-366-3663 (Office)
919-995-0363 (Cell)
bboutinpg@bellsouth.net

PROJECT: Central Carolina Tire		Well ID: GW-3D	
LOCATION: Cameron, NC		Client: Central Carolina Tire	
DRILLING CONTRACTOR: Soil Drilling Services		NORTHING: 547894.61473	EASTING: 1953477.24903
DRILLING EQUIPMENT: CME 55		GROUND SURFACE ELEV.: 347.35	TOC ELEVATION:
DRILLING METHOD: Mud Rotary		TOTAL DEPTH: 50	DEPTH TO WATER: 46.4
LOGGED BY: BSB	SAMPLING METHOD: 2-foot variable	DATE STARTED: 4/17/12	DATE COMPLETED: 4/17/12

Elev. (feet)	USCS	Description	REC (in)	# Blows/ft
348	SC	Clayey SAND: vf-med; little to some clay; loose; brown; dry	17	13
344	CL	Sandy CLAY: some vf-med sand; sand content decreases slightly with depth in section; micaceous; tr. to little silt in middle of section; tan-red-br; v. moist to wet 8-10'.	16	11
			22	18
340			19	17
			20	16
336	SC	Clayey SAND: vf-med; tr. c. sand and f gravel; some clay; plastic; visible bedding in lower part of section; varies tan-br to to tan-br-red-purple; wet.	22	11
332				
			17	6
328				
324	CL	Sandy CLAY: little to some vf-m sand; tr c sand and f gravel; med. plastic; stiff; subvertical veins of weathered dk minerals; micaceous; mottled tan-gray-or-br.	19	25
320				
			18	33
316	CL	CLAY: tr to little vf-f sand; stiff; med. plastic; micaceous; some blk and white weathered mineral grains; gray to mottled gray-red-purple.		
312			21	39
308			24	22
304	SC	Clayey SAND: vf-med sand; some clay; loose, med. plastic at top of section to very hard at bottom of section; few seams with higher sand abundance 1-2" thick; weathered white feldspar grains; sand content decreases with depth; gray.	24	9
300				
296			10	>100

Well Construction



Finished within 6" steel, stickup well protector with hinged, locking lid.

4" ID Sch 40 PVC outer casing

2" ID Sch 40 PVC solid riser.

No. 2 Sand Filter Pack

2" ID Sch 40 PVC 0.010" machine slotted well screen.

Depth to GW measured on 4/30/12

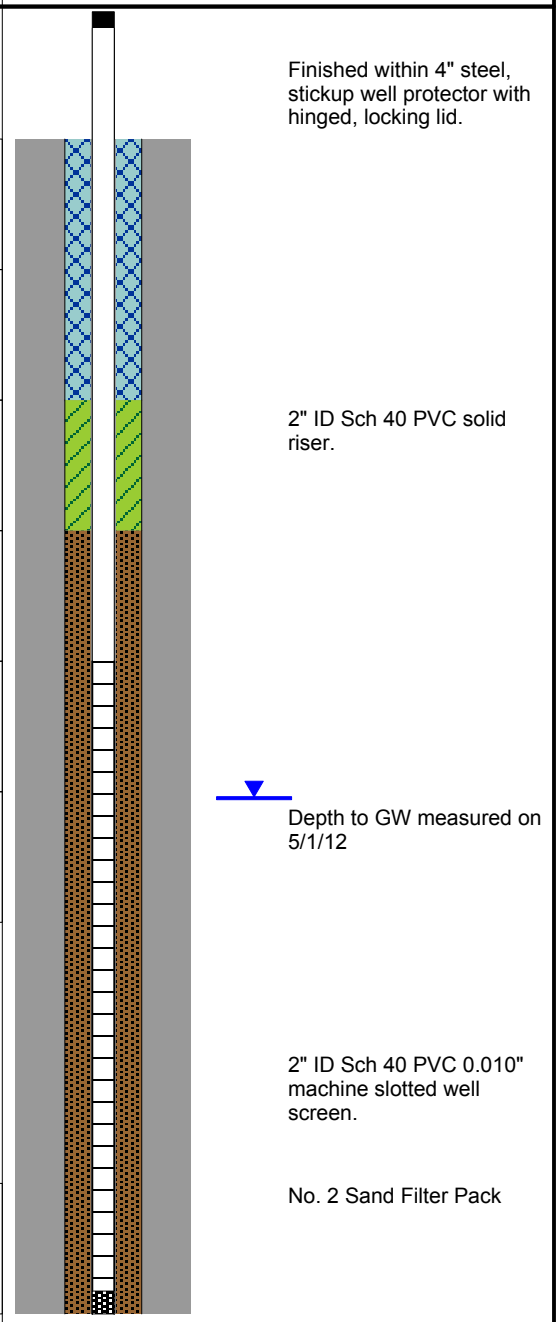
NOTES: Type III Well

Nautilus Geologic Consulting, PLLC
11112 Branding Iron Pl
Wendell, NC 27591
919-366-3663 (Office)
919-995-0363 (Cell)
bboutinpg@bellsouth.net

PROJECT: Central Carolina Tire		Well ID: GW-3S	
LOCATION: Cameron, NC		Client: Central Carolina Tire	
DRILLING CONTRACTOR: Soil Drilling Services		NORTHING: 547892.07886	EASTING: 1953481.44326
DRILLING EQUIPMENT: CME 55		GROUND SURFACE ELEV.: 346.97	TOC ELEVATION:
DRILLING METHOD: Hollow stem auger		TOTAL DEPTH: 18	DEPTH TO WATER: 9.99
LOGGED BY: BSB	SAMPLING METHOD: 2-foot variable	DATE STARTED: 4/10/12	DATE COMPLETED: 4/10/12

Elev. (feet)	USCS	Graphic Log	Description	REC (in)	# Blows/ft
347					
346	SC		Clayey SAND: vf-med; little to some clay; loose; brown; dry	17	13
345			Sandy CLAY: some vf-med sand; sand content decreases slightly with depth in section; micaceous; tr. to little silt in middle of section; tan-red-br; v. moist to wet 8-10'.		
344				16	11
343					
342				22	18
341	CL				
340				19	17
339					
338				20	16
337			Clayey SAND: vf-med; tr. c. sand and f gravel; some clay; plastic; visible bedding in lower part of section; varies tan-br to tan-br-red-purple; wet.		
336				22	11
335					
334					
333	SC				
332					
331					
330				17	6
329					
328					

Well Construction



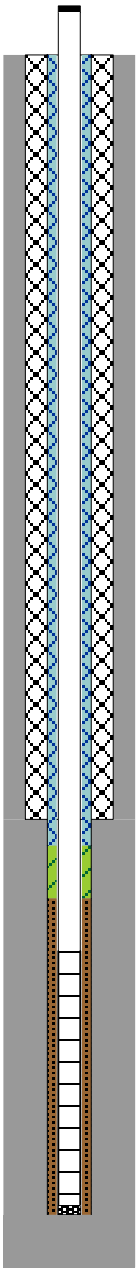
NOTES: Type II Well

Nautilus Geologic Consulting, PLLC
11112 Branding Iron Pl
Wendell, NC 27591
919-366-3663 (Office)
919-995-0363 (Cell)
bboutinpg@bellsouth.net

PROJECT: Central Carolina Tire		Well ID: GW-4D	
LOCATION: Cameron, NC		Client: Central Carolina Tire	
DRILLING CONTRACTOR: Soil Drilling Services		NORTHING: 547916.80889	EASTING: 1953409.70457
DRILLING EQUIPMENT: CME 55		GROUND SURFACE ELEV.: 353.14	TOC ELEVATION:
DRILLING METHOD: Mud Rotary		TOTAL DEPTH: 44	DEPTH TO WATER: 41.28
LOGGED BY: BSB	SAMPLING METHOD: 2-foot variable	DATE STARTED: 4/18/12	DATE COMPLETED: 4/18/12

Elev. (feet)	USCS	Description	REC (in)	# Blows/ft
356				
352	SC	Clayey SAND: vf-f; some clay; loose; dk. br,	20	13
	CL	Sandy CLAY: some vf-f sand; loose at top of section, stiff near bottom of section; sand content decreases with depth; mottled tan-or-br-red.	18	11
348			23	23
	CL	CLAY: stiff; semi-plastic; slightly micaceous; gray-tan-or-purple.	17	23
344			15	24
	CL	Sandy CLAY: some vf-med sand; stiff; micaceous; sand content decreases in middle of section and becomes vf-f; v. moist to wet at 14-16'; tan-gr-br.	22	35
340			18	21
			17	19
336				
	SC	Clayey SAND: vf-med; some clay; slightly micaceous; tr. to little c sand in bottom of section; varies tan-br to gray-red with depth.	23	5
332				
			22	5
328				
324	SC	Clayey SAND: vf-med sand; tr c sand; some clay; dense; med. plastic; sl micaceous; sand content increases with depth; mottled gray-tan-or-br.	20	38
320				
			22	27
316	CL	CLAY: very stiff; med plastic; alternating gray clay and or mottled sandy clay as above from 36-39'; little vf-f sand in middle of section; micaceous; very hard drilling 42-44'; few weathered white feldspar grains in bottom of section; gray to mottled gray-red-br with depth.		
312			19	40
308			20	36
304				

Well Construction



Finished within 6" steel, stickup well protector with hinged, locking lid.

4" ID Sch 40 PVC outer casing

2" ID Sch 40 PVC solid riser.

No. 2 Sand Filter Pack

2" ID Sch 40 PVC 0.010" machine slotted well screen.

Depth to GW measured on 4/30/12

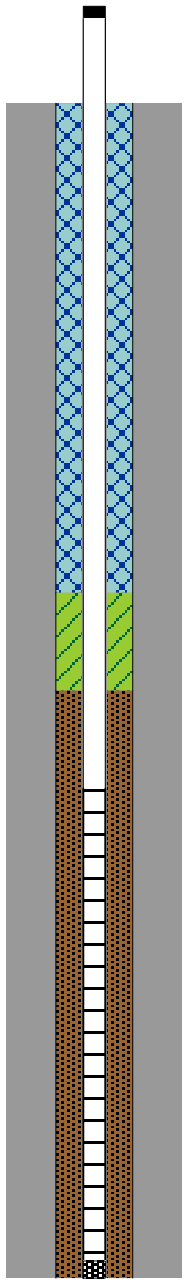
NOTES: Type III Well

Nautilus Geologic Consulting, PLLC
11112 Branding Iron Pl
Wendell, NC 27591
919-366-3663 (Office)
919-995-0363 (Cell)
bboutinpg@bellsouth.net

PROJECT: Central Carolina Tire		Well ID: GW-4S	
LOCATION: Cameron, NC		Client: Central Carolina Tire	
DRILLING CONTRACTOR: Soil Drilling Services		NORTHING: 547912.67232	EASTING: 1953413.70925
DRILLING EQUIPMENT: CME 55		GROUND SURFACE ELEV.: 352.82	TOC ELEVATION:
DRILLING METHOD: Hollow stem auger		TOTAL DEPTH: 24	DEPTH TO WATER: 15.87
LOGGED BY: BSB	SAMPLING METHOD: 2-foot variable	DATE STARTED: 4/11/12	DATE COMPLETED: 4/11/12

Elev. (feet)	USCS	Graphic Log	Description	REC (in)	# Blows/ft
354					
352	SC		Clayey SAND: vf-f; some clay; loose; dk. br,	20	13
350	CL		Sandy CLAY: some vf-f sand; loose at top of section, stiff near bottom of section; sand content decreases with depth; mottled tan-or-br-red.	18	11
348				23	23
346	CL		CLAY: stiff; semi-plastic; slightly micaceous; gray-tan-or-purple.	17	23
344				15	24
342				22	35
340	CL		Sandy CLAY: some vf-med sand; stiff; micaceous; sand content decreases in middle of section and becomes vf-f; v. moist to wet at 14-16'; tan-gray-br.	18	21
338				17	19
336					
334	SC		Clayey SAND: vf-med; some clay; slightly micaceous; tr. to little c sand in bottom of section; varies tan-br to gray-red with depth in section; wet.	23	5
332					
330				22	5
328					

Well Construction



Finished within 4" steel, stickup well protector with hinged, locking lid.

2" ID Sch 40 PVC solid riser.

Depth to GW measured on 4/30/12

2" ID Sch 40 PVC 0.010" machine slotted well screen.

No. 2 Sand Filter Pack

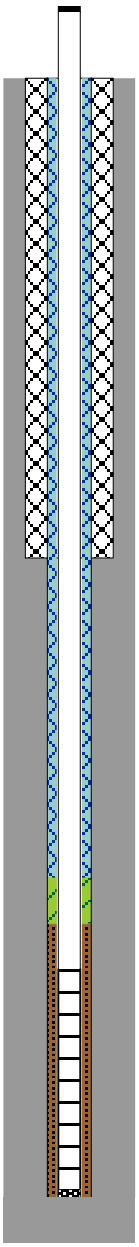
NOTES: Type II Well

Nautilus Geologic Consulting, PLLC
11112 Branding Iron Pl
Wendell, NC 27591
919-366-3663 (Office)
919-995-0363 (Cell)
bboutinpg@bellsouth.net

PROJECT: Central Carolina Tire		Well ID: GW-5D	
LOCATION: Cameron, NC		Client: Central Carolina Tire	
DRILLING CONTRACTOR: Soil Drilling Services		NORTHING: 547881.6829	EASTING: 1953607.05001
DRILLING EQUIPMENT: CME 55		GROUND SURFACE ELEV.: 342.28	TOC ELEVATION:
DRILLING METHOD: Mud Rotary		TOTAL DEPTH: 49	DEPTH TO WATER: 44.88
LOGGED BY: BSB	SAMPLING METHOD: 2-foot variable	DATE STARTED: 4/17/12	DATE COMPLETED: 4/17/12

Elev. (feet)	USCS	Description	REC (in)	# Blows/ft
344				
340	SC	Clayey SAND: vf-f; some clay; loose; lt. br.	18	15
			20	15
336	CL	Sandy CLAY: some vf-m sand; sl. plastic; sand becomes vf-f with depth; mottled red-br-gray to tan-gray with depth; very moist	19	17
			20	11
332	SC	Clayey SAND: vf-c sand; rock frags in 2" interval at appr. 7.5'; dark mineral inclusions; some clay; visible bedding beginning 8-10'; hard drilling beginning at 11.5'; loose; tan-or-br to tan-red-or-br-purple with depth; wet.	24	3
328	CL	Sandy CLAY: little to some vf-m sand; tr c sand and f gravel in lower part of section; little silt; micaceous; weathered white feldspar grains in lower part of section; hard; med plastic; mottled tan-br-or to gray with depth.	16	37
324				
320				
316			20	28
312	CL	CLAY: tr vf-f sand; stiff; becomes softer with depth in section; med plastic; weathered mineral grains; gray to mottled gray-red-purple-br with depth.	17	28
308			24	18
304	SC	Clayey SAND: vf-f sand; tr c sand; some clay; abundant weathered mineral grains (mostly white feldspar) in layers; dense to very dense; sand abundance increases with depth to vf-f sand, tr c sand and f gravel; gray.	16	>80
300				
296			16	>100
292			17	>95
288				

Well Construction



Finished within 6" steel, stickup well protector with hinged, locking lid.

4" ID Sch 40 PVC outer casing

2" ID Sch 40 PVC solid riser.

No. 2 Sand Filter Pack

2" ID Sch 40 PVC 0.010" machine slotted well screen.

Depth to GW measured on 4/30/12

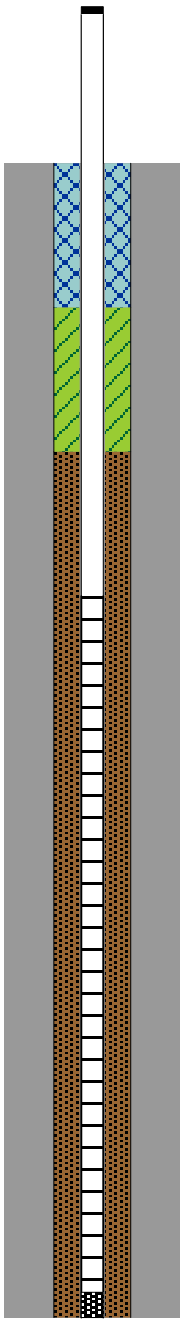
NOTES: Type III Well

Nautilus Geologic Consulting, PLLC
11112 Branding Iron Pl
Wendell, NC 27591
919-366-3663 (Office)
919-995-0363 (Cell)
bboutinpg@bellsouth.net

PROJECT: Central Carolina Tire		Well ID: GW-5S	
LOCATION: Cameron, NC		Client: Central Carolina Tire	
DRILLING CONTRACTOR: Soil Drilling Services		NORTHING: 547878.35829	EASTING: 1953613.34361
DRILLING EQUIPMENT: CME 55		GROUND SURFACE ELEV.: 342.19	TOC ELEVATION:
DRILLING METHOD: Hollow stem auger		TOTAL DEPTH: 16	DEPTH TO WATER: 5.2
LOGGED BY: BSB	SAMPLING METHOD: 2-foot variable	DATE STARTED: 4/11/12	DATE COMPLETED: 4/11/12

Elev. (feet)	USCS	Graphic Log	Description	REC (in)	# Blows/ft
343					
342	SC		Clayey SAND: vf-f; some clay; loose; lt. br.	18	15
341					
340				20	15
339					
338	CL		Sandy CLAY: some vf-m sand; sl. plastic; sand becomes vf-f with depth; mottled red-br-gray to tan-gray with depth; very moist to wet 4-6'.	19	17
337					
336				20	11
335					
334	SC		Clayey SAND: vf-c sand; rock frags in 2" interval at appr. 7.5'; dark mineral inclusions; some clay; visible bedding beginning 8-10'; hard drilling beginning at 11.5'; loose; tan-or-br to tan-red-or-br-purple with depth; wet.	24	3
333					
332					
331					
330	CL		Sandy CLAY: little to some vf-m sand; little silt; micaceous; hard; mottled tan-br-or.		
329					
328					
327				16	37
326					

Well Construction



Finished within 4" steel, stickup well protector with hinged, locking lid.

2" ID Sch 40 PVC solid riser.

Depth to GW measured on 4/30/12

2" ID Sch 40 PVC 0.010" machine slotted well screen.

No. 2 Sand Filter Pack

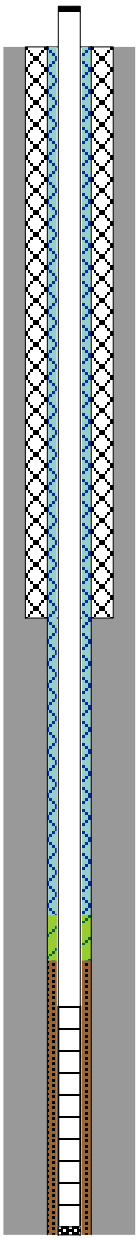
NOTES: Type II Well

Nautilus Geologic Consulting, PLLC
11112 Branding Iron Pl
Wendell, NC 27591
919-366-3663 (Office)
919-995-0363 (Cell)
bboutinpg@bellsouth.net

PROJECT: Central Carolina Tire		Well ID: GW-6D	
LOCATION: Cameron, NC		Client: Central Carolina Tire	
DRILLING CONTRACTOR: Soil Drilling Services		NORTHING: 547754.43383	EASTING: 1953397.72293
DRILLING EQUIPMENT: CME 55		GROUND SURFACE ELEV.: 347.87	TOC ELEVATION:
DRILLING METHOD: Mud Rotary		TOTAL DEPTH: 52	DEPTH TO WATER: 44.49
LOGGED BY: BSB	SAMPLING METHOD: 2-foot variable	DATE STARTED: 4/19/12	DATE COMPLETED: 4/19/12

Elev. (feet)	USCS	Description	REC (in)	# Blows/ft
348	SC	Clayey SAND: vf-f; some clay; loose; lt. br.	18	9
344	CL	Sandy CLAY: some vf-med sand; med stiff; sl. plastic; sand content decreases in middle of section and increases in lower part of section; micaceous brginning in middle part of section; mottled tan-or-br; v. moist to wet at 10-12'.	15	8
			21	8
340			19	9
			18	15
336			20	9
			20	5
332	SC	Clayey SAND: vf-med; some clay; tr to little silt; loose; med. plastic; visible bedding; sub-vertical purple veins in lower part of section; or-tan to lt. tan with depth; wet.	20	3
328				
324	CL	Sandy CLAY: little to some vf-m sand; micaceous; med plastic; stiff; sand becomes more abundant and vf-f with depth in section; mottled gray-or-tan-br.		
320			22	36
			22	21
316	CL	CLAY: very stiff to hard; med plastic; tr vf-f sand; tr weathered white feldspar grains; very hard drilling 34-39'; gray; gray with red, br in middle part of section.		
312			20	36
308			24	30
304	SC	Clayey SAND: vf-c sand; some clay; dense; med plastic; abundant weathered white feldspar and dk mineral grains; micaceous; gray.	20	17
300			23	20
296				
292				

Well Construction



Finished within 6" steel, stickup well protector with hinged, locking lid.

4" ID Sch 40 PVC outer casing

2" ID Sch 40 PVC solid riser.

No. 2 Sand Filter Pack

Depth to GW measured on 4/30/12

2" ID Sch 40 PVC 0.010" machine slotted well screen.

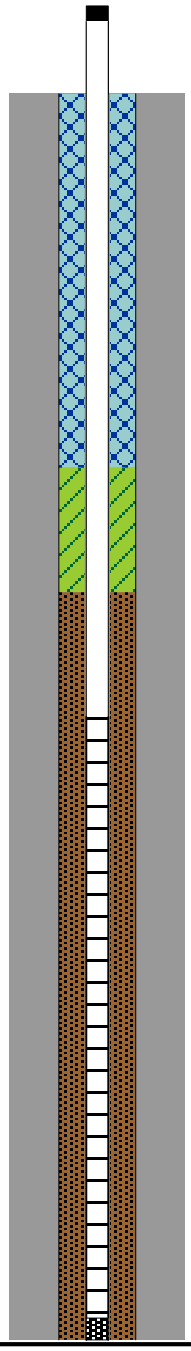
NOTES: Type III Well

Nautilus Geologic Consulting, PLLC
11112 Branding Iron Pl
Wendell, NC 27591
919-366-3663 (Office)
919-995-0363 (Cell)
bboutinpg@bellsouth.net

PROJECT: Central Carolina Tire		Well ID: GW-6S	
LOCATION: Cameron, NC		Client: Central Carolina Tire	
DRILLING CONTRACTOR: Soil Drilling Services		NORTHING: 547756.80036	EASTING: 1953393.23134
DRILLING EQUIPMENT: CME 55		GROUND SURFACE ELEV.: 348.07	TOC ELEVATION:
DRILLING METHOD: Hollow stem auger		TOTAL DEPTH: 20	DEPTH TO WATER: 11.68
LOGGED BY: BSB	SAMPLING METHOD: 2-foot variable	DATE STARTED: 4/11/12	DATE COMPLETED: 4/11/12

Elev. (feet)	USCS	Graphic Log	Description	REC (in)	# Blows/ft
349					
348			Clayey SAND: vf-f; some clay; loose; lt. br.		
347	SC			18	9
346			Sandy CLAY: some vf-med sand; med stiff; sl. plastic; sand content decreases in middle of section and increases in lower part of section; micaceous beginning in middle part of section; mottled tan-or-br; v. moist to wet at 10-12'.		
345				15	8
344					
343				21	8
342					
341	CL			19	9
340					
339				18	15
338					
337				20	9
336					
335			Clayey SAND: vf-med; some clay; tr to little silt; loose; med. plastic; visible bedding; sub-vertical purple veins in lower part of section; or-tan to lt. tan with depth; wet.	20	5
334					
333					
332	SC				
331				20	3
330					
329					
328					

Well Construction



Finished within 4" steel, stickup well protector with hinged, locking lid.

2" ID Sch 40 PVC solid riser.

Depth to GW measured on 4/30/12

No. 2 Sand Filter Pack

2" ID Sch 40 PVC 0.010" machine slotted well screen.

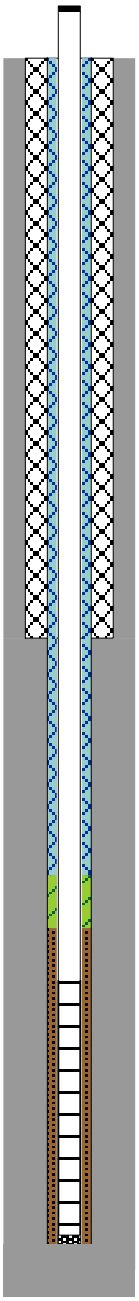
NOTES: Type II Well

Nautilus Geologic Consulting, PLLC
11112 Branding Iron Pl
Wendell, NC 27591
919-366-3663 (Office)
919-995-0363 (Cell)
bboutinpg@bellsouth.net

PROJECT: Central Carolina Tire		Well ID: GW-7D	
LOCATION: Cameron, NC		Client: Central Carolina Tire	
DRILLING CONTRACTOR: Soil Drilling Services		NORTHING: 547737.51782	EASTING: 1953481.62886
DRILLING EQUIPMENT: CME 55		GROUND SURFACE ELEV.: 344.6	TOC ELEVATION:
DRILLING METHOD: Mud Rotary		TOTAL DEPTH: 45	DEPTH TO WATER: 41.09
LOGGED BY: BSB	SAMPLING METHOD: 2-foot variable	DATE STARTED: 4/18/12	DATE COMPLETED: 4/18/12

Elev. (feet)	USCS	Description	REC (in)	# Blows/ft
348				
344	CL	Sandy CLAY: little to some vf-f sand; micaceous; brittle; stiff; red-or-br-gray.	15	31
			18	24
340	CL	CLAY: little vf-f sand; sand becomes vf-med with depth; micaceous; stiff; red-br-or; v.moist to wet at appr. 7.5'.	17	14
			20	10
336	CL	Sandy CLAY: some vf-med sand; or-br-tan-gray; wet.	18	12
	CH	Silty CLAY: some silt; plastic; mottled tan-br-gr; wet.		
	SC	Clayey SAND: vf-med; some clay; loose; rust-or; wet.	20	11
332				
	CL	Sandy CLAY: some vf-c sand; few rock frags; med plastic; or-br; wet.	19	9
328	CH	CLAY: plastic; fat; mottled br-tan-gr-purple.		
324	SW	SAND: f-c poorly sorted sand; little clay; loose to med dense; lt br.		
320	CL	Sandy CLAY: some vf-c sand; stiff; med plastic; micaceous; sand becomes vf-f and less abundant with depth in section; mottled or-br-tan-gray to gray with depth.	18	12
316			15	27
312	CL	CLAY: very stiff; med plastic; tr mica; abundant weathered br mineral grains; gray.	18	37
308	SC	Clayey SAND: vf-med sand; tr c sand; some clay; weathered white feldspar grains and black rock frags; micaceous; sand abundance increases with depth; gray.	19	28
304				
300			20	13
296				

Well Construction



Finished within 6" steel, stickup well protector with hinged, locking lid.

4" ID Sch 40 PVC outer casing

2" ID Sch 40 PVC solid riser.

No. 2 Sand Filter Pack

2" ID Sch 40 PVC 0.010" machine slotted well screen.

Depth to GW measured on 4/30/12

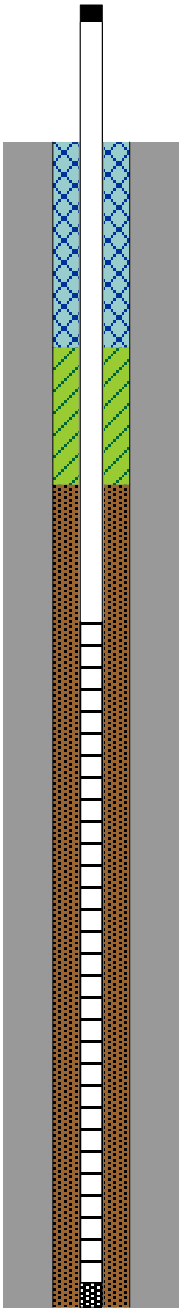
NOTES: Type III Well

Nautilus Geologic Consulting, PLLC
11112 Branding Iron Pl
Wendell, NC 27591
919-366-3663 (Office)
919-995-0363 (Cell)
bboutinpg@bellsouth.net

PROJECT: Central Carolina Tire		Well ID: GW-7S	
LOCATION: Cameron, NC		Client: Central Carolina Tire	
DRILLING CONTRACTOR: Soil Drilling Services		NORTHING: 547737.65034	EASTING: 1953476.42607
DRILLING EQUIPMENT: CME 55		GROUND SURFACE ELEV.: 344.76	TOC ELEVATION:
DRILLING METHOD: Hollow stem auger		TOTAL DEPTH: 17	DEPTH TO WATER: 10.71
LOGGED BY: BSB	SAMPLING METHOD: 2-foot variable	DATE STARTED: 4/12/11	DATE COMPLETED: 4/12/11

Elev. (feet)	USCS	Graphic Log	Description	REC (in)	# Blows/ft
345					
344	CL		Sandy CLAY: little to some vf-f sand; micaceous; brittle; stiff; red-or-br-gray.	15	31
343					
342				18	24
341					
340	CL		CLAY: little vf-f sand; sand becomes vf-med with depth; micaceous; stiff; red-br-or; v.moist to wet at appr. 7.5'.	17	14
339					
338				20	10
337					
336	CL		Sandy CLAY: some vf-med sand; or-br-tan-gray; wet.	18	12
335	CH		Silty CLAY: some silt; plastic; mottled tan-br-gr; wet.		
334	SC		Clayey SAND: vf-med; some clay; loose; rust-or; wet.	20	11
333					
332					
331					
330	CL		Sandy CLAY: some vf-c sand; few rock frags; med plastic; or-br; wet.		
329				19	9
328	CH		CLAY: plastic; fat; mottled br-tan-gr-purple.		
327					

Well Construction



Finished within 4" steel, stickup well protector with hinged, locking lid.

2" ID Sch 40 PVC solid riser.

Depth to GW measured on 5/1/12

2" ID Sch 40 PVC 0.010" machine slotted well screen.

No. 2 Sand Filter Pack

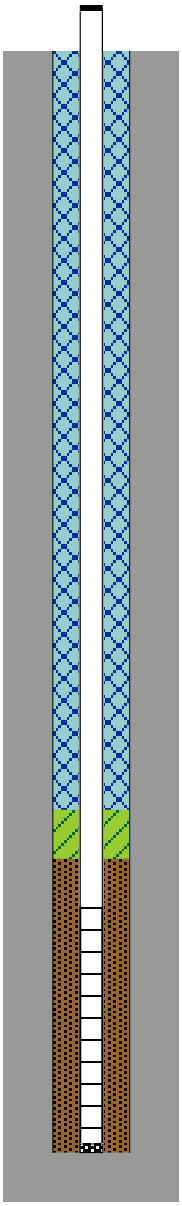
NOTES: Type II Well

Nautilus Geologic Consulting, PLLC
11112 Branding Iron Pl
Wendell, NC 27591
919-366-3663 (Office)
919-995-0363 (Cell)
bboutinpg@bellsouth.net

PROJECT: Central Carolina Tire		Well ID: GW-8	
LOCATION: Cameron, NC		Client: Central Carolina Tire	
DRILLING CONTRACTOR: Soil Drilling Services		NORTHING: 547716.4751	EASTING: 1953602.83081
DRILLING EQUIPMENT: CME 55		GROUND SURFACE ELEV.: 338.83	TOC ELEVATION:
DRILLING METHOD: Hollow stem auger		TOTAL DEPTH: 47	DEPTH TO WATER: 33.28
LOGGED BY: BSB	SAMPLING METHOD: 2-foot variable	DATE STARTED: 4/12/12	DATE COMPLETED: 4/13/12

Elev. (feet)	USCS	Graphic Log	Description	REC (in)	# Blows/ft
340					
	CL		Sandy CLAY: some vf-m sand; organics (roots; veg.); or-br to dk br at top of section becoming mottled red-or-gray-br with depth; sand content decreases with depth; dk mineral inclusions with depth in section; becomes medium plastic with depth.	16	10
336				14	6
				18	8
332				18	8
	SC		Clayey SAND: vf-med; some clay; med. plastic; loose; or-red-br.	19	7
	CL		CLAY: stiff; med. plastic; mottled or-br-gr-purple; few sandy clay seams; becomes micaceous with depth; tr to little vf-m sand with depth.	15	20
328				17	42
324				20	42
				19	31
320				21	21
	CL		Sandy CLAY: some vf-med sand; med plastic; gray.	24	18
316			CLAY: very stiff to hard; gray to purple-red-gray with depth.	24	43
312					
	CL			22	26
308					
				20	17
304			Clayey SAND: vf-c sand; tr f gravel; some clay; weathered white feldspar grains; micaceous; sand becomes vf-f with depth with tr silt; some thin seams with tr f gravel in lower part of section; gray; wet.	16	12
300					
	SC			19	35
296					
292				18	84
288					

Well Construction



Finished within 4" steel, stickup well protector with hinged, locking lid.

2" ID Sch 40 PVC solid riser.

Depth to GW measured on 4/30/12

No. 2 Sand Filter Pack

2" ID Sch 40 PVC 0.010" machine slotted well screen.

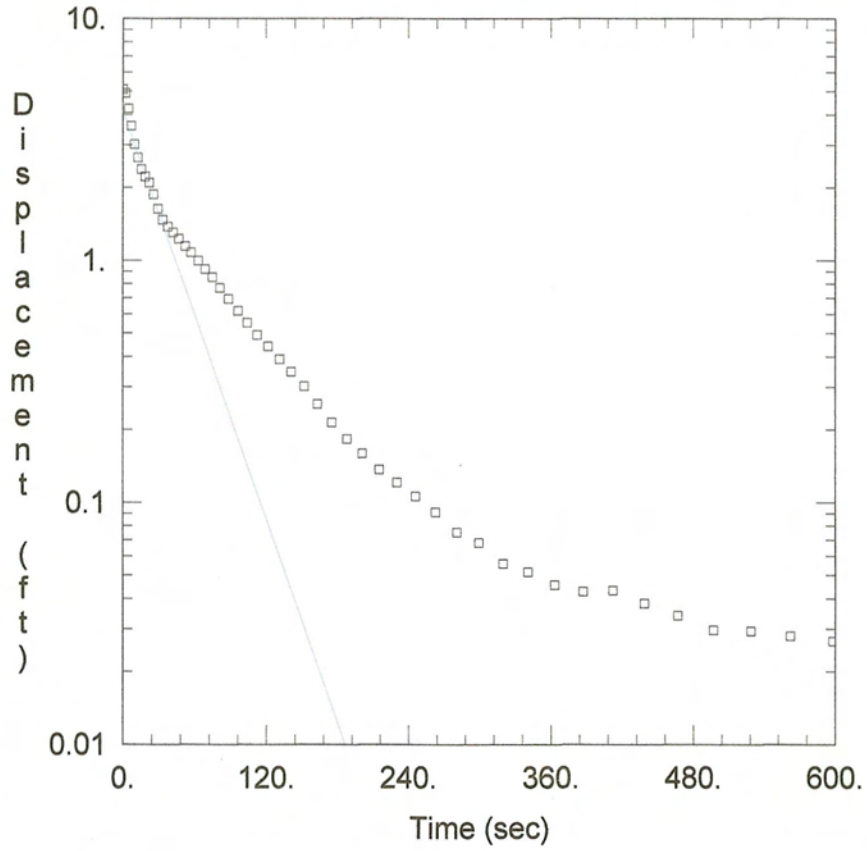
NOTES: Type II Well installed in deep aquifer.

APPENDIX B

Geotechnical Laboratory Data Sheets

APPENDIX C

Slug Test Data



GW-1S

Data Set: C:\USERS\BRIAN\DOCUME~1\BRIANS\PROJECTS\GA

Date: 05/10/12 Time: 10:54:30

PROJECT INFORMATION

Company: Brian S. Boutin, PG
Client: Central Carolina Tire
Test Location: Cameron, NC
Test Well: GW-1S
Test Date: 4/30/2012

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.000251 ft/sec
y0 = 4.122 ft

AQUIFER DATA

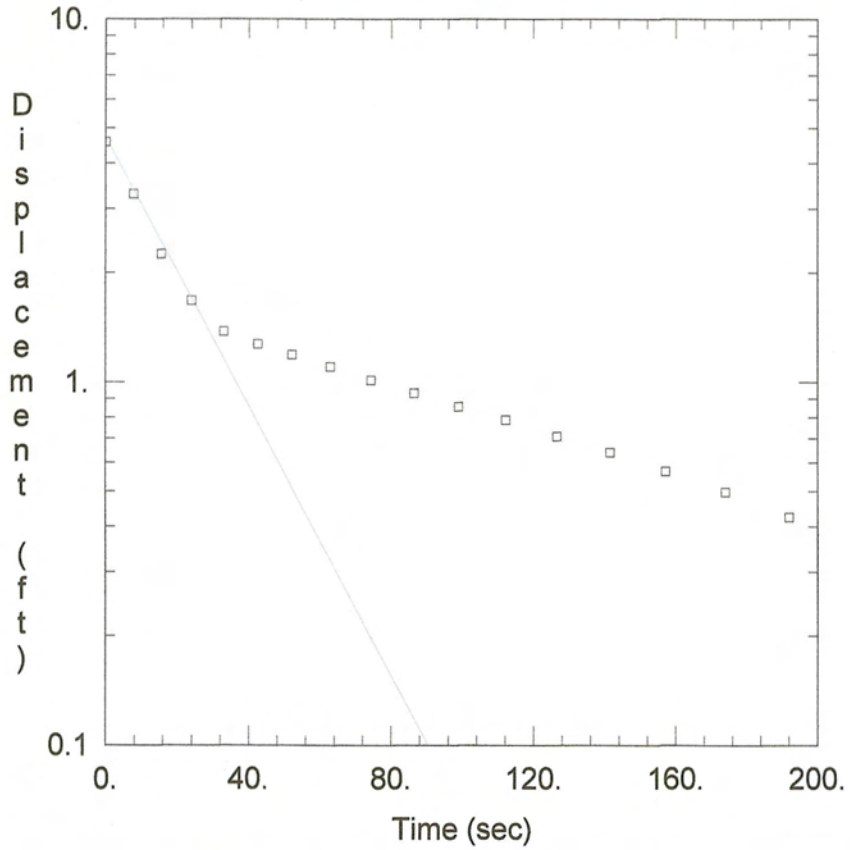
Saturated Thickness: 11.5 ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA

Initial Displacement: 5.095 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft

Water Column Height: 8.38 ft
Wellbore Radius: 0.3438 ft
Gravel Pack Porosity: 0.39



GW-2S

Data Set: C:\USERS\BRIAN\DOCUME~1\BRIANS\PROJECTS\GA

Date: 05/10/12 Time: 11:01:42

PROJECT INFORMATION

Company: Brian S. Boutin, PG
Client: Central Carolina Tire
Test Location: Cameron, NC
Test Well: GW-2S
Test Date: 4/30/2012

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.000333 ft/sec
y0 = 4.718 ft

AQUIFER DATA

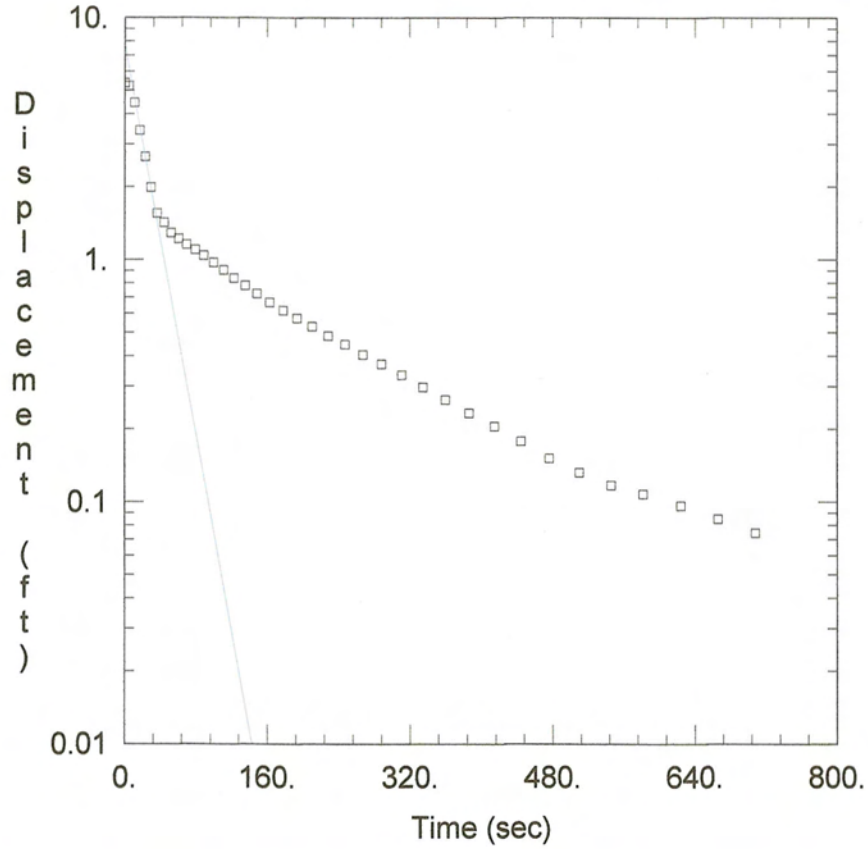
Saturated Thickness: 14. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA

Initial Displacement: 4.577 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft

Water Column Height: 9.16 ft
Wellbore Radius: 0.3438 ft
Gravel Pack Porosity: 0.39



GW-3S

Data Set: C:\USERS\BRIAN\DOCUME~1\BRIANS\PROJECTS\GA

Date: 05/10/12 Time: 11:08:10

PROJECT INFORMATION

Company: Brian S. Boutin, PG
Client: Central Carolina Tire
Test Location: Cameron, NC
Test Well: GW-3S
Test Date: 4/30/2012

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.0003541 ft/sec
y0 = 7.674 ft

AQUIFER DATA

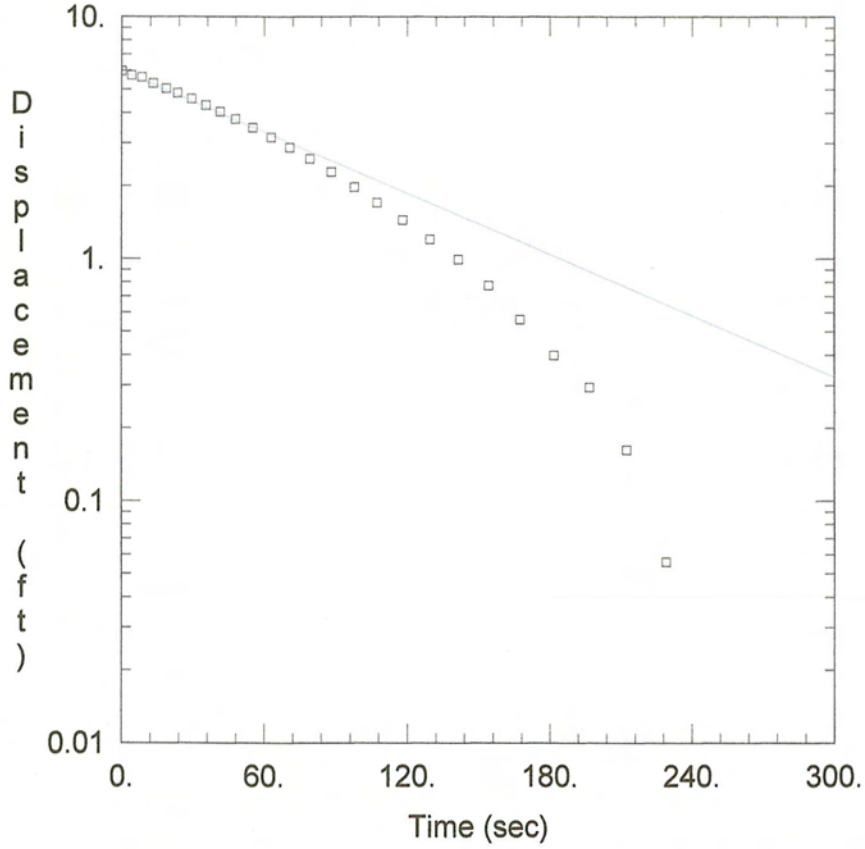
Saturated Thickness: 11. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA

Initial Displacement: 5.371 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft

Water Column Height: 7.68 ft
Wellbore Radius: 0.3438 ft
Gravel Pack Porosity: 0.39



GW-4S

Data Set: C:\USERS\BRIAN\DOCUME~1\BRIANS\PROJECTS\GA

Date: 05/10/12 Time: 11:22:03

PROJECT INFORMATION

Company: Brian S. Boutin, PG
Client: Central Carolina Tire
Test Location: Cameron, NC
Test Well: GW-4S
Test Date: 4/30/2012

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 7.566E-05 ft/sec
y0 = 5.966 ft

AQUIFER DATA

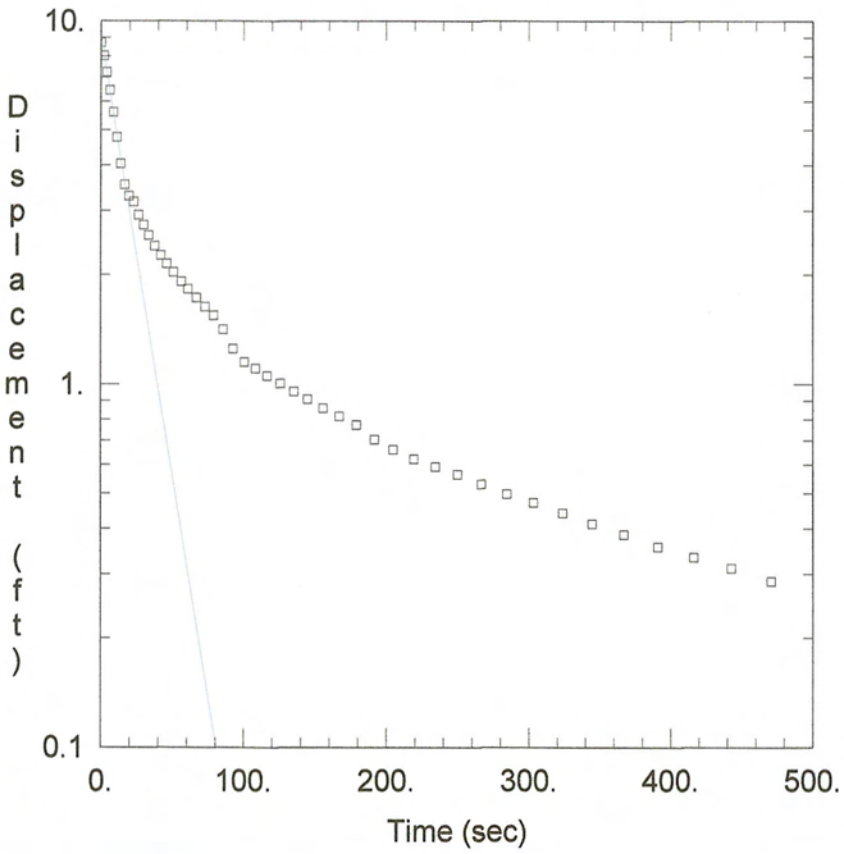
Saturated Thickness: 11.5 ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA

Initial Displacement: 5.953 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft

Water Column Height: 8.53 ft
Wellbore Radius: 0.3438 ft
Gravel Pack Porosity: 0.39



GW-5S

Data Set: C:\USERS\BRIAN\DOCUME~1\BRIANS\PROJECTS\GA

Date: 05/10/12 Time: 11:29:23

PROJECT INFORMATION

Company: Brian S. Boutin, PG
Client: Central Carolina Tire
Test Location: Cameron, NC
Test Well: GW-5S
Test Date: 4/30/2012

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.0004895 ft/sec
y0 = 9.091 ft

AQUIFER DATA

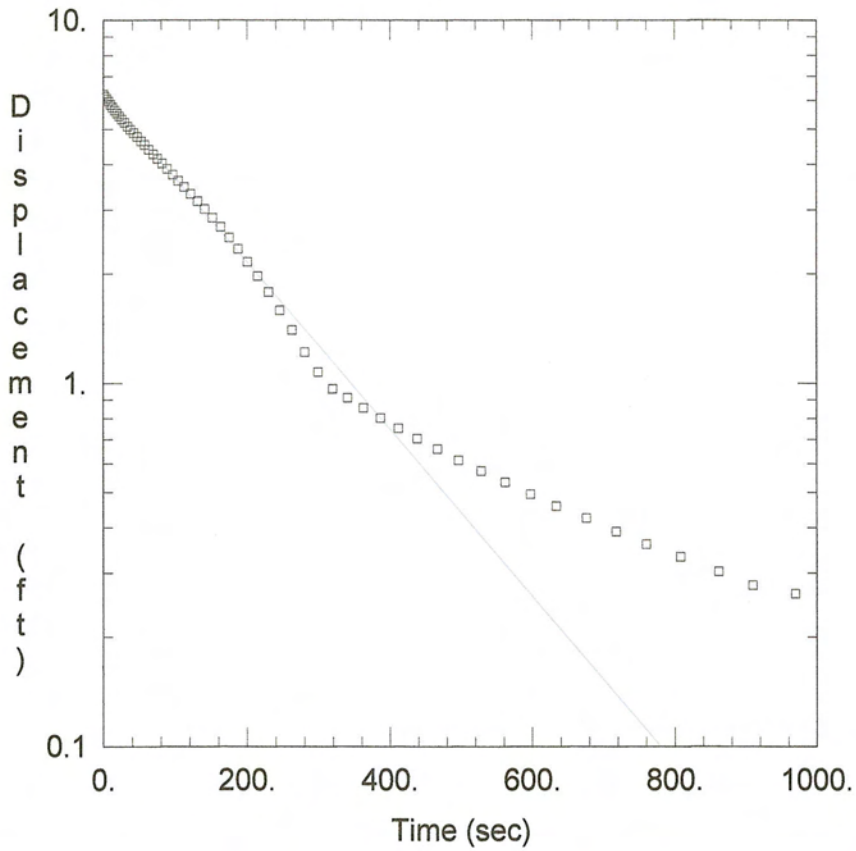
Saturated Thickness: 11. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA

Initial Displacement: 8.728 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft

Water Column Height: 10.85 ft
Wellbore Radius: 0.3438 ft
Gravel Pack Porosity: 0.39



GW-6S

Data Set: C:\USERS\BRIAN\DOCUME~1\BRIANS\PROJECTS\GA

Date: 05/10/12 Time: 11:35:35

PROJECT INFORMATION

Company: Brian S. Boutin, PG
Client: Central Carolina Tire
Test Location: Cameron, NC
Test Well: GW-6S
Test Date: 4/30/2012

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 4.039E-05 ft/sec
y0 = 6.198 ft

AQUIFER DATA

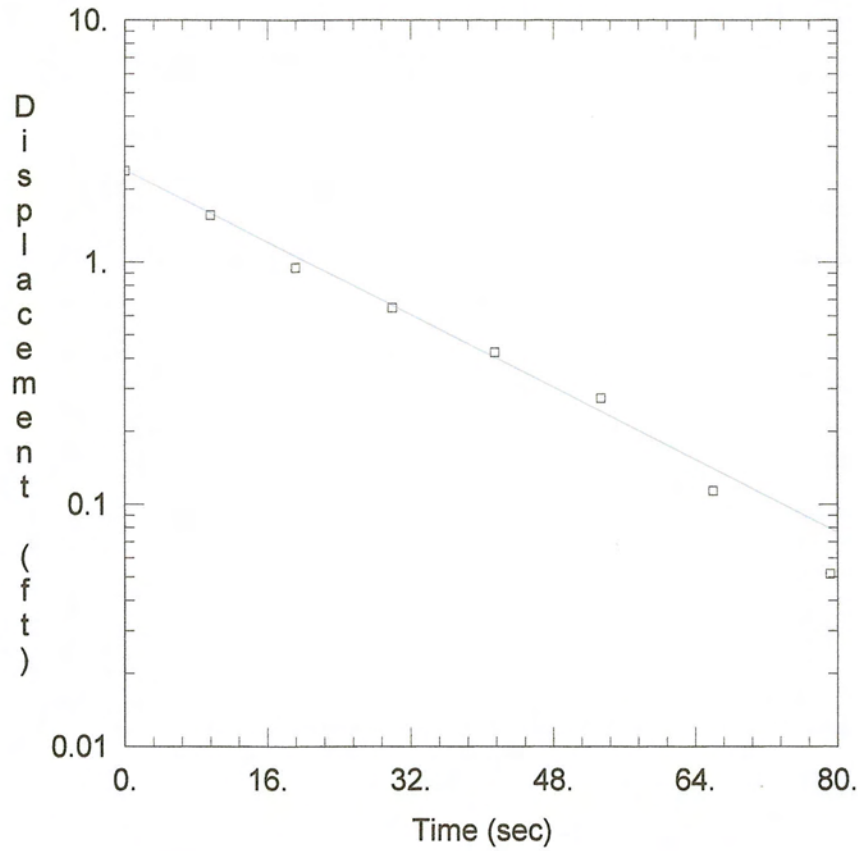
Saturated Thickness: 12. ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA

Initial Displacement: 6.246 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft

Water Column Height: 7.91 ft
Wellbore Radius: 0.3438 ft
Gravel Pack Porosity: 0.39



GW-7S

Data Set: C:\USERS\BRIAN\DOCUME~1\BRIANS\PROJECTS\GA

Date: 05/10/12 Time: 11:42:29

PROJECT INFORMATION

Company: Brian S. Boutin, PG
Client: Central Carolina Tire
Test Location: Cameron, NC
Test Well: GW-7S
Test Date: 4/30/2012

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.0002727 ft/sec
y0 = 2.406 ft

AQUIFER DATA

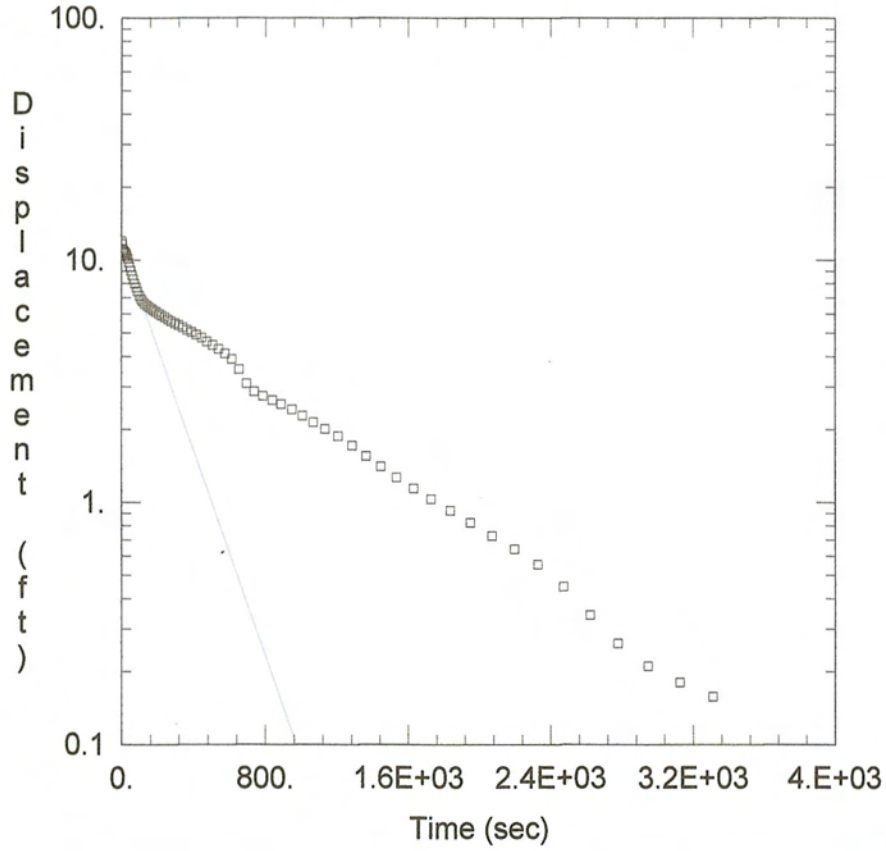
Saturated Thickness: 8.5 ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA

Initial Displacement: 2.381 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft

Water Column Height: 8.46 ft
Wellbore Radius: 0.3438 ft
Gravel Pack Porosity: 0.39



MW-8

Data Set: C:\USERS\BRIAN\DOCUME~1\BRIANS\PROJECTS\GA
Date: 05/10/12 Time: 11:49:38

PROJECT INFORMATION

Company: Brian S. Boutin, PG
Client: Central Carolina Tire
Test Location: Cameron, NC
Test Well: MW-8
Test Date: 4/30/2012

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 4.429E-05 ft/sec
y0 = 11.49 ft

AQUIFER DATA

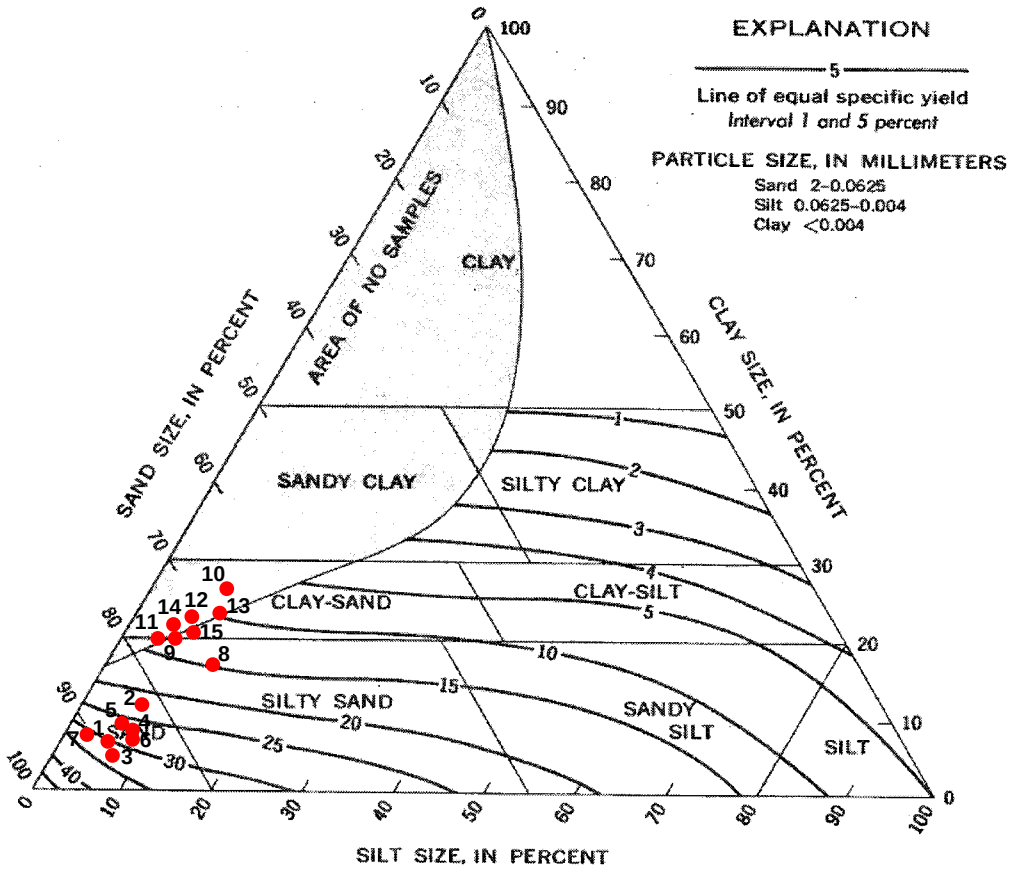
Saturated Thickness: 13. ft
Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA

Initial Displacement: 11.96 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft
Water Column Height: 12.88 ft
Wellbore Radius: 0.3438 ft
Gravel Pack Porosity: 0.39

APPENDIX D

Effective Porosity Estimates



Textural classification triangle for unconsolidated materials showing the relation between particle size and specific yield. Source: A. I. Johnson, U. S. Geological Survey Water-Supply Paper 1662-D, 1967

1 **GW-1S 18.5-20' Specific Yield = 31%**
2 **GW-2S 13.5-15' Specific Yield = 22.5%**
3 **GW-3S 18-20' Specific Yield = 33%**
4 **GW-4S 18-20' Specific Yield = 27%**
5 **GW-5S 8-10' Specific Yield = 26%**
6 **GW-6S 16-18' Specific Yield = 28%**
7 **GW-7S 10-12' Specific Yield = 32%**
8 **GW-8 40-42' Specific Yield = 15%**
9 **GW-1D 34-36' Specific Yield = 13.5%**
10 **GW-2D 41.5-43.5' Specific Yield = 8%**
11 **GW-3D 43.5-45.5' Specific Yield = 14%**
12 **GW-4D 34-36' Specific Yield = 12%**
13 **GW-5D 44-46' Specific Yield = 10%**
14 **GW-6D 44-46' Specific Yield = 13%**
15 **GW-7D 39-41' Specific Yield = 12.5%**

APPENDIX E

Laboratory Reports and Chain-of-Custody Forms

Microbac

Laboratory Report Number: L12040721

Brian Boutin
Central Carolina Tire
11112 Branding Iron Place
Wendell, NC 27591

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the accrediting authority listed below. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

This report was certified on May 01 2012

David E. Vandenberg

David Vandenberg – Managing Director

State of Origin: NC
Accrediting Authority: Department of the Environment and Natural Resources ID:583
QAPP: Microbac OVD

Microbac

Lab Report #: L12040721
Lab Project #: 3071.001
Project Name: Central Carolina Tire
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #
0017114	H	2.0		1002239572860004575000873013168280

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct perservatives used? (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac

Lab Report #: L12040721
Lab Project #: 3071.001
Project Name: Central Carolina Tire
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
GW-1S 8-10'	L12040721-01	04/10/2012 08:45	04/20/2012 10:10
GW-2S 4-6'	L12040721-02	04/10/2012 10:57	04/20/2012 10:10
GW-3S 6-8'	L12040721-03	04/10/2012 14:28	04/20/2012 10:10
GW-4S 0-2'	L12040721-04	04/11/2012 08:00	04/20/2012 10:10
GW-5S 0-2'	L12040721-05	04/11/2012 12:45	04/20/2012 10:10
GW-6S 8-10'	L12040721-06	04/11/2012 15:46	04/20/2012 10:10
GW-7S 0-2'	L12040721-07	04/12/2012 08:41	04/20/2012 10:10
GW-8S 12-14'	L12040721-08	04/12/2012 13:14	04/20/2012 10:10

Certificate of Analysis

Sample #:	L12040721-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	GW-1S 8-10'	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/23/2012 17:01
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/13/2012 16:40
Workgroup #:	WG395957	**Analyst:**	TMB	**Run Date:**	04/23/2012 21:39
Collect Date:	04/10/2012 08:45	**Dilution:**	1	**File ID:**	9M92762
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	90.6

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		ND	5.97	0.597
1,1,1-Trichloroethane	71-55-6		ND	5.97	0.597
1,1,2,2-Tetrachloroethane	79-34-5		ND	5.97	0.597
1,1,2-Trichloroethane	79-00-5		ND	5.97	0.597
1,1-Dichloroethane	75-34-3		ND	5.97	1.19
1,1-Dichloroethene	75-35-4		ND	5.97	0.597
1,1-Dichloropropene	563-58-6		ND	5.97	0.597
1,2,3-Trichlorobenzene	87-61-6		ND	5.97	0.597
1,2,3-Trichloropropane	96-18-4		ND	5.97	1.19
1,2,4-Trichlorobenzene	120-82-1		ND	5.97	0.597
1,2,4-Trimethylbenzene	95-63-6		ND	5.97	0.597
1,2-Dibromo-3-chloropropane	96-12-8		ND	5.97	2.39
1,2-Dibromoethane	106-93-4		ND	5.97	0.597
1,2-Dichlorobenzene	95-50-1		ND	5.97	0.597
1,2-Dichloroethane	107-06-2		ND	5.97	0.597
1,2-Dichloropropane	78-87-5		ND	5.97	0.597
1,3,5-Trimethylbenzene	108-67-8		ND	5.97	0.597
1,3-Dichlorobenzene	541-73-1		ND	5.97	0.597
1,3-Dichloropropane	142-28-9		ND	5.97	0.597
1,4-Dichlorobenzene	106-46-7		ND	5.97	0.597
2,2-Dichloropropane	594-20-7		ND	5.97	0.597
2-Butanone	78-93-3		ND	5.97	2.99
2-Chloroethyl vinyl ether	110-75-8		ND	5.97	2.39
2-Chlorotoluene	95-49-8		ND	5.97	0.597
2-Hexanone	591-78-6		ND	5.97	2.99
4-Chlorotoluene	106-43-4		ND	5.97	0.597
4-Methyl-2-pentanone	108-10-1		ND	5.97	2.99
Acetone	67-64-1		ND	11.9	5.97
Acetonitrile	75-05-8	26.2		11.9	5.97
Acrolein	107-02-8		ND	119	23.9
Benzene	71-43-2		ND	5.97	0.597
Bromobenzene	108-86-1		ND	5.97	0.597
Bromochloromethane	74-97-5		ND	5.97	1.19

Certificate of Analysis

Sample #:	L12040721-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	GW-1S 8-10'	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/23/2012 17:01
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/13/2012 16:40
Workgroup #:	WG395957	**Analyst:**	TMB	**Run Date:**	04/23/2012 21:39
Collect Date:	04/10/2012 08:45	**Dilution:**	1	**File ID:**	9M92762
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	90.6

Analyte	CAS #	Result	Qual	RL	MDL
Bromodichloromethane	75-27-4		ND	5.97	0.597
Bromoform	75-25-2		ND	5.97	0.597
Bromomethane	74-83-9		ND	5.97	1.19
Carbon disulfide	75-15-0		ND	5.97	0.597
Carbon tetrachloride	56-23-5		ND	5.97	0.597
Chlorobenzene	108-90-7		ND	5.97	0.597
Chlorodibromomethane	124-48-1		ND	5.97	0.597
Chloroethane	75-00-3		ND	5.97	1.19
Chloroform	67-66-3		ND	5.97	0.597
Chloromethane	74-87-3		ND	5.97	2.39
cis-1,2-Dichloroethene	156-59-2		ND	5.97	0.597
cis-1,3-Dichloropropene	10061-01-5		ND	5.97	0.597
Dibromomethane	74-95-3		ND	5.97	0.597
Dichlorodifluoromethane	75-71-8		ND	5.97	1.19
Ethylbenzene	100-41-4		ND	5.97	0.597
Hexachlorobutadiene	87-68-3		ND	5.97	0.597
Isopropylbenzene	98-82-8		ND	5.97	0.597
m-,p-Xylene	179601-23-1		ND	5.97	0.597
Methylene chloride	75-09-2		ND	5.97	1.19
n-Butylbenzene	104-51-8		ND	5.97	0.597
n-Propylbenzene	103-65-1		ND	5.97	0.597
Naphthalene	91-20-3		ND	5.97	0.597
o-Xylene	95-47-6		ND	5.97	0.597
p-Isopropyltoluene	99-87-6		ND	5.97	0.597
sec-Butylbenzene	135-98-8		ND	5.97	0.597
Styrene	100-42-5		ND	5.97	0.597
tert-Butylbenzene	98-06-6		ND	5.97	0.597
Tetrachloroethene	127-18-4		ND	5.97	0.597
Toluene	108-88-3		ND	5.97	0.597
trans-1,2-Dichloroethene	156-60-5		ND	5.97	0.597
trans-1,3-Dichloropropene	10061-02-6		ND	5.97	0.597
Trichloroethene	79-01-6		ND	5.97	0.597
Trichlorofluoromethane	75-69-4		ND	5.97	1.19

Certificate of Analysis

Sample #:	L12040721-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	GW-1S 8-10'	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/23/2012 17:01
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/13/2012 16:40
Workgroup #:	WG395957	**Analyst:**	TMB	**Run Date:**	04/23/2012 21:39
Collect Date:	04/10/2012 08:45	**Dilution:**	1	**File ID:**	9M92762
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	90.6

Analyte	CAS #	Result	Qual	RL	MDL
Vinyl acetate	108-05-4		ND	5.97	2.99
Vinyl chloride	75-01-4		ND	5.97	1.19

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	97.9	80	120	
4-Bromofluorobenzene	92.3	74	121	
Dibromofluoromethane	97.7	80	120	
Toluene-d8	99.7	81	117	

ND	Not detected at or above the reporting limit (RL).

Certificate of Analysis

Sample #:	L12040721-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	GW-2S 4-6'	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/23/2012 17:02
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/13/2012 16:40
Workgroup #:	WG395957	**Analyst:**	TMB	**Run Date:**	04/23/2012 22:09
Collect Date:	04/10/2012 10:57	**Dilution:**	1	**File ID:**	9M92763
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	89.0

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		ND	5.71	0.571
1,1,1-Trichloroethane	71-55-6		ND	5.71	0.571
1,1,2,2-Tetrachloroethane	79-34-5		ND	5.71	0.571
1,1,2-Trichloroethane	79-00-5		ND	5.71	0.571
1,1-Dichloroethane	75-34-3		ND	5.71	1.14
1,1-Dichloroethene	75-35-4		ND	5.71	0.571
1,1-Dichloropropene	563-58-6		ND	5.71	0.571
1,2,3-Trichlorobenzene	87-61-6		ND	5.71	0.571
1,2,3-Trichloropropane	96-18-4		ND	5.71	1.14
1,2,4-Trichlorobenzene	120-82-1		ND	5.71	0.571
1,2,4-Trimethylbenzene	95-63-6		ND	5.71	0.571
1,2-Dibromo-3-chloropropane	96-12-8		ND	5.71	2.28
1,2-Dibromoethane	106-93-4		ND	5.71	0.571
1,2-Dichlorobenzene	95-50-1		ND	5.71	0.571
1,2-Dichloroethane	107-06-2		ND	5.71	0.571
1,2-Dichloropropane	78-87-5		ND	5.71	0.571
1,3,5-Trimethylbenzene	108-67-8		ND	5.71	0.571
1,3-Dichlorobenzene	541-73-1		ND	5.71	0.571
1,3-Dichloropropane	142-28-9		ND	5.71	0.571
1,4-Dichlorobenzene	106-46-7		ND	5.71	0.571
2,2-Dichloropropane	594-20-7		ND	5.71	0.571
2-Butanone	78-93-3		ND	5.71	2.86
2-Chloroethyl vinyl ether	110-75-8		ND	5.71	2.28
2-Chlorotoluene	95-49-8		ND	5.71	0.571
2-Hexanone	591-78-6		ND	5.71	2.86
4-Chlorotoluene	106-43-4		ND	5.71	0.571
4-Methyl-2-pentanone	108-10-1		ND	5.71	2.86
Acetone	67-64-1		ND	11.4	5.71
Acetonitrile	75-05-8	25.5		11.4	5.71
Acrolein	107-02-8		ND	114	22.8
Benzene	71-43-2		ND	5.71	0.571
Bromobenzene	108-86-1		ND	5.71	0.571
Bromochloromethane	74-97-5		ND	5.71	1.14

Certificate of Analysis

Sample #:	L12040721-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	GW-2S 4-6'	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/23/2012 17:02
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/13/2012 16:40
Workgroup #:	WG395957	**Analyst:**	TMB	**Run Date:**	04/23/2012 22:09
Collect Date:	04/10/2012 10:57	**Dilution:**	1	**File ID:**	9M92763
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	89.0

Analyte	CAS #	Result	Qual	RL	MDL
Bromodichloromethane	75-27-4		ND	5.71	0.571
Bromoform	75-25-2		ND	5.71	0.571
Bromomethane	74-83-9		ND	5.71	1.14
Carbon disulfide	75-15-0		ND	5.71	0.571
Carbon tetrachloride	56-23-5		ND	5.71	0.571
Chlorobenzene	108-90-7		ND	5.71	0.571
Chlorodibromomethane	124-48-1		ND	5.71	0.571
Chloroethane	75-00-3		ND	5.71	1.14
Chloroform	67-66-3		ND	5.71	0.571
Chloromethane	74-87-3		ND	5.71	2.28
cis-1,2-Dichloroethene	156-59-2		ND	5.71	0.571
cis-1,3-Dichloropropene	10061-01-5		ND	5.71	0.571
Dibromomethane	74-95-3		ND	5.71	0.571
Dichlorodifluoromethane	75-71-8		ND	5.71	1.14
Ethylbenzene	100-41-4		ND	5.71	0.571
Hexachlorobutadiene	87-68-3		ND	5.71	0.571
Isopropylbenzene	98-82-8		ND	5.71	0.571
m-,p-Xylene	179601-23-1		ND	5.71	0.571
Methylene chloride	75-09-2		ND	5.71	1.14
n-Butylbenzene	104-51-8		ND	5.71	0.571
n-Propylbenzene	103-65-1		ND	5.71	0.571
Naphthalene	91-20-3		ND	5.71	0.571
o-Xylene	95-47-6		ND	5.71	0.571
p-Isopropyltoluene	99-87-6		ND	5.71	0.571
sec-Butylbenzene	135-98-8		ND	5.71	0.571
Styrene	100-42-5		ND	5.71	0.571
tert-Butylbenzene	98-06-6		ND	5.71	0.571
Tetrachloroethene	127-18-4		ND	5.71	0.571
Toluene	108-88-3		ND	5.71	0.571
trans-1,2-Dichloroethene	156-60-5		ND	5.71	0.571
trans-1,3-Dichloropropene	10061-02-6		ND	5.71	0.571
Trichloroethene	79-01-6		ND	5.71	0.571
Trichlorofluoromethane	75-69-4		ND	5.71	1.14

Certificate of Analysis

Sample #:	L12040721-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	GW-2S 4-6'	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/23/2012 17:02
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/13/2012 16:40
Workgroup #:	WG395957	**Analyst:**	TMB	**Run Date:**	04/23/2012 22:09
Collect Date:	04/10/2012 10:57	**Dilution:**	1	**File ID:**	9M92763
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	89.0

Analyte	CAS #	Result	Qual	RL	MDL
Vinyl acetate	108-05-4		ND	5.71	2.86
Vinyl chloride	75-01-4		ND	5.71	1.14

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	106	80	120	
4-Bromofluorobenzene	91.5	74	121	
Dibromofluoromethane	101	80	120	
Toluene-d8	96.9	81	117	

ND	Not detected at or above the reporting limit (RL).

Certificate of Analysis

Sample #:	L12040721-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	GW-3S 6-8'	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/23/2012 17:03
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/13/2012 16:40
Workgroup #:	WG395957	**Analyst:**	TMB	**Run Date:**	04/23/2012 22:40
Collect Date:	04/10/2012 14:28	**Dilution:**	1	**File ID:**	9M92764
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.9

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		ND	5.73	0.573
1,1,1-Trichloroethane	71-55-6		ND	5.73	0.573
1,1,2,2-Tetrachloroethane	79-34-5		ND	5.73	0.573
1,1,2-Trichloroethane	79-00-5		ND	5.73	0.573
1,1-Dichloroethane	75-34-3		ND	5.73	1.15
1,1-Dichloroethene	75-35-4		ND	5.73	0.573
1,1-Dichloropropene	563-58-6		ND	5.73	0.573
1,2,3-Trichlorobenzene	87-61-6		ND	5.73	0.573
1,2,3-Trichloropropane	96-18-4		ND	5.73	1.15
1,2,4-Trichlorobenzene	120-82-1		ND	5.73	0.573
1,2,4-Trimethylbenzene	95-63-6		ND	5.73	0.573
1,2-Dibromo-3-chloropropane	96-12-8		ND	5.73	2.29
1,2-Dibromoethane	106-93-4		ND	5.73	0.573
1,2-Dichlorobenzene	95-50-1		ND	5.73	0.573
1,2-Dichloroethane	107-06-2		ND	5.73	0.573
1,2-Dichloropropane	78-87-5		ND	5.73	0.573
1,3,5-Trimethylbenzene	108-67-8		ND	5.73	0.573
1,3-Dichlorobenzene	541-73-1		ND	5.73	0.573
1,3-Dichloropropane	142-28-9		ND	5.73	0.573
1,4-Dichlorobenzene	106-46-7		ND	5.73	0.573
2,2-Dichloropropane	594-20-7		ND	5.73	0.573
2-Butanone	78-93-3		ND	5.73	2.87
2-Chloroethyl vinyl ether	110-75-8		ND	5.73	2.29
2-Chlorotoluene	95-49-8		ND	5.73	0.573
2-Hexanone	591-78-6		ND	5.73	2.87
4-Chlorotoluene	106-43-4		ND	5.73	0.573
4-Methyl-2-pentanone	108-10-1		ND	5.73	2.87
Acetone	67-64-1	9.72	J	11.5	5.73
Acetonitrile	75-05-8	22.8		11.5	5.73
Acrolein	107-02-8		ND	115	22.9
Benzene	71-43-2		ND	5.73	0.573
Bromobenzene	108-86-1		ND	5.73	0.573
Bromochloromethane	74-97-5		ND	5.73	1.15

Certificate of Analysis

Sample #:	L12040721-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	GW-3S 6-8'	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/23/2012 17:03
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/13/2012 16:40
Workgroup #:	WG395957	**Analyst:**	TMB	**Run Date:**	04/23/2012 22:40
Collect Date:	04/10/2012 14:28	**Dilution:**	1	**File ID:**	9M92764
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.9

Analyte	CAS #	Result	Qual	RL	MDL
Bromodichloromethane	75-27-4		ND	5.73	0.573
Bromoform	75-25-2		ND	5.73	0.573
Bromomethane	74-83-9		ND	5.73	1.15
Carbon disulfide	75-15-0		ND	5.73	0.573
Carbon tetrachloride	56-23-5		ND	5.73	0.573
Chlorobenzene	108-90-7		ND	5.73	0.573
Chlorodibromomethane	124-48-1		ND	5.73	0.573
Chloroethane	75-00-3		ND	5.73	1.15
Chloroform	67-66-3		ND	5.73	0.573
Chloromethane	74-87-3		ND	5.73	2.29
cis-1,2-Dichloroethene	156-59-2		ND	5.73	0.573
cis-1,3-Dichloropropene	10061-01-5		ND	5.73	0.573
Dibromomethane	74-95-3		ND	5.73	0.573
Dichlorodifluoromethane	75-71-8		ND	5.73	1.15
Ethylbenzene	100-41-4		ND	5.73	0.573
Hexachlorobutadiene	87-68-3		ND	5.73	0.573
Isopropylbenzene	98-82-8		ND	5.73	0.573
m-,p-Xylene	179601-23-1		ND	5.73	0.573
Methylene chloride	75-09-2		ND	5.73	1.15
n-Butylbenzene	104-51-8		ND	5.73	0.573
n-Propylbenzene	103-65-1		ND	5.73	0.573
Naphthalene	91-20-3		ND	5.73	0.573
o-Xylene	95-47-6		ND	5.73	0.573
p-Isopropyltoluene	99-87-6		ND	5.73	0.573
sec-Butylbenzene	135-98-8		ND	5.73	0.573
Styrene	100-42-5		ND	5.73	0.573
tert-Butylbenzene	98-06-6		ND	5.73	0.573
Tetrachloroethene	127-18-4		ND	5.73	0.573
Toluene	108-88-3		ND	5.73	0.573
trans-1,2-Dichloroethene	156-60-5		ND	5.73	0.573
trans-1,3-Dichloropropene	10061-02-6		ND	5.73	0.573
Trichloroethene	79-01-6		ND	5.73	0.573
Trichlorofluoromethane	75-69-4		ND	5.73	1.15

Certificate of Analysis

Sample #:	L12040721-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	GW-3S 6-8'	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/23/2012 17:03
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/13/2012 16:40
Workgroup #:	WG395957	**Analyst:**	TMB	**Run Date:**	04/23/2012 22:40
Collect Date:	04/10/2012 14:28	**Dilution:**	1	**File ID:**	9M92764
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.9

Analyte	CAS #	Result	Qual	RL	MDL
Vinyl acetate	108-05-4		ND	5.73	2.87
Vinyl chloride	75-01-4		ND	5.73	1.15

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	103	80	120	
4-Bromofluorobenzene	92.6	74	121	
Dibromofluoromethane	101	80	120	
Toluene-d8	98.7	81	117	

J	Estimated value; the analyte concentration was less than the RL/LOQ.
ND	Not detected at or above the reporting limit (RL).

Certificate of Analysis

Sample #:	L12040721-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	GW-4S 0-2'	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/23/2012 17:04
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/13/2012 16:40
Workgroup #:	WG395957	**Analyst:**	TMB	**Run Date:**	04/23/2012 23:11
Collect Date:	04/11/2012 08:00	**Dilution:**	1	**File ID:**	9M92765
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	89.9

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		ND	5.56	0.556
1,1,1-Trichloroethane	71-55-6		ND	5.56	0.556
1,1,2,2-Tetrachloroethane	79-34-5		ND	5.56	0.556
1,1,2-Trichloroethane	79-00-5		ND	5.56	0.556
1,1-Dichloroethane	75-34-3		ND	5.56	1.11
1,1-Dichloroethene	75-35-4		ND	5.56	0.556
1,1-Dichloropropene	563-58-6		ND	5.56	0.556
1,2,3-Trichlorobenzene	87-61-6		ND	5.56	0.556
1,2,3-Trichloropropane	96-18-4		ND	5.56	1.11
1,2,4-Trichlorobenzene	120-82-1		ND	5.56	0.556
1,2,4-Trimethylbenzene	95-63-6		ND	5.56	0.556
1,2-Dibromo-3-chloropropane	96-12-8		ND	5.56	2.22
1,2-Dibromoethane	106-93-4		ND	5.56	0.556
1,2-Dichlorobenzene	95-50-1		ND	5.56	0.556
1,2-Dichloroethane	107-06-2		ND	5.56	0.556
1,2-Dichloropropane	78-87-5		ND	5.56	0.556
1,3,5-Trimethylbenzene	108-67-8		ND	5.56	0.556
1,3-Dichlorobenzene	541-73-1		ND	5.56	0.556
1,3-Dichloropropane	142-28-9		ND	5.56	0.556
1,4-Dichlorobenzene	106-46-7		ND	5.56	0.556
2,2-Dichloropropane	594-20-7		ND	5.56	0.556
2-Butanone	78-93-3	5.79		5.56	2.78
2-Chloroethyl vinyl ether	110-75-8		ND	5.56	2.22
2-Chlorotoluene	95-49-8		ND	5.56	0.556
2-Hexanone	591-78-6		ND	5.56	2.78
4-Chlorotoluene	106-43-4		ND	5.56	0.556
4-Methyl-2-pentanone	108-10-1		ND	5.56	2.78
Acetonitrile	75-05-8	23.4		11.1	5.56
Acrolein	107-02-8		ND	111	22.2
Benzene	71-43-2		ND	5.56	0.556
Bromobenzene	108-86-1		ND	5.56	0.556
Bromochloromethane	74-97-5		ND	5.56	1.11
Bromodichloromethane	75-27-4		ND	5.56	0.556

Certificate of Analysis

Sample #:	L12040721-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	GW-4S 0-2'	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/23/2012 17:04
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/13/2012 16:40
Workgroup #:	WG395957	**Analyst:**	TMB	**Run Date:**	04/23/2012 23:11
Collect Date:	04/11/2012 08:00	**Dilution:**	1	**File ID:**	9M92765
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	89.9

Analyte	CAS #	Result	Qual	RL	MDL
Bromoform	75-25-2		ND	5.56	0.556
Bromomethane	74-83-9		ND	5.56	1.11
Carbon disulfide	75-15-0		ND	5.56	0.556
Carbon tetrachloride	56-23-5		ND	5.56	0.556
Chlorobenzene	108-90-7		ND	5.56	0.556
Chlorodibromomethane	124-48-1		ND	5.56	0.556
Chloroethane	75-00-3		ND	5.56	1.11
Chloroform	67-66-3		ND	5.56	0.556
Chloromethane	74-87-3		ND	5.56	2.22
cis-1,2-Dichloroethene	156-59-2		ND	5.56	0.556
cis-1,3-Dichloropropene	10061-01-5		ND	5.56	0.556
Dibromomethane	74-95-3		ND	5.56	0.556
Dichlorodifluoromethane	75-71-8		ND	5.56	1.11
Ethylbenzene	100-41-4		ND	5.56	0.556
Hexachlorobutadiene	87-68-3		ND	5.56	0.556
Isopropylbenzene	98-82-8		ND	5.56	0.556
m-,p-Xylene	179601-23-1		ND	5.56	0.556
Methylene chloride	75-09-2		ND	5.56	1.11
n-Butylbenzene	104-51-8		ND	5.56	0.556
n-Propylbenzene	103-65-1		ND	5.56	0.556
Naphthalene	91-20-3		ND	5.56	0.556
o-Xylene	95-47-6		ND	5.56	0.556
p-Isopropyltoluene	99-87-6		ND	5.56	0.556
sec-Butylbenzene	135-98-8		ND	5.56	0.556
Styrene	100-42-5		ND	5.56	0.556
tert-Butylbenzene	98-06-6		ND	5.56	0.556
Tetrachloroethene	127-18-4		ND	5.56	0.556
Toluene	108-88-3		ND	5.56	0.556
trans-1,2-Dichloroethene	156-60-5		ND	5.56	0.556
trans-1,3-Dichloropropene	10061-02-6		ND	5.56	0.556
Trichloroethene	79-01-6		ND	5.56	0.556
Trichlorofluoromethane	75-69-4		ND	5.56	1.11
Vinyl acetate	108-05-4		ND	5.56	2.78

Certificate of Analysis

Sample #:	L12040721-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	GW-4S 0-2'	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/23/2012 17:04
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/13/2012 16:40
Workgroup #:	WG395957	**Analyst:**	TMB	**Run Date:**	04/23/2012 23:11
Collect Date:	04/11/2012 08:00	**Dilution:**	1	**File ID:**	9M92765
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	89.9

Analyte	CAS #	Result	Qual	RL	MDL
Vinyl chloride	75-01-4		ND	5.56	1.11

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	107	80	120	
4-Bromofluorobenzene	150	74	121	*
Dibromofluoromethane	106	80	120	
Toluene-d8	104	81	117	

*	Surrogate or spike compound out of range
ND	Not detected at or above the reporting limit (RL).

Sample #:	L12040721-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	GW-4S 0-2'	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/24/2012 08:56
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/13/2012 16:40
Workgroup #:	WG396076	**Analyst:**	TMB	**Run Date:**	04/24/2012 21:35
Collect Date:	04/11/2012 08:00	**Dilution:**	1	**File ID:**	9M92789
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	89.9

Analyte	CAS #	Result	Qual	RL	MDL
Acetone	67-64-1	1260		56.7	28.4

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	104	80	120	
4-Bromofluorobenzene	112	74	121	
Dibromofluoromethane	104	80	120	
Toluene-d8	101	81	117	

Certificate of Analysis

Sample #:	L12040721-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	GW-5S 0-2'	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/23/2012 17:14
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/13/2012 16:40
Workgroup #:	WG395957	**Analyst:**	TMB	**Run Date:**	04/23/2012 23:41
Collect Date:	04/11/2012 12:45	**Dilution:**	1	**File ID:**	9M92766
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	93.5

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		ND	5.47	0.547
1,1,1-Trichloroethane	71-55-6		ND	5.47	0.547
1,1,2,2-Tetrachloroethane	79-34-5		ND	5.47	0.547
1,1,2-Trichloroethane	79-00-5		ND	5.47	0.547
1,1-Dichloroethane	75-34-3		ND	5.47	1.09
1,1-Dichloroethene	75-35-4		ND	5.47	0.547
1,1-Dichloropropene	563-58-6		ND	5.47	0.547
1,2,3-Trichlorobenzene	87-61-6		ND	5.47	0.547
1,2,3-Trichloropropane	96-18-4		ND	5.47	1.09
1,2,4-Trichlorobenzene	120-82-1		ND	5.47	0.547
1,2,4-Trimethylbenzene	95-63-6		ND	5.47	0.547
1,2-Dibromo-3-chloropropane	96-12-8		ND	5.47	2.19
1,2-Dibromoethane	106-93-4		ND	5.47	0.547
1,2-Dichlorobenzene	95-50-1		ND	5.47	0.547
1,2-Dichloroethane	107-06-2		ND	5.47	0.547
1,2-Dichloropropane	78-87-5		ND	5.47	0.547
1,3,5-Trimethylbenzene	108-67-8		ND	5.47	0.547
1,3-Dichlorobenzene	541-73-1		ND	5.47	0.547
1,3-Dichloropropane	142-28-9		ND	5.47	0.547
1,4-Dichlorobenzene	106-46-7		ND	5.47	0.547
2,2-Dichloropropane	594-20-7		ND	5.47	0.547
2-Butanone	78-93-3		ND	5.47	2.73
2-Chloroethyl vinyl ether	110-75-8		ND	5.47	2.19
2-Chlorotoluene	95-49-8		ND	5.47	0.547
2-Hexanone	591-78-6		ND	5.47	2.73
4-Chlorotoluene	106-43-4		ND	5.47	0.547
4-Methyl-2-pentanone	108-10-1		ND	5.47	2.73
Acetone	67-64-1		ND	10.9	5.47
Acetonitrile	75-05-8		ND	10.9	5.47
Acrolein	107-02-8		ND	109	21.9
Benzene	71-43-2		ND	5.47	0.547
Bromobenzene	108-86-1		ND	5.47	0.547
Bromochloromethane	74-97-5		ND	5.47	1.09

Certificate of Analysis

Sample #:	L12040721-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	GW-5S 0-2'	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/23/2012 17:14
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/13/2012 16:40
Workgroup #:	WG395957	**Analyst:**	TMB	**Run Date:**	04/23/2012 23:41
Collect Date:	04/11/2012 12:45	**Dilution:**	1	**File ID:**	9M92766
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	93.5

Analyte	CAS #	Result	Qual	RL	MDL
Bromodichloromethane	75-27-4		ND	5.47	0.547
Bromoform	75-25-2		ND	5.47	0.547
Bromomethane	74-83-9		ND	5.47	1.09
Carbon disulfide	75-15-0		ND	5.47	0.547
Carbon tetrachloride	56-23-5		ND	5.47	0.547
Chlorobenzene	108-90-7		ND	5.47	0.547
Chlorodibromomethane	124-48-1		ND	5.47	0.547
Chloroethane	75-00-3		ND	5.47	1.09
Chloroform	67-66-3		ND	5.47	0.547
Chloromethane	74-87-3		ND	5.47	2.19
cis-1,2-Dichloroethene	156-59-2		ND	5.47	0.547
cis-1,3-Dichloropropene	10061-01-5		ND	5.47	0.547
Dibromomethane	74-95-3		ND	5.47	0.547
Dichlorodifluoromethane	75-71-8		ND	5.47	1.09
Ethylbenzene	100-41-4		ND	5.47	0.547
Hexachlorobutadiene	87-68-3		ND	5.47	0.547
Isopropylbenzene	98-82-8		ND	5.47	0.547
m-,p-Xylene	179601-23-1		ND	5.47	0.547
Methylene chloride	75-09-2		ND	5.47	1.09
n-Butylbenzene	104-51-8		ND	5.47	0.547
n-Propylbenzene	103-65-1		ND	5.47	0.547
Naphthalene	91-20-3		ND	5.47	0.547
o-Xylene	95-47-6		ND	5.47	0.547
p-Isopropyltoluene	99-87-6		ND	5.47	0.547
sec-Butylbenzene	135-98-8		ND	5.47	0.547
Styrene	100-42-5		ND	5.47	0.547
tert-Butylbenzene	98-06-6		ND	5.47	0.547
Tetrachloroethene	127-18-4		ND	5.47	0.547
Toluene	108-88-3		ND	5.47	0.547
trans-1,2-Dichloroethene	156-60-5		ND	5.47	0.547
trans-1,3-Dichloropropene	10061-02-6		ND	5.47	0.547
Trichloroethene	79-01-6		ND	5.47	0.547
Trichlorofluoromethane	75-69-4		ND	5.47	1.09

Certificate of Analysis

Sample #:	L12040721-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	GW-5S 0-2'	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/23/2012 17:14
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/13/2012 16:40
Workgroup #:	WG395957	**Analyst:**	TMB	**Run Date:**	04/23/2012 23:41
Collect Date:	04/11/2012 12:45	**Dilution:**	1	**File ID:**	9M92766
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	93.5

Analyte	CAS #	Result	Qual	RL	MDL
Vinyl acetate	108-05-4		ND	5.47	2.73
Vinyl chloride	75-01-4		ND	5.47	1.09

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	94.8	80	120	
4-Bromofluorobenzene	96.5	74	121	
Dibromofluoromethane	96.8	80	120	
Toluene-d8	101	81	117	

ND	Not detected at or above the reporting limit (RL).

Certificate of Analysis

Sample #:	L12040721-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	GW-6S 8-10'	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/23/2012 17:16
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/13/2012 16:40
Workgroup #:	WG395957	**Analyst:**	TMB	**Run Date:**	04/24/2012 00:11
Collect Date:	04/11/2012 15:46	**Dilution:**	1	**File ID:**	9M92767
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.5

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		ND	5.99	0.599
1,1,1-Trichloroethane	71-55-6		ND	5.99	0.599
1,1,2,2-Tetrachloroethane	79-34-5		ND	5.99	0.599
1,1,2-Trichloroethane	79-00-5		ND	5.99	0.599
1,1-Dichloroethane	75-34-3		ND	5.99	1.20
1,1-Dichloroethene	75-35-4		ND	5.99	0.599
1,1-Dichloropropene	563-58-6		ND	5.99	0.599
1,2,3-Trichlorobenzene	87-61-6		ND	5.99	0.599
1,2,3-Trichloropropane	96-18-4		ND	5.99	1.20
1,2,4-Trichlorobenzene	120-82-1		ND	5.99	0.599
1,2,4-Trimethylbenzene	95-63-6		ND	5.99	0.599
1,2-Dibromo-3-chloropropane	96-12-8		ND	5.99	2.40
1,2-Dibromoethane	106-93-4		ND	5.99	0.599
1,2-Dichlorobenzene	95-50-1		ND	5.99	0.599
1,2-Dichloroethane	107-06-2		ND	5.99	0.599
1,2-Dichloropropane	78-87-5		ND	5.99	0.599
1,3,5-Trimethylbenzene	108-67-8		ND	5.99	0.599
1,3-Dichlorobenzene	541-73-1		ND	5.99	0.599
1,3-Dichloropropane	142-28-9		ND	5.99	0.599
1,4-Dichlorobenzene	106-46-7		ND	5.99	0.599
2,2-Dichloropropane	594-20-7		ND	5.99	0.599
2-Butanone	78-93-3		ND	5.99	3.00
2-Chloroethyl vinyl ether	110-75-8		ND	5.99	2.40
2-Chlorotoluene	95-49-8		ND	5.99	0.599
2-Hexanone	591-78-6		ND	5.99	3.00
4-Chlorotoluene	106-43-4		ND	5.99	0.599
4-Methyl-2-pentanone	108-10-1		ND	5.99	3.00
Acetone	67-64-1		ND	12.0	5.99
Acetonitrile	75-05-8		ND	12.0	5.99
Acrolein	107-02-8		ND	120	24.0
Benzene	71-43-2		ND	5.99	0.599
Bromobenzene	108-86-1		ND	5.99	0.599
Bromochloromethane	74-97-5		ND	5.99	1.20

Certificate of Analysis

Sample #:	L12040721-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	GW-6S 8-10'	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/23/2012 17:16
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/13/2012 16:40
Workgroup #:	WG395957	**Analyst:**	TMB	**Run Date:**	04/24/2012 00:11
Collect Date:	04/11/2012 15:46	**Dilution:**	1	**File ID:**	9M92767
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.5

Analyte	CAS #	Result	Qual	RL	MDL
Bromodichloromethane	75-27-4		ND	5.99	0.599
Bromoform	75-25-2		ND	5.99	0.599
Bromomethane	74-83-9		ND	5.99	1.20
Carbon disulfide	75-15-0		ND	5.99	0.599
Carbon tetrachloride	56-23-5		ND	5.99	0.599
Chlorobenzene	108-90-7		ND	5.99	0.599
Chlorodibromomethane	124-48-1		ND	5.99	0.599
Chloroethane	75-00-3		ND	5.99	1.20
Chloroform	67-66-3		ND	5.99	0.599
Chloromethane	74-87-3		ND	5.99	2.40
cis-1,2-Dichloroethene	156-59-2		ND	5.99	0.599
cis-1,3-Dichloropropene	10061-01-5		ND	5.99	0.599
Dibromomethane	74-95-3		ND	5.99	0.599
Dichlorodifluoromethane	75-71-8		ND	5.99	1.20
Ethylbenzene	100-41-4		ND	5.99	0.599
Hexachlorobutadiene	87-68-3		ND	5.99	0.599
Isopropylbenzene	98-82-8		ND	5.99	0.599
m-,p-Xylene	179601-23-1		ND	5.99	0.599
Methylene chloride	75-09-2		ND	5.99	1.20
n-Butylbenzene	104-51-8		ND	5.99	0.599
n-Propylbenzene	103-65-1		ND	5.99	0.599
Naphthalene	91-20-3		ND	5.99	0.599
o-Xylene	95-47-6		ND	5.99	0.599
p-Isopropyltoluene	99-87-6		ND	5.99	0.599
sec-Butylbenzene	135-98-8		ND	5.99	0.599
Styrene	100-42-5		ND	5.99	0.599
tert-Butylbenzene	98-06-6		ND	5.99	0.599
Tetrachloroethene	127-18-4		ND	5.99	0.599
Toluene	108-88-3		ND	5.99	0.599
trans-1,2-Dichloroethene	156-60-5		ND	5.99	0.599
trans-1,3-Dichloropropene	10061-02-6		ND	5.99	0.599
Trichloroethene	79-01-6		ND	5.99	0.599
Trichlorofluoromethane	75-69-4		ND	5.99	1.20

Certificate of Analysis

Sample #:	L12040721-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	GW-6S 8-10'	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/23/2012 17:16
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/13/2012 16:40
Workgroup #:	WG395957	**Analyst:**	TMB	**Run Date:**	04/24/2012 00:11
Collect Date:	04/11/2012 15:46	**Dilution:**	1	**File ID:**	9M92767
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.5

Analyte	CAS #	Result	Qual	RL	MDL
Vinyl acetate	108-05-4		ND	5.99	3.00
Vinyl chloride	75-01-4		ND	5.99	1.20

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	96.6	80	120	
4-Bromofluorobenzene	91.4	74	121	
Dibromofluoromethane	94.8	80	120	
Toluene-d8	100	81	117	

ND	Not detected at or above the reporting limit (RL).

Certificate of Analysis

Sample #:	L12040721-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	GW-7S 0-2'	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/23/2012 17:18
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/13/2012 16:40
Workgroup #:	WG395957	**Analyst:**	TMB	**Run Date:**	04/24/2012 00:42
Collect Date:	04/12/2012 08:41	**Dilution:**	1	**File ID:**	9M92768
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.2

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		ND	6.32	0.632
1,1,1-Trichloroethane	71-55-6		ND	6.32	0.632
1,1,2,2-Tetrachloroethane	79-34-5		ND	6.32	0.632
1,1,2-Trichloroethane	79-00-5		ND	6.32	0.632
1,1-Dichloroethane	75-34-3		ND	6.32	1.26
1,1-Dichloroethene	75-35-4		ND	6.32	0.632
1,1-Dichloropropene	563-58-6		ND	6.32	0.632
1,2,3-Trichlorobenzene	87-61-6		ND	6.32	0.632
1,2,3-Trichloropropane	96-18-4		ND	6.32	1.26
1,2,4-Trichlorobenzene	120-82-1		ND	6.32	0.632
1,2,4-Trimethylbenzene	95-63-6		ND	6.32	0.632
1,2-Dibromo-3-chloropropane	96-12-8		ND	6.32	2.53
1,2-Dibromoethane	106-93-4		ND	6.32	0.632
1,2-Dichlorobenzene	95-50-1		ND	6.32	0.632
1,2-Dichloroethane	107-06-2		ND	6.32	0.632
1,2-Dichloropropane	78-87-5		ND	6.32	0.632
1,3,5-Trimethylbenzene	108-67-8		ND	6.32	0.632
1,3-Dichlorobenzene	541-73-1		ND	6.32	0.632
1,3-Dichloropropane	142-28-9		ND	6.32	0.632
1,4-Dichlorobenzene	106-46-7		ND	6.32	0.632
2,2-Dichloropropane	594-20-7		ND	6.32	0.632
2-Butanone	78-93-3		ND	6.32	3.16
2-Chloroethyl vinyl ether	110-75-8		ND	6.32	2.53
2-Chlorotoluene	95-49-8		ND	6.32	0.632
2-Hexanone	591-78-6		ND	6.32	3.16
4-Chlorotoluene	106-43-4		ND	6.32	0.632
4-Methyl-2-pentanone	108-10-1		ND	6.32	3.16
Acetone	67-64-1		ND	12.6	6.32
Acetonitrile	75-05-8	23.7		12.6	6.32
Acrolein	107-02-8		ND	126	25.3
Benzene	71-43-2		ND	6.32	0.632
Bromobenzene	108-86-1		ND	6.32	0.632
Bromochloromethane	74-97-5		ND	6.32	1.26

Certificate of Analysis

Sample #:	L12040721-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	GW-7S 0-2'	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/23/2012 17:18
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/13/2012 16:40
Workgroup #:	WG395957	**Analyst:**	TMB	**Run Date:**	04/24/2012 00:42
Collect Date:	04/12/2012 08:41	**Dilution:**	1	**File ID:**	9M92768
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.2

Analyte	CAS #	Result	Qual	RL	MDL
Bromodichloromethane	75-27-4		ND	6.32	0.632
Bromoform	75-25-2		ND	6.32	0.632
Bromomethane	74-83-9		ND	6.32	1.26
Carbon disulfide	75-15-0		ND	6.32	0.632
Carbon tetrachloride	56-23-5		ND	6.32	0.632
Chlorobenzene	108-90-7		ND	6.32	0.632
Chlorodibromomethane	124-48-1		ND	6.32	0.632
Chloroethane	75-00-3		ND	6.32	1.26
Chloroform	67-66-3		ND	6.32	0.632
Chloromethane	74-87-3		ND	6.32	2.53
cis-1,2-Dichloroethene	156-59-2		ND	6.32	0.632
cis-1,3-Dichloropropene	10061-01-5		ND	6.32	0.632
Dibromomethane	74-95-3		ND	6.32	0.632
Dichlorodifluoromethane	75-71-8		ND	6.32	1.26
Ethylbenzene	100-41-4		ND	6.32	0.632
Hexachlorobutadiene	87-68-3		ND	6.32	0.632
Isopropylbenzene	98-82-8		ND	6.32	0.632
m-,p-Xylene	179601-23-1		ND	6.32	0.632
Methylene chloride	75-09-2		ND	6.32	1.26
n-Butylbenzene	104-51-8		ND	6.32	0.632
n-Propylbenzene	103-65-1		ND	6.32	0.632
Naphthalene	91-20-3		ND	6.32	0.632
o-Xylene	95-47-6		ND	6.32	0.632
p-Isopropyltoluene	99-87-6		ND	6.32	0.632
sec-Butylbenzene	135-98-8		ND	6.32	0.632
Styrene	100-42-5		ND	6.32	0.632
tert-Butylbenzene	98-06-6		ND	6.32	0.632
Tetrachloroethene	127-18-4		ND	6.32	0.632
Toluene	108-88-3		ND	6.32	0.632
trans-1,2-Dichloroethene	156-60-5		ND	6.32	0.632
trans-1,3-Dichloropropene	10061-02-6		ND	6.32	0.632
Trichloroethene	79-01-6		ND	6.32	0.632
Trichlorofluoromethane	75-69-4		ND	6.32	1.26

Certificate of Analysis

Sample #:	L12040721-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	GW-7S 0-2'	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/23/2012 17:18
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/13/2012 16:40
Workgroup #:	WG395957	**Analyst:**	TMB	**Run Date:**	04/24/2012 00:42
Collect Date:	04/12/2012 08:41	**Dilution:**	1	**File ID:**	9M92768
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.2

Analyte	CAS #	Result	Qual	RL	MDL
Vinyl acetate	108-05-4		ND	6.32	3.16
Vinyl chloride	75-01-4		ND	6.32	1.26

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	100	80	120	
4-Bromofluorobenzene	101	74	121	
Dibromofluoromethane	98.5	80	120	
Toluene-d8	105	81	117	

ND	Not detected at or above the reporting limit (RL).

Certificate of Analysis

Sample #:	L12040721-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	GW-8S 12-14'	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/23/2012 17:19
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/13/2012 16:40
Workgroup #:	WG395957	**Analyst:**	TMB	**Run Date:**	04/24/2012 01:12
Collect Date:	04/12/2012 13:14	**Dilution:**	1	**File ID:**	9M92769
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.1

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		ND	6.01	0.601
1,1,1-Trichloroethane	71-55-6		ND	6.01	0.601
1,1,2,2-Tetrachloroethane	79-34-5		ND	6.01	0.601
1,1,2-Trichloroethane	79-00-5		ND	6.01	0.601
1,1-Dichloroethane	75-34-3		ND	6.01	1.20
1,1-Dichloroethene	75-35-4		ND	6.01	0.601
1,1-Dichloropropene	563-58-6		ND	6.01	0.601
1,2,3-Trichlorobenzene	87-61-6		ND	6.01	0.601
1,2,3-Trichloropropane	96-18-4		ND	6.01	1.20
1,2,4-Trichlorobenzene	120-82-1		ND	6.01	0.601
1,2,4-Trimethylbenzene	95-63-6		ND	6.01	0.601
1,2-Dibromo-3-chloropropane	96-12-8		ND	6.01	2.40
1,2-Dibromoethane	106-93-4		ND	6.01	0.601
1,2-Dichlorobenzene	95-50-1		ND	6.01	0.601
1,2-Dichloroethane	107-06-2		ND	6.01	0.601
1,2-Dichloropropane	78-87-5		ND	6.01	0.601
1,3,5-Trimethylbenzene	108-67-8		ND	6.01	0.601
1,3-Dichlorobenzene	541-73-1		ND	6.01	0.601
1,3-Dichloropropane	142-28-9		ND	6.01	0.601
1,4-Dichlorobenzene	106-46-7		ND	6.01	0.601
2,2-Dichloropropane	594-20-7		ND	6.01	0.601
2-Butanone	78-93-3		ND	6.01	3.01
2-Chloroethyl vinyl ether	110-75-8		ND	6.01	2.40
2-Chlorotoluene	95-49-8		ND	6.01	0.601
2-Hexanone	591-78-6		ND	6.01	3.01
4-Chlorotoluene	106-43-4		ND	6.01	0.601
4-Methyl-2-pentanone	108-10-1		ND	6.01	3.01
Acetone	67-64-1	45.4		12.0	6.01
Acetonitrile	75-05-8	25.6		12.0	6.01
Acrolein	107-02-8		ND	120	24.0
Benzene	71-43-2		ND	6.01	0.601
Bromobenzene	108-86-1		ND	6.01	0.601
Bromochloromethane	74-97-5		ND	6.01	1.20

Certificate of Analysis

Sample #:	L12040721-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	GW-8S 12-14'	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/23/2012 17:19
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/13/2012 16:40
Workgroup #:	WG395957	**Analyst:**	TMB	**Run Date:**	04/24/2012 01:12
Collect Date:	04/12/2012 13:14	**Dilution:**	1	**File ID:**	9M92769
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.1

Analyte	CAS #	Result	Qual	RL	MDL
Bromodichloromethane	75-27-4		ND	6.01	0.601
Bromoform	75-25-2		ND	6.01	0.601
Bromomethane	74-83-9		ND	6.01	1.20
Carbon disulfide	75-15-0		ND	6.01	0.601
Carbon tetrachloride	56-23-5		ND	6.01	0.601
Chlorobenzene	108-90-7		ND	6.01	0.601
Chlorodibromomethane	124-48-1		ND	6.01	0.601
Chloroethane	75-00-3		ND	6.01	1.20
Chloroform	67-66-3		ND	6.01	0.601
Chloromethane	74-87-3		ND	6.01	2.40
cis-1,2-Dichloroethene	156-59-2		ND	6.01	0.601
cis-1,3-Dichloropropene	10061-01-5		ND	6.01	0.601
Dibromomethane	74-95-3		ND	6.01	0.601
Dichlorodifluoromethane	75-71-8		ND	6.01	1.20
Ethylbenzene	100-41-4		ND	6.01	0.601
Hexachlorobutadiene	87-68-3		ND	6.01	0.601
Isopropylbenzene	98-82-8		ND	6.01	0.601
m-,p-Xylene	179601-23-1		ND	6.01	0.601
Methylene chloride	75-09-2		ND	6.01	1.20
n-Butylbenzene	104-51-8		ND	6.01	0.601
n-Propylbenzene	103-65-1		ND	6.01	0.601
Naphthalene	91-20-3		ND	6.01	0.601
o-Xylene	95-47-6		ND	6.01	0.601
p-Isopropyltoluene	99-87-6		ND	6.01	0.601
sec-Butylbenzene	135-98-8		ND	6.01	0.601
Styrene	100-42-5		ND	6.01	0.601
tert-Butylbenzene	98-06-6		ND	6.01	0.601
Tetrachloroethene	127-18-4		ND	6.01	0.601
Toluene	108-88-3		ND	6.01	0.601
trans-1,2-Dichloroethene	156-60-5		ND	6.01	0.601
trans-1,3-Dichloropropene	10061-02-6		ND	6.01	0.601
Trichloroethene	79-01-6		ND	6.01	0.601
Trichlorofluoromethane	75-69-4		ND	6.01	1.20

Certificate of Analysis

Sample #:	L12040721-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	GW-8S 12-14'	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/23/2012 17:19
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/13/2012 16:40
Workgroup #:	WG395957	**Analyst:**	TMB	**Run Date:**	04/24/2012 01:12
Collect Date:	04/12/2012 13:14	**Dilution:**	1	**File ID:**	9M92769
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.1

Analyte	CAS #	Result	Qual	RL	MDL
Vinyl acetate	108-05-4		ND	6.01	3.01
Vinyl chloride	75-01-4		ND	6.01	1.20

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	102	80	120	
4-Bromofluorobenzene	95.0	74	121	
Dibromofluoromethane	97.2	80	120	
Toluene-d8	99.1	81	117	

ND	Not detected at or above the reporting limit (RL).

Microbac

Lab Report #: L12040721
Lab Project #: 3071.001
Project Name: Central Carolina Tire
Lab Contact: Stephanie Mossburg

Sample #: L12040721-01 **Client ID:** GW-1S 8-10' **Matrix:** Soil **Collect Date:** 04/10/2012 08:45

Analyte	Result	Units	Qualifier
Percent Solids	90.6	weight %	

Sample #: L12040721-02 **Client ID:** GW-2S 4-6' **Matrix:** Soil **Collect Date:** 04/10/2012 10:57

Analyte	Result	Units	Qualifier
Percent Solids	89.0	weight %	

Sample #: L12040721-03 **Client ID:** GW-3S 6-8' **Matrix:** Soil **Collect Date:** 04/10/2012 14:28

Analyte	Result	Units	Qualifier
Percent Solids	86.9	weight %	

Sample #: L12040721-04 **Client ID:** GW-4S 0-2' **Matrix:** Soil **Collect Date:** 04/11/2012 08:00

Analyte	Result	Units	Qualifier
Percent Solids	89.9	weight %	

Sample #: L12040721-05 **Client ID:** GW-5S 0-2' **Matrix:** Soil **Collect Date:** 04/11/2012 12:45

Analyte	Result	Units	Qualifier
Percent Solids	93.5	weight %	

Sample #: L12040721-06 **Client ID:** GW-6S 8-10' **Matrix:** Soil **Collect Date:** 04/11/2012 15:46

Analyte	Result	Units	Qualifier
Percent Solids	85.5	weight %	

Sample #: L12040721-07 **Client ID:** GW-7S 0-2' **Matrix:** Soil **Collect Date:** 04/12/2012 08:41

Analyte	Result	Units	Qualifier
Percent Solids	84.2	weight %	

Sample #: L12040721-08 **Client ID:** GW-8S 12-14' **Matrix:** Soil **Collect Date:** 04/12/2012 13:14

Analyte	Result	Units	Qualifier
Percent Solids	85.1	weight %	

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12040721
Blank File ID: 9M92752
Prep Date: 04/23/12 16:26
Analyzed Date: 04/23/12 16:26
Analyst: TMB

Work Group: WG395957
Blank Sample ID: WG395957-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG395957-02	9M92753	04/23/12 16:58	01
GW-1S 8-10'	L12040721-01	9M92762	04/23/12 21:39	01
GW-2S 4-6'	L12040721-02	9M92763	04/23/12 22:09	01
GW-3S 6-8'	L12040721-03	9M92764	04/23/12 22:40	01
GW-4S 0-2'	L12040721-04	9M92765	04/23/12 23:11	02
GW-5S 0-2'	L12040721-05	9M92766	04/23/12 23:41	01
GW-6S 8-10'	L12040721-06	9M92767	04/24/12 00:11	01
GW-7S 0-2'	L12040721-07	9M92768	04/24/12 00:42	01
GW-8S 12-14'	L12040721-08	9M92769	04/24/12 01:12	01

Report Name: BLANK_SUMMARY
PDF File ID: 2397556
Report generated 04/30/2012 17:24

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12040721
Blank File ID: 9M92779
Prep Date: 04/24/12 16:27
Analyzed Date: 04/24/12 16:27
Analyst: TMB

Work Group: WG396076
Blank Sample ID: WG396076-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG396076-02	9M92780	04/24/12 16:58	01
GW-4S 0-2'	L12040721-04	9M92789	04/24/12 21:35	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 2397556
Report generated 04/30/2012 17:24

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12040721 Prep Date: 04/23/12 16:26 Sample ID: WG395957-01
Instrument ID: HPMS9 Run Date: 04/23/12 16:26 Prep Method: 5030B/5030C/503
File ID: 9M92752 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG395957 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-13-APR-12

Analytes	MDL	RL	Concentration	Dilution	Qualifier
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	5.00	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
2-Butanone	2.50	5.00	2.50	1	U
2-Chloroethyl vinyl ether	2.00	5.00	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	5.00	2.50	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	5.00	2.50	1	U
Acetone	5.00	10.0	5.00	1	U
Acetonitrile	5.00	10.0	19.4	1	*
Acrolein	20.0	100	20.0	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
Carbon disulfide	0.500	5.00	0.754	1	J
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U

Report Name: BLANK
PDF ID: 2397557
30-APR-2012 17:24

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12040721 Prep Date: 04/23/12 16:26 Sample ID: WG395957-01
Instrument ID: HPMS9 Run Date: 04/23/12 16:26 Prep Method: 5030B/5030C/503
File ID: 9M92752 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG395957 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-13-APR-12

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Chloromethane	2.00	5.00	2.00	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U
Methylene chloride	1.00	5.00	1.00	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Naphthalene	0.500	5.00	0.500	1	U
o-Xylene	0.500	5.00	0.500	1	U
p-Isopropyltoluene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
Vinyl acetate	2.50	5.00	2.50	1	U
Vinyl chloride	1.00	5.00	1.00	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,2-Dichloroethane-d4	98.1	80 - 120	PASS
4-Bromofluorobenzene	93.8	74 - 121	PASS
Dibromofluoromethane	98.1	80 - 120	PASS
Toluene-d8	99.1	81 - 117	PASS

MDL Method Detection Limit
RL Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > RL

Report Name:BLANK
PDF ID: 2397557
30-APR-2012 17:24

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12040721 Prep Date: 04/24/12 16:27 Sample ID: WG396076-01
Instrument ID: HPMS9 Run Date: 04/24/12 16:27 Prep Method: 5030B/5030C/503
File ID: 9M92779 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG396076 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-13-APR-12

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Acetone	5.00	10.0	5.47	1	J

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,2-Dichloroethane-d4	97.9	80 - 120	PASS
4-Bromofluorobenzene	93.5	74 - 121	PASS
Dibromofluoromethane	100	80 - 120	PASS
Toluene-d8	99.2	81 - 117	PASS

MDL Method Detection Limit
RL Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > RL

Report Name:BLANK
PDF ID: 2397557
30-APR-2012 17:24

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12040721 Run Date: 04/23/2012 Sample ID: WG395957-02
Instrument ID: HPMS9 Run Time: 16:58 Prep Method: 5030B/5030C/503
File ID: 9M92753 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG395957 Matrix: Soil Units: ug/kg
QC Key: STD Lot#: STD51076 Cal ID: HPMS9-13-APR-12

Analytes	Expected	Found	% Rec	LCS Limits	Q
1,1,1,2-Tetrachloroethane	20.0	19.0	95.2	71 - 137	
1,1,1-Trichloroethane	20.0	20.4	102	70 - 135	
1,1,2,2-Tetrachloroethane	20.0	20.3	102	55 - 130	
1,1,2-Trichloroethane	20.0	20.0	100	60 - 125	
1,1-Dichloroethane	20.0	21.0	105	75 - 125	
1,1-Dichloroethene	20.0	21.7	109	65 - 135	
1,1-Dichloropropene	20.0	20.6	103	57 - 138	
1,2,3-Trichlorobenzene	20.0	18.7	93.5	60 - 135	
1,2,3-Trichloropropane	20.0	19.8	98.8	65 - 130	
1,2,4-Trichlorobenzene	20.0	18.9	94.4	65 - 130	
1,2,4-Trimethylbenzene	20.0	20.7	103	75 - 132	
1,2-Dibromo-3-chloropropane	20.0	19.9	99.5	40 - 135	
1,2-Dibromoethane	20.0	20.1	101	69 - 130	
1,2-Dichlorobenzene	20.0	20.0	100	70 - 130	
1,2-Dichloroethane	20.0	19.8	99.1	63 - 133	
1,2-Dichloropropane	20.0	19.6	98.1	72 - 130	
1,3,5-Trimethylbenzene	20.0	20.2	101	74 - 133	
1,3-Dichlorobenzene	20.0	19.7	98.5	70 - 130	
1,3-Dichloropropane	20.0	19.8	99.0	65 - 128	
1,4-Dichlorobenzene	20.0	19.4	97.2	70 - 130	
2,2-Dichloropropane	20.0	20.8	104	66 - 135	
2-Butanone	20.0	20.4	102	37 - 180	
2-Chloroethyl vinyl ether	20.0	17.8	88.9	35 - 154	
2-Chlorotoluene	20.0	19.4	97.1	63 - 147	
2-Hexanone	20.0	20.2	101	45 - 145	
4-Chlorotoluene	20.0	20.8	104	70 - 138	
4-Methyl-2-pentanone	20.0	19.2	95.9	47 - 146	
Acetone	20.0	22.5	112	20 - 160	
Acrolein	100	56.8	56.8	50 - 150	
Benzene	20.0	20.2	101	70 - 130	
Bromobenzene	20.0	19.7	98.4	72 - 131	
Bromochloromethane	20.0	20.8	104	70 - 130	
Bromodichloromethane	20.0	19.6	97.9	72 - 137	
Bromoform	20.0	19.3	96.4	49 - 136	
Bromomethane	20.0	22.1	110	37 - 143	
Carbon disulfide	20.0	19.7	98.7	39 - 139	
Carbon tetrachloride	20.0	20.6	103	59 - 136	
Chlorobenzene	20.0	19.8	98.8	70 - 130	
Chlorodibromomethane	20.0	19.6	98.2	59 - 136	
Chloroethane	20.0	20.5	103	52 - 135	
Chloroform	20.0	20.7	103	74 - 129	

LCS - Modified 03/06/2008
PDF File ID: 2393802
Report generated: 04/30/2012 17:24

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12040721 Run Date: 04/23/2012 Sample ID: WG395957-02
Instrument ID: HPMS9 Run Time: 16:58 Prep Method: 5030B/5030C/503
File ID: 9M92753 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG395957 Matrix: Soil Units: ug/kg
QC Key: STD Lot#: STD51076 Cal ID: HPMS9-13-APR-12

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloromethane	20.0	22.2	111	30 - 131	
cis-1,2-Dichloroethene	20.0	21.6	108	70 - 130	
cis-1,3-Dichloropropene	20.0	19.8	98.9	70 - 142	
Dibromomethane	20.0	21.6	108	69 - 130	
Dichlorodifluoromethane	20.0	27.0	135	25 - 130	*
Ethylbenzene	20.0	21.2	106	70 - 130	
Hexachlorobutadiene	20.0	18.4	91.8	65 - 135	
Isopropylbenzene	20.0	18.0	89.8	68 - 129	
m-,p-Xylene	40.0	41.3	103	70 - 130	
Methylene chloride	20.0	20.4	102	74 - 128	
n-Butylbenzene	20.0	19.9	99.6	70 - 136	
n-Propylbenzene	20.0	20.5	103	72 - 136	
Naphthalene	20.0	19.4	97.0	50 - 146	
o-Xylene	20.0	20.1	100	70 - 130	
p-Isopropyltoluene	20.0	19.4	97.0	72 - 128	
sec-Butylbenzene	20.0	20.3	102	71 - 132	
Styrene	20.0	19.9	99.4	74 - 130	
tert-Butylbenzene	20.0	20.6	103	72 - 130	
Tetrachloroethene	20.0	21.1	105	72 - 130	
Toluene	20.0	19.3	96.5	77 - 126	
trans-1,2-Dichloroethene	20.0	22.7	113	72 - 127	
trans-1,3-Dichloropropene	20.0	18.1	90.6	65 - 139	
Trichloroethene	20.0	20.4	102	72 - 126	
Trichlorofluoromethane	20.0	21.3	107	48 - 154	
Vinyl acetate	20.0	33.0	165	10 - 150	*
Vinyl chloride	20.0	22.5	113	45 - 140	

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,2-Dichloroethane-d4	95.9	80 - 120	PASS
4-Bromofluorobenzene	94.7	74 - 121	PASS
Dibromofluoromethane	97.0	80 - 120	PASS
Toluene-d8	99.0	81 - 117	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 2393802
Report generated: 04/30/2012 17:24

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12040721 Run Date: 04/24/2012 Sample ID: WG396076-02
Instrument ID: HPMS9 Run Time: 16:58 Prep Method: 5030B/5030C/503
File ID: 9M92780 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG396076 Matrix: Soil Units: ug/kg
QC Key: STD Lot#: STD51076 Cal ID: HPMS9-13-APR-12

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	24.7	124	20 - 160	

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,2-Dichloroethane-d4	98.0	80 - 120	PASS
4-Bromofluorobenzene	94.4	74 - 121	PASS
Dibromofluoromethane	99.3	80 - 120	PASS
Toluene-d8	98.0	81 - 117	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 2393802
Report generated: 04/30/2012 17:24

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L12040721 Cal ID: HPMS9 - Worknum: WG396076
Instrument ID: HPMS9 Contract #: Method: 8260B
Parent ID: WG395998-03 File ID: 9M92789 Dil: 1 Matrix: SOLID
Sample ID: WG395998-04 MS File ID: 9M92781 Dil: 1 Units: ug/kg
Sample ID: WG395998-05 MSD File ID: 9M92782 Dil: 1 Percent Solid: 89.9

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	ND	23200	118	0.508	22700	105	0.464	10.9	71 - 137	30	*
1,1,1-Trichloroethane	ND	23200	142	0.612	22700	112	0.493	23.5	70 - 135	30	*
1,1,2,2-Tetrachloroethane	6.12	23200	167	0.693	22700	106	0.440	44.6	55 - 130	30	*#
1,1,2-Trichloroethane	ND	23200	120	0.519	22700	129	0.567	6.72	60 - 125	30	*
1,1-Dichloroethane	ND	23200	145	0.626	22700	128	0.564	12.3	75 - 125	30	*
1,1-Dichloroethene	ND	23200	158	0.683	22700	126	0.557	22.3	65 - 135	30	*
1,1-Dichloropropene	ND	23200	131	0.565	22700	101	0.444	26.0	57 - 138	30	*
1,2,3-Trichlorobenzene	17.2	23200	126	0.468	22700	54.2	0.163	79.4	60 - 135	30	*#
1,2,3-Trichloropropane	6.16	23200	182	0.759	22700	127	0.534	35.5	65 - 130	30	*#
1,2,4-Trichlorobenzene	ND	23200	146	0.629	22700	61.3	0.270	81.5	65 - 130	30	*#
1,2,4-Trimethylbenzene	ND	23200	112	0.484	22700	46.4	0.204	83.0	75 - 132	30	*#
1,2-Dibromo-3-chloropropane	ND	23200	136	0.586	22700	121	0.533	11.5	40 - 135	30	*
1,2-Dibromoethane	ND	23200	123	0.529	22700	111	0.490	9.65	69 - 130	30	*
1,2-Dichlorobenzene	ND	23200	114	0.493	22700	62.0	0.273	59.3	70 - 130	30	*#
1,2-Dichloroethane	ND	23200	135	0.583	22700	116	0.510	15.4	63 - 133	30	*
1,2-Dichloropropane	ND	23200	134	0.579	22700	117	0.518	13.3	70 - 130	30	*
1,3,5-Trimethylbenzene	ND	23200	120	0.516	22700	52.3	0.230	78.3	74 - 133	30	*#
1,3-Dichlorobenzene	ND	23200	113	0.490	22700	56.9	0.251	66.3	70 - 130	30	*#
1,3-Dichloropropane	ND	23200	132	0.568	22700	116	0.509	12.9	65 - 128	30	*
1,4-Dichlorobenzene	ND	23200	114	0.493	22700	55.7	0.245	68.9	70 - 130	30	*#
2,2-Dichloropropane	ND	23200	142	0.612	22700	112	0.491	23.8	66 - 135	30	*
2-Butanone	14.8	23200	125	0.474	22700	107	0.405	15.5	37 - 180	30	*
2-Chloroethyl vinyl ether	ND	23200	91.5	0.395	22700	92.9	0.409	1.56	35 - 154	30	*
2-Chlorotoluene	ND	23200	123	0.529	22700	62.5	0.275	64.9	63 - 147	30	*#
2-Hexanone	ND	23200	99.2	0.428	22700	99.6	0.439	0.443	45 - 145	30	*
4-Chlorotoluene	ND	23200	114	0.492	22700	62.3	0.275	58.6	70 - 138	30	*#
4-Methyl-2-pentanone	ND	23200	107	0.460	22700	94.2	0.415	12.3	47 - 146	30	*
Acetone	1260	23200	1000	-1.13	22700	846	-1.84	16.7	20 - 160	30	*
Acetonitrile	ND		ND			ND		0	50 - 150	30	*
Acrolein	ND	116000	131	0.113	113000	63.7	0.0561	69.1	50 - 150	30	*#
Benzene	ND	23200	131	0.564	22700	112	0.495	15.1	70 - 130	30	*
Bromobenzene	ND	23200	144	0.622	22700	80.7	0.356	56.4	72 - 131	30	*#
Bromochloromethane	ND	23200	146	0.628	22700	122	0.537	17.8	70 - 130	30	*
Bromodichloromethane	ND	23200	133	0.574	22700	114	0.501	15.7	72 - 137	30	*
Bromoform	ND	23200	115	0.495	22700	126	0.557	9.78	49 - 136	30	*
Bromomethane	ND	23200	147	0.633	22700	138	0.607	6.31	37 - 143	30	*
Carbon disulfide	ND	23200	126	0.543	22700	99.5	0.438	23.4	39 - 139	30	*
Carbon tetrachloride	ND	23200	137	0.593	22700	98.6	0.435	32.8	59 - 136	30	*#
Chlorobenzene	ND	23200	120	0.516	22700	87.7	0.387	30.7	70 - 130	30	*#

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 2393803
Report generated 04/26/2012 18:18

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L12040721 Cal ID: HPMS9 Worknum: WG396076
Instrument ID: HPMS9 Contract #: Method: 8260B
Parent ID: WG395998-03 File ID: 9M92789 Dil: 1 Matrix: SOLID
Sample ID: WG395998-04 MS File ID: 9M92781 Dil: 1 Units: ug/kg
Sample ID: WG395998-05 MSD File ID: 9M92782 Dil: 1 Percent Solid: 89.9

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	ND	23200	114	0.490	22700	109	0.479	4.29	59 - 136	30	*
Chloroethane	ND	23200	143	0.618	22700	119	0.525	18.3	52 - 135	30	*
Chloroform	ND	23200	140	0.605	22700	120	0.529	15.3	74 - 129	30	*
Chloromethane	ND	23200	170	0.734	22700	145	0.639	16.0	30 - 131	30	*
Dibromomethane	ND	23200	137	0.590	22700	125	0.551	8.81	59 - 130	30	*
Dichlorodifluoromethane	ND	23200	191	0.825	22700	162	0.714	16.5	25 - 130	30	*
Ethylbenzene	ND	23200	128	0.554	22700	82.3	0.363	43.7	70 - 130	30	*#
Hexachlorobutadiene	ND	23200	66.0	0.285	22700	14.7	0.0648	127	65 - 135	30	*#
Isopropylbenzene	ND	23200	95.8	0.413	22700	52.0	0.229	59.3	68 - 129	30	*#
Methylene chloride	ND	23200	145	0.627	22700	133	0.587	8.52	74 - 128	30	*
Naphthalene	8.71	23200	94.6	0.371	22700	45.9	0.164	69.3	50 - 146	30	*#
Styrene	ND	23200	117	0.507	22700	78.2	0.344	40.2	74 - 130	30	*#
Tetrachloroethene	ND	23200	121	0.523	22700	71.5	0.315	51.5	72 - 130	30	*#
Toluene	ND	23200	122	0.526	22700	91.5	0.403	28.4	77 - 126	30	*
Trichloroethene	ND	23200	129	0.555	22700	103	0.455	21.9	72 - 126	30	*
Trichlorofluoromethane	ND	23200	156	0.675	22700	118	0.522	27.5	48 - 154	30	*
Vinyl acetate	ND	23200	ND	0	22700	3.63	0.0160	200	10 - 150	30	*#
Vinyl chloride	ND	23200	160	0.692	22700	140	0.618	13.4	25 - 140	30	*
cis-1,2-Dichloroethene	ND	23200	147	0.633	22700	128	0.565	13.3	65 - 130	30	*
cis-1,3-Dichloropropene	ND	23200	125	0.540	22700	106	0.468	16.4	70 - 142	30	*
m-,p-Xylene	ND	46300	233	0.502	45400	135	0.297	53.2	70 - 130	30	*#
n-Butylbenzene	3.98	23200	98.9	0.410	22700	35.5	0.139	94.3	70 - 136	30	*#
n-Propylbenzene	ND	23200	124	0.534	22700	52.3	0.230	81.2	72 - 136	30	*#
o-Xylene	ND	23200	125	0.537	22700	77.3	0.341	46.8	70 - 130	30	*#
p-Isopropyltoluene	ND	23200	102	0.438	22700	40.3	0.178	86.3	72 - 128	30	*#
sec-Butylbenzene	ND	23200	109	0.470	22700	38.4	0.169	95.8	70 - 132	30	*#
tert-Butylbenzene	ND	23200	116	0.500	22700	48.8	0.215	81.3	72 - 130	30	*#
trans-1,2-Dichloroethene	ND	23200	152	0.654	22700	124	0.547	19.9	65 - 127	30	*
trans-1,3-Dichloropropene	ND	23200	106	0.459	22700	97.9	0.431	8.26	56 - 139	30	*

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 2393803
Report generated 04/26/2012 18:18

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L12040721 Cal ID: HPMS9 - Worknum: WG395957
Instrument ID: HPMS9 Contract #: Method: 8260B
Parent ID: WG395965-01 File ID: 9M92766 Dil: 1 Matrix: SOLID
Sample ID: WG395965-02 MS File ID: 9M92770 Dil: 1 Units: ug/kg
Sample ID: WG395965-03 MSD File ID: 9M92771 Dil: 1 Percent Solid: 93.5

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	ND	20.1	16.0	79.7	22.3	18.8	84.1	15.9	71 - 137	30	
1,1,1-Trichloroethane	ND	20.1	22.1	110	22.3	25.1	113	13.0	70 - 135	30	
1,1,2,2-Tetrachloroethane	ND	20.1	14.7	73.4	22.3	16.6	74.3	11.8	55 - 130	30	
1,1,2-Trichloroethane	ND	20.1	17.3	86.2	22.3	20.2	90.3	15.1	60 - 125	30	
1,1-Dichloroethane	ND	20.1	22.9	114	22.3	26.7	120	15.4	75 - 125	30	
1,1-Dichloroethene	ND	20.1	23.6	118	22.3	26.4	118	10.9	65 - 135	30	
1,1-Dichloropropene	ND	20.1	21.6	108	22.3	24.3	109	11.5	57 - 138	30	
1,2,3-Trichlorobenzene	ND	20.1	4.90	24.4	22.3	8.58	38.4	54.5	60 - 135	30	*#
1,2,3-Trichloropropane	ND	20.1	16.0	79.9	22.3	19.1	85.8	17.6	65 - 130	30	
1,2,4-Trichlorobenzene	ND	20.1	5.16	25.7	22.3	8.64	38.7	50.5	65 - 130	30	*#
1,2,4-Trimethylbenzene	ND	20.1	10.8	53.9	22.3	15.8	71.0	37.6	75 - 132	30	*#
1,2-Dibromo-3-chloropropane	ND	20.1	13.6	67.8	22.3	16.3	72.9	17.6	40 - 135	30	
1,2-Dibromoethane	ND	20.1	16.7	83.0	22.3	19.4	86.8	15.0	69 - 130	30	
1,2-Dichlorobenzene	ND	20.1	9.71	48.3	22.3	14.4	64.5	38.9	70 - 130	30	*#
1,2-Dichloroethane	ND	20.1	21.1	105	22.3	24.0	108	13.0	63 - 133	30	
1,2-Dichloropropane	ND	20.1	20.7	103	22.3	23.0	103	10.3	70 - 130	30	
1,3,5-Trimethylbenzene	ND	20.1	12.0	59.5	22.3	17.0	76.4	35.1	74 - 133	30	*#
1,3-Dichlorobenzene	ND	20.1	9.67	48.1	22.3	14.1	63.2	37.4	70 - 130	30	*#
1,3-Dichloropropane	ND	20.1	18.4	91.6	22.3	20.9	93.6	12.6	65 - 128	30	
1,4-Dichlorobenzene	ND	20.1	8.89	44.3	22.3	13.4	60.1	40.5	70 - 130	30	*#
2,2-Dichloropropane	ND	20.1	21.6	108	22.3	24.7	111	13.3	66 - 135	30	
2-Butanone	ND	20.1	18.1	90.0	22.3	18.4	82.3	1.47	37 - 180	30	
2-Chloroethyl vinyl ether	ND	20.1	12.3	61.0	22.3	14.1	63.0	13.7	35 - 154	30	
2-Chlorotoluene	ND	20.1	11.8	58.6	22.3	18.2	81.4	42.7	63 - 147	30	*#
2-Hexanone	ND	20.1	12.0	59.7	22.3	13.2	59.4	9.93	45 - 145	30	
4-Chlorotoluene	ND	20.1	7.77	38.7	22.3	12.7	56.7	47.8	70 - 138	30	*#
4-Methyl-2-pentanone	ND	20.1	14.8	73.4	22.3	16.6	74.2	11.6	47 - 146	30	
Acetone	ND	20.1	21.7	108	22.3	23.4	105	7.38	20 - 160	30	
Acrolein	ND	100	ND	0	112	ND	0	0	50 - 150	30	*
Benzene	ND	20.1	20.2	100	22.3	22.9	102	12.5	70 - 130	30	
Bromobenzene	ND	20.1	12.5	62.3	22.3	16.7	75.0	28.9	72 - 131	30	*
Bromochloromethane	ND	20.1	22.4	112	22.3	25.9	116	14.6	70 - 130	30	
Bromodichloromethane	ND	20.1	19.5	97.1	22.3	22.8	102	15.6	72 - 137	30	
Bromoform	ND	20.1	14.3	70.9	22.3	16.3	72.9	13.2	49 - 136	30	
Bromomethane	ND	20.1	23.2	115	22.3	25.8	116	10.7	37 - 143	30	
Carbon disulfide	ND	20.1	18.9	94.2	22.3	22.0	98.6	15.0	39 - 139	30	
Carbon tetrachloride	ND	20.1	21.8	108	22.3	24.8	111	13.2	59 - 136	30	
Chlorobenzene	ND	20.1	15.1	75.3	22.3	18.6	83.6	20.8	70 - 130	30	
Chlorodibromomethane	ND	20.1	16.4	81.4	22.3	18.8	84.2	13.8	59 - 136	30	

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 2393803
Report generated 04/26/2012 18:18

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L12040721 Cal ID: HPMS9 Worknum: WG395957
Instrument ID: HPMS9 Contract #: Method: 8260B
Parent ID: WG395965-01 File ID: 9M92766 Dil: 1 Matrix: SOLID
Sample ID: WG395965-02 MS File ID: 9M92770 Dil: 1 Units: ug/kg
Sample ID: WG395965-03 MSD File ID: 9M92771 Dil: 1 Percent Solid: 93.5

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chloroethane	ND	20.1	21.8	108	22.3	24.5	110	11.8	52 - 135	30	
Chloroform	ND	20.1	22.4	111	22.3	25.2	113	11.8	74 - 129	30	
Chloromethane	ND	20.1	26.2	131	22.3	29.6	133	12.1	30 - 131	30	*
Dibromomethane	ND	20.1	21.1	105	22.3	24.0	107	12.9	59 - 130	30	
Dichlorodifluoromethane	ND	20.1	29.7	148	22.3	32.8	147	9.97	25 - 130	30	*
Ethylbenzene	ND	20.1	16.5	82.0	22.3	20.9	93.5	23.5	70 - 130	30	
Hexachlorobutadiene	ND	20.1	6.46	32.1	22.3	11.2	50.3	53.9	65 - 135	30	*#
Isopropylbenzene	ND	20.1	12.5	62.3	22.3	16.5	74.0	27.5	68 - 129	30	*
Methylene chloride	ND	20.1	22.0	109	22.3	24.9	112	12.4	74 - 128	30	
Naphthalene	ND	20.1	6.83	34.0	22.3	10.2	45.9	40.0	50 - 146	30	*#
Styrene	ND	20.1	11.8	58.6	22.3	15.3	68.6	26.0	74 - 130	30	*
Tetrachloroethene	ND	20.1	16.4	81.4	22.3	19.8	88.7	19.0	72 - 130	30	
Toluene	ND	20.1	16.5	82.3	22.3	19.8	88.9	18.1	77 - 126	30	
Trichloroethene	ND	20.1	20.0	99.7	22.3	23.1	104	14.3	72 - 126	30	
Trichlorofluoromethane	ND	20.1	24.4	122	22.3	26.8	120	9.05	48 - 154	30	
Vinyl acetate	ND	20.1	ND	0	22.3	ND	0	0	10 - 150	30	*
Vinyl chloride	ND	20.1	25.3	126	22.3	28.9	130	13.3	25 - 140	30	
cis-1,2-Dichloroethene	ND	20.1	22.5	112	22.3	25.7	115	13.4	65 - 130	30	
cis-1,3-Dichloropropene	ND	20.1	16.4	81.9	22.3	19.4	86.8	16.3	70 - 142	30	
m-,p-Xylene	ND	40.2	27.3	67.9	44.6	35.2	78.9	25.4	70 - 130	30	*
n-Butylbenzene	ND	20.1	8.13	40.5	22.3	13.3	59.6	48.3	70 - 136	30	*#
n-Propylbenzene	ND	20.1	11.9	59.3	22.3	17.0	76.2	35.3	72 - 136	30	*#
o-Xylene	ND	20.1	15.2	75.9	22.3	19.6	87.7	24.8	70 - 130	30	
p-Isopropyltoluene	ND	20.1	6.66	33.2	22.3	10.7	47.8	46.3	72 - 128	30	*#
sec-Butylbenzene	ND	20.1	11.5	57.0	22.3	16.4	73.4	35.3	70 - 132	30	*#
tert-Butylbenzene	ND	20.1	12.6	62.8	22.3	18.2	81.6	36.2	72 - 130	30	*#
trans-1,2-Dichloroethene	ND	20.1	24.0	119	22.3	26.8	120	11.2	65 - 127	30	
trans-1,3-Dichloropropene	ND	20.1	14.2	70.6	22.3	16.5	74.0	15.3	56 - 139	30	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 2393803
Report generated 04/26/2012 18:18

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L12040721 Cal ID: HPMS9 - Worknum: WG396076
Instrument ID: HPMS9 Contract #: Method: 8260B
Parent ID: WG395998-03 File ID: 9M92789 Dil: 1 Matrix: SOLID
Sample ID: WG395998-04 MS File ID: 9M92781 Dil: 1 Units: ug/kg
Sample ID: WG395998-05 MSD File ID: 9M92782 Dil: 1 Percent Solid: 89.9

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	ND	23200	118	0.508	22700	105	0.464	10.9	71 - 137	30	*
1,1,1-Trichloroethane	ND	23200	142	0.612	22700	112	0.493	23.5	70 - 135	30	*
1,1,2,2-Tetrachloroethane	6.12	23200	167	0.693	22700	106	0.440	44.6	55 - 130	30	*#
1,1,2-Trichloroethane	ND	23200	120	0.519	22700	129	0.567	6.72	60 - 125	30	*
1,1-Dichloroethane	ND	23200	145	0.626	22700	128	0.564	12.3	75 - 125	30	*
1,1-Dichloroethene	ND	23200	158	0.683	22700	126	0.557	22.3	65 - 135	30	*
1,1-Dichloropropene	ND	23200	131	0.565	22700	101	0.444	26.0	57 - 138	30	*
1,2,3-Trichlorobenzene	17.2	23200	126	0.468	22700	54.2	0.163	79.4	60 - 135	30	*#
1,2,3-Trichloropropane	6.16	23200	182	0.759	22700	127	0.534	35.5	65 - 130	30	*#
1,2,4-Trichlorobenzene	ND	23200	146	0.629	22700	61.3	0.270	81.5	65 - 130	30	*#
1,2,4-Trimethylbenzene	ND	23200	112	0.484	22700	46.4	0.204	83.0	75 - 132	30	*#
1,2-Dibromo-3-chloropropane	ND	23200	136	0.586	22700	121	0.533	11.5	40 - 135	30	*
1,2-Dibromoethane	ND	23200	123	0.529	22700	111	0.490	9.65	69 - 130	30	*
1,2-Dichlorobenzene	ND	23200	114	0.493	22700	62.0	0.273	59.3	70 - 130	30	*#
1,2-Dichloroethane	ND	23200	135	0.583	22700	116	0.510	15.4	63 - 133	30	*
1,2-Dichloropropane	ND	23200	134	0.579	22700	117	0.518	13.3	70 - 130	30	*
1,3,5-Trimethylbenzene	ND	23200	120	0.516	22700	52.3	0.230	78.3	74 - 133	30	*#
1,3-Dichlorobenzene	ND	23200	113	0.490	22700	56.9	0.251	66.3	70 - 130	30	*#
1,3-Dichloropropane	ND	23200	132	0.568	22700	116	0.509	12.9	65 - 128	30	*
1,4-Dichlorobenzene	ND	23200	114	0.493	22700	55.7	0.245	68.9	70 - 130	30	*#
2,2-Dichloropropane	ND	23200	142	0.612	22700	112	0.491	23.8	66 - 135	30	*
2-Butanone	14.8	23200	125	0.474	22700	107	0.405	15.5	37 - 180	30	*
2-Chloroethyl vinyl ether	ND	23200	91.5	0.395	22700	92.9	0.409	1.56	35 - 154	30	*
2-Chlorotoluene	ND	23200	123	0.529	22700	62.5	0.275	64.9	63 - 147	30	*#
2-Hexanone	ND	23200	99.2	0.428	22700	99.6	0.439	0.443	45 - 145	30	*
4-Chlorotoluene	ND	23200	114	0.492	22700	62.3	0.275	58.6	70 - 138	30	*#
4-Methyl-2-pentanone	ND	23200	107	0.460	22700	94.2	0.415	12.3	47 - 146	30	*
Acetone	1260	23200	1000	-1.13	22700	846	-1.84	16.7	20 - 160	30	*
Acetonitrile	ND		ND			ND		0	50 - 150	30	*
Acrolein	ND	116000	131	0.113	113000	63.7	0.0561	69.1	50 - 150	30	*#
Benzene	ND	23200	131	0.564	22700	112	0.495	15.1	70 - 130	30	*
Bromobenzene	ND	23200	144	0.622	22700	80.7	0.356	56.4	72 - 131	30	*#
Bromochloromethane	ND	23200	146	0.628	22700	122	0.537	17.8	70 - 130	30	*
Bromodichloromethane	ND	23200	133	0.574	22700	114	0.501	15.7	72 - 137	30	*
Bromoform	ND	23200	115	0.495	22700	126	0.557	9.78	49 - 136	30	*
Bromomethane	ND	23200	147	0.633	22700	138	0.607	6.31	37 - 143	30	*
Carbon disulfide	ND	23200	126	0.543	22700	99.5	0.438	23.4	39 - 139	30	*
Carbon tetrachloride	ND	23200	137	0.593	22700	98.6	0.435	32.8	59 - 136	30	*#
Chlorobenzene	ND	23200	120	0.516	22700	87.7	0.387	30.7	70 - 130	30	*#

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 2393803
Report generated 04/26/2012 18:18

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L12040721 Cal ID: HPMS9 Worknum: WG396076
Instrument ID: HPMS9 Contract #: Method: 8260B
Parent ID: WG395998-03 File ID: 9M92789 Dil: 1 Matrix: SOLID
Sample ID: WG395998-04 MS File ID: 9M92781 Dil: 1 Units: ug/kg
Sample ID: WG395998-05 MSD File ID: 9M92782 Dil: 1 Percent Solid: 89.9

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	ND	23200	114	0.490	22700	109	0.479	4.29	59 - 136	30	*
Chloroethane	ND	23200	143	0.618	22700	119	0.525	18.3	52 - 135	30	*
Chloroform	ND	23200	140	0.605	22700	120	0.529	15.3	74 - 129	30	*
Chloromethane	ND	23200	170	0.734	22700	145	0.639	16.0	30 - 131	30	*
Dibromomethane	ND	23200	137	0.590	22700	125	0.551	8.81	59 - 130	30	*
Dichlorodifluoromethane	ND	23200	191	0.825	22700	162	0.714	16.5	25 - 130	30	*
Ethylbenzene	ND	23200	128	0.554	22700	82.3	0.363	43.7	70 - 130	30	*#
Hexachlorobutadiene	ND	23200	66.0	0.285	22700	14.7	0.0648	127	65 - 135	30	*#
Isopropylbenzene	ND	23200	95.8	0.413	22700	52.0	0.229	59.3	68 - 129	30	*#
Methylene chloride	ND	23200	145	0.627	22700	133	0.587	8.52	74 - 128	30	*
Naphthalene	8.71	23200	94.6	0.371	22700	45.9	0.164	69.3	50 - 146	30	*#
Styrene	ND	23200	117	0.507	22700	78.2	0.344	40.2	74 - 130	30	*#
Tetrachloroethene	ND	23200	121	0.523	22700	71.5	0.315	51.5	72 - 130	30	*#
Toluene	ND	23200	122	0.526	22700	91.5	0.403	28.4	77 - 126	30	*
Trichloroethene	ND	23200	129	0.555	22700	103	0.455	21.9	72 - 126	30	*
Trichlorofluoromethane	ND	23200	156	0.675	22700	118	0.522	27.5	48 - 154	30	*
Vinyl acetate	ND	23200	ND	0	22700	3.63	0.0160	200	10 - 150	30	*#
Vinyl chloride	ND	23200	160	0.692	22700	140	0.618	13.4	25 - 140	30	*
cis-1,2-Dichloroethene	ND	23200	147	0.633	22700	128	0.565	13.3	65 - 130	30	*
cis-1,3-Dichloropropene	ND	23200	125	0.540	22700	106	0.468	16.4	70 - 142	30	*
m-,p-Xylene	ND	46300	233	0.502	45400	135	0.297	53.2	70 - 130	30	*#
n-Butylbenzene	3.98	23200	98.9	0.410	22700	35.5	0.139	94.3	70 - 136	30	*#
n-Propylbenzene	ND	23200	124	0.534	22700	52.3	0.230	81.2	72 - 136	30	*#
o-Xylene	ND	23200	125	0.537	22700	77.3	0.341	46.8	70 - 130	30	*#
p-Isopropyltoluene	ND	23200	102	0.438	22700	40.3	0.178	86.3	72 - 128	30	*#
sec-Butylbenzene	ND	23200	109	0.470	22700	38.4	0.169	95.8	70 - 132	30	*#
tert-Butylbenzene	ND	23200	116	0.500	22700	48.8	0.215	81.3	72 - 130	30	*#
trans-1,2-Dichloroethene	ND	23200	152	0.654	22700	124	0.547	19.9	65 - 127	30	*
trans-1,3-Dichloropropene	ND	23200	106	0.459	22700	97.9	0.431	8.26	56 - 139	30	*

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 2393803
Report generated 04/26/2012 18:18

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
May 1, 2012

ADC - ANTHONY D. CANTER	AJF - AMANDA J. FICKIESEN	ALB - ANNIE L. BROWN
ALV - AMY L. VALENTINE	AML - TONY M. LONG	AZH - AFTER HOURS
BLG - BRENDA L. GREENWALT	BRG - BRENDA R. GREGORY	CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS	CEB - CHAD E. BARNES	CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER	CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CS - CODY M. STRAHLER	CSH - CHRIS S. HILL	DDE - DEBRA D. ELLIOTT
DEV - DAVID E. VANDENBERG	DGB - DOUGLAS G. BUTCHER	DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER	DLP - DOROTHY L. PAYNE	DLR - DIANNA L. RAUCH
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON	EDL - ERIN D. LONG
ERP - ERIN R. PORTER	FJB - FRANCES J. BOLDEN	HAV - HEMA VILASAGAR
HJR - HOLLY J. REED	JAL - JOHN A. LENT	JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON	JKS - JANE K. SCHAAD	JLL - JOHN L. LENT
JWR - JOHN W. RICHARDS	JWS - JACK W. SHEAVES	JYH - JI Y. HU
KEB - KATIE E. BARNES	KHR - KIM H. RHODES	KRA - KATHY R. ALBERTSON
LKN - LINDA K. NEDEFF	LSB - LESLIE S. BUCINA	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON	PDM - PIERCE D. MORRIS
PWD - PAUL W. DENT	QX - QIN XU	RAH - ROY A. HALSTEAD
REK - BOB E. KYER	RLB - BOB BUCHANAN	RLK - ROBIN L. KLINGER
RS - ROSEMARY SCOTT	RWC - RODNEY W. CAMPBELL	SJP - SUZANNE J. PAUGH
SLM - STEPHANIE L. MOSSBURG	SLP - SHERI L. PFALZGRAF	TIP - TAE I. PARRISH
TMB - TIFFANY M. BAILEY	TMM - TAMMY M. MORRIS	VC - VICKI COLLIER
WJB - WILL J. BEASLEY	WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
May 01, 2012

Qualkey: STD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Result is greater than the associated numerical value.
A	See the report narrative
B	Analyte present in method blank
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
FL	Free Liquid
H1	Sample analysis performed past holding time.
I	Semiquantitative result (out of instrument calibration range)
J	Estimated value; the analyte concentration was less than the RL/LOQ.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Tentatively identified compound(TIC)
NA	Not applicable
ND	Not detected at or above the reporting limit (RL).
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
U	Analyte was not detected. The concentration is below the reported MDL.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UJ	Undetected; the analyte was analyzed for, but not detected.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

COC No. A 29659

158 Starlite Drive
Marietta, OH 45750

Microbac

CHAIN-OF-CUSTODY RECORD

Phone: 740-373-4071
Fax: 740-373-4835

Company Name: Brian S. Boutin, PG

Project Contact: Brian Boutin

Contact Phone #: 919-995-0363

Turn Around Requirements: Standard

Location: Cameron, NC

Project ID: Central Carolina Tire

Sampler (print): Brian S. Boutin

Signature: [signature]

Program: ☐ CWA ☐ RCRA ☐ DOD ☐ AFCEE ☐ Other _____

Sample I.D. No.	Comp	Grab	Date	Time	Matrix*	NUMBER OF CONTAINERS	Hold	8260	Dry weight	TOTAL # (LAB USE)	ADDITIONAL REQUIREMENTS
GW-1S 8-10'		X	4/10/12	0845	Soil	2		X	X		
GW-2S 4-6'			↓	1057	↓	↓		↓	↓		
GW-3S 6-8'			↓	1428	↓	↓		↓	↓		
GW-4S 0-2'			4/11/12	0800	↓	↓		↓	↓		
GW-5S 0-2'			↓	1245	↓	↓		↓	↓		
GW-6S 8-10'			↓	1546	↓	↓		↓	↓		
GW-7S 0-2'			4/12/12	0841	↓	↓		↓	↓		
GW-8S 12-14'			↓	1314	↓	↓		↓	↓		

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	4/19/12	1400			
Relinquished by: (Signature)	Date	Time	Received by: (Signature)		

Microbac OVD
Received: 04/20/2012 10:10
By: JANE SCHAAD 221000024319
[signature]

Remarks:

*Water (W), Soil (S), Solid Waste (SD), Unknown (X)

Page 1 of 1

Microbac

Laboratory Report Number: L12050009

Brian Boutin
Central Carolina Tire
11112 Branding Iron Place
Wendell, NC 27591

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the accrediting authority listed below. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

This report was certified on May 11 2012

David E. Vandenberg

David Vandenberg – Managing Director

State of Origin: NC
Accrediting Authority: Department of the Environment and Natural Resources ID:583
QAPP: Microbac OVD

Microbac

Lab Report #: L12050009
Lab Project #: 3071.001
Project Name: Central Carolina Tire
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #
0016980	G	0.0		1002239584510004575000873013168305

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct perservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac

Lab Report #: L12050009
Lab Project #: 3071.001
Project Name: Central Carolina Tire
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
4304-GW-5S	L12050009-01	04/30/2012 15:40	05/01/2012 10:10
4304-GW-4S	L12050009-02	04/30/2012 14:15	05/01/2012 10:10
4304-GW-6S	L12050009-03	04/30/2012 15:25	05/01/2012 10:10
4304-GW-2S	L12050009-04	04/30/2012 11:35	05/01/2012 10:10
4304-GW-1S	L12050009-05	04/30/2012 13:35	05/01/2012 10:10

Certificate of Analysis

Sample #:	L12050009-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	4304-GW-5S	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/27/2012 15:49
Workgroup #:	WG397136	**Analyst:**	MES	**Run Date:**	05/07/2012 00:53
Collect Date:	04/30/2012 15:40	**Dilution:**	1	**File ID:**	8M378849
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		ND	1.00	0.250
1,1,1-Trichloroethane	71-55-6		ND	1.00	0.250
1,1,2,2-Tetrachloroethane	79-34-5		ND	1.00	0.200
1,1,2-Trichloroethane	79-00-5		ND	1.00	0.250
1,1-Dichloroethane	75-34-3		ND	1.00	0.125
1,1-Dichloroethene	75-35-4		ND	1.00	0.500
1,1-Dichloropropene	563-58-6		ND	1.00	0.250
1,2,3-Trichlorobenzene	87-61-6		ND	1.00	0.150
1,2,3-Trichloropropane	96-18-4		ND	1.00	0.500
1,2,4-Trichlorobenzene	120-82-1		ND	1.00	0.200
1,2,4-Trimethylbenzene	95-63-6		ND	1.00	0.250
1,2-Dibromo-3-chloropropane	96-12-8		ND	2.00	1.00
1,2-Dibromoethane	106-93-4		ND	1.00	0.250
1,2-Dichlorobenzene	95-50-1		ND	1.00	0.125
1,2-Dichloroethane	107-06-2		ND	1.00	0.250
1,2-Dichloropropane	78-87-5		ND	1.00	0.200
1,3,5-Trimethylbenzene	108-67-8		ND	1.00	0.250
1,3-Dichlorobenzene	541-73-1		ND	1.00	0.250
1,3-Dichloropropane	142-28-9		ND	1.00	0.200
1,4-Dichlorobenzene	106-46-7		ND	1.00	0.125
2,2-Dichloropropane	594-20-7		ND	1.00	0.250
2-Butanone	78-93-3		ND	5.00	2.50
2-Chloroethyl vinyl ether	110-75-8		ND	5.00	2.00
2-Chlorotoluene	95-49-8		ND	1.00	0.125
2-Hexanone	591-78-6		ND	5.00	2.50
4-Chlorotoluene	106-43-4		ND	1.00	0.250
4-Methyl-2-pentanone	108-10-1		ND	5.00	2.50
Acetone	67-64-1		ND	5.00	2.50
Acetonitrile	75-05-8		ND	100	50.0
Acrolein	107-02-8		ND	100	20.0
Benzene	71-43-2		ND	1.00	0.125
Bromobenzene	108-86-1		ND	1.00	0.125
Bromochloromethane	74-97-5		ND	1.00	0.200

Certificate of Analysis

Sample #:	L12050009-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	4304-GW-5S	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/27/2012 15:49
Workgroup #:	WG397136	**Analyst:**	MES	**Run Date:**	05/07/2012 00:53
Collect Date:	04/30/2012 15:40	**Dilution:**	1	**File ID:**	8M378849
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Bromodichloromethane	75-27-4		ND	1.00	0.250
Bromoform	75-25-2		ND	1.00	0.500
Bromomethane	74-83-9		ND	1.00	0.500
Carbon disulfide	75-15-0		ND	1.00	0.500
Carbon tetrachloride	56-23-5		ND	1.00	0.250
Chlorobenzene	108-90-7		ND	1.00	0.125
Chlorodibromomethane	124-48-1		ND	1.00	0.250
Chloroethane	75-00-3		ND	1.00	0.500
Chloroform	67-66-3		ND	1.00	0.125
Chloromethane	74-87-3		ND	1.00	0.500
cis-1,2-Dichloroethene	156-59-2		ND	1.00	0.250
cis-1,3-Dichloropropene	10061-01-5		ND	1.00	0.250
Dibromomethane	74-95-3		ND	1.00	0.250
Dichlorodifluoromethane	75-71-8		ND	1.00	0.250
Ethylbenzene	100-41-4		ND	1.00	0.250
Hexachlorobutadiene	87-68-3		ND	1.00	0.250
Isopropylbenzene	98-82-8		ND	1.00	0.250
m-,p-Xylene	179601-23-1		ND	1.00	0.500
Methylene chloride	75-09-2		ND	1.00	0.250
n-Butylbenzene	104-51-8		ND	1.00	0.250
n-Propylbenzene	103-65-1		ND	1.00	0.125
Naphthalene	91-20-3		ND	1.00	0.200
o-Xylene	95-47-6		ND	1.00	0.250
p-Isopropyltoluene	99-87-6		ND	1.00	0.250
sec-Butylbenzene	135-98-8		ND	1.00	0.250
Styrene	100-42-5		ND	1.00	0.125
tert-Butylbenzene	98-06-6		ND	1.00	0.250
Tetrachloroethene	127-18-4	3.07		1.00	0.250
Toluene	108-88-3		ND	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		ND	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		ND	1.00	0.500
Trichloroethene	79-01-6		ND	1.00	0.250
Trichlorofluoromethane	75-69-4		ND	1.00	0.250

Certificate of Analysis

Sample #:	L12050009-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	4304-GW-5S	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/27/2012 15:49
Workgroup #:	WG397136	**Analyst:**	MES	**Run Date:**	05/07/2012 00:53
Collect Date:	04/30/2012 15:40	**Dilution:**	1	**File ID:**	8M378849
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Vinyl acetate	108-05-4		ND	5.00	2.50
Vinyl chloride	75-01-4		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	107	80	120	
4-Bromofluorobenzene	97.3	86	115	
Dibromofluoromethane	104	86	118	
Toluene-d8	99.3	88	110	

ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050009-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	4304-GW-5S	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	04/30/2012 15:04
Workgroup #:	WG396843	**Analyst:**	FJB	**Run Date:**	05/02/2012 17:21
Collect Date:	04/30/2012 15:40	**Dilution:**	1	**File ID:**	16G32147
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Methane	74-82-8		ND	5.00	1.00
Ethene	74-85-1		ND	5.00	1.00
Ethane	74-84-0		ND	5.00	1.00

ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050009-01	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	4304-GW-5S	**Prep Method:**	3005A	**Prep Date:**	05/03/2012 06:54
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	05/07/2012 10:38
Workgroup #:	WG396933	**Analyst:**	KHR	**Run Date:**	05/07/2012 11:42
Collect Date:	04/30/2012 15:40	**Dilution:**	1	**File ID:**	P2.050712.114210
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Iron, Dissolved	7439-89-6	0.0579	J	0.100	0.0500

J	Estimated value; the analyte concentration was less than the RL/LOQ.

Certificate of Analysis

Sample #:	L12050009-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW-5S	**Prep Method:**	325.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	325.2	**Cal Date:**	05/01/2012 15:43
Workgroup #:	WG396727	**Analyst:**	DIH	**Run Date:**	05/01/2012 15:47
Collect Date:	04/30/2012 15:40	**Dilution:**	1	**File ID:**	SC120501002.013
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Chloride	16887-00-6	4.24		2.00	1.00

Sample #:	L12050009-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW-5S	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	05/01/2012 15:43
Workgroup #:	WG396738	**Analyst:**	DIH	**Run Date:**	05/02/2012 11:35
Collect Date:	04/30/2012 15:40	**Dilution:**	16	**File ID:**	SC12050709054101
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Nitrate (as N)	14797-55-8	8.62		0.800	0.400

Sample #:	L12050009-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	4304-GW-5S	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG396993	**Analyst:**	DIH	**Run Date:**	05/04/2012 12:06
Collect Date:	04/30/2012 15:40	**Dilution:**	1	**File ID:**	TC05042012.011
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Organic Carbon, Dissolved		2.10		1.00	0.500

Certificate of Analysis

Sample #:	L12050009-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	4304-GW-4S	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/27/2012 15:49
Workgroup #:	WG397136	**Analyst:**	MES	**Run Date:**	05/07/2012 01:24
Collect Date:	04/30/2012 14:15	**Dilution:**	1	**File ID:**	8M378850
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		ND	1.00	0.250
1,1,1-Trichloroethane	71-55-6		ND	1.00	0.250
1,1,2,2-Tetrachloroethane	79-34-5		ND	1.00	0.200
1,1,2-Trichloroethane	79-00-5		ND	1.00	0.250
1,1-Dichloroethane	75-34-3		ND	1.00	0.125
1,1-Dichloroethene	75-35-4		ND	1.00	0.500
1,1-Dichloropropene	563-58-6		ND	1.00	0.250
1,2,3-Trichlorobenzene	87-61-6		ND	1.00	0.150
1,2,3-Trichloropropane	96-18-4		ND	1.00	0.500
1,2,4-Trichlorobenzene	120-82-1		ND	1.00	0.200
1,2,4-Trimethylbenzene	95-63-6		ND	1.00	0.250
1,2-Dibromo-3-chloropropane	96-12-8		ND	2.00	1.00
1,2-Dibromoethane	106-93-4		ND	1.00	0.250
1,2-Dichlorobenzene	95-50-1		ND	1.00	0.125
1,2-Dichloroethane	107-06-2		ND	1.00	0.250
1,2-Dichloropropane	78-87-5		ND	1.00	0.200
1,3,5-Trimethylbenzene	108-67-8		ND	1.00	0.250
1,3-Dichlorobenzene	541-73-1		ND	1.00	0.250
1,3-Dichloropropane	142-28-9		ND	1.00	0.200
1,4-Dichlorobenzene	106-46-7		ND	1.00	0.125
2,2-Dichloropropane	594-20-7		ND	1.00	0.250
2-Butanone	78-93-3		ND	5.00	2.50
2-Chloroethyl vinyl ether	110-75-8		ND	5.00	2.00
2-Chlorotoluene	95-49-8		ND	1.00	0.125
2-Hexanone	591-78-6		ND	5.00	2.50
4-Chlorotoluene	106-43-4		ND	1.00	0.250
4-Methyl-2-pentanone	108-10-1		ND	5.00	2.50
Acetone	67-64-1		ND	5.00	2.50
Acetonitrile	75-05-8		ND	100	50.0
Acrolein	107-02-8		ND	100	20.0
Benzene	71-43-2		ND	1.00	0.125
Bromobenzene	108-86-1		ND	1.00	0.125
Bromochloromethane	74-97-5		ND	1.00	0.200

Certificate of Analysis

Sample #:	L12050009-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	4304-GW-4S	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/27/2012 15:49
Workgroup #:	WG397136	**Analyst:**	MES	**Run Date:**	05/07/2012 01:24
Collect Date:	04/30/2012 14:15	**Dilution:**	1	**File ID:**	8M378850
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Bromodichloromethane	75-27-4	5.29		1.00	0.250
Bromoform	75-25-2	0.831	J	1.00	0.500
Bromomethane	74-83-9		ND	1.00	0.500
Carbon disulfide	75-15-0		ND	1.00	0.500
Carbon tetrachloride	56-23-5		ND	1.00	0.250
Chlorobenzene	108-90-7		ND	1.00	0.125
Chlorodibromomethane	124-48-1	3.94		1.00	0.250
Chloroethane	75-00-3		ND	1.00	0.500
Chloroform	67-66-3	5.94		1.00	0.125
Chloromethane	74-87-3		ND	1.00	0.500
cis-1,2-Dichloroethene	156-59-2		ND	1.00	0.250
cis-1,3-Dichloropropene	10061-01-5		ND	1.00	0.250
Dibromomethane	74-95-3		ND	1.00	0.250
Dichlorodifluoromethane	75-71-8		ND	1.00	0.250
Ethylbenzene	100-41-4		ND	1.00	0.250
Hexachlorobutadiene	87-68-3		ND	1.00	0.250
Isopropylbenzene	98-82-8		ND	1.00	0.250
m-,p-Xylene	179601-23-1		ND	1.00	0.500
Methylene chloride	75-09-2		ND	1.00	0.250
n-Butylbenzene	104-51-8		ND	1.00	0.250
n-Propylbenzene	103-65-1		ND	1.00	0.125
Naphthalene	91-20-3		ND	1.00	0.200
o-Xylene	95-47-6		ND	1.00	0.250
p-Isopropyltoluene	99-87-6		ND	1.00	0.250
sec-Butylbenzene	135-98-8		ND	1.00	0.250
Styrene	100-42-5		ND	1.00	0.125
tert-Butylbenzene	98-06-6		ND	1.00	0.250
Tetrachloroethene	127-18-4	1.70		1.00	0.250
Toluene	108-88-3		ND	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		ND	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		ND	1.00	0.500
Trichloroethene	79-01-6		ND	1.00	0.250
Trichlorofluoromethane	75-69-4		ND	1.00	0.250

Certificate of Analysis

Sample #:	L12050009-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	4304-GW-4S	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/27/2012 15:49
Workgroup #:	WG397136	**Analyst:**	MES	**Run Date:**	05/07/2012 01:24
Collect Date:	04/30/2012 14:15	**Dilution:**	1	**File ID:**	8M378850
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Vinyl acetate	108-05-4		ND	5.00	2.50
Vinyl chloride	75-01-4		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	110	80	120	
4-Bromofluorobenzene	98.2	86	115	
Dibromofluoromethane	103	86	118	
Toluene-d8	98.6	88	110	

J	Estimated value; the analyte concentration was less than the RL/LOQ.
ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050009-02	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	4304-GW-4S	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	04/30/2012 15:04
Workgroup #:	WG396843	**Analyst:**	FJB	**Run Date:**	05/02/2012 17:30
Collect Date:	04/30/2012 14:15	**Dilution:**	1	**File ID:**	16G32148
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Methane	74-82-8		ND	5.00	1.00
Ethene	74-85-1		ND	5.00	1.00
Ethane	74-84-0		ND	5.00	1.00

ND	Not detected at or above the reporting limit (RL).

Certificate of Analysis

Sample #:	L12050009-02	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	4304-GW-4S	**Prep Method:**	3005A	**Prep Date:**	05/03/2012 06:54
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	05/07/2012 10:38
Workgroup #:	WG396933	**Analyst:**	KHR	**Run Date:**	05/07/2012 11:49
Collect Date:	04/30/2012 14:15	**Dilution:**	1	**File ID:**	P2.050712.114905
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Iron, Dissolved	7439-89-6		ND	0.100	0.0500

ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050009-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW-4S	**Prep Method:**	325.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	325.2	**Cal Date:**	05/01/2012 15:43
Workgroup #:	WG396727	**Analyst:**	DIH	**Run Date:**	05/01/2012 15:48
Collect Date:	04/30/2012 14:15	**Dilution:**	1	**File ID:**	SC120501002.014
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Chloride	16887-00-6	4.70		2.00	1.00

Sample #:	L12050009-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW-4S	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	05/01/2012 15:43
Workgroup #:	WG396738	**Analyst:**	DIH	**Run Date:**	05/02/2012 11:35
Collect Date:	04/30/2012 14:15	**Dilution:**	1	**File ID:**	SC12050709054901
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Nitrate (as N)	14797-55-8	1.23		0.0500	0.0250

Sample #:	L12050009-02	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	4304-GW-4S	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG396993	**Analyst:**	DIH	**Run Date:**	05/04/2012 12:19
Collect Date:	04/30/2012 14:15	**Dilution:**	1	**File ID:**	TC05042012.012
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Organic Carbon, Dissolved		2.22		1.00	0.500

Certificate of Analysis

Sample #:	L12050009-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	4304-GW-6S	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/27/2012 15:49
Workgroup #:	WG397136	**Analyst:**	MES	**Run Date:**	05/07/2012 01:55
Collect Date:	04/30/2012 15:25	**Dilution:**	1	**File ID:**	8M378851
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		ND	1.00	0.250
1,1,1-Trichloroethane	71-55-6		ND	1.00	0.250
1,1,2,2-Tetrachloroethane	79-34-5		ND	1.00	0.200
1,1,2-Trichloroethane	79-00-5		ND	1.00	0.250
1,1-Dichloroethane	75-34-3		ND	1.00	0.125
1,1-Dichloroethene	75-35-4		ND	1.00	0.500
1,1-Dichloropropene	563-58-6		ND	1.00	0.250
1,2,3-Trichlorobenzene	87-61-6		ND	1.00	0.150
1,2,3-Trichloropropane	96-18-4		ND	1.00	0.500
1,2,4-Trichlorobenzene	120-82-1		ND	1.00	0.200
1,2,4-Trimethylbenzene	95-63-6		ND	1.00	0.250
1,2-Dibromo-3-chloropropane	96-12-8		ND	2.00	1.00
1,2-Dibromoethane	106-93-4		ND	1.00	0.250
1,2-Dichlorobenzene	95-50-1		ND	1.00	0.125
1,2-Dichloroethane	107-06-2		ND	1.00	0.250
1,2-Dichloropropane	78-87-5		ND	1.00	0.200
1,3,5-Trimethylbenzene	108-67-8		ND	1.00	0.250
1,3-Dichlorobenzene	541-73-1		ND	1.00	0.250
1,3-Dichloropropane	142-28-9		ND	1.00	0.200
1,4-Dichlorobenzene	106-46-7		ND	1.00	0.125
2,2-Dichloropropane	594-20-7		ND	1.00	0.250
2-Butanone	78-93-3		ND	5.00	2.50
2-Chloroethyl vinyl ether	110-75-8		ND	5.00	2.00
2-Chlorotoluene	95-49-8		ND	1.00	0.125
2-Hexanone	591-78-6		ND	5.00	2.50
4-Chlorotoluene	106-43-4		ND	1.00	0.250
4-Methyl-2-pentanone	108-10-1		ND	5.00	2.50
Acetone	67-64-1		ND	5.00	2.50
Acetonitrile	75-05-8		ND	100	50.0
Acrolein	107-02-8		ND	100	20.0
Benzene	71-43-2		ND	1.00	0.125
Bromobenzene	108-86-1		ND	1.00	0.125
Bromochloromethane	74-97-5		ND	1.00	0.200

Certificate of Analysis

Sample #:	L12050009-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	4304-GW-6S	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/27/2012 15:49
Workgroup #:	WG397136	**Analyst:**	MES	**Run Date:**	05/07/2012 01:55
Collect Date:	04/30/2012 15:25	**Dilution:**	1	**File ID:**	8M378851
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Bromodichloromethane	75-27-4	5.90		1.00	0.250
Bromoform	75-25-2	0.871	J	1.00	0.500
Bromomethane	74-83-9		ND	1.00	0.500
Carbon disulfide	75-15-0		ND	1.00	0.500
Carbon tetrachloride	56-23-5		ND	1.00	0.250
Chlorobenzene	108-90-7		ND	1.00	0.125
Chlorodibromomethane	124-48-1	4.59		1.00	0.250
Chloroethane	75-00-3		ND	1.00	0.500
Chloroform	67-66-3	6.09		1.00	0.125
Chloromethane	74-87-3		ND	1.00	0.500
cis-1,2-Dichloroethene	156-59-2		ND	1.00	0.250
cis-1,3-Dichloropropene	10061-01-5		ND	1.00	0.250
Dibromomethane	74-95-3		ND	1.00	0.250
Dichlorodifluoromethane	75-71-8		ND	1.00	0.250
Ethylbenzene	100-41-4		ND	1.00	0.250
Hexachlorobutadiene	87-68-3		ND	1.00	0.250
Isopropylbenzene	98-82-8		ND	1.00	0.250
m-,p-Xylene	179601-23-1		ND	1.00	0.500
Methylene chloride	75-09-2		ND	1.00	0.250
n-Butylbenzene	104-51-8		ND	1.00	0.250
n-Propylbenzene	103-65-1		ND	1.00	0.125
Naphthalene	91-20-3		ND	1.00	0.200
o-Xylene	95-47-6		ND	1.00	0.250
p-Isopropyltoluene	99-87-6		ND	1.00	0.250
sec-Butylbenzene	135-98-8		ND	1.00	0.250
Styrene	100-42-5		ND	1.00	0.125
tert-Butylbenzene	98-06-6		ND	1.00	0.250
Tetrachloroethene	127-18-4		ND	1.00	0.250
Toluene	108-88-3		ND	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		ND	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		ND	1.00	0.500
Trichloroethene	79-01-6		ND	1.00	0.250
Trichlorofluoromethane	75-69-4		ND	1.00	0.250

Certificate of Analysis

Sample #:	L12050009-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	4304-GW-6S	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/27/2012 15:49
Workgroup #:	WG397136	**Analyst:**	MES	**Run Date:**	05/07/2012 01:55
Collect Date:	04/30/2012 15:25	**Dilution:**	1	**File ID:**	8M378851
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Vinyl acetate	108-05-4		ND	5.00	2.50
Vinyl chloride	75-01-4		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	109	80	120	
4-Bromofluorobenzene	97.8	86	115	
Dibromofluoromethane	104	86	118	
Toluene-d8	98.7	88	110	

J	Estimated value; the analyte concentration was less than the RL/LOQ.
ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050009-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	4304-GW-6S	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	04/30/2012 15:04
Workgroup #:	WG396843	**Analyst:**	FJB	**Run Date:**	05/02/2012 17:39
Collect Date:	04/30/2012 15:25	**Dilution:**	1	**File ID:**	16G32149
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Methane	74-82-8		ND	5.00	1.00
Ethene	74-85-1		ND	5.00	1.00
Ethane	74-84-0		ND	5.00	1.00

ND	Not detected at or above the reporting limit (RL).

Certificate of Analysis

Sample #:	L12050009-03	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	4304-GW-6S	**Prep Method:**	3005A	**Prep Date:**	05/03/2012 06:54
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	05/07/2012 10:38
Workgroup #:	WG396933	**Analyst:**	KHR	**Run Date:**	05/07/2012 11:56
Collect Date:	04/30/2012 15:25	**Dilution:**	1	**File ID:**	P2.050712.115602
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Iron, Dissolved	7439-89-6		ND	0.100	0.0500

ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050009-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW-6S	**Prep Method:**	325.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	325.2	**Cal Date:**	05/01/2012 15:43
Workgroup #:	WG396727	**Analyst:**	DIH	**Run Date:**	05/01/2012 15:48
Collect Date:	04/30/2012 15:25	**Dilution:**	1	**File ID:**	SC120501002.015
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Chloride	16887-00-6	11.5		2.00	1.00

Sample #:	L12050009-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW-6S	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	05/01/2012 15:43
Workgroup #:	WG396738	**Analyst:**	DIH	**Run Date:**	05/02/2012 11:35
Collect Date:	04/30/2012 15:25	**Dilution:**	10	**File ID:**	SC12050709055601
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Nitrate (as N)	14797-55-8	13.0		0.500	0.250

Sample #:	L12050009-03	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	4304-GW-6S	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG396993	**Analyst:**	DIH	**Run Date:**	05/04/2012 12:32
Collect Date:	04/30/2012 15:25	**Dilution:**	1	**File ID:**	TC05042012.013
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Organic Carbon, Dissolved		1.20		1.00	0.500

Certificate of Analysis

Sample #:	L12050009-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	4304-GW-2S	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/27/2012 15:49
Workgroup #:	WG397136	**Analyst:**	MES	**Run Date:**	05/07/2012 02:25
Collect Date:	04/30/2012 11:35	**Dilution:**	1	**File ID:**	8M378852
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		ND	1.00	0.250
1,1,1-Trichloroethane	71-55-6		ND	1.00	0.250
1,1,2,2-Tetrachloroethane	79-34-5		ND	1.00	0.200
1,1,2-Trichloroethane	79-00-5		ND	1.00	0.250
1,1-Dichloroethane	75-34-3		ND	1.00	0.125
1,1-Dichloroethene	75-35-4		ND	1.00	0.500
1,1-Dichloropropene	563-58-6		ND	1.00	0.250
1,2,3-Trichlorobenzene	87-61-6		ND	1.00	0.150
1,2,3-Trichloropropane	96-18-4		ND	1.00	0.500
1,2,4-Trichlorobenzene	120-82-1		ND	1.00	0.200
1,2,4-Trimethylbenzene	95-63-6		ND	1.00	0.250
1,2-Dibromo-3-chloropropane	96-12-8		ND	2.00	1.00
1,2-Dibromoethane	106-93-4		ND	1.00	0.250
1,2-Dichlorobenzene	95-50-1		ND	1.00	0.125
1,2-Dichloroethane	107-06-2		ND	1.00	0.250
1,2-Dichloropropane	78-87-5		ND	1.00	0.200
1,3,5-Trimethylbenzene	108-67-8		ND	1.00	0.250
1,3-Dichlorobenzene	541-73-1		ND	1.00	0.250
1,3-Dichloropropane	142-28-9		ND	1.00	0.200
1,4-Dichlorobenzene	106-46-7		ND	1.00	0.125
2,2-Dichloropropane	594-20-7		ND	1.00	0.250
2-Butanone	78-93-3		ND	5.00	2.50
2-Chloroethyl vinyl ether	110-75-8		ND	5.00	2.00
2-Chlorotoluene	95-49-8		ND	1.00	0.125
2-Hexanone	591-78-6		ND	5.00	2.50
4-Chlorotoluene	106-43-4		ND	1.00	0.250
4-Methyl-2-pentanone	108-10-1		ND	5.00	2.50
Acetone	67-64-1		ND	5.00	2.50
Acetonitrile	75-05-8		ND	100	50.0
Acrolein	107-02-8		ND	100	20.0
Benzene	71-43-2		ND	1.00	0.125
Bromobenzene	108-86-1		ND	1.00	0.125
Bromochloromethane	74-97-5		ND	1.00	0.200

Certificate of Analysis

Sample #:	L12050009-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	4304-GW-2S	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/27/2012 15:49
Workgroup #:	WG397136	**Analyst:**	MES	**Run Date:**	05/07/2012 02:25
Collect Date:	04/30/2012 11:35	**Dilution:**	1	**File ID:**	8M378852
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Bromodichloromethane	75-27-4		ND	1.00	0.250
Bromoform	75-25-2		ND	1.00	0.500
Bromomethane	74-83-9		ND	1.00	0.500
Carbon disulfide	75-15-0		ND	1.00	0.500
Carbon tetrachloride	56-23-5		ND	1.00	0.250
Chlorobenzene	108-90-7		ND	1.00	0.125
Chlorodibromomethane	124-48-1		ND	1.00	0.250
Chloroethane	75-00-3		ND	1.00	0.500
Chloroform	67-66-3		ND	1.00	0.125
Chloromethane	74-87-3		ND	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	8.01		1.00	0.250
cis-1,3-Dichloropropene	10061-01-5		ND	1.00	0.250
Dibromomethane	74-95-3		ND	1.00	0.250
Dichlorodifluoromethane	75-71-8		ND	1.00	0.250
Ethylbenzene	100-41-4		ND	1.00	0.250
Hexachlorobutadiene	87-68-3		ND	1.00	0.250
Isopropylbenzene	98-82-8		ND	1.00	0.250
m-,p-Xylene	179601-23-1		ND	1.00	0.500
Methylene chloride	75-09-2		ND	1.00	0.250
n-Butylbenzene	104-51-8		ND	1.00	0.250
n-Propylbenzene	103-65-1		ND	1.00	0.125
Naphthalene	91-20-3		ND	1.00	0.200
o-Xylene	95-47-6		ND	1.00	0.250
p-Isopropyltoluene	99-87-6		ND	1.00	0.250
sec-Butylbenzene	135-98-8		ND	1.00	0.250
Styrene	100-42-5		ND	1.00	0.125
tert-Butylbenzene	98-06-6		ND	1.00	0.250
Tetrachloroethene	127-18-4	8.82		1.00	0.250
Toluene	108-88-3		ND	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		ND	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		ND	1.00	0.500
Trichloroethene	79-01-6	1.33		1.00	0.250
Trichlorofluoromethane	75-69-4	0.439	J	1.00	0.250

Certificate of Analysis

Sample #:	L12050009-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	4304-GW-2S	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/27/2012 15:49
Workgroup #:	WG397136	**Analyst:**	MES	**Run Date:**	05/07/2012 02:25
Collect Date:	04/30/2012 11:35	**Dilution:**	1	**File ID:**	8M378852
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Vinyl acetate	108-05-4		ND	5.00	2.50
Vinyl chloride	75-01-4		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	112	80	120	
4-Bromofluorobenzene	97.9	86	115	
Dibromofluoromethane	105	86	118	
Toluene-d8	98.6	88	110	

J	Estimated value; the analyte concentration was less than the RL/LOQ.
ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050009-04	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	4304-GW-2S	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	04/30/2012 15:04
Workgroup #:	WG396843	**Analyst:**	FJB	**Run Date:**	05/02/2012 17:57
Collect Date:	04/30/2012 11:35	**Dilution:**	1	**File ID:**	16G32151
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Methane	74-82-8		ND	5.00	1.00
Ethene	74-85-1		ND	5.00	1.00
Ethane	74-84-0		ND	5.00	1.00

ND	Not detected at or above the reporting limit (RL).

Certificate of Analysis

Sample #:	L12050009-04	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	4304-GW-2S	**Prep Method:**	3005A	**Prep Date:**	05/03/2012 06:54
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	05/07/2012 10:38
Workgroup #:	WG396933	**Analyst:**	KHR	**Run Date:**	05/07/2012 12:02
Collect Date:	04/30/2012 11:35	**Dilution:**	1	**File ID:**	P2.050712.120258
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Iron, Dissolved	7439-89-6		ND	0.100	0.0500

ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050009-04	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW-2S	**Prep Method:**	325.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	325.2	**Cal Date:**	05/01/2012 15:43
Workgroup #:	WG396727	**Analyst:**	DIH	**Run Date:**	05/01/2012 15:49
Collect Date:	04/30/2012 11:35	**Dilution:**	1	**File ID:**	SC120501002.016
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Chloride	16887-00-6	5.59		2.00	1.00

Sample #:	L12050009-04	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW-2S	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	05/01/2012 15:43
Workgroup #:	WG396738	**Analyst:**	DIH	**Run Date:**	05/02/2012 11:35
Collect Date:	04/30/2012 11:35	**Dilution:**	4	**File ID:**	SC12050709060301
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Nitrate (as N)	14797-55-8	4.15		0.200	0.100

Certificate of Analysis

Sample #:	L12050009-04	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	4304-GW-2S	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG396993	**Analyst:**	DIH	**Run Date:**	05/04/2012 13:05
Collect Date:	04/30/2012 11:35	**Dilution:**	1	**File ID:**	TC05042012.016
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Organic Carbon, Dissolved			ND	1.00	0.500

ND	Not detected at or above the reporting limit (RL).

Certificate of Analysis

Sample #:	L12050009-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	4304-GW-1S	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/27/2012 15:49
Workgroup #:	WG397136	**Analyst:**	MES	**Run Date:**	05/07/2012 02:56
Collect Date:	04/30/2012 13:35	**Dilution:**	1	**File ID:**	8M378853
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		ND	1.00	0.250
1,1,1-Trichloroethane	71-55-6		ND	1.00	0.250
1,1,2,2-Tetrachloroethane	79-34-5		ND	1.00	0.200
1,1,2-Trichloroethane	79-00-5		ND	1.00	0.250
1,1-Dichloroethane	75-34-3		ND	1.00	0.125
1,1-Dichloroethene	75-35-4		ND	1.00	0.500
1,1-Dichloropropene	563-58-6		ND	1.00	0.250
1,2,3-Trichlorobenzene	87-61-6		ND	1.00	0.150
1,2,3-Trichloropropane	96-18-4		ND	1.00	0.500
1,2,4-Trichlorobenzene	120-82-1		ND	1.00	0.200
1,2,4-Trimethylbenzene	95-63-6		ND	1.00	0.250
1,2-Dibromo-3-chloropropane	96-12-8		ND	2.00	1.00
1,2-Dibromoethane	106-93-4		ND	1.00	0.250
1,2-Dichlorobenzene	95-50-1		ND	1.00	0.125
1,2-Dichloroethane	107-06-2		ND	1.00	0.250
1,2-Dichloropropane	78-87-5		ND	1.00	0.200
1,3,5-Trimethylbenzene	108-67-8		ND	1.00	0.250
1,3-Dichlorobenzene	541-73-1		ND	1.00	0.250
1,3-Dichloropropane	142-28-9		ND	1.00	0.200
1,4-Dichlorobenzene	106-46-7		ND	1.00	0.125
2,2-Dichloropropane	594-20-7		ND	1.00	0.250
2-Butanone	78-93-3		ND	5.00	2.50
2-Chloroethyl vinyl ether	110-75-8		ND	5.00	2.00
2-Chlorotoluene	95-49-8		ND	1.00	0.125
2-Hexanone	591-78-6		ND	5.00	2.50
4-Chlorotoluene	106-43-4		ND	1.00	0.250
4-Methyl-2-pentanone	108-10-1		ND	5.00	2.50
Acetone	67-64-1		ND	5.00	2.50
Acetonitrile	75-05-8		ND	100	50.0
Acrolein	107-02-8		ND	100	20.0
Benzene	71-43-2		ND	1.00	0.125
Bromobenzene	108-86-1		ND	1.00	0.125
Bromochloromethane	74-97-5		ND	1.00	0.200

Certificate of Analysis

Sample #:	L12050009-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	4304-GW-1S	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/27/2012 15:49
Workgroup #:	WG397136	**Analyst:**	MES	**Run Date:**	05/07/2012 02:56
Collect Date:	04/30/2012 13:35	**Dilution:**	1	**File ID:**	8M378853
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Bromodichloromethane	75-27-4		ND	1.00	0.250
Bromoform	75-25-2		ND	1.00	0.500
Bromomethane	74-83-9		ND	1.00	0.500
Carbon disulfide	75-15-0		ND	1.00	0.500
Carbon tetrachloride	56-23-5		ND	1.00	0.250
Chlorobenzene	108-90-7		ND	1.00	0.125
Chlorodibromomethane	124-48-1		ND	1.00	0.250
Chloroethane	75-00-3		ND	1.00	0.500
Chloroform	67-66-3		ND	1.00	0.125
Chloromethane	74-87-3		ND	1.00	0.500
cis-1,2-Dichloroethene	156-59-2		ND	1.00	0.250
cis-1,3-Dichloropropene	10061-01-5		ND	1.00	0.250
Dibromomethane	74-95-3		ND	1.00	0.250
Dichlorodifluoromethane	75-71-8		ND	1.00	0.250
Ethylbenzene	100-41-4		ND	1.00	0.250
Hexachlorobutadiene	87-68-3		ND	1.00	0.250
Isopropylbenzene	98-82-8		ND	1.00	0.250
m-,p-Xylene	179601-23-1		ND	1.00	0.500
Methylene chloride	75-09-2		ND	1.00	0.250
n-Butylbenzene	104-51-8		ND	1.00	0.250
n-Propylbenzene	103-65-1		ND	1.00	0.125
Naphthalene	91-20-3		ND	1.00	0.200
o-Xylene	95-47-6		ND	1.00	0.250
p-Isopropyltoluene	99-87-6		ND	1.00	0.250
sec-Butylbenzene	135-98-8		ND	1.00	0.250
Styrene	100-42-5		ND	1.00	0.125
tert-Butylbenzene	98-06-6		ND	1.00	0.250
Tetrachloroethene	127-18-4		ND	1.00	0.250
Toluene	108-88-3		ND	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		ND	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		ND	1.00	0.500
Trichloroethene	79-01-6		ND	1.00	0.250
Trichlorofluoromethane	75-69-4		ND	1.00	0.250

Certificate of Analysis

Sample #:	L12050009-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	4304-GW-1S	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/27/2012 15:49
Workgroup #:	WG397136	**Analyst:**	MES	**Run Date:**	05/07/2012 02:56
Collect Date:	04/30/2012 13:35	**Dilution:**	1	**File ID:**	8M378853
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Vinyl acetate	108-05-4		ND	5.00	2.50
Vinyl chloride	75-01-4		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	113	80	120	
4-Bromofluorobenzene	97.4	86	115	
Dibromofluoromethane	105	86	118	
Toluene-d8	99.6	88	110	

ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050009-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	4304-GW-1S	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	04/30/2012 15:04
Workgroup #:	WG396843	**Analyst:**	FJB	**Run Date:**	05/02/2012 18:06
Collect Date:	04/30/2012 13:35	**Dilution:**	1	**File ID:**	16G32152
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Methane	74-82-8		ND	5.00	1.00
Ethene	74-85-1		ND	5.00	1.00
Ethane	74-84-0		ND	5.00	1.00

ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050009-05	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	4304-GW-1S	**Prep Method:**	3005A	**Prep Date:**	05/03/2012 06:54
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	05/07/2012 10:38
Workgroup #:	WG396933	**Analyst:**	KHR	**Run Date:**	05/07/2012 12:09
Collect Date:	04/30/2012 13:35	**Dilution:**	1	**File ID:**	P2.050712.120954
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Iron, Dissolved	7439-89-6		ND	0.100	0.0500

ND	Not detected at or above the reporting limit (RL).

Certificate of Analysis

Sample #:	L12050009-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW-1S	**Prep Method:**	325.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	325.2	**Cal Date:**	05/01/2012 15:43
Workgroup #:	WG396727	**Analyst:**	DIH	**Run Date:**	05/01/2012 15:49
Collect Date:	04/30/2012 13:35	**Dilution:**	1	**File ID:**	SC120501002.017
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Chloride	16887-00-6	2.17		2.00	1.00

Sample #:	L12050009-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW-1S	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	05/01/2012 15:43
Workgroup #:	WG396738	**Analyst:**	DIH	**Run Date:**	05/02/2012 11:35
Collect Date:	04/30/2012 13:35	**Dilution:**	1	**File ID:**	SC12050709061001
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Nitrate (as N)	14797-55-8	1.49		0.0500	0.0250

Sample #:	L12050009-05	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	4304-GW-1S	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG396993	**Analyst:**	DIH	**Run Date:**	05/04/2012 13:18
Collect Date:	04/30/2012 13:35	**Dilution:**	1	**File ID:**	TC05042012.017
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Organic Carbon, Dissolved		0.812	J	1.00	0.500

J	Estimated value; the analyte concentration was less than the RL/LOQ.

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12050009
Blank File ID: 8M378834
Prep Date: 05/06/12 17:12
Analyzed Date: 05/06/12 17:12
Analyst: MES

Work Group: WG397136
Blank Sample ID: WG397136-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG397136-02	8M378835	05/06/12 17:43	01
LCS2	WG397136-03	8M378836	05/06/12 18:13	01
4304-GW-5S	L12050009-01	8M378849	05/07/12 00:53	01
4304-GW-4S	L12050009-02	8M378850	05/07/12 01:24	01
4304-GW-6S	L12050009-03	8M378851	05/07/12 01:55	01
4304-GW-2S	L12050009-04	8M378852	05/07/12 02:25	01
4304-GW-1S	L12050009-05	8M378853	05/07/12 02:56	01

Report Name: BLANK_SUMMARY
PDF File ID: 2411483
Report generated 05/11/2012 11:23

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12050009 Prep Date: 05/06/12 17:12 Sample ID: WG397136-01
Instrument ID: HPMS8 Run Date: 05/06/12 17:12 Prep Method: 5030B/5030C/503
File ID: 8M378834 Analyst: MES Method: 8260B
Workgroup (AAB#): WG397136 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-27-MAR-12

Analytes	MDL	RL	Concentration	Dilution	Qualifier
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,1-Dichloroethene	0.500	1.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,3-Trichloropropane	0.500	1.00	0.500	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	2.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
2-Butanone	2.50	5.00	2.50	1	U
2-Chloroethyl vinyl ether	2.00	5.00	2.00	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
2-Hexanone	2.50	5.00	2.50	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	5.00	2.50	1	U
Acetone	2.50	5.00	2.50	1	U
Acetonitrile	50.0	100	50.0	1	U
Acrolein	20.0	100	20.0	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	1.00	0.500	1	U
Bromomethane	0.500	1.00	0.500	1	U
Carbon disulfide	0.500	1.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	1.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U

Report Name: BLANK
PDF ID: 2411484
11-MAY-2012 11:23

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12050009 Prep Date: 05/06/12 17:12 Sample ID: WG397136-01
Instrument ID: HPMS8 Run Date: 05/06/12 17:12 Prep Method: 5030B/5030C/503
File ID: 8M378834 Analyst: MES Method: 8260B
Workgroup (AAB#): WG397136 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-27-MAR-12

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Chloromethane	0.500	1.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	1.00	0.500	1	U
Methylene chloride	0.250	1.00	0.250	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Naphthalene	0.200	1.00	0.200	1	U
o-Xylene	0.250	1.00	0.250	1	U
p-Isopropyltoluene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
Styrene	0.125	1.00	0.125	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	1.00	0.500	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
Vinyl acetate	2.50	5.00	2.50	1	U
Vinyl chloride	0.250	1.00	0.250	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,2-Dichloroethane-d4	102	80 - 120	PASS
4-Bromofluorobenzene	99.4	86 - 115	PASS
Dibromofluoromethane	101	86 - 118	PASS
Toluene-d8	102	88 - 110	PASS

MDL Method Detection Limit
RL Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > RL

Report Name: BLANK
PDF ID: 2411484
11-MAY-2012 11:23

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12050009 Analyst: MES Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG397136 Units: ug/L
QC Key: STD Lot #: STD51372

Sample ID: WG397136-02 LCS File ID: 8M378835 Run Date: 05/06/2012 17:43
Sample ID: WG397136-03 LCS2 File ID: 8M378836 Run Date: 05/06/2012 18:13

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	20.5	103	20.0	21.0	105	2.32	80 - 130	20	
1,1,1-Trichloroethane	20.0	21.8	109	20.0	22.3	111	2.30	80 - 134	20	
1,1,2,2-Tetrachloroethane	20.0	16.8	84.0	20.0	16.2	81.2	3.34	79 - 125	20	
1,1,2-Trichloroethane	20.0	18.7	93.6	20.0	18.6	93.1	0.530	80 - 125	20	
1,1-Dichloroethane	20.0	19.0	95.1	20.0	19.3	96.6	1.63	80 - 125	20	
1,1-Dichloroethene	20.0	20.0	100	20.0	20.8	104	3.62	80 - 132	20	
1,1-Dichloropropene	20.0	19.4	96.8	20.0	20.6	103	6.03	75 - 130	20	
1,2,3-Trichlorobenzene	20.0	18.6	92.9	20.0	18.9	94.7	1.87	55 - 140	20	
1,2,3-Trichloropropane	20.0	18.5	92.3	20.0	18.6	93.0	0.757	75 - 125	20	
1,2,4-Trichlorobenzene	20.0	17.8	89.2	20.0	18.4	92.1	3.23	65 - 135	20	
1,2,4-Trimethylbenzene	20.0	20.7	104	20.0	21.3	106	2.74	80 - 125	20	
1,2-Dibromo-3-chloropropane	20.0	16.8	83.8	20.0	17.1	85.6	2.15	50 - 130	20	
1,2-Dibromoethane	20.0	18.0	89.9	20.0	18.7	93.4	3.75	80 - 129	20	
1,2-Dichlorobenzene	20.0	18.5	92.6	20.0	19.1	95.3	2.90	80 - 125	20	
1,2-Dichloroethane	20.0	21.1	105	20.0	21.0	105	0.381	80 - 129	20	
1,2-Dichloropropane	20.0	18.7	93.6	20.0	19.6	97.9	4.48	80 - 120	20	
1,3,5-Trimethylbenzene	20.0	19.2	95.9	20.0	19.8	99.2	3.39	80 - 127	20	
1,3-Dichlorobenzene	20.0	18.8	93.8	20.0	19.0	95.2	1.44	80 - 120	20	
1,3-Dichloropropane	20.0	17.8	89.0	20.0	18.8	94.1	5.61	80 - 120	20	
1,4-Dichlorobenzene	20.0	18.7	93.3	20.0	19.1	95.4	2.23	80 - 120	20	
2,2-Dichloropropane	20.0	20.1	100	20.0	20.3	101	0.891	80 - 133	20	
2-Butanone	20.0	14.9	74.5	20.0	16.5	82.4	10.1	10 - 170	20	
2-Chloroethyl vinyl ether	20.0	17.2	86.0	20.0	17.4	86.8	0.946	45 - 160	20	
2-Chlorotoluene	20.0	18.3	91.7	20.0	18.4	92.1	0.459	80 - 127	20	
2-Hexanone	20.0	15.2	76.0	20.0	15.5	77.5	1.95	55 - 130	20	
4-Chlorotoluene	20.0	18.5	92.6	20.0	19.7	98.4	6.10	80 - 126	20	
4-Methyl-2-pentanone	20.0	15.8	79.1	20.0	17.0	85.2	7.34	64 - 140	20	
Acetone	20.0	16.0	80.1	20.0	17.0	85.2	6.17	40 - 180	20	
Acrolein	100	81.7	81.7	100	80.9	80.9	0.926	10 - 200	20	
Benzene	20.0	18.8	93.9	20.0	19.4	96.8	3.05	80 - 121	20	
Bromobenzene	20.0	19.4	96.9	20.0	20.0	100	3.17	80 - 120	20	
Bromochloromethane	20.0	20.1	100	20.0	20.2	101	0.488	65 - 130	20	
Bromodichloromethane	20.0	20.9	105	20.0	21.6	108	3.27	80 - 131	20	
Bromoform	20.0	20.0	100	20.0	20.4	102	1.78	70 - 130	20	
Bromomethane	20.0	16.2	81.2	20.0	16.6	82.9	2.14	30 - 145	20	
Carbon disulfide	20.0	21.0	105	20.0	22.3	111	5.79	58 - 128	20	
Carbon tetrachloride	20.0	22.4	112	20.0	23.0	115	2.81	65 - 140	20	
Chlorobenzene	20.0	18.8	93.8	20.0	19.3	96.5	2.91	80 - 120	20	
Chlorodibromomethane	20.0	20.3	102	20.0	20.6	103	1.28	60 - 135	20	
Chloroethane	20.0	17.9	89.6	20.0	19.0	95.1	6.04	60 - 135	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2411203
Report generated: 05/11/2012 11:23

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12050009 Analyst: MES Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG397136 Units: ug/L
QC Key: STD Lot #: STD51372

Sample ID: WG397136-02 LCS File ID: 8M378835 Run Date: 05/06/2012 17:43
Sample ID: WG397136-03 LCS2 File ID: 8M378836 Run Date: 05/06/2012 18:13

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Chloroform	20.0	19.9	99.4	20.0	20.3	102	2.34	80 - 125	20	
Chloromethane	20.0	19.1	95.4	20.0	20.1	101	5.33	40 - 125	20	
cis-1,2-Dichloroethene	20.0	19.7	98.6	20.0	19.8	98.9	0.249	70 - 125	20	
cis-1,3-Dichloropropene	20.0	19.8	98.8	20.0	20.4	102	3.05	70 - 130	20	
Dibromomethane	20.0	19.6	97.9	20.0	19.5	97.5	0.495	75 - 125	20	
Dichlorodifluoromethane	20.0	23.7	119	20.0	26.1	131	9.60	40 - 160	20	
Ethylbenzene	20.0	19.0	94.8	20.0	19.9	99.7	5.03	80 - 122	20	
Hexachlorobutadiene	20.0	21.6	108	20.0	22.6	113	4.41	72 - 132	20	
Isopropylbenzene	20.0	17.2	86.0	20.0	17.9	89.4	3.91	80 - 122	20	
m-,p-Xylene	40.0	38.3	95.7	40.0	40.0	100	4.38	80 - 122	20	
Methylene chloride	20.0	18.5	92.6	20.0	18.5	92.7	0.107	80 - 123	20	
n-Butylbenzene	20.0	18.4	91.9	20.0	19.1	95.3	3.64	80 - 131	20	
n-Propylbenzene	20.0	18.4	91.8	20.0	18.9	94.7	3.08	80 - 129	20	
Naphthalene	20.0	17.0	85.0	20.0	17.3	86.7	2.07	59 - 149	20	
o-Xylene	20.0	18.7	93.7	20.0	19.4	97.0	3.51	80 - 122	20	
p-Isopropyltoluene	20.0	18.7	93.4	20.0	19.4	96.9	3.69	80 - 122	20	
sec-Butylbenzene	20.0	18.2	90.8	20.0	18.8	94.0	3.40	80 - 127	20	
Styrene	20.0	17.5	87.6	20.0	18.2	91.1	3.88	80 - 123	20	
tert-Butylbenzene	20.0	18.9	94.7	20.0	19.8	98.8	4.30	80 - 126	20	
Tetrachloroethene	20.0	20.0	99.9	20.0	20.5	103	2.69	80 - 124	20	
Toluene	20.0	17.7	88.7	20.0	18.7	93.7	5.40	80 - 124	20	
trans-1,2-Dichloroethene	20.0	19.9	99.5	20.0	20.5	102	2.88	80 - 127	20	
trans-1,3-Dichloropropene	20.0	17.4	87.2	20.0	17.5	87.7	0.542	80 - 130	20	
Trichloroethene	20.0	20.6	103	20.0	21.8	109	5.58	80 - 122	20	
Trichlorofluoromethane	20.0	22.2	111	20.0	23.4	117	5.62	62 - 151	20	
Vinyl acetate	20.0	17.8	89.1	20.0	17.1	85.4	4.28	10 - 190	20	
Vinyl chloride	20.0	19.9	99.4	20.0	21.6	108	8.09	50 - 170	20	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	104	104	80 - 120	PASS
Dibromofluoromethane	102	99.7	86 - 118	PASS
4-Bromofluorobenzene	99.4	98.8	86 - 115	PASS
Toluene-d8	101	99.6	88 - 110	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2411203
Report generated: 05/11/2012 11:23

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12050009
Blank File ID: 16G32140
Prep Date: 05/02/12 16:17
Analyzed Date: 05/02/12 16:17
Analyst: FJB

Work Group: WG396843
Blank Sample ID: WG396843-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG396843-02	16G32141	05/02/12 16:27	01
4304-GW-5S	L12050009-01	16G32147	05/02/12 17:21	01
4304-GW-4S	L12050009-02	16G32148	05/02/12 17:30	01
4304-GW-6S	L12050009-03	16G32149	05/02/12 17:39	01
4304-GW-2S	L12050009-04	16G32151	05/02/12 17:57	01
4304-GW-1S	L12050009-05	16G32152	05/02/12 18:06	01

Report Name: BLANK_SUMMARY
PDF File ID: 2400820
Report generated 05/03/2012 11:28

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12050009 Prep Date: 05/02/12 16:17 Sample ID: WG396843-01
Instrument ID: HP16 Run Date: 05/02/12 16:17 Prep Method: 5021
File ID: 16G32140 Analyst: FJB Method: RSK175
Workgroup (AAB#): WG396843 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16 - 30-APR-12

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Methane	1.00	5.00	1.00	1	U
Ethene	1.00	5.00	1.00	1	U
Ethane	1.00	5.00	1.00	1	U

MDL Method Detection Limit
RL Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > RL

Report Name: BLANK
PDF ID: 2400821
03-MAY-2012 11:28

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12050009 Run Date: 05/02/2012 Sample ID: WG396843-02
Instrument ID: HP16 Run Time: 16:27 Prep Method: 5021
File ID: 16G32141 Analyst: FJB Method: RSK175
Workgroup (AAB#): WG396843 Matrix: Water Units: ug/L
QC Key: STD Lot#: STD45308 Cal ID: HP16 - 30-APR-12

Analytes	Expected	Found	% Rec	LCS Limits	Q
Methane	116	104	89.6	56 - 140	
Ethene	202	177	87.8	56 - 140	
Ethane	216	195	90.3	56 - 137	

LCS - Modified 03/06/2008
PDF File ID: 2400822
Report generated: 05/03/2012 11:28

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12050009
Blank File ID: P2.050712.112916
Prep Date: 05/03/12 06:54
Analyzed Date: 05/07/12 11:29
Analyst: KHR

Work Group: WG396933
Blank Sample ID: WG396864-04
Instrument ID: PE-ICP2
Method: 6010B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG396864-05	P2.050712.113611	05/07/12 11:36	01
4304-GW-5S	L12050009-01	P2.050712.114210	05/07/12 11:42	01
4304-GW-4S	L12050009-02	P2.050712.114905	05/07/12 11:49	01
4304-GW-6S	L12050009-03	P2.050712.115602	05/07/12 11:56	01
4304-GW-2S	L12050009-04	P2.050712.120258	05/07/12 12:02	01
4304-GW-1S	L12050009-05	P2.050712.120954	05/07/12 12:09	01
FLT_BLK	WG396864-06	P2.050712.142646	05/07/12 14:26	01

Report Name: BLANK_SUMMARY
PDF File ID: 2405088
Report generated 05/08/2012 08:52

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12050009 Prep Date: 05/03/12 06:54 Sample ID: WG396864-04
Instrument ID: PE-ICP2 Run Date: 05/07/12 11:29 Prep Method: 3005A
File ID: P2.050712.112916 Analyst: KHR Method: 6010B
Workgroup (AAB#): WG396933 Matrix: Water Units: mg/L
Contract #: Cal ID: PE-ICP - 07-MAY-12

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Iron, Dissolved	0.0500	0.100	0.0500	1	U

MDL Method Detection Limit
RL Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > RL

Report Name: BLANK
PDF ID: 2405089
08-MAY-2012 08:52

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12050009 Run Date: 05/07/2012 Sample ID: WG396864-05
Instrument ID: PE-ICP2 Run Time: 11:36 Prep Method: 3005A
File ID: P2.050712.113611 Analyst: KHR Method: 6010B
Workgroup (AAB#): WG396933 Matrix: Water Units: mg/L
QC Key: STD Lot#: STD51357 Cal ID: PE-ICP - 07-MAY-12

Analytes	Expected	Found	% Rec	LCS Limits	Q
Iron, Dissolved	2.00	2.00	99.8	85 - 115	

LCS - Modified 03/06/2008
PDF File ID: 2405090
Report generated: 05/08/2012 08:52

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L12050009 Cal ID: PE-ICP2- Worknum: WG396933
Instrument ID: PE-ICP2 Contract #: Method: 6010B
Parent ID: WG396864-01 File ID: P2.050712.124416 Dil: 1 Matrix: WATER
Sample ID: WG396864-07 MS File ID: P2.050712.125013 Dil: 1 Units: mg/L
Sample ID: WG396864-08 MSD File ID: P2.050712.125611 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Iron, Total	0.917	2.00	2.79	93.6	2.00	3.38	123	19.0	80 - 120	20	*

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 2405091
Report generated 05/08/2012 08:52

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12050009
Blank File ID: SC120501002.009
Prep Date: 05/01/12 15:44
Analyzed Date: 05/01/12 15:44
Analyst: DIH

Work Group: WG396727
Blank Sample ID: WG396727-01
Instrument ID: SMARTCHEM
Method: 325.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG396727-02	SC120501002.010	05/01/12 15:45	01
LCS2	WG396727-03	SC120501002.011	05/01/12 15:46	01
4304-GW-5S	L12050009-01	SC120501002.013	05/01/12 15:47	01
4304-GW-4S	L12050009-02	SC120501002.014	05/01/12 15:48	01
4304-GW-6S	L12050009-03	SC120501002.015	05/01/12 15:48	01
4304-GW-2S	L12050009-04	SC120501002.016	05/01/12 15:49	01
4304-GW-1S	L12050009-05	SC120501002.017	05/01/12 15:49	01
DUP	WG396727-05	SC120501002.020	05/01/12 15:51	01

Report Name: BLANK_SUMMARY
PDF File ID: 2399732
Report generated 05/02/2012 11:31

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12050009 Prep Date: 05/01/12 15:44 Sample ID: WG396727-01
Instrument ID: SMARTCHEM Run Date: 05/01/12 15:44 Prep Method: 325.2
File ID: SC120501002.009 Analyst: DIH Method: 325.2
Workgroup (AAB#): WG396727 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-01-MAY-12

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Chloride	1.00	2.00	1.00	1	U

MDL Method Detection Limit
RL Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > RL

Report Name: BLANK
PDF ID: 2399733
02-MAY-2012 11:31

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12050009 Analyst: DIH Prep Method: 325.2
Instrument ID: SMARTCHEM Matrix: Water Method: 325.2
Workgroup (AAB#): WG396727 Units: mg/L
QC Key: STD Lot #: STD51245

Sample ID: WG396727-02 LCS File ID: SC120501002.010 Run Date: 05/01/2012 15:45
Sample ID: WG396727-03 LCS2 File ID: SC120501002.011 Run Date: 05/01/2012 15:46

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Chloride	50.0	51.1	102	50.0	51.2	102	0.213	90 - 110	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2399734
Report generated: 05/02/2012 11:31

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12050009
Blank File ID: SC12050709000501
Prep Date: 05/02/12 11:35
Analyzed Date: 05/02/12 11:35
Analyst: DIH

Work Group: WG396738
Blank Sample ID: WG396738-01
Instrument ID: SMARTCHEM
Method: 353.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
DUP	WG396738-05	SC12050709004301	05/02/12 11:35	
LCS2	WG396738-03	SC12050709002301	05/02/12 11:35	
4304-GW-5S	L12050009-01	SC12050709054101	05/02/12 11:35	
4304-GW-4S	L12050009-02	SC12050709054901	05/02/12 11:35	
4304-GW-2S	L12050009-04	SC12050709060301	05/02/12 11:35	
LCS	WG396738-02	SC12050709001701	05/02/12 11:35	
4304-GW-1S	L12050009-05	SC12050709061001	05/02/12 11:35	
4304-GW-6S	L12050009-03	SC12050709055601	05/02/12 11:35	

Report Name: BLANK_SUMMARY
PDF File ID: 2404997
Report generated 05/08/2012 08:24

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12050009 Prep Date: 05/02/12 11:35 Sample ID: WG396738-01
Instrument ID: SMARTCHEM Run Date: 05/02/12 11:35 Prep Method: 353.2
File ID: SC12050709000501 Analyst: DIH Method: 353.2
Workgroup (AAB#): WG396738 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-01-MAY-12

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Nitrate (as N)	0.0250	0.0500	0.0250	1	U

MDL Method Detection Limit
RL Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > RL

Report Name: BLANK
PDF ID: 2404998
08-MAY-2012 08:24

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12050009 Analyst: DIH Prep Method: 353.2
Instrument ID: SMARTCHEM Matrix: Water Method: 353.2
Workgroup (AAB#): WG396738 Units: mg/L
QC Key: STD Lot #: STD51196

Sample ID: WG396738-02 LCS File ID: SC12050709001701 Run Date: 05/02/2012 11:35
Sample ID: WG396738-03 LCS2 File ID: SC12050709002301 Run Date: 05/02/2012 11:35

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Nitrate (as N)	1.00	1.07	107	1.00	1.05	105	1.70	90 - 110	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2405000
Report generated: 05/08/2012 08:24

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12050009
Blank File ID: TC05042012.003
Prep Date: 05/04/12 10:22
Analyzed Date: 05/04/12 10:22
Analyst: DIH

Work Group: WG396993
Blank Sample ID: WG396993-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG396993-02	TC05042012.004	05/04/12 10:34	01
LCS2	WG396993-03	TC05042012.005	05/04/12 10:46	01
DUP	WG396993-05	TC05042012.009	05/04/12 11:39	DL01
4304-GW-5S	L12050009-01	TC05042012.011	05/04/12 12:06	01
4304-GW-4S	L12050009-02	TC05042012.012	05/04/12 12:19	01
4304-GW-6S	L12050009-03	TC05042012.013	05/04/12 12:32	01
4304-GW-2S	L12050009-04	TC05042012.016	05/04/12 13:05	01
4304-GW-1S	L12050009-05	TC05042012.017	05/04/12 13:18	01

Report Name: BLANK_SUMMARY
PDF File ID: 2403332
Report generated 05/05/2012 11:22

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12050009 Prep Date: 05/04/12 10:22 Sample ID: WG396993-01
Instrument ID: TOC-VWP Run Date: 05/04/12 10:22 Prep Method: 415.1
File ID: TC05042012.003 Analyst: DIH Method: 415.1
Workgroup (AAB#): WG396993 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-06-DEC-11

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Organic Carbon, Dissolved	0.500	1.00	0.500	1	U

MDL Method Detection Limit
RL Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > RL

Report Name: BLANK
PDF ID: 2403333
05-MAY-2012 11:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12050009 Analyst: DIH Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG396993 Units: mg/L
QC Key: STD Lot #: STD50986

Sample ID: WG396993-02 LCS File ID: TC05042012.004 Run Date: 05/04/2012 10:34
Sample ID: WG396993-03 LCS2 File ID: TC05042012.005 Run Date: 05/04/2012 10:46

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Organic Carbon, Dissolved	25.0	23.8	95.2	25.0	23.5	94.1	1.23	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2403334
Report generated: 05/05/2012 11:22

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
May 11, 2012

ADC - ANTHONY D. CANTER	AJF - AMANDA J. FICKIESEN	ALB - ANNIE L. BROWN
ALV - AMY L. VALENTINE	AML - TONY M. LONG	AZH - AFTER HOURS
BLG - BRENDA L. GREENWALT	BRG - BRENDA R. GREGORY	CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS	CEB - CHAD E. BARNES	CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER	CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CS - CODY M. STRAHLER	CSH - CHRIS S. HILL	DDE - DEBRA D. ELLIOTT
DEV - DAVID E. VANDENBERG	DGB - DOUGLAS G. BUTCHER	DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER	DLP - DOROTHY L. PAYNE	DLR - DIANNA L. RAUCH
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON	EDL - ERIN D. LONG
ERP - ERIN R. PORTER	FJB - FRANCES J. BOLDEN	HAV - HEMA VILASAGAR
HJR - HOLLY J. REED	JAL - JOHN A. LENT	JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON	JKS - JANE K. SCHAAD	JLL - JOHN L. LENT
JWR - JOHN W. RICHARDS	JWS - JACK W. SHEAVES	JYH - JI Y. HU
KEB - KATIE E. BARNES	KHR - KIM H. RHODES	KRA - KATHY R. ALBERTSON
LKN - LINDA K. NEDEFF	LSB - LESLIE S. BUCINA	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON	PDM - PIERCE D. MORRIS
PWD - PAUL W. DENT	QX - QIN XU	RAH - ROY A. HALSTEAD
REK - BOB E. KYER	RLB - BOB BUCHANAN	RLK - ROBIN L. KLINGER
RS - ROSEMARY SCOTT	RWC - RODNEY W. CAMPBELL	SJP - SUZANNE J. PAUGH
SLM - STEPHANIE L. MOSSBURG	SLP - SHERI L. PFALZGRAF	TIP - TAE I. PARRISH
TMB - TIFFANY M. BAILEY	TMM - TAMMY M. MORRIS	VC - VICKI COLLIER
WJB - WILL J. BEASLEY	WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
May 11, 2012

Qualkey: STD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Result is greater than the associated numerical value.
A	See the report narrative
B	Analyte present in method blank
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
FL	Free Liquid
H1	Sample analysis performed past holding time.
I	Semiquantitative result (out of instrument calibration range)
J	Estimated value; the analyte concentration was less than the RL/LOQ.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Tentatively identified compound(TIC)
NA	Not applicable
ND	Not detected at or above the reporting limit (RL).
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
U	Analyte was not detected. The concentration is below the reported MDL.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UJ	Undetected; the analyte was analyzed for, but not detected.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

COC No. A 29660A

158 Starlite Drive
Marietta, OH 45750

Microbac

CHAIN-OF-CUSTODY RECORD

Phone: 740-373-4071
Fax: 740-373-4835

Company Name: BSB PG

Project Contact: Brian Boutin

Contact Phone #: 914-366-3663

Turn Around Requirements: STD

Location: CC Tire

Project ID: CC Tire permit # 4304

Sampler (print): Aaron Hill

Signature: A Hill

Sample I.D. No.	Comp	Grab	Date	Time	Matrix*	NUMBER OF CONTAINERS	Hold	8260	Diss Gases	Diss TOC	Cl / NO3	Diss Metals										TOTAL # (LAB USE)	ADDITIONAL REQUIREMENTS
~~4304-4S~~ 4304-GW5S		G	4/30/12	~~1445~~ 1540	W	9		3	3	1	1	1											
4304-GW4S		G	4/30/12	1415	W	9		3	3	1	1	1											
4304-GW-6S		G	4/30/12	1525	W	9		3	3	1	1	1											
4304-GW-2S		G	4/30/12	1135	W	9		3	3	1	1	1											
4304-GW-1S		G	4/30/12	1335	W	9		3	3	1	1	1											

Program
- ☐ CWA
- ☐ RCRA
- ☐ DOD
- ☐ AFCEE
- ☐ Other _____

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relin (Sign
Phillip C. Pk	4/30/12	1700	Fed Ex	
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	D

Microbac OVD
Received: 05/01/2012 10:10
By: CARA STRICKLER 221000024595

Cara Strickler

*Water (W), Soil (S), Solid Waste (SD), Unknown (X)

Page _____ of _____

Microbac

Laboratory Report Number: L12050051

Brian Boutin
Central Carolina Tire
11112 Branding Iron Place
Wendell, NC 27591

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the accrediting authority listed below. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

This report was certified on May 10 2012

David E. Vandenberg

David Vandenberg – Managing Director

State of Origin: NC
Accrediting Authority: Department of the Environment and Natural Resources ID:583
QAPP: Microbac OVD

Microbac

Lab Report #: L12050051
Lab Project #: 3071.001
Project Name: Central Carolina Tire
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
The Metals Diss. and the TOC Diss. were received together in the same bottle for ID's GW-1d, GW-3d, GW-4D and GW-5d. Per the lab, these will need to be split accordingly. RLK	

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #
0015745	H	0.0		1002239580160004575000873013168290

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct perservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac

Lab Report #: L12050051
Lab Project #: 3071.001
Project Name: Central Carolina Tire
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
4304-GW1D	L12050051-01	05/01/2012 09:00	05/02/2012 10:00
4304-GW3D	L12050051-02	05/01/2012 10:30	05/02/2012 10:00
4304-GW4D	L12050051-03	05/01/2012 10:00	05/02/2012 10:00
4304-GW2D	L12050051-04	05/01/2012 10:48	05/02/2012 10:00
4304-GW5D	L12050051-05	05/01/2012 10:14	05/02/2012 10:00
4304-GW6D	L12050051-06	05/01/2012 09:12	05/02/2012 10:00
4304-GW7D	L12050051-07	05/01/2012 09:30	05/02/2012 10:00
4304-GW8D	L12050051-08	05/01/2012 09:44	05/02/2012 10:00
4304-TB01	L12050051-09	04/30/2012 00:01	05/02/2012 10:00
4304-TB02	L12050051-10	05/01/2012 00:01	05/02/2012 10:00
4304-GW7S	L12050051-11	05/01/2012 08:50	05/02/2012 10:00
4304-MW8	L12050051-12	05/01/2012 10:10	05/02/2012 10:00
4304-GW3S	L12050051-13	05/01/2012 11:55	05/02/2012 10:00

Login Number: L12050051
Department: Metals
Analyst: Kim Rhodes

METHOD

Preparation: SW-846 3005A

Analysis: SW-846 6010

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Interference Check Standards: All acceptance criteria were met.

Continuing Calibration Verification: All acceptance criteria were met.

Continuing Calibration Blank: WG397042 - The continuing calibration blank analyzed initially on 07-MAY-2012 at 14:50 yielded a noncompliant result for iron. The continuing calibration blank was reanalyzed at 15:12 prior to sample analysis and was compliant for iron.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Serial Dilution/Post Digestion Spikes: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

Narrative ID: 46027
Approved By: Maren Beery
Maren Beery

Certificate of Analysis

Sample #:	L12050051-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW1D	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 14:03
Collect Date:	05/01/2012 09:00	**Dilution:**	1	**File ID:**	10M95287
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		ND	1.00	0.250
1,1,1-Trichloroethane	71-55-6		ND	1.00	0.250
1,1,2,2-Tetrachloroethane	79-34-5		ND	1.00	0.200
1,1,2-Trichloroethane	79-00-5		ND	1.00	0.250
1,1-Dichloroethane	75-34-3		ND	1.00	0.125
1,1-Dichloroethene	75-35-4		ND	1.00	0.500
1,1-Dichloropropene	563-58-6		ND	1.00	0.250
1,2,3-Trichlorobenzene	87-61-6		ND	1.00	0.150
1,2,3-Trichloropropane	96-18-4		ND	1.00	0.500
1,2,4-Trichlorobenzene	120-82-1		ND	1.00	0.200
1,2,4-Trimethylbenzene	95-63-6		ND	1.00	0.250
1,2-Dibromo-3-chloropropane	96-12-8		ND	2.00	1.00
1,2-Dibromoethane	106-93-4		ND	1.00	0.250
1,2-Dichlorobenzene	95-50-1		ND	1.00	0.125
1,2-Dichloroethane	107-06-2		ND	1.00	0.250
1,2-Dichloropropane	78-87-5		ND	1.00	0.200
1,3,5-Trimethylbenzene	108-67-8		ND	1.00	0.250
1,3-Dichlorobenzene	541-73-1		ND	1.00	0.250
1,3-Dichloropropane	142-28-9		ND	1.00	0.200
1,4-Dichlorobenzene	106-46-7		ND	1.00	0.125
2,2-Dichloropropane	594-20-7		ND	1.00	0.250
2-Butanone	78-93-3		ND	5.00	2.50
2-Chloroethyl vinyl ether	110-75-8		ND	5.00	2.00
2-Chlorotoluene	95-49-8		ND	1.00	0.125
2-Hexanone	591-78-6		ND	5.00	2.50
4-Chlorotoluene	106-43-4		ND	1.00	0.250
4-Methyl-2-pentanone	108-10-1		ND	5.00	2.50
Acetone	67-64-1	5.00		5.00	2.50
Acetonitrile	75-05-8		ND	100	50.0
Acrolein	107-02-8		ND	100	20.0
Benzene	71-43-2		ND	1.00	0.125
Bromobenzene	108-86-1		ND	1.00	0.125
Bromochloromethane	74-97-5		ND	1.00	0.200

Certificate of Analysis

Sample #:	L12050051-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW1D	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 14:03
Collect Date:	05/01/2012 09:00	**Dilution:**	1	**File ID:**	10M95287
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Bromodichloromethane	75-27-4	8.07		1.00	0.250
Bromoform	75-25-2	1.96		1.00	0.500
Bromomethane	74-83-9		ND	1.00	0.500
Carbon disulfide	75-15-0	0.641	J	1.00	0.500
Carbon tetrachloride	56-23-5		ND	1.00	0.250
Chlorobenzene	108-90-7		ND	1.00	0.125
Chlorodibromomethane	124-48-1	6.50		1.00	0.250
Chloroethane	75-00-3		ND	1.00	0.500
Chloroform	67-66-3	12.9		1.00	0.125
Chloromethane	74-87-3		ND	1.00	0.500
cis-1,2-Dichloroethene	156-59-2		ND	1.00	0.250
cis-1,3-Dichloropropene	10061-01-5		ND	1.00	0.250
Dibromomethane	74-95-3		ND	1.00	0.250
Dichlorodifluoromethane	75-71-8		ND	1.00	0.250
Ethylbenzene	100-41-4		ND	1.00	0.250
Hexachlorobutadiene	87-68-3		ND	1.00	0.250
Isopropylbenzene	98-82-8		ND	1.00	0.250
m-,p-Xylene	179601-23-1		ND	1.00	0.500
Methylene chloride	75-09-2		ND	1.00	0.250
n-Butylbenzene	104-51-8		ND	1.00	0.250
n-Propylbenzene	103-65-1		ND	1.00	0.125
Naphthalene	91-20-3		ND	1.00	0.200
o-Xylene	95-47-6		ND	1.00	0.250
p-Isopropyltoluene	99-87-6		ND	1.00	0.250
sec-Butylbenzene	135-98-8		ND	1.00	0.250
Styrene	100-42-5		ND	1.00	0.125
tert-Butylbenzene	98-06-6		ND	1.00	0.250
Tetrachloroethene	127-18-4		ND	1.00	0.250
Toluene	108-88-3		ND	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		ND	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		ND	1.00	0.500
Trichloroethene	79-01-6		ND	1.00	0.250
Trichlorofluoromethane	75-69-4		ND	1.00	0.250

Certificate of Analysis

Sample #:	L12050051-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW1D	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 14:03
Collect Date:	05/01/2012 09:00	**Dilution:**	1	**File ID:**	10M95287
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Vinyl acetate	108-05-4		ND	5.00	2.50
Vinyl chloride	75-01-4		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	81.9	80	120	
4-Bromofluorobenzene	94.5	86	115	
Dibromofluoromethane	89.3	86	118	
Toluene-d8	97.5	88	110	

J	Estimated value; the analyte concentration was less than the RL/LOQ.
ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050051-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	4304-GW1D	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	04/30/2012 15:04
Workgroup #:	WG397035	**Analyst:**	MDA	**Run Date:**	05/04/2012 13:18
Collect Date:	05/01/2012 09:00	**Dilution:**	1	**File ID:**	16G32196
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Methane	74-82-8		ND	5.00	1.00
Ethene	74-85-1		ND	5.00	1.00
Ethane	74-84-0		ND	5.00	1.00

ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050051-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	4304-GW1D	**Prep Method:**	3005A	**Prep Date:**	05/04/2012 07:36
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	05/07/2012 14:23
Workgroup #:	WG397042	**Analyst:**	KHR	**Run Date:**	05/07/2012 16:08
Collect Date:	05/01/2012 09:00	**Dilution:**	1	**File ID:**	T2.050712.160829
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Iron, Dissolved	7439-89-6	0.191		0.100	0.0500

Certificate of Analysis

Sample #:	L12050051-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW1D	**Prep Method:**	325.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	325.2	**Cal Date:**	05/07/2012 15:07
Workgroup #:	WG397212	**Analyst:**	DIH	**Run Date:**	05/07/2012 15:11
Collect Date:	05/01/2012 09:00	**Dilution:**	1	**File ID:**	SC120507004.012
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Chloride	16887-00-6	9.24		2.00	1.00

Sample #:	L12050051-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW1D	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	05/01/2012 15:43
Workgroup #:	WG396816	**Analyst:**	DIH	**Run Date:**	05/02/2012 14:04
Collect Date:	05/01/2012 09:00	**Dilution:**	1	**File ID:**	SC12050708540401
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Nitrate (as N)	14797-55-8	0.101		0.0500	0.0250

Sample #:	L12050051-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	4304-GW1D	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG396993	**Analyst:**	DIH	**Run Date:**	05/04/2012 17:05
Collect Date:	05/01/2012 09:00	**Dilution:**	1	**File ID:**	TC05042012.035
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Organic Carbon, Dissolved		4.80		1.00	0.500

Certificate of Analysis

Sample #:	L12050051-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW3D	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 14:34
Collect Date:	05/01/2012 10:30	**Dilution:**	1	**File ID:**	10M95288
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		ND	1.00	0.250
1,1,1-Trichloroethane	71-55-6		ND	1.00	0.250
1,1,2,2-Tetrachloroethane	79-34-5		ND	1.00	0.200
1,1,2-Trichloroethane	79-00-5		ND	1.00	0.250
1,1-Dichloroethane	75-34-3		ND	1.00	0.125
1,1-Dichloroethene	75-35-4		ND	1.00	0.500
1,1-Dichloropropene	563-58-6		ND	1.00	0.250
1,2,3-Trichlorobenzene	87-61-6		ND	1.00	0.150
1,2,3-Trichloropropane	96-18-4		ND	1.00	0.500
1,2,4-Trichlorobenzene	120-82-1		ND	1.00	0.200
1,2,4-Trimethylbenzene	95-63-6		ND	1.00	0.250
1,2-Dibromo-3-chloropropane	96-12-8		ND	2.00	1.00
1,2-Dibromoethane	106-93-4		ND	1.00	0.250
1,2-Dichlorobenzene	95-50-1		ND	1.00	0.125
1,2-Dichloroethane	107-06-2		ND	1.00	0.250
1,2-Dichloropropane	78-87-5		ND	1.00	0.200
1,3,5-Trimethylbenzene	108-67-8		ND	1.00	0.250
1,3-Dichlorobenzene	541-73-1		ND	1.00	0.250
1,3-Dichloropropane	142-28-9		ND	1.00	0.200
1,4-Dichlorobenzene	106-46-7		ND	1.00	0.125
2,2-Dichloropropane	594-20-7		ND	1.00	0.250
2-Butanone	78-93-3		ND	5.00	2.50
2-Chloroethyl vinyl ether	110-75-8		ND	5.00	2.00
2-Chlorotoluene	95-49-8		ND	1.00	0.125
2-Hexanone	591-78-6		ND	5.00	2.50
4-Chlorotoluene	106-43-4		ND	1.00	0.250
4-Methyl-2-pentanone	108-10-1		ND	5.00	2.50
Acetone	67-64-1	5.09		5.00	2.50
Acetonitrile	75-05-8		ND	100	50.0
Acrolein	107-02-8		ND	100	20.0
Benzene	71-43-2		ND	1.00	0.125
Bromobenzene	108-86-1		ND	1.00	0.125
Bromochloromethane	74-97-5		ND	1.00	0.200

Certificate of Analysis

Sample #:	L12050051-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW3D	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 14:34
Collect Date:	05/01/2012 10:30	**Dilution:**	1	**File ID:**	10M95288
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Bromodichloromethane	75-27-4	2.04		1.00	0.250
Bromoform	75-25-2	1.08		1.00	0.500
Bromomethane	74-83-9		ND	1.00	0.500
Carbon disulfide	75-15-0		ND	1.00	0.500
Carbon tetrachloride	56-23-5		ND	1.00	0.250
Chlorobenzene	108-90-7		ND	1.00	0.125
Chlorodibromomethane	124-48-1	1.79		1.00	0.250
Chloroethane	75-00-3		ND	1.00	0.500
Chloroform	67-66-3	4.61		1.00	0.125
Chloromethane	74-87-3		ND	1.00	0.500
cis-1,2-Dichloroethene	156-59-2		ND	1.00	0.250
cis-1,3-Dichloropropene	10061-01-5		ND	1.00	0.250
Dibromomethane	74-95-3		ND	1.00	0.250
Dichlorodifluoromethane	75-71-8		ND	1.00	0.250
Ethylbenzene	100-41-4		ND	1.00	0.250
Hexachlorobutadiene	87-68-3		ND	1.00	0.250
Isopropylbenzene	98-82-8		ND	1.00	0.250
m-,p-Xylene	179601-23-1		ND	1.00	0.500
Methylene chloride	75-09-2		ND	1.00	0.250
n-Butylbenzene	104-51-8		ND	1.00	0.250
n-Propylbenzene	103-65-1		ND	1.00	0.125
Naphthalene	91-20-3		ND	1.00	0.200
o-Xylene	95-47-6		ND	1.00	0.250
p-Isopropyltoluene	99-87-6		ND	1.00	0.250
sec-Butylbenzene	135-98-8		ND	1.00	0.250
Styrene	100-42-5		ND	1.00	0.125
tert-Butylbenzene	98-06-6		ND	1.00	0.250
Tetrachloroethene	127-18-4		ND	1.00	0.250
Toluene	108-88-3		ND	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		ND	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		ND	1.00	0.500
Trichloroethene	79-01-6		ND	1.00	0.250
Trichlorofluoromethane	75-69-4		ND	1.00	0.250

Certificate of Analysis

Sample #:	L12050051-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW3D	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 14:34
Collect Date:	05/01/2012 10:30	**Dilution:**	1	**File ID:**	10M95288
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Vinyl acetate	108-05-4		ND	5.00	2.50
Vinyl chloride	75-01-4		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	80.3	80	120	
4-Bromofluorobenzene	93.9	86	115	
Dibromofluoromethane	88.7	86	118	
Toluene-d8	98.2	88	110	

ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050051-02	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	4304-GW3D	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	04/30/2012 15:04
Workgroup #:	WG397035	**Analyst:**	MDA	**Run Date:**	05/04/2012 13:26
Collect Date:	05/01/2012 10:30	**Dilution:**	1	**File ID:**	16G32197
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Methane	74-82-8		ND	5.00	1.00
Ethene	74-85-1		ND	5.00	1.00
Ethane	74-84-0		ND	5.00	1.00

ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050051-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	4304-GW3D	**Prep Method:**	3005A	**Prep Date:**	05/04/2012 07:36
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	05/07/2012 14:23
Workgroup #:	WG397042	**Analyst:**	KHR	**Run Date:**	05/07/2012 16:25
Collect Date:	05/01/2012 10:30	**Dilution:**	1	**File ID:**	T2.050712.162526
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Iron, Dissolved	7439-89-6	0.456		0.100	0.0500

Certificate of Analysis

Sample #:	L12050051-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW3D	**Prep Method:**	325.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	325.2	**Cal Date:**	05/07/2012 15:07
Workgroup #:	WG397212	**Analyst:**	DIH	**Run Date:**	05/07/2012 15:11
Collect Date:	05/01/2012 10:30	**Dilution:**	1	**File ID:**	SC120507004.013
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Chloride	16887-00-6	8.33		2.00	1.00

Sample #:	L12050051-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW3D	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	05/01/2012 15:43
Workgroup #:	WG396816	**Analyst:**	DIH	**Run Date:**	05/02/2012 14:04
Collect Date:	05/01/2012 10:30	**Dilution:**	1	**File ID:**	SC12050708540701
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Nitrate (as N)	14797-55-8	0.149		0.0500	0.0250

Sample #:	L12050051-02	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	4304-GW3D	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG396993	**Analyst:**	DIH	**Run Date:**	05/04/2012 17:18
Collect Date:	05/01/2012 10:30	**Dilution:**	1	**File ID:**	TC05042012.036
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Organic Carbon, Dissolved		8.97		1.00	0.500

Certificate of Analysis

Sample #:	L12050051-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW4D	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 15:04
Collect Date:	05/01/2012 10:00	**Dilution:**	1	**File ID:**	10M95289
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		ND	1.00	0.250
1,1,1-Trichloroethane	71-55-6		ND	1.00	0.250
1,1,2,2-Tetrachloroethane	79-34-5		ND	1.00	0.200
1,1,2-Trichloroethane	79-00-5		ND	1.00	0.250
1,1-Dichloroethane	75-34-3		ND	1.00	0.125
1,1-Dichloroethene	75-35-4		ND	1.00	0.500
1,1-Dichloropropene	563-58-6		ND	1.00	0.250
1,2,3-Trichlorobenzene	87-61-6		ND	1.00	0.150
1,2,3-Trichloropropane	96-18-4		ND	1.00	0.500
1,2,4-Trichlorobenzene	120-82-1		ND	1.00	0.200
1,2,4-Trimethylbenzene	95-63-6		ND	1.00	0.250
1,2-Dibromo-3-chloropropane	96-12-8		ND	2.00	1.00
1,2-Dibromoethane	106-93-4		ND	1.00	0.250
1,2-Dichlorobenzene	95-50-1		ND	1.00	0.125
1,2-Dichloroethane	107-06-2		ND	1.00	0.250
1,2-Dichloropropane	78-87-5		ND	1.00	0.200
1,3,5-Trimethylbenzene	108-67-8		ND	1.00	0.250
1,3-Dichlorobenzene	541-73-1		ND	1.00	0.250
1,3-Dichloropropane	142-28-9		ND	1.00	0.200
1,4-Dichlorobenzene	106-46-7		ND	1.00	0.125
2,2-Dichloropropane	594-20-7		ND	1.00	0.250
2-Butanone	78-93-3		ND	5.00	2.50
2-Chloroethyl vinyl ether	110-75-8		ND	5.00	2.00
2-Chlorotoluene	95-49-8		ND	1.00	0.125
2-Hexanone	591-78-6		ND	5.00	2.50
4-Chlorotoluene	106-43-4		ND	1.00	0.250
4-Methyl-2-pentanone	108-10-1		ND	5.00	2.50
Acetone	67-64-1		ND	5.00	2.50
Acetonitrile	75-05-8		ND	100	50.0
Acrolein	107-02-8		ND	100	20.0
Benzene	71-43-2		ND	1.00	0.125
Bromobenzene	108-86-1		ND	1.00	0.125
Bromochloromethane	74-97-5		ND	1.00	0.200

Certificate of Analysis

Sample #:	L12050051-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW4D	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 15:04
Collect Date:	05/01/2012 10:00	**Dilution:**	1	**File ID:**	10M95289
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Bromodichloromethane	75-27-4	1.92		1.00	0.250
Bromoform	75-25-2		ND	1.00	0.500
Bromomethane	74-83-9		ND	1.00	0.500
Carbon disulfide	75-15-0	0.823	J	1.00	0.500
Carbon tetrachloride	56-23-5		ND	1.00	0.250
Chlorobenzene	108-90-7		ND	1.00	0.125
Chlorodibromomethane	124-48-1	1.54		1.00	0.250
Chloroethane	75-00-3		ND	1.00	0.500
Chloroform	67-66-3	4.08		1.00	0.125
Chloromethane	74-87-3		ND	1.00	0.500
cis-1,2-Dichloroethene	156-59-2		ND	1.00	0.250
cis-1,3-Dichloropropene	10061-01-5		ND	1.00	0.250
Dibromomethane	74-95-3		ND	1.00	0.250
Dichlorodifluoromethane	75-71-8		ND	1.00	0.250
Ethylbenzene	100-41-4		ND	1.00	0.250
Hexachlorobutadiene	87-68-3		ND	1.00	0.250
Isopropylbenzene	98-82-8		ND	1.00	0.250
m-,p-Xylene	179601-23-1		ND	1.00	0.500
Methylene chloride	75-09-2		ND	1.00	0.250
n-Butylbenzene	104-51-8		ND	1.00	0.250
n-Propylbenzene	103-65-1		ND	1.00	0.125
Naphthalene	91-20-3		ND	1.00	0.200
o-Xylene	95-47-6		ND	1.00	0.250
p-Isopropyltoluene	99-87-6		ND	1.00	0.250
sec-Butylbenzene	135-98-8		ND	1.00	0.250
Styrene	100-42-5		ND	1.00	0.125
tert-Butylbenzene	98-06-6		ND	1.00	0.250
Tetrachloroethene	127-18-4		ND	1.00	0.250
Toluene	108-88-3		ND	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		ND	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		ND	1.00	0.500
Trichloroethene	79-01-6		ND	1.00	0.250
Trichlorofluoromethane	75-69-4		ND	1.00	0.250

Certificate of Analysis

Sample #:	L12050051-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW4D	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 15:04
Collect Date:	05/01/2012 10:00	**Dilution:**	1	**File ID:**	10M95289
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Vinyl acetate	108-05-4		ND	5.00	2.50
Vinyl chloride	75-01-4		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	81.8	80	120	
4-Bromofluorobenzene	93.5	86	115	
Dibromofluoromethane	88.5	86	118	
Toluene-d8	98.4	88	110	

J	Estimated value; the analyte concentration was less than the RL/LOQ.
ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050051-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	4304-GW4D	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	04/30/2012 15:04
Workgroup #:	WG397036	**Analyst:**	MDA	**Run Date:**	05/04/2012 17:20
Collect Date:	05/01/2012 10:00	**Dilution:**	1	**File ID:**	16G32222
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Methane	74-82-8		ND	5.00	1.00
Ethene	74-85-1		ND	5.00	1.00
Ethane	74-84-0		ND	5.00	1.00

ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050051-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	4304-GW4D	**Prep Method:**	3005A	**Prep Date:**	05/04/2012 07:36
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	05/07/2012 14:23
Workgroup #:	WG397042	**Analyst:**	KHR	**Run Date:**	05/07/2012 16:28
Collect Date:	05/01/2012 10:00	**Dilution:**	1	**File ID:**	T2.050712.162845
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Iron, Dissolved	7439-89-6	0.789		0.100	0.0500

Certificate of Analysis

Sample #:	L12050051-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW4D	**Prep Method:**	325.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	325.2	**Cal Date:**	05/07/2012 15:07
Workgroup #:	WG397212	**Analyst:**	DIH	**Run Date:**	05/07/2012 15:12
Collect Date:	05/01/2012 10:00	**Dilution:**	1	**File ID:**	SC120507004.014
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Chloride	16887-00-6	3.54		2.00	1.00

Sample #:	L12050051-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW4D	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	05/01/2012 15:43
Workgroup #:	WG396816	**Analyst:**	DIH	**Run Date:**	05/02/2012 14:04
Collect Date:	05/01/2012 10:00	**Dilution:**	1	**File ID:**	SC12050708541101
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Nitrate (as N)	14797-55-8	0.215		0.0500	0.0250

Sample #:	L12050051-03	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	4304-GW4D	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG396993	**Analyst:**	DIH	**Run Date:**	05/04/2012 17:29
Collect Date:	05/01/2012 10:00	**Dilution:**	1	**File ID:**	TC05042012.037
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Organic Carbon, Dissolved		8.25		1.00	0.500

Certificate of Analysis

Sample #:	L12050051-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW2D	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 15:35
Collect Date:	05/01/2012 10:48	**Dilution:**	1	**File ID:**	10M95290
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		ND	1.00	0.250
1,1,1-Trichloroethane	71-55-6		ND	1.00	0.250
1,1,2,2-Tetrachloroethane	79-34-5		ND	1.00	0.200
1,1,2-Trichloroethane	79-00-5		ND	1.00	0.250
1,1-Dichloroethane	75-34-3		ND	1.00	0.125
1,1-Dichloroethene	75-35-4		ND	1.00	0.500
1,1-Dichloropropene	563-58-6		ND	1.00	0.250
1,2,3-Trichlorobenzene	87-61-6		ND	1.00	0.150
1,2,3-Trichloropropane	96-18-4		ND	1.00	0.500
1,2,4-Trichlorobenzene	120-82-1		ND	1.00	0.200
1,2,4-Trimethylbenzene	95-63-6		ND	1.00	0.250
1,2-Dibromo-3-chloropropane	96-12-8		ND	2.00	1.00
1,2-Dibromoethane	106-93-4		ND	1.00	0.250
1,2-Dichlorobenzene	95-50-1		ND	1.00	0.125
1,2-Dichloroethane	107-06-2		ND	1.00	0.250
1,2-Dichloropropane	78-87-5		ND	1.00	0.200
1,3,5-Trimethylbenzene	108-67-8		ND	1.00	0.250
1,3-Dichlorobenzene	541-73-1		ND	1.00	0.250
1,3-Dichloropropane	142-28-9		ND	1.00	0.200
1,4-Dichlorobenzene	106-46-7		ND	1.00	0.125
2,2-Dichloropropane	594-20-7		ND	1.00	0.250
2-Butanone	78-93-3		ND	5.00	2.50
2-Chloroethyl vinyl ether	110-75-8		ND	5.00	2.00
2-Chlorotoluene	95-49-8		ND	1.00	0.125
2-Hexanone	591-78-6		ND	5.00	2.50
4-Chlorotoluene	106-43-4		ND	1.00	0.250
4-Methyl-2-pentanone	108-10-1		ND	5.00	2.50
Acetone	67-64-1	4.31	J	5.00	2.50
Acetonitrile	75-05-8		ND	100	50.0
Acrolein	107-02-8		ND	100	20.0
Benzene	71-43-2		ND	1.00	0.125
Bromobenzene	108-86-1		ND	1.00	0.125
Bromochloromethane	74-97-5		ND	1.00	0.200

Certificate of Analysis

Sample #:	L12050051-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW2D	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 15:35
Collect Date:	05/01/2012 10:48	**Dilution:**	1	**File ID:**	10M95290
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Bromodichloromethane	75-27-4	0.885	J	1.00	0.250
Bromoform	75-25-2		ND	1.00	0.500
Bromomethane	74-83-9		ND	1.00	0.500
Carbon disulfide	75-15-0		ND	1.00	0.500
Carbon tetrachloride	56-23-5		ND	1.00	0.250
Chlorobenzene	108-90-7		ND	1.00	0.125
Chlorodibromomethane	124-48-1	0.763	J	1.00	0.250
Chloroethane	75-00-3		ND	1.00	0.500
Chloroform	67-66-3	4.79		1.00	0.125
Chloromethane	74-87-3		ND	1.00	0.500
cis-1,2-Dichloroethene	156-59-2		ND	1.00	0.250
cis-1,3-Dichloropropene	10061-01-5		ND	1.00	0.250
Dibromomethane	74-95-3		ND	1.00	0.250
Dichlorodifluoromethane	75-71-8		ND	1.00	0.250
Ethylbenzene	100-41-4		ND	1.00	0.250
Hexachlorobutadiene	87-68-3		ND	1.00	0.250
Isopropylbenzene	98-82-8		ND	1.00	0.250
m-,p-Xylene	179601-23-1		ND	1.00	0.500
Methylene chloride	75-09-2		ND	1.00	0.250
n-Butylbenzene	104-51-8		ND	1.00	0.250
n-Propylbenzene	103-65-1		ND	1.00	0.125
Naphthalene	91-20-3		ND	1.00	0.200
o-Xylene	95-47-6		ND	1.00	0.250
p-Isopropyltoluene	99-87-6		ND	1.00	0.250
sec-Butylbenzene	135-98-8		ND	1.00	0.250
Styrene	100-42-5		ND	1.00	0.125
tert-Butylbenzene	98-06-6		ND	1.00	0.250
Tetrachloroethene	127-18-4		ND	1.00	0.250
Toluene	108-88-3		ND	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		ND	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		ND	1.00	0.500
Trichloroethene	79-01-6		ND	1.00	0.250
Trichlorofluoromethane	75-69-4		ND	1.00	0.250

Certificate of Analysis

Sample #:	L12050051-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW2D	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 15:35
Collect Date:	05/01/2012 10:48	**Dilution:**	1	**File ID:**	10M95290
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Vinyl acetate	108-05-4		ND	5.00	2.50
Vinyl chloride	75-01-4		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	81.9	80	120	
4-Bromofluorobenzene	92.8	86	115	
Dibromofluoromethane	89.4	86	118	
Toluene-d8	97.8	88	110	

J	Estimated value; the analyte concentration was less than the RL/LOQ.
ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050051-04	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	4304-GW2D	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	04/30/2012 15:04
Workgroup #:	WG397036	**Analyst:**	MDA	**Run Date:**	05/04/2012 17:29
Collect Date:	05/01/2012 10:48	**Dilution:**	1	**File ID:**	16G32223
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Methane	74-82-8		ND	5.00	1.00
Ethene	74-85-1		ND	5.00	1.00
Ethane	74-84-0		ND	5.00	1.00

ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050051-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	4304-GW2D	**Prep Method:**	3005A	**Prep Date:**	05/04/2012 07:36
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	05/07/2012 14:23
Workgroup #:	WG397042	**Analyst:**	KHR	**Run Date:**	05/07/2012 16:32
Collect Date:	05/01/2012 10:48	**Dilution:**	1	**File ID:**	T2.050712.163204
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Iron, Dissolved	7439-89-6	0.249		0.100	0.0500

Certificate of Analysis

Sample #:	L12050051-04	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW2D	**Prep Method:**	325.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	325.2	**Cal Date:**	05/07/2012 15:07
Workgroup #:	WG397212	**Analyst:**	DIH	**Run Date:**	05/07/2012 15:12
Collect Date:	05/01/2012 10:48	**Dilution:**	1	**File ID:**	SC120507004.015
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Chloride	16887-00-6	8.18		2.00	1.00

Sample #:	L12050051-04	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW2D	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	05/01/2012 15:43
Workgroup #:	WG396816	**Analyst:**	DIH	**Run Date:**	05/02/2012 14:04
Collect Date:	05/01/2012 10:48	**Dilution:**	1	**File ID:**	SC12050708541501
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Nitrate (as N)	14797-55-8	0.0790		0.0500	0.0250

Sample #:	L12050051-04	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	4304-GW2D	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG396996	**Analyst:**	DIH	**Run Date:**	05/04/2012 22:50
Collect Date:	05/01/2012 10:48	**Dilution:**	1	**File ID:**	TC05042012.054
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Organic Carbon, Dissolved		2.74		1.00	0.500

Certificate of Analysis

Sample #:	L12050051-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW5D	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 16:06
Collect Date:	05/01/2012 10:14	**Dilution:**	1	**File ID:**	10M95291
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		ND	1.00	0.250
1,1,1-Trichloroethane	71-55-6		ND	1.00	0.250
1,1,2,2-Tetrachloroethane	79-34-5		ND	1.00	0.200
1,1,2-Trichloroethane	79-00-5		ND	1.00	0.250
1,1-Dichloroethane	75-34-3		ND	1.00	0.125
1,1-Dichloroethene	75-35-4		ND	1.00	0.500
1,1-Dichloropropene	563-58-6		ND	1.00	0.250
1,2,3-Trichlorobenzene	87-61-6		ND	1.00	0.150
1,2,3-Trichloropropane	96-18-4		ND	1.00	0.500
1,2,4-Trichlorobenzene	120-82-1		ND	1.00	0.200
1,2,4-Trimethylbenzene	95-63-6		ND	1.00	0.250
1,2-Dibromo-3-chloropropane	96-12-8		ND	2.00	1.00
1,2-Dibromoethane	106-93-4		ND	1.00	0.250
1,2-Dichlorobenzene	95-50-1		ND	1.00	0.125
1,2-Dichloroethane	107-06-2		ND	1.00	0.250
1,2-Dichloropropane	78-87-5		ND	1.00	0.200
1,3,5-Trimethylbenzene	108-67-8		ND	1.00	0.250
1,3-Dichlorobenzene	541-73-1		ND	1.00	0.250
1,3-Dichloropropane	142-28-9		ND	1.00	0.200
1,4-Dichlorobenzene	106-46-7		ND	1.00	0.125
2,2-Dichloropropane	594-20-7		ND	1.00	0.250
2-Butanone	78-93-3		ND	5.00	2.50
2-Chloroethyl vinyl ether	110-75-8		ND	5.00	2.00
2-Chlorotoluene	95-49-8		ND	1.00	0.125
2-Hexanone	591-78-6		ND	5.00	2.50
4-Chlorotoluene	106-43-4		ND	1.00	0.250
4-Methyl-2-pentanone	108-10-1		ND	5.00	2.50
Acetone	67-64-1	4.36	J	5.00	2.50
Acetonitrile	75-05-8		ND	100	50.0
Acrolein	107-02-8		ND	100	20.0
Benzene	71-43-2		ND	1.00	0.125
Bromobenzene	108-86-1		ND	1.00	0.125
Bromochloromethane	74-97-5		ND	1.00	0.200

Certificate of Analysis

Sample #:	L12050051-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW5D	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 16:06
Collect Date:	05/01/2012 10:14	**Dilution:**	1	**File ID:**	10M95291
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Bromodichloromethane	75-27-4	6.55		1.00	0.250
Bromoform	75-25-2	1.68		1.00	0.500
Bromomethane	74-83-9		ND	1.00	0.500
Carbon disulfide	75-15-0	0.710	J	1.00	0.500
Carbon tetrachloride	56-23-5		ND	1.00	0.250
Chlorobenzene	108-90-7		ND	1.00	0.125
Chlorodibromomethane	124-48-1	5.46		1.00	0.250
Chloroethane	75-00-3		ND	1.00	0.500
Chloroform	67-66-3	11.5		1.00	0.125
Chloromethane	74-87-3		ND	1.00	0.500
cis-1,2-Dichloroethene	156-59-2		ND	1.00	0.250
cis-1,3-Dichloropropene	10061-01-5		ND	1.00	0.250
Dibromomethane	74-95-3		ND	1.00	0.250
Dichlorodifluoromethane	75-71-8		ND	1.00	0.250
Ethylbenzene	100-41-4		ND	1.00	0.250
Hexachlorobutadiene	87-68-3		ND	1.00	0.250
Isopropylbenzene	98-82-8		ND	1.00	0.250
m-,p-Xylene	179601-23-1		ND	1.00	0.500
Methylene chloride	75-09-2		ND	1.00	0.250
n-Butylbenzene	104-51-8		ND	1.00	0.250
n-Propylbenzene	103-65-1		ND	1.00	0.125
Naphthalene	91-20-3		ND	1.00	0.200
o-Xylene	95-47-6		ND	1.00	0.250
p-Isopropyltoluene	99-87-6		ND	1.00	0.250
sec-Butylbenzene	135-98-8		ND	1.00	0.250
Styrene	100-42-5		ND	1.00	0.125
tert-Butylbenzene	98-06-6		ND	1.00	0.250
Tetrachloroethene	127-18-4		ND	1.00	0.250
Toluene	108-88-3		ND	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		ND	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		ND	1.00	0.500
Trichloroethene	79-01-6		ND	1.00	0.250
Trichlorofluoromethane	75-69-4		ND	1.00	0.250

Certificate of Analysis

Sample #:	L12050051-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW5D	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 16:06
Collect Date:	05/01/2012 10:14	**Dilution:**	1	**File ID:**	10M95291
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Vinyl acetate	108-05-4		ND	5.00	2.50
Vinyl chloride	75-01-4		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	80.5	80	120	
4-Bromofluorobenzene	93.3	86	115	
Dibromofluoromethane	89.9	86	118	
Toluene-d8	98.6	88	110	

J	Estimated value; the analyte concentration was less than the RL/LOQ.
ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050051-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	4304-GW5D	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	04/30/2012 15:04
Workgroup #:	WG397036	**Analyst:**	MDA	**Run Date:**	05/04/2012 17:38
Collect Date:	05/01/2012 10:14	**Dilution:**	1	**File ID:**	16G32224
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Methane	74-82-8		ND	5.00	1.00
Ethene	74-85-1		ND	5.00	1.00
Ethane	74-84-0		ND	5.00	1.00

ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050051-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	4304-GW5D	**Prep Method:**	3005A	**Prep Date:**	05/04/2012 07:36
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	05/07/2012 14:23
Workgroup #:	WG397042	**Analyst:**	KHR	**Run Date:**	05/07/2012 16:35
Collect Date:	05/01/2012 10:14	**Dilution:**	1	**File ID:**	T2.050712.163522
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Iron, Dissolved	7439-89-6	0.548		0.100	0.0500

Certificate of Analysis

Sample #:	L12050051-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW5D	**Prep Method:**	325.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	325.2	**Cal Date:**	05/07/2012 15:07
Workgroup #:	WG397212	**Analyst:**	DIH	**Run Date:**	05/07/2012 15:13
Collect Date:	05/01/2012 10:14	**Dilution:**	1	**File ID:**	SC120507004.016
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Chloride	16887-00-6	9.46		2.00	1.00

Sample #:	L12050051-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW5D	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	05/01/2012 15:43
Workgroup #:	WG396816	**Analyst:**	DIH	**Run Date:**	05/02/2012 14:04
Collect Date:	05/01/2012 10:14	**Dilution:**	1	**File ID:**	SC12050708542001
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Nitrate (as N)	14797-55-8	0.228		0.0500	0.0250

Sample #:	L12050051-05	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	4304-GW5D	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG396996	**Analyst:**	DIH	**Run Date:**	05/04/2012 23:02
Collect Date:	05/01/2012 10:14	**Dilution:**	1	**File ID:**	TC05042012.055
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Organic Carbon, Dissolved		8.75		1.00	0.500

Certificate of Analysis

Sample #:	L12050051-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW6D	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 16:36
Collect Date:	05/01/2012 09:12	**Dilution:**	1	**File ID:**	10M95292
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		ND	1.00	0.250
1,1,1-Trichloroethane	71-55-6		ND	1.00	0.250
1,1,2,2-Tetrachloroethane	79-34-5		ND	1.00	0.200
1,1,2-Trichloroethane	79-00-5		ND	1.00	0.250
1,1-Dichloroethane	75-34-3		ND	1.00	0.125
1,1-Dichloroethene	75-35-4		ND	1.00	0.500
1,1-Dichloropropene	563-58-6		ND	1.00	0.250
1,2,3-Trichlorobenzene	87-61-6		ND	1.00	0.150
1,2,3-Trichloropropane	96-18-4		ND	1.00	0.500
1,2,4-Trichlorobenzene	120-82-1		ND	1.00	0.200
1,2,4-Trimethylbenzene	95-63-6		ND	1.00	0.250
1,2-Dibromo-3-chloropropane	96-12-8		ND	2.00	1.00
1,2-Dibromoethane	106-93-4		ND	1.00	0.250
1,2-Dichlorobenzene	95-50-1		ND	1.00	0.125
1,2-Dichloroethane	107-06-2		ND	1.00	0.250
1,2-Dichloropropane	78-87-5		ND	1.00	0.200
1,3,5-Trimethylbenzene	108-67-8		ND	1.00	0.250
1,3-Dichlorobenzene	541-73-1		ND	1.00	0.250
1,3-Dichloropropane	142-28-9		ND	1.00	0.200
1,4-Dichlorobenzene	106-46-7		ND	1.00	0.125
2,2-Dichloropropane	594-20-7		ND	1.00	0.250
2-Butanone	78-93-3		ND	5.00	2.50
2-Chloroethyl vinyl ether	110-75-8		ND	5.00	2.00
2-Chlorotoluene	95-49-8		ND	1.00	0.125
2-Hexanone	591-78-6		ND	5.00	2.50
4-Chlorotoluene	106-43-4		ND	1.00	0.250
4-Methyl-2-pentanone	108-10-1		ND	5.00	2.50
Acetone	67-64-1	3.08	J	5.00	2.50
Acetonitrile	75-05-8		ND	100	50.0
Acrolein	107-02-8		ND	100	20.0
Benzene	71-43-2		ND	1.00	0.125
Bromobenzene	108-86-1		ND	1.00	0.125
Bromochloromethane	74-97-5		ND	1.00	0.200

Certificate of Analysis

Sample #:	L12050051-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW6D	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 16:36
Collect Date:	05/01/2012 09:12	**Dilution:**	1	**File ID:**	10M95292
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Bromodichloromethane	75-27-4	1.01		1.00	0.250
Bromoform	75-25-2	0.937	J	1.00	0.500
Bromomethane	74-83-9		ND	1.00	0.500
Carbon disulfide	75-15-0	0.811	J	1.00	0.500
Carbon tetrachloride	56-23-5		ND	1.00	0.250
Chlorobenzene	108-90-7		ND	1.00	0.125
Chlorodibromomethane	124-48-1	1.08		1.00	0.250
Chloroethane	75-00-3		ND	1.00	0.500
Chloroform	67-66-3	2.86		1.00	0.125
Chloromethane	74-87-3		ND	1.00	0.500
cis-1,2-Dichloroethene	156-59-2		ND	1.00	0.250
cis-1,3-Dichloropropene	10061-01-5		ND	1.00	0.250
Dibromomethane	74-95-3		ND	1.00	0.250
Dichlorodifluoromethane	75-71-8		ND	1.00	0.250
Ethylbenzene	100-41-4		ND	1.00	0.250
Hexachlorobutadiene	87-68-3		ND	1.00	0.250
Isopropylbenzene	98-82-8		ND	1.00	0.250
m-,p-Xylene	179601-23-1		ND	1.00	0.500
Methylene chloride	75-09-2		ND	1.00	0.250
n-Butylbenzene	104-51-8		ND	1.00	0.250
n-Propylbenzene	103-65-1		ND	1.00	0.125
Naphthalene	91-20-3		ND	1.00	0.200
o-Xylene	95-47-6		ND	1.00	0.250
p-Isopropyltoluene	99-87-6		ND	1.00	0.250
sec-Butylbenzene	135-98-8		ND	1.00	0.250
Styrene	100-42-5		ND	1.00	0.125
tert-Butylbenzene	98-06-6		ND	1.00	0.250
Tetrachloroethene	127-18-4		ND	1.00	0.250
Toluene	108-88-3		ND	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		ND	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		ND	1.00	0.500
Trichloroethene	79-01-6		ND	1.00	0.250
Trichlorofluoromethane	75-69-4		ND	1.00	0.250

Certificate of Analysis

Sample #:	L12050051-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW6D	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 16:36
Collect Date:	05/01/2012 09:12	**Dilution:**	1	**File ID:**	10M95292
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Vinyl acetate	108-05-4		ND	5.00	2.50
Vinyl chloride	75-01-4		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	80.5	80	120	
4-Bromofluorobenzene	91.1	86	115	
Dibromofluoromethane	87.8	86	118	
Toluene-d8	96.2	88	110	

J	Estimated value; the analyte concentration was less than the RL/LOQ.
ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050051-06	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	4304-GW6D	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	04/30/2012 15:04
Workgroup #:	WG397036	**Analyst:**	MDA	**Run Date:**	05/04/2012 17:47
Collect Date:	05/01/2012 09:12	**Dilution:**	1	**File ID:**	16G32225
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Methane	74-82-8		ND	5.00	1.00
Ethene	74-85-1		ND	5.00	1.00
Ethane	74-84-0		ND	5.00	1.00

ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050051-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	4304-GW6D	**Prep Method:**	3005A	**Prep Date:**	05/04/2012 07:36
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	05/07/2012 14:23
Workgroup #:	WG397042	**Analyst:**	KHR	**Run Date:**	05/07/2012 16:38
Collect Date:	05/01/2012 09:12	**Dilution:**	1	**File ID:**	T2.050712.163840
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Iron, Dissolved	7439-89-6	0.142		0.100	0.0500

Certificate of Analysis

Sample #:	L12050051-06	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW6D	**Prep Method:**	325.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	325.2	**Cal Date:**	05/07/2012 15:07
Workgroup #:	WG397212	**Analyst:**	DIH	**Run Date:**	05/07/2012 15:13
Collect Date:	05/01/2012 09:12	**Dilution:**	1	**File ID:**	SC120507004.017
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Chloride	16887-00-6	3.34		2.00	1.00

Sample #:	L12050051-06	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW6D	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	05/01/2012 15:43
Workgroup #:	WG396816	**Analyst:**	DIH	**Run Date:**	05/02/2012 14:04
Collect Date:	05/01/2012 09:12	**Dilution:**	1	**File ID:**	SC12050708542401
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Nitrate (as N)	14797-55-8	0.0290	J	0.0500	0.0250

J	Estimated value; the analyte concentration was less than the RL/LOQ.

Sample #:	L12050051-06	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	4304-GW6D	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG396996	**Analyst:**	DIH	**Run Date:**	05/04/2012 23:14
Collect Date:	05/01/2012 09:12	**Dilution:**	1	**File ID:**	TC05042012.056
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Organic Carbon, Dissolved		3.88		1.00	0.500

Certificate of Analysis

Sample #:	L12050051-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW7D	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 17:07
Collect Date:	05/01/2012 09:30	**Dilution:**	1	**File ID:**	10M95293
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		ND	1.00	0.250
1,1,1-Trichloroethane	71-55-6		ND	1.00	0.250
1,1,2,2-Tetrachloroethane	79-34-5		ND	1.00	0.200
1,1,2-Trichloroethane	79-00-5		ND	1.00	0.250
1,1-Dichloroethane	75-34-3		ND	1.00	0.125
1,1-Dichloroethene	75-35-4		ND	1.00	0.500
1,1-Dichloropropene	563-58-6		ND	1.00	0.250
1,2,3-Trichlorobenzene	87-61-6		ND	1.00	0.150
1,2,3-Trichloropropane	96-18-4		ND	1.00	0.500
1,2,4-Trichlorobenzene	120-82-1		ND	1.00	0.200
1,2,4-Trimethylbenzene	95-63-6		ND	1.00	0.250
1,2-Dibromo-3-chloropropane	96-12-8		ND	2.00	1.00
1,2-Dibromoethane	106-93-4		ND	1.00	0.250
1,2-Dichlorobenzene	95-50-1		ND	1.00	0.125
1,2-Dichloroethane	107-06-2		ND	1.00	0.250
1,2-Dichloropropane	78-87-5		ND	1.00	0.200
1,3,5-Trimethylbenzene	108-67-8		ND	1.00	0.250
1,3-Dichlorobenzene	541-73-1		ND	1.00	0.250
1,3-Dichloropropane	142-28-9		ND	1.00	0.200
1,4-Dichlorobenzene	106-46-7		ND	1.00	0.125
2,2-Dichloropropane	594-20-7		ND	1.00	0.250
2-Butanone	78-93-3		ND	5.00	2.50
2-Chloroethyl vinyl ether	110-75-8		ND	5.00	2.00
2-Chlorotoluene	95-49-8		ND	1.00	0.125
2-Hexanone	591-78-6		ND	5.00	2.50
4-Chlorotoluene	106-43-4		ND	1.00	0.250
4-Methyl-2-pentanone	108-10-1		ND	5.00	2.50
Acetone	67-64-1	2.59	J	5.00	2.50
Acetonitrile	75-05-8		ND	100	50.0
Acrolein	107-02-8		ND	100	20.0
Benzene	71-43-2		ND	1.00	0.125
Bromobenzene	108-86-1		ND	1.00	0.125
Bromochloromethane	74-97-5		ND	1.00	0.200

Certificate of Analysis

Sample #:	L12050051-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW7D	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 17:07
Collect Date:	05/01/2012 09:30	**Dilution:**	1	**File ID:**	10M95293
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Bromodichloromethane	75-27-4	3.63		1.00	0.250
Bromoform	75-25-2	1.22		1.00	0.500
Bromomethane	74-83-9		ND	1.00	0.500
Carbon disulfide	75-15-0		ND	1.00	0.500
Carbon tetrachloride	56-23-5		ND	1.00	0.250
Chlorobenzene	108-90-7		ND	1.00	0.125
Chlorodibromomethane	124-48-1	3.07		1.00	0.250
Chloroethane	75-00-3		ND	1.00	0.500
Chloroform	67-66-3	7.17		1.00	0.125
Chloromethane	74-87-3		ND	1.00	0.500
cis-1,2-Dichloroethene	156-59-2		ND	1.00	0.250
cis-1,3-Dichloropropene	10061-01-5		ND	1.00	0.250
Dibromomethane	74-95-3		ND	1.00	0.250
Dichlorodifluoromethane	75-71-8		ND	1.00	0.250
Ethylbenzene	100-41-4		ND	1.00	0.250
Hexachlorobutadiene	87-68-3		ND	1.00	0.250
Isopropylbenzene	98-82-8		ND	1.00	0.250
m-,p-Xylene	179601-23-1		ND	1.00	0.500
Methylene chloride	75-09-2		ND	1.00	0.250
n-Butylbenzene	104-51-8		ND	1.00	0.250
n-Propylbenzene	103-65-1		ND	1.00	0.125
Naphthalene	91-20-3		ND	1.00	0.200
o-Xylene	95-47-6		ND	1.00	0.250
p-Isopropyltoluene	99-87-6		ND	1.00	0.250
sec-Butylbenzene	135-98-8		ND	1.00	0.250
Styrene	100-42-5		ND	1.00	0.125
tert-Butylbenzene	98-06-6		ND	1.00	0.250
Tetrachloroethene	127-18-4		ND	1.00	0.250
Toluene	108-88-3		ND	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		ND	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		ND	1.00	0.500
Trichloroethene	79-01-6		ND	1.00	0.250
Trichlorofluoromethane	75-69-4		ND	1.00	0.250

Certificate of Analysis

Sample #:	L12050051-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW7D	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 17:07
Collect Date:	05/01/2012 09:30	**Dilution:**	1	**File ID:**	10M95293
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Vinyl acetate	108-05-4		ND	5.00	2.50
Vinyl chloride	75-01-4		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	81.5	80	120	
4-Bromofluorobenzene	92.6	86	115	
Dibromofluoromethane	89.1	86	118	
Toluene-d8	97.3	88	110	

J	Estimated value; the analyte concentration was less than the RL/LOQ.
ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050051-07	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	4304-GW7D	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	04/30/2012 15:04
Workgroup #:	WG397035	**Analyst:**	MDA	**Run Date:**	05/04/2012 15:43
Collect Date:	05/01/2012 09:30	**Dilution:**	1	**File ID:**	16G32212
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Methane	74-82-8		ND	5.00	1.00
Ethene	74-85-1		ND	5.00	1.00
Ethane	74-84-0		ND	5.00	1.00

ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050051-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	4304-GW7D	**Prep Method:**	3005A	**Prep Date:**	05/04/2012 07:36
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	05/07/2012 14:23
Workgroup #:	WG397042	**Analyst:**	KHR	**Run Date:**	05/07/2012 16:42
Collect Date:	05/01/2012 09:30	**Dilution:**	1	**File ID:**	T2.050712.164200
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Iron, Dissolved	7439-89-6	0.382		0.100	0.0500

Certificate of Analysis

Sample #:	L12050051-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW7D	**Prep Method:**	325.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	325.2	**Cal Date:**	05/07/2012 15:07
Workgroup #:	WG397212	**Analyst:**	DIH	**Run Date:**	05/07/2012 15:15
Collect Date:	05/01/2012 09:30	**Dilution:**	1	**File ID:**	SC120507004.020
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Chloride	16887-00-6	5.37		2.00	1.00

Sample #:	L12050051-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW7D	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	05/01/2012 15:43
Workgroup #:	WG396816	**Analyst:**	DIH	**Run Date:**	05/02/2012 14:04
Collect Date:	05/01/2012 09:30	**Dilution:**	1	**File ID:**	SC12050708542801
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Nitrate (as N)	14797-55-8	0.135		0.0500	0.0250

Sample #:	L12050051-07	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	4304-GW7D	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG396996	**Analyst:**	DIH	**Run Date:**	05/04/2012 23:27
Collect Date:	05/01/2012 09:30	**Dilution:**	1	**File ID:**	TC05042012.057
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Organic Carbon, Dissolved		5.01		1.00	0.500

Certificate of Analysis

Sample #:	L12050051-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW8D	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 17:37
Collect Date:	05/01/2012 09:44	**Dilution:**	1	**File ID:**	10M95294
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		ND	1.00	0.250
1,1,1-Trichloroethane	71-55-6		ND	1.00	0.250
1,1,2,2-Tetrachloroethane	79-34-5		ND	1.00	0.200
1,1,2-Trichloroethane	79-00-5		ND	1.00	0.250
1,1-Dichloroethane	75-34-3		ND	1.00	0.125
1,1-Dichloroethene	75-35-4		ND	1.00	0.500
1,1-Dichloropropene	563-58-6		ND	1.00	0.250
1,2,3-Trichlorobenzene	87-61-6		ND	1.00	0.150
1,2,3-Trichloropropane	96-18-4		ND	1.00	0.500
1,2,4-Trichlorobenzene	120-82-1		ND	1.00	0.200
1,2,4-Trimethylbenzene	95-63-6		ND	1.00	0.250
1,2-Dibromo-3-chloropropane	96-12-8		ND	2.00	1.00
1,2-Dibromoethane	106-93-4		ND	1.00	0.250
1,2-Dichlorobenzene	95-50-1		ND	1.00	0.125
1,2-Dichloroethane	107-06-2		ND	1.00	0.250
1,2-Dichloropropane	78-87-5		ND	1.00	0.200
1,3,5-Trimethylbenzene	108-67-8		ND	1.00	0.250
1,3-Dichlorobenzene	541-73-1		ND	1.00	0.250
1,3-Dichloropropane	142-28-9		ND	1.00	0.200
1,4-Dichlorobenzene	106-46-7		ND	1.00	0.125
2,2-Dichloropropane	594-20-7		ND	1.00	0.250
2-Butanone	78-93-3		ND	5.00	2.50
2-Chloroethyl vinyl ether	110-75-8		ND	5.00	2.00
2-Chlorotoluene	95-49-8		ND	1.00	0.125
2-Hexanone	591-78-6		ND	5.00	2.50
4-Chlorotoluene	106-43-4		ND	1.00	0.250
4-Methyl-2-pentanone	108-10-1		ND	5.00	2.50
Acetone	67-64-1		ND	5.00	2.50
Acetonitrile	75-05-8		ND	100	50.0
Acrolein	107-02-8		ND	100	20.0
Benzene	71-43-2		ND	1.00	0.125
Bromobenzene	108-86-1		ND	1.00	0.125
Bromochloromethane	74-97-5		ND	1.00	0.200

Certificate of Analysis

Sample #:	L12050051-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW8D	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 17:37
Collect Date:	05/01/2012 09:44	**Dilution:**	1	**File ID:**	10M95294
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Bromodichloromethane	75-27-4	0.403	J	1.00	0.250
Bromoform	75-25-2		ND	1.00	0.500
Bromomethane	74-83-9		ND	1.00	0.500
Carbon disulfide	75-15-0		ND	1.00	0.500
Carbon tetrachloride	56-23-5		ND	1.00	0.250
Chlorobenzene	108-90-7		ND	1.00	0.125
Chlorodibromomethane	124-48-1	0.592	J	1.00	0.250
Chloroethane	75-00-3		ND	1.00	0.500
Chloroform	67-66-3	0.716	J	1.00	0.125
Chloromethane	74-87-3		ND	1.00	0.500
cis-1,2-Dichloroethene	156-59-2		ND	1.00	0.250
cis-1,3-Dichloropropene	10061-01-5		ND	1.00	0.250
Dibromomethane	74-95-3		ND	1.00	0.250
Dichlorodifluoromethane	75-71-8		ND	1.00	0.250
Ethylbenzene	100-41-4		ND	1.00	0.250
Hexachlorobutadiene	87-68-3		ND	1.00	0.250
Isopropylbenzene	98-82-8		ND	1.00	0.250
m-,p-Xylene	179601-23-1		ND	1.00	0.500
Methylene chloride	75-09-2		ND	1.00	0.250
n-Butylbenzene	104-51-8		ND	1.00	0.250
n-Propylbenzene	103-65-1		ND	1.00	0.125
Naphthalene	91-20-3		ND	1.00	0.200
o-Xylene	95-47-6		ND	1.00	0.250
p-Isopropyltoluene	99-87-6		ND	1.00	0.250
sec-Butylbenzene	135-98-8		ND	1.00	0.250
Styrene	100-42-5		ND	1.00	0.125
tert-Butylbenzene	98-06-6		ND	1.00	0.250
Tetrachloroethene	127-18-4		ND	1.00	0.250
Toluene	108-88-3		ND	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		ND	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		ND	1.00	0.500
Trichloroethene	79-01-6		ND	1.00	0.250
Trichlorofluoromethane	75-69-4		ND	1.00	0.250

Certificate of Analysis

Sample #:	L12050051-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW8D	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 17:37
Collect Date:	05/01/2012 09:44	**Dilution:**	1	**File ID:**	10M95294
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Vinyl acetate	108-05-4		ND	5.00	2.50
Vinyl chloride	75-01-4		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	81.7	80	120	
4-Bromofluorobenzene	94.1	86	115	
Dibromofluoromethane	88.9	86	118	
Toluene-d8	98.0	88	110	

J	Estimated value; the analyte concentration was less than the RL/LOQ.
ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050051-08	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	4304-GW8D	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	04/30/2012 15:04
Workgroup #:	WG397035	**Analyst:**	MDA	**Run Date:**	05/04/2012 16:02
Collect Date:	05/01/2012 09:44	**Dilution:**	1	**File ID:**	16G32214
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Methane	74-82-8	3.44	J	5.00	1.00
Ethene	74-85-1	1.44	J	5.00	1.00
Ethane	74-84-0	1.57	J	5.00	1.00

J	Estimated value; the analyte concentration was less than the RL/LOQ.

Sample #:	L12050051-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	4304-GW8D	**Prep Method:**	3005A	**Prep Date:**	05/04/2012 07:36
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	05/07/2012 14:23
Workgroup #:	WG397042	**Analyst:**	KHR	**Run Date:**	05/07/2012 16:45
Collect Date:	05/01/2012 09:44	**Dilution:**	1	**File ID:**	T2.050712.164518
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Iron, Dissolved	7439-89-6	0.315		0.100	0.0500

Certificate of Analysis

Sample #:	L12050051-08	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW8D	**Prep Method:**	325.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	325.2	**Cal Date:**	05/07/2012 15:07
Workgroup #:	WG397212	**Analyst:**	DIH	**Run Date:**	05/07/2012 15:16
Collect Date:	05/01/2012 09:44	**Dilution:**	1	**File ID:**	SC120507004.021
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Chloride	16887-00-6	4.94		2.00	1.00

Sample #:	L12050051-08	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW8D	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	05/01/2012 15:43
Workgroup #:	WG396816	**Analyst:**	DIH	**Run Date:**	05/02/2012 14:04
Collect Date:	05/01/2012 09:44	**Dilution:**	4	**File ID:**	SC12050708543601
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Nitrate (as N)	14797-55-8	2.93		0.200	0.100

Sample #:	L12050051-08	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	4304-GW8D	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG396996	**Analyst:**	DIH	**Run Date:**	05/04/2012 23:40
Collect Date:	05/01/2012 09:44	**Dilution:**	1	**File ID:**	TC05042012.058
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Organic Carbon, Dissolved		9.85		1.00	0.500

Certificate of Analysis

Sample #:	L12050051-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-TB01	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 13:33
Collect Date:	04/30/2012 00:01	**Dilution:**	1	**File ID:**	10M95286
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		ND	1.00	0.250
1,1,1-Trichloroethane	71-55-6		ND	1.00	0.250
1,1,2,2-Tetrachloroethane	79-34-5		ND	1.00	0.200
1,1,2-Trichloroethane	79-00-5		ND	1.00	0.250
1,1-Dichloroethane	75-34-3		ND	1.00	0.125
1,1-Dichloroethene	75-35-4		ND	1.00	0.500
1,1-Dichloropropene	563-58-6		ND	1.00	0.250
1,2,3-Trichlorobenzene	87-61-6		ND	1.00	0.150
1,2,3-Trichloropropane	96-18-4		ND	1.00	0.500
1,2,4-Trichlorobenzene	120-82-1		ND	1.00	0.200
1,2,4-Trimethylbenzene	95-63-6		ND	1.00	0.250
1,2-Dibromo-3-chloropropane	96-12-8		ND	2.00	1.00
1,2-Dibromoethane	106-93-4		ND	1.00	0.250
1,2-Dichlorobenzene	95-50-1		ND	1.00	0.125
1,2-Dichloroethane	107-06-2		ND	1.00	0.250
1,2-Dichloropropane	78-87-5		ND	1.00	0.200
1,3,5-Trimethylbenzene	108-67-8		ND	1.00	0.250
1,3-Dichlorobenzene	541-73-1		ND	1.00	0.250
1,3-Dichloropropane	142-28-9		ND	1.00	0.200
1,4-Dichlorobenzene	106-46-7		ND	1.00	0.125
2,2-Dichloropropane	594-20-7		ND	1.00	0.250
2-Butanone	78-93-3		ND	5.00	2.50
2-Chloroethyl vinyl ether	110-75-8		ND	5.00	2.00
2-Chlorotoluene	95-49-8		ND	1.00	0.125
2-Hexanone	591-78-6		ND	5.00	2.50
4-Chlorotoluene	106-43-4		ND	1.00	0.250
4-Methyl-2-pentanone	108-10-1		ND	5.00	2.50
Acetone	67-64-1		ND	5.00	2.50
Acetonitrile	75-05-8		ND	100	50.0
Acrolein	107-02-8		ND	100	20.0
Benzene	71-43-2		ND	1.00	0.125
Bromobenzene	108-86-1		ND	1.00	0.125
Bromochloromethane	74-97-5		ND	1.00	0.200

Certificate of Analysis

Sample #:	L12050051-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-TB01	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 13:33
Collect Date:	04/30/2012 00:01	**Dilution:**	1	**File ID:**	10M95286
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Bromodichloromethane	75-27-4		ND	1.00	0.250
Bromoform	75-25-2		ND	1.00	0.500
Bromomethane	74-83-9		ND	1.00	0.500
Carbon disulfide	75-15-0		ND	1.00	0.500
Carbon tetrachloride	56-23-5		ND	1.00	0.250
Chlorobenzene	108-90-7		ND	1.00	0.125
Chlorodibromomethane	124-48-1		ND	1.00	0.250
Chloroethane	75-00-3		ND	1.00	0.500
Chloroform	67-66-3		ND	1.00	0.125
Chloromethane	74-87-3		ND	1.00	0.500
cis-1,2-Dichloroethene	156-59-2		ND	1.00	0.250
cis-1,3-Dichloropropene	10061-01-5		ND	1.00	0.250
Dibromomethane	74-95-3		ND	1.00	0.250
Dichlorodifluoromethane	75-71-8		ND	1.00	0.250
Ethylbenzene	100-41-4		ND	1.00	0.250
Hexachlorobutadiene	87-68-3		ND	1.00	0.250
Isopropylbenzene	98-82-8		ND	1.00	0.250
m-,p-Xylene	179601-23-1		ND	1.00	0.500
Methylene chloride	75-09-2		ND	1.00	0.250
n-Butylbenzene	104-51-8		ND	1.00	0.250
n-Propylbenzene	103-65-1		ND	1.00	0.125
Naphthalene	91-20-3		ND	1.00	0.200
o-Xylene	95-47-6		ND	1.00	0.250
p-Isopropyltoluene	99-87-6		ND	1.00	0.250
sec-Butylbenzene	135-98-8		ND	1.00	0.250
Styrene	100-42-5		ND	1.00	0.125
tert-Butylbenzene	98-06-6		ND	1.00	0.250
Tetrachloroethene	127-18-4		ND	1.00	0.250
Toluene	108-88-3		ND	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		ND	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		ND	1.00	0.500
Trichloroethene	79-01-6		ND	1.00	0.250
Trichlorofluoromethane	75-69-4		ND	1.00	0.250

Certificate of Analysis

Sample #:	L12050051-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-TB01	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 13:33
Collect Date:	04/30/2012 00:01	**Dilution:**	1	**File ID:**	10M95286
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Vinyl acetate	108-05-4		ND	5.00	2.50
Vinyl chloride	75-01-4		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	81.1	80	120	
4-Bromofluorobenzene	94.1	86	115	
Dibromofluoromethane	88.8	86	118	
Toluene-d8	97.9	88	110	

ND	Not detected at or above the reporting limit (RL).

Certificate of Analysis

Sample #:	L12050051-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-TB02	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 13:02
Collect Date:	05/01/2012 00:01	**Dilution:**	1	**File ID:**	10M95285
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		ND	1.00	0.250
1,1,1-Trichloroethane	71-55-6		ND	1.00	0.250
1,1,2,2-Tetrachloroethane	79-34-5		ND	1.00	0.200
1,1,2-Trichloroethane	79-00-5		ND	1.00	0.250
1,1-Dichloroethane	75-34-3		ND	1.00	0.125
1,1-Dichloroethene	75-35-4		ND	1.00	0.500
1,1-Dichloropropene	563-58-6		ND	1.00	0.250
1,2,3-Trichlorobenzene	87-61-6		ND	1.00	0.150
1,2,3-Trichloropropane	96-18-4		ND	1.00	0.500
1,2,4-Trichlorobenzene	120-82-1		ND	1.00	0.200
1,2,4-Trimethylbenzene	95-63-6		ND	1.00	0.250
1,2-Dibromo-3-chloropropane	96-12-8		ND	2.00	1.00
1,2-Dibromoethane	106-93-4		ND	1.00	0.250
1,2-Dichlorobenzene	95-50-1		ND	1.00	0.125
1,2-Dichloroethane	107-06-2		ND	1.00	0.250
1,2-Dichloropropane	78-87-5		ND	1.00	0.200
1,3,5-Trimethylbenzene	108-67-8		ND	1.00	0.250
1,3-Dichlorobenzene	541-73-1		ND	1.00	0.250
1,3-Dichloropropane	142-28-9		ND	1.00	0.200
1,4-Dichlorobenzene	106-46-7		ND	1.00	0.125
2,2-Dichloropropane	594-20-7		ND	1.00	0.250
2-Butanone	78-93-3		ND	5.00	2.50
2-Chloroethyl vinyl ether	110-75-8		ND	5.00	2.00
2-Chlorotoluene	95-49-8		ND	1.00	0.125
2-Hexanone	591-78-6		ND	5.00	2.50
4-Chlorotoluene	106-43-4		ND	1.00	0.250
4-Methyl-2-pentanone	108-10-1		ND	5.00	2.50
Acetone	67-64-1		ND	5.00	2.50
Acetonitrile	75-05-8		ND	100	50.0
Acrolein	107-02-8		ND	100	20.0
Benzene	71-43-2		ND	1.00	0.125
Bromobenzene	108-86-1		ND	1.00	0.125
Bromochloromethane	74-97-5		ND	1.00	0.200

Certificate of Analysis

Sample #:	L12050051-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-TB02	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 13:02
Collect Date:	05/01/2012 00:01	**Dilution:**	1	**File ID:**	10M95285
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Bromodichloromethane	75-27-4		ND	1.00	0.250
Bromoform	75-25-2		ND	1.00	0.500
Bromomethane	74-83-9		ND	1.00	0.500
Carbon disulfide	75-15-0		ND	1.00	0.500
Carbon tetrachloride	56-23-5		ND	1.00	0.250
Chlorobenzene	108-90-7		ND	1.00	0.125
Chlorodibromomethane	124-48-1		ND	1.00	0.250
Chloroethane	75-00-3		ND	1.00	0.500
Chloroform	67-66-3		ND	1.00	0.125
Chloromethane	74-87-3		ND	1.00	0.500
cis-1,2-Dichloroethene	156-59-2		ND	1.00	0.250
cis-1,3-Dichloropropene	10061-01-5		ND	1.00	0.250
Dibromomethane	74-95-3		ND	1.00	0.250
Dichlorodifluoromethane	75-71-8		ND	1.00	0.250
Ethylbenzene	100-41-4		ND	1.00	0.250
Hexachlorobutadiene	87-68-3		ND	1.00	0.250
Isopropylbenzene	98-82-8		ND	1.00	0.250
m-,p-Xylene	179601-23-1		ND	1.00	0.500
Methylene chloride	75-09-2		ND	1.00	0.250
n-Butylbenzene	104-51-8		ND	1.00	0.250
n-Propylbenzene	103-65-1		ND	1.00	0.125
Naphthalene	91-20-3		ND	1.00	0.200
o-Xylene	95-47-6		ND	1.00	0.250
p-Isopropyltoluene	99-87-6		ND	1.00	0.250
sec-Butylbenzene	135-98-8		ND	1.00	0.250
Styrene	100-42-5		ND	1.00	0.125
tert-Butylbenzene	98-06-6		ND	1.00	0.250
Tetrachloroethene	127-18-4		ND	1.00	0.250
Toluene	108-88-3		ND	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		ND	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		ND	1.00	0.500
Trichloroethene	79-01-6		ND	1.00	0.250
Trichlorofluoromethane	75-69-4		ND	1.00	0.250

Certificate of Analysis

Sample #:	L12050051-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-TB02	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 13:02
Collect Date:	05/01/2012 00:01	**Dilution:**	1	**File ID:**	10M95285
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Vinyl acetate	108-05-4		ND	5.00	2.50
Vinyl chloride	75-01-4		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	79.8	80	120	*
4-Bromofluorobenzene	93.2	86	115	
Dibromofluoromethane	87.9	86	118	
Toluene-d8	98.2	88	110	

*	Surrogate or spike compound out of range
ND	Not detected at or above the reporting limit (RL).

Certificate of Analysis

Sample #:	L12050051-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW7S	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 18:08
Collect Date:	05/01/2012 08:50	**Dilution:**	1	**File ID:**	10M95295
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		ND	1.00	0.250
1,1,1-Trichloroethane	71-55-6		ND	1.00	0.250
1,1,2,2-Tetrachloroethane	79-34-5		ND	1.00	0.200
1,1,2-Trichloroethane	79-00-5		ND	1.00	0.250
1,1-Dichloroethane	75-34-3		ND	1.00	0.125
1,1-Dichloroethene	75-35-4		ND	1.00	0.500
1,1-Dichloropropene	563-58-6		ND	1.00	0.250
1,2,3-Trichlorobenzene	87-61-6		ND	1.00	0.150
1,2,3-Trichloropropane	96-18-4		ND	1.00	0.500
1,2,4-Trichlorobenzene	120-82-1		ND	1.00	0.200
1,2,4-Trimethylbenzene	95-63-6		ND	1.00	0.250
1,2-Dibromo-3-chloropropane	96-12-8		ND	2.00	1.00
1,2-Dibromoethane	106-93-4		ND	1.00	0.250
1,2-Dichlorobenzene	95-50-1		ND	1.00	0.125
1,2-Dichloroethane	107-06-2		ND	1.00	0.250
1,2-Dichloropropane	78-87-5		ND	1.00	0.200
1,3,5-Trimethylbenzene	108-67-8		ND	1.00	0.250
1,3-Dichlorobenzene	541-73-1		ND	1.00	0.250
1,3-Dichloropropane	142-28-9		ND	1.00	0.200
1,4-Dichlorobenzene	106-46-7		ND	1.00	0.125
2,2-Dichloropropane	594-20-7		ND	1.00	0.250
2-Butanone	78-93-3		ND	5.00	2.50
2-Chloroethyl vinyl ether	110-75-8		ND	5.00	2.00
2-Chlorotoluene	95-49-8		ND	1.00	0.125
2-Hexanone	591-78-6		ND	5.00	2.50
4-Chlorotoluene	106-43-4		ND	1.00	0.250
4-Methyl-2-pentanone	108-10-1		ND	5.00	2.50
Acetone	67-64-1		ND	5.00	2.50
Acetonitrile	75-05-8		ND	100	50.0
Acrolein	107-02-8		ND	100	20.0
Benzene	71-43-2		ND	1.00	0.125
Bromobenzene	108-86-1		ND	1.00	0.125
Bromochloromethane	74-97-5		ND	1.00	0.200

Certificate of Analysis

Sample #:	L12050051-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW7S	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 18:08
Collect Date:	05/01/2012 08:50	**Dilution:**	1	**File ID:**	10M95295
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Bromodichloromethane	75-27-4		ND	1.00	0.250
Bromoform	75-25-2		ND	1.00	0.500
Bromomethane	74-83-9		ND	1.00	0.500
Carbon disulfide	75-15-0		ND	1.00	0.500
Carbon tetrachloride	56-23-5		ND	1.00	0.250
Chlorobenzene	108-90-7		ND	1.00	0.125
Chlorodibromomethane	124-48-1		ND	1.00	0.250
Chloroethane	75-00-3		ND	1.00	0.500
Chloroform	67-66-3		ND	1.00	0.125
Chloromethane	74-87-3		ND	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.83		1.00	0.250
cis-1,3-Dichloropropene	10061-01-5		ND	1.00	0.250
Dibromomethane	74-95-3		ND	1.00	0.250
Dichlorodifluoromethane	75-71-8		ND	1.00	0.250
Ethylbenzene	100-41-4		ND	1.00	0.250
Hexachlorobutadiene	87-68-3		ND	1.00	0.250
Isopropylbenzene	98-82-8		ND	1.00	0.250
m-,p-Xylene	179601-23-1		ND	1.00	0.500
Methylene chloride	75-09-2		ND	1.00	0.250
n-Butylbenzene	104-51-8		ND	1.00	0.250
n-Propylbenzene	103-65-1		ND	1.00	0.125
Naphthalene	91-20-3		ND	1.00	0.200
o-Xylene	95-47-6		ND	1.00	0.250
p-Isopropyltoluene	99-87-6		ND	1.00	0.250
sec-Butylbenzene	135-98-8		ND	1.00	0.250
Styrene	100-42-5		ND	1.00	0.125
tert-Butylbenzene	98-06-6		ND	1.00	0.250
Tetrachloroethene	127-18-4	7.37		1.00	0.250
Toluene	108-88-3		ND	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		ND	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		ND	1.00	0.500
Trichloroethene	79-01-6	0.430	J	1.00	0.250
Trichlorofluoromethane	75-69-4		ND	1.00	0.250

Certificate of Analysis

Sample #:	L12050051-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW7S	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 18:08
Collect Date:	05/01/2012 08:50	**Dilution:**	1	**File ID:**	10M95295
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Vinyl acetate	108-05-4		ND	5.00	2.50
Vinyl chloride	75-01-4		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	80.8	80	120	
4-Bromofluorobenzene	93.3	86	115	
Dibromofluoromethane	87.4	86	118	
Toluene-d8	97.5	88	110	

J	Estimated value; the analyte concentration was less than the RL/LOQ.
ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050051-11	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	4304-GW7S	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	04/30/2012 15:04
Workgroup #:	WG397035	**Analyst:**	MDA	**Run Date:**	05/04/2012 16:11
Collect Date:	05/01/2012 08:50	**Dilution:**	1	**File ID:**	16G32215
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Methane	74-82-8		ND	5.00	1.00
Ethene	74-85-1		ND	5.00	1.00
Ethane	74-84-0		ND	5.00	1.00

ND	Not detected at or above the reporting limit (RL).

Certificate of Analysis

Sample #:	L12050051-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	4304-GW7S	**Prep Method:**	3005A	**Prep Date:**	05/04/2012 07:36
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	05/07/2012 14:23
Workgroup #:	WG397042	**Analyst:**	KHR	**Run Date:**	05/07/2012 16:48
Collect Date:	05/01/2012 08:50	**Dilution:**	1	**File ID:**	T2.050712.164836
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Iron, Dissolved	7439-89-6		ND	0.100	0.0500

ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050051-11	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW7S	**Prep Method:**	325.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	325.2	**Cal Date:**	05/07/2012 15:07
Workgroup #:	WG397212	**Analyst:**	DIH	**Run Date:**	05/07/2012 15:17
Collect Date:	05/01/2012 08:50	**Dilution:**	1	**File ID:**	SC120507004.022
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Chloride	16887-00-6	4.01		2.00	1.00

Sample #:	L12050051-11	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW7S	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	05/01/2012 15:43
Workgroup #:	WG396816	**Analyst:**	DIH	**Run Date:**	05/02/2012 14:04
Collect Date:	05/01/2012 08:50	**Dilution:**	4	**File ID:**	SC12050708544201
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Nitrate (as N)	14797-55-8	2.34		0.200	0.100

Certificate of Analysis

Sample #:	L12050051-11	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	4304-GW7S	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG396996	**Analyst:**	DIH	**Run Date:**	05/04/2012 23:52
Collect Date:	05/01/2012 08:50	**Dilution:**	1	**File ID:**	TC05042012.059
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Organic Carbon, Dissolved		0.891	J	1.00	0.500

J	Estimated value; the analyte concentration was less than the RL/LOQ.

Certificate of Analysis

Sample #:	L12050051-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-MW8	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 18:38
Collect Date:	05/01/2012 10:10	**Dilution:**	1	**File ID:**	10M95296
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		ND	1.00	0.250
1,1,1-Trichloroethane	71-55-6		ND	1.00	0.250
1,1,2,2-Tetrachloroethane	79-34-5		ND	1.00	0.200
1,1,2-Trichloroethane	79-00-5		ND	1.00	0.250
1,1-Dichloroethane	75-34-3		ND	1.00	0.125
1,1-Dichloroethene	75-35-4		ND	1.00	0.500
1,1-Dichloropropene	563-58-6		ND	1.00	0.250
1,2,3-Trichlorobenzene	87-61-6		ND	1.00	0.150
1,2,3-Trichloropropane	96-18-4		ND	1.00	0.500
1,2,4-Trichlorobenzene	120-82-1		ND	1.00	0.200
1,2,4-Trimethylbenzene	95-63-6		ND	1.00	0.250
1,2-Dibromo-3-chloropropane	96-12-8		ND	2.00	1.00
1,2-Dibromoethane	106-93-4		ND	1.00	0.250
1,2-Dichlorobenzene	95-50-1		ND	1.00	0.125
1,2-Dichloroethane	107-06-2		ND	1.00	0.250
1,2-Dichloropropane	78-87-5		ND	1.00	0.200
1,3,5-Trimethylbenzene	108-67-8		ND	1.00	0.250
1,3-Dichlorobenzene	541-73-1		ND	1.00	0.250
1,3-Dichloropropane	142-28-9		ND	1.00	0.200
1,4-Dichlorobenzene	106-46-7		ND	1.00	0.125
2,2-Dichloropropane	594-20-7		ND	1.00	0.250
2-Butanone	78-93-3		ND	5.00	2.50
2-Chloroethyl vinyl ether	110-75-8		ND	5.00	2.00
2-Chlorotoluene	95-49-8		ND	1.00	0.125
2-Hexanone	591-78-6		ND	5.00	2.50
4-Chlorotoluene	106-43-4		ND	1.00	0.250
4-Methyl-2-pentanone	108-10-1		ND	5.00	2.50
Acetone	67-64-1		ND	5.00	2.50
Acetonitrile	75-05-8		ND	100	50.0
Acrolein	107-02-8		ND	100	20.0
Benzene	71-43-2		ND	1.00	0.125
Bromobenzene	108-86-1		ND	1.00	0.125
Bromochloromethane	74-97-5		ND	1.00	0.200

Certificate of Analysis

Sample #:	L12050051-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-MW8	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 18:38
Collect Date:	05/01/2012 10:10	**Dilution:**	1	**File ID:**	10M95296
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Bromodichloromethane	75-27-4		ND	1.00	0.250
Bromoform	75-25-2		ND	1.00	0.500
Bromomethane	74-83-9		ND	1.00	0.500
Carbon disulfide	75-15-0		ND	1.00	0.500
Carbon tetrachloride	56-23-5		ND	1.00	0.250
Chlorobenzene	108-90-7		ND	1.00	0.125
Chlorodibromomethane	124-48-1		ND	1.00	0.250
Chloroethane	75-00-3		ND	1.00	0.500
Chloroform	67-66-3		ND	1.00	0.125
Chloromethane	74-87-3		ND	1.00	0.500
cis-1,2-Dichloroethene	156-59-2		ND	1.00	0.250
cis-1,3-Dichloropropene	10061-01-5		ND	1.00	0.250
Dibromomethane	74-95-3		ND	1.00	0.250
Dichlorodifluoromethane	75-71-8		ND	1.00	0.250
Ethylbenzene	100-41-4		ND	1.00	0.250
Hexachlorobutadiene	87-68-3		ND	1.00	0.250
Isopropylbenzene	98-82-8		ND	1.00	0.250
m-,p-Xylene	179601-23-1		ND	1.00	0.500
Methylene chloride	75-09-2		ND	1.00	0.250
n-Butylbenzene	104-51-8		ND	1.00	0.250
n-Propylbenzene	103-65-1		ND	1.00	0.125
Naphthalene	91-20-3		ND	1.00	0.200
o-Xylene	95-47-6		ND	1.00	0.250
p-Isopropyltoluene	99-87-6		ND	1.00	0.250
sec-Butylbenzene	135-98-8		ND	1.00	0.250
Styrene	100-42-5		ND	1.00	0.125
tert-Butylbenzene	98-06-6		ND	1.00	0.250
Tetrachloroethene	127-18-4	3.32		1.00	0.250
Toluene	108-88-3		ND	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		ND	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		ND	1.00	0.500
Trichloroethene	79-01-6		ND	1.00	0.250
Trichlorofluoromethane	75-69-4		ND	1.00	0.250

Certificate of Analysis

Sample #:	L12050051-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-MW8	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 18:38
Collect Date:	05/01/2012 10:10	**Dilution:**	1	**File ID:**	10M95296
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Vinyl acetate	108-05-4		ND	5.00	2.50
Vinyl chloride	75-01-4		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	81.0	80	120	
4-Bromofluorobenzene	92.6	86	115	
Dibromofluoromethane	86.4	86	118	
Toluene-d8	96.4	88	110	

ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050051-12	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	4304-MW8	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	04/30/2012 15:04
Workgroup #:	WG397035	**Analyst:**	MDA	**Run Date:**	05/04/2012 16:20
Collect Date:	05/01/2012 10:10	**Dilution:**	1	**File ID:**	16G32216
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Methane	74-82-8		ND	5.00	1.00
Ethene	74-85-1		ND	5.00	1.00
Ethane	74-84-0		ND	5.00	1.00

ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050051-12	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	4304-MW8	**Prep Method:**	3005A	**Prep Date:**	05/04/2012 07:36
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	05/07/2012 14:23
Workgroup #:	WG397042	**Analyst:**	KHR	**Run Date:**	05/07/2012 16:51
Collect Date:	05/01/2012 10:10	**Dilution:**	1	**File ID:**	T2.050712.165159
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Iron, Dissolved	7439-89-6		ND	0.100	0.0500

ND	Not detected at or above the reporting limit (RL).

Certificate of Analysis

Sample #:	L12050051-12	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-MW8	**Prep Method:**	325.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	325.2	**Cal Date:**	05/07/2012 15:07
Workgroup #:	WG397212	**Analyst:**	DIH	**Run Date:**	05/07/2012 15:17
Collect Date:	05/01/2012 10:10	**Dilution:**	1	**File ID:**	SC120507004.023
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Chloride	16887-00-6	8.24		2.00	1.00

Sample #:	L12050051-12	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-MW8	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	05/01/2012 15:43
Workgroup #:	WG396816	**Analyst:**	DIH	**Run Date:**	05/02/2012 14:04
Collect Date:	05/01/2012 10:10	**Dilution:**	4	**File ID:**	SC12050708544801
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Nitrate (as N)	14797-55-8	4.28		0.200	0.100

Sample #:	L12050051-12	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	4304-MW8	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG396996	**Analyst:**	DIH	**Run Date:**	05/05/2012 00:04
Collect Date:	05/01/2012 10:10	**Dilution:**	1	**File ID:**	TC05042012.060
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Organic Carbon, Dissolved		1.51		1.00	0.500

Certificate of Analysis

Sample #:	L12050051-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW3S	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 19:09
Collect Date:	05/01/2012 11:55	**Dilution:**	1	**File ID:**	10M95297
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		ND	1.00	0.250
1,1,1-Trichloroethane	71-55-6		ND	1.00	0.250
1,1,2,2-Tetrachloroethane	79-34-5		ND	1.00	0.200
1,1,2-Trichloroethane	79-00-5		ND	1.00	0.250
1,1-Dichloroethane	75-34-3		ND	1.00	0.125
1,1-Dichloroethene	75-35-4		ND	1.00	0.500
1,1-Dichloropropene	563-58-6		ND	1.00	0.250
1,2,3-Trichlorobenzene	87-61-6		ND	1.00	0.150
1,2,3-Trichloropropane	96-18-4		ND	1.00	0.500
1,2,4-Trichlorobenzene	120-82-1		ND	1.00	0.200
1,2,4-Trimethylbenzene	95-63-6		ND	1.00	0.250
1,2-Dibromo-3-chloropropane	96-12-8		ND	2.00	1.00
1,2-Dibromoethane	106-93-4		ND	1.00	0.250
1,2-Dichlorobenzene	95-50-1		ND	1.00	0.125
1,2-Dichloroethane	107-06-2		ND	1.00	0.250
1,2-Dichloropropane	78-87-5		ND	1.00	0.200
1,3,5-Trimethylbenzene	108-67-8		ND	1.00	0.250
1,3-Dichlorobenzene	541-73-1		ND	1.00	0.250
1,3-Dichloropropane	142-28-9		ND	1.00	0.200
1,4-Dichlorobenzene	106-46-7		ND	1.00	0.125
2,2-Dichloropropane	594-20-7		ND	1.00	0.250
2-Butanone	78-93-3		ND	5.00	2.50
2-Chloroethyl vinyl ether	110-75-8		ND	5.00	2.00
2-Chlorotoluene	95-49-8		ND	1.00	0.125
2-Hexanone	591-78-6		ND	5.00	2.50
4-Chlorotoluene	106-43-4		ND	1.00	0.250
4-Methyl-2-pentanone	108-10-1		ND	5.00	2.50
Acetone	67-64-1		ND	5.00	2.50
Acetonitrile	75-05-8		ND	100	50.0
Acrolein	107-02-8		ND	100	20.0
Benzene	71-43-2		ND	1.00	0.125
Bromobenzene	108-86-1		ND	1.00	0.125
Bromochloromethane	74-97-5		ND	1.00	0.200

Certificate of Analysis

Sample #:	L12050051-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW3S	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 19:09
Collect Date:	05/01/2012 11:55	**Dilution:**	1	**File ID:**	10M95297
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Bromodichloromethane	75-27-4		ND	1.00	0.250
Bromoform	75-25-2		ND	1.00	0.500
Bromomethane	74-83-9		ND	1.00	0.500
Carbon disulfide	75-15-0		ND	1.00	0.500
Carbon tetrachloride	56-23-5		ND	1.00	0.250
Chlorobenzene	108-90-7		ND	1.00	0.125
Chlorodibromomethane	124-48-1		ND	1.00	0.250
Chloroethane	75-00-3		ND	1.00	0.500
Chloroform	67-66-3		ND	1.00	0.125
Chloromethane	74-87-3		ND	1.00	0.500
cis-1,2-Dichloroethene	156-59-2		ND	1.00	0.250
cis-1,3-Dichloropropene	10061-01-5		ND	1.00	0.250
Dibromomethane	74-95-3		ND	1.00	0.250
Dichlorodifluoromethane	75-71-8		ND	1.00	0.250
Ethylbenzene	100-41-4		ND	1.00	0.250
Hexachlorobutadiene	87-68-3		ND	1.00	0.250
Isopropylbenzene	98-82-8		ND	1.00	0.250
m-,p-Xylene	179601-23-1		ND	1.00	0.500
Methylene chloride	75-09-2		ND	1.00	0.250
n-Butylbenzene	104-51-8		ND	1.00	0.250
n-Propylbenzene	103-65-1		ND	1.00	0.125
Naphthalene	91-20-3		ND	1.00	0.200
o-Xylene	95-47-6		ND	1.00	0.250
p-Isopropyltoluene	99-87-6		ND	1.00	0.250
sec-Butylbenzene	135-98-8		ND	1.00	0.250
Styrene	100-42-5		ND	1.00	0.125
tert-Butylbenzene	98-06-6		ND	1.00	0.250
Tetrachloroethene	127-18-4	0.869	J	1.00	0.250
Toluene	108-88-3		ND	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		ND	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		ND	1.00	0.500
Trichloroethene	79-01-6		ND	1.00	0.250
Trichlorofluoromethane	75-69-4		ND	1.00	0.250

Certificate of Analysis

Sample #:	L12050051-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS10
Client ID:	4304-GW3S	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/17/2012 20:46
Workgroup #:	WG397177	**Analyst:**	TMB	**Run Date:**	05/07/2012 19:09
Collect Date:	05/01/2012 11:55	**Dilution:**	1	**File ID:**	10M95297
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Vinyl acetate	108-05-4		ND	5.00	2.50
Vinyl chloride	75-01-4		ND	1.00	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	83.4	80	120	
4-Bromofluorobenzene	92.6	86	115	
Dibromofluoromethane	88.8	86	118	
Toluene-d8	98.1	88	110	

J	Estimated value; the analyte concentration was less than the RL/LOQ.
ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050051-13	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	4304-GW3S	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	04/30/2012 15:04
Workgroup #:	WG397036	**Analyst:**	MDA	**Run Date:**	05/04/2012 17:56
Collect Date:	05/01/2012 11:55	**Dilution:**	1	**File ID:**	16G32226
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
Methane	74-82-8		ND	5.00	1.00
Ethene	74-85-1		ND	5.00	1.00
Ethane	74-84-0		ND	5.00	1.00

ND	Not detected at or above the reporting limit (RL).

Certificate of Analysis

Sample #:	L12050051-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	4304-GW3S	**Prep Method:**	3005A	**Prep Date:**	05/04/2012 07:36
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	05/07/2012 14:23
Workgroup #:	WG397042	**Analyst:**	KHR	**Run Date:**	05/07/2012 16:55
Collect Date:	05/01/2012 11:55	**Dilution:**	1	**File ID:**	T2.050712.165521
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Iron, Dissolved	7439-89-6		ND	0.100	0.0500

ND	Not detected at or above the reporting limit (RL).

Sample #:	L12050051-13	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW3S	**Prep Method:**	325.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	325.2	**Cal Date:**	05/07/2012 15:07
Workgroup #:	WG397212	**Analyst:**	DIH	**Run Date:**	05/07/2012 15:18
Collect Date:	05/01/2012 11:55	**Dilution:**	1	**File ID:**	SC120507004.024
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Chloride	16887-00-6	4.24		2.00	1.00

Sample #:	L12050051-13	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	4304-GW3S	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	05/01/2012 15:43
Workgroup #:	WG396816	**Analyst:**	DIH	**Run Date:**	05/02/2012 14:04
Collect Date:	05/01/2012 11:55	**Dilution:**	4	**File ID:**	SC12050708545601
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Nitrate (as N)	14797-55-8	4.50		0.200	0.100

Sample #:	L12050051-13	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	4304-GW3S	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	12/06/2011 09:40
Workgroup #:	WG396996	**Analyst:**	DIH	**Run Date:**	05/05/2012 00:16
Collect Date:	05/01/2012 11:55	**Dilution:**	1	**File ID:**	TC05042012.061
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Organic Carbon, Dissolved		1.37		1.00	0.500

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12050051
Blank File ID: 10M95281
Prep Date: 05/07/12 11:00
Analyzed Date: 05/07/12 11:00
Analyst: TMB

Work Group: WG397177
Blank Sample ID: WG397177-01
Instrument ID: HPMS10
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG397177-02	10M95282	05/07/12 11:30	01
LCS2	WG397177-03	10M95283	05/07/12 12:01	01
4304-TB02	L12050051-10	10M95285	05/07/12 13:02	01
4304-TB01	L12050051-09	10M95286	05/07/12 13:33	01
4304-GW1D	L12050051-01	10M95287	05/07/12 14:03	01
4304-GW3D	L12050051-02	10M95288	05/07/12 14:34	01
4304-GW4D	L12050051-03	10M95289	05/07/12 15:04	01
4304-GW2D	L12050051-04	10M95290	05/07/12 15:35	01
4304-GW5D	L12050051-05	10M95291	05/07/12 16:06	01
4304-GW6D	L12050051-06	10M95292	05/07/12 16:36	01
4304-GW7D	L12050051-07	10M95293	05/07/12 17:07	01
4304-GW8D	L12050051-08	10M95294	05/07/12 17:37	01
4304-GW7S	L12050051-11	10M95295	05/07/12 18:08	01
4304-MW8	L12050051-12	10M95296	05/07/12 18:38	01
4304-GW3S	L12050051-13	10M95297	05/07/12 19:09	01

Report Name: BLANK_SUMMARY
PDF File ID: 2410061
Report generated 05/10/2012 15:05

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12050051 Prep Date: 05/07/12 11:00 Sample ID: WG397177-01
Instrument ID: HPMS10 Run Date: 05/07/12 11:00 Prep Method: 5030B/5030C/503
File ID: 10M95281 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG397177 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS10-17-APR-12

Analytes	MDL	RL	Concentration	Dilution	Qualifier
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,1-Dichloroethene	0.500	1.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,3-Trichloropropane	0.500	1.00	0.500	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	2.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
2-Butanone	2.50	5.00	2.50	1	U
2-Chloroethyl vinyl ether	2.00	5.00	2.00	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
2-Hexanone	2.50	5.00	2.50	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	5.00	2.50	1	U
Acetone	2.50	5.00	2.50	1	U
Acetonitrile	50.0	100	50.0	1	U
Acrolein	20.0	100	20.0	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	1.00	0.500	1	U
Bromomethane	0.500	1.00	0.500	1	U
Carbon disulfide	0.500	1.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	1.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U

Report Name: BLANK
PDF ID: 2410062
10-MAY-2012 15:05

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12050051 Prep Date: 05/07/12 11:00 Sample ID: WG397177-01
Instrument ID: HPMS10 Run Date: 05/07/12 11:00 Prep Method: 5030B/5030C/503
File ID: 10M95281 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG397177 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS10 - 17-APR-12

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Chloromethane	0.500	1.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	1.00	0.500	1	U
Methylene chloride	0.250	1.00	0.250	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Naphthalene	0.200	1.00	0.200	1	U
o-Xylene	0.250	1.00	0.250	1	U
p-Isopropyltoluene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
Styrene	0.125	1.00	0.125	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	1.00	0.500	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
Vinyl acetate	2.50	5.00	2.50	1	U
Vinyl chloride	0.250	1.00	0.250	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,2-Dichloroethane-d4	80.5	80 - 120	PASS
4-Bromofluorobenzene	94.4	86 - 115	PASS
Dibromofluoromethane	88.7	86 - 118	PASS
Toluene-d8	98.5	88 - 110	PASS

MDL Method Detection Limit
RL Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > RL

Report Name: BLANK
PDF ID: 2410062
10-MAY-2012 15:05

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12050051 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS10 Matrix: Water Method: 8260B
Workgroup (AAB#): WG397177 Units: ug/L
QC Key: STD Lot #: STD51427

Sample ID: WG397177-02 LCS File ID: 10M95282 Run Date: 05/07/2012 11:30
Sample ID: WG397177-03 LCS2 File ID: 10M95283 Run Date: 05/07/2012 12:01

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	19.9	99.6	20.0	19.7	98.4	1.14	80 - 130	20	
1,1,1-Trichloroethane	20.0	17.3	86.4	20.0	17.0	85.1	1.52	80 - 134	20	
1,1,2,2-Tetrachloroethane	20.0	17.2	86.1	20.0	17.4	87.1	1.13	79 - 125	20	
1,1,2-Trichloroethane	20.0	18.9	94.3	20.0	18.9	94.3	0.0341	80 - 125	20	
1,1-Dichloroethane	20.0	17.5	87.7	20.0	17.6	88.1	0.520	80 - 125	20	
1,1-Dichloroethene	20.0	17.2	86.2	20.0	16.9	84.3	2.23	80 - 132	20	
1,1-Dichloropropene	20.0	17.5	87.4	20.0	17.3	86.5	1.05	75 - 130	20	
1,2,3-Trichlorobenzene	20.0	20.3	101	20.0	20.5	102	0.975	55 - 140	20	
1,2,3-Trichloropropane	20.0	17.6	88.1	20.0	17.7	88.5	0.430	75 - 125	20	
1,2,4-Trichlorobenzene	20.0	20.0	100	20.0	20.1	101	0.673	65 - 135	20	
1,2,4-Trimethylbenzene	20.0	19.6	98.0	20.0	19.8	99.0	0.954	80 - 125	20	
1,2-Dibromo-3-chloropropane	20.0	17.3	86.4	20.0	17.9	89.3	3.34	50 - 130	20	
1,2-Dibromoethane	20.0	18.8	94.0	20.0	18.9	94.5	0.486	80 - 129	20	
1,2-Dichlorobenzene	20.0	19.0	95.1	20.0	19.2	96.1	1.03	80 - 125	20	
1,2-Dichloroethane	20.0	15.7	78.5	20.0	15.7	78.6	0.0792	80 - 129	20	*
1,2-Dichloropropane	20.0	18.4	92.1	20.0	18.5	92.7	0.635	80 - 120	20	
1,3,5-Trimethylbenzene	20.0	19.1	95.5	20.0	19.1	95.7	0.224	80 - 127	20	
1,3-Dichlorobenzene	20.0	19.2	96.2	20.0	19.3	96.4	0.217	80 - 120	20	
1,3-Dichloropropane	20.0	18.0	90.1	20.0	18.3	91.4	1.46	80 - 120	20	
1,4-Dichlorobenzene	20.0	18.7	93.5	20.0	18.7	93.6	0.0418	80 - 120	20	
2,2-Dichloropropane	20.0	16.6	83.0	20.0	16.7	83.7	0.814	80 - 133	20	
2-Butanone	20.0	17.3	86.3	20.0	17.3	86.5	0.217	10 - 170	20	
2-Chloroethyl vinyl ether	20.0	17.3	86.4	20.0	17.5	87.6	1.38	45 - 160	20	
2-Chlorotoluene	20.0	17.7	88.7	20.0	18.5	92.6	4.23	80 - 127	20	
2-Hexanone	20.0	17.5	87.5	20.0	17.4	87.2	0.294	55 - 130	20	
4-Chlorotoluene	20.0	18.0	90.0	20.0	17.2	85.8	4.73	80 - 126	20	
4-Methyl-2-pentanone	20.0	17.2	85.8	20.0	17.4	87.2	1.69	64 - 140	20	
Acetone	20.0	15.9	79.6	20.0	16.8	84.1	5.44	40 - 180	20	
Acrolein	100	105	105	100	108	108	3.05	10 - 200	20	
Benzene	20.0	18.5	92.4	20.0	18.3	91.3	1.14	80 - 121	20	
Bromobenzene	20.0	19.0	94.8	20.0	19.0	95.1	0.279	80 - 120	20	
Bromochloromethane	20.0	19.1	95.7	20.0	19.2	96.2	0.490	65 - 130	20	
Bromodichloromethane	20.0	17.5	87.3	20.0	17.5	87.7	0.470	80 - 131	20	
Bromoform	20.0	17.1	85.6	20.0	17.3	86.5	1.07	70 - 130	20	
Bromomethane	20.0	14.9	74.7	20.0	15.6	77.9	4.19	30 - 145	20	
Carbon disulfide	20.0	17.4	87.2	20.0	17.5	87.3	0.0772	58 - 128	20	
Carbon tetrachloride	20.0	15.3	76.6	20.0	15.1	75.7	1.22	65 - 140	20	
Chlorobenzene	20.0	18.5	92.5	20.0	18.3	91.5	1.02	80 - 120	20	
Chlorodibromomethane	20.0	18.4	92.0	20.0	18.4	92.1	0.0778	60 - 135	20	
Chloroethane	20.0	18.8	94.1	20.0	18.8	93.9	0.191	60 - 135	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2406137
Report generated: 05/10/2012 15:05

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12050051 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS10 Matrix: Water Method: 8260B
Workgroup (AAB#): WG397177 Units: ug/L
QC Key: STD Lot #: STD51427

Sample ID: WG397177-02 LCS File ID: 10M95282 Run Date: 05/07/2012 11:30
Sample ID: WG397177-03 LCS2 File ID: 10M95283 Run Date: 05/07/2012 12:01

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Chloroform	20.0	17.8	88.8	20.0	17.9	89.4	0.754	80 - 125	20	
Chloromethane	20.0	14.9	74.7	20.0	14.3	71.5	4.33	40 - 125	20	
cis-1,2-Dichloroethene	20.0	19.0	94.9	20.0	18.8	94.1	0.871	70 - 125	20	
cis-1,3-Dichloropropene	20.0	17.5	87.5	20.0	17.8	88.8	1.57	70 - 130	20	
Dibromomethane	20.0	17.1	85.5	20.0	17.2	86.0	0.530	75 - 125	20	
Dichlorodifluoromethane	20.0	20.0	100	20.0	19.8	99.0	1.02	40 - 160	20	
Ethylbenzene	20.0	19.4	96.9	20.0	19.5	97.6	0.640	80 - 122	20	
Hexachlorobutadiene	20.0	25.4	127	20.0	25.0	125	1.31	72 - 132	20	
Isopropylbenzene	20.0	17.7	88.4	20.0	17.7	88.7	0.335	80 - 122	20	
m-,p-Xylene	40.0	37.9	94.7	40.0	37.6	94.0	0.779	80 - 122	20	
Methylene chloride	20.0	18.2	91.2	20.0	18.1	90.3	1.02	80 - 123	20	
n-Butylbenzene	20.0	20.5	102	20.0	20.3	101	1.07	80 - 131	20	
n-Propylbenzene	20.0	18.6	93.1	20.0	18.6	93.0	0.0901	80 - 129	20	
Naphthalene	20.0	18.2	91.2	20.0	18.5	92.7	1.55	59 - 149	20	
o-Xylene	20.0	18.6	93.2	20.0	18.8	94.2	1.01	80 - 122	20	
p-Isopropyltoluene	20.0	19.9	99.7	20.0	19.7	98.6	1.14	80 - 122	20	
sec-Butylbenzene	20.0	20.2	101	20.0	20.2	101	0.0553	80 - 127	20	
Styrene	20.0	17.7	88.3	20.0	17.6	88.0	0.437	80 - 123	20	
tert-Butylbenzene	20.0	19.6	98.1	20.0	19.9	99.4	1.26	80 - 126	20	
Tetrachloroethene	20.0	21.2	106	20.0	21.0	105	0.733	80 - 124	20	
Toluene	20.0	19.0	94.8	20.0	19.1	95.5	0.778	80 - 124	20	
trans-1,2-Dichloroethene	20.0	18.1	90.4	20.0	18.2	90.8	0.452	80 - 127	20	
trans-1,3-Dichloropropene	20.0	15.9	79.6	20.0	16.1	80.5	1.23	80 - 130	20	*
Trichloroethene	20.0	19.3	96.7	20.0	19.1	95.7	1.01	80 - 122	20	
Trichlorofluoromethane	20.0	16.7	83.3	20.0	16.6	82.8	0.602	62 - 151	20	
Vinyl acetate	20.0	12.7	63.6	20.0	13.2	66.2	4.00	10 - 190	20	
Vinyl chloride	20.0	21.2	106	20.0	19.2	96.2	9.55	50 - 170	20	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	80.7	79.8	80 - 120	FAIL
Dibromofluoromethane	93.5	92.7	86 - 118	PASS
4-Bromofluorobenzene	92.1	92.8	86 - 115	PASS
Toluene-d8	99.2	98.7	88 - 110	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2406137
Report generated: 05/10/2012 15:05

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12050051
Blank File ID: 16G32192
Prep Date: 05/04/12 12:41
Analyzed Date: 05/04/12 12:41
Analyst: MDA

Work Group: WG397035
Blank Sample ID: WG397035-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG397035-02	16G32193	05/04/12 12:50	01
LCS2	WG397035-03	16G32194	05/04/12 12:59	01
4304-GW1D	L12050051-01	16G32196	05/04/12 13:18	02
4304-GW3D	L12050051-02	16G32197	05/04/12 13:26	02
4304-GW7D	L12050051-07	16G32212	05/04/12 15:43	01
4304-GW8D	L12050051-08	16G32214	05/04/12 16:02	01
4304-GW7S	L12050051-11	16G32215	05/04/12 16:11	01
4304-MW8	L12050051-12	16G32216	05/04/12 16:20	01

Report Name: BLANK_SUMMARY
PDF File ID: 2404543
Report generated 05/09/2012 15:11

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12050051
Blank File ID: 16G32221
Prep Date: 05/04/12 17:11
Analyzed Date: 05/04/12 17:11
Analyst: MDA

Work Group: WG397036
Blank Sample ID: WG397036-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG397036-02	16G32219	05/04/12 16:53	01
LCS2	WG397036-03	16G32220	05/04/12 17:02	01
4304-GW4D	L12050051-03	16G32222	05/04/12 17:20	01
4304-GW2D	L12050051-04	16G32223	05/04/12 17:29	01
4304-GW5D	L12050051-05	16G32224	05/04/12 17:38	01
4304-GW6D	L12050051-06	16G32225	05/04/12 17:47	01
4304-GW3S	L12050051-13	16G32226	05/04/12 17:56	01

Report Name: BLANK_SUMMARY
PDF File ID: 2404543
Report generated 05/09/2012 15:11

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12050051 Prep Date: 05/04/12 12:41 Sample ID: WG397035-01
Instrument ID: HP16 Run Date: 05/04/12 12:41 Prep Method: 5021
File ID: 16G32192 Analyst: MDA Method: RSK175
Workgroup (AAB#): WG397035 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16-30-APR-12

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Methane	1.00	5.00	1.00	1	U
Ethene	1.00	5.00	1.00	1	U
Ethane	1.00	5.00	1.00	1	U

MDL Method Detection Limit
RL Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > RL

Report Name: BLANK
PDF ID: 2404544
09-MAY-2012 15:11

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12050051 Prep Date: 05/04/12 17:11 Sample ID: WG397036-01
Instrument ID: HP16 Run Date: 05/04/12 17:11 Prep Method: 5021
File ID: 16G32221 Analyst: MDA Method: RSK175
Workgroup (AAB#): WG397036 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16 - 30-APR-12

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Methane	1.00	5.00	1.00	1	U
Ethene	1.00	5.00	1.00	1	U
Ethane	1.00	5.00	1.00	1	U

MDL Method Detection Limit
RL Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > RL

Report Name: BLANK
PDF ID: 2404544
09-MAY-2012 15:11

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12050051 Analyst: MDA Prep Method: 5021
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG397036 Units: ug/L
QC Key: STD Lot #: STD45308

Sample ID: WG397036-02 LCS File ID: 16G32219 Run Date: 05/04/2012 16:53
Sample ID: WG397036-03 LCS2 File ID: 16G32220 Run Date: 05/04/2012 17:02

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	116	111	95.4	116	122	104	8.94	56 - 140	40	
Ethene	202	191	94.8	202	216	107	12.0	56 - 140	40	
Ethane	216	213	98.7	216	239	111	11.5	56 - 137	40	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2404545
Report generated: 05/09/2012 15:11

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12050051 Analyst: MDA Prep Method: 5021
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG397035 Units: ug/L
QC Key: STD Lot #: STD45308

Sample ID: WG397035-02 LCS File ID: 16G32193 Run Date: 05/04/2012 12:50
Sample ID: WG397035-03 LCS2 File ID: 16G32194 Run Date: 05/04/2012 12:59

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	116	100	85.9	116	98.9	84.9	1.15	56 - 140	40	
Ethene	202	162	80.5	202	160	79.4	1.43	56 - 140	40	
Ethane	216	179	82.7	216	177	81.8	1.08	56 - 137	40	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2404545
Report generated: 05/09/2012 15:11

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12050051
Blank File ID: T2.050712.151551
Prep Date: 05/04/12 07:36
Analyzed Date: 05/07/12 15:15
Analyst: KHR

Work Group: WG397042
Blank Sample ID: WG396997-02
Instrument ID: ICP-THERMO2
Method: 6010B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
FLT_BLK	WG396997-04	T2.050712.151916	05/07/12 15:19	01
LCS	WG396997-03	T2.050712.152239	05/07/12 15:22	01
4304-GW1D	L12050051-01	T2.050712.160829	05/07/12 16:08	01
4304-GW3D	L12050051-02	T2.050712.162526	05/07/12 16:25	01
4304-GW4D	L12050051-03	T2.050712.162845	05/07/12 16:28	01
4304-GW2D	L12050051-04	T2.050712.163204	05/07/12 16:32	01
4304-GW5D	L12050051-05	T2.050712.163522	05/07/12 16:35	01
4304-GW6D	L12050051-06	T2.050712.163840	05/07/12 16:38	01
4304-GW7D	L12050051-07	T2.050712.164200	05/07/12 16:42	01
4304-GW8D	L12050051-08	T2.050712.164518	05/07/12 16:45	01
4304-GW7S	L12050051-11	T2.050712.164836	05/07/12 16:48	01
4304-MW8	L12050051-12	T2.050712.165159	05/07/12 16:51	01
4304-GW3S	L12050051-13	T2.050712.165521	05/07/12 16:55	01

Report Name: BLANK_SUMMARY
PDF File ID: 2405497
Report generated 05/08/2012 12:06

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12050051 Prep Date: 05/04/12 07:36 Sample ID: WG396997-02
Instrument ID: ICP-THERMO2 Run Date: 05/07/12 15:15 Prep Method: 3005A
File ID: T2.050712.151551 Analyst: KHR Method: 6010B
Workgroup (AAB#): WG397042 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH - 07-MAY-12

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Iron, Dissolved	0.0500	0.100	0.0500	1	U

MDL Method Detection Limit
RL Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > RL

Report Name: BLANK
PDF ID: 2405498
08-MAY-2012 12:06

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12050051 Run Date: 05/07/2012 Sample ID: WG396997-03
Instrument ID: ICP-THERMO2 Run Time: 15:22 Prep Method: 3005A
File ID: T2.050712.152239 Analyst: KHR Method: 6010B
Workgroup (AAB#): WG397042 Matrix: Water Units: mg/L
QC Key: STD Lot#: STD51357 Cal ID: ICP-TH-07-MAY-12

Analytes	Expected	Found	% Rec	LCS Limits	Q
Iron, Dissolved	2.00	1.98	98.8	85 - 115	

LCS - Modified 03/06/2008
PDF File ID: 2405499
Report generated: 05/08/2012 12:06

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L12050051 Cal ID: ICP-THERMO2 - Worknum: WG397042
Instrument ID: ICP-THERMO2 Contract #: Method: 6010B
Parent ID: WG396997-01 File ID: T2.050712.152552 Dil: 1 Matrix: WATER
Sample ID: WG396997-05 MS File ID: T2.050712.152908 Dil: 1 Units: mg/L
Sample ID: WG396997-06 MSD File ID: T2.050712.153219 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Iron, Total	2.31	2.00	4.31	100	2.00	4.32	101	0.174	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 2405500
Report generated 05/08/2012 12:06

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12050051
Blank File ID: SC120507004.009
Prep Date: 05/07/12 15:09
Analyzed Date: 05/07/12 15:09
Analyst: DIH

Work Group: WG397212
Blank Sample ID: WG397212-01
Instrument ID: SMARTCHEM
Method: 325.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG397212-02	SC120507004.010	05/07/12 15:09	01
LCS2	WG397212-03	SC120507004.011	05/07/12 15:10	01
4304-GW1D	L12050051-01	SC120507004.012	05/07/12 15:11	01
4304-GW3D	L12050051-02	SC120507004.013	05/07/12 15:11	01
4304-GW4D	L12050051-03	SC120507004.014	05/07/12 15:12	01
4304-GW2D	L12050051-04	SC120507004.015	05/07/12 15:12	01
4304-GW5D	L12050051-05	SC120507004.016	05/07/12 15:13	01
4304-GW6D	L12050051-06	SC120507004.017	05/07/12 15:13	01
4304-GW7D	L12050051-07	SC120507004.020	05/07/12 15:15	01
4304-GW8D	L12050051-08	SC120507004.021	05/07/12 15:16	01
4304-GW7S	L12050051-11	SC120507004.022	05/07/12 15:17	01
4304-MW8	L12050051-12	SC120507004.023	05/07/12 15:17	01
4304-GW3S	L12050051-13	SC120507004.024	05/07/12 15:18	01
DUP	WG397212-05	SC120507004.027	05/07/12 15:19	01

Report Name: BLANK_SUMMARY
PDF File ID: 2407513
Report generated 05/09/2012 12:29

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12050051 Prep Date: 05/07/12 15:09 Sample ID: WG397212-01
Instrument ID: SMARTCHEM Run Date: 05/07/12 15:09 Prep Method: 325.2
File ID: SC120507004.009 Analyst: DIH Method: 325.2
Workgroup (AAB#): WG397212 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-07-MAY-12

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Chloride	1.00	2.00	1.00	1	U

MDL Method Detection Limit
RL Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > RL

Report Name: BLANK
PDF ID: 2407514
09-MAY-2012 12:29

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12050051 Analyst: DIH Prep Method: 325.2
Instrument ID: SMARTCHEM Matrix: Water Method: 325.2
Workgroup (AAB#): WG397212 Units: mg/L
QC Key: STD Lot #: STD51245

Sample ID: WG397212-02 LCS File ID: SC120507004.010 Run Date: 05/07/2012 15:09
Sample ID: WG397212-03 LCS2 File ID: SC120507004.011 Run Date: 05/07/2012 15:10

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Chloride	50.0	51.7	103	50.0	51.7	103	0.00	90 - 110	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2407515
Report generated: 05/09/2012 12:29

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12050051
Blank File ID: SC12050708525901
Prep Date: 05/02/12 14:04
Analyzed Date: 05/02/12 14:04
Analyst: DIH

Work Group: WG396816
Blank Sample ID: WG396816-01
Instrument ID: SMARTCHEM
Method: 353.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
4304-MW8	L12050051-12	SC12050708544801	05/02/12 14:04	
4304-GW2D	L12050051-04	SC12050708541501	05/02/12 14:04	
4304-GW5D	L12050051-05	SC12050708542001	05/02/12 14:04	
4304-GW8D	L12050051-08	SC12050708543601	05/02/12 14:04	
4304-GW7D	L12050051-07	SC12050708542801	05/02/12 14:04	
4304-GW4D	L12050051-03	SC12050708541101	05/02/12 14:04	
LCS2	WG396816-03	SC12050708531001	05/02/12 14:04	
4304-GW3S	L12050051-13	SC12050708545601	05/02/12 14:04	
LCS	WG396816-02	SC12050708530501	05/02/12 14:04	
4304-GW3D	L12050051-02	SC12050708540701	05/02/12 14:04	
DUP	WG396816-05	SC12050708531901	05/02/12 14:04	
4304-GW1D	L12050051-01	SC12050708540401	05/02/12 14:04	
4304-GW6D	L12050051-06	SC12050708542401	05/02/12 14:04	
4304-GW7S	L12050051-11	SC12050708544201	05/02/12 14:04	

Report Name: BLANK_SUMMARY
PDF File ID: 2404944
Report generated 05/08/2012 08:20

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12050051 Prep Date: 05/02/12 14:04 Sample ID: WG396816-01
Instrument ID: SMARTCHEM Run Date: 05/02/12 14:04 Prep Method: 353.2
File ID: SC12050708525901 Analyst: DIH Method: 353.2
Workgroup (AAB#): WG396816 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-01-MAY-12

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Nitrate (as N)	0.0250	0.0500	0.0250	1	U

MDL Method Detection Limit
RL Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > RL

Report Name: BLANK
PDF ID: 2404945
08-MAY-2012 08:20

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12050051 Analyst: DIH Prep Method: 353.2
Instrument ID: SMARTCHEM Matrix: Water Method: 353.2
Workgroup (AAB#): WG396816 Units: mg/L
QC Key: STD Lot #: STD51196

Sample ID: WG396816-02 LCS File ID: SC12050708530501 Run Date: 05/02/2012 14:04
Sample ID: WG396816-03 LCS2 File ID: SC12050708531001 Run Date: 05/02/2012 14:04

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Nitrate (as N)	1.00	0.977	97.7	1.00	0.972	97.2	0.513	90 - 110	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2404946
Report generated: 05/08/2012 08:20

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12050051
Blank File ID: TC05042012.003
Prep Date: 05/04/12 10:22
Analyzed Date: 05/04/12 10:22
Analyst: DIH

Work Group: WG396993
Blank Sample ID: WG396993-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG396993-02	TC05042012.004	05/04/12 10:34	01
LCS2	WG396993-03	TC05042012.005	05/04/12 10:46	01
DUP	WG396993-05	TC05042012.009	05/04/12 11:39	DL01
4304-GW1D	L12050051-01	TC05042012.035	05/04/12 17:05	01
4304-GW3D	L12050051-02	TC05042012.036	05/04/12 17:18	01
4304-GW4D	L12050051-03	TC05042012.037	05/04/12 17:29	01

Report Name: BLANK_SUMMARY
PDF File ID: 2403345
Report generated 05/05/2012 11:24

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L12050051
Blank File ID: TC05042012.051
Prep Date: 05/04/12 22:15
Analyzed Date: 05/04/12 22:15
Analyst: DIH

Work Group: WG396996
Blank Sample ID: WG396996-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG396996-02	TC05042012.052	05/04/12 22:27	01
4304-GW2D	L12050051-04	TC05042012.054	05/04/12 22:50	01
4304-GW5D	L12050051-05	TC05042012.055	05/04/12 23:02	01
4304-GW6D	L12050051-06	TC05042012.056	05/04/12 23:14	01
4304-GW7D	L12050051-07	TC05042012.057	05/04/12 23:27	01
4304-GW8D	L12050051-08	TC05042012.058	05/04/12 23:40	01
4304-GW7S	L12050051-11	TC05042012.059	05/04/12 23:52	01
4304-MW8	L12050051-12	TC05042012.060	05/05/12 00:04	01
4304-GW3S	L12050051-13	TC05042012.061	05/05/12 00:16	01
DUP	WG396996-05	TC05042012.078	05/05/12 03:42	01
LCS2	WG396996-03	TC05042012.085	05/05/12 09:36	01

Report Name: BLANK_SUMMARY
PDF File ID: 2403345
Report generated 05/05/2012 11:24

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12050051 Prep Date: 05/04/12 10:22 Sample ID: WG396993-01
Instrument ID: TOC-VWP Run Date: 05/04/12 10:22 Prep Method: 415.1
File ID: TC05042012.003 Analyst: DIH Method: 415.1
Workgroup (AAB#): WG396993 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-06-DEC-11

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Organic Carbon, Dissolved	0.500	1.00	0.500	1	U

MDL Method Detection Limit
RL Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > RL

Report Name: BLANK
PDF ID: 2403346
05-MAY-2012 11:24

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L12050051 Prep Date: 05/04/12 22:15 Sample ID: WG396996-01
Instrument ID: TOC-VWP Run Date: 05/04/12 22:15 Prep Method: 415.1
File ID: TC05042012.051 Analyst: DIH Method: 415.1
Workgroup (AAB#): WG396996 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-06-DEC-11

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Organic Carbon, Dissolved	0.500	1.00	0.500	1	U

MDL Method Detection Limit
RL Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > RL

Report Name: BLANK
PDF ID: 2403346
05-MAY-2012 11:24

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12050051 Analyst: DIH Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG396996 Units: mg/L
QC Key: STD Lot #: STD50986

Sample ID: WG396996-02 LCS File ID: TC05042012.052 Run Date: 05/04/2012 22:27
Sample ID: WG396996-03 LCS2 File ID: TC05042012.085 Run Date: 05/05/2012 09:36

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Organic Carbon, Dissolved	25.0	23.8	95.1	25.0	26.1	104	9.15	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2403347
Report generated: 05/05/2012 11:24

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L12050051 Analyst: DIH Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG396993 Units: mg/L
QC Key: STD Lot #: STD50986

Sample ID: WG396993-02 LCS File ID: TC05042012.004 Run Date: 05/04/2012 10:34
Sample ID: WG396993-03 LCS2 File ID: TC05042012.005 Run Date: 05/04/2012 10:46

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Organic Carbon, Dissolved	25.0	23.8	95.2	25.0	23.5	94.1	1.23	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 2403347
Report generated: 05/05/2012 11:24

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
May 10, 2012

ADC - ANTHONY D. CANTER	AJF - AMANDA J. FICKIESEN	ALB - ANNIE L. BROWN
ALV - AMY L. VALENTINE	AML - TONY M. LONG	AZH - AFTER HOURS
BLG - BRENDA L. GREENWALT	BRG - BRENDA R. GREGORY	CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS	CEB - CHAD E. BARNES	CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER	CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CS - CODY M. STRAHLER	CSH - CHRIS S. HILL	DDE - DEBRA D. ELLIOTT
DEV - DAVID E. VANDENBERG	DGB - DOUGLAS G. BUTCHER	DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER	DLP - DOROTHY L. PAYNE	DLR - DIANNA L. RAUCH
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON	EDL - ERIN D. LONG
ERP - ERIN R. PORTER	FJB - FRANCES J. BOLDEN	HAV - HEMA VILASAGAR
HJR - HOLLY J. REED	JAL - JOHN A. LENT	JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON	JKS - JANE K. SCHAAD	JLL - JOHN L. LENT
JWR - JOHN W. RICHARDS	JWS - JACK W. SHEAVES	JYH - JI Y. HU
KEB - KATIE E. BARNES	KHR - KIM H. RHODES	KRA - KATHY R. ALBERTSON
LKN - LINDA K. NEDEFF	LSB - LESLIE S. BUCINA	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON	PDM - PIERCE D. MORRIS
PWD - PAUL W. DENT	QX - QIN XU	RAH - ROY A. HALSTEAD
REK - BOB E. KYER	RLB - BOB BUCHANAN	RLK - ROBIN L. KLINGER
RS - ROSEMARY SCOTT	RWC - RODNEY W. CAMPBELL	SJP - SUZANNE J. PAUGH
SLM - STEPHANIE L. MOSSBURG	SLP - SHERI L. PFALZGRAF	TIP - TAE I. PARRISH
TMB - TIFFANY M. BAILEY	TMM - TAMMY M. MORRIS	VC - VICKI COLLIER
WJB - WILL J. BEASLEY	WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
May 10, 2012

Qualkey: STD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Result is greater than the associated numerical value.
A	See the report narrative
B	Analyte present in method blank
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
FL	Free Liquid
H1	Sample analysis performed past holding time.
I	Semiquantitative result (out of instrument calibration range)
J	Estimated value; the analyte concentration was less than the RL/LOQ.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Tentatively identified compound(TIC)
NA	Not applicable
ND	Not detected at or above the reporting limit (RL).
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
U	Analyte was not detected. The concentration is below the reported MDL.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UJ	Undetected; the analyte was analyzed for, but not detected.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

COC No. A 29660 3

158 Starlite Drive
Marietta, OH 45750

Microbac

CHAIN-OF-CUSTODY RECORD

Phone: 740-373-4071
Fax: 740-373-4835

Company Name: BSB, PG

Project Contact: Brian Boutin

Contact Phone #: 919-366-3663

Turn Around Requirements: STD

Location: CC Tire

Project ID: CC Tire

Sampler (print): JEFF LEAVOR, Aaron Hill

Signature: Jeff Leavor, Aaron Hill

Program: ☐ CWA ☐ RCRA ☐ DOD ☐ AFCEE ☐ Other _____

Sample I.D. No.	Comp	Grab	Date	Time	Matrix*	NUMBER OF CONTAINERS	Hold	8260	D. Gases	D. Metals / D.TOC	Cl / NO3	TOTAL # (LAB USE)	ADDITIONAL REQUIREMENTS
4304-GW1d		X	5/1/12	0900	GW	6		2	2	1	1		
4304-GW3d		X	5/1/12	1030	GW	6		2	2	1	1		
4304-GW4d		X	5/1/12	1000	GW	6		2	2	1	1		
4304-GW2d		X	5/1/12	1048	GW	8		2	3	2	1		
4304-GW5d		X	5/1/12	1014	GW	7		2	3	1	1		
4304-GW6d		X	5/1/12	0912	GW	8		2	3	2	1		
4304-GW7d		X	5/1/12	0930	GW	8		2	3	2	1		
4304-GW8d		X	5/1/12	0944	GW	8		2	3	2	1		
4304-TB01	—		4/30/12	—	DI	2		2					
4304-TB02	—		5/1/12	—	DI	2		2					
4304-GW7s		X	5/1/12	0850	GW	8		2	3	2	1		
4304-MW8		X	5/1/12	1010	GW	8		2	3	2	1		
4304-GW3s		X	5/1/12	1155	GW	8		2	3	2	1		

Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Jeff Leavor	5/1/12		FED-EX
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)

Microbac OVD
Received: 05/02/2012 10:00
By: BRENDA GREENWALT 221000024617

Brenda Greenwalt

*Water (W), Soil (S), Solid Waste (SD), Unknown (X)

Page 1 of 1

APPENDIX F

Groundwater Sample Collection Forms

Well/Piezo ID: GW-15

Ground Water Sample Collection Record

Client: BRIAN S. BOUTIN, PG
Project No: CENTRAL CAROLINA TIRE, PERMIT #4304
Site Location: CAMERON, NC
Weather Conds: 70s sunny Collector(s) C. Poston

Date: 4/30/12
Time: Start 1245 am/pm
Finish 1350 am/pm

WATER LEVEL DATA: (measured from Top of Casing) Well ☐ Piezometer ☐

a. Total Well Length 23.36 c. Casing Material PVC e. Length of Water Column 8.37 (a-b)

b. Water Table Depth 14.99 d. Casing Diameter 2" f. Calculated Well Volume (see back) 1.36

WELL PURGING DATA

a. Purge Method low flow peristaltic pump

b. Acceptance Criteria defined (from workplan)
- Minimum Required Purge Volume (@ _____ well volumes) _____ N/A Pumping Rate: 125 ml/min.
- Maximum Allowable Turbidity N/A NTUs
- Stabilization of parameters 10 %

c. Field Testing Equipment Used:

Make	Model	Serial Number
~~OAKTON~~	~~PH/CON10~~ YSI 556MPS	09K101305
HACH	~~2100P~~ 2100Q	09120C000390

d. Field Testing Equipment Calibration Documentation Found on Separate Form

Time	Volume Removed ml	T° (C/F)	pH	Spec. Cond (umhos)	TURBIDITY	DTW	Color	ORP	D.O. mg/l
1250	625	20.76	4.32	28	30.1	~~14~~15.01	cloudy	203.1	8.54
1300	1875	20.31	3.37	26	13.9	15.01	cloudy	259.3	5.49
1310	3125	20.68	4.21	27	12.4	15.02	clear	227.1	5.46
1315	3750	20.54	4.23	27	11.9	15.02	clear	227.9	5.49
1320	4375	20.48	4.25	27	11.6	15.02	clear	228.4	5.51
1325	5000	20.37	4.21	27	10.2	15.02	clear	229.9	5.57
1330	5625	20.35	4.19	27	8.40	15.02	clear	235.7	5.60

PCP

e. Acceptance criteria pass/fail

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

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: low flow peristaltic pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
4304-GW-15	VOA	3	HCL	8260	1335
4304-GW-15	250 Plastic	1	None	Diss. Metals	1335
4304-GW-15	250 Plastic	1	None	CL,NO3,~~DISS.TOC~~	1335
4304-GW-K	VOA	3	HCL	Diss. Gases	1335
4304-GW-15	250 Plastic	1	None	Diss TOC	1335

Comments

Signature Phillip C. Poston Date 4/30/12

Well/Piezo ID: GW-25

Ground Water Sample Collection Record

Client: BRIAN S. BOUTIN, PG
Project No: CENTRAL CAROLINA TIRE, PERMIT #4304
Site Location: CAMERON, NC
Weather Conds: 70s cloudy Collector(s) C. Poston

Date: 4/30/12
Time: Start 1020 am/pm
Finish 1150 am/pm

WATER LEVEL DATA: (measured from Top of Casing) Well ☐ Piezometer ☐

a. Total Well Length 22.18 c. Casing Material PVC e. Length of Water Column 9.16 (a-b)

b. Water Table Depth 13.02 d. Casing Diameter 2" f. Calculated Well Volume (see back) 1.49

WELL PURGING DATA

a. Purge Method low flow peristaltic pump

b. Acceptance Criteria defined (from workplan)
- Minimum Required Purge Volume (@ _____ well volumes) _____ N/A Pumping Rate: 150 ml/min.
- Maximum Allowable Turbidity N/A NTUs
- Stabilization of parameters 10 %

c. Field Testing Equipment Used:

Make	Model	Serial Number
~~OAKTON~~	~~PH/CON10~~ YSI	556MPS 09K101305
HACH	~~2100P~~ 2100Q	09120C000390

d. Field Testing Equipment Calibration Documentation Found on Separate Form

Time	Volume Removed ml	T°(C/F)	pH	Spec. Cond (umhos)	TURBIDITY	DTW	Color	ORP	D.O. mg/l
1025	Initial	19.30	5.32	81	39.2	13.03	cloudy	217.4	6.71
1035	2250	19.29	4.21	78	38.9	13.04	cloudy	243.1	6.14
1045	3750	19.35	4.26	75	46.2	13.04	cloudy	233.2	6.14
1055	5,250	19.32	4.20	69	45.9	13.04	cloudy	236.4	6.18
1105	6750	19.42	4.12	69	37.6	13.04	cloudy	239.6	5.90
1115	8,250	19.46	4.17	68	23.6	13.04	clear	236.8	5.82
1125	9,750	19.53	4.18	68	14.8	13.04	clear	232.1	5.86
1130	10500	19.51	4.18	68	9.83	13.04	Clear	231.3	5.84

e. Acceptance criteria pass/fail

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

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: low flow peristaltic pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
4304-GW-25	VOA	3	HCL	8260	1135
4304-GW-25	250 Plastic	1	None	Diss. Metals	1135
4304-GW-25	250 Plastic	1	None	CL,NO3,~~DISS.TOC~~	1135
4304-GW-25	VOA	3	HCL	Diss. Gases	1135
4304-GW-25	250 Plastic	1	~~Diss TOC~~ None	Diss TOC	1135

Comments

Signature Phillip C. Poston Date 4/30/12

Well/Piezo ID: GW-35

Ground Water Sample Collection Record

Client: BRIAN S. BOUTIN, PG
Project No: CENTRAL CAROLINA TIRE, PERMIT #4304
Site Location: CAMERON, NC
Weather Conds: 70s sunny Collector(s) C Poston

Date: ~~4~~ 5 / 1 /12
Time: Start ~~1040~~ 1055 am/pm
Finish 1215 am/pm

WATER LEVEL DATA: (measured from Top of Casing) Well ☐ Piezometer ☐

a. Total Well Length 19.61 c. Casing Material PVC e. Length of Water Column 7.67 (a-b)

b. Water Table Depth 11.94 d. Casing Diameter 2" f. Calculated Well Volume (see back) 1.25

WELL PURGING DATA

a. Purge Method low flow peristaltic pump

b. Acceptance Criteria defined (from workplan)
- Minimum Required Purge Volume (@ _____ well volumes) _____ N/A Pumping Rate: 125 ml/min.
- Maximum Allowable Turbidity N/A NTUs
- Stabilization of parameters 10 %

c. Field Testing Equipment Used:

Make	Model	Serial Number
~~OAKTON~~	~~PH/CON10~~ YSI 556MPS	09K101305
HACH	~~2100P~~ 2100Q	09120C000390

d. Field Testing Equipment Calibration Documentation Found on Separate Form

Time	Volume Removed ml	T° (C/F)	pH	Spec. Cond (umhos)	TURBIDITY	DTW	Color	ORP	D.O. mg/l
1100 ~~1045~~	625	20.45	3.90	61	36.6	11.99	clear	219.6	8.91
1105	1250	20.31	3.74	60	39.7	11.99	clear	225.9	8.24
1110	1875	20.07	3.68	60	42.3	11.99	clear	232.8	7.00
1120	3125	20.06	4.02	59	35.1	12.00	clear	215.5	6.63
1130	4375	19.83	3.97	59	23.7	12.00	clear	222.9	6.45
1140	5625	19.98	4.01	59	14.1	12.00	clear	219.4	6.40
1150	6875	20.06	4.03	59	8.74	12.00	clear	217.2	6.38

pcp

e. Acceptance criteria pass/fail

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

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: low flow peristaltic pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
4304- GW35	VOA	~~2~~ 3	HCL	8260	1155
	250 Plastic	1	None	Diss. Metals	
	250 Plastic	1	None	CL,NO3,~~DISS.TOC~~	
	VOA	3	HCL	Diss. Gases	
	250 P	1	None	Diss TOC	

Comments

Signature Phillip C. Poston Date ~~4~~ 5 / 1 /12

Well/Piezo ID: GW-4S

Ground Water Sample Collection Record

Client: BRIAN S. BOUTIN, PG
Project No: CENTRAL CAROLINA TIRE, PERMIT #4304
Site Location: CAMERON, NC
Weather Conds: P.Cloudy, 80°s Collector(s) A. Hill

Date: 4/30/12
Time: Start 1320 am/pm
Finish 1420 am/pm

WATER LEVEL DATA: (measured from Top of Casing) Well ☒ Piezometer ☐

a. Total Well Length 26.40 c. Casing Material PVC e. Length of Water Column 8.55 (a-b)

b. Water Table Depth 17.85 d. Casing Diameter 2" f. Calculated Well Volume (see back) 1.4

WELL PURGING DATA

a. Purge Method low flow

b. Acceptance Criteria defined (from workplan)
- Minimum Required Purge Volume (@ NA well volumes) _____ N/A Pumping Rate: 200 ml/min.
- Maximum Allowable Turbidity N/A NTUs
- Stabilization of parameters 10 %

c. Field Testing Equipment Used:

Make	Model	Serial Number
OAKTON	PH/CON10	09K01305
HACH	2100P	028078

d. Field Testing Equipment Calibration Documentation Found on Separate Form

Time	Volume Removed ml	T° (C/F)	pH	Spec. Cond (umhos)	TURBIDITY	DTW	Color	ORP	D.O. mg/l
1325	INT	17.34	4.65	46	35.5	17.86	clear	49.6	6.07
1335	3000	18.59	4.11	48	29.2	17.86	clear	58.2	6.69
1345	5000	19.18	3.92	50	21.4	17.86	clear	60.1	7.31
1355	7000	19.25	3.85	50	16.9	17.86	clear	63.2	7.76
1405	9000	18.55	3.85	46	7.9	17.86	clear	69.4	7.52
1410	10000	18.57	3.82	47	6.9	17.86	clear	68.3	7.40

e. Acceptance criteria pass/fail

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

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: pump tubing

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
4304-GW4S	VOA	3	HCL	8260	1415
	250 Plastic	1	None	Diss. Metals	
	250 Plastic	1	None	CL,NO3, ~~DISS.TOC~~	
	VOA	3	HCL	Diss. Gases	
	250 Plastic	1	None	Diss TOC	

Comments

Signature A. Hill Date 4/30/12

Well/Piezo ID: GW-5s

Ground Water Sample Collection Record

Client: BRIAN S. BOUTIN, PG
Project No: CENTRAL CAROLINA TIRE, PERMIT #4304
Site Location: CAMERON, NC
Weather Conds: PCloudy, 70s Collector(s) A.Hill

Date: 4/30/12
Time: Start 1435 am/pm
Finish 1550 am/pm

WATER LEVEL DATA: (measured from Top of Casing) Well ☒ Piezometer ☐

a. Total Well Length 18.22 c. Casing Material PVC e. Length of Water Column 10.85 (a-b)

b. Water Table Depth 7.37 d. Casing Diameter 2" f. Calculated Well Volume (see back) 1.8

WELL PURGING DATA

a. Purge Method low flow

b. Acceptance Criteria defined (from workplan)
- Minimum Required Purge Volume (@ NA well volumes) _____ N/A Pumping Rate: 200 ml/min.
- Maximum Allowable Turbidity N/A NTUs
- Stabilization of parameters 10 %

c. Field Testing Equipment Used:

Make	Model	Serial Number
OAKTON	PH/CON10	09K101305
HACH	2100P	28078

d. Field Testing Equipment Calibration Documentation Found on Separate Form

Time	Volume Removed ml	T° (C/F)	pH	Spec. Cond (umhos)	TURBIDITY	DTW	Color	ORP	D.O. mg/l
1440	INT	17.34	2.91	110	41.0	7.40	clear	183.5	7.65
1445	2000	16.94	3.04	111	38.1	7.40	clear	185.1	6.69
1450	3000	16.79	3.16	112	33.3	7.40	clear	186.3	6.33
1520	9000	16.86	2.89	93	9.4	7.40	clear	170.6	5.48
1525	10000	16.72	2.89	92	8.7	7.40	clear	170.6	5.72
1530	11000	16.69	2.90	92	8.5	7.40	clear	170.4	5.80
1535	12000	16.66	2.90	92	8.1	7.40	clear	170.3	5.83

e. Acceptance criteria pass/fail

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

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: Pump Tubing

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
4304-GW5s	VOA	2	HCL	8260	1550
	250 Plastic	1	None	Diss. Metals	
	250 Plastic	1	None	CL,NO3,~~DISS.TOC~~	
	VOA	3	HCL	Diss. Gases	
	250 ml(P)	1	None	Diss TOC	

Comments

Signature [signature] Date 4/30/12

Well/Piezo ID: GW-65

Ground Water Sample Collection Record

Client: BRIAN S. BOUTIN, PG
Project No: CENTRAL CAROLINA TIRE, PERMIT #4304
Site Location: CAMERON, NC
Weather Conds: 70s Sunny Collector(s) ~~70s Sunny~~ C. Poston

Date: 4/30/12
Time: Start 1355 am/pm
Finish 1545 am/pm

WATER LEVEL DATA: (measured from Top of Casing) Well ☐ Piezometer ☐

a. Total Well Length 20.94 c. Casing Material PVC e. Length of Water Column 7.85 (a-b)

b. Water Table Depth 13.09 d. Casing Diamete r 2" f. Calculated Well Volume (see back) 1.27

WELL PURGING DATA

a. Purge Method low flow peristaltic pump

b. Acceptance Criteria defined (from workplan)
- Minimum Required Purge Volume (@ _____ well volumes) _____ N/A Pumping Rate: 100 ml/min.
- Maximum Allowable Turbidity N/A NTUs
- Stabilization of parameters 10 %

c. Field Testing Equipment Used:

Make	Model	Serial Number
~~OAKTON~~	~~PH/CON10~~ YSI	556MPS 09K101305
HACH	~~2100P~~ 2100Q	09120C000390

d. Field Testing Equipment Calibration Documentation Found on Separate Form

Time	Volume Removed ml	T° (C/F)	pH	Spec. Cond (umhos)	TURBIDITY	DTW	Color	ORP	D.O. mg/l
1400	500	23.84	4.76	157	29.8	13.19	cloudy	162.6	13.09
1410	1500	24.14	4.69	159	34.8	13.19	cloudy	181.3	4.43
1420	2500	23.76	4.63	160	35.6	13.19	cloudy	190.6	4.47
1430	3500	23.79	4.63	160	34.5	13.20	cloudy	191.8	4.19
1440	4500	23.76	4.64	160	32.8	13.20	cloudy	193.0	4.13
1500	7500	24.60	4.65	161	21.7	13.20	cloudy	192.5	3.86
1510	8500	25.14	4.65	161	15.3	13.20	clear	188.5	3.79
1520	9500	25.23	4.65	161	9.28	13.20	clear	186.9	3.73

e. Acceptance criteria pass/fail

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

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: low flow peristaltic pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
4304- GW-65	VOA	3 ~~23~~	HCL	8260	1525
4304-GW-65	250 Plastic	1	None	Diss. Metals	1525
4304-GW-65	250 Plastic	1	None	CL,NO3,~~DISS.TOC~~	1525
4304-GW-65	VOA	3	HCL	Diss. Gases	1525
4304-GW-65	250 Plastic	1	None	Diss TOC	1525

Comments

Signature Phillip C. Poston Date 4/30/12

Well/Piezo ID: GW-7S

Ground Water Sample Collection Record

Client: BRIAN S. BOUTIN, PG
Project No: CENTRAL CAROLINA TIRE, PERMIT #4304
Site Location: CAMERON, NC
Weather Conds: 60s cloudy Collector(s) C. Poston

Date: 5/1/12
Time: Start 0715 am/pm
Finish 0905 am/pm

WATER LEVEL DATA: (measured from Top of Casing) Well ☐ Piezometer ☐

a. Total Well Length 19.06 c. Casing Material PVC e. Length of Water Column 8.35 (a-b)

b. Water Table Depth 10.71 d. Casing Diamete r 2" f. Calculated Well Volume (see back) 1.36

WELL PURGING DATA

a. Purge Method low flow peristaltic pump

b. Acceptance Criteria defined (from workplan)
- Minimum Required Purge Volume (@ _____ well volumes) _____ N/A Pumping Rate: 150 ml/min.
- Maximum Allowable Turbidity N/A NTUs
- Stabilization of parameters 10 %

c. Field Testing Equipment Used:

Make	Model	Serial Number
~~OAKTON~~	~~PH/CON10~~ YSI 556 MPS	09K101305
HACH	~~2100P~~ 2100Q	09120C006390

d. Field Testing Equipment Calibration Documentation Found on Separate Form

Time	Volume Removed ml	T° (C)(F)	pH	Spec. Cond (umhos)	TURBIDITY	DTW	Color	ORP	D.O. mg/l	
0720	750	18.14	5.41	50	63.2	10.71	cloudy	509.1	9.39	
0740	3750	18.21	4.03	48	52.7	10.71	cloudy	354.7	7.45	
0800	6750	18.29	3.82	48	39.4	10.71	cloudy	283.1	6.97	
0815	9000	18.33	3.86	47	26.8	10.71	clear	261.7	6.85	
0830	11250	18.40	3.86	47	19.1	10.71	Clear	258.4	6.84	
0840	12750	18.41	3.87	47	13.4	10.71	Clear	256.9	6.83	
0845	13500	18.43	3.88	47	9.38	10.71	Clear	255.1	6.81	pcp

e. Acceptance criteria pass/fail

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

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: low flow peristaltic pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
4304-GW7S	VOA	~~2~~ 3	HCL	8260	0850
4304-GW7S	250 Plastic	1	None	Diss. Metals	0850
4304-GW7S	250 Plastic	1	None	CL,NO3, ~~DISS.TOC~~	0850
4304-GW7S	VOA	3	HCL	Diss. Gases	0850
4304-GW7S	250 Plastic	1	None	Diss TOC	0850

Comments

Signature Phillip C. Poston Date 5/1/12

Well/Piezo ID: GW-8D

Ground Water Sample Collection Record

Client: BRIAN S. BOUTIN, PG
Project No: CENTRAL CAROLINA TIRE, PERMIT #4304
Site Location: CAMERON, NC
Weather Conds: SUNNY 71° Collector(s) JEFF LEAVER

Date: 4/30/12
Time: Start 1110 am/pm
Finish 1137 am/pm

WATER LEVEL DATA: (measured from Top of Casing) Well ☑ Piezometer ☐

a. Total Well Length 41.45 c. Casing Material PVC e. Length of Water Column 6.31 (a-b)

b. Water Table Depth 35.14 d. Casing Diameter 2" f. Calculated Well Volume (see back) 1.03

WELL PURGING DATA

a. Purge Method 3 VOLUME

b. Acceptance Criteria defined (from workplan)
- Minimum Required Purge Volume (@ 3 well volumes) 3.1 ~~N/A~~ Pumping Rate: N/A ml/min.
- Maximum Allowable Turbidity N/A NTUs
- Stabilization of parameters 10 %

c. Field Testing Equipment Used:

Make	Model	Serial Number
OAKTON	PH/CON10	10ff00442
HACH	2100P	28078

d. Field Testing Equipment Calibration Documentation Found on Separate Form

Time	Volume Removed ml	T° (C/F)	pH	Spec. Cond (umhos)	TURBIDITY	DTW	Color	ORP	D.O. mg/l
1115	INITIAL	17.86	6.51	141	90.2	—	CLOUDY	54.7	7.31
1122	0.75	17.37	6.22	150	624.9	—	WHITE	84.1	7.44
1130	1.50	17.29	6.04	154	1,000+	—	LT. BROWN	90.5	7.70
1133	DRY	—	—	—	—	—	—	—	—
5/1/12 0810	—	—	—	—	—	38.00	—	—	—

e. Acceptance criteria pass/fail

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

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: HAND BAILED / DISPOSABLE BAILER

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
4304-GW8D	VOA	2	HCL	8260	0944 5/1/12
	250 Plastic	1	None	Diss. Metals	
	250 Plastic	2	None	CL,NO3,DISS.TOC	
	VOA	3	HCL	Diss. Gases	

Comments SOFT BOTTOM, WELL WENT DRY AT 1.5 GALLONS, ALLOW WELL TO RECHARGE THEN SAMPLE.

Signature Jeff Leaver Date 4/30/12

Well/Piezo ID: GW-1D

Ground Water Sample Collection Record

Client: BRIAN S. BOUTIN, PG
Project No: CENTRAL CAROLINA TIRE, PERMIT #4304
Site Location: CAMERON, NC
Weather Conds: SUNNY 76° Collector(s) JEFF LEAVER

Date: 4/30/12
Time: Start 1150 am/pm
Finish 1210 am/pm

WATER LEVEL DATA: (measured from Top of Casing) Well ☒ Piezometer ☐

a. Total Well Length 42.95 c. Casing Material PVC e. Length of Water Column 3.97 (a-b)

b. Water Table Depth 38.98 d. Casing Diamete r 2" f. Calculated Well Volume (see back) 0.65

WELL PURGING DATA

a. Purge Method 3 VOLUME

b. Acceptance Criteria defined (from workplan)
- Minimum Required Purge Volume (@ 3 well volumes) 1.94 ~~N/A~~ Pumping Rate: N/A ml/min.
- Maximum Allowable Turbidity N/A NTUs
- Stabilization of parameters 10 %

c. Field Testing Equipment Used:

Make	Model	Serial Number
OAKTON	PH/CON10	10H100442
HACH	2100P	28078

d. Field Testing Equipment Calibration Documentation Found on Separate Form

Time	Volume Removed ml	T° (C/F)	pH	Spec. Cond (umhos)	TURBIDITY	DTW	Color	ORP	D.O. mg/l
1153	INITIAL	18.02	4.02	164	31.7	—	CLEAR	67.2	6.96
1200	0.75	18.36	3.94	160	1,000+	—	LT. BROWN	78.7	7.17
1204	DRY	—	—	—	—	—	—	—	—
5/1/12 0802	—	—	—	—	—	41.75	—	—	—

e. Acceptance criteria pass/fail

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

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: HAND BAIL / DISPOSABLE BAILER

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
4304- GW1D	VOA	2	HCL	8260	0900 5/1/12
	250 Plastic	1	None	Diss. Metals	
	250 Plastic	1	None	CL,NO3,DISS.TOC	
	VOA	2	HCL	Diss. Gases	

Comments WELL WENT DRY AT 0.75 GALLONS, ALLOW WELL TO RECHARGE OVERNIGHT THEN SAMPLE.

Signature Jeff Leaver Date 4/30/12

Well/Piezo ID: GW-20

Ground Water Sample Collection Record

Client: BRIAN S. BOUTIN, PG
Project No: CENTRAL CAROLINA TIRE, PERMIT #4304
Site Location: CAMERON, NC
Weather Conds: SUNNY 82° Collector(s) JEFF LEAVER

Date: 4/30/12
Time: Start 1404 am/pm
Finish 1425 am/pm

WATER LEVEL DATA: (measured from Top of Casing) Well ☑ Piezometer ☐

a. Total Well Length 52.80 c. Casing Material PVC e. Length of Water Column 3.66 (a-b)

b. Water Table Depth 49.14 d. Casing Diamete r 2" f. Calculated Well Volume (see back) 0.60

WELL PURGING DATA

a. Purge Method 3 VOLUME

b. Acceptance Criteria defined (from workplan)
- Minimum Required Purge Volume (@ _____ well volumes) 1.8 ~~N/A~~ Pumping Rate: N/A ml/min.
- Maximum Allowable Turbidity N/A NTUs
- Stabilization of parameters 10 %

c. Field Testing Equipment Used:

Make	Model	Serial Number
OAKTON	PH/CON10	104100442
HACH	2100P	28078

d. Field Testing Equipment Calibration Documentation Found on Separate Form

	Time	Volume Removed ml	T° (C/F)	pH	Spec. Cond (umhos)	TURBIDITY	DTW	Color	ORP	D.O. mg/l
	1410	INITIAL	18.94	4.76	179	320.7	—	WHITE	43.3	6.70
	1416	0.75	18.05	5.04	168	1,000+	—	LT. BROWN	41.0	6.28
	1420	DRY	—	—	—	—	—	—	—	—
5/1/12	0824	—	—	—	—	—	57.31	—	—	—

e. Acceptance criteria pass/fail

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

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: HAND BAIL / DISPOSABLE BAILER

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
4304-GW20	VOA	2	HCL	8260	1048 5/1/12
	250 Plastic	1	None	Diss. Metals	
	250 Plastic	2	None	CL,NO3,DISS.TOC	
	VOA	3	HCL	Diss. Gases	

Comments WELL WENT DRY AT 0.75 GALLONS, ALLOW WELL TO RECHARGE OVERNIGHT THEN SAMPLE.

Signature Jeff Leaver Date 4/30/12

Well/Piezo ID: GW-3D

Ground Water Sample Collection Record

Client: BRIAN S. BOUTIN, PG
Project No: CENTRAL CAROLINA TIRE, PERMIT #4304
Site Location: CAMERON, NC
Weather Conds: SUNNY 78° Collector(s) JEFF LEAVER

Date: 4/30/12
Time: Start 1300 am/pm
Finish 1317 am/pm

WATER LEVEL DATA: (measured from Top of Casing) Well ☑ Piezometer ☐

a. Total Well Length 52.50
b. Water Table Depth 48.50
c. Casing Material PVC
d. Casing Diameter 2"
e. Length of Water Column 4.00 (a-b)
f. Calculated Well Volume (see back) 0.65

WELL PURGING DATA

a. Purge Method 3 VOLUME

b. Acceptance Criteria defined (from workplan)
- Minimum Required Purge Volume (@ 3 well volumes) 2.0 ~~N/A~~ Pumping Rate: N/A ml/min.
- Maximum Allowable Turbidity N/A NTUs
- Stabilization of parameters 10 %

c. Field Testing Equipment Used:

Make	Model	Serial Number
OAKTON	PH/CON10	104100442
HACH	2100P	28078

d. Field Testing Equipment Calibration Documentation Found on Separate Form

Time	Volume Removed ml	T° (C/F)	pH	Spec. Cond (umhos)	TURBIDITY	DTW	Color	ORP	D.O. mg/l
1303	INITIAL	18.52	5.29	122	87.5	—	CLOUDY	40.1	7.19
1308	0.75	17.80	3.91	86	1,000+	—	WHITE	67.9	7.64
1312	DRY	—	—	—	—	—	—	—	—
5/1/12 0820	—	—	—	—	—	57.31	—	—	—

e. Acceptance criteria pass/fail

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

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: HAND BAIL / DISPOSABLE BAILER

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
4304- GW3D	VOA	2	HCL	8260	1030 5/1/12
↓	250 Plastic	1	None	Diss. Metals	↓
	250 Plastic	1	None	CL,NO3,DISS.TOC	
↓	VOA	2	HCL	Diss. Gases	↓

Comments WELL WENT DRY AT 0.75 GALLONS, ALLOW WELL TO RECHARGE OVERNIGHT THEN SAMPLE.

Signature Jeff Leaver Date 4/30/12

Well/Piezo ID: GW-4D

Ground Water Sample Collection Record

Client: BRIAN S. BOUTIN, PG
Project No: CENTRAL CAROLINA TIRE, PERMIT #4304
Site Location: CAMERON, NC
Weather Conds: SUNNY 75° Collector(s) JEFF LEAVER

Date: 4/30/12
Time: Start 1230 am/pm
Finish 1249 am/pm

WATER LEVEL DATA: (measured from Top of Casing) Well ☑ Piezometer ☐

a. Total Well Length 45.35 c. Casing Material PVC e. Length of Water Column 2.21 (a-b)

b. Water Table Depth 43.14 d. Casing Diameter 2" f. Calculated Well Volume (see back) 0.36

WELL PURGING DATA

a. Purge Method 3 VOLUME

b. Acceptance Criteria defined (from workplan)
- Minimum Required Purge Volume (@ 3 well volumes) 1.1 ~~N/A~~ Pumping Rate: N/A ml/min.
- Maximum Allowable Turbidity N/A NTUs
- Stabilization of parameters 10 %

c. Field Testing Equipment Used:

Make	Model	Serial Number
OAKTON	PH/CON10	10H100442
HACH	2100P	28078

d. Field Testing Equipment Calibration Documentation Found on Separate Form

Time	Volume Removed ml	T° (C/F)	pH	Spec. Cond (umhos)	TURBIDITY	DTW	Color	ORP	D.O. mg/l
1234	INITIAL	19.56	7.19	180	277.4	—	WHITE	-2.2	7.04
1240	0.40	18.10	7.60	175	1,000+	—	WHITE	-10.7	6.70
1245	DRY	—	—	—	—	—	—	—	—
5/1/12 0815	—	—	—	—	—	44.12	—	—	—

e. Acceptance criteria pass/fail

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

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: HAND BAILED / DISPOSABLE BAILER

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
4304-GW4D	VOA	2	HCL	8260	1000 5/1/12
	250 Plastic	1	None	Diss. Metals	
	250 Plastic	1	None	CL,NO3,DISS.TOC	
	VOA	2	HCL	Diss. Gases	

Comments WELL WENT DRY AT 0.40 GALLONS, ALLOW WELL TO RECHARGE OVERNIGHT THEN SAMPLE.

Signature Jeff Leaver Date 4/30/12

Well/Piezo ID: GW-5D

Ground Water Sample Collection Record

Client: BRIAN S. BOUTIN, PG
Project No: CENTRAL CAROLINA TIRE, PERMIT #4304
Site Location: CAMERON, NC
Weather Conds: SUNNY 80° Collector(s) JEFF LEAVER

Date: 4/30/12
Time: Start 1330 am/pm
Finish 1354 am/pm

WATER LEVEL DATA: (measured from Top of Casing) Well ☑ Piezometer ☐

a. Total Well Length 51.45 c. Casing Material PVC e. Length of Water Column 3.43 (a-b)

b. Water Table Depth 48.02 d. Casing Diameter 2" f. Calculated Well Volume (see back) 0.56

WELL PURGING DATA

a. Purge Method 3 VOLUME

b. Acceptance Criteria defined (from workplan)
- Minimum Required Purge Volume (@ 3 well volumes) 1.68 ~~N/A~~ Pumping Rate: N/A ml/min.
- Maximum Allowable Turbidity N/A NTUs
- Stabilization of parameters 10 %

c. Field Testing Equipment Used:

Make	Model	Serial Number
OAKTON	PH/CON10	10H100442
HACH	2100P	28078

d. Field Testing Equipment Calibration Documentation Found on Separate Form

Time	Volume Removed ml	T° (C/F)	pH	Spec. Cond (umhos)	TURBIDITY	DTW	Color	ORP	D.O. mg/l
1336	INITIAL	18.67	4.20	124	27.9	—	CLEAR	40.0	4.71
1344	0.50	17.82	3.91	124	4,000+	—	LT. BROWN	53.1	6.29
1350	DRY	—	—	—	—	—	—	—	—
5/1/12 0817	—	—	—	—	—	50.36	—	—	—

e. Acceptance criteria pass/fail

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

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: HAND BAIL / DISPOSABLE BAILER

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
4304-GW5D	VOA	3	HCL	8260	1014 5/1/12
	250 Plastic	1	None	Diss. Metals	
	250 Plastic	1	None	CL,NO3,DISS.TOC	
	VOA	3	HCL	Diss. Gases	

Comments WELL WENT DRY AT 0.50 GALLONS, ALLOW WELL TO RECHARGE OVERNIGHT THEN SAMPLE.

Signature Jeff Leaver Date 4/30/12

Well/Piezo ID: GW-6D

Ground Water Sample Collection Record

Client: BRIAN S. BOUTIN, PG
Project No: CENTRAL CAROLINA TIRE, PERMIT #4304
Site Location: CAMERON, NC
Weather Conds: Cloudy 67° Collector(s) JEFF LEAVER

Date: 4/30/12
Time: Start 0950 am/pm
Finish 1020 am/pm

WATER LEVEL DATA: (measured from Top of Casing) Well ☒ Piezometer ☐

a. Total Well Length 54.00 c. Casing Material PVC e. Length of Water Column 7.73 (a-b)

b. Water Table Depth 46.27 d. Casing Diameter 2" f. Calculated Well Volume (see back) 1.26

WELL PURGING DATA

a. Purge Method 3 volume

b. Acceptance Criteria defined (from workplan)
- Minimum Required Purge Volume (@ 3 well volumes) 3.78 ~~N/A~~ Pumping Rate: N/A ml/min.
- Maximum Allowable Turbidity N/A NTUs
- Stabilization of parameters 10 %

c. Field Testing Equipment Used:

Make	Model	Serial Number
OAKTON	PH/CON10	10H100442
HACH	2100P	28078

d. Field Testing Equipment Calibration Documentation Found on Separate Form

Time	Volume Removed ml	T° (C/F)	pH	Spec. Cond (umhos)	TURBIDITY	DTW	Color	ORP	D.O. mg/l
0954	INITIAL	18.47	6.67	152	71.4	—	CLOUDY	54.2	5.77
1000	0.75	18.11	6.80	150	590.6	—	WHITE	52.8	6.40
1010	1.50	18.00	6.84	149	1,000+	—	WHITE	50.6	6.91
1016	DRY	—	—	—	—	—	—	—	—
5/1/12 0807	—	—	—	—	—	50.45	—	—	—

e. Acceptance criteria pass/fail

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

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: HAND BAILED / DISPOSABLE BAILER

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
4304-GW6D	VOA	2	HCL	8260	0912 5/1/12
	250 Plastic	1	None	Diss. Metals	
	250 Plastic	2	None	CL,NO3,DISS.TOC	
	VOA	3	HCL	Diss. Gases	

Comments WELL WENT DRY AT 1.5 GALLONS, ALLOW WELL TO RECHARGE OVERNIGHT THEN SAMPLE.

Signature Jeff Leaver Date 4/30/12

Well/Piezo ID: GW-7D

Ground Water Sample Collection Record

Client: BRIAN S. BOUTIN, PG
Project No: CENTRAL CAROLINA TIRE, PERMIT #4304
Site Location: CAMERON, NC
Weather Conds: P. SUNNY 78° Collector(s) JEFF LEAVER

Date: 4/30/12
Time: Start 1035 am/pm
Finish 1102 am/pm

WATER LEVEL DATA: (measured from Top of Casing) Well ☑ Piezometer ☐

a. Total Well Length 47.50 c. Casing Material PVC e. Length of Water Column 4.43 (a-b)

b. Water Table Depth 43.07 d. Casing Diameter 2" f. Calculated Well Volume (see back) 0.72

WELL PURGING DATA

a. Purge Method 3 VOLUME

b. Acceptance Criteria defined (from workplan)
- Minimum Required Purge Volume (@ 3 well volumes) 2.16 ~~N/A~~ Pumping Rate: N/A ml/min.
- Maximum Allowable Turbidity N/A NTUs
- Stabilization of parameters 10 %

c. Field Testing Equipment Used:

Make	Model	Serial Number
OAKTON	PH/CON10	10H100442
HACH	2100P	28078

d. Field Testing Equipment Calibration Documentation Found on Separate Form

Time	Volume Removed ml	T° (C/F)	pH	Spec. Cond (umhos)	TURBIDITY	DTW	Color	ORP	D.O. mg/l
1039	INITIAL	17.60	7.54	176	111.0	—	CLOUDY	18.9	5.11
1046	0.5	17.20	7.43	160	1,000+	—	WHITE	13.2	4.80
1055	0.75	17.16	7.40	154	1,000+	—	LT. BROWN	12.6	4.97
1057	DRY	—	—	—	—	—	—	—	—
5/1/12 0800	—	—	—	—	—	45.40	—	—	—

e. Acceptance criteria pass/fail

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

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: HAND BAILER / DISPOSABLE BAILER

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
4304-GW7D	VOA	2	HCL	8260	09:30 5/1/12
	250 Plastic	1	None	Diss. Metals	
	250 Plastic	2	None	CL,NO3,DISS.TOC	
	VOA	3	HCL	Diss. Gases	

Comments WELL WENT DRY AT 0.75 GALLONS, ALLOW WELL TO RECHARGE OVERNIGHT THEN SAMPLE

Signature Jeff Leaver Date 4/30/12

Well/Piezo ID: MW-8

Ground Water Sample Collection Record

Client: BRIAN S. BOUTIN, PG
Project No: CENTRAL CAROLINA TIRE, PERMIT #4304
Site Location: CAMERON, NC
Weather Conds: 70s sunny Collector(s) C. Poston

Date: ~~4~~ 5 / 1 /12
Time: Start 0915 am/pm
Finish 1035 am/pm

WATER LEVEL DATA: (measured from Top of Casing) Well ☐ Piezometer ☐

a. Total Well Length 20.00 c. Casing Material PVC e. Length of Water Column 12.98 (a-b)

b. Water Table Depth 7.02 d. Casing Diameter 2" f. Calculated Well Volume (see back) 2.11

WELL PURGING DATA

a. Purge Method low flow peristaltic pump

b. Acceptance Criteria defined (from workplan)
- Minimum Required Purge Volume (@ _____ well volumes) _____ N/A Pumping Rate: 100 ml/min.
- Maximum Allowable Turbidity N/A NTUs
- Stabilization of parameters 10 %

c. Field Testing Equipment Used:

Make	Model	Serial Number
~~OAKTON~~	~~PH/CON10~~ YSI 556MPS	09K101305
HACH	~~2100P~~ 2100Q	09120C000390

d. Field Testing Equipment Calibration Documentation Found on Separate Form

Time	Volume Removed ml	T° (C/F)	pH	Spec. Cond (umhos)	TURBIDITY	DTW	Color	ORP	D.O. mg/l
0920	500	21.32	4.31	57	42.8	07.11	cloudy	221.5	5.34
0945	3000	21.92	4.32	57	22.4	07.12	clear	220.8	3.98
0950	3500	22.54	4.34	57	17.3	07.12	clear	218.9	3.99
0955	4000	22.71	4.35	57	12.7	07.12	clear	216.6	4.01
1000	4500	22.78	4.34	57	11.4	07.12	clear	216.7	4.03
1005	5000	22.89	4.33	57	9.91	07.12	clear	216.9	4.05

PSP

e. Acceptance criteria pass/fail

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

If no or N/A - Explain below.

SAMPLE COLLECTION: Method: low flow peristaltic pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time
4304-MW8	VOA	~~2~~ 3	HCL	8260	1010
	250 Plastic	1	None	Diss. Metals	
	250 Plastic	1	None	CL,NO3,~~DISS.TOC~~	
	VOA	3	HCL	Diss. Gases	
	250 Plastic	1	None	Diss TOC	

Comments

Signature Phillip C Poston Date ~~4~~ 5 / 1 /12

APPENDIX G

Site and Surrounding Property Ownership Information

HARNETT COUNTY, NORTH CAROLINA

GIS/LAND RECORDS

AddressPoints

Roads

MajorRoads

Rivers

Parcels

County_Boundary

CityLimits

Fort_Bragg_Camp_McCa

Red: Band_1

Green: Band_2

Blue: Band_3

Harnett.sid

Red: Band_1

Green: Band_2

Blue: Band_3

Harnett County GIS
305 W Cornelius Harnett Blvd, Suite 100
Lillington NC 27546
Phone: 910-893-7523 www.harnett.org

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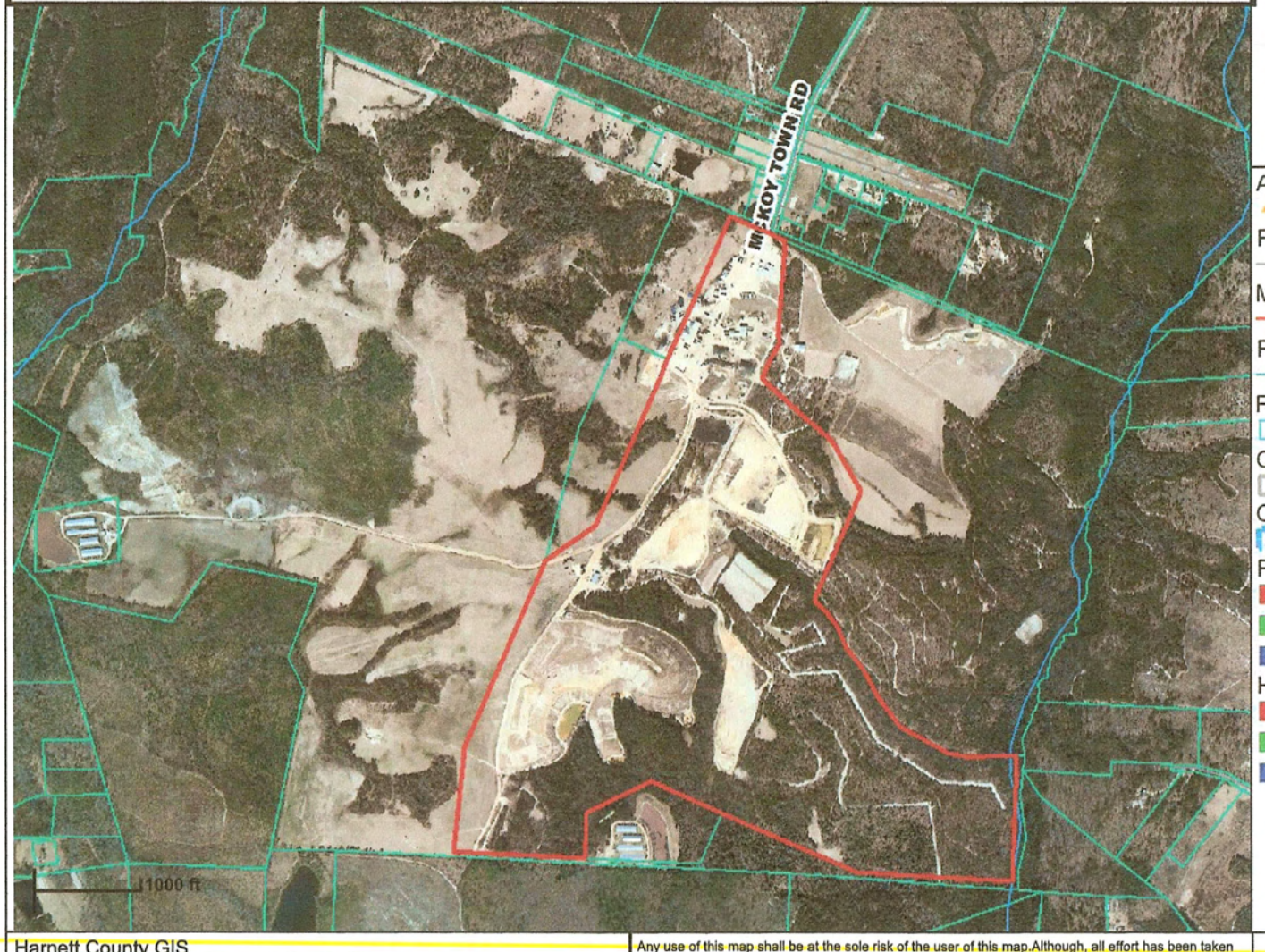
HARNETT COUNTY, NORTH CAROLINA

GIS/LAND RECORDS



AddressPoints

Roads

MajorRoads

Rivers

Parcels

County_Boundary

CityLimits

Fort_Bragg_Camp_McCa

Red: Band_1

Green: Band_2

Blue: Band_3

Harnett.sid

Red: Band_1

Green: Band_2

Blue: Band_3

Harnett County GIS
305 W Cornelius Harnett Blvd, Suite 100
Lillington NC 27546
Phone: 910-893-7523 www.harnett.org

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Harnett COUNTY NORTH CAROLINA
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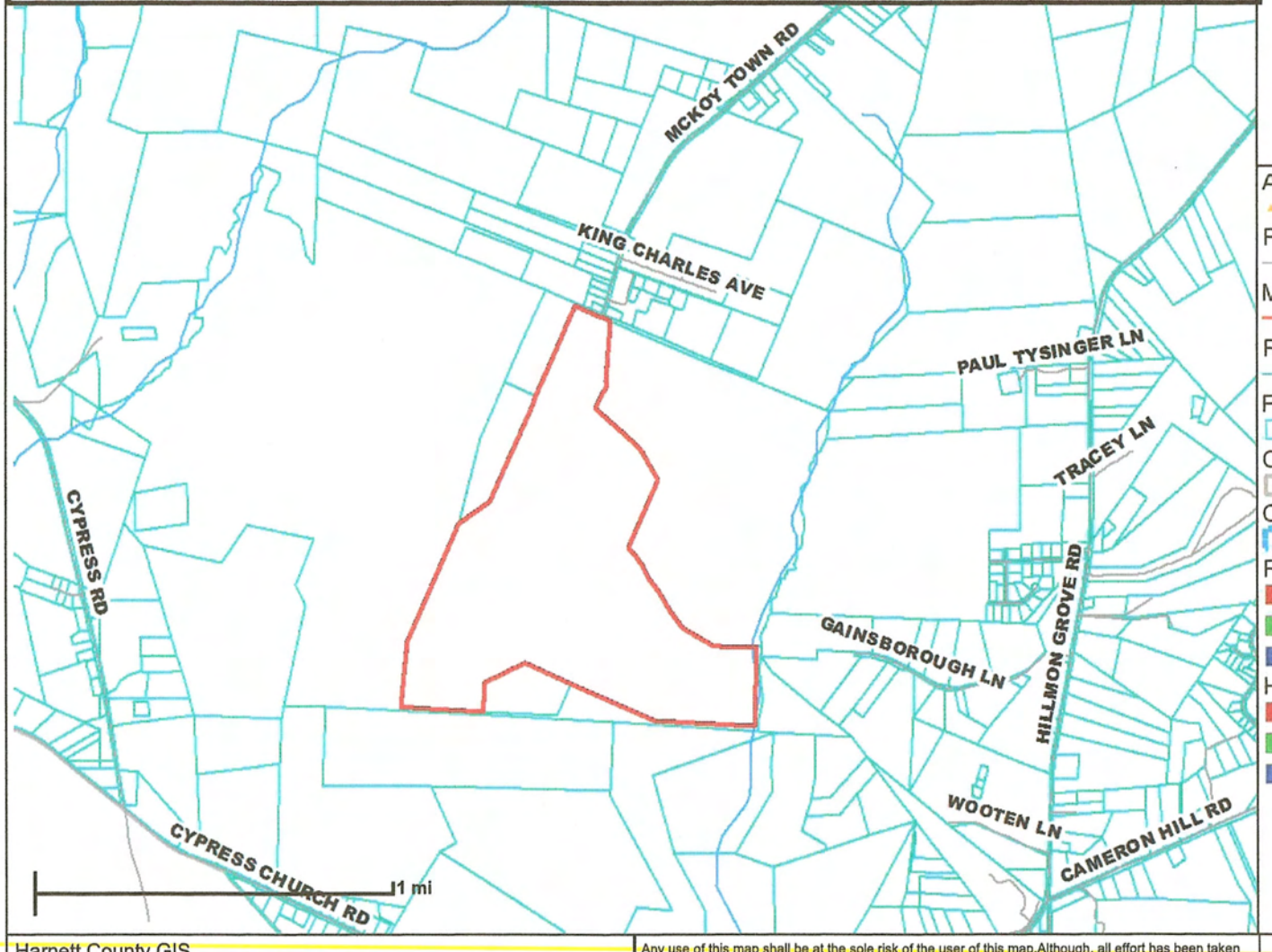
HARNETT COUNTY, NORTH CAROLINA

GIS/LAND RECORDS



AddressPoints

Roads

MajorRoads

Rivers

Parcels

County_Boundary

CityLimits

Fort_Bragg_Camp_McCa

Red: Band_1

Green: Band_2

Blue: Band_3

Harnett.sid

Red: Band_1

Green: Band_2

Blue: Band_3

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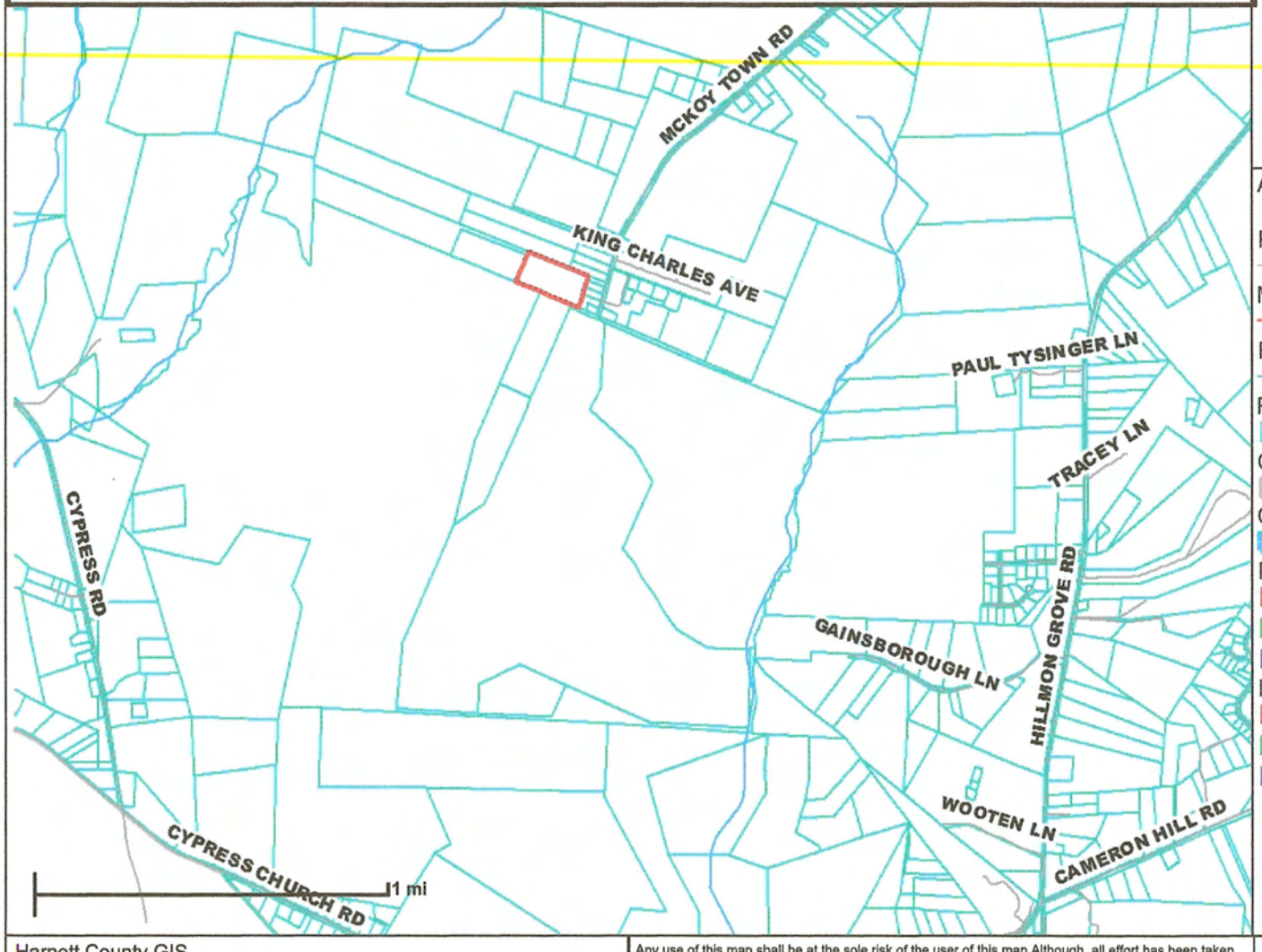
Selected Parcel Feature

PIN	9554-48-4293.000
PID	099555 0035 01
[REID]	0038188
OWNER INFORMATION	
[AccountNumber]	1400024472
[Name1]	CENTRAL CAROLINA HOLDINGS LLC
[Name2]	
[Address1]	
[Address2]	1616 MCKOY TOWN RD
[Address3]	
[City]	CAMERON
[State]	NC
[ZipCode]	28326-0000
ASSESSMENT INFORMATION	
[ParcelBuildingValue]	615560
[ParcelObxfValue]	60560
[ParcelLandValue]	1290940
[TotalAssessedValue]	1967060
PARCEL INFORMATION	
[HouseNumber]	001616
[UnitNumber]	
[StreetDirection]	
[StreetName]	MCKOY TOWN
[StreetType]	RD
[StreetSuffix]	
[ParCity]	
[LegalDescription]	344.25AC CENTRAL CAROLINAMAP#2005-539
[LegalLandUnits]	344.25
[LegalLandType]	AC
[PlatBook]	2005
[PlatPage]	0539
STRUCTURE INFORMATION	
[ActualYearBuilt]	1991
[ActualAreaHeated]	910
SALES INFORMATION	
[DeedBook]	02177
[DeedPage]	0375
[DeedDate]	2006-01-09 19:00:00
[SalePrice]	533000
PARCEL LINKS	
PRC	Click here for 099555 0035 01
ZONING OVERLAY	Click here for 099555 0035 01
SOILS OVERLAY	Click here for 099555 0035 01

HARNETT COUNTY, NORTH CAROLINA

GIS/LAND RECORDS



AddressPoints

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Rivers

Parcels

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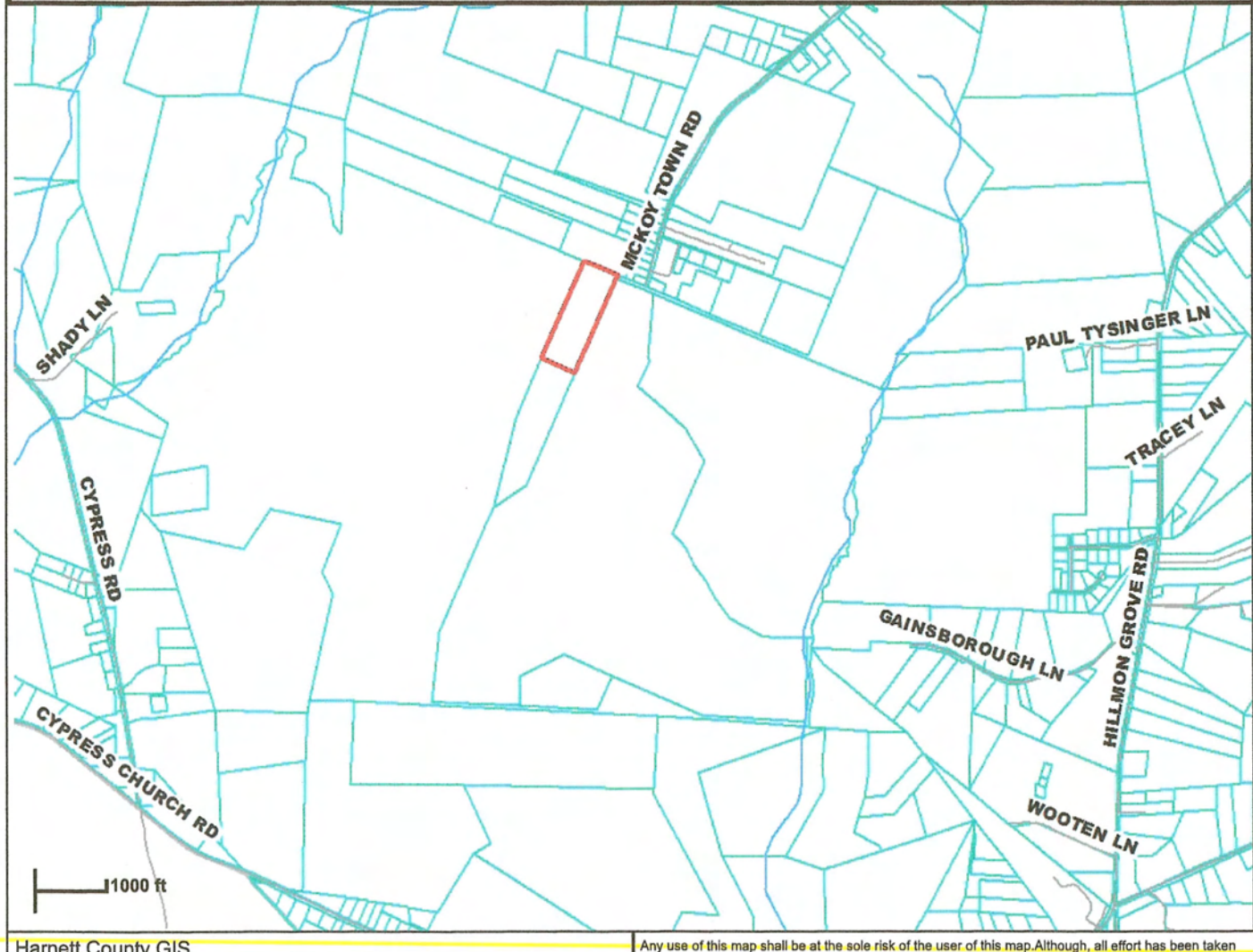
Selected Parcel Feature	
PIN	9555-41-5747.000
PID	099555 0032 05
[REID]	0067381
OWNER INFORMATION	
[AccountNumber]	1305982000
[Name1]	WOMBLE THOMAS A & WIFE
[Name2]	WOMBLE DIANE T &
[Address1]	
[Address2]	385 A C MORRISON RD
[Address3]	
[City]	LILLINGTON
[State]	NC
[ZipCode]	27546-0000
ASSESSMENT INFORMATION	
[ParcelBuildingValue]	
[ParcelObxfValue]	
[ParcelLandValue]	26500
[TotalAssessedValue]	26500
PARCEL INFORMATION	
[HouseNumber]	
[UnitNumber]	
[StreetDirection]	
[StreetName]	MCKOY TOWN
[StreetType]	RD
[StreetSuffix]	
[ParCity]	
[LegalDescription]	10.60AC TIMOTHY B MCNEILLMAP#2007-290
[LegalLandUnits]	10.6
[LegalLandType]	AC
[PlatBook]	2007
[PlatPage]	0290
STRUCTURE INFORMATION	
[ActualYearBuilt]	
[ActualAreaHeated]	
SALES INFORMATION	
[DeedBook]	02360
[DeedPage]	0880
[DeedDate]	2007-04-03 20:00:00
[SalePrice]	
PARCEL LINKS	
PRC	Click here for 099555 0032 05
ZONING OVERLAY	Click here for 099555 0032 05
SOILS OVERLAY	Click here for 099555 0032 05

HARNETT COUNTY, NORTH CAROLINA

GIS/LAND RECORDS



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Roads

MajorRoads

Rivers

Parcels

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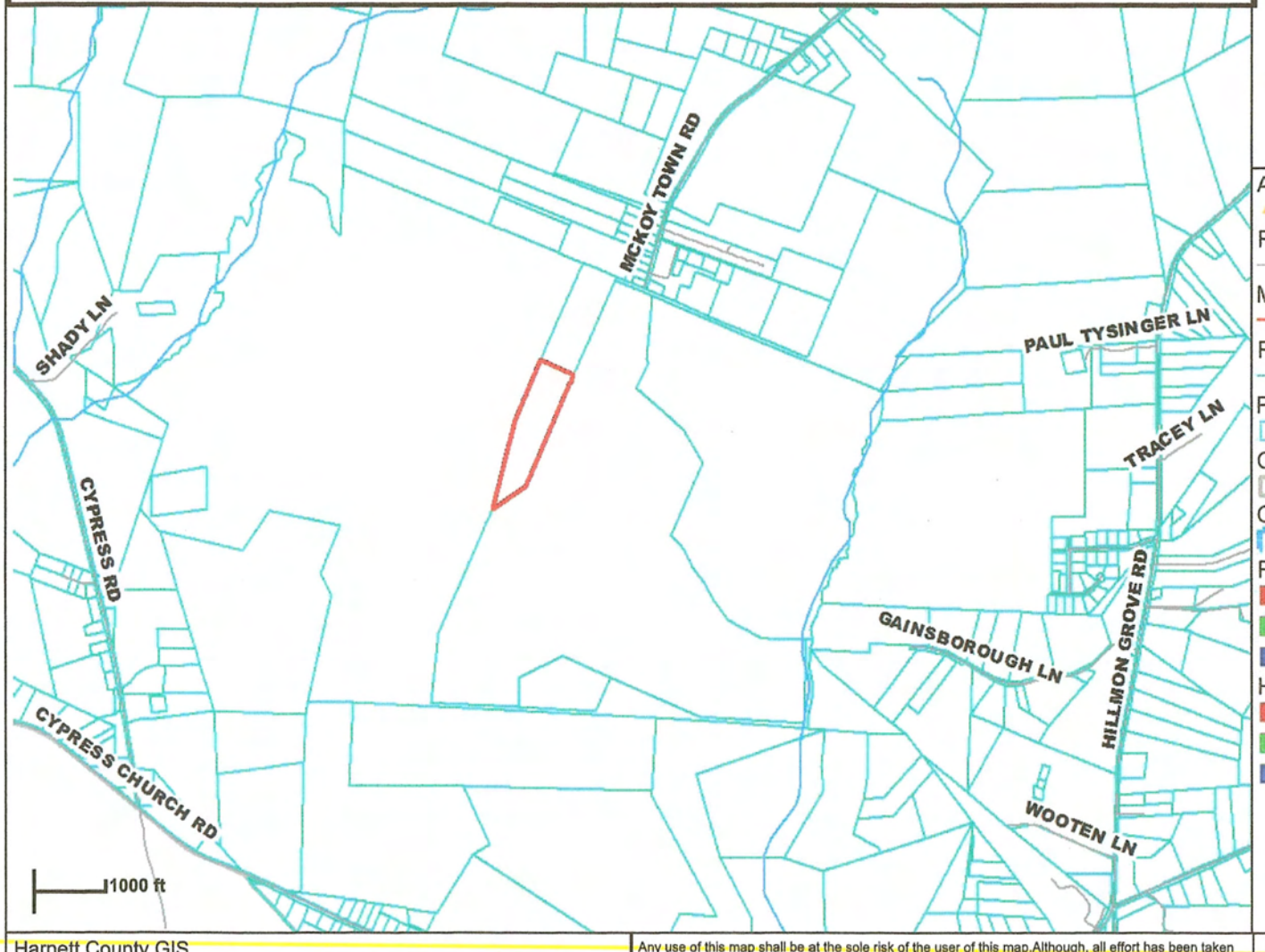
Selected Parcel Feature	
PIN	9555-40-2892.000
PID	099555 0035 08
[REID]	
OWNER INFORMATION	
[AccountNumber]	1400008596
[Name1]	WOMBLE DIANE T
[Name2]	
[Address1]	
[Address2]	1616 MCKOY TOWN ROAD
[Address3]	
[City]	CAMERON
[State]	NC
[ZipCode]	28326-0000
ASSESSMENT INFORMATION	
[ParcelBuildingValue]	
[ParcelObxfValue]	
[ParcelLandValue]	
[TotalAssessedValue]	
PARCEL INFORMATION	
[HouseNumber]	
[UnitNumber]	
[StreetDirection]	
[StreetName]	MCKOY TOWN OFF
[StreetType]	RD
[StreetSuffix]	
[ParCity]	
[LegalDescription]	TR#1 CENTRAL CAROLINA HOLDINGS MP#2012-68
[LegalLandUnits]	17.15
[LegalLandType]	AC
[PlatBook]	2012
[PlatPage]	68
STRUCTURE INFORMATION	
[ActualYearBuilt]	
[ActualAreaHeated]	
SALES INFORMATION	
[DeedBook]	01673
[DeedPage]	0893
[DeedDate]	2002-10-07 20:00:00
[SalePrice]	
PARCEL LINKS	
PRC	Click here for 099555 0035 08
ZONING OVERLAY	Click here for 099555 0035 08
SOILS OVERLAY	Click here for 099555 0035 08

HARNETT COUNTY, NORTH CAROLINA

GIS/LAND RECORDS



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Roads

MajorRoads

Rivers

Parcels

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Selected Parcel Feature	
PIN	9554-39-6358.000
PID	099555 0035 09
[REID]	
OWNER INFORMATION	
[AccountNumber]	1400008596
[Name1]	WOMBLE DIANE T
[Name2]	
[Address1]	
[Address2]	1616 MCKOY TOWN ROAD
[Address3]	
[City]	CAMERON
[State]	NC
[ZipCode]	28326-0000
ASSESSMENT INFORMATION	
[ParcelBuildingValue]	
[ParcelObxfValue]	
[ParcelLandValue]	
[TotalAssessedValue]	
PARCEL INFORMATION	
[HouseNumber]	
[UnitNumber]	
[StreetDirection]	
[StreetName]	MCKOY TOWN OFF
[StreetType]	RD
[StreetSuffix]	
[ParCity]	
[LegalDescription]	TR#2 CENTRAL CAROLINA HOLDINGS MP#2012-68
[LegalLandUnits]	20.67
[LegalLandType]	AC
[PlatBook]	2012
[PlatPage]	68
STRUCTURE INFORMATION	
[ActualYearBuilt]	
[ActualAreaHeated]	
SALES INFORMATION	
[DeedBook]	01673
[DeedPage]	0893
[DeedDate]	2002-10-07 20:00:00
[SalePrice]	
PARCEL LINKS	
PRC	Click here for 099555 0035 09
ZONING OVERLAY	Click here for 099555 0035 09
SOILS OVERLAY	Click here for 099555 0035 09

HARNETT COUNTY, NORTH CAROLINA

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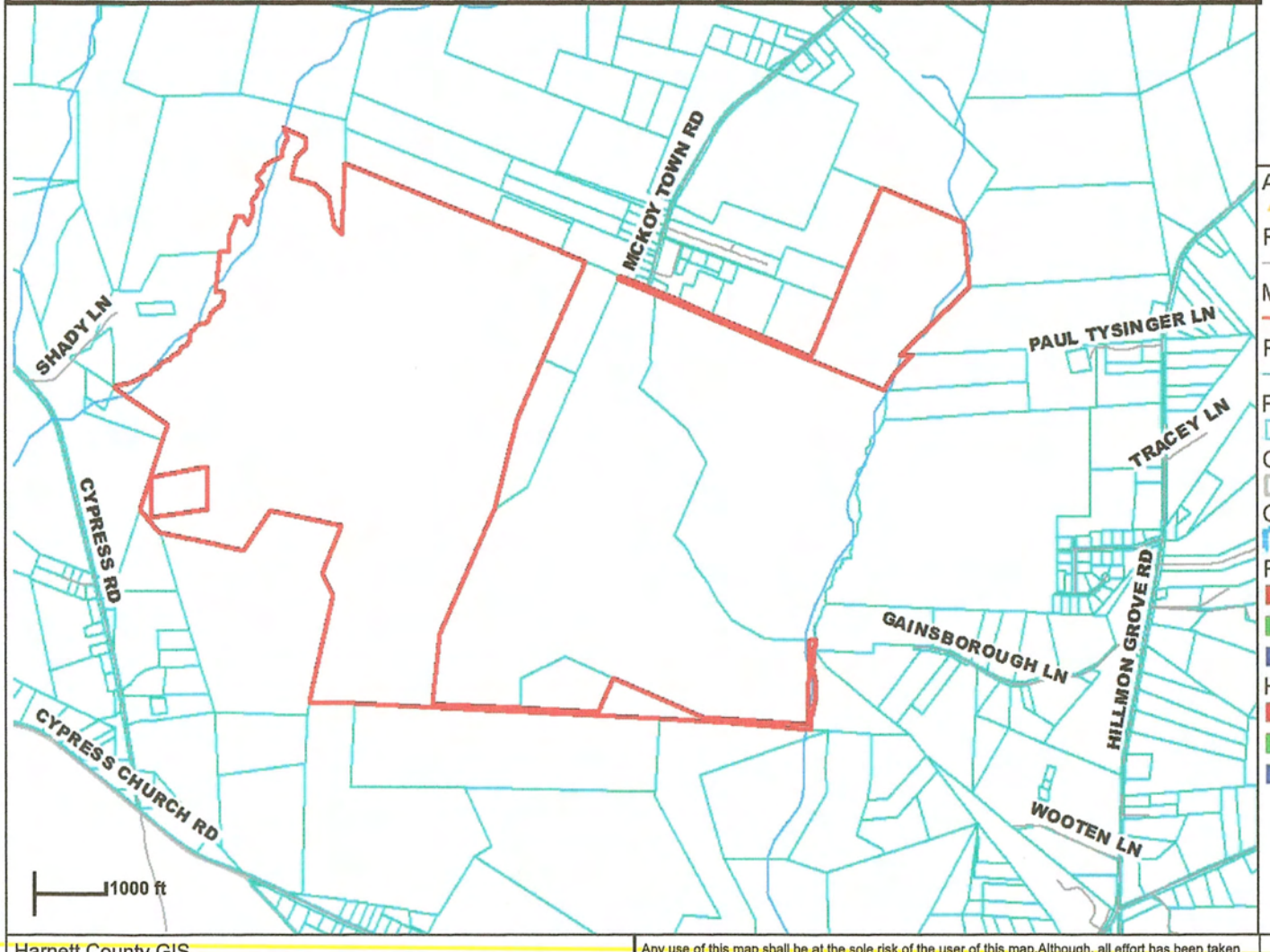

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Roads

MajorRoads

Rivers

Parcels

County_Boundary

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Selected Parcel Feature	
PIN	9554-19-6563.000
PID	099555 0035
[REID]	0033670
OWNER INFORMATION	
[AccountNumber]	1400008596
[Name1]	WOMBLE DIANE T
[Name2]	
[Address1]	
[Address2]	1616 MCKOY TOWN ROAD
[Address3]	
[City]	CAMERON
[State]	NC
[ZipCode]	28326-0000
ASSESSMENT INFORMATION	
[ParcelBuildingValue]	53230
[ParcelObxfValue]	119110
[ParcelLandValue]	1382690
[TotalAssessedValue]	724560
PARCEL INFORMATION	
[HouseNumber]	001991
[UnitNumber]	
[StreetDirection]	
[StreetName]	HILLMON GROVE
[StreetType]	
[StreetSuffix]	
[ParCity]	
[LegalDescription]	693.65 AC PASCHAL LUMBER CO TRACT 34-3
[LegalLandUnits]	693.65
[LegalLandType]	AC
[PlatBook]	
[PlatPage]	
STRUCTURE INFORMATION	
[ActualYearBuilt]	1998
[ActualAreaHeated]	1296
SALES INFORMATION	
[DeedBook]	01247
[DeedPage]	0548
[DeedDate]	1998-01-22 19:00:00
[SalePrice]	
PARCEL LINKS	
PRC	Click here for 099555 0035
ZONING OVERLAY	Click here for 099555 0035
SOILS OVERLAY	Click here for 099555 0035

HARNETT COUNTY, NORTH CAROLINA

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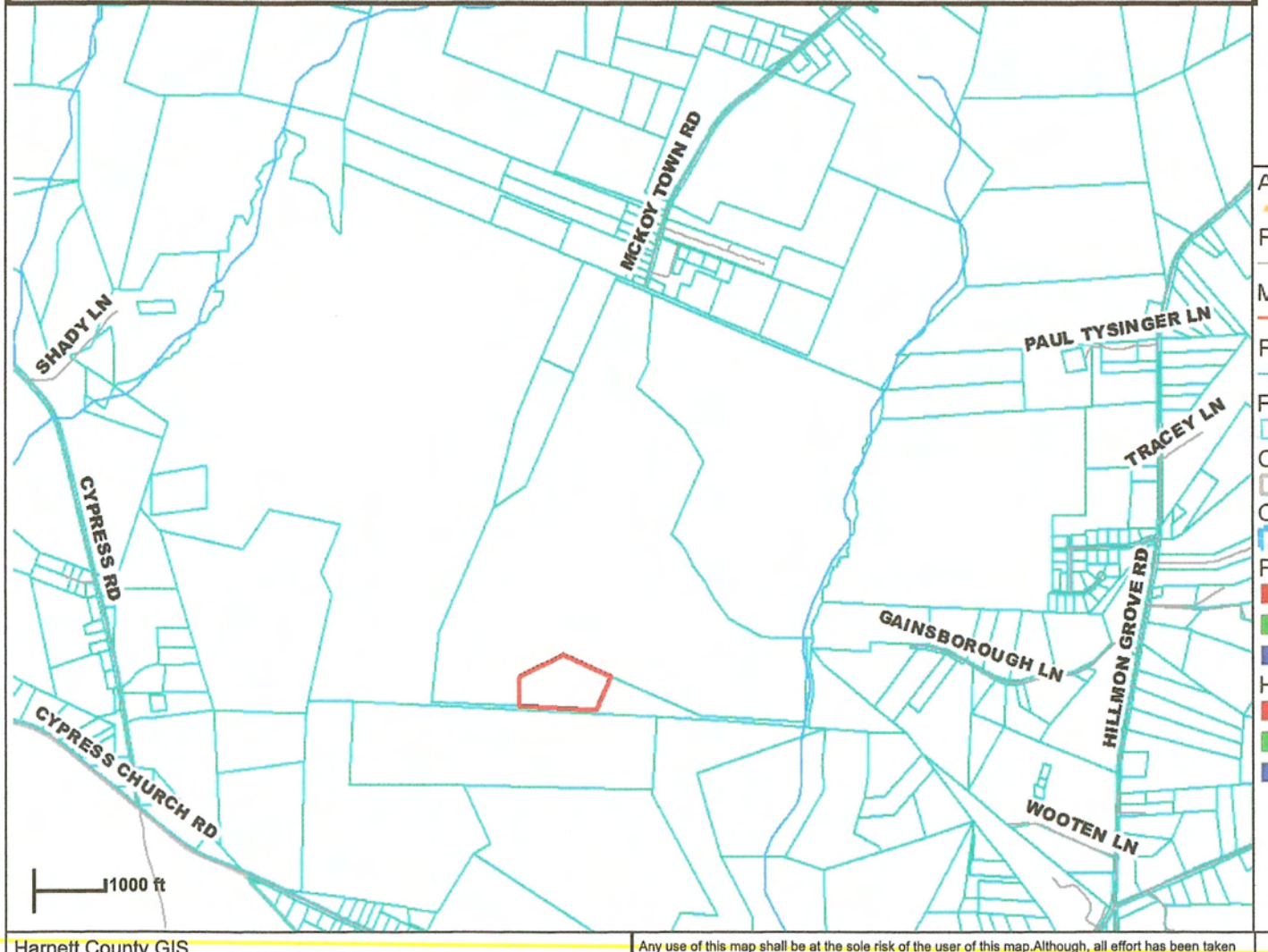

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Roads

MajorRoads

Rivers

Parcels

County_Boundary

CityLimits

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Selected Parcel Feature	
PIN	9554-45-0763.000
PID	099555 0035 02
[REID]	0038189
OWNER INFORMATION	
[AccountNumber]	902973000
[Name1]	WOMBLE DIANE T
[Name2]	
[Address1]	
[Address2]	385 AC MORRISON ROAD
[Address3]	
[City]	LILLINGTON
[State]	NC
[ZipCode]	27546-0000
ASSESSMENT INFORMATION	
[ParcelBuildingValue]	
[ParcelObxfValue]	
[ParcelLandValue]	40580
[TotalAssessedValue]	14850
PARCEL INFORMATION	
[HouseNumber]	001685
[UnitNumber]	
[StreetDirection]	
[StreetName]	MCKOY TOWN
[StreetType]	RD
[StreetSuffix]	
[ParCity]	
[LegalDescription]	TR#2 AC BILLY THOMAS MAP#2000-415
[LegalLandUnits]	16.23
[LegalLandType]	AC
[PlatBook]	2000
[PlatPage]	0415
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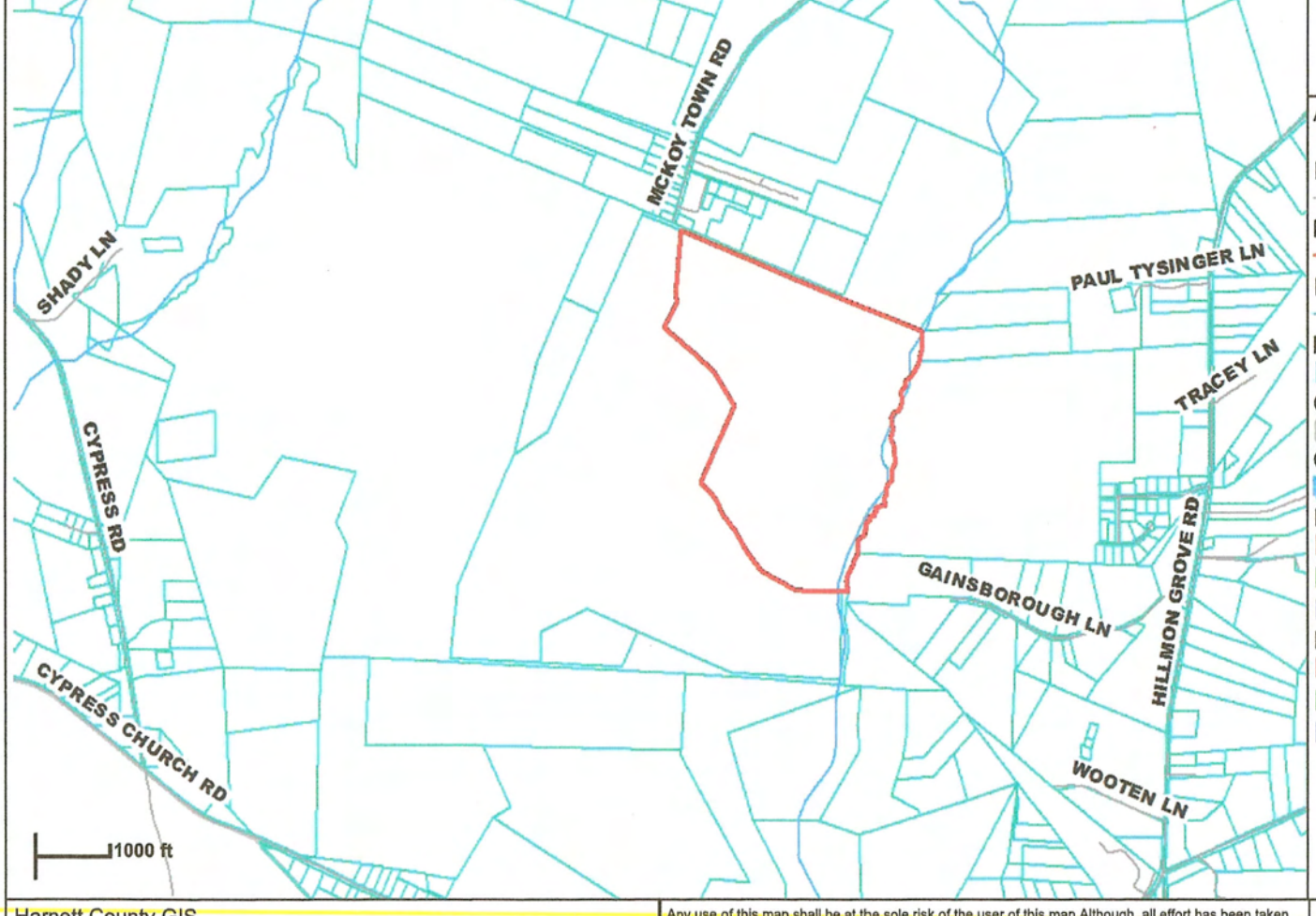
[DeedPage]	0505
[DeedDate]	1991-08-06 20:00:00
[SalePrice]	
PARCEL LINKS	
PRC	Click here for 099555 0035 02
ZONING OVERLAY	Click here for 099555 0035 02
SOILS OVERLAY	Click here for 099555 0035 02

[TotalAssessedValue]

HARNETT COUNTY, NORTH CAROLINA
GIS/LAND RECORDS



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Roads
MajorRoads
Rivers
Parcels
County_Boundary
CityLimits
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Selected Parcel Feature

PIN	9554-59-7597.000
PID	099555 0035 04
[REID]	0053744
OWNER INFORMATION	
[AccountNumber]	1400037215
[Name1]	S T WOOTEN CORPORATION
[Name2]	
[Address1]	
[Address2]	PO BOX 2408
[Address3]	
[City]	WILSON
[State]	NC
[ZipCode]	27894-0000
ASSESSMENT INFORMATION	
[ParcelBuildingValue]	99390
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[TotalAssessedValue]	559580
PARCEL INFORMATION	
[HouseNumber]	001617
[UnitNumber]	
[StreetDirection]	
[StreetName]	MCKOY TOWN
[StreetType]	RD
[StreetSuffix]	
[ParCity]	
[LegalDescription]	TRCS#1-5 S T WOOTEN CORP MAP#2008-1018
[LegalLandUnits]	226.11
[LegalLandType]	AC
[PlatBook]	2008
[PlatPage]	1018
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[ActualAreaHeated]	2280
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[DeedPage]	0922
[DeedDate]	2008-12-15 19:00:00
[SalePrice]	375000
PARCEL LINKS	
PRC	Click here for 099555 0035 04
ZONING OVERLAY	Click here for 099555 0035 04
SOILS OVERLAY	Click here for 099555 0035 04