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From: M Muthig IPGX <mgm.ipgx@gmail.com>
Sent: Monday, May 13, 2019 7:29 AM
To: Hornosky, Tim
Cc: 'Steve Burris'
Subject: 4200-4210 Azalea Drive Assessment Report

Tim,

Attached is an assessment report for soil and groundwater at the 4200/4210 Azalea Dr properties in Charleston, SC. A printed copy of the report will be transmitted to your attention and should arrive within 3 business days.

Assessment activity was requested by SCDHEC to provide additional characterization of site hydrogeologic conditions, improved delineation of the migration of volatile organic compounds, an evaluation of LNAPL recovery efforts, and to assess the potential for vapor intrusion at the 4210 Azalea Drive building.

Assessment activity included installing a series of test holes using a Direct Push Technology (DPT) combined with geophysical testing, installation of additional monitoring wells, sub-slab soil vapor testing, enhanced vacuum recovery of LNAPL, and groundwater sampling. This report also includes a summary of indoor air monitoring performed by General Engineering Labs under contract to WM Bird inside the former Headquarter building on the 4210 Azalea Dr property.

Please feel free to email if you have any questions or comments regarding the report.

Regards,

Michael

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Innovative Products and Services

GROUNDWATER AND SOIL VAPOR ASSESSMENT REPORT
4200-4210 AZALEA DRIVE (AREA 1)
N. CHARLESTON, SC

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PM Copy

Submitted to:

Division of Site Assessment, Remediation & Revitalization
Bureau of Land and Waste Management

S.C. Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201

Prepared for:

Burris Environmental Services
4310 Amsterdam Street
N. Charleston, SC 29418

RECEIVED
MAY 16 2019
SITE ASSESSMENT, REMEDIATION & REVITALIZATION

Prepared By:

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IPGX, Inc.

May 2019

Signature

5/12/2019
Date

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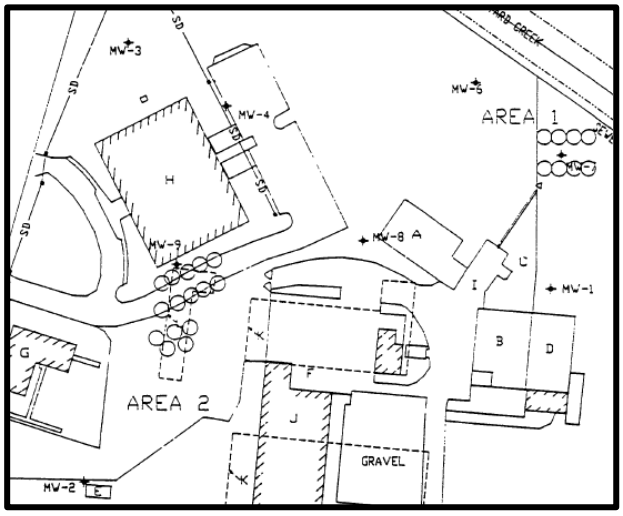
Groundwater Assessment Report
4200-4210 Azalea Dr (Area 1)
N. Charleston, SC

1.0 INTRODUCTION

1.1 Background and Purpose

The former Burris Chemical Site encompassed a 10.9 acre tract of land in Stark Industrial Park in North Charleston, SC. The Headquarters site was previously part of this larger tract that was owned by Burris Chemical. A chemical warehouse and distribution facility operated on the east and north portions of the original 10.9 acre tract of land (4200 Azalea Dr – Warehouse and Operations), and the Corporate headquarters was located on the southwest portion of the property (4210 Azalea Dr). In 1997, the Headquarters site was separated from the larger tract. Site operations were taken over by SouthChem (now Brenntag) and the Office Building/Headquarters (4210 Azalea Dr) was subsequently sold to the W.M. Bird Company.



In 1993, a corrective action plan was prepared by Burris Chemical for the entire original site that included two phases of remediation. Phase I called for soil/groundwater remediation in Area 1 using air sparging combined with vacuum extraction (AS/VE). After reducing concentrations in Area 1, the system was going to be moved to Area 2. The system was installed in Area 1 and operated for several years. Following the transition to SouthChem (now Brenntag), who took the lead on environmental work on the Warehouse/Operation site (4200 Azalea Dr), the planned AS/VE remediation program in Area 2 was never implemented. Prior to July 2018, Brenntag had not conducted any active remediation of soil or groundwater in Area 2. In the Fall of 2018, it was reported that Brenntag was to initiate vacuum-enhanced recovery from MW-14. The first 2018 semiannual report described one round of enhanced vacuum recovery. The second semiannual report dated 15 February 2019 indicates that "*No remedial activities were conducted in the vicinity of monitor well MW-14*."

The purpose of recent assessment activity is to address the request from DHEC to provide a better characterization of site hydrogeologic conditions, improve delineation of the migration of volatile organic compounds, evaluate LNAPL recovery efforts, and to assess the potential for vapor intrusion at the 4210 Azalea Drive (former Headquarters) building.

1.2 Site Layout and Operational History

Operation at the former Burris Chemical Site consisted of warehousing and distribution of industrial chemicals including handling of drummed liquids and bagged solids, bulk handling, and repackaging of flammable and corrosive liquids. Details of operational activity is provided in the 1993 Corrective Action Plan. In 1996, Burris Chemical operations in Charleston were acquired by Southchem (now Brenntag). The land occupied by facility operations and the former Burris Corporate headquarters was subdivided into two parcels. All activities on the operational parcel of land is under the control of Southchem/ Brenntag. Environmental investigation activity on the former headquarters site is being coordinated by Burris Environmental Services with the cooperation of the current landowner. The current layout of the 4210 Azalea Dr property is shown in Figure 1.

2.0 ASSESSMENT ACTIVITY

2.1 Overview

Recent assessment activity was requested by SCDHEC to provide additional characterization of site hydrogeologic conditions, improved delineation of the migration of volatile organic compounds, evaluation of LNAPL recovery efforts, and to assess the potential for vapor intrusion at the 4210 Azalea Drive building. Activity included installing a series of test holes using a Direct Push Technology (DPT) combined with geophysical testing, installation of additional monitoring wells, sub-slab soil vapor testing, enhanced vacuum recovery of LNAPL, and groundwater sampling. This report also includes a summary of indoor air monitoring performed by General Engineering Labs under contract to WM Bird inside the former Headquarter building on the 4210 Azalea Dr property.

2.2 Soil Testing and Monitoring Well Installation

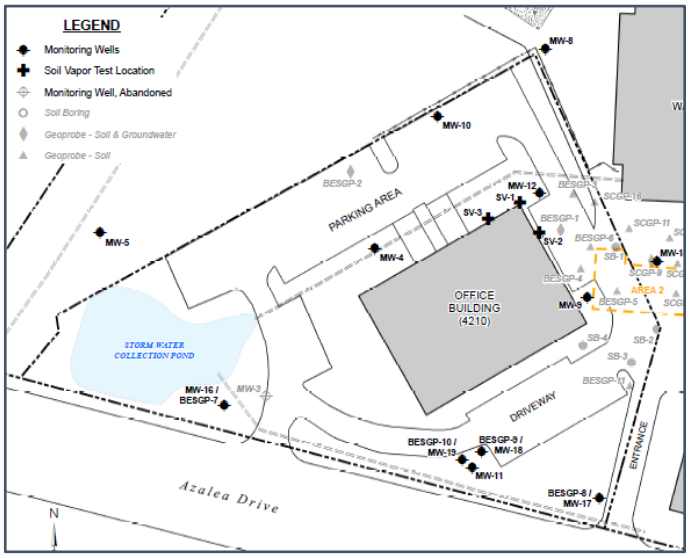
A series of test holes were installed using a Direct Push Technology (DPT) combined with geophysical testing. The DPT system was equipped with the following sensors to allow high resolution (sub-foot accuracy), real-time readings to provide high resolution mapping: Laser Induced Florescence (LIF) probe, Membrane Interface Probe (MIP), a Hydraulic Profiling Tool (Hpt), and an Electrical Conductivity (EC) sensor. Locations of test holes are shown in Figure 1.

Location	Push Depth (ft)	Corresponding Well #	Screened Internal (ft)
BESGP-7	10	MW-16	3-8
BESGP-8	12	MW-17	4-9
BESGP-9	11	MW-18	4-9
BESGP-10	19	MW-19	10-15
BESGP-11	14	NA	NA

Test holes were converted to monitoring wells and equipped with passive diffusion bag samplers (pdbs) to be included in future groundwater sampling events. Groundwater samples were

collected immediately following well installation and again in January 2019.

2.2.1 Soil Testing – Direct Push



Geoprobe tooling for the characterization effort used a 1.5-inch outer diameter probe rod. Test holes were advanced to total depth using Direct Push Technology (DPT). High resolution contaminant mapping was performed via combined use of a Laser Induced Florescence (LIF) probe, Membrane Interface Probe (MIP), a Hydraulic Profiling Tool (Hpt), and an Electrical Conductivity (EC) sensor. LIF, MIP, Hpt, and EC sensors will log high resolution (sub-foot accuracy), real-time readings of relative concentrations. The LIF served as a prescreening tool to the MIP to identify layers of high concentrations of non-chlorinated Volatile Organic Compounds (VOCs). The MIP is capable of detecting VOCs at or below 100 ppb to identify the distribution and magnitude of dissolved and free-phase material, and it can differentiate between chlorinated and non-chlorinated VOCs via combined use of a photoionization detector (PID), flame ionization detector (FID), and a halogen specific detector (XSD). The Hpt and EC sensors log permeability and lithology. Details of field activity were provided in a report by Peak Hydrogeologic: A summary of field activity along with copies of geophysical logs (Peak Hydrogeologic 2018). Details of well installation activity are provided in the following appendices:

Appendix A. Monitoring Well Records
Appendix B. MiHpt Reference Log
Appendix C. MiHpt Logs with Detectors @ 100 Millivolts
Appendix D. MiHpt Logs with Detectors @ 1,000 Millivolts

2.2.2 Monitoring Well Installation

Four soil test locations were converted to monitoring wells. Screen intervals are shown in the table above. The well installation process included the following:

- Drive MIP to target depth at specified location;
- extract MIP;
- drive 3.25-in OD rod to proposed well depth;
- lower in pre-pack screens;

- extract rod;
- add grout with forced tremie pipe from top of bentonite to ground surface.

Well screens and risers consist of 1.5-inch inner diameter (2.5-inch outer diameter) DPT monitoring wells using prepacked screens. Wells were completed below grade with flush mount manholes and locking caps. Locking caps were equipped with a key chain mount capable of suspending a cable for connection to passive diffusion bag samplers. Following installation, all wells were surveyed relative to the location and elevation of other site wells using a builder's transit level kit.

2.3 Groundwater Sampling

Following installations, groundwater samples were collected from the newly installed wells using clean tubing connected to a peristaltic pump at the surface. Samples were collected using a low-flow collection technique designed to minimize the need for purging and reduce sample turbidity. Samples were placed into appropriately preserved laboratory sample containers and submitted to a SC-certified laboratory for VOC analysis per EPA Method 8260. After samples were collected, passive diffusion bag samplers were installed in each well for future sampling events. In January 2019 the routine semiannual sampling event was performed which included the new wells.

2.4 LNAPL Removal

To enhance recovery, a proposal was made to modify the LNAPL recovery program to include periodic removal using vacuum recovery (IPGX July 2018). Recovery plans call for lowering a small diameter pipe (e.g., 1 to 1.5-inch diameter) into the well to a depth just above fluid level and applying a vacuum for up to four hours. The first event was performed on 14 January 2019. The event resulted in recovery of approximately 10 pints of LNAPL and 1,000 gallons of water. LNAPL levels and water quality data will be reviewed to evaluate effectiveness of the vacuum recovery program.

2.5 Sub-Slab Soil Vapor Screening

Sub-slab vapor samples were collected as a tool for screening the potential for vapor intrusion from subsurface sources to indoor air. Sampling was performed during two events. The first event was in June 2018. The second event was coordinated with routine sampling performed in January 2019. During the first event, samples were collected from 3 locations (Figure 1). Due to malfunction of a sample canister during the second event, samples were only collected from the two locations showing the highest soil vapor concentrations.

Samples were collected per the U.S. Environmental Protection Agency's (USEPA) Office of

Solid Waste and Emergency Response (OSWER) Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air (OSWER Publication 9200.2-154; June 2015). The sampling protocol was designed to collect samples from a depth of one foot above the water table. An extendable AMS gas vapor sampler (inverted approximately 30°- 45° from vertical) with expendable drive points and screens were used to collect samples. The drive-point sampler was connected to the Summa canister via appropriately sized Teflon tubing. A hydrated 6-inch bentonite seal were placed around the drive-point sample rod to prevent short-circuiting with atmospheric air and avoid false positives in samples. Leak detection in sample analysis were achieved by placing a rag saturated with isopropyl rubbing alcohol over the bentonite seal. The sample train were purged via hand pump prior to opening the Summa canister valve.

Samples were collected in cleaned/certified 1-liter stainless steel Summa canisters with fill valves set for sample intake of 15-minutes/sample. Summa canisters were submitted to a SC-certified laboratory for analysis of volatile organic compounds in air collected in specially-prepared canisters and analyzed via gas chromatography/mass spectrometry per EPA method Toxic Organics-15 (TO-15).

Analytical results were compared to USEPA OSWER Industrial Air Screening Levels using the EPA prescribed attenuation factor of 0.03 for sub-slab soil vapor samples. Industrial air screening levels were divided by 0.03 to generate Indoor Air Equivalent screening levels. Results of sub-slab vapor sampling are discussed in Section 4 below.

2.6 Indoor Air Sampling

Indoor air quality (IAQ) sampling was performed on February 17, 2019 by General Engineering Labs under contract to WM Bird. Four IAQ samples were collected from the interior of the building and one ambient exterior (outdoor) sample was collected. A duplicate of one interior air sample was collected for quality control. Details of the sampling effort and results are provided in Appendix F.

3.0 HYDROGEOLOGY

3.1 Regional/Local Hydrogeology

3.1.1 Geology

Geologic units from the ground surface to a depth of 2500 feet in Charleston County consist of unconsolidated to partially indurated sedimentary deposits ranging in age from Quaternary (recent) to late Cretaceous (Park 1985). Surficial deposits are generally described as light colored, fine-to medium-grain sand, shelly sand, shell beds, and varicolored clays. The Pamlico formation reportedly occurs at elevations between 0 and 25 feet above mean sea level (msl). This formation is described as consisting (from the top down) of green, glauconitic sand, undifferentiated sand, and up to several feet of a basal Pleistocene shell unit. Surficial deposits are underlain by the Cooper Formation, which occurs at approximately 0 to -20 feet below msl in the vicinity of the site.

The Cooper Formation is generally described as a pale-green or yellow-gray, clayey to sandy, fine-grain phosphatic, limestone. The Ashley member is the upper unit of the Cooper Formation and is generally described as phosphatic, muddy, calcareous, sand. The upper surface of the Cooper Formation has a relief of 15 to more than 50 feet. Overall thickness of the Cooper Formation ranges from 260-280 feet in the vicinity of the site. The Cooper is underlain by the Santee Limestone, which occurs at approximately 250 to 300 feet below mean sea level in the vicinity of the site.

3.1.2 Groundwater hydrology

Shallow water-bearing units in Charleston County typically consist of discontinuous layers of sand, clay, and localized shell beds and limestone. Groundwater typically occurs under water-table conditions with recharge primarily supplied by rainfall. Water movement is primarily controlled by gravity drainage from topographically high to topographically low areas. Depth to groundwater ranges from 0 - 15 feet below land surface and generally corresponds to variations in topography. Water table fluctuations may range from 1 - 6 feet annually and are primarily attributed to rainfall. Transmissivities are typically low due to limited thickness and presence of fine-grain sediment. Specific capacities are low with values commonly less than 4 gpm/ft. Yield from shallow wells may range from less than 1 gallon per minute (gpm) to 200 gpm. Shallow water-bearing units are underlain by the Cooper Formation, which inhibits the downward movement of groundwater. Natural seepage to surface water and evapotranspiration are the principal means of shallow groundwater discharge. Water extracted by wells accounts for only a small portion of water loss (Park 1985).

The Cooper Formation is fine, granular, sandy, limestone that produces little or no water and acts as a confining unit that creates artesian conditions in the underlying Santee Limestone. Only a few feet of the material are needed to effectively retard vertical movement of groundwater. The

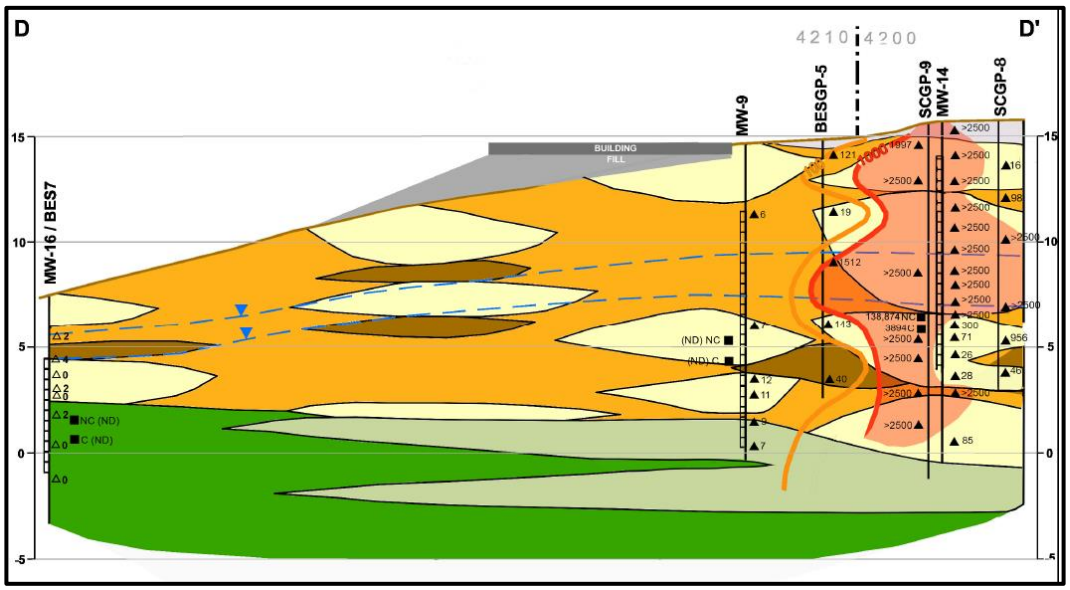
Cooper Formation occurs at approximately 0 to 20 feet msl and is approximately 250 to 300 feet thick in the vicinity of the site (Park 1985).

3.2 Topography and Drainage

The facility is located in the southern part of North Charleston approximately one mile southwest of I-26 and one mile northwest of the Ashley River. The topography of the site generally slopes from east to west (or northwest) from approximately 15 feet above mean sea level (msl) along Industrial Avenue to 5 feet above msl along Brickyard Creek. The property is bound to the west by Brickyard Creek, and a small intermittent creek/lowland is present in the northern portion of the property. Brickyard Creek drains southward into the Ashley River. The Ashley River and Cooper River join at the southern tip of Charleston. Brickyard Creek is tidally influenced; and, although the facility is located in the upper reaches of the creek, water level in the creek appears to fluctuate several feet with the tide.

3.3 Site Geology

Site geology includes a highly complex suite of interlayered sediments that are included within two general geologic units. The upper unit is characterized by medium grained sand interbedded with fine sand, silt, and to a lesser extent clay. The upper unit tends to be light to dark gray (and sometime orange) in color. The upper unit appears to be part of the Pamlico formation. The lower unit is characterized by fine to medium grained sands with large amounts of shell material interbedded with finer grained silts and clays which also often contain shell material. This unit tends to have a green, gray-green, or sometimes blue-green color. The lower unit is encountered at a depth of 5-20 feet below ground surface (approximately +5 to -5 msl) and appears to be part of the Cooper Formation. Cross sections illustrating site geology are provided in Figures 3, 4, and 5.



Upper Unit (Pamlico Formation): The medium-grained sands of the upper unit range from 2 to 6 feet in thickness and may be found in vertical stacks (as in MW-14, MW-9, and MW-19. Based on closely space continues cores take in Area 2 (Figures 3 and 4), the medium sands have a limited horizontal extend, particularly in the east-west direction. The medium sands are important hydraulically as they represent avenues for preferential flow. The greatest vertical thickness of the medium sands is found in SCGP-9 and MW-14, where the sequence from 4 to 15 feet below ground surface is dominated by the relatively coarse-grained sand.

The medium sands are commonly underlain by a fine-grained layer of clay and/or clay interbedded with silt/sand. These fine-grained units tend to be less than 3-feet thick and have limited horizontal extent. At MW-14, the fine-grained which is present at 3-6 feet above sea level in nearby borings, is less than 6-inches thick (Figure 3).

The medium-grain sand found from 8 to 14 feet below ground surface in MW-9 do not appear to continuous with the medium sand in MW-14 as evidenced by data from BESGP-5.

The coarse-grain material at the base of MW-9 contains a large amount of shell material, which is characteristic of the underlying unit. Shell material was not recorded for the sand at the same elevation in MW-14. This is the rational for not correlating the sand/shell at the base of MW-9 with the sand found at the base of MW-14.

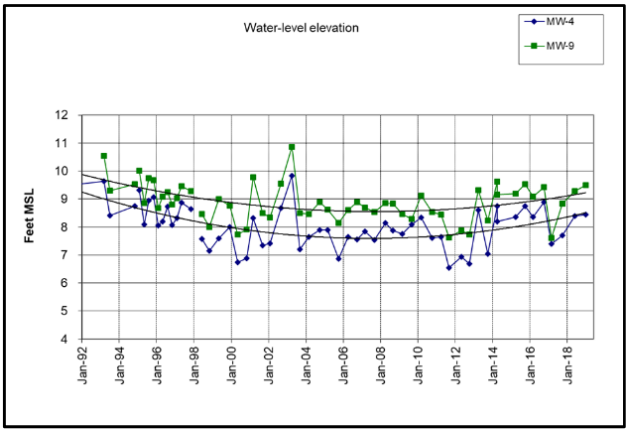
Lower Unit (Cooper Formation): The lower unit is characterized green, fine to medium grained sands, silts, and clays often containing shell material. Given the elevation and characteristics, this unit is thought to be the upper portion of the Cooper Formation. The top of this unit is typically encountered within a few feet of the zero sea-level reference for the site. At the west end of the site in MW-16, the lower unit is represented by a fine-grain material (Figures 3 and 5). Throughout much of the site, 1-3 feet of a sand with shell is found at the top of the lower unit/base of the upper unit (Figures 3 and 5). The Cooper Formation is a regional confining bed and is reported to range from 260-280 feet in the vicinity of the site. These green silts, clay and sands containing shells are consistent with regional descriptions for the upper portion of the Cooper Formation.

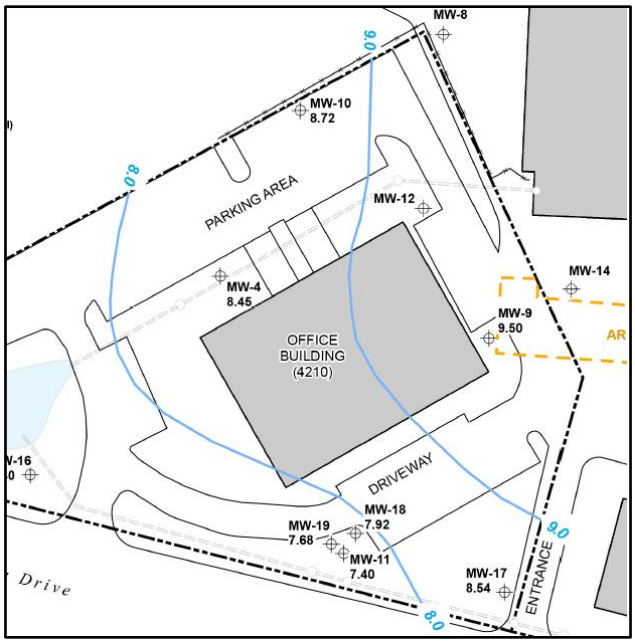
3.4 Site Groundwater Elevation and Movement

The site is underlain by a regionally extensive confining layer (Cooper Formation) that is generally recognized as providing a barrier to the downward movement of groundwater. In the vicinity of the site, approximately 10 to 30 feet of fine-medium sand, silt and clay are present above the Cooper Formation. Depth to groundwater below the site typically ranges from approximately 2 to 6 feet below ground surface (Table 1). Groundwater elevations measured in the recent event generally increased from the prior event and are comparable to high levels reached 2014-2017. Prior extreme low groundwater levels were recorded between Fall 2002 to

Spring 2003, from Fall 2011 through Fall 2012, and in spring 2017 (see hydrograph – Figure 9). Appling a best fit polynomial curve to the data shows a decreasing trend in water levels from 1992 through 2007 and an increasing trend since 2007 (Figure 9).

Brickyard Creek is located just west of the property and is a discharge point for shallow groundwater. Overall topography and surface water drainage is towards the west and is captured in a retention pond located between the office building and the creek. The office building sits on a topographic high, and overall groundwater movement appear to have a similar trend to surface topography (Figure 8). One feature of note is that water level in MW-9 is higher than the water level in MW-14 (see July 2018 data). The screened intervals for MW-9 and MW-14 are essentially at the same elevation, so the data indicates a potential for flow is from MW-9 towards MW-14. The water level in MW-9 is also higher than the fluid level in MW-12, also indicating that MW-9 represents a local groundwater high (Figures 3 and 8). The relatively high water level in MW-9 helps explain the absence of volatile organics in this well. Additional rounds of collected at the same time for both sites are needed to evaluate temporal fluctuations in vertical head.

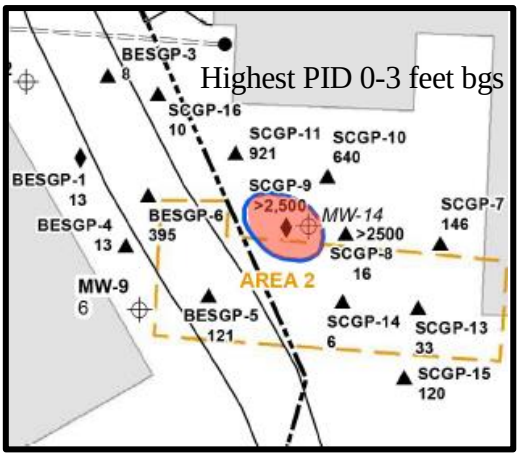


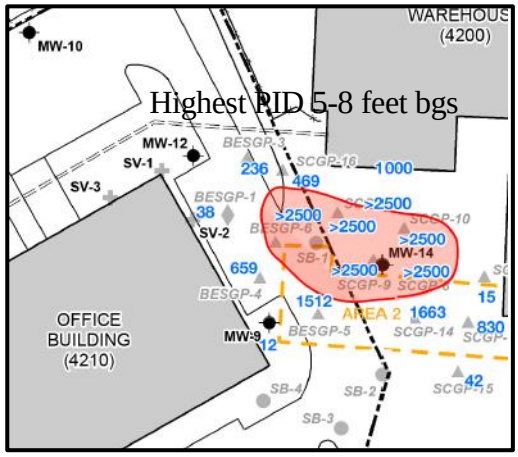


4.0 SOIL QUALITY

4.1 Soil Quality

Results from the soil assessment performed in 1998 showed the highest concentration of total VOCs in soil were detected on the adjacent property in the area surrounding SCGP- 9 and MW-14. This is shown in map view in Figures 6 and 7 and in cross section view in Figures 3 and 4. The highest concentration in shallow soil (0-3 feet bgs) was limited to a small area surrounding SCGP-8, SC-GP9, and MW-14 (Figure 6), which is in the area just north of the former above-ground solvent tanks (Area 2).





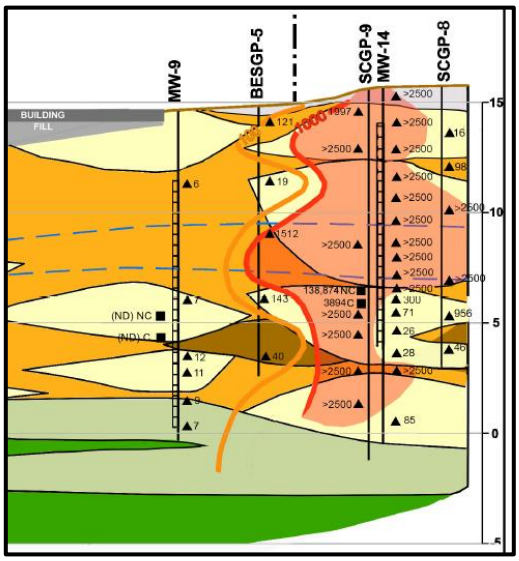


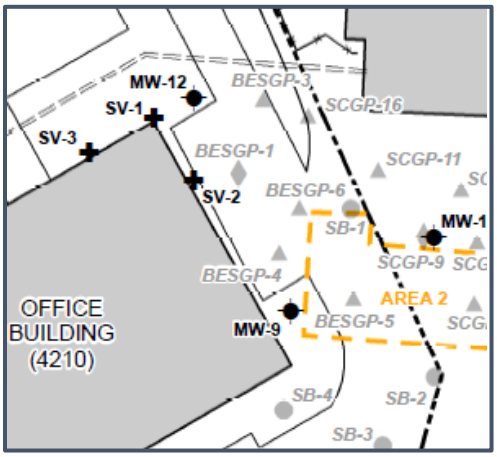
Figure 7 illustrate the highest PID readings found in soil samples collected between 5 and 8 feet below ground surface (a depth at or near the water table). This map shows that the highest concentrations of VOCs near the water table spreads laterally away from MW-14.

None of the soil borings on the 4210 Azalea Drive property, including the direct push points installed in the recent sampling event, show elevated volatile organic compounds above the high water table. Only SCGP-8, SCGP-9, and MW-14 (on the adjacent property) show elevated concentrations of volatile organic compounds above the water table (Figures 3 and 6). SCGP-9 and MW-14 shows highly elevated concentrations starting at or near the surface and continue to a depth greater than 15 feet.

Soil-test data along with water-quality data indicate that the area between SCGP-8, SCGP-9 and MW-14 (all on the adjacent property) is the primary source of volatile organic compounds in groundwater below the Headquarters property.

4.2 Sub-slab Soil Vapor Assessment

Sub-slab vapor samples were collected as a tool for screening the potential for vapor intrusion from subsurface sources to indoor air. Sampling was performed during two events. The first event was in June 2018. The second event was coordinated with routine sampling performed in January 2019. During the first event, samples were collected from 3 locations (Figure 1). Due to malfunction of a sample canister during the second event, samples were only collected from the two locations showing the highest soil vapor concentrations. Results are summarized in Table 2.



Results from the two events show that the levels of benzene were above the EPA model value for the Industrial Indoor Air Equivalent. The value for benzene in the second event (79.7 ug/mg) was only slightly higher than the indoor air equivalent screening value of 53.3. In general, soil vapor values for the first event were higher than for the second event. During the first event, samples were collected less than one foot above the water table (possibly within the capillary fringe), and there is potential that sample values were more indicative of groundwater quality rather than soil vapor. Also, vacuum-enhanced recovery of LNAPL took place at MW-12 and MW-14 between the two events, and the lower values could be related to decreased concentrations due to remediation activity.

Results from sub-slab vapor testing show that benzene was just above the EPA model value for the Industrial Indoor Air Equivalent. LNAPL from the adjacent property appears to be the primary source of volatile organics in soil. Brenntag and WM Bird were notified of sub-slab test results, and efforts are being made to coordinate future response activity with WM Bird and Brenntag.

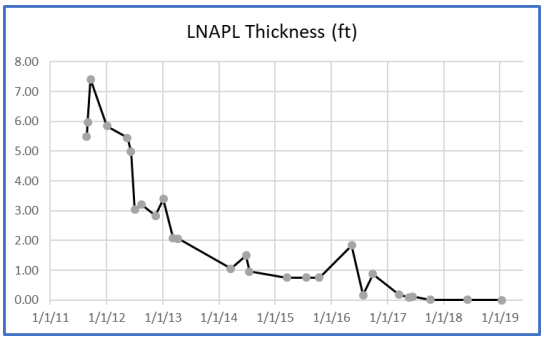
4.3 Indoor Air Quality

Results of indoor air quality (IAQ) sampling performed on February 17, 2019 by General Engineering Labs under contract to WM Bird showed that several volatile organic compounds were detected, but that all compounds found in groundwater below the site were orders of magnitude lower than OSHA permissible exposure levels (PELs). In addition, of the compounds detected, only tetrachloroethene (PCE) concentrations exceed the EPA RSL for industrial indoor air (47 ug/m3). In reviewing groundwater data, PCE (tetrachloroethene) is rarely detected in groundwater samples above the method detection level (Table 3). Also, PCE was only detected in one of the sub-slab vapor samples at 2 ug/m3.

5.0 LNAPL

In 2004, an investigation was performed to characterize the extent of LNAPL floating on the water table near MW-12. The scope of work included installing eight temporary monitoring wells to allow the direct measurement of LNAPL and a product bail-down test. Assessment results did not show evidence that the free-phase layer extended beyond the immediate vicinity of MW-12. Analysis of product bail-down test indicated the actual thickness of free-phase material floating on the water table was no more than two inches. A thin layer of LNAPL has been reported in MW-14 on the adjacent Brenntag site. Water and soil quality data indicate the LNAPL layer likely extends back to the source area near MW-14 on the adjacent property.

A free-product removal program was initiated that included periodic removal of LNAPL from MW-12. Initial removal was performed on a weekly or more frequent basis. The frequency was decreased to every two weeks, and then to every three weeks to allow a sufficient volume of free-phase material to collect in the well.



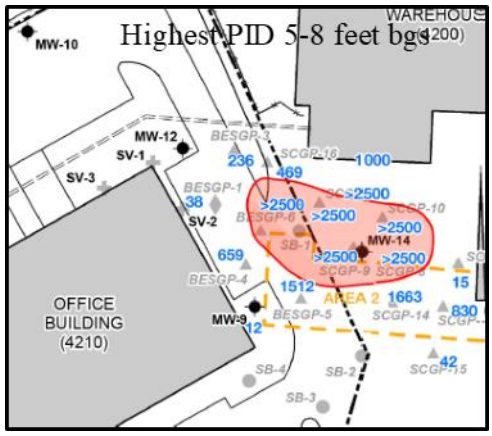
The thickness of LNAPL measured in MW-12 decreased from an apparent thickness of 3.5 feet prior to initiating recovery to non-detectable levels in November and December 2006. LNAPL was not detected in MW-12 between September 2007 and October 2010. In Spring 2011, measurable LNAPL was found again in MW-12. As a result, the LNAPL program was resumed. The program included measuring LNAPL levels quarterly followed by manual removal of LNAPL. LNAPL thickness has been less than 0.2 feet since September 2016 (Figure 10).

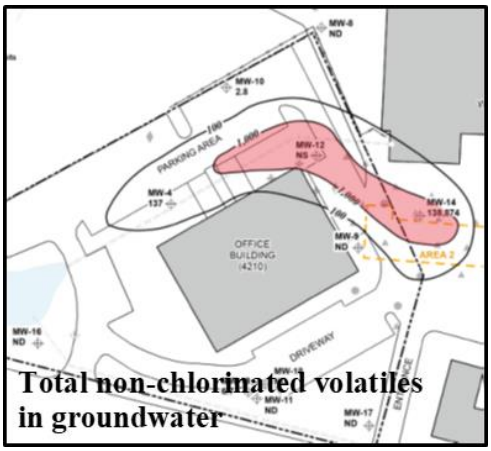
On June 6, 2018, ARCADIS conducted an Aggressive Fluid Vapor Recovery (AFVR) event at monitor well MW-14 due to high concentrations of hydrocarbons in MW-14 on June 6, 2018. In the vacuum-enhanced recovery event performed by Brenntag, they reported recovering approximately 370 gallons of fluid during a six-hour test. The Arcadis report concludes that **"*data from the AFVR test and resampling of monitor well MW-14 indicates a hydrocarbon source in the soils*".** I In their report, Arcadis recommended conducting quarterly AFVR test at MW-14 for a period of one year. Based on the information provided in the Second Annual Report, a second event was not performed.

The volume of LNAPL recovered from MW-12 has continually decreased and has been 2 pints or less since 2016. In an effort to improve recovery, a vacuum-enhanced removal program was

initiated in January 2019. Vacuum recovery was accomplished by lowering a small diameter pipe (e.g., 1 to 1.5-inch diameter) into the well and applying a vacuum for up to three hours. The initial plans were to perform three vacuum recovery events. The recovery event resulted in recovery of 10 pints of LNAPL.

In reviewing historical soil data and current groundwater data, it appears likely that the LNAPL layer likely extends back to a source area near MW-14 on the adjacent Brenntag property. With an upgradient source of LNAPL, there is concern that any additional enhanced recovery from MW-12 could result in drawing LNAPL towards MW-12 from the adjacent property. As a result, it is recommended that any future enhanced recovery effort be performed on the Brenntag property to ensure that recovery efforts consider the source area and do not result in drawing the LNAPL layer towards MW-12, where it could impact the Headquarters building.



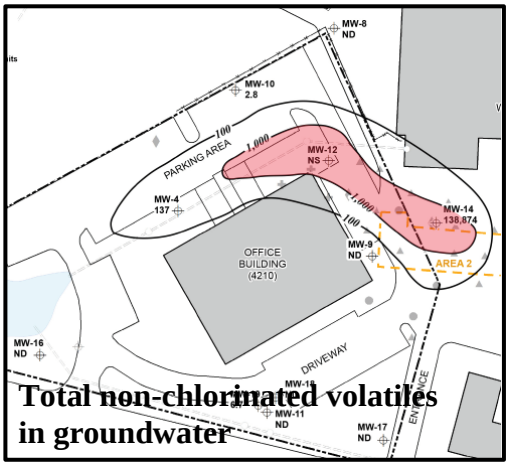


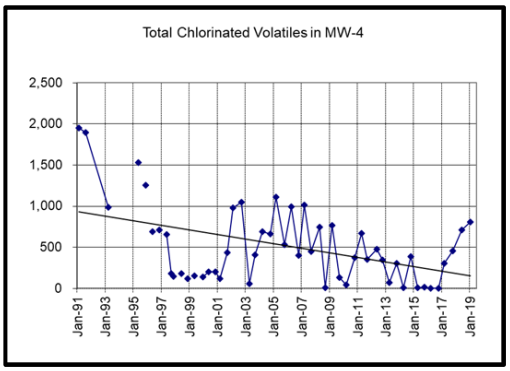
6.0 GROUNDWATER QUALITY

Groundwater-quality are summarized one Tables 3 and 4 and illustrated in Figures 11 and 12. Time-concentrations plots are provided in Figure 13. Certificates of analysis for groundwater samples is provided in Appendix E. For illustration purposes, water quality data are summarized for selected total chlorinated and total non-chlorinated volatile organic compounds.

6.1 Non-Chlorinated Volatile Organic Compounds

Distribution of non-chlorinated volatile organics is shown in Figure 11. The plume of non-chlorinated volatile organics originates near MW-14 and extends to the northeast towards MW-12 and then west southwest towards MW-4. Non-chlorinated volatiles are below detection limits or at low concentrations in all other wells. It is interesting to note that the non-chlorinated compounds migrated to the northwest, but not to the southwest. This is thought to be related to a preferential pathway located at or near the water table that allowed non-aqueous phase liquids (LNAPL) to migrate to the northwest from the source area near MW-14, but did not allow the LNAPLs to migrate to the south/southwest. MW-16 located at the west side of the property did not show detectable levels of non-chlorinated volatiles.



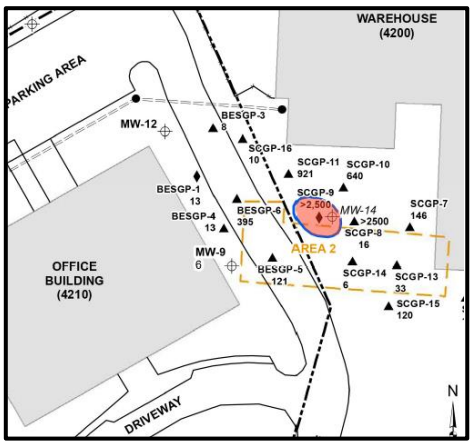


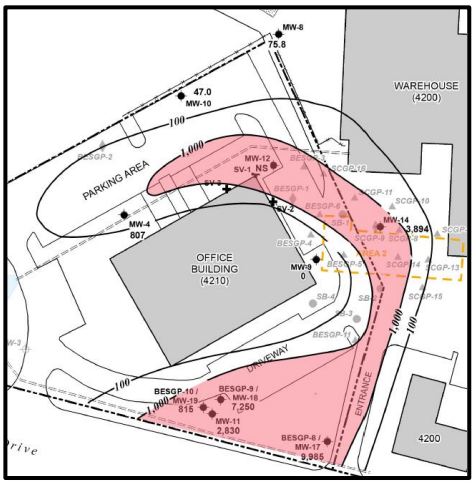
Overall, the concentration of non-chlorinated volatiles has been decreasing (Figure 12 and Table 4). There was a slight rebound in concentration of non-chlorinated volatiles starting in 2017 in MW-4 (primarily benzene).

There appears to be rapid natural attenuation of non-chlorinated volatiles in groundwater, and the lateral migration appears to be limited to the area just southwest of MW-4. A thin layer of light non-aqueous liquid is present in MW-12 and in MW-14. Removal of LNAPL from MW-12 has reduced the thickness of LNAPL, and efforts are being made to evaluate the potential migration of vapors into the Headquarters building. However, until action is take to remove the LNAPL layer and impacted soil at the source location on the adjacent property, there will be an ongoing source for non-chlorinated volatiles and any action to remove LNAPL from the Headquarters property will likely result in pulling LNAPL from the adjacent property.

6.2 Chlorinated Volatile Organic Compounds

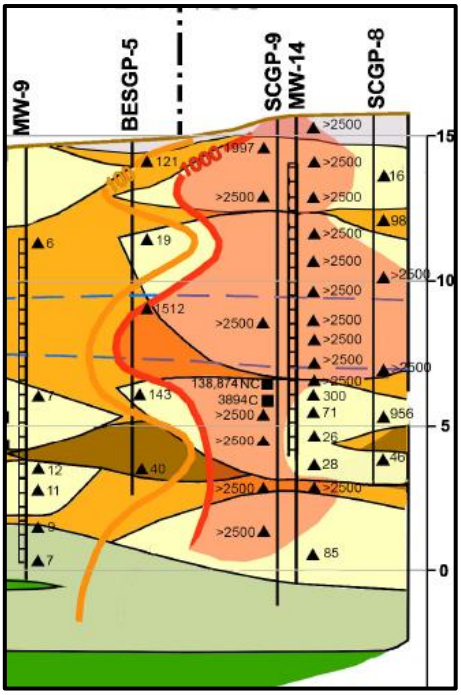
Distribution of chlorinated volatile organics (CVOCs) is shown in Figure 12. As noted in the discussion of soil quality data, the source area for volatile organic compounds appears to be from the adjacent property near the location of MW-14. From the source area, the plume of chlorinated volatile organic compounds (CVOCs) extends to the northwest and also to the south/southwest. This is in contrast to the plume of non-chlorinated volatiles which extends only to the northwest.





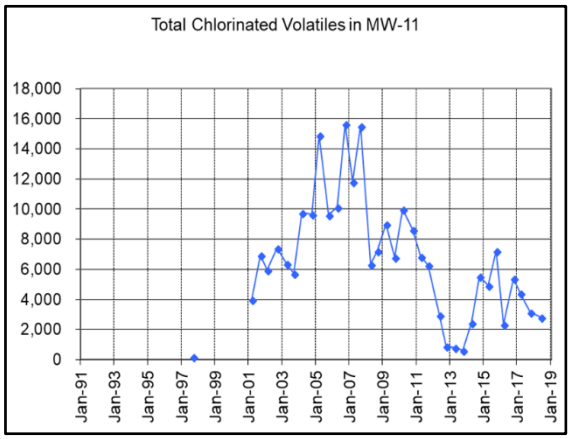
Chlorinated volatiles are heavier than water and when present in liquid phase in the subsurface are referred to as dense non-aqueous phase liquid or DNAPLs. Unlike LNAPLs, movement of DNAPLs on the subsurface is controlled to a large extent by confining beds and preferential flow zones. DNAPLs tend to move downward until they are fully attenuated by the soil or encounter a confining unit.

The distribution of chlorinated volatiles in groundwater (Figure 12) is thought to be the result of two process. Movement to the northwest (in a pattern similar to the LNAPLs) is thought to result from co-solubilization of the chlorinated compounds in the LNAPL, allowing migration of some chlorinated compounds with the LNAPL layer. Movement to the south and southwest is thought to be related to the vertical migration of DNAPLSs controlled by the presence of confining beds, then by the movement of groundwater. As shown in Figure 3, the first confining bed in the area of MW-14 is found at 12 feet below ground surface.

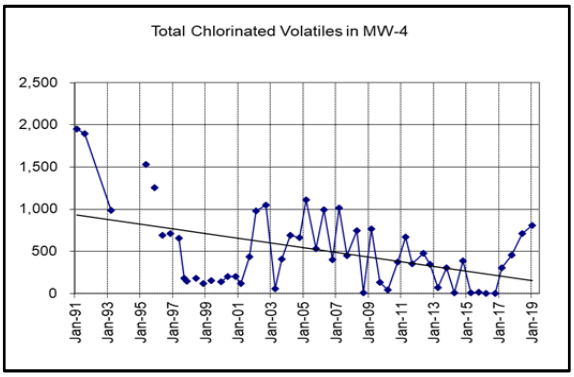


Soil and groundwater quality data show that the chlorinated compounds did not migrate to the east towards MW-9. Water quality data does show migration from the source area on the adjacent property near MW-14 to the south and eventually to the southwest towards MW-17 and MW-11. MW-16 located at the west side of the property did not show detectable levels of CVOCs.

In MW-11 the concentration of CVOCs were initially low in the first sampling performed in 1997. MW-11 was not sampled again until the fall of 2000, when the concentration was 4,008 ug/l. The total concentration of total CVOCs was relatively stable for the next 6 events, then increased in the March 2005. Since mid-2007, the concentration of CVOC shows a decreasing trend.



In MW-4, the total concentration of CVOCs is notably lower than in MW-11 and MW-14 and has shown an overall decrease since monitoring was initiated in 1991. This is consistent with the concept that chlorinated volatiles in MW-4 resulted from the migration of chlorinated compounds co-solubilized with LNAPL rather than directly tied to a source of DNAPL.



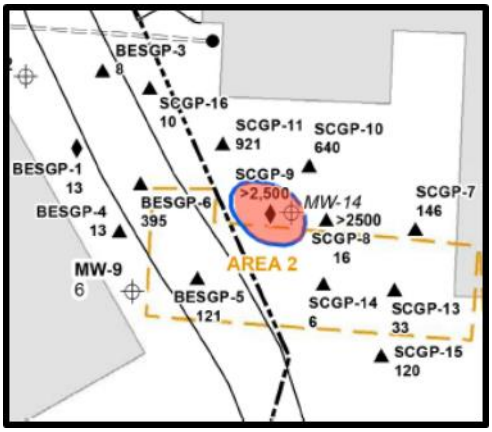
The distribution of CVOCs in soil and groundwater below the site indicates that the primary source of CVOCs is from the adjacent property from the area near MW-14. Migration of CVOCs to the north/northwest appears limited to the area west of MW-4. CVOCs have migrated from the source area on the adjacent property to the southern property boundary along Azalea Drive.

7.0 SUMMARY AND PROPOSED ACTIVITY

Recent assessment activity was requested by SCDHEC to provide a better characterization of site hydrogeologic conditions, improved delineation of the migration of volatile organic compounds, evaluation of LNAPL recovery efforts, and to assess the potential for vapor intrusion at the 4210 Azalea Drive building. Activity included installing a series of test holes using a Direct Push Technology (DPT) combined with geophysical testing, sub-slab soil vapor testing, enhanced vacuum recovery of LNAPL, and groundwater sampling. Results of indoor air sampling performed by WM Bird are also discussed in this report.

Hydrogeology: Site geology includes a complex suite of interlayered sediments that are included within two general geologic units. The upper unit is characterized by medium-grained sand interbedded with fine sand, silt, and to a lesser extent clay and appears to be part of the Pamlico Formation. The lower unit is characterized by fine- to medium-grained sands with large amounts of shell material interbedded with finer grained silts and clays which also often contain shell material and appears to be part of the Cooper Formation. Groundwater occurs at depths ranging in depth from 2 to 6 feet and generally flows to the west, south and southwest toward Brickyard Cr.

Soil Quality: None of the soil borings on the 4210 Azalea Drive property, including the direct push points installed in the recent sampling event, show elevated volatile organic compounds above the high water table. Only SCGP-8, SCGP-9, and MW-14 (on the adjacent property) show elevated concentrations of volatile organic compounds above the water table. GP-9 and MW-14 notably elevated concentrations starting at or near the surface and continue to a depth of 15 feet. These data, along with water-quality data, indicate that the area between SCGP-8, SCGP-9 and MW-14 (all on the adjacent property) is the source of volatile organic compounds found in groundwater below the Headquarters property.



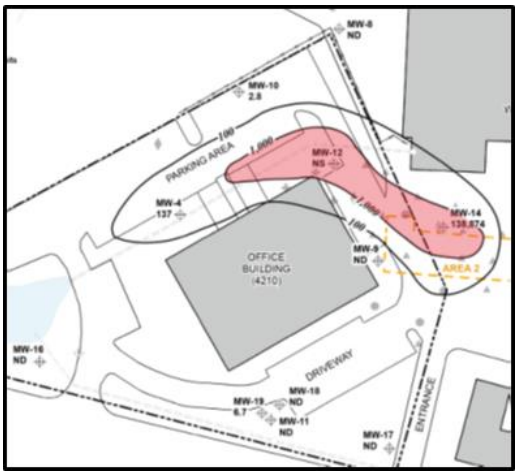
LNAPL: In reviewing historical soil data and current groundwater data, it appears likely that the LNAPL layer likely extends back to a source area near MW-14 on the adjacent Brenntag property. With an upgradient source of LNAPL, there is concern that any additional enhanced recovery from MW-12 could result in drawing LNAPL towards MW-12 from the adjacent property. As a result, it is proposed that any future enhanced recovery be designed and performed by Brenntag to ensure that recovery efforts are consider the source area and do not result in drawing the LNAPL layer towards MW-12

Sub-Slab Vapor Monitoring: Results from sub-slab vapor testing show that benzene was just above the EPA model screening value for the Industrial Indoor Air Equivalent. LNAPL from the

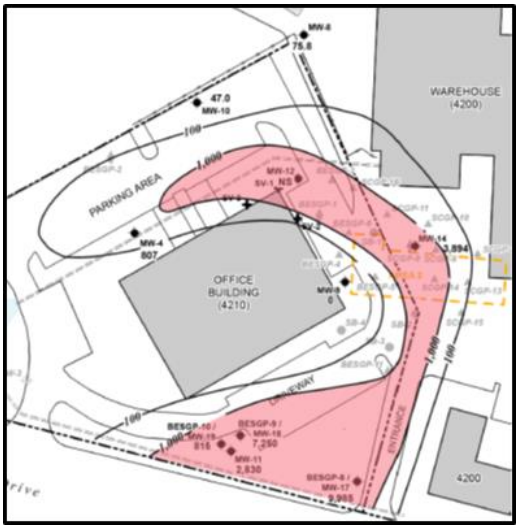
adjacent property appears to be the primary source of volatile organics in soil. Brenntag and WM Bird were notified of sub-slab test results, and efforts are being made to coordinate future response activity with WM Bird and Brenntag. Unless efforts are made to remove the source from the adjacent property, there will be an ongoing source of volatile organics in the shallow subsurface.

Indoor Air Quality: Results of indoor air quality (IAQ) sampling showed that several volatile organic compounds were detected, but that all compounds found in groundwater below the site were orders of magnitude lower than OSHA permissible exposure levels (PELs). In addition, of the compounds detected, only tetrachloroethene (PCE) concentrations exceed the EPA RSL for industrial indoor air (47 ug/m3). In reviewing groundwater data, PCE (tetrachloroethene) is rarely detected in groundwater samples above the method detection level. Also, PCE was only detected in one of the sub-slab vapor samples at 2 ug/m3.

Non-chlorinated Volatile Organics in Groundwater: The plume of non-chlorinated volatile organics originates near MW-14 and extends to the northeast towards MW-12 and then west southwest towards MW-4. Although there is a thin layer of LNAPL between MW-14 and MW-12, there appears to be rapid natural attenuation of non-chlorinated volatiles in groundwater, and non-chlorinated volatiles in groundwater are at or below detection limits or at low concentrations in all other wells. Semiannual groundwater monitoring will be continued, but unless efforts are made by Brenntag to remove material from the source area on the adjacent site, the LNAPL will provide a continuing source of shallow soil vapor in the vicinity of the former Headquarters office building.



Chlorinated Volatile Organics in Groundwater: The source area for volatile organic compounds appears to be from the adjacent property near the location of MW-14. From the source area, the plume of chlorinated volatile organic compounds (CVOCs) extends to the northwest and also to the south/southwest. The distribution of chlorinated volatiles in groundwater is thought to be the result of two process. Movement to the northwest (in a pattern similar to the LNAPLs) is thought to result from co-solubilization of the chlorinated compounds in LNAPL, allowing migration of some chlorinated compounds with the LNAPL layer. Movement to the south and southwest is thought to be related to the initial downward migration of DNAPLs controlled by the presence/absence of confining beds. Semiannual groundwater monitoring will be continued, However, unless efforts are made to remove source material from the adjacent property of Brenntag, it is not anticipated that CVOC concentration below the property will decrease in a significant manner.



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Arcadis, February 2019, Second Semiannual 2018 Groundwater Monitoring Report, Brenntag Southeast, Inc. 4200 Azalea Drive, Charleston, SC.

IPGX, Inc, 2018, Groundwater Monitoring Report, June 2018 Sampling.

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Groundwater Solutions, Inc, 1998, Report of Additional Assessment Activity,

Park, A.D., 1985, The Ground-Water Resources of Charleston, Berkeley, and Dorchester Counties, S.C., SC Water Resources Commission Report No. 139, 146 p.

Peak Hydrogeologic Report, 2018 (December), Soil testing, monitoring well installation, and groundwater sampling report. 4210 Azalea Drive, Charleston, SC.

FIGURES

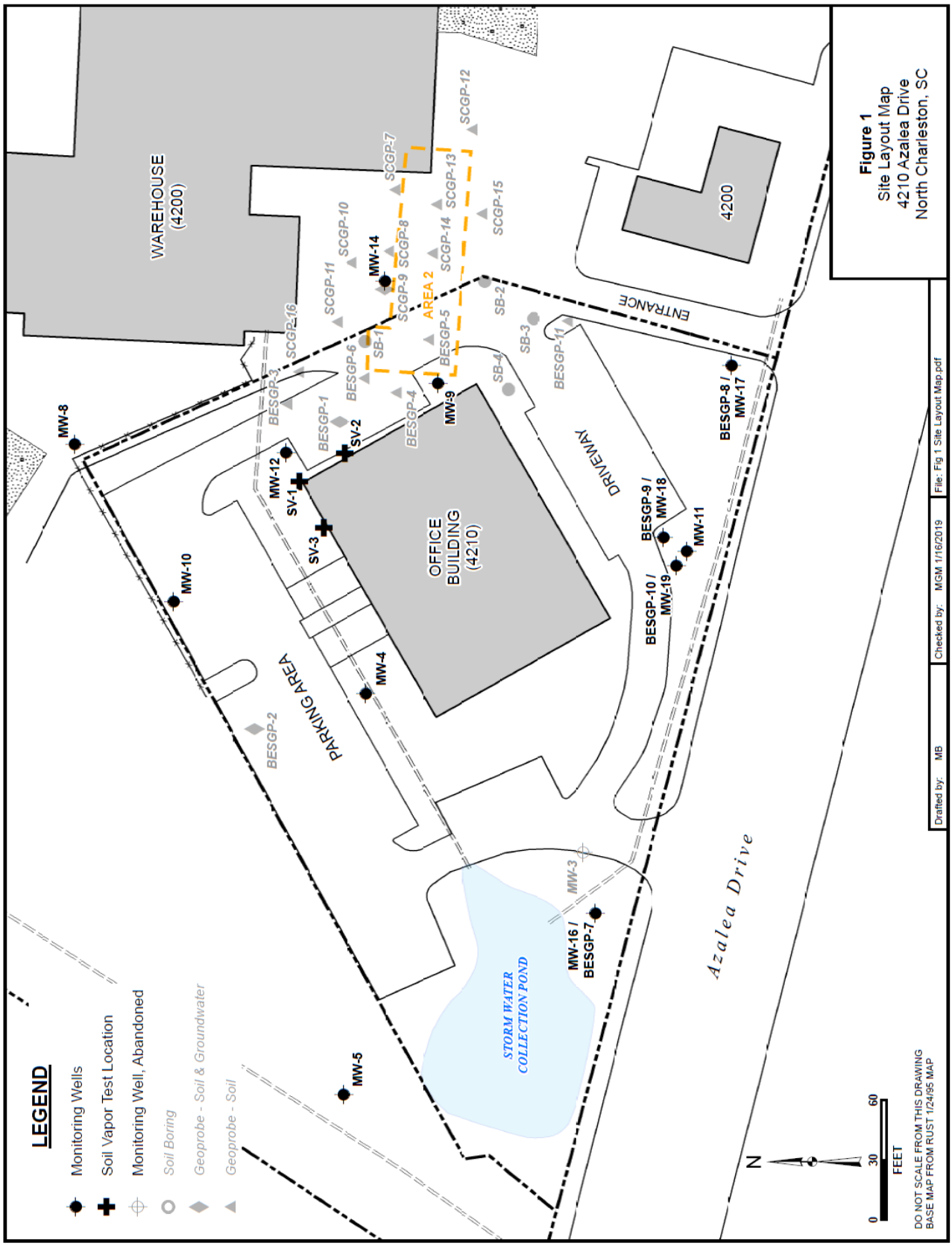
Figure 1
Site Layout Map
4210 Azalea Drive
North Charleston, SC
WAREHOUSE (4200)
4200
OFFICE BUILDING (4210)
PARKING AREA
DRIVEWAY
ENTRANCE
Azalea Drive
STORM WATER COLLECTION POND
AREA 2
MW-8
MW-10
MW-12
SV-1
SV-3
SV-2
MW-4
MW-5
MW-14
MW-9
MW-16 / BESGP-7
MW-3
BESGP-9 / MW-18
MW-11
BESGP-10 / MW-19
BESGP-8 / MW-17
SCGP-7
SCGP-8
SCGP-9
SCGP-10
SCGP-11
SCGP-12
SCGP-13
SCGP-14
SCGP-15
SCGP-16
SB-1
SB-2
SB-3
SB-4
BESGP-1
BESGP-2
BESGP-3
BESGP-4
BESGP-5
BESGP-6
BESGP-11
LEGEND
Monitoring Wells
Soil Vapor Test Location
Monitoring Well, Abandoned
Soil Boring
Geoprobe - Soil & Groundwater
Geoprobe - Soil
N
0
30
60
FEET
DO NOT SCALE FROM THIS DRAWING
BASE MAP FROM RUST 1/24/95 MAP
Drafted by: MB
Checked by: MGM 1/16/2019
File: Fig 1 Site Layout Map.pdf

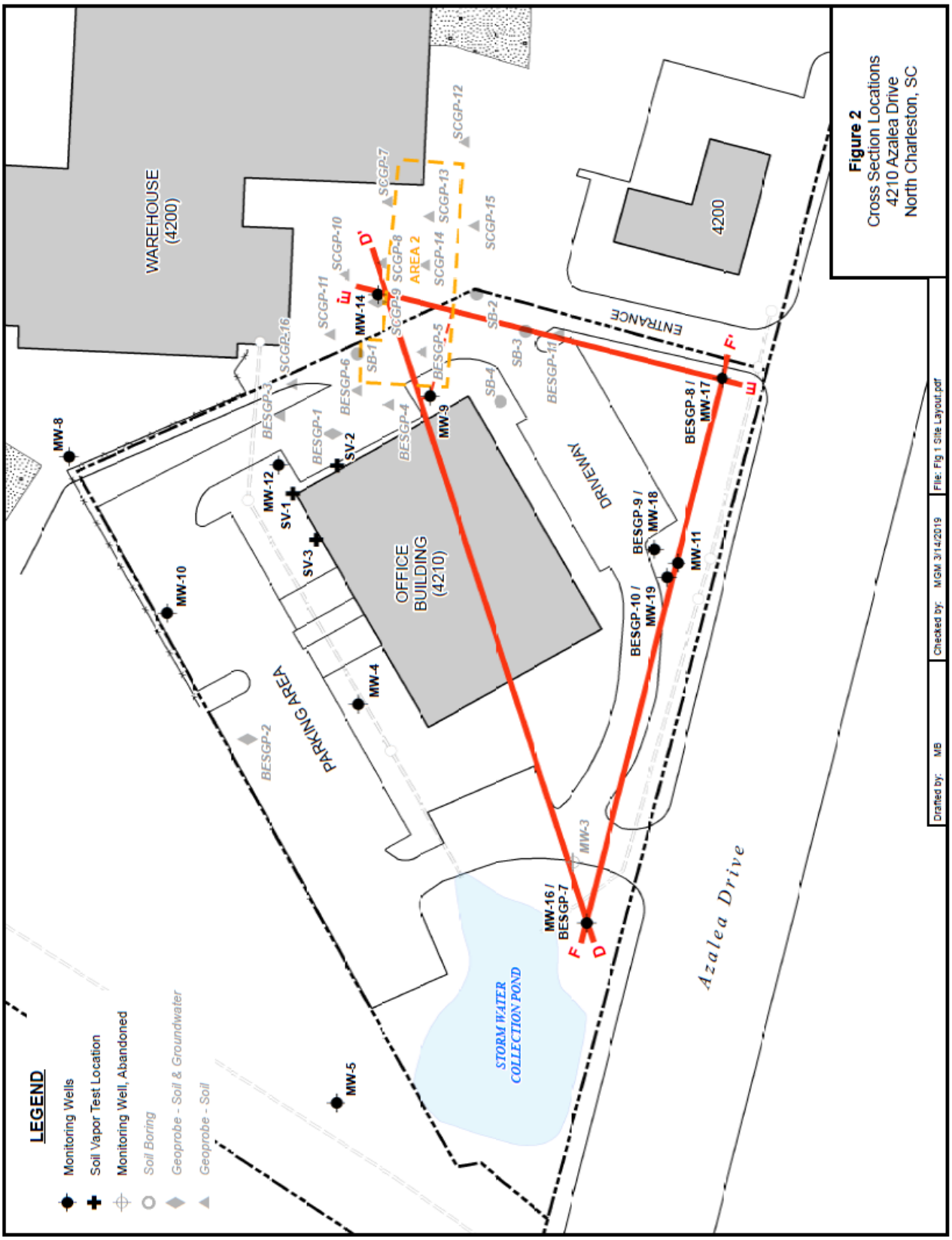
Figure 2
Cross Section Locations
4210 Azalea Drive
North Charleston, SC
Drafted by: MB
Checked by: MGM 3/14/2019
File: Fig 1 Site Layout.pdf
LEGEND
Monitoring Wells
Soil Vapor Test Location
Monitoring Well, Abandoned
Soil Boring
Geoprobe - Soil & Groundwater
Geoprobe - Soil
WAREHOUSE (4200)
4200
OFFICE BUILDING (4210)
PARKING AREA
DRIVEWAY
ENTRANCE
AREA 2
STORM WATER COLLECTION POND
Azalea Drive
MW-8
MW-10
MW-12
SV-1
SV-2
SV-3
MW-4
MW-5
MW-14
MW-9
MW-3
MW-16 / BESGP-7
BESGP-8 / MW-17
BESGP-9 / MW-18
BESGP-10 / MW-19
MW-11
SB-1
SB-2
SB-3
SB-4
SB-5
BESGP-1
BESGP-2
BESGP-3
BESGP-4
BESGP-5
BESGP-6
BESGP-11
SCGP-7
SCGP-8
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SCGP-14
SCGP-15
SCGP-16
D
D'
F
F'

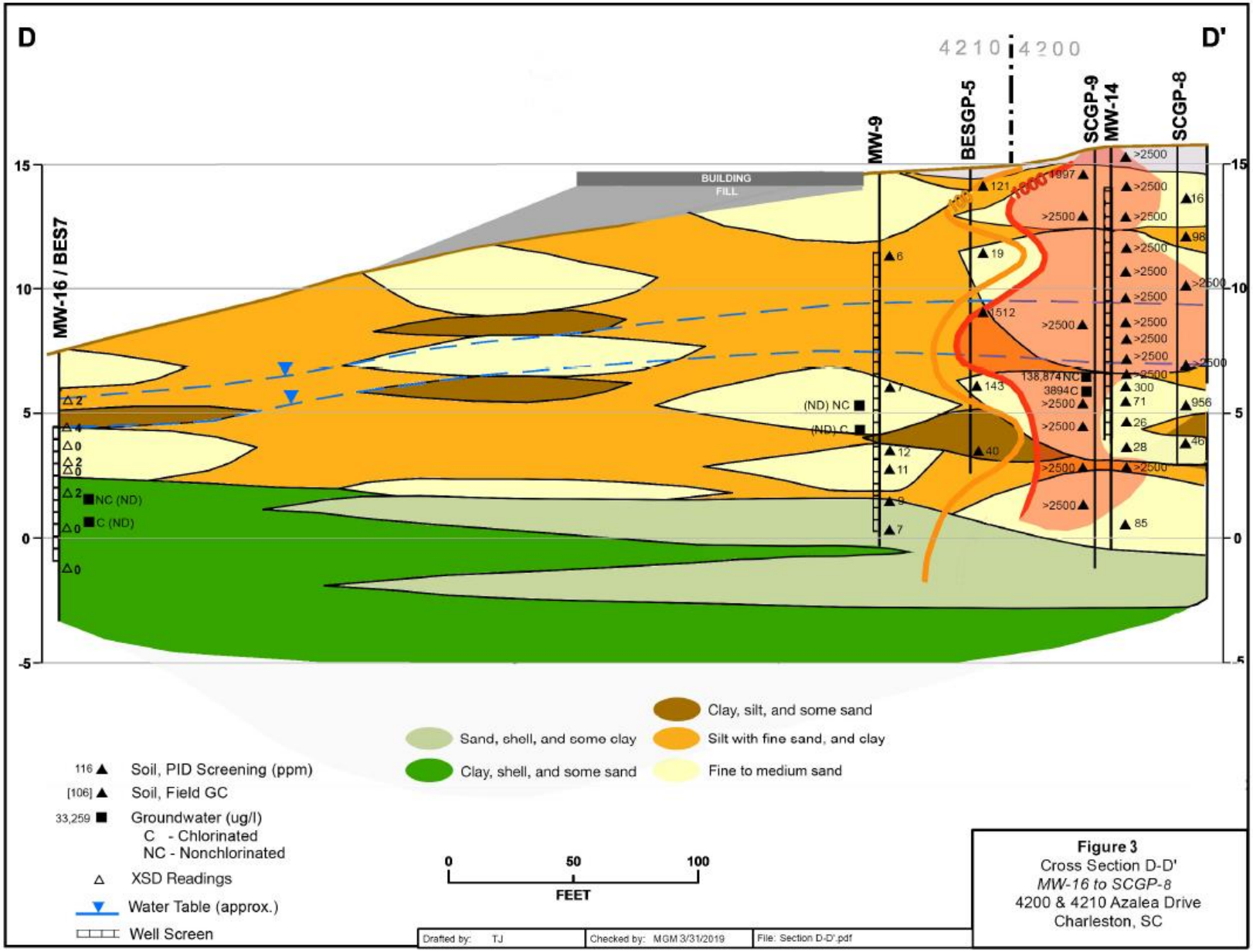


Figure 3
Cross Section D-D'
MW-16 to SCGP-8
4200 & 4210 Azalea Drive
Charleston, SC

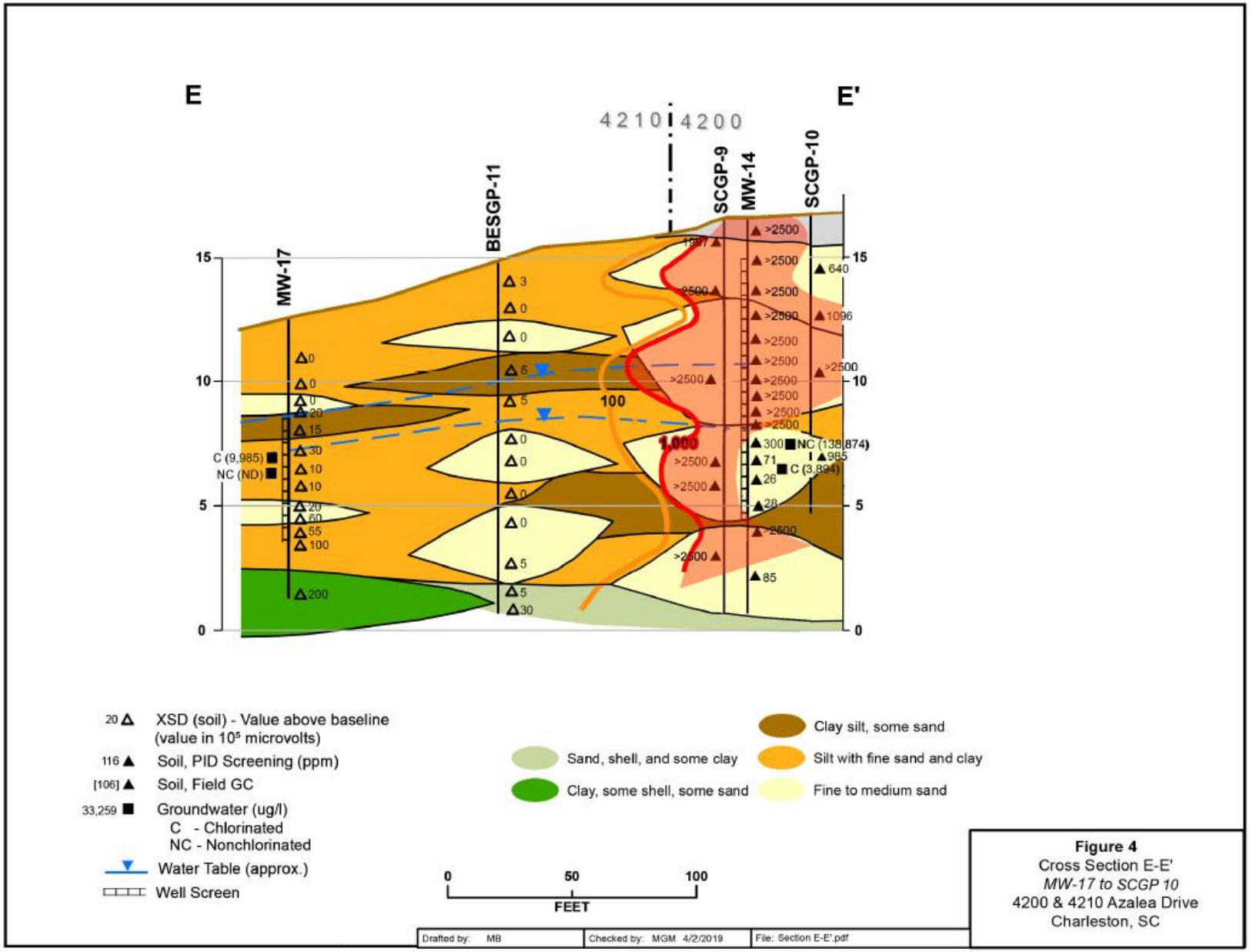


Figure 4
Cross Section E-E'
MW-17 to SCGP 10
4200 & 4210 Azalea Drive
Charleston, SC

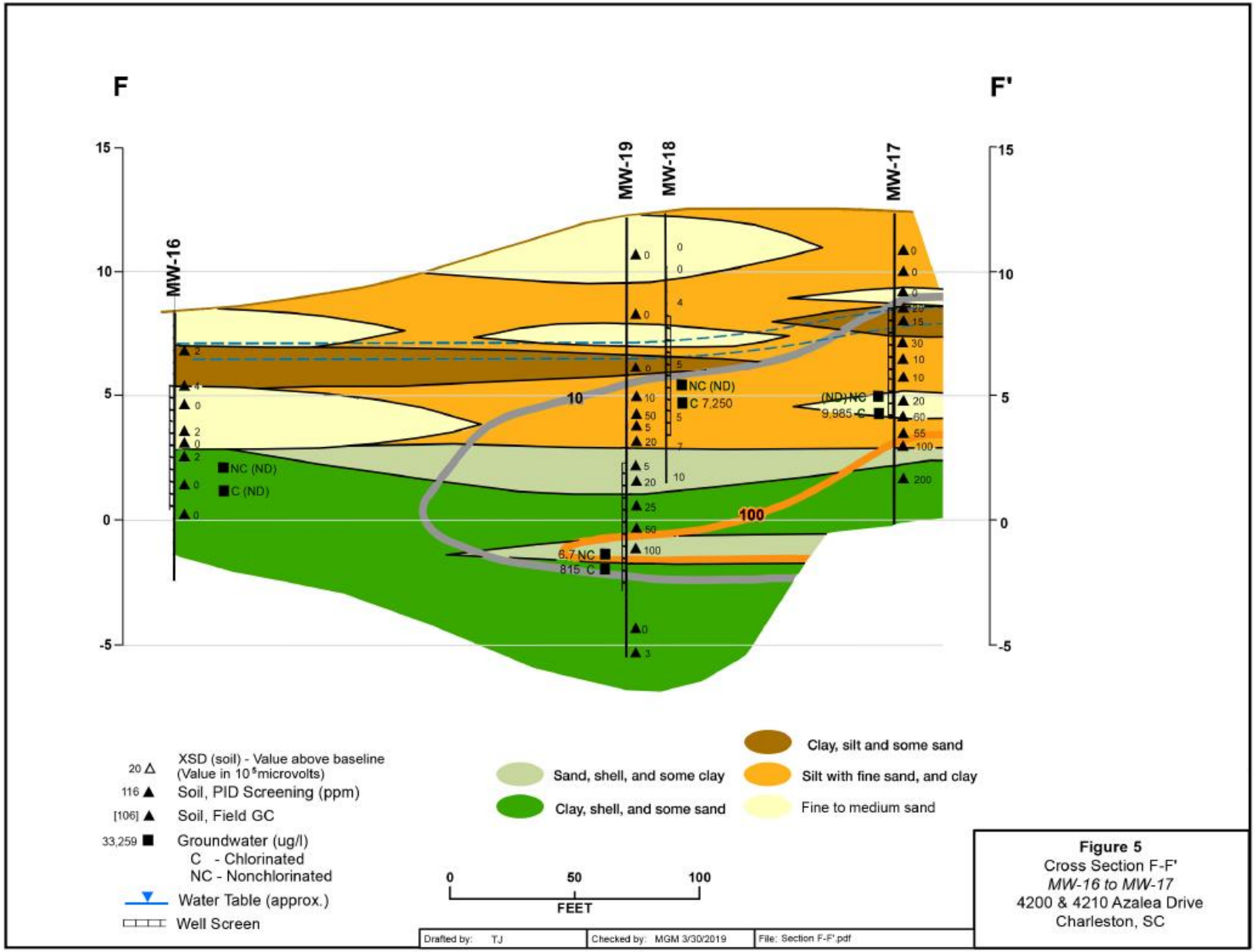


Figure 5
Cross Section F-F'
MW-16 to MW-17
4200 & 4210 Azalea Drive
Charleston, SC

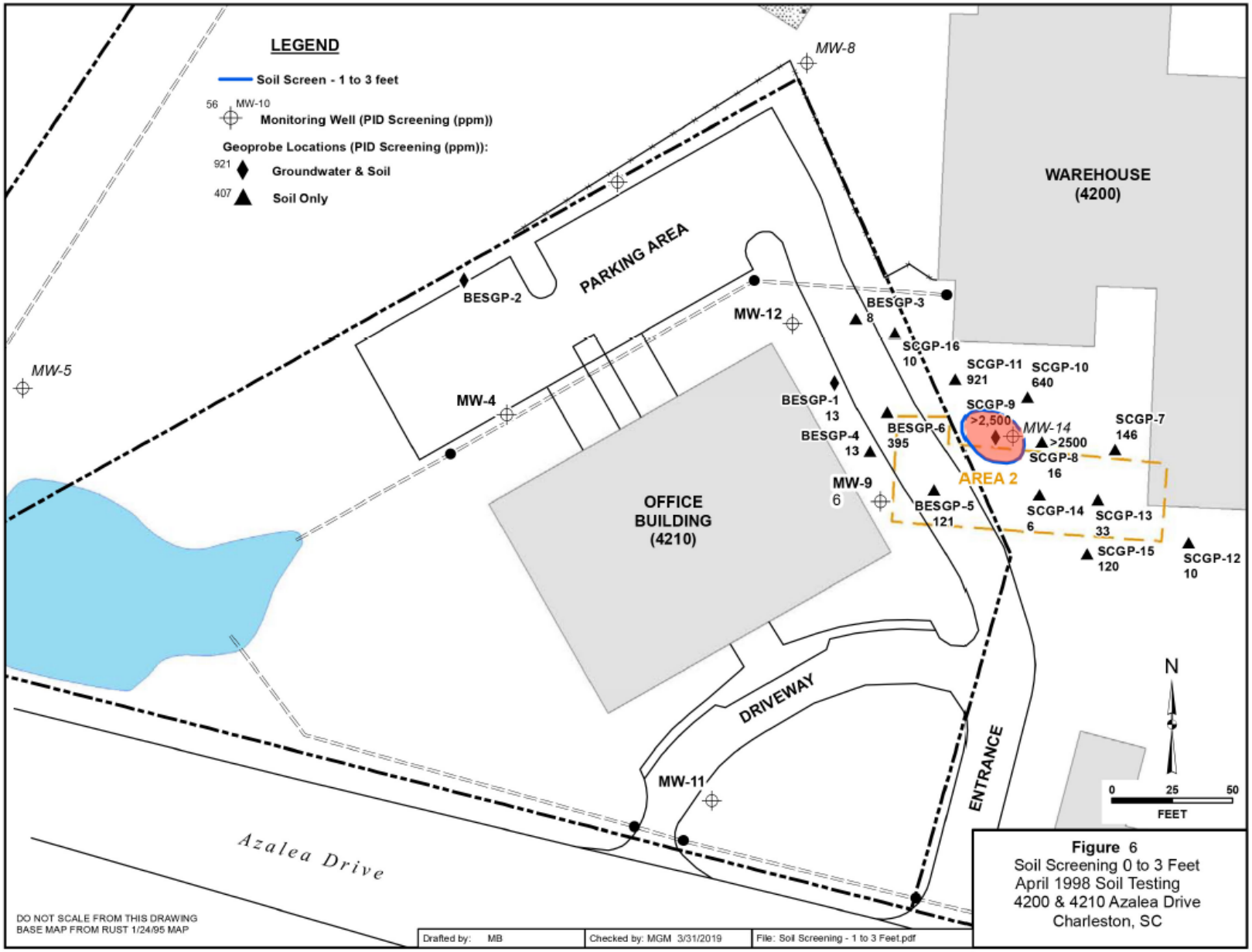


Figure 6
Soil Screening 0 to 3 Feet
April 1998 Soil Testing
4200 & 4210 Azalea Drive
Charleston, SC

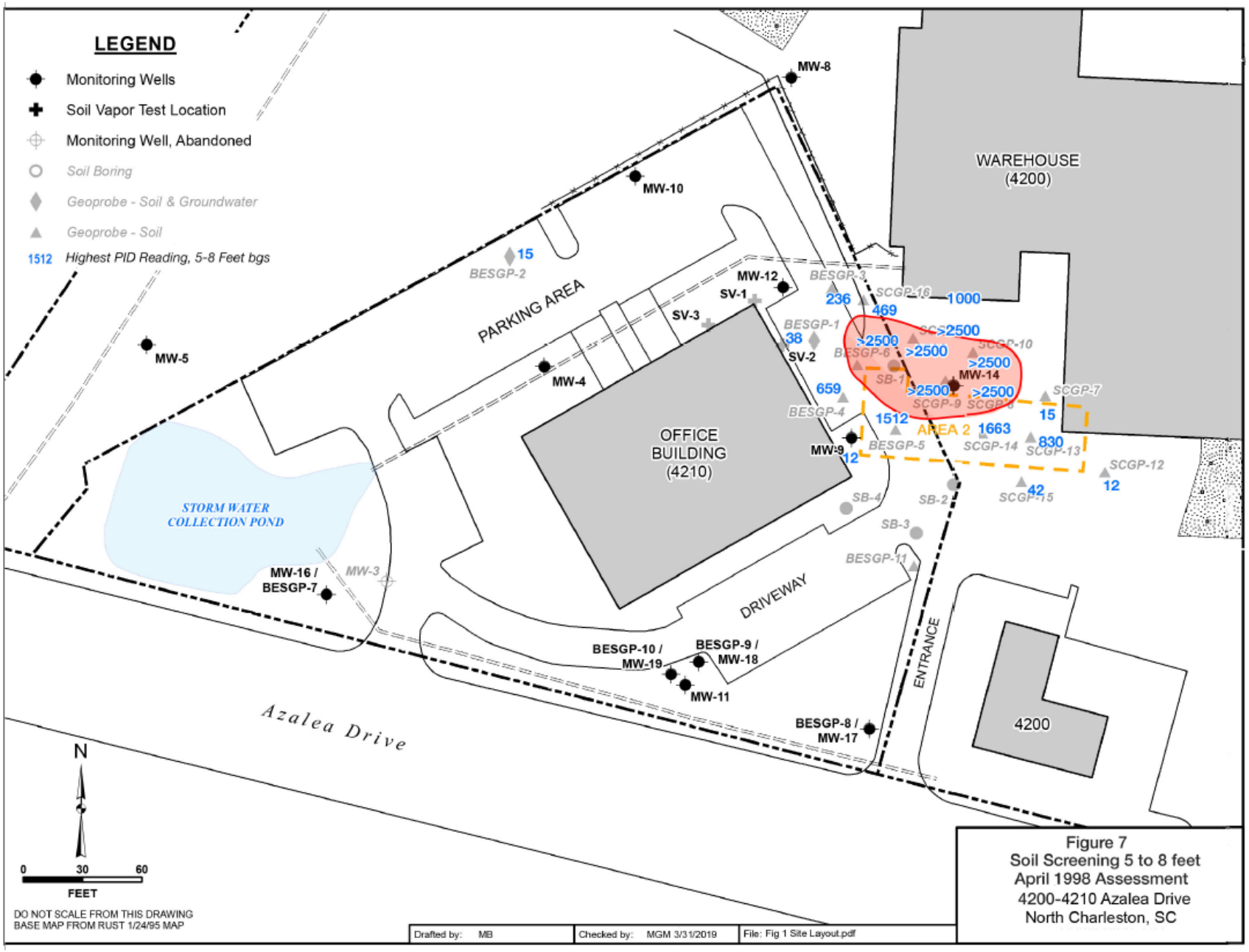


Figure 7
Soil Screening 5 to 8 feet
April 1998 Assessment
4200-4210 Azalea Drive
North Charleston, SC

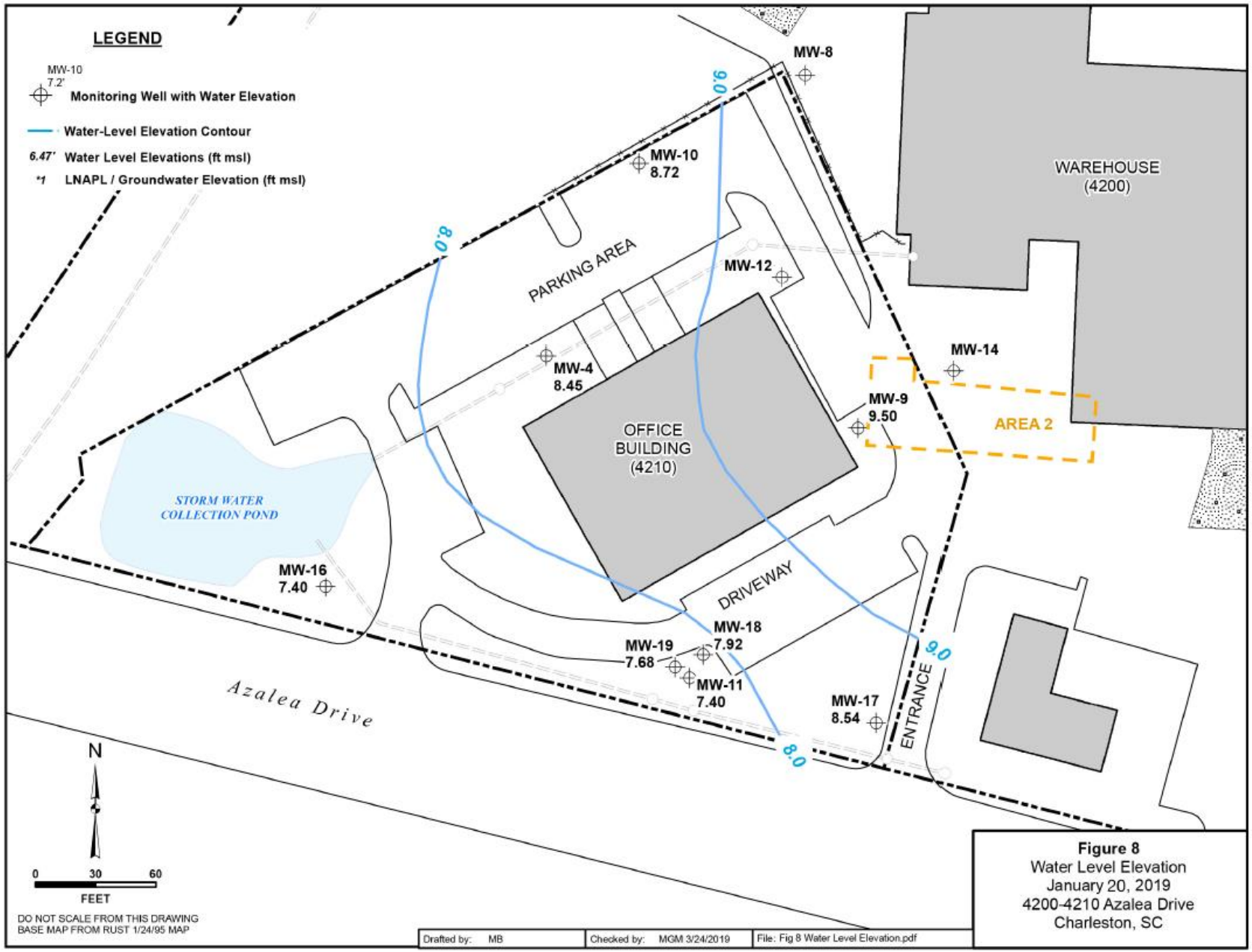
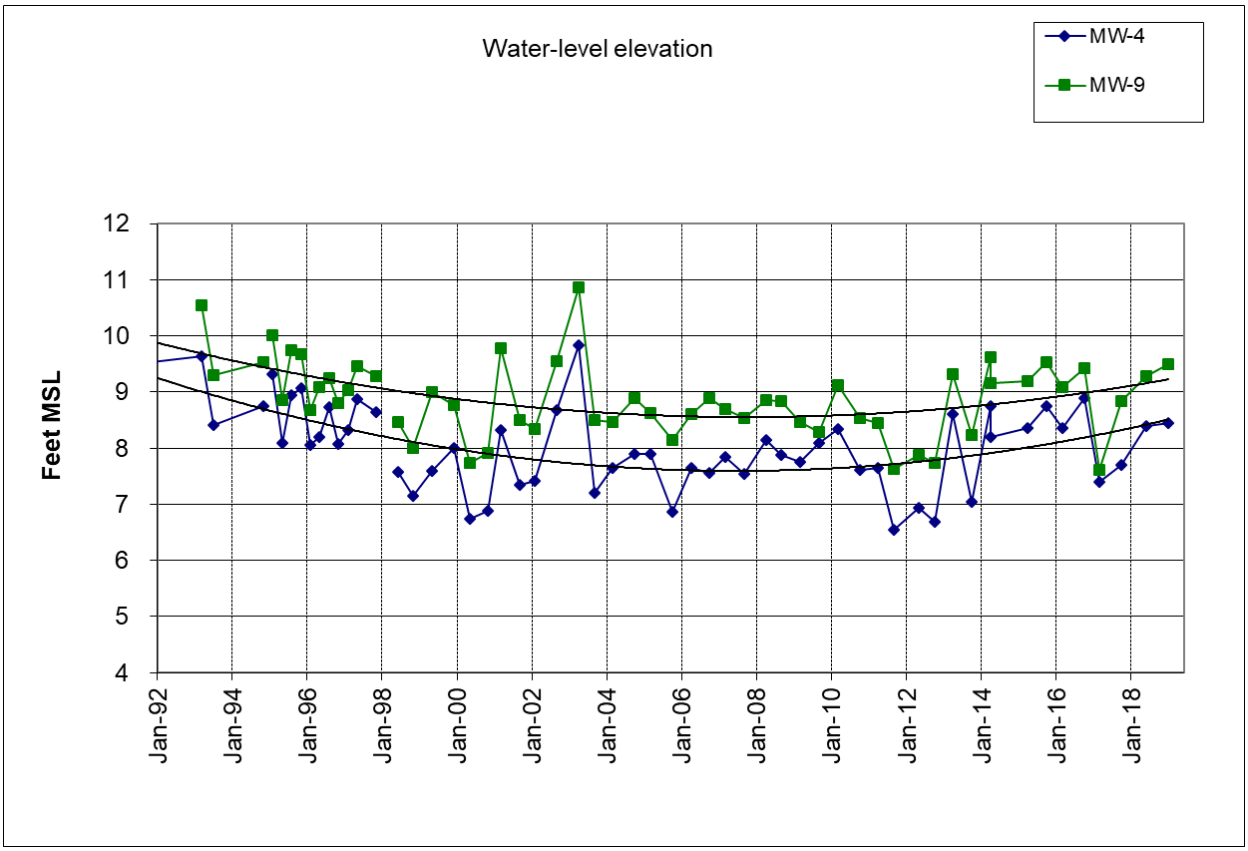
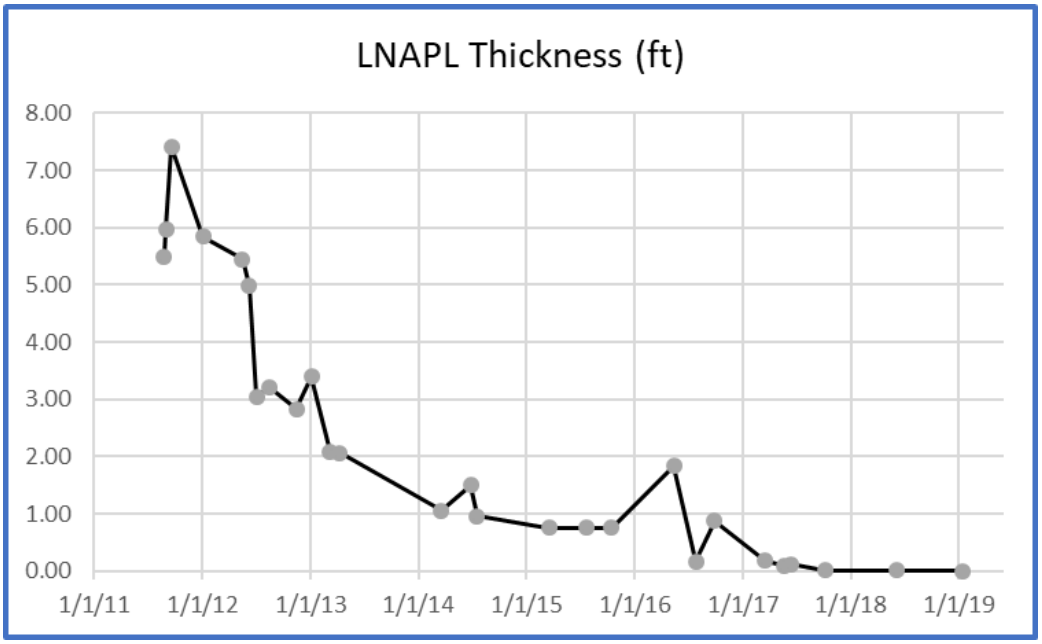

LEGEND
MW-10
7.2'
Monitoring Well with Water Elevation
Water-Level Elevation Contour
6.47' Water Level Elevations (ft msl)
*1 LNAPL / Groundwater Elevation (ft msl)
MW-8
MW-10
8.72
MW-12
MW-4
8.45
MW-14
MW-9
9.50
AREA 2
WAREHOUSE
(4200)
OFFICE
BUILDING
(4210)
PARKING AREA
STORM WATER
COLLECTION POND
MW-16
7.40
DRIVEWAY
MW-18
7.92
MW-19
7.68
MW-11
7.40
MW-17
8.54
ENTRANCE
Azalea Drive
9.0
8.0
N
0
30
60
FEET
DO NOT SCALE FROM THIS DRAWING
BASE MAP FROM RUST 1/24/95 MAP
Drafted by: MB
Checked by: MGM 3/24/2019
File: Fig 8 Water Level Elevation.pdf
Figure 8
Water Level Elevation
January 20, 2019
4200-4210 Azalea Drive
Charleston, SC

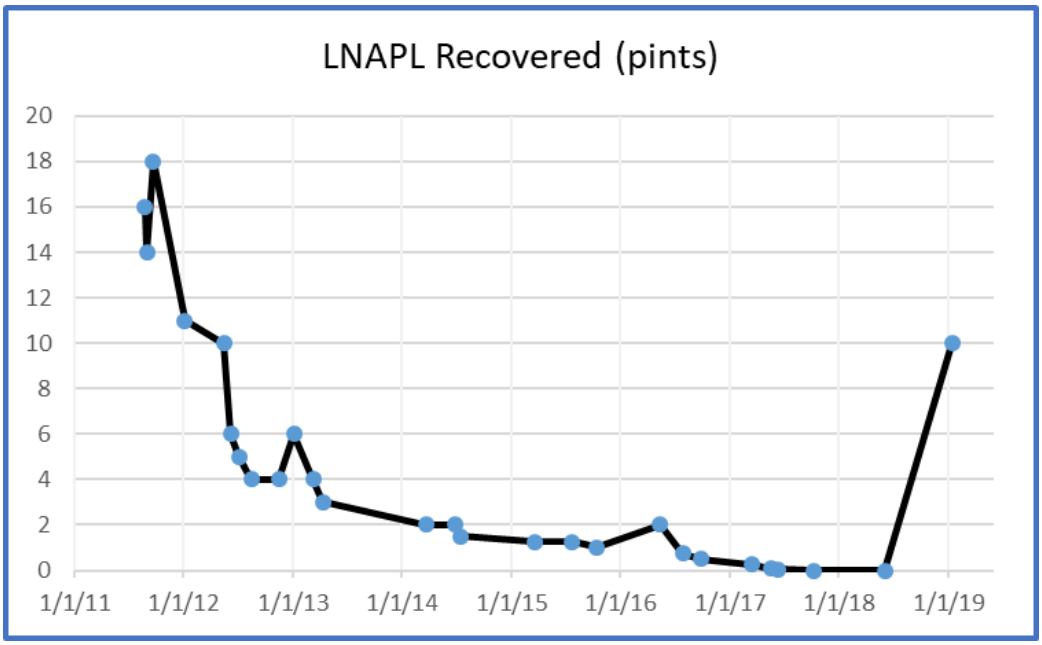
Figure 9. Water-Level Hydrograph



Second order polynomial trendline shown for both wells.

Figure 10. LNAPL Thickness/Recovery Plots





Vacuum enhanced recovery January 2019

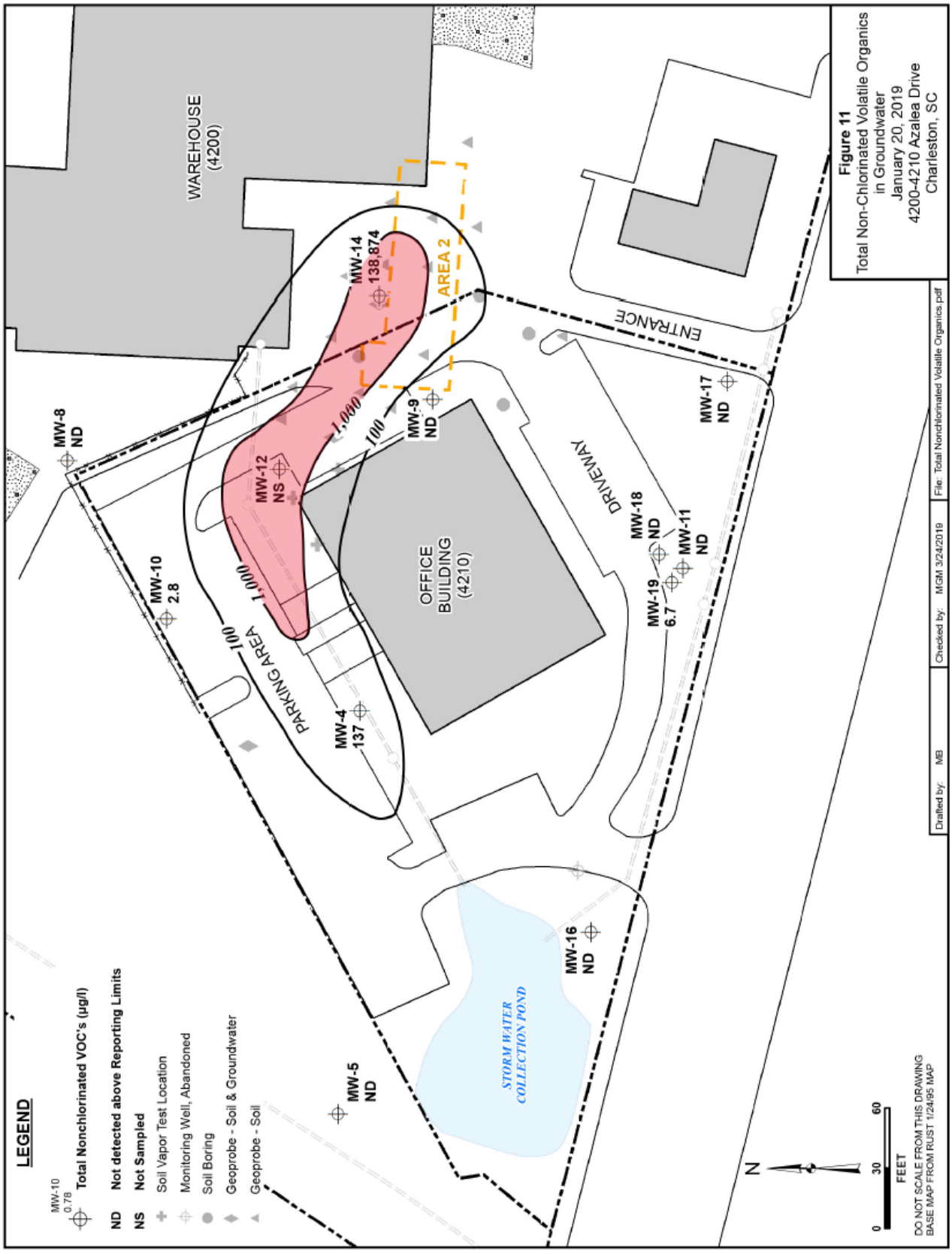


Figure 11
Total Non-Chlorinated Volatile Organics
in Groundwater
January 20, 2019
4200-4210 Azalea Drive
Charleston, SC
Drafted by: MB
Checked by: MGM 3/24/2019
File: Total Nonchlorinated Volatile Organics.pdf
LEGEND
MW-10
0.78
Total Nonchlorinated VOC's (µg/l)
ND Not detected above Reporting Limits
NS Not Sampled
Soil Vapor Test Location
Monitoring Well, Abandoned
Soil Boring
Geoprobe - Soil & Groundwater
Geoprobe - Soil
WAREHOUSE
(4200)
OFFICE
BUILDING
(4210)
PARKING AREA
DRIVEWAY
ENTRANCE
AREA 2
STORM WATER
COLLECTION POND
MW-8
ND
MW-10
2.8
MW-12
NS
MW-14
138,874
MW-9
ND
MW-4
137
MW-5
ND
MW-16
ND
MW-17
ND
MW-18
ND
MW-19
6.7
MW-11
ND
1,000
100
N
0
30
60
FEET
DO NOT SCALE FROM THIS DRAWING
BASE MAP FROM RUST 1/24/95 MAP

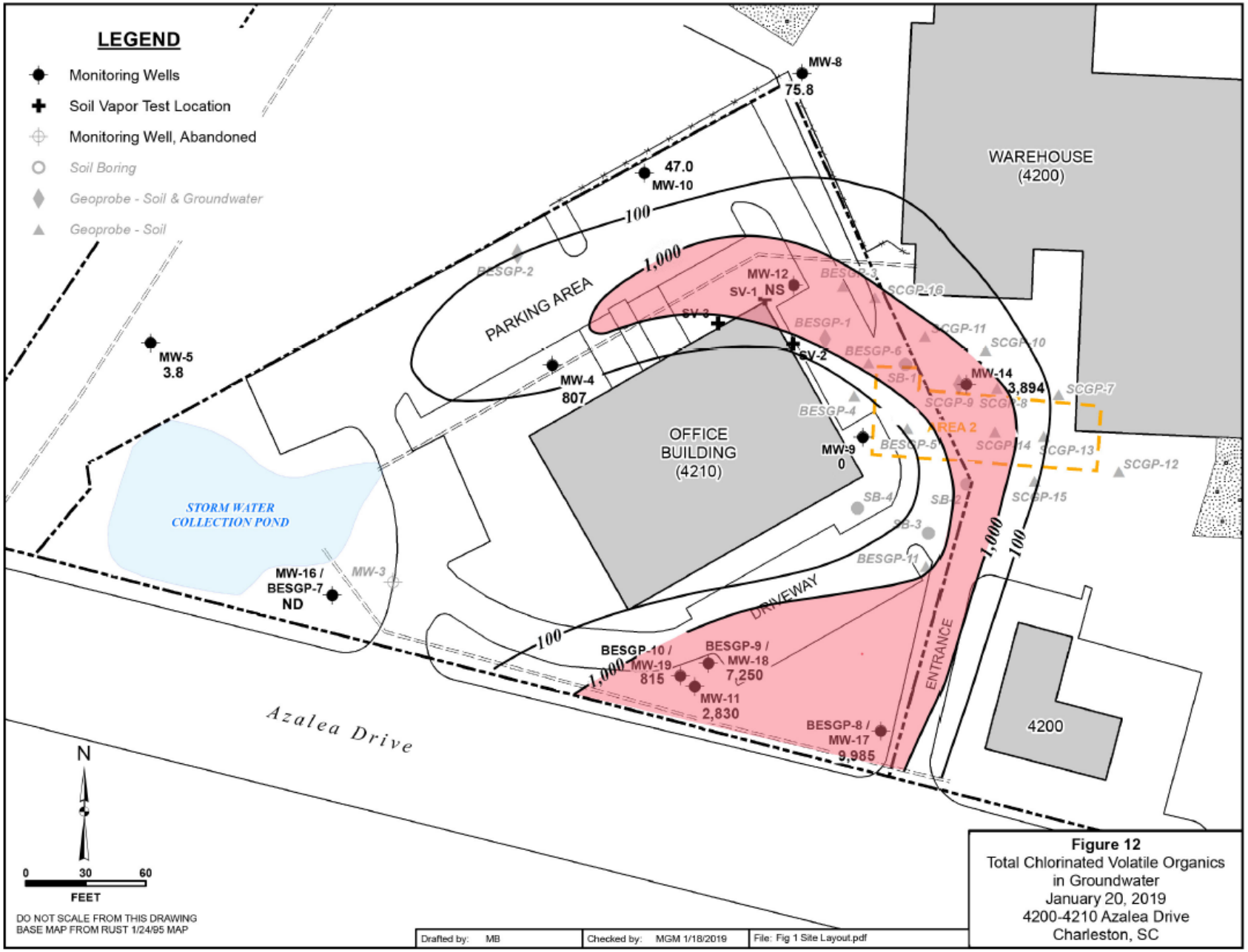
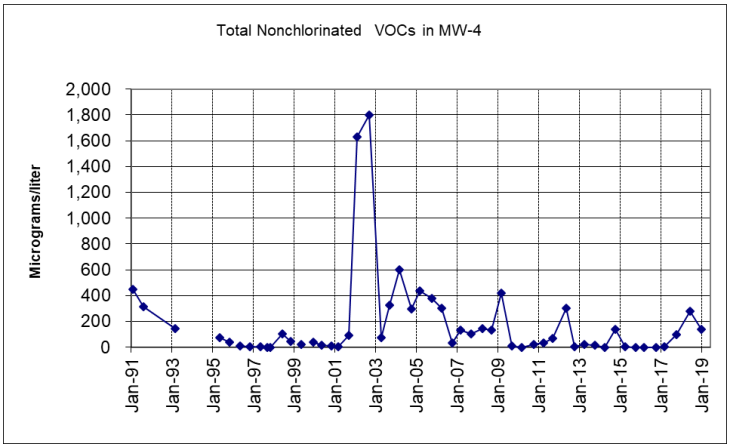
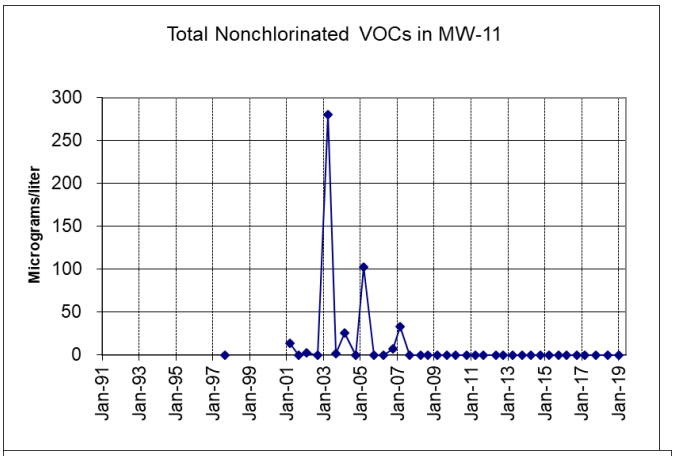
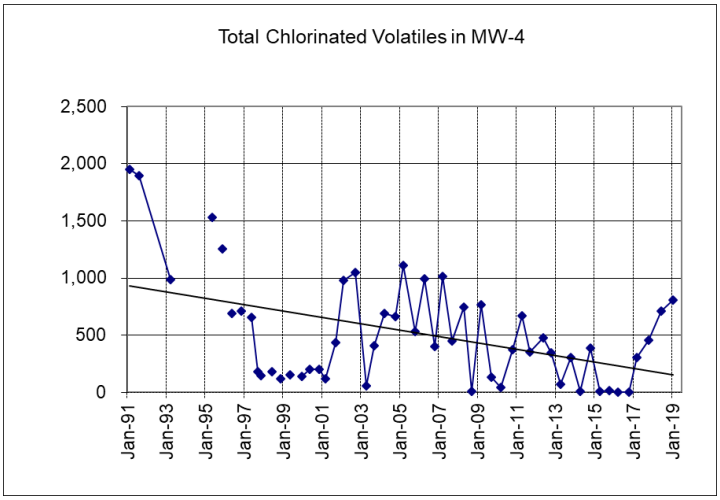


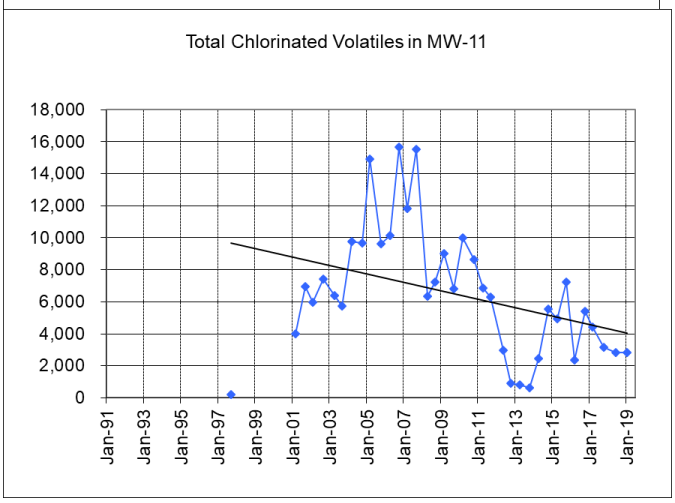
Figure 12
Total Chlorinated Volatile Organics
in Groundwater
January 20, 2019
4200-4210 Azalea Drive
Charleston, SC

Figure 13. Time-Concentration Graphs









Linear trendline shown total chlorinated volatiles.

TABLES

Table 1. Water-Level Elevations
4210 Azalea Drive, Charleston, SC

	Water		Water		Water		Water		Water		Water		Water		Inapl		Water		Water		Water		Water	
	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.
DATE	**MW-4**		**MW-5**		**MW-8**		**MW-9**		**MW-10**		**MW-11**		**MW-12**				**MW-14**		**MW-16**		**MW-17**		**MW-18**		**MW-19**	
08/15/91	4.27	9.52	11.8	0.22																				
03/29/93	3.82	9.63	11.8	0.26	4.61	10.53	4.71	10.54																
07/15/93	5.04	8.41	12.1	-0.11	6.15	8.99	5.95	9.3																
11/07/94	4.7	8.75	11.2	0.83	5.46	9.68	5.72	9.53																
12/20/94					5.55	9.61																		
02/22/95	4.18	9.32	11.1	0.96	5.15	10.01	5.26	10.02																
05/17/95	5.41	8.09	11.5	0.55	6.58	8.58	6.42	8.86																
08/15/95	4.55	8.95			5.95	9.21	5.54	9.74																
11/13/95	4.43	9.07	11	1	5.54	9.62	5.61	9.67																
02/20/96	5.44	8.06	11.6	0.45	5.6	9.56	6.61	8.67																
05/20/96	5.31	8.19	11.1	0.93	6.57	8.59	6.20	9.08																
08/30/96	4.76	8.74	10.6	1.41	6.14	9.02	6.04	9.24																
11/14/96	5.42	8.08	10.3	1.71	6.49	8.67	6.48	8.80																
02/28/97	5.18	8.32	10.9	1.08	6.15	9.01	6.25	9.03																
05/08/97	4.62	8.88	10.1	1.91	5.9	9.26	5.82	9.46																
11/26/97	4.86	8.64	10.3	1.75	5.81	9.35	6.00	9.28																
02/14/98					5.3	9.86																		
06/19/98	5.92	7.58	11.7	0.36	6.66	8.5	6.82	8.46	6.90	7.55				6.67		8.24								
11/30/98	6.35	7.15	11.6	0.39	7.2	7.96	7.28	8.00	8.15	6.30	3.90	6.53		7.28		7.63								
05/14/99	5.9	7.6	10.1	1.91	6.72	8.44	6.29	8.99	7.51	6.94	3.62	6.81		6.75		8.16								
12/27/99	5.49	8.01	10.4	1.62	6.41	8.75	6.52	8.76																
05/31/00	6.76	6.74	10.7	1.34	7.48	7.68	7.54	7.74																
11/10/00	6.62	6.88	10.7	1.32	7.25	7.91	7.37	7.91																
03/16/01	5.18	8.32	10.6	1.45	6.51	8.65	5.50	9.78	6.63	7.82	3.15	7.28												
09/20/01	6.15	7.35	10.8	1.23	6.71	8.45	6.78	8.50	7.15	7.30	3.45	6.98		7.14		7.77								
02/25/02	6.08	7.42					6.94	8.34	7.20	7.25	3.65	6.78		11.26		3.65								
09/30/02	4.83	8.67					5.73	9.55	5.70	8.75	2.92	7.51		9.28		5.63								
04/11/03	3.66	9.84					4.41	10.87	4.53	9.92	2.67	7.76	4.72	8.23	10.19	6.68								
09/29/03	6.29	7.21					6.78	8.50	7.20	7.25	3.54	6.89	6.48	10.94	8.43	3.97								
03/26/04	5.85	7.65					6.82	8.46	6.75	7.70	3.78	6.65	6.36	10.34	8.55	4.57								
10/02/04	5.6	7.9					6.38	8.90	6.42	8.03	3.29	7.14	6.01	9.85	8.90	5.06								
03/12/05	5.61	7.89					6.65	8.63	6.41	8.04	3.21	7.22	6.10	9.75	8.81	5.16								
10/01/05	6.64	6.86					7.14	8.14	7.45	7.00	3.60	6.83	6.81	10.65	8.10	4.26								
04/02/06	5.85	7.65					6.68	8.60	6.56	7.89	3.35	7.08	6.22	9.75	8.69	5.16								
10/01/06	5.95	7.55					6.39	8.89	6.60	7.85	3.32	7.11	6.40	6.74	8.51	8.17								
03/25/07	5.65	7.85					6.59	8.69	6.42	8.03	3.04	7.39	6.60	6.61	8.31	8.31								
09/22/07	5.96	7.54					6.74	8.54	6.85	7.60	3.10	7.33	NA	6.91		8.00								
04/06/08	5.35	8.15					6.42	8.86	6.14	8.31	3.03	7.40	NA	6.50		8.41								
09/27/08	5.62	7.88					6.45	8.83	6.41	8.04	2.68	7.75	NA	6.61		8.30								
03/30/09	5.74	7.76					6.82	8.46	6.49	7.96	3.23	7.20	NA	6.85		8.06								
09/19/09	5.41	8.09					6.99	8.29	7.01	7.44	3.48	6.95	NA	7.01		7.90								
03/27/10	5.16	8.34					6.15	9.13	5.92	8.53	3.03	7.40	NA	6.09		8.82								
10/09/10	5.89	7.61					6.74	8.54	6.79	7.66	3.16	7.27	*	6.83		8.08								
04/09/11	5.85	7.65					6.83	8.45	6.71	7.74	3.32	7.11	6.36	9.05	8.55	5.86								
09/25/11	6.95	6.55					7.65	7.63	7.98	6.47	3.29	7.14	7.45	12.90	7.46	2.01								
05/18/12	6.57	6.93					7.40	7.88	7.60	6.85	3.48	6.95	7.25	11.75	7.66	3.16								
10/17/12	6.82	6.68					7.54	7.74	7.70	6.75	3.83	6.60	7.53	9.38	7.38	5.53								
04/13/13	4.89	8.61					5.97	9.31	5.62	8.83	2.79	7.64	6.06	6.90	8.85	8.01								
10/04/13	6.45	7.05					7.04	8.24	7.27	7.18	3.56	6.87	7.15	8.80	7.76	6.11								
04/25/14	4.75	8.75					5.66	9.62	5.60	8.85	2.79	7.64	5.70	6.80	9.21	8.11								

Table 1. Water-Level Elevations
4210 Azalea Drive, Charleston, SC

	Water		Water		Water		Water		Water		Water		Water		Inapl		Water		Water		Water		Water		Water	
	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.
DATE	**MW-4**		**MW-5**		**MW-8**		**MW-9**		**MW-10**		**MW-11**		**MW-12**				**MW-14**		**MW-16**		**MW-17**		**MW-18**		**MW-19**	
04/25/14	5.3	8.2					6.13	9.15	6.16	8.29	2.83	7.60	6.30	7.02	8.61	7.89										
04/03/15	5.15	8.35					6.09	9.19	5.95	8.50	3.05	7.38	6.15	7.40	8.76	7.51										
10/17/15	4.75	8.75					5.75	9.53	5.57	8.88	2.71	7.72	5.82	5.90	9.09	9.01										
03/17/16	5.15	8.35					6.19	9.09	6.07	8.38	3.09	7.34	6.07	6.35	8.84	8.56										
10/16/16	4.61	8.89					5.85	9.43	5.51	8.94	2.99	7.44	5.85	6.90	9.06	8.01										
03/18/17	6.11	7.39					7.66	7.62	6.95	7.50	3.55	6.88	7.11	8.51	7.80	6.40										
10/08/17	5.8	7.7					6.44	8.84	6.64	7.81	3.56	6.87	6.46	6.47	8.45	8.44										
06/04/18	5.1	8.4	8.7	3.31	5.79	9.37	6.00	9.28	5.79	8.66	2.92	7.51	5.95	5.96	8.96	8.95	6.10	9.07								
01/19/19	5.05	8.45					5.78	9.50	5.73	8.72	3.03	7.40	6.04	6.04	8.87	8.87			1.45	7.40	3.43	8.54	4.32	7.92	4.04	7.68

Depth to groundwater in feet below measuring point.
Measuring point elevations for 8/15/91 are reportedly relative to mean sea level. This data is from the 10/31/91 Assessment Report by GEL.
Measuring point elevations were resurveyed on 3/30/93 and again on1/24/95. Elevations were then calculated from those surveys assuming the elevation for MW-5 was correctly given as 12.01 feet above mean sea level. MW-10 &12 from 4/98 Trico map.
Free phase material was discovered in MW-12 on 3/16/01.
2/25/02 - Depth to water in MW-12 may be inaccurate due to equipment problem.
10/9/10 - Interface probe was not operational, depth taken with water level meter.

Table 2. Sub-Slab Vapor Quality Summary

	June-18				January-19					
	SV1	SV2	SV3		EB	SV2	SV3		Indoor Air Equivalent (3)	Industrial Air SL
Acetone (6)	186	16500	8060		9.5	1060	90.7		4,666,667	140000
Benzene	1.8	307	3.1		ND	79.7	2.1		53.3	1.6
2-Butanone (MEK)	57.4	241	57.5		ND	740	7.3		733,333	22000
Carbon disulfide	3.9	12.7	2.8		ND	10.7	9.7		103,333	3100
Chlorobenzene	ND	413	ND		ND	295	ND		7,333	220
Chloroethane	ND	4.5	ND		ND	7.9	ND		1,466,667	44000
Chloromethane	1.3	1.7	1.8		ND	ND	ND		13,000	390
Cyclohexane	1.8	154	4.5		ND	153	ND		866,667	26000
1,4- Dichlorobenzene	ND	3.6	ND		ND	ND	ND		36.7	1.1
Dichlorodiflouromethane	2.1	ND	4		2.0	ND	1.9		14,667	440
Ethyl acetate	6.1	ND	6.7		ND	ND	ND		10,333	310
Ethylbenzene	ND	2.4	ND		ND	3.2	ND		163	4.9
n-Hexane	7	453	194		1.3	217	2.1		103,333	3100
2-Hexanone	ND	31.6	ND		ND	ND	ND		4,333	130
Methylene Chloride	58.1	76.3	701		10.5	30.4	ND		40,000	1200
4-Methyl-2-pentanone (MIBK)	64.8	13.5	ND		ND	ND	ND		433,333	13000
Naphthalene	7.6	ND	ND		ND	ND	ND		12.0	0.36
2-Propanol (6)	1640	2160	442		2290	810	232		29,333	880
Propylene	23.2	487	37.1		ND	76.3	13.5		146,667	4400
Styrene	3.5	2.1	ND		ND	ND	ND		146,667	4400
Tetracholoethene	ND	ND	ND		ND	ND	2.0		1,567	47
Toluene	7.5	11.2	38.4		ND	2.8	2.0		733,333	22000
Trichloroflouromethane	ND	ND	2.5		ND	ND	ND		Not listed	Not listed
1,2,4-Trimethylbenzene	2.6	ND	ND		ND	ND	ND		8,667	260
m&p-Xylene	7	5.6	4.3		ND	7.2	ND		14,667	440
o-Xylene	4.3	4.3	ND		ND	ND	ND		14,667	440

Notes:	
1	Units= ug/m3
2	ND= Not detected above reporting limits
3	IAE= Indoor Air Equivalent (based on EPA prescribed attenuation factor of 0.03 for samples collected from 5 feet below ground surface). IAE= Industrial Air SL/0.03
4	Industrial Air SL= May 2018 US EPA Regional Screening Levels
5	## (red highlight)= Screening value exceeds Industrial Indoor Air Equivalent.
6	Presence of leak tracer, 2-propanol (and potentially acetone), indicates a leak may have been present in the sample stream. This suggests that false positives may be present in the data set.

Table 3. Groundwater Quality Summary – Current Sampling Event

Non-Chlorinated Volatile Organic Parameters

Parameter	MW-4	MW-5	MW-8	MW-9	MW-10	MW-11	MW-14	MW-16	MW-17	MW-18	MW-19
Benzene	73.3	<1	<1	<1	2.8	<25	274	<1	<40	<40	6.7
Ethylbenzene	<5	<1	<1	<1	<1	<25	7100	<1	<40	<40	<2.5
Toluene	<5	<1	<1	<1	<1	<25	60100	<1	<40	<40	<2.5
Xylenes	64	<3	<3	<1	<1	<25	71400	<1	<40	<40	<2.5
Total	**137.3**	**0**	**0**	**0**	**2.8**	**0**	**138,874**	**0**	**0**	**0**	**6.7**

Chlorinated Volatile Organic Parameters

Parameter	MW-4	MW-5	MW-8	MW-9	MW-10	MW-11	MW-14	MW-16	MW-17	MW-18	MW-19
Chlorobenzene	798	<1	2.3	<1	8.6	<25	<500	<1	<40	<40	10.1
Chloroethane	<5	<2	<2	<1	<1	<25	<1000	<1	<40	<40	<2.5
1,2 Dicholorobenzene	<5	<1	4.2	<1	9.1	<25	613	<1	<40	<40	74.2
1,3 Dicholorobenzene	<5	<1	0.52	<1	<1	<25	<500	<1	<40	<40	<2.5
1,4 Dicholorobenzene	<5	<1	1.7	<1	2.8	<25	<500	<1	<40	<40	4
1,1 Dichloroethane	<5	<1	<1	<1	<1	<25	<500	<1	<40	<40	<2.5
1,2 Dichloroethane	<5	<1	<1	<1	<1	<25	<500	<1	<40	<40	<2.5
1,1 Dichloroethene	<5	<1	0.92	<1	<1	<25	<500	<1	<40	<40	<2.5
cis-1,2 Dichloroethene	8.5	3.4	48.2	<1	2.1	2740	3060	<1	4950	6080	386
trans-1,2 Dichloroethene	<5	<1	0.56	<1	<1	<25	<500	<1	<40	<40	<2.5
Tetrachloroethene	<5	<1	1.2	<1	<1	<25	<500	<1	<40	<40	<2.5
Trichloroethene	<5	0.43	7	<1	<1	<25	221	<1	4960	<40	<2.5
Vinylchloride	<5	<1	9.2	<1	24.4	89.9	<500	<1	74.9	1170	341
Total Cholinated	**807**	**3.8**	**75.8**	**0**	**47.0**	**2,830**	**3,894**	**0**	**9,985**	**7,250**	**815**

Table 4. Groundwater Quality Summary - Nonchlorinated Volatile Organic Parameters

DATE	MW-4	MW-5	MW-6	MW-8	MW-9	MW-10	MW-11	MW-12	MW-14	MW-16	MW-17	MW-18	MW-19
	Benzene												
02/06/91	<50												
08/15/91	<50.0	4.36	22.70										
03/30/93	8 J	2 J	32	<50	402								
11/07/94													
05/18/95	<5	<5		22	<5								
11/13/95	38	<5		<5	<5								
02/20/96				9.4									
05/20/96	6.8	1.2		14.2	7.5								
11/14/96	4	17.6		11.8	10.1								
05/08/97	2.2	<1		19.1	1.5								
09/08/97	<2				54.1	254	<2	1410					
11/26/97	<5	<5		<5	<5								
06/19/98	103	<5		11.9	248								
11/30/98	32	<5		77.1	321			490					
02/15/99				<5									
05/15/99	7.9	<5		61	<5								
09/03/99				130									
12/27/99	37		41	41									
05/31/00	15		30	166	86								
11/10/00	8		33	19	16								
03/16/01	3		7		<2	8	13	<2000					
09/20/01	72	<2 A	7 A	5 A	<2	5	<100	1200					
02/25/02	1200	< A	12 A	< A	<2	4	2	4100					
09/30/02	1700	< A	20 A	< A	<5	<5	<25	1800					
04/11/03	51	< A	17 A	< A	<0.5	0.5	<210	2900					
09/30/03	300 D	< A	26 A	25 A	0.73	52 D	<0.5	670					
03/26/04	440	< A	< A	< A	<0.5	34	23	<1300	630 a				
10/02/04	260				<5	14	<100						
03/12/05	420				<5	6	<250						
10/01/05	380				<5	11	<250						
04/02/06	300				1.2 J	0.51 J	<250						
10/01/06	35				46	18	5.9						
03/25/07	120				260	32	10 J						
09/22/07	100				<5	45	<250						
04/06/08	140				<1	89	<20						
09/27/08	110				<1	39	<2						
03/30/09	420				<1	36	<100	74 J					
09/19/09	7.9				0.77 J	39	<25						
03/27/10	0.87 J				<1	0.79 J	<10						
10/09/10	20				<1	58	<20						
04/09/11	25				<1	9.6	<50						
09/25/11	67				0.3 J	67	<20						
05/18/12	300	0.23		0.7 J	<1	64	<1		827				
10/17/12	2.34				<1	53	<1						
04/13/13	21				<1	0.94 J	<5						
10/04/13	14				<1	54	<1						
04/25/14	0.7 J				<1	3.1	<20						
10/04/14	130				<1	37	<50						
04/03/15	1.3				<1	0.96 J	<50						
10/17/15	<1				<1	0.72 J	<50						
03/17/16	<1				<1	1.4	<20						
10/16/16	<1				<1	0.74 J	<50	340 J					
03/18/17	3.8				<1	13	<1						
10/08/17	96.9				<1	17.6	<25						
06/04/18	281	<1	<1	<1	<1	5.2	<25		<2000				
01/20/19	73.3	<1	<1	<1	<1	2.8	<25		274 J	<1	<40	<40	6.7

Table 4. Groundwater Quality Summary - Nonchlorinated Volatile Organic Parameters

DATE	MW-4	MW-5	MW-6	MW-8	MW-9	MW-10	MW-11	MW-12	MW-14	MW-16	MW-17	MW-18	MW-19
	Ethylbenzene												
02/06/91	448												
08/15/91	300.0	<2.00	2.37										
03/30/93	133	<5	3 J	<50	867								
11/07/94													
05/18/95	75	<5		<5	<5								
11/13/95	<5	<5		<5	<5								
02/20/96				<1									
05/20/96	5	<1		<1	8.8								
11/14/96	<1	3.6		<1	<1								
05/08/97	<1	<1		<1	<1								
09/08/97	<2				13.9	5.3	<2	5770					
11/26/97	<5	<5		<5	<5								
06/19/98	<5	<5		<5	116								
11/30/98	10.4	<5		<5	386			9350					
02/15/99				<5									
05/15/99	<5	<5		<5	<5								
09/03/99				<5									
12/27/99			2.9										
05/31/00					18								
11/10/00			2										
03/16/01	<2				<2	<2	<2	53,000,000					
09/20/01	<2	<2	<2	<2	<2	<2	<100	8700					
02/25/02	<10	< a	< a	< a	<2	<2	<2	21000					
09/30/02	5.3	< a	< a	< a	<5	<5	<25	5200					
04/11/03	<1	< a	< a	< a	<0.5	<0.5	<210	8100					
09/30/03	3.8	< a	2 a	< a	<0.5	<0.5	<0.5	3800					
03/26/04	<18	< a	< a	< a	<0.5	<3.1	<0.5	5700	6100 a				
10/02/04	<5				<5	<5	<100						
03/12/05	4.3 J				<5	<5	16 J						
10/01/05	<10				<5	<5	<250						
04/02/06	<50				<5	<5	<250						
10/01/06	0.54 J				11	<5	<5						
03/25/07	3.4 J				490	<0.3	<15						
09/22/07	<5				6	<25	<250						
04/06/08	1.6 J				<1	<5	<20						
09/27/08	<5				<1	<5	<2						
03/30/09	<10				<1	<10	<100	6400					
09/19/09	<1				<1	<1	<25						
03/27/10	<1				<1	<5	<250						
10/09/10	<1				<1	<1	<20						
04/09/11	1.3				<1	<1	<50						
09/25/11	<1				<1	<1	<20						
05/18/12	<1	<1		<1	<1	<1	<1		5,920				
10/17/12	<1				<1	<1	<1						
04/13/13	<1				<1	<1	<5						
10/04/13	<1				<1	<1	<1						
04/25/14	<1				<1	<1	<20						
10/04/14	<1				<1	<1	<50						
04/03/15	<1				<1	<1	<50						
10/17/15	<1				<1	<1	<50						
03/17/16	<1				<1	<1	<20						
10/16/16	<1				<1	<1	<50	8,300					
03/18/17	<1				<1	<1	<1						
10/08/17	<4				<1	<1	<25						
06/04/18	<5	<1	<1	<1	<1	<1	<25		8,840				
01/20/19	<5	<1	<1	<1	<1	<1	<25		7,100	<1	<40	<40	<2.5

Table 4. Groundwater Quality Summary - Nonchlorinated Volatile Organic Parameters

DATE	MW-4	MW-5	MW-6	MW-8	MW-9	MW-10	MW-11	MW-12	MW-14	MW-16	MW-17	MW-18	MW-19
	Toluene												
02/06/91	216												
08/15/91	<50.0	2.86	3.78										
03/30/93	12	<5	4 J	<50	3830								
11/07/94													
05/18/95	5	<5		3 J	<5								
11/13/95	<5	<5		<5	<5								
02/20/96				<1									
05/20/96	<1	<1		<1	<1								
11/14/96	<1	3.7		<1	<1								
05/08/97	<1	<1		<1	<1								
09/08/97	<2				26.9	4.33	<2	21300					
11/26/97	<5	<5		<5	<5								
06/19/98	<5	<5		<5	221								
11/30/98	<5	<5		7.8	937			11000					
02/15/99				<5									
05/15/99	<5	<5		<5	<5								
09/03/99				10									
12/27/99			5 a	< a									
05/31/00			< a	< a	1.3								
11/10/00			4 a	2 a									
03/16/01	<2		< a	< a	<2	<2	<2	150,000,000					
09/20/01	<2		< a	< a	<2	<2	<100	75000					
02/25/02	<10		< a	< a	<2	<2	<2	120000					
09/30/02	<5		2 a	< a	<5	<5	<25	54000					
04/11/03	<1		3 a	< a	<0.5	0.7	280	86000					
09/30/03	<0.5		4 a	4 a	<0.5	1.4	1.5	26000					
03/26/04	<18		< a	< a	<0.5	<3.1	2.4	38000	96000 a				
10/02/04	<5				<5	<5	<100						
03/12/05	1.8 J				<5	<5	<250						
10/01/05	0.4 J				<5	0.57 J	<250						
04/02/06	<50				<5	<5	<250						
10/01/06	0.25 J				0.29 J	0.78 J	1 J						
03/25/07	<1				4.6 J	4.4 J	<10						
09/22/07	<5				<5	2.6 J	<250						
04/06/08	<5				<1	7.8	<20						
09/27/08	<5				<1	2 J	<2						
03/30/09	<10				<1	4.3 J	<100	22000					
09/19/09	<1				<1	1.5	<25						
03/27/10	<1				<1	<5	<250						
10/09/10	<1				<1	1.3	<20						
04/09/11	<1				<1	0.62 J	<50						
09/25/11	<1				<1	1.5	<20						
05/18/12	<1	<1		0.93 J	<1	1.3	<1		113,000				
10/17/12	<1				<1	1.24	<1						
04/13/13	<1				<1	<1	<5						
10/04/13	<1				<1	1.1	<1						
04/25/14	<1				<1	<1	<20						
10/04/14	<1				<1	0.84 J	<50						
04/03/15	<1				<1	<1	<50						
10/17/15	<1				<1	<1	<50						
03/17/16	<1				<1	<1	<20						
10/16/16	<1				<1	<1	<50	48,000					
03/18/17	<1				<1	0.4 J	<1						
10/08/17	<4				<1	<1	<25						
06/04/18	<5	<1	<1	1.5	<1	<1	<25		102,000				
01/20/19	<5	<1	<1	<1	<1	<1	<25		60,100	<1	<40	<40	<2.5

Table 4. Groundwater Quality Summary - Nonchlorinated Volatile Organic Parameters

DATE	MW-4	MW-5	MW-6	MW-8	MW-9	MW-10	MW-11	MW-12	MW-14	MW-16	MW-17	MW-18	MW-19
	1,2,4 - Trimethylbenzene												
02/06/91													
08/15/91													
03/30/93													
11/07/94													
05/18/95													
11/13/95													
02/20/96													
05/20/96	<1	<1		<1	<1								
11/14/96	3.1	<1		<1	<1								
05/08/97	<1	<1		<1	<1								
09/08/97													
11/26/97													
06/19/98													
11/30/98													
02/15/99													
05/15/99													
09/03/99													
12/27/99													
05/31/00													
11/10/00													
03/16/01	<10				<10	<10	<10	<10000					
09/20/01	<10	<10	<10	<10	<10	<10	<500	<500					
02/25/02	130				<10	<10	<10	3400					
09/30/02	<5				<5	<5	<25	<500					
04/11/03	NA				NA	NA	NA	NA					
09/30/03	18 D				<0.5	0.048 J	<0.5	<630					
03/26/04	30				<0.5	<3.1	<0.5	<1300	130				
10/02/04	29				<5	<5	<100						
03/12/05	8.1 J				<5	<5	30 J						
10/01/05	<10				<5	<5	<250						
04/02/06	<50				<5	<5	<250						
10/01/06	<5				0.57 J	<5	<5						
03/25/07	3.6 J				19 J	<0.4	23 J						
09/22/07	<5				2.7 J	<25	<250						
04/06/08	<5				<1	2.3 J	<20						
09/27/08	<5				<1	<5	<2						
03/30/09	<10				<1	<10	<100	510					
09/19/09	<1				<1	<1	<25						
03/27/10	<1				<1	<5	<250						
10/09/10	<1				<1	<1	<20						
04/09/11	<1				<1	<1	<50						
09/25/11	<1				<1	<1	<20						
05/18/12	<1	NA		NA	<1	<1	<1		NA				
10/17/12	<1				<1	0.633 J	<1						
04/13/13	<1				<1	<1	<5						
10/04/13	<1				<1	<1	<1						
04/25/14	<1				<1	<1	<20						
10/04/14	<1				<1	<1	<50						
04/03/15	0.48 J				<1	<1	<50						
10/17/15	<1				<1	<1	<50						
03/17/16	<1				<1	<1	<20						
10/16/16	<1				<1	<1	<50	620					
03/18/17	<1				<1	<1	<1						
10/08/17	<4				<1	<1	<25						
06/04/18	<5	NA	NA	NA	<1	<1	<25		NA				
01/20/19	<5	NA	NA	NA	<1	<1	<25		NA	<1	<40	<40	<2.5

Table 4. Groundwater Quality Summary - Nonchlorinated Volatile Organic Parameters

DATE	MW-4	MW-5	MW-6	MW-8	MW-9	MW-10	MW-11	MW-12	MW-14	MW-16	MW-17	MW-18	MW-19
	1,3,5 - Trimethylbenzene												
02/06/91													
08/15/91													
03/30/93													
11/07/94													
05/18/95													
11/13/95													
02/20/96													
05/20/96	<1	<1		<1	<1								
11/14/96	<1	<1		<1	<1								
05/08/97	<1	<1		<1	<1								
09/08/97													
11/26/97													
06/19/98													
11/30/98													
02/15/99													
05/15/99													
09/03/99													
12/27/99													
05/31/00													
11/10/00													
03/16/01	<10				<10	<10	<10	<10000					
09/20/01	<10	<10	<10	<10	<10	<10	<500	<500					
02/25/02	<50				<10	<10	<10	1700					
09/30/02	86				<5	<5	<25	<500					
04/11/03	NA				NA	NA	NA	NA					
09/30/03	0.9				<0.5	<0.5	<0.5	<630					
03/26/04	<18				<0.5	<3.1	<0.5	<1300	NA a				
10/02/04	<5				<5	<5	<100						
03/12/05	<25				<5	<5	<250						
10/01/05	<10				<5	<5	<250						
04/02/06	<50				<5	<5	<250						
10/01/06	<5				<5	<5	<5						
03/25/07	<3				6.7 J	<0.6	<30						
09/22/07	<5				1.2 J	<25	<250						
04/06/08	<5				<1	<5	<20						
09/27/08	20				<1	<5	<2						
03/30/09	<10				<1	<10	<100	240					
09/19/09	<1				<1	<1	<25						
03/27/10	<1				<1	<5	<250						
10/09/10	<1				<1	<1	<20						
04/09/11	<1				<1	<1	<50						
09/25/11	<1				<1	<1	<20						
05/18/12	<1	NA		NA	<1	<1	<1		NA				
10/17/12	<1				<1	<1	<1						
04/13/13	<1				<1	<1	<5						
10/04/13	<1				<1	<1	<1						
04/25/14	<1				<1	<1	<20						
10/04/14	<1				<1	<1	<50						
04/03/15	<1				<1	<1	<50						
10/17/15	<1				<1	<1	<50						
03/17/16	<1				<1	<1	<20						
10/16/16	<1				<1	<1	<50	240 J					
03/18/17	<1				<1	<1	<1						
10/08/17	<4				<1	<1	<25						
06/04/18	<5	NA	NA	NA	<1	<1	<25		NA				
01/20/19	<5	NA	NA	NA	<1	<1	<25		NA	<1	<40	<40	<2.5

Table 4. Groundwater Quality Summary - Nonchlorinated Volatile Organic Parameters

DATE	MW-4	MW-5	MW-6	MW-8	MW-9	MW-10	MW-11	MW-12	MW-14	MW-16	MW-17	MW-18	MW-19
	Xylenes (total)												
03/30/93	5 J	<5	3 J	<50	5160								
11/07/94													
05/18/95	<5	<5		3 J	<5								
11/13/95	<5	<5		<5	<5								
02/20/96				<1									
05/20/96	<1	<1		1.6	31.2								
11/14/96	<1	14		2.9	<1								
05/08/97	<1	<1		<1	<1								
09/08/97	<4				178	13.5	<4	22,100					
11/26/97	<15	<15		<15	<15								
06/19/98	<15	<15		<15	388								
11/30/98	<15	<15		<15	1880			23,500					
02/15/99				<15									
05/15/99	16.3	<5		26.6	<5								
09/03/99				16									
12/27/99			3										
05/31/00				7.9	125								
11/10/00													
03/16/01	<5				<5	<5	<5	310,000,000					
09/20/01	18	<5	<5	<5	<5	<5	<200	49,000					
02/25/02	300	< a	< a	< a	<5	<5	<5	130,000					
09/30/02	6.4	< a	< a	< a	<5	<5	<25	29,000					
04/11/03	26	< a	< a	< a	<0.5	<0.5	<210	56,000					
09/30/03	3.4	< a	< a	< a	<0.5	<0.5	<0.5	27,000					
03/26/04	130	< a	< a	< a	<0.5	<3.1	<0.5	39,000	57,000 a				
10/02/04	8.7				<5	<5	<100						
03/12/05	<25				<5	<5	56 J						
10/01/05	<10				<5	<5	<250						
04/02/06	<50				<5	<5	<250						
10/01/06	<5				7	0.68 J	<5						
03/25/07	6.6 J				1100	1.8 J	<25						
09/22/07	4.3 J				30	<25	<250						
04/06/08	<5				<1	2.7 J	<20						
09/27/08	<5				<1	<5	<2						
03/30/09	<10				<1	<10	<100	40,000					
09/19/09	<1				<1	1.2	<25						
03/27/10	<1				<1	<5	<250						
10/09/10	<1				<1	0.38 J	<20						
04/09/11	5.1				<1	0.51 J	<50						
09/25/11	<1				<1	1.3	<20						
05/18/12	<1	<3		<3	<1	1.1	<1		52,900				
10/17/12	<3				<3	1.19 J	<3						
04/13/13	<1				<1	<1	<5						
10/04/13	<1				<1	1.7	<1						
04/25/14	<1				<1	<1	<20						
10/04/14	7.7				<1	0.63 J	<50						
04/03/15	3.4				<1	<1	<50						
10/17/15	<1				<1	<1	<50						
03/17/16	<1				<1	<1	<20						
10/16/16	<1				<1	<1	<50	74,000					
03/18/17	0.6 J				<1	<1	<1						
10/08/17	<4				<1	<1	<25						
06/04/18	<5	<3	<3	1.1	<1	<1	<25		84,700				
01/20/19	64	<3	<3	<3	<1	<1	<25		71,400	<1	<40	<40	<2.5

Table 4. Groundwater Quality Summary - Nonchlorinated Volatile Organic Parameters

DATE	MW-4	MW-5	MW-6	MW-8	MW-9	MW-10	MW-11	MW-12	MW-14	MW-16	MW-17	MW-18	MW-19
	Total Nonchlorinated Volatiles												
02/06/91	448												
08/15/91	312	4	29										
03/30/93	146	2	38	0	6,429								
11/07/94													
05/18/95	75	0		25	0								
11/13/95	38	0		0	0								
02/20/96				9									
05/20/96	12	5		16	48								
11/14/96	4	35		15	10								
05/08/97	2	0		19	2								
09/08/97	0				467	273	0	29,280					
11/26/97	0	0		0	221								
06/19/98	103	0		20	1,689								
11/30/98	42	0		77	2,587			33,340					
02/15/99				0									
05/15/99	24	0		98	0								
09/03/99				146									
12/27/99	37		47	41									
05/31/00	15		34	176	229								
11/10/00	8		35	19	16								
03/16/01	3		7		0	8	13	513,000,000					
09/20/01	90	0 a	7 a	5 a	0	5	0	133,900					
02/25/02	1,630	0 a	14 a	0 a	0	4	2	280,200					
09/30/02	1,798	0 a	23 a	0 a	0	0	0	90,000					
04/11/03	77	0 a	21 a	4 a	0	1	280	153,000					
09/30/03	326	0 a	28 a	25 a	1	53	2	57,470					
03/26/04	600	0 a	0 a	0 a	0	34	25	82,700	159,860 a				
10/02/04	298				0	14	0						
03/12/05	434				0	6	102						
10/01/05	380				0	12	0						
04/02/06	300				1	1	0						
10/01/06	36				65	19	7						
03/25/07	134				1,880	38	33						
09/22/07	104				40	48	0						
04/06/08	142				0	102	0						
09/27/08	130				0	41	0						
03/30/09	420				0	40	0	69,224					
09/19/09	8				1	42	0						
03/27/10	0.87				0	0.79	0						
10/09/10	20				0	60	0						
04/09/11	31				0	11	0						
09/25/11	67				0.3	69.8	0						
05/18/12	300	0.23		1.63	0	66.4	0		172,647				
10/17/12	2				0	56.1	0						
04/13/13	21				0	0.9	0						
10/04/13	14				0	56.8	0						
04/25/14	0.7				0	3.1	0						
10/04/14	137.7				0	38.5	0						
04/03/15	5.18				0	0.96	0						
10/17/15	0				0	0.72	0						
03/17/16	0				0	1.40	0						
10/16/16	0				0	0.74	0						
03/18/17	4.4				0	13.4	0						
10/08/17	96.9				0	17.6	0						
06/04/18	281.0	0	0	2.6	0	5.2	0		195,540				
01/20/19	137.3	0	0	0	0	2.8	0		138,874	0	0	0	6.7

Table 4. Groundwater Quality Summary - Nonchlorinated Volatile Organic Parameters

DATE MW-4 MW-5 MW-6 MW-8 MW-9 MW-10 MW-11 MW-12 MW-14 MW-16 MW-17 MW-18 MW-19

All values are micrograms per liter (ug/l).
<10 - Compound not detected above method detection or method reporting level.
8/91 Sampling took place on 8/15-16/91.
* MW-2 abandonded on 12/16/92 for warehouse construction, and replaced with MW-2r on 10/26/94.
D - Compound exceeded upper calibration level. This value reported when value is below detection limit of dilution.
E - Compound exceeded upper calibration level. Sample was diluted and reanalyzed.
J - Concentration estimated below detection limit.
S - MS/MSD failure
*T - Prior to 3/30/93, 1,2-cis dichloroethene was not included in lab analyses.
9/8/97 results for MW-3,4,9,10,11, &12 were collected by GEL.
8/26/97 data for MW-8 is from routine sampling performed on 8/26/97.
3/16/01 results for MW-12 were for sample of free phase material.
a - Data from Brenntag report dated 4/28/04
Samples after 4/2006 collected with passive diffusion bag samplers
b - outside of control limits

Table 5. Groundwater Quality Summary - Chlorinated Volatile Organic Parameters

DATE	MW-4	MW-5	MW-8	MW-9	MW-10	MW-11	MW-12	MW-14	MW-16	MW-17	MW-18	MW-19
	Chlorobenzene											
2/6/91	221											
8/15/91	240.0	51.10										
3/30/93	105	3 J	12 J	326								
11/7/94												
2/22/95			<25									
5/18/95	177	7	55	<5								
8/15/95			<50	<1								
11/13/95	141	8	26	<5								
2/20/96			42.5									
5/20/96	86.6	20.6	48.7	3.8								
8/30/96			64.8									
11/14/96	169	426	45.4	19.5								
2/28/97			30.7									
5/8/97	127.5	1.5	39.3	2.9								
9/8/97	65		17.8	62.1	51.9	<2	374					
11/26/97	42.4	<5	7.2	<5								
2/14/98			11.5									
6/19/98	119	12.6	22.5	149								
8/8/98			40.6									
11/30/98	66.1	10.8	32.8	122			285					
2/15/99			<5									
5/15/99	36.7	<5	23.9	<5								
9/3/99			19									
12/27/99	41	3	8	<2								
5/31/00	89	<1	10	73								
11/10/00	170	<10	<50	27								
3/16/01	100	<10	<10	<10	40	<10	<10000000					
9/20/01	410	<10	<10	<10	31	<500	<500					
2/25/02	980	<10 a	<10 a	<10	21	<10	520					
9/30/02	1000	<10 a	<10 a	<5	8.7	<25	<500					
4/11/03	48	<10 a	<10 a	<0.5	<0.5	<210	<2500					
9/30/03	330 D	<10 a	<10 a	1.7	61 D	4.4	<630					
3/26/04	690	<10 a	<10 a	<0.5	49	7.4	<1300	110 a				
10/2/04	660			<5	29	<100						
3/12/05	1100			<5	13	<250						
10/1/05	520			0.52 J	55	<250						
4/2/06	990			4.4 J	1.8 J	<250						
10/1/06	390			100	95	<10						
3/25/07	990			370	15	<10						
9/22/07	440			<5	91	<250						
4/6/08	730			<1	6.9	<20						
9/27/08	<5			<1	70	2.5						
3/30/09	750			<1	<10	<100	750					
9/19/09	120			2.6	93	<25						
3/27/10	38			<1	<5	<250						
10/9/10	360			<1	75	<20						
4/9/11	660 E			<1	14	<50						
9/25/11	340			0.72 J	82	<20						
5/18/12	470 E	2.8	4.1	<1	75	<1		<2000				
10/17/12	338			0.255 J	78.8	0.643 J						
4/13/13	67			<1	1.8	<5						
10/4/13	290			<1	87	<10						
4/25/14	8.1			<1	10	<20						
10/4/14	380			<1	70	<50						
4/3/15	4.1			<1	4.9	<50						
10/17/15	12			<1	3.2	<50						
3/17/16	1.8			<1	7.2	<20						
10/16/16	3.4			<1	10	<50	630					
3/18/17	300			<1	39	0.65 J						
10/8/17	451			<1	48.1	<25						
6/4/18	703	<1	2.5	<1	23.1	<25		<2000				
1/20/19	798	<1	2.3	<1	8.6	<25		<500	<1 m1	<40	<40	10.1

Table 5. Groundwater Quality Summary - Chlorinated Volatile Organic Parameters

DATE	MW-4	MW-5	MW-8	MW-9	MW-10	MW-11	MW-12	MW-14	MW-16	MW-17	MW-18	MW-19
	Chloroethane											
2/6/91	<50											
8/15/91	<50	<2										
3/30/93	<20	<10	<100	<200								
11/7/94												
2/22/95			<50									
5/18/95	<10	<10	<10	<10								
8/15/95			<100	<2								
11/13/95	<10	<10	<10	<10								
2/20/96			<1									
5/20/96	<1	<1	<1	<1								
8/30/96			<1									
11/14/96	<1	2.1	<1	<1								
2/28/97			<1									
5/8/97	<1	<1	<1	<1								
9/8/97	<2		<1	<2	<2	<2	<200					
11/26/97	<10	<10	<10	<10								
2/14/98			<5									
6/19/98	<10	<10	<10	<10								
8/8/98			<10									
11/30/98	<10	<10	<10	<10			<10					
2/15/99			<10									
5/15/99	<5	<5	6.2	<5								
9/3/99			<5									
12/27/99	<2	<2	<2	<2								
5/31/00	<1	<1	<1	<1								
11/10/00	<5	<5	<25	<5								
3/16/01	<5	<5	<5	<5	<5	<5	<5000000					
9/20/01	<5	<5	<5	<5	<5	<250	<250					
2/25/02	<25	<5 a	<5 a	<5	<5	<5	<250					
9/30/02	16	<5 a	<5 a	<5	<5	<25	<500					
4/11/03	<1	<5 a	<5 a	<0.5	<0.5	<210	<2500					
9/30/03	20	<5 a	<5 a	<0.5	<0.5	<0.5	<630					
3/26/04	<18	<5 a	<5 a	<0.5	<3.1	<0.5	<1300	<50 a				
10/2/04	<5			<5	<5	<100						
3/12/05	4.9 J			<5	<5	<250						
10/1/05	4.7 J			<5	<5	<250						
4/2/06	5.4 J			<5	<5	<250						
10/1/06	<5			<5	<5	<5						
3/25/07	<2.5			<2.5	<0.5	<25						
9/22/07	<5			<5	<25	<250						
4/6/08	<10			<2	<10	<40						
9/27/08	<10			<2	<10	<4						
3/30/09	6.5 J			<2	<20	<200	<200					
9/19/09	<2			<2	<2	<50						
3/27/10	<2			<2	<5	<250						
10/9/10	1.3 J			<2	<2	<40						
4/9/11	0.51 J			<2	<2	<100						
9/25/11	<2			<2	<2	<40						
5/18/12	<2	<2	<2	<2	<2	<2		<4000				
10/17/12	<1			<1	<1	<1						
4/13/13	<2			<2	<2	<10						
10/4/13	<2			<2	<2	<2						
4/25/14	<2			<2	<2	<40						
10/4/14	<2			<2	<2	<100						
4/3/15	<2			<2	<2	<100						
10/17/15	<2			<2	<2	<100						
3/17/16	<2			<2	<2	<40						
10/16/16	<2			<2	<2	<100	<1,000					
3/18/17	<2			<2	<2	<2						
10/8/17	<4			<1	<1	<25						
6/4/18	<5	<2	<2	<1	<1	<25		<4000				
1/20/19	<5	<2	<2	<1	<1	<25		<1000	<1 m1	<40	<40	<2.5

Table 5. Groundwater Quality Summary - Chlorinated Volatile Organic Parameters

DATE	MW-4	MW-5	MW-8	MW-9	MW-10	MW-11	MW-12	MW-14	MW-16	MW-17	MW-18	MW-19
	1,2 Dichlorobenzene											
2/6/91	1,175											
8/15/91	1,140	18.6										
3/30/93	649	4 J	8 J	35 J								
11/7/94												
2/22/95			<25									
5/18/95	1070	3 J	26	<5								
8/15/95			<50	<1								
11/13/95	979	<5	12	<5								
2/20/96			13.1									
5/20/96	475	10.2	17.7	<1								
8/30/96			33									
11/14/96	401	271	17	<1								
2/28/97			9.3									
5/8/97	389	<1	12.5	<1								
9/8/97	86.4		6	<10	66	<10	775					
11/26/97	67.4	<5	<5	<5								
2/14/98			<5									
6/19/98	13.8	<5	8.4	6.9								
8/8/98			25.1									
11/30/98	5.4	<5	102	19.4			1840					
2/15/99			9.9									
5/15/99	<5	<5	138	<5								
9/3/99			140									
12/27/99	5	<2	31	<2								
5/31/00	<1	<1	<1	<1								
11/10/00	<10	<10	62	<10								
3/16/01	<10	<10	<10	<10	55	38	16000000					
9/20/01	<10	<10	<10	<10	47	<500	1600					
2/25/02	<50	<10 a	<10 a	<10	33	35	7000					
9/30/02	5.4	<10 a	<10 a	<5	15	30	1000					
4/11/03	<1	<10 a	<10 a	<0.5	0.8	<210	<2500					
9/30/03	4.8	<10 a	<10 a	<0.5	88 D	39 E	1100					
3/26/04	<18	<10 a	<10 a	<0.5	70	54 E	1400	450 a				
10/2/04	<5			<5	36	<100						
3/12/05	<25			<5	19	<250						
10/1/05	<10			<5	66	<250						
4/2/06	<50			<5	15	<250						
10/1/06	1.4 J			0.6 J	120	26						
3/25/07	4.1 J			2.2 J	27 J	25 J						
9/22/07	1.4 J			<5	120	<250						
4/6/08	2.7 J			<1	20	<20						
9/27/08	<5			<1	87	<2						
3/30/09	<10			<1	14	<100	1100					
9/19/09	2			<1	97	<25						
3/27/10	<1			<1	2 J	<250						
10/9/10	1.7			<1	91	<20						
4/9/11	2.1			<1	25	<50						
9/25/11	1.3			<1	95	<20						
5/18/12	0.64 J	<1	1.5	<1	70	<1		<2000				
10/17/12	<1			<1	78	<1						
4/13/13	<1			<1	3.7	<5						
10/4/13	2.2			<1	92	<1						
4/25/14	<1			<1	11	<20						
10/4/14	1.6			<1	77	<50						
4/3/15	<1			<1	4.9	<50						
10/17/15	<1			<1	8.3	<50						
3/17/16	<1			<1	3.4	<20						
10/16/16	<1			<1	36	<50	1,300					
3/18/17	1.3			<1	33	<1						
10/8/17	<4			<1	43.1	<25						
6/4/18	<5	<1	5.4	<1	36.4	<25		<2000				
1/20/19	<5	<1	4.2	<1	9.1	<25		613	<1	<40	<40	74.2

Table 5. Groundwater Quality Summary - Chlorinated Volatile Organic Parameters

DATE	MW-4	MW-5	MW-8	MW-9	MW-10	MW-11	MW-12	MW-14	MW-16	MW-17	MW-18	MW-19
	1,3 Dichlorobenzene (m)											
2/6/91	94											
8/15/91	80.0	<2.00										
3/30/93	40	<5	<50	<100								
11/7/94												
2/22/95			<25									
5/18/95	<5	<5	<5	<5								
8/15/95			<50	<1								
11/13/95	<5	<5	<5	<5								
2/20/96			2.7									
5/20/96	27.6	<1	5.1	<1								
8/30/96			5.7									
11/14/96	26	15.4	6.3	<1								
2/28/97			4									
5/8/97	28.8	<1	3.5	<1								
9/8/97	<10		2.6	<10	<10	<10	41.3					
11/26/97	6.8	15.7	<5	<5								
2/14/98			<5									
6/19/98	<5	<5	<5	<5								
8/8/98			<5									
11/30/98	13.2	<5	9.8	<5			79.1					
2/15/99			<5									
5/15/99	<5	<5	51.6	<5								
9/3/99			12.5									
12/27/99	3	<2	8	<2								
5/31/00	<1	<1	<1	<1								
11/10/00	<10	<10	<50	<10								
3/16/01	<10	<10	<10	<10	<10	<10	<10000000					
9/20/01	<10	<10	<10	<10	<10	<500	<500					
2/25/02	<50	<10 a	<10 a	<10	<10	<10	<500					
9/30/02	5.4	<10 a	<10 a	<5	<5	<25	<500					
4/11/03	<1	<10 a	<10 a	<0.5	<0.5	<210	<2500					
9/30/03	3.6	<10 a	<10 a	<0.5	<0.5	0.66	<630					
3/26/04	<18	<10 a	<10 a	<0.5	4.6	1	<1300	<100 a				
10/2/04	<5			<5	<5	<100						
3/12/05	<25			<5	2.1 J	<250						
10/1/05	1.6 J			<5	3.6 J	<250						
4/2/06	<50			<5	2.1 J	<250						
10/1/06	2.7 J			0.6 J	7.4	0.55 J						
3/25/07	2.5 J			<1.5	2.8 J	<15						
9/22/07	2.2 J			<5	6.5 J	<250						
4/6/08	2.4 J			<1	1.7 J	<20						
9/27/08	2.6 J			<1	4.9 J	<2						
3/30/09	<10			<1	<10	<100	76 J					
9/19/09	1.4			<1	5.1	<25						
3/27/10	0.36 J			<1	<5	<250						
10/9/10	1.2			<1	4.4	<20						
4/9/11	1.7			<1	2.1	<50						
9/25/11	1.7			<1	4.9	<20						
5/18/12	<1	<1	0.29 J	<1	3.8	<1		<2000				
10/17/12	1.62			<1	4.31	<1						
4/13/13	<1			<1	<1	<5						
10/4/13	1.7			<1	4.6	<1						
4/25/14	0.98 J			<1	1.3	<20						
10/4/14	1.4			<1	4.5	<50						
4/3/15	<1			<1	0.83 J	<50						
10/17/15	<1			<1	1.5	<50						
3/17/16	<1			<1	0.5 J	<20						
10/16/16	<1			<1	2.6	<50	<500					
3/18/17	1.4			<1	2.1	<1						
10/8/17	<4			<1	2.3	<25						
6/4/18	<5	<1	0.71 J	<1	2.3	<25		<2000				
1/20/19	<5	<1	0.52 J	<1	<1	<25		<500	<1	<40	<40	<2.5

Table 5. Groundwater Quality Summary - Chlorinated Volatile Organic Parameters

DATE	MW-4	MW-5	MW-8	MW-9	MW-10	MW-11	MW-12	MW-14	MW-16	MW-17	MW-18	MW-19
	1,4 Dichlorobenzene (p)											
2/6/91	322											
8/15/91	255.0	3.72										
3/30/93	148	<5	6 J	<100								
11/7/94												
2/22/95			<25									
5/18/95	256	<5	29	<5								
8/15/95			<50	<1								
11/13/95	130	<5	13	<5								
2/20/96			15.4									
5/20/96	90.6	2.2	27.2	<1								
8/30/96			<1									
11/14/96	104	61.6	32.1	<1								
2/28/97			<1									
5/8/97	102.5	<1	18	<1								
9/8/97	30		2.8	<10	16.6	<10	171					
11/26/97	24.3	<5	<5	<5								
2/14/98			<5									
6/19/98	24.5	<5	10.6	6.4								
8/8/98			22.8									
11/30/98	12.4	<5	35.8	9.9			103					
2/15/99			<5									
5/15/99	6.1	<5	10.3	<5								
9/3/99			41									
12/27/99	8	<2	19	<2								
5/31/00	<1	<1	<1	<1								
11/10/00	30	<10	<50	<10								
3/16/01	19	<10	<10	<10	21	<10	<10000000					
9/20/01	23	<10	<10	<10	20	<500	<500					
2/25/02	<50	<10 a	<10 a	<10	16	<10	1400					
9/30/02	19	<10 a	<10 a	<5	7.8	<25	<500					
4/11/03	<1	<10 a	<10 a	<0.5	<0.5	<210	<2500					
9/30/03	16	<10 a	<10 a	<0.5	18	1.5	<630					
3/26/04	<18	<10 a	<10 a	<0.5	16	2.3	<1300	<100 a				
10/2/04	<5			<5	8.7	<100						
3/12/05	8.4 J			<5	8.2	<250						
10/1/05	6.3 J			<5	12	<250						
4/2/06	<50			0.27 J	7.3	<250						
10/1/06	6.5			1.4 J	23	1.3 J						
3/25/07	11 J			5.4 J	10	<10						
9/22/07	8.2			2.1 J	21 J	<250						
4/6/08	9.1			<1	6.5	<20						
9/27/08	7.8			<1	15	<2						
3/30/09	6.6 J			<1	3.7 J	<100	250					
9/19/09	7.6			<1	16	<25						
3/27/10	1.5			<1	<5	<250						
10/9/10	8.2			<1	16	<20						
4/9/11	6.4			<1	7.6	<50						
9/25/11	8.4			<1	17	<20						
5/18/12	2.5	<1	0.83 J	<1	13	<1		<2000				
10/17/12	5.13			<1	14	<1						
4/13/13	0.99 J			<1	2.6	<5						
10/4/13	9.4			<1	16	<1						
4/25/14	1.6			<1	4.9	<20						
10/4/14	7.3			<1	14	<50						
4/3/15	0.55 J			<1	3.4	<50						
10/17/15	2.3			<1	4.2	<50						
3/17/16	0.29 J			<1	1.8	<20						
10/16/16	0.6 J			<1	7.3	<50	230 J					
3/18/17	3.5			<1	7.4	<1						
10/8/17	5.3			<1	7.9	<25						
6/4/18	5.4	<1	2.5	<1	7.6	<25		<2000				
1/20/19	<5	<1	1.7	<1	2.8	<25		<500	<1	<40	<40	4.0
					.							

Table 5. Groundwater Quality Summary - Chlorinated Volatile Organic Parameters

DATE	MW-4	MW-5	MW-8	MW-9	MW-10	MW-11	MW-12	MW-14	MW-16	MW-17	MW-18	MW-19
	1,1 Dichloroethane											
2/6/91	63											
8/15/91	52.5	<2.00										
3/30/93	13	<5	10 J	<100								
11/7/94												
2/22/95			<25									
5/18/95	11	<5	7	<5								
8/15/95			<50	<1								
11/13/95	6	<5	6	<5								
2/20/96			4.7									
5/20/96	4.7	<1	5.4	<1								
8/30/96			6.7									
11/14/96	4.9	<1	6.9	<1								
2/28/97			<1									
5/8/97	3.6	<1	<1	<1								
9/8/97	<2		5.6	<2	26.1	<2	<200					
11/26/97	<5	<5	<5	<5								
2/14/98			<5									
6/19/98	<5	<5	<5	<5								
8/8/98			8.3									
11/30/98	<5	<5	9.3	6.1			26.7					
2/15/99			<5									
5/15/99	<5	<5	13	<5								
9/3/99			8.2									
12/27/99	3	<2	15	<2								
5/31/00	1	<1	23	<1								
11/10/00	<2	<2	18	<2								
3/16/01	<2	<2	<2	<2	10	3	<2000000					
9/20/01	<2	<2	2	<2	9	<100	<100					
2/25/02	<10	<2 a	<2 a	<2	8	27	120					
9/30/02	<5	<2 a	<2 a	<5	<5	<25	<500					
4/11/03	2	<2 a	<2 a	<0.5	0.6	<210	<2500					
9/30/03	<0.5	<2 a	5 a	<0.5	11	2.1	<630					
3/26/04	<18	<2 a	<2 a	<0.5	10	3.7	<1300	150 a				
10/2/04	<5			<5	5.2	<100						
3/12/05	<25			<5	6.7	<250						
10/1/05	<10			<5	5.2	<250						
4/2/06	<50			<5	4.2 J	<250						
10/1/06	<5			0.39 J	5.4	0.91 J						
3/25/07	<1.5			<1.5	16	<15						
9/22/07	<5			<5	9.5 J	<250						
4/6/08	<5			<1	19	<20						
9/27/08	<5			<1	7.4	<2						
3/30/09	<10			<1	17	<100	<100					
9/19/09	0.38 J			<1	4.5	<25						
3/27/10	0.38 J			<1	2.4 J	<250						
10/9/10	0.28 J			<1	5.4	<20						
4/9/11	0.27 J			<1	4.8	<50						
9/25/11	0.15 J			<1	5.2	<20						
5/18/12	0.38 J	<1	1.8	<1	4.5	<1		<2000				
10/17/12	<1			<1	4.23	<1						
4/13/13	0.16 J			<1	1.8	<5						
10/4/13	<1			<1	3.9	<1						
4/25/14	<1			<1	2.9	<20						
10/4/14	<1			<1	2.8	<50						
4/3/15	<1			<1	1.6	<50						
10/17/15	<1			<1	<1	<50						
3/17/16	<1			<1	1	<20						
10/16/16	<1			<1	<1	<50	<500					
3/18/17	<1			<1	1.4	<1						
10/8/17	<4			<1	1.5	<25						
6/4/18	<5	<1	0.56 J	<1	1.1	<25		<2000				
1/20/19	<5	<1	<1	<1	<1	<25		<500	<1	<40	<40	<2.5

Table 5. Groundwater Quality Summary - Chlorinated Volatile Organic Parameters

DATE	MW-4	MW-5	MW-8	MW-9	MW-10	MW-11	MW-12	MW-14	MW-16	MW-17	MW-18	MW-19
	1,2 Dichloroethane											
2/6/91	<50											
8/15/91	<50.0	<2.00										
3/30/93	<10	<5	<50	<100								
11/7/94												
2/22/95			<25									
5/18/95	<5	<5	<5	<5								
8/15/95			<50	<1								
11/13/95	<5	<5	<5	<5								
2/20/96			<1									
5/20/96	<1	<1	<1	<1								
8/30/96			<1									
11/14/96	<1	<1	<1	<1								
2/28/97			<1									
5/8/97	<1	<1	<1	<1								
9/8/97	<2		<1	<2	<2	<2	<200					
11/26/97	<5	<5	<5	<5								
2/14/98			<5									
6/19/98	<5	<5	<5	22.8								
8/8/98			<5									
11/30/98	<5	<5	<5	<5			<5					
2/15/99			<5									
5/15/99	<5	<5	<5	<5								
9/3/99			<5									
12/27/99	<2	<2	<2	<2								
5/31/00	<1	<1	<1	<1								
11/10/00	<2	<2	<10	<2								
3/16/01	<2	<2	<2	<2	<2	<2	<2000000					
9/20/01	<2	<2	<2	<2	<2	<100	<100					
2/25/02	<10	<2 a	<2 a	<2	<2	<2	<100					
9/30/02	<5	<2 a	<2 a	<5	<5	<25	<500					
4/11/03	<1	<2 a	<2 a	<0.5	<0.5	<210	<2500					
9/30/03	27 E	<2 a	<2 a	<0.5	3.3	<0.5	<630					
3/26/04	<18	<2 a	<2 a	<0.5	<3.1	<.5	<1300	160 a				
10/2/04	<5			<5	<5	<100						
3/12/05	<25			<5	<5	<250						
10/1/05	<10			<5	<5	<250						
4/2/06	<50			<5	<5	<250						
10/1/06	<5			0.37 J	1 J	<5						
3/25/07	<1.5			<1.5	<0.3	<15						
9/22/07	<5			<5	<25	<250						
4/6/08	<5			<1	<5	<20						
9/27/08	<5			<1	<5	<2						
3/30/09	<10			<1	<10	<100	<100					
9/19/09	<1			<1	<1	<25						
3/27/10	<1			<1	<5	<250						
10/9/10	<1			<1	<1	<20						
4/9/11	<1			<1	<1	<50						
9/25/11	<1			<1	<1	<20						
5/18/12	<1	<1	<1	<1	<1	<1		<2000				
10/17/12	<1			<1	0.477 J	<1						
4/13/13	<1			<1	<1	<5						
10/4/13	<1			<1	<1	<1						
4/25/14	<1			<1	<1	<20						
10/4/14	<1			<1	<1	<50						
4/3/15	<1			<1	<1	<50						
10/17/15	<1			<1	<1	<50						
3/17/16	<1			<1	<1	<20						
10/16/16	<1			<1	<1	<50	<500					
3/18/17	<1			<1	<1	<1						
10/8/17	<4			<1	<1	<25						
6/4/18	<5	<1	<1	<1	<1	<25		<2000				
1/20/19	<5	<1	<1	<1	<1	<25		<500	<1	<40	<40	<2.5

Table 5. Groundwater Quality Summary - Chlorinated Volatile Organic Parameters

DATE	MW-4	MW-5	MW-8	MW-9	MW-10	MW-11	MW-12	MW-14	MW-16	MW-17	MW-18	MW-19
	1,1 Dichloroethene											
2/6/91	<50											
8/15/91	<50.0	<2.00										
3/30/93	4 J	<5	<50	<100								
11/7/94												
2/22/95			<25									
5/18/95	<5	<5	3 J	<5								
8/15/95			<50	<1								
11/13/95	<5	<5	4 J	<5								
2/20/96			3.8									
5/20/96	<1	<1	2.4	<1								
8/30/96			<1									
11/14/96	<1	<1	<1	<1								
2/28/97			5.8									
5/8/97	<1	<1	2.2	<1								
9/8/97	<2		<1	<2	<2	<2	<200					
11/26/97	<5	<5	5.7	<5								
2/14/98			<5									
6/19/98	<5	<5	7.9	<5								
8/8/98			<5									
11/30/98	<5	<5	<5	<5			38.8					
2/15/99			<5									
5/15/99	<5	<5	<5	<5								
9/3/99			<5									
12/27/99	<2	<2	8	<2								
5/31/00	<1	<1	5	<1								
11/10/00	<2	<2	<10	<2								
3/16/01	<2	<2	<2	<2	<2	9	<2000000					
9/20/01	<2	<2	4	<2	<2	<100	<100					
2/25/02	<10	<2 a	<2 a	<2	<2	11	<100					
9/30/02	<5	<2 a	2 a	<5	<5	<25	<500					
4/11/03	<1	<2 a	3 a	<0.5	<0.5	<210	<2500					
9/30/03	<0.5	<2 a	<2 a	<0.5	<0.5	21	<630					
3/26/04	<18	<2 a	<2 a	<0.5	<3.1	29 E	<1300	<20 a				
10/2/04	<5			<5	<5	<100						
3/12/05	<25			<5	<5	<250						
10/1/05	<10			<5	<5	<250						
4/2/06	<50			<5	<5	<250						
10/1/06	<5			<5	<5	24						
3/25/07	<2.5			<2.5	<0.5	<25						
9/22/07	<5			<5	<25	<250						
4/6/08	<5			<1	5.1	12 J						
9/27/08	<5			<1	<5	11						
3/30/09	<10			<1	5.6 J	<100	<100					
9/19/09	<1			<1	0.37 J	<25						
3/27/10	<1			<1	<5	<250						
10/9/10	<1			<1	0.37 J	12 J						
4/9/11	<1			<1	<1	<50						
9/25/11	<1			<1	0.69 J	12 J						
5/18/12	<1	<1	3.6	<1	0.26 J	5.3 J		<2000				
10/17/12	<1			<1	<1	2.31						
4/13/13	<1			<1	1.8	<5						
10/4/13	<1			<1	<1	1.5						
4/25/14	<1			<1	<1	<20						
10/4/14	<1			<1	<1	<50						
4/3/15	<1			<1	<1	8.4 J						
10/17/15	<1			<1	<1	17 J						
3/17/16	<1			<1	<1	<20						
10/16/16	<1			<1	<1	<50	<500					
3/18/17	<1			<1	<1	9.7						
10/8/17	<4			<1	<1	<25						
6/4/18	<5	<1	0.86 J	<1	<1	<25		<2000				
1/20/19	<5	<1	0.92 J	<1	<1	<25		<500	<1	<40	<40	<2.5

Table 5. Groundwater Quality Summary - Chlorinated Volatile Organic Parameters

DATE	MW-4	MW-5	MW-8	MW-9	MW-10	MW-11	MW-12	MW-14	MW-16	MW-17	MW-18	MW-19
	cis 1,2 Dichloroethene											
2/6/91												
8/15/91												
3/30/93	11	96	172	290								
11/7/94												
2/22/95			392									
5/18/95	4 J	3 J	131	<5								
8/15/95			253	<1								
11/13/95	<5	<5	227	<5								
2/20/96			900									
5/20/96	<1	<1	376	<1								
8/30/96			233									
11/14/96	3.2	<1	356	<1								
2/28/97			474									
5/8/97	2.8	<1	186	<1								
9/8/97	<2		520	<2	34.3	166	8550					
11/26/97	7.2	<5	632	<5								
2/14/98			458									
6/19/98	12.6	<5	358	86.9								
8/8/98			236									
11/30/98	12.1	<5	179	<5			2280					
2/15/99			28.2									
5/15/99	61.3	<5	243	<5								
9/3/99			150									
12/27/99	65	11	182	<2								
5/31/00	113	<1	290	<1								
11/10/00	3	<2	300	<2								
3/16/01	2	<2	79	<2	30	3,600	<2000000					
9/20/01	2	<2	270	<2	38	6,800	7400					
2/25/02	<10	<2 a	180 a	<2	18	5,500	13000					
9/30/02	<5	<2 a	85 a	21	14	7,200	3600					
4/11/03	5	<2 a	230 a	<0.5	23	6,400	8000					
9/30/03	3.6	<2 a	89 a	<0.5	25 D	5,400 D	1400					
3/26/04	<18	<2 a	7 a	<0.5	19	8,800 D	2600	4800 a				
10/2/04	<5			<5	6.4	9,400						
3/12/05	<25			0.32 J	3.3 J	14,000						
10/1/05	<10			3.9 J	2.2 J	8,900						
4/2/06	<50			5.3	0.44 J	8,700						
10/1/06	0.26 J			2 J	5.2	15,000						
3/25/07	2 J			<1.0	43	11,000						
9/22/07	<5			<5	320	15,000						
4/6/08	<5			0.3 J	1400	6,200						
9/27/08	<5			0.32 J	220	7,100						
3/30/09	<10			<1	1100	9,000	1400					
9/19/09	0.48 J			11	82	6,600						
3/27/10	1.9			1.5	70	9,800						
10/9/10	0.25 J			6.8	84	8,400						
4/9/11	<1			3.3	24	6,700						
9/25/11	0.23 J			11	110	6,100						
5/18/12	0.27 J	2.3	196 b	25	46	2,900		10,300				
10/17/12	0.259 J			21.3	20.6	885						
4/13/13	2.4			3	0.73 J	780 S						
10/4/13	0.2 J			4.2	15	560						
4/25/14	<1			1.3	0.94 J	2,400						
10/4/14	<1			1.8	1.6	5,400						
4/3/15	0.38 J			2.6	0.39 J	4,800						
10/17/15	<1			2.2	<1	7,000						
3/17/16	<1			1.8	0.65 J	2,300						
10/16/16	0.52 J			1.1	<1	5,200	1,400					
3/18/17	<1			5.0	1.0	4,300						
10/8/17	<4			1.7	<1	3,080						
6/4/18	<5	<1	33.7	<1	<1	2,690		7,450				
1/20/19	8.5	3.4	48.2	<1	2.1	2,740		3,060	<1	4,950	6,080 m1	386

Table 5. Groundwater Quality Summary - Chlorinated Volatile Organic Parameters

DATE	MW-4	MW-5	MW-8	MW-9	MW-10	MW-11	MW-12	MW-14	MW-16	MW-17	MW-18	MW-19
	Trans 1,2 Dichloroethene											
2/6/91	<50											
8/15/91	<50.0	2.26										
3/30/93	<10	2 J	<50	<100								
11/7/94												
2/22/95			<25									
5/18/95	<5	<5	3 J	<5								
8/15/95			<50	<1								
11/13/95	<5	<5	<5	<5								
2/20/96			1.8									
5/20/96	<1	<1	<1	<1								
8/30/96			<1									
11/14/96	<1	<1	1.8	<1								
2/28/97			<1									
5/8/97	<1	<1	3.1	<1								
9/8/97	<2		1	<2	<2	2.7	<200					
11/26/97	<5	<5	<5	<5								
2/14/98			<5									
6/19/98	<5	<5	<5	<5								
8/8/98			<5									
11/30/98	<5	<5	<5	<5			7.8					
2/15/99			<5									
5/15/99	<5	<5	<5	<5								
9/3/99			<5									
12/27/99	<2	<2	<2	<2								
5/31/00	<1	<1	3	<1								
11/10/00	<2	<2	<10	<2								
3/16/01	<2	<2	<2	<2	<2	62	<2000000					
9/20/01	<2	<2	<2	<2	<2	<100	<100					
2/25/02	<10	<2 a	<2 a	<2	<2	97	<100					
9/30/02	<5	<2 a	<2 a	<5	<5	65	<500					
4/11/03	<1	<2 a	<2 a	<0.5	<0.5	<210	<2500					
9/30/03	<0.5	<2 a	<2 a	<0.5	2.4 D	93 E	<630					
3/26/04	<18	<2 a	<2 a	<0.5	<3.1	73 E	<1300	<20 a				
10/2/04	<5			<5	<5	<100						
3/12/05	<25			<5	0.69 J	48 J						
10/1/05	<10			<5	1.3 J	34 J						
4/2/06	<50			<5	<5	20 J						
10/1/06	<5			0.62 J	2 J	46						
3/25/07	<2			<2.0	3 J	42 J						
9/22/07	<5			<5	5 J	44 J						
4/6/08	<5			<1	14	26						
9/27/08	<5			<1	3.9 J	32						
3/30/09	<10			<1	10	37 J	<100					
9/19/09	<1			0.26 J	2.4	36						
3/27/10	0.27 J			<1	1.3 J	36 J						
10/9/10	<1			<1	2.4	28						
4/9/11	<1			<1	1.1	25 J						
9/25/11	<1			<1	2.9	29						
5/18/12	0.23 J	<1	1.4	<1	2.3	13		<2000				
10/17/12	<1			0.703 J	2.61	16.5						
4/13/13	<1			<1	<1	3 J						
10/4/13	<1			<1	2.2	3.7						
4/25/14	<1			<1	0.51 J	12 J						
10/4/14	<1			<1	1.3	<50						
4/3/15	<1			<1	<1	29 J						
10/17/15	<1			<1	<1	33 J						
3/17/16	<1			<1	<1	12 J						
10/16/16	<1			<1	<1	30 J	<500					
3/18/17	<1			<1	0.61 J	21						
10/8/17	<4			<1	<1	<25						
6/4/18	<5	<1	0.26 J	<1	<1	<25		<2000				
1/20/19	<5	<1	0.56 J	<1	<1	<25		<500	<1	<40	<40	<2.5

Table 5. Groundwater Quality Summary - Chlorinated Volatile Organic Parameters

DATE	MW-4	MW-5	MW-8	MW-9	MW-10	MW-11	MW-12	MW-14	MW-16	MW-17	MW-18	MW-19
	Tetrachloroethene											
2/6/91	<50											
8/15/91	60.0	<2.00										
3/30/93	<10	<5	34 J	<100								
11/7/94												
2/22/95			<25									
5/18/95	<5	<5	4 J	<5								
8/15/95			<50	<1								
11/13/95	<5	<5	15	<5								
2/20/96			4.1									
5/20/96	<1	<1	2.8	<1								
8/30/96			2.9									
11/14/96	<1	1.5	6.1	<1								
2/28/97			8.1									
5/8/97	<1	<1	<1	<1								
9/8/97	<2		12	<2	<2	<2	353					
11/26/97	<5	<5	11.6	<5								
2/14/98			19.1									
6/19/98	<5	<5	7	<5								
8/8/98			<5									
11/30/98	<5	<5	<5	<5			3170					
2/15/99			<5									
5/15/99	<5	<5	<5	<5								
9/3/99			<5									
12/27/99	<2	<2	5	<2								
5/31/00	<1	<1	3	<1								
11/10/00	<2	<2	<10	<2								
3/16/01	<2	<2	<2	<2	<2	<2	<2000000					
9/20/01	<2	<2	<2	<2	<2	<100	<100					
2/25/02	<10	<2 a	<2 a	<2	<2	<2	<100					
9/30/02	<5	<2 a	<2 a	<5	<5	<25	<500					
4/11/03	<1	<2 a	<2 a	<0.5	<0.5	<210	<2500					
9/30/03	<0.5	<2 a	<2 a	<0.5	<0.5	<0.5	<630					
3/26/04	<18	<2 a	<2 a	<0.5	<3.1	<0.5	<1300	<20 a				
10/2/04	<5			<5	<5	<100						
3/12/05	<25			<5	<5	<250						
10/1/05	<10			<5	<5	<250						
4/2/06	<50			<5	<5	<250						
10/1/06	<5			<5	<5	<5						
3/25/07	2 J			3.2 J	<0.4	64 J						
9/22/07	<5			<5	<25	<250						
4/6/08	<5			<1	<5	<20						
9/27/08	<5			<1	<5	<2						
3/30/09	<10			<1	<10	<100	<100					
9/19/09	0.84 J			<1	<1	<25						
3/27/10	0.78 J			<1	<5	<250						
10/9/10	0.18 J			<1	<1	<20						
4/9/11	<1			<1	<1	<50						
9/25/11	<1			<1	<1	<20						
5/18/12	2.1	<1	0.7 J	<1	<1	<1		<2000				
10/17/12	0.487 J			<1	0.41 J	<1						
4/13/13	0.730 J			<1	<1	<5						
10/4/13	<1			<1	<1	<1						
4/25/14	0.74 J			<1	<1	<20						
10/4/14	<1			<1	<1	<50						
4/3/15	1.0			<1	<1	<50						
10/17/15	0.92 J			<1	<1	<50						
3/17/16	0.68 J			<1	<1	<20						
10/16/16	0.76 J			<1	<1	<50	<500					
3/18/17	<1			<1	<1	<1						
10/8/17	<4			<1	<1	<25						
6/4/18	<5	<1	0.48 J	<1	<1	<25		<2000				
1/20/19	<5	<1	1.2	<1	<1	<25		<500	<1	<40	<40	<2.5

Table 5. Groundwater Quality Summary - Chlorinated Volatile Organic Parameters

DATE	MW-4	MW-5	MW-8	MW-9	MW-10	MW-11	MW-12	MW-14	MW-16	MW-17	MW-18	MW-19
	Trichloroethene											
2/6/91	76											
8/15/91	67.5	<2.00										
3/30/93	16	<5	2,470	124								
11/7/94												
2/22/95			5,130									
5/18/95	10	<5	1,650	<5								
8/15/95			2,240	<1								
11/13/95	<5	<5	3,650	<5								
2/20/96			1,140									
5/20/96	7.3	<1	1,694	<1								
8/30/96			1,750									
11/14/96	2.1	<1	3,475	1								
2/28/97			3,695									
5/8/97	2.5	<1	631	<1								
9/8/97	<2		3,920	<2	<2	5.3	829					
11/26/97	<5	<5	5,950	<5								
2/14/98			3,170									
6/19/98	<5	<5	4,010	14.5								
8/8/98			2,080									
11/30/98	<5	<5	2,180	<5			1850					
2/15/99			2,420									
5/15/99	<5	<5	2,580	<5								
9/3/99			990									
12/27/99	<2	<2	1,190	6								
5/31/00	<1	<1	2,050	<1								
11/10/00	<2	<2	940	<2								
3/16/01	<2	<2	140	<2	<2	96	16000000					
9/20/01	<2	<2	210	<2	<2	<100	6800					
2/25/02	<10	<2 a	9 a	<2	<2	60	13000					
9/30/02	<5	<2 a	27 a	<5	<5	26	5700					
4/11/03	<1	<2 a	95 a	<0.5	<0.5	<210	9500					
9/30/03	<0.5	<2 a	4 a	<0.5	0.7	<0.5	2500					
3/26/04	<18	<2 a	4 a	<0.5	<3.1	3.4	3700	6100 a				
10/2/04	<5			<5	<5	<100						
3/12/05	<25			<5	<5	270						
10/1/05	<10			<5	<5	<250						
4/2/06	<50			<5	<5	<250						
10/1/06	<5			<5	<5	5.8						
3/25/07	<1.5			<1.5	<0.3	<15						
9/22/07	<5			<5	<25	<250						
4/6/08	<5			<1	16	<20						
9/27/08	<5			<1	1.4 J	11						
3/30/09	<10			<1	<10	<100	68 J					
9/19/09	1.4			<1	0.69 J	<25						
3/27/10	1.5			<1	0.36 J	<250						
10/9/10	0.27 J			<1	<1	93						
4/9/11	<1			<1	<1	40 J						
9/25/11	<1			<1	0.22 J	65						
5/18/12	1.4	0.26 J	12.8	<1	<1	31		1,870 J				
10/17/12	0.327 J			<1	<1	6.71						
4/13/13	0.590 J			<1	<1	6.7						
10/4/13	<1			<1	<1	16						
4/25/14	<1			<1	<1	17 J						
10/4/14	<1			<1	<1	63						
4/3/15	0.56 J			<1	<1	14 J						
10/17/15	0.35 J			<1	<1	52						
3/17/16	<1			<1	0.17 J	5.2 J						
10/16/16	<1			<1	<1	71	500					
3/18/17	<1			<1	<1	54						
10/8/17	<4			<1	<1	<25						
6/4/18	<5	<1	6.8	<1	<1	100		<2000				
1/20/19	<5	0.43 J	#######	<1	<1	<25		221 J	<1	4,960	<40	<2.5

Table 5. Groundwater Quality Summary - Chlorinated Volatile Organic Parameters

DATE	MW-4	MW-5	MW-8	MW-9	MW-10	MW-11	MW-12	MW-14	MW-16	MW-17	MW-18	MW-19
	Vinyl Chloride											
2/6/91	<50											
8/15/91	<50.0	88.70										
3/30/93	<20	79	<100	<200								
11/7/94												
2/22/95			<50									
5/18/95	<10	5 J	3 J	<10								
8/15/95			<100	<2								
11/13/95	<10	<10	<10	<10								
2/20/96			2.4									
5/20/96	<1	39.4	2.4	<1								
8/30/96			1									
11/14/96	<1	61.7	<1	<1								
2/28/97			4.9									
5/8/97	<1	<1	7.9	<1								
9/8/97	<2		2.8	<2	107	26.4	266					
11/26/97	<10	<10	<10	<10								
2/14/98			<2									
6/19/98	7.9	<2	34.2	<2								
8/8/98			138									
11/30/98	9.2	<2	182	<2			144					
2/15/99			21.8									
5/15/99	49.6	<2	296	<2								
9/3/99			140									
12/27/99	18	<2	175	<2								
5/31/00	<1	<1	<1	<1								
11/10/00	<10	<10	140	<10								
3/16/01	<10	<10	<10	<10	18	200	<10000000					
9/20/01	2	<2	78	<2	24	150	120					
2/25/02	<10	<2 a	8 a	<2	12	250	310					
9/30/02	<2	<2 a	46 a	<2	<2	100	<200					
4/11/03	<1	<2 a	9 a	<0.5	15	<210	<2500					
9/30/03	1	2 a	38 a	<0.5	42 D	170 D	<630					
3/26/04	<18	<2 a	<2 a	<0.5	66	800 D	<1300	130 a				
10/2/04	<2			<2	19	290						
3/12/05	<10			<2	12	600						
10/1/05	<4			0.69 J	8.2	710						
4/2/06	<20			1.3 J	2.9	1400						
10/1/06	0.28 J			0.94 J	16	550						
3/25/07	2.5 J			<0.5	900	690						
9/22/07	<2			<2	590	460						
4/6/08	<5			<1	1600	93						
9/27/08	<5			<1	320	99						
3/30/09	<10			<1	1700	<100	<100					
9/19/09	<1			3.7	250	170						
3/27/10	<1			<1	78	180						
10/9/10	0.35 J			1.1	370	100						
4/9/11	<1			<1	67	100						
9/25/11	0.5 J			0.97 J	470	84						
5/18/12	<1	<1	14.1	1.9	320	24		<2000				
10/17/12	<1			2.94	245	17.5						
4/13/13	<1			<1	11	49						
10/4/13	<1			<1	200	34						
4/25/14	<1			<1	10	16 J						
10/4/14	<1			<1	56	71						
4/3/15	<1			<1	1.3	70						
10/17/15	<1			<1	0.66 J	150						
3/17/16	<1			<1	4.3	44						
10/16/16	<1			<1	0.97 J	130	<500					
3/18/17	<1			<1	19	57						
10/8/17	<4			<1	37.9	71.5						
6/4/18	<5	<1	21.1	<1	5.8	28.6		<2000				
1/20/19	<5	<1	9.2	<1	24.4	89.9		<500	<1	74.9	1,170	341

Table 5. Groundwater Quality Summary - Chlorinated Volatile Organic Parameters

DATE	MW-4	MW-5	MW-8	MW-9	MW-10	MW-11	MW-12	MW-14	MW-16	MW-17	MW-18	MW-19
	Total Chlorinated Volatiles											
2/6/91	1,951											
8/15/91	1,895	164										
3/30/93	986	184	2,712	775								
11/7/94												
2/22/95			5,522									
5/18/95	1,528	18	1,911	0								
8/15/95			2,493	0								
11/13/95	1,256	8	3,953	0								
2/20/96			2,131									
5/20/96	692	72	2,182	4								
8/30/96			2,097									
11/14/96	710	839	3,947	21								
2/28/97			4,232									
5/8/97	657	2	904	3								
9/8/97	181		4,491	62	302	200	11,359					
11/26/97	148	16	6,607	0								
2/14/98			3,659									
6/19/98	178	13	4,459	287								
8/8/98			2,551									
11/30/98	118	11	2,731	157			9,824					
2/15/99			2,480									
5/15/99	154	0	3,362	0								
9/3/99			1,501									
12/27/99	143	14	1,641	6								
5/31/00	203	0	2,384	73								
11/10/00	203	0	1,460	27								
3/16/01	121	0	219	0	174	4,008	32,000,000					
9/20/01	437	0	564	0	169	6,950	15,920					
2/25/02	980	0 a	197 a	0	108	5,980	35,350					
9/30/02	1,046	0 a	160 a	21	46	7,421	10,300					
4/11/03	55	0 a	337 a	0	39	6,400	17,500					
9/30/03	406	2 a	136 a	2	251	5,732	5,000					
3/26/04	690	0 a	11 a	0	235	9,774	7,700	11,900				
10/2/04	660			0	104	9,690						
3/12/05	1,113			0	65	14,918						
10/1/05	533			5	154	9,644						
4/2/06	995			11	34	10,120						
10/1/06	401			107	275	15,655						
3/25/07	1,014			381	1,017	11,821						
9/22/07	452			2	1,163	15,504						
4/6/08	744			0	3,089	6,331						
9/27/08	10			0	730	7,256						
3/30/09	763			0	2,850	9,037	3,644					
9/19/09	134			17.6	551	6,806						
3/27/10	45			1.5	154	10,016						
10/9/10	374			7.9	649	8,633						
4/9/11	671			3.3	146	6,865						
9/25/11	352			12.7	788	6,290						
5/18/12	478	5	237	26.9	535	2,973		12,170				
10/17/12	346			25.2	448	929						
4/13/13	72			3.0	23	839						
10/4/13	304			4.2	421	615						
4/25/14	11			1.3	42	2,445						
10/4/14	390			1.8	227	5,534						
4/3/15	6.59			2.6	17.3	4,921						
10/17/15	15.6			2.2	17.9	7,252						
3/17/16	2.8			1.8	19.0	2,361						
10/16/16	5.3			1.1	56.9	5,431	4,060					
3/18/17	306.2			5.0	103.5	4,442						
10/8/17	456.3			1.7	140.8	3,152						
6/4/18	708.4	0	75	0.0	76.3	2,819		7,450				
1/20/19	807	3.8	75.8	0	47.0	2,830		3,894	0	9,985	7,250	815

Table 5. Groundwater Quality Summary - Chlorinated Volatile Organic Parameters

DATE	MW-4	MW-5	MW-8	MW-9	MW-10	MW-11	MW-12	MW-14	MW-16	MW-17	MW-18	MW-19

All values are micrograms per liter (ug/l).
<10 - Compound not detected above method detection or method reporting level.
8/91 Sampling took place on 8/15-16/91.
* MW-2 abandonded on 12/16/92 for warehouse construction, and replaced with MW-2r on 10/26/94.
D - Compound exceeded upper calibration level. This value reported when value is below detection limit of dilution.
E - Compound exceeded upper calibration level. Sample was diluted and reanalyzed.
J - Concentration estimated below detection limit.
S - MS/MSD failure
*T - Prior to 3/30/93, 1,2-cis dichloroethene was not included in lab analyses.
9/8/97 results for MW-3,4,9,10,11, &12 were collected by GEL.
8/26/97 data for MW-8 is from routine sampling performed on 8/26/97.
3/16/01 results for MW-12 were for sample of free phase material.
a - Data from Brenntag report dated 4/28/04
Samples after 4/2006 collected with passive diffusion bag samplers
b - outside of control limits
m1 - Matrix spike recovery exceeded QC limites. Batch accepted ased on lab control sample.
1/20/2019 - Data from Brenntag sampling on 12/21/2018.

Appendix A. Monitoring Well Records

DHEC
PROMOTE PROTECT PROSPER

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

1. WELL OWNER INFORMATION:
Name: Burris Environmental Services (last) (first)
Address: 4310 Amsterdam St
City: N Charleston State: SC Zip: 29418
Telephone: Work: Home:

2. LOCATION OF WELL: MW-16 **COUNTY:** Charleston
Name: WM Bird Co.
Street Address: 4210 Azalea Dr
City: N. Charleston Zip:
Latitude: 32°50'53"N Longitude: 80°00'23"W

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

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

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
No cuttings via direct push installation	8.0'	8.0'
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:

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

7. PERMIT NUMBER: 11726

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

9. WELL DEPTH (completed) 8.0' ft. Date Started: 10/20/18 Date Completed: 10/20/18

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.5'
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.5' in. to 3.0' ft. depth
_____ in. to _____ ft. depth
Height: Above/Below Surface _____ ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN: (5' Geoprobe pre-packed well screen)
Type: PVC Diam.: 1.5"
Slot/Gauge: 0.010" Length: 5'
Set Between: 3.0' ft. and 8.0' ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 3.5' ft. below land surface after 24 hours

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

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

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 1.5' ft. to 8.0' ft.
Effective size #2 Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 0 ft. to 1.5' ft.

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

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

19. WELL DRILLER: William Walker **CERT. NO.:** 2042
Address: (Print)
PO Box 8446
Columbia, SC, 29202
Level: A B ✓ C D (circle one)
Telephone No.: 803-351-7936 Fax No.:

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

Digitally signed by William Walker
DN: cn=William Walker, o=W Walker Environmental Services, ou, email=wwenvironmental@gmail.com, c=US
Date: 2018.11.13 17:05:10 -05'00'

Signed: _____ Date: 11/3/18
Well Driller

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

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

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Burris Environmental Services (first)
Address: 4310 Amsterdam St
City: N Charleston State: SC Zip: 29418
Telephone: Work: Home:

2. LOCATION OF WELL: MW-17 **COUNTY:** Charleston
Name: WM Bird Co.
Street Address: 4210 Azalea Dr
City: N. Charleston Zip:
Latitude: 32°50'52"N Longitude: 80°00'20"W

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

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

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
No cuttings via direct push installation	9.0'	9.0'
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:

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

7. PERMIT NUMBER: 11726

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

9. WELL DEPTH (completed) 9.0' ft. Date Started: 10/20/18 Date Completed: 10/20/18

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.5'
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.5' in. to 4.0' ft. depth
_____ in. to _____ ft. depth
Height: Above/Below Surface _____ ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN: (5' Geoprobe pre-packed well screen)
Type: PVC Diam.: 1.5"
Slot/Gauge: 0.010" Length: 5'
Set Between: 4.0' ft. and 9.0' ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☑ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 4.4 ft. below land surface after 24 hours

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

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

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 2.0' ft. to 9.0' ft.
Effective size #2 Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 0 ft. to 2.0' ft.

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

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

19. WELL DRILLER: William Walker **CERT. NO.:** 2042
Address: (Print)
PO Box 8446
Columbia, SC, 29202
Level: A B ✓ C D (circle one)
Telephone No.: 803-331-7936 Fax No.:

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

Digitally signed by William Walker
DN: cn=William Walker, o=W Walker Environmental Services, ou, email=wwenvironmental@gmail.com, c=US
Date: 2018.11.13 17:05:27 -05'00'

Signed: _____ Date: 11/3/18
Well Driller

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

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

D H E C
PROMOTE PROTECT PROSPER

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

1. WELL OWNER INFORMATION:
Name: Burris Environmental Services (first)
Address: 4310 Amsterdam St
City: N Charleston State: SC Zip: 29418
Telephone: Work: Home:

2. LOCATION OF WELL: MW-18 **COUNTY:** Charleston
Name: WM Bird Co.
Street Address: 4210 Azalea Dr
City: N. Charleston Zip:
Latitude: 32°50'53"N Longitude: 80°00'21"W

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

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

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
"No cuttings via direct push installation"	9.0'	9.0'
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		
5. REMARKS:		

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

7. PERMIT NUMBER: 11726

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

9. WELL DEPTH (completed) Date Started: 10/20/18
9.0' ft. Date Completed: 10/20/18

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.5'
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.5' in. to 4.0' ft. depth
_____ in. to _____ ft. depth
Height: Above/Below Surface _____ ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN: (5' Geoprobe pre-packed well screen)
Type: PVC Diam.: 1.5"
Slot/Gauge: 0.010" Length: 5'
Set Between: 4.0' ft. and 9.0' ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 5.6 ft. below land surface after 24 hours

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

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

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 2.0' ft. to 9.0' ft.
Effective size #2 Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 0 ft. to 2.0' ft.

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

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

19. WELL DRILLER: William Walker **CERT. NO.:** 2042
Address: (Print) Level: A B ✓ C D (circle one)
PO Box 8446
Columbia, SC, 29202
Telephone No.: 803-331-7936 Fax No.:

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

Digitally signed by William Walker
DN: cn=William Walker, o=W Walker Environmental Services, ou, email=wwenvironmental@gmail.com, c=US
Date: 2018.11.13 17:05:43 -05'00'

Signed: _____ Date: 11/3/18
Well Driller

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

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

D H E C
PROMOTE PROTECT PROSPER

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

1. WELL OWNER INFORMATION:
Name: Burris Environmental Services (last) (first)
Address: 4310 Amsterdam St
City: N Charleston State: SC Zip: 29418
Telephone: Work: Home:

2. LOCATION OF WELL: MW-19 **COUNTY:** Charleston
Name: WM Bird Co.
Street Address: 4210 Azalea Dr
City: N. Charleston Zip:
Latitude: 32°50'53"N Longitude: 80°00'21"W

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

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

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
No cuttings via direct push installation	15'	15'
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:

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

7. PERMIT NUMBER: 11726

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

9. WELL DEPTH (completed) 15.0' ft. Date Started: 10/20/18 Date Completed: 10/20/18

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.5'
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.5' in. to 10.0' ft. depth
_____ in. to _____ ft. depth
Height: Above/Below Surface _____ ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN: (5' Geoprobe pre-packed well screen)
Type: PVC Diam.: 1.5"
Slot/Gauge: 0.010" Length: 5'
Set Between: 10.0' ft. and 15.0' ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 5.6 ft. below land surface after 24 hours

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

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

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 8.0' ft. to 15.0' ft.
Effective size # 2 Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 0 ft. to 8.0' ft.

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

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

19. WELL DRILLER: William Walker **CERT. NO.:** 2042
Address: (Print)
PO Box 8446
Columbia, SC, 29202
Level: A B ✓ C D (circle one)
Telephone No.: 803-331-7936 Fax No.:

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

Digitally signed by William Walker
DN: cn=William Walker, o=W Walker Environmental Services, ou, email=wwenvironmental@gmail.com, c=US
Date: 2018.11.13 17:06:00-05'00'

Signed: _____ Date: 11/3/18
Well Driller

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

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

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

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Burris Environmental Services (last) (first)
Address: 4310 Amsterdam St
City: N Charleston State: SC Zip: 29418
Telephone: Work: Home:

2. LOCATION OF WELL: BESGP-11 **COUNTY:** Charleston
Name: WM Bird Co.
Street Address: 4210 Azalea Dr
City: N. Charleston Zip:
Latitude: 32°50'53"N Longitude: 80°00'19"W

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☒ Yes ☐ No
Give Details Below
Grouted Depth: from 0.0 ft. to 10.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
No cuttings via direct push installation	10'	10'
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
no well was installed
contaminant screening

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

7. PERMIT NUMBER: 11726

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

9. WELL DEPTH (completed) 10.0' ft. Date Started: 10/20/18 Date Completed: 10/20/18

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

11. SCREEN:
Type: ____ Diam.: ____
Slot/Gauge: ____ Length: ____
Set Between: ____ ft. and ____ ft.
____ ft. and ____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

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

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

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

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

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

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

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

19. WELL DRILLER: William Walker **CERT. NO.:** 2042
Address: (Print)
PO Box 8446
Columbia, SC, 29202
Level: A B ✓ C D (circle one)
Telephone No.: 803-331-7936 Fax No.:

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

Digitally signed by William Walker
DN: cn=William Walker, o=W Walker Environmental Services, ou, email=wwenvironmental@gmail.com, c=US
Date: 2018.11.13 17:04:47 -05'00'

Signed: ____ Date: 11/3/18
Well Driller

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

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

Appendix B. MiHpt Geophysical Log

Dakota Technologies MiHpt Reference Log

Conductivity Plot:

The Electrical Conductivity **(EC)** of the soil is logged simultaneously with the HPT pressure and analytical detector data utilizing a dipole arrangement. The EC provides insight into stratigraphy and contaminant pathways when viewed in relation to detector responses. Typically, an increase in EC is indicative of finer grained, tighter soil types.

HPT Pressure Plot:

The HPT pressure gives insight into hydraulic properties of the soil as water is pumped into the formation at a constant rate. The pressure (unlike EC) is independent of certain factors such as pore water chemistry or mineralogy (contaminants, brines), and so further aids in defining soil/hydraulic properties. Potential contaminant migration pathways can be better understood when pressure data are viewed in relation to detector responses.

Estimated K Plot:

Estimated K is internally calculated with pressure and flow data in conjunction with dissipation tests performed at each location. Hydraulic conductivity data is useful for directing sampling, remediation and slug testing protocols.

PID Plot:

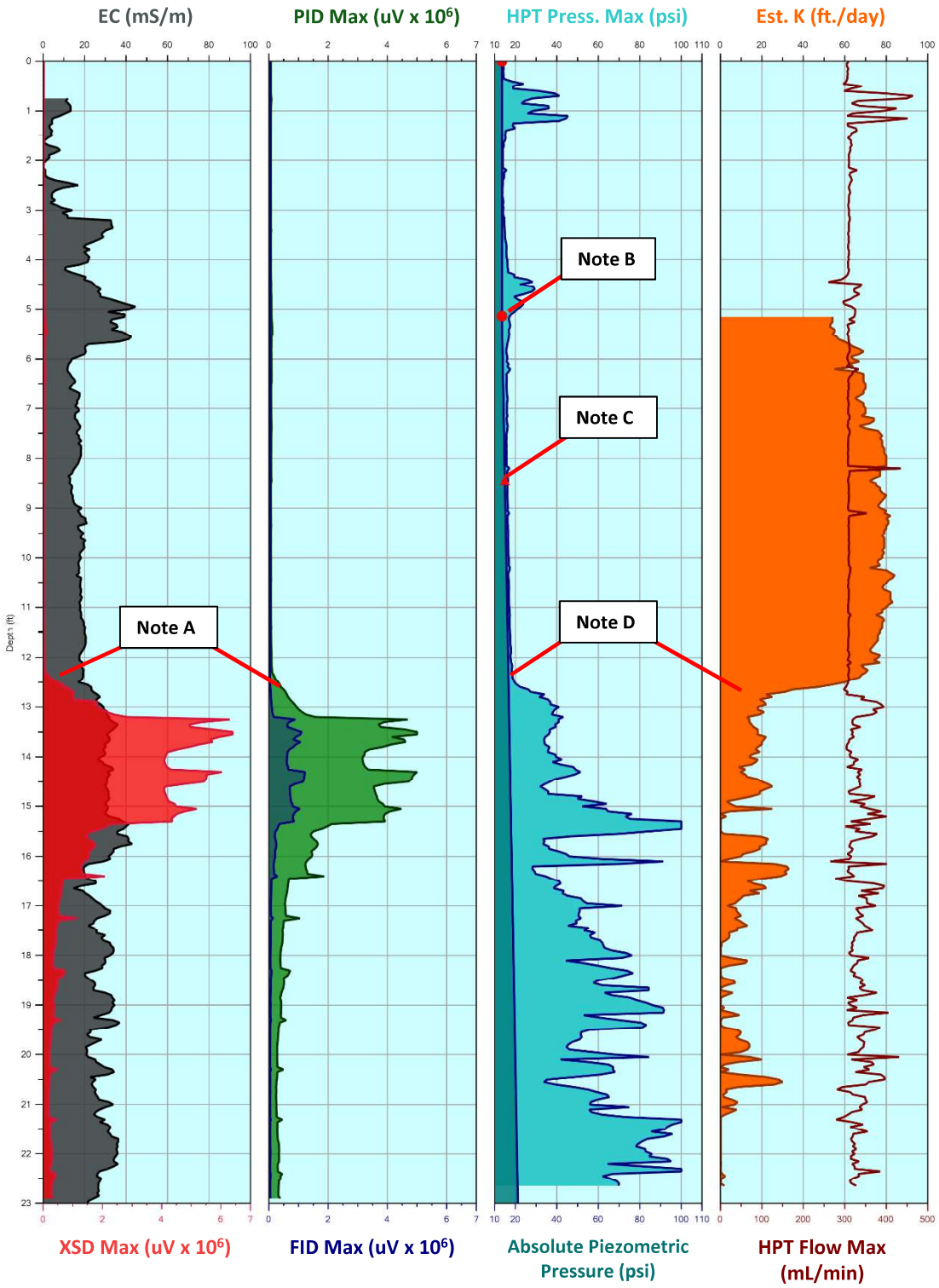
Detects unsaturated, multi-bond compounds (olefins) and aromatic (BTEX) hydrocarbons, as well as GRO to approx. 0.5-1 ppm detection limit in all types of soil.

FID Plot:

Detects all types of hydrocarbons (including methane and butane) to approximately 10 ppm detection limit. Generally, the FID response is an indication of total VOCs/CVOCs present.

XSD Plot:

Detects halogenated compounds (i.e. CVOCs such as TCE and PCE) to approximately 250 ppb detection limit.



Note A:

XSD (and PID/FID) responses starting at 12.5 feet are indicative of moderate level CVOCs.

Note B:

The hydrostatic water level is indicated with a round marker at 5.2 feet.

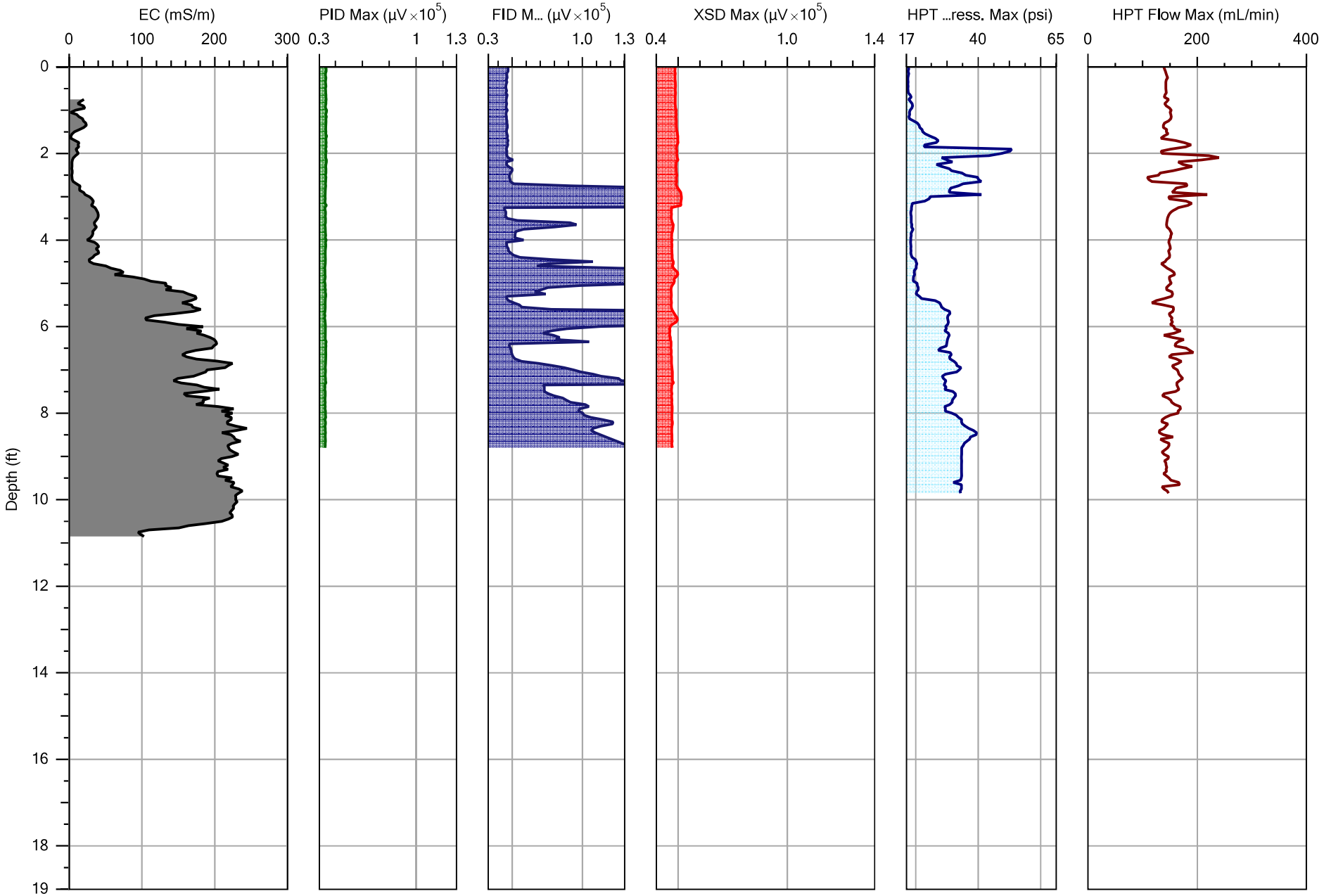
Note C:

The Absolute Piezometric pressure has been calculated and graphed with the dissipation test point indicated by a triangular marker at 8.4 feet. The pressure begins to increase relative to the head pressure as soon as the water table is encountered, producing the rising piezometric pressure baseline after 5.5 feet.

Note D:

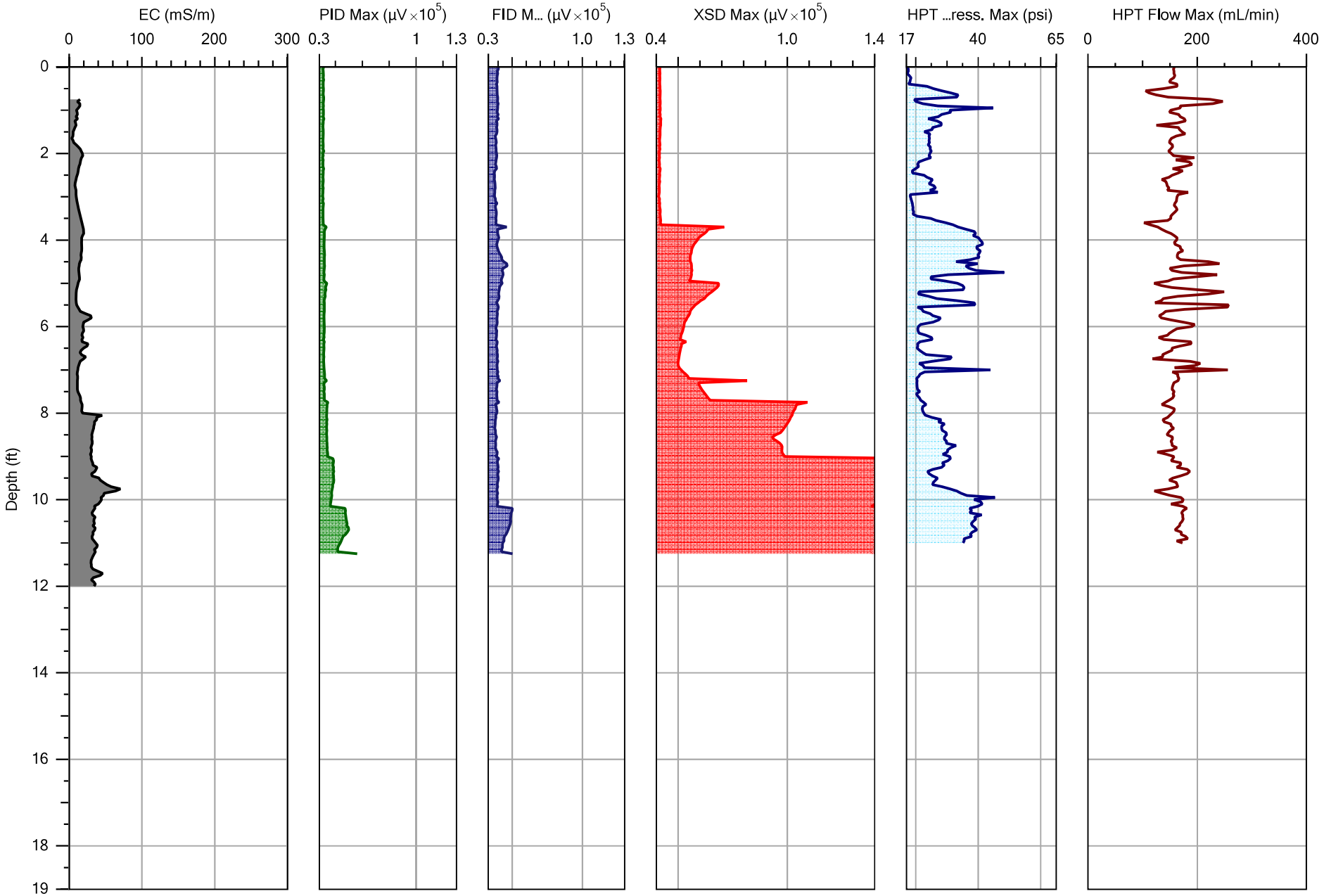
Increasing pressure readings starting at 12.5 feet are indicative of a less permeable soil type (clay). Note that this pertinent data (related to contaminant flow pathway) is not dramatically discerned by the EC plot. Sinking, dense CVOCs are “trapped” in this less transmissive zone (see Est. K plot).

Appendix C. MiHpt Logs with Detectors @ 100 Millivolts



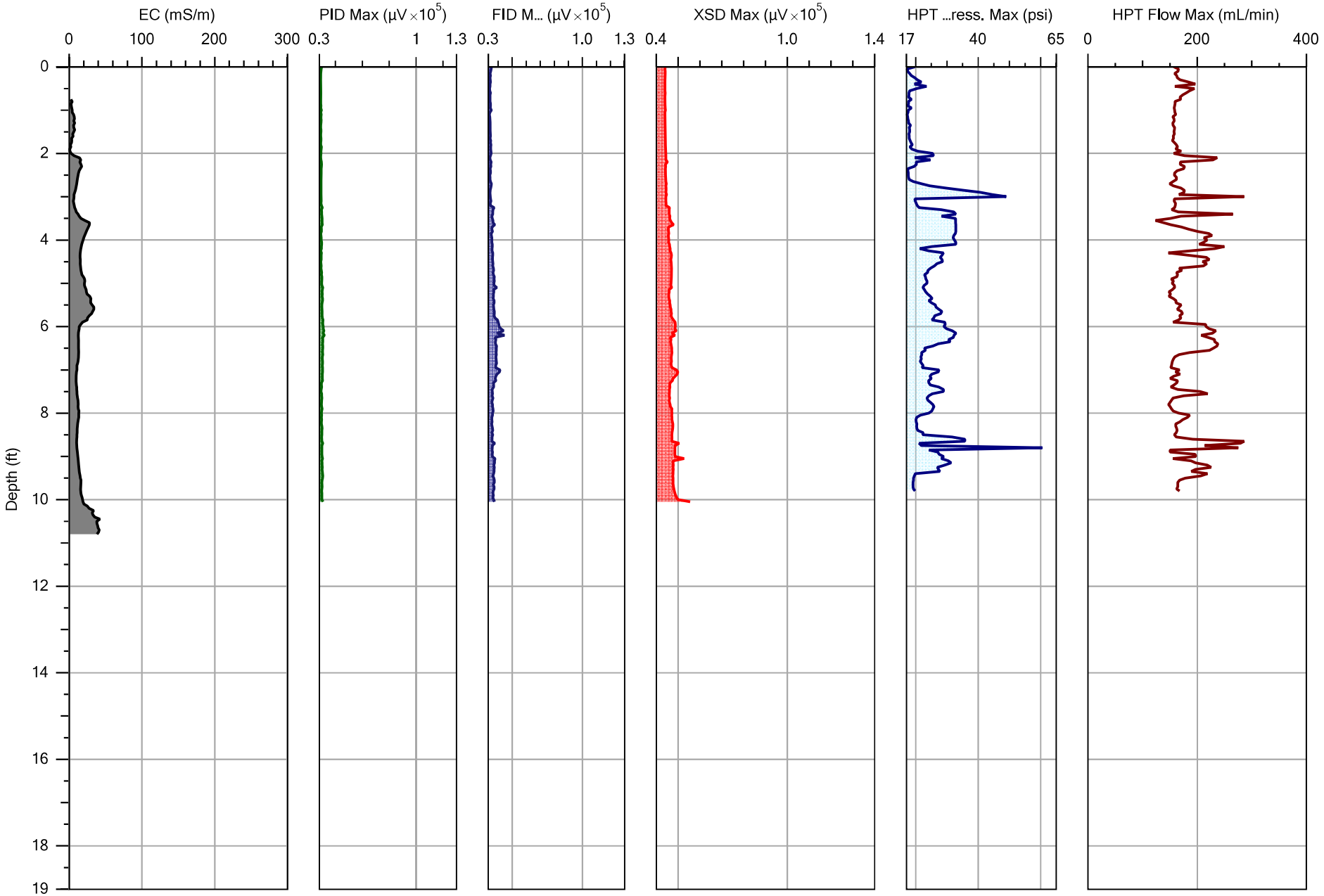
DAKOTA TECHNOLOGIES

		File: BESGP-7A.MHP
Company: Dakota Technologies	Operator: Miller	Date: 10/20/2018
Project ID: 4210 Azalea Dr	Client: Peak	Location: Charleston, SC



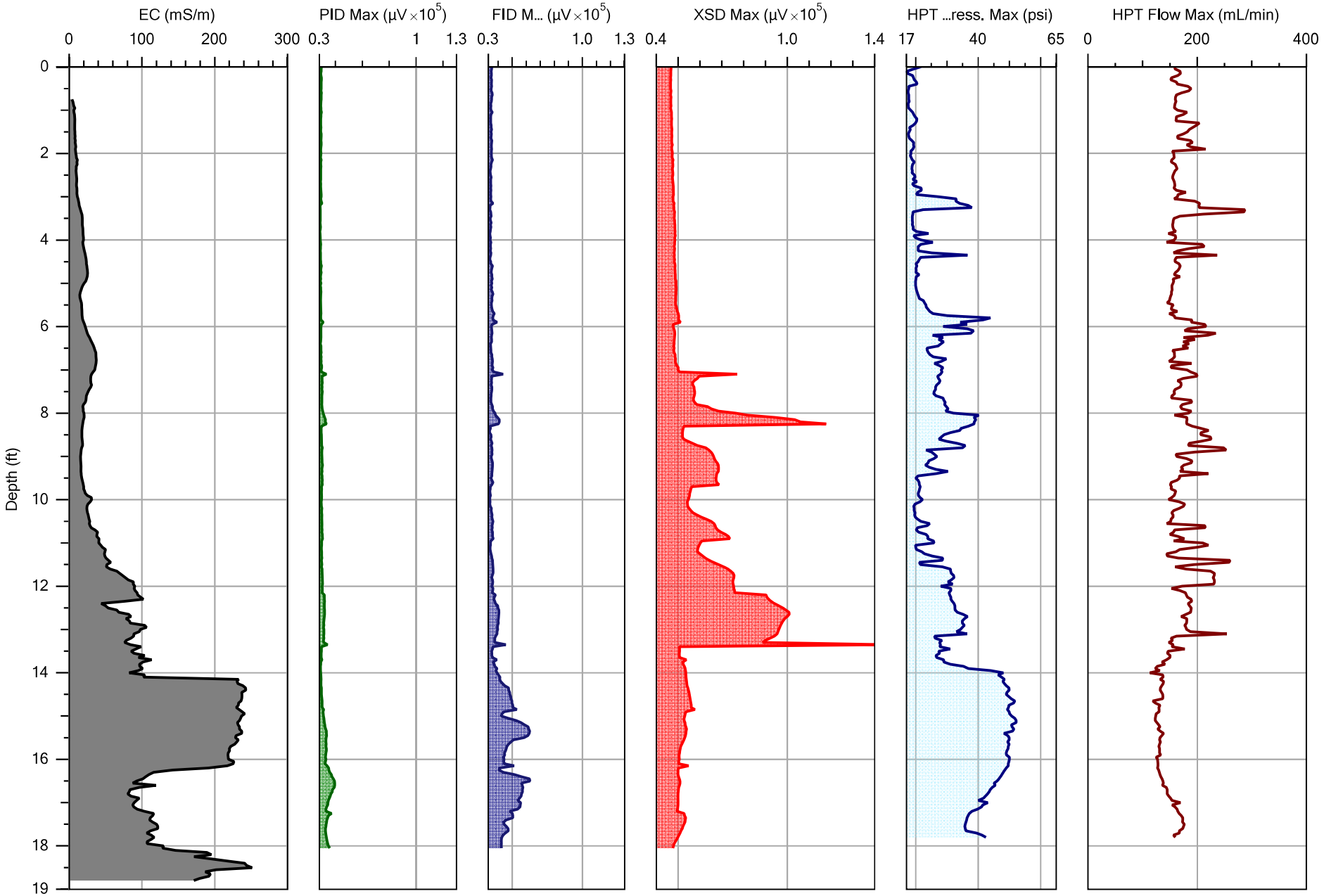
DAKOTA TECHNOLOGIES

		File: BESGP-8.MHP
Company: Dakota Technologies	Operator: Miller	Date: 10/20/2018
Project ID: 4210 Azalea Dr	Client: Peak	Location: Charleston, SC



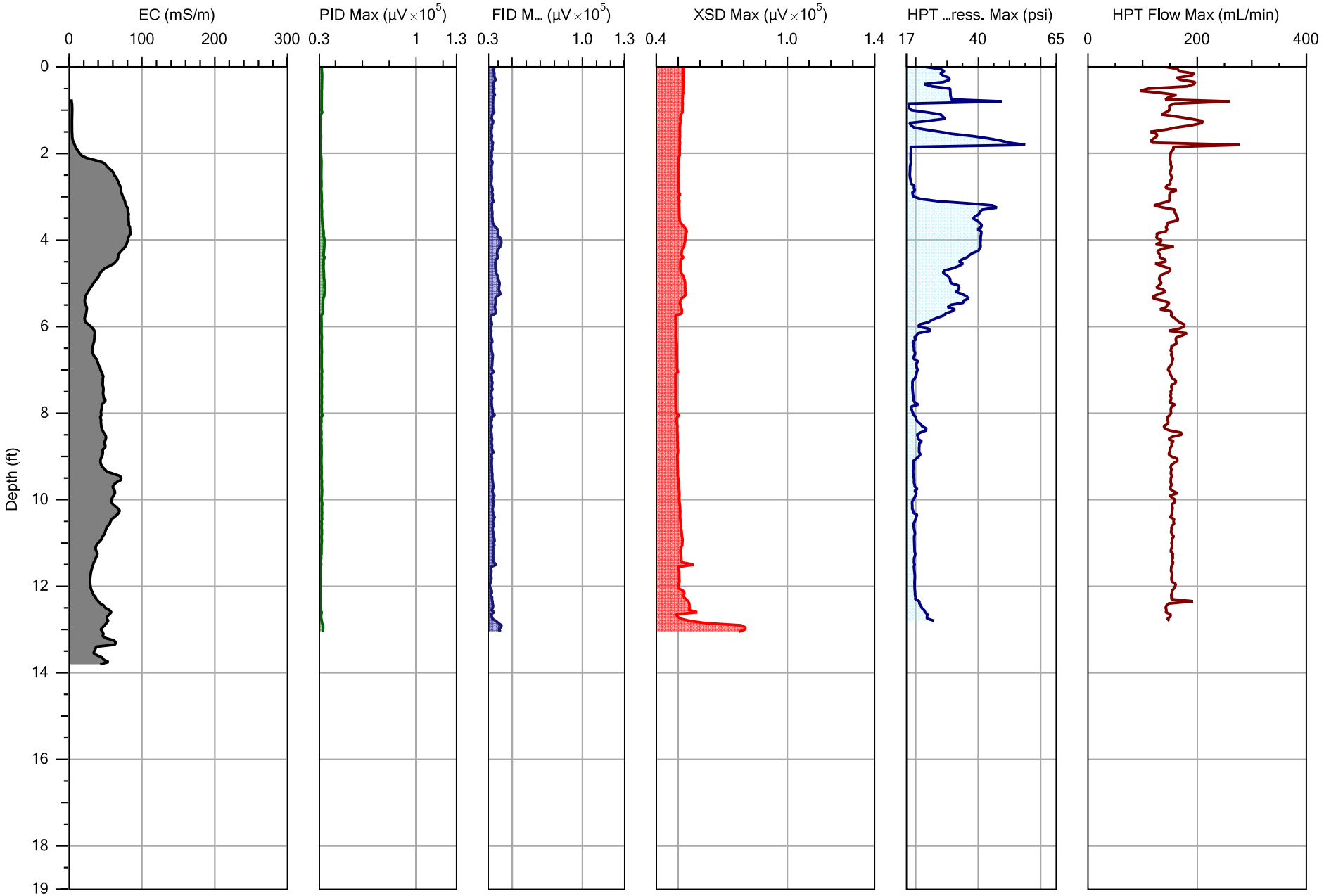
DAKOTA TECHNOLOGIES

		File: BESGP-9.MHP
Company: Dakota Technologies	Operator: Miller	Date: 10/20/2018
Project ID: 4210 Azalea Dr	Client: Peak	Location: Charleston, SC



DAKOTA TECHNOLOGIES

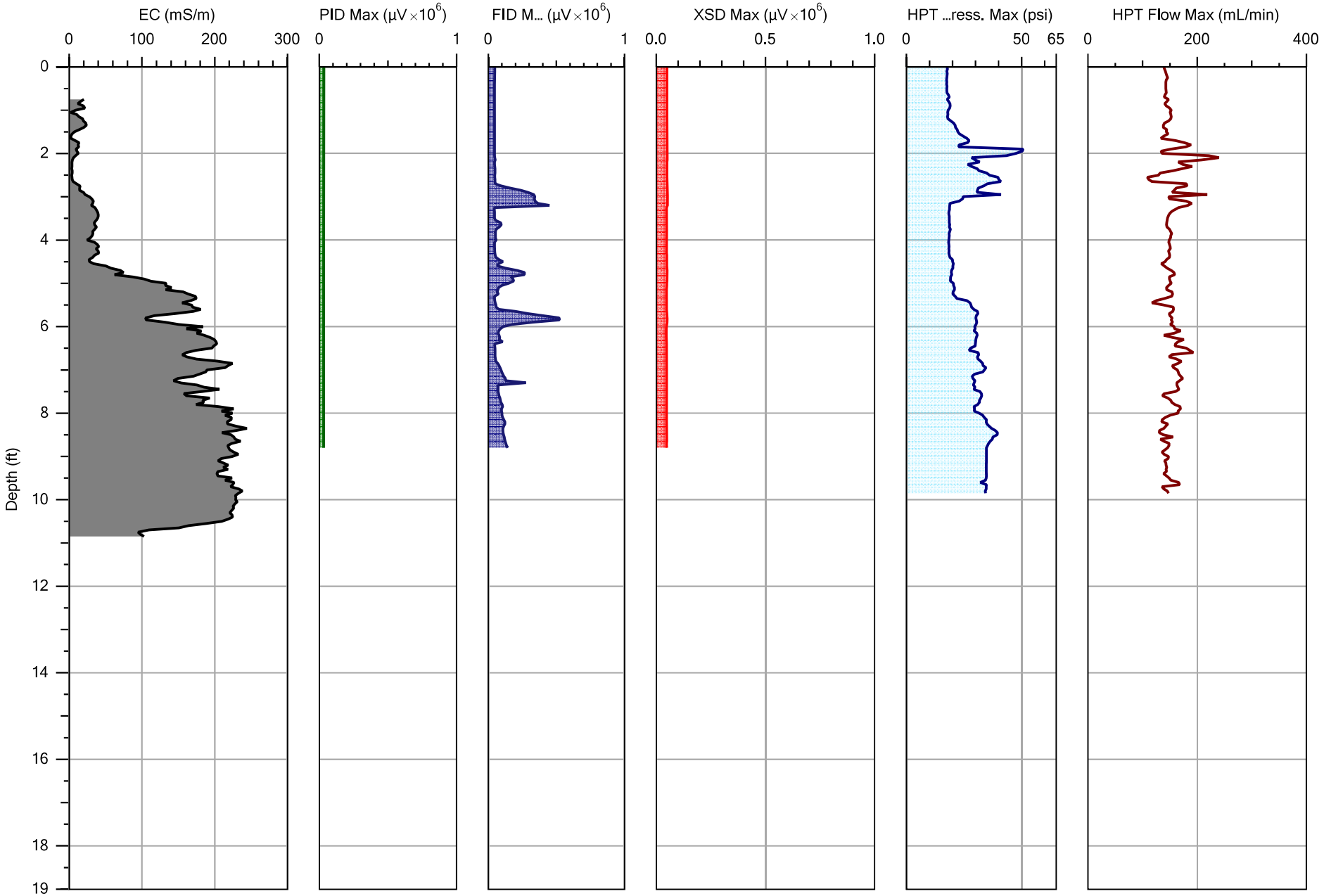
Company: Dakota Technologies	Operator: Miller	File: BESGP-10.MHP
		Date: 10/20/2018
Project ID: 4210 Azalea Dr	Client: Peak	Location: Charleston, SC



DAKOTA TECHNOLOGIES

		File: BESGP-11.MHP
Company: Dakota Technologies	Operator: Miller	Date: 10/20/2018
Project ID: 4210 Azalea Dr	Client: Peak	Location: Charleston, SC

Appendix D. MiHpt Logs with Detectors @ 1,000 Millivolts



DAKOTA TECHNOLOGIES

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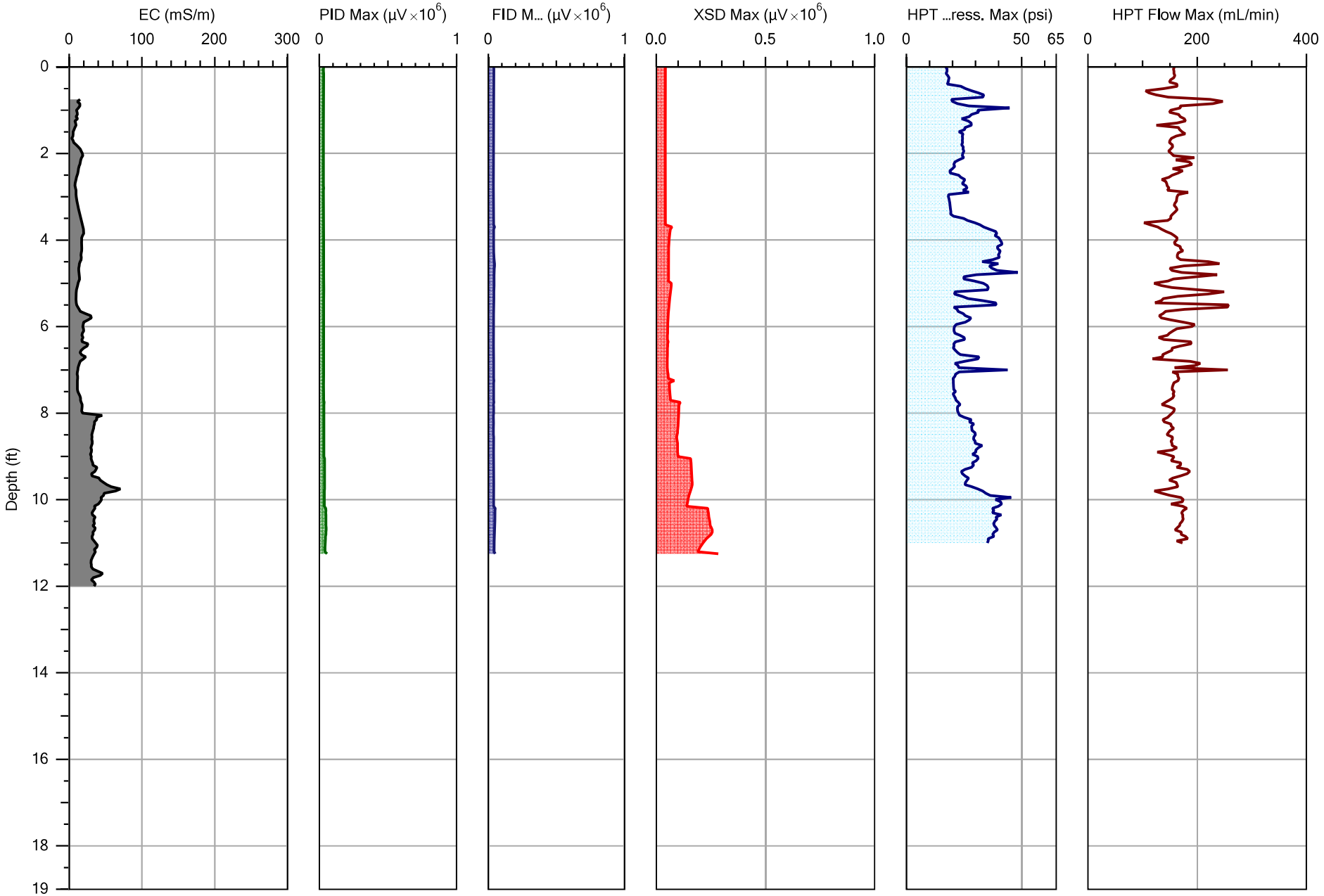
Company: Dakota Technologies	Operator: Miller	Date: 10/20/2018
Project ID: 4210 Azalea Dr	Client: Peak	Location: Charleston, SC



DAKOTA TECHNOLOGIES

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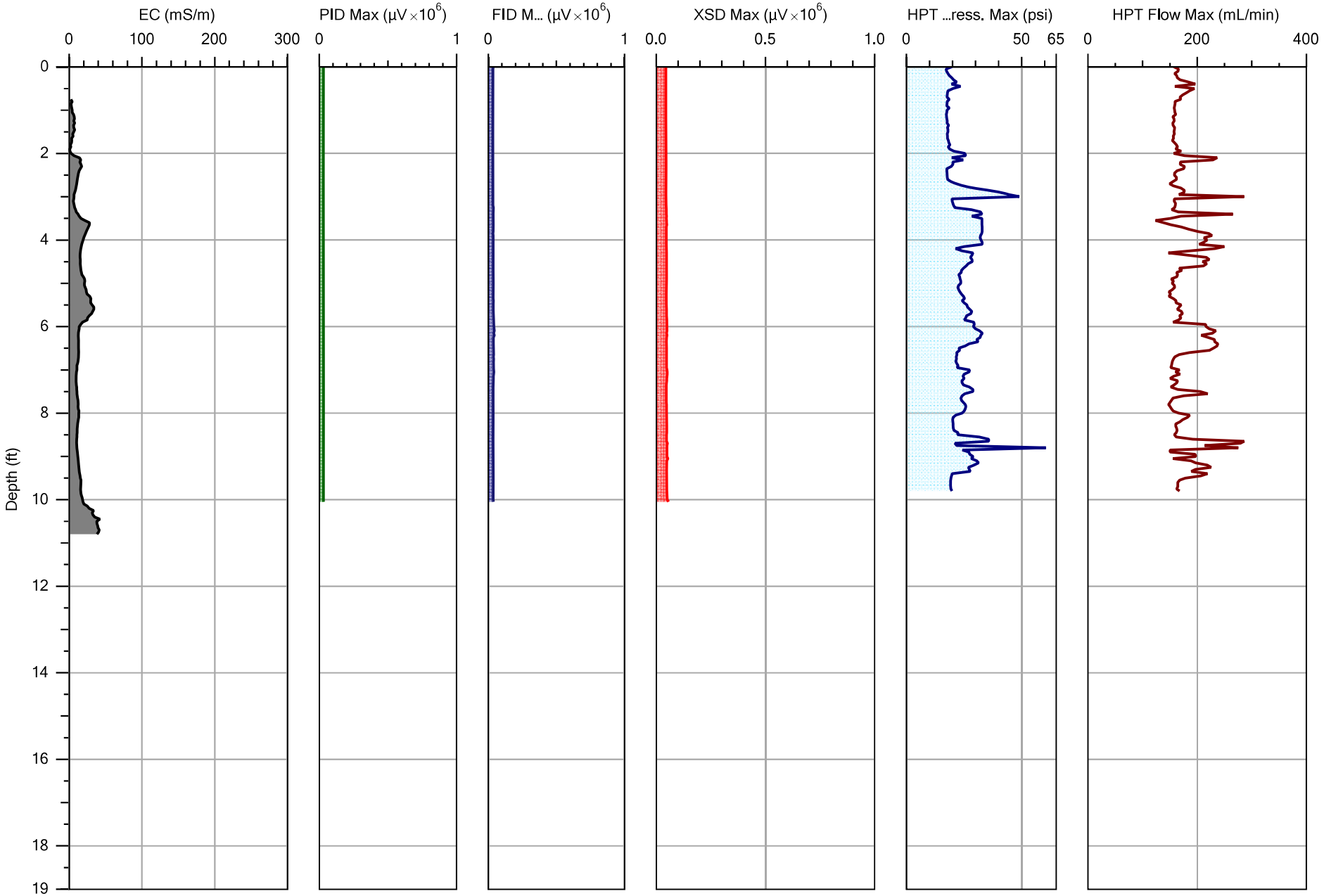
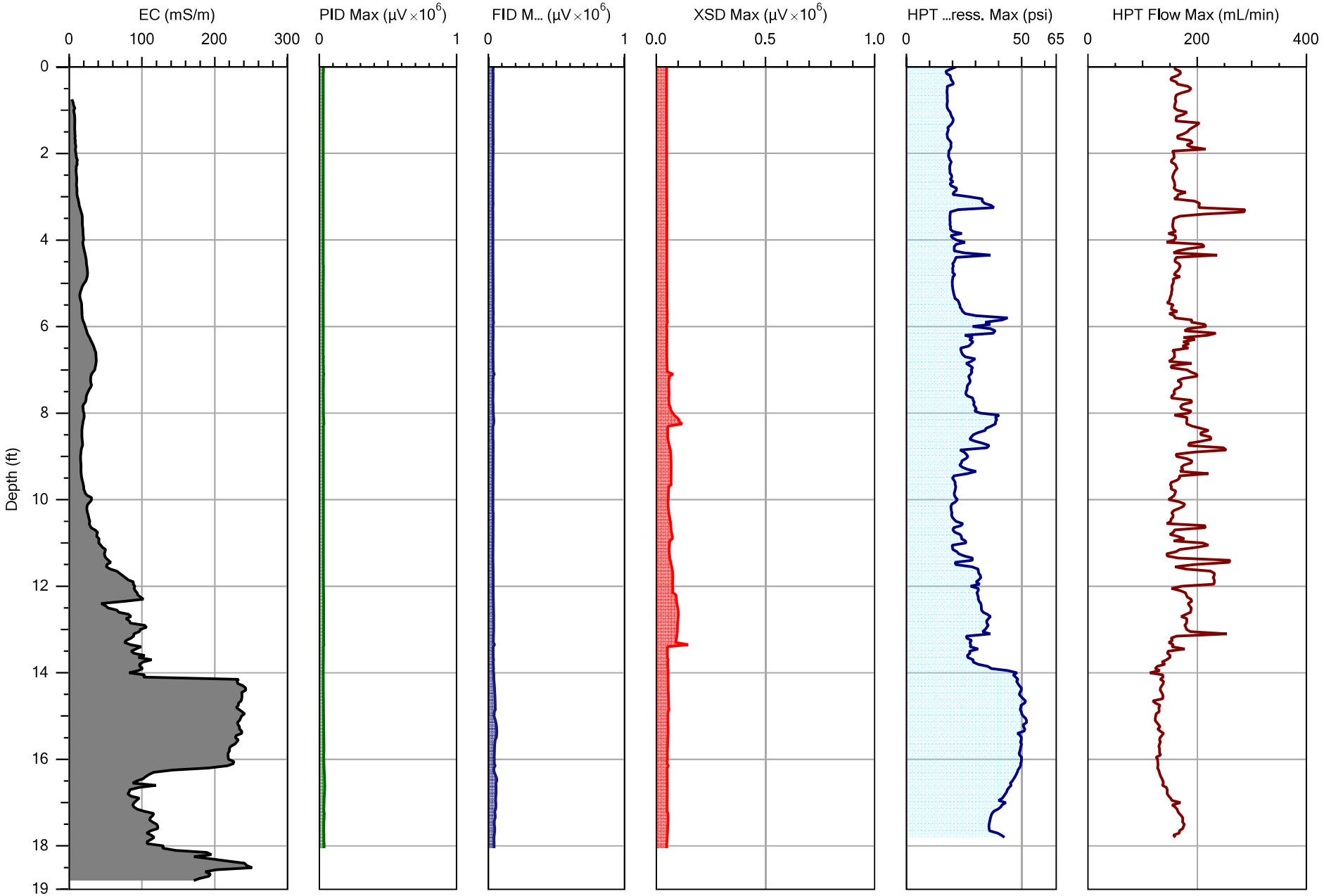
Company: Dakota Technologies	Operator: Miller	Date: 10/20/2018
Project ID: 4210 Azalea Dr	Client: Peak	Location: Charleston, SC



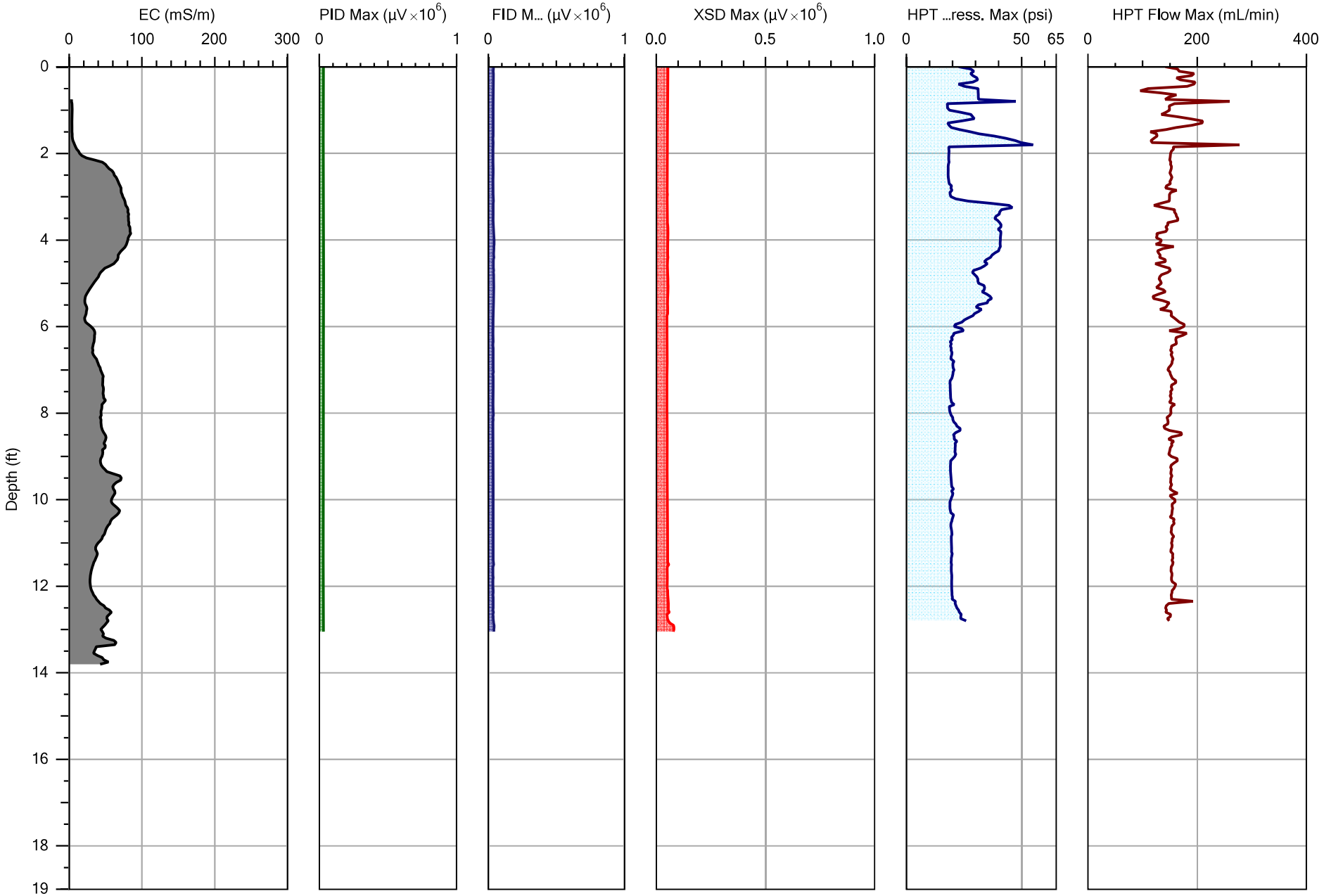
DAKOTA TECHNOLOGIES

		File: BESGP-9.MHP
Company: Dakota Technologies	Operator: Miller	Date: 10/20/2018
Project ID: 4210 Azalea Dr	Client: Peak	Location: Charleston, SC



DAKOTA TECHNOLOGIES

		File: BESGP-10.MHP
Company: Dakota Technologies	Operator: Miller	Date: 10/20/2018
Project ID: 4210 Azalea Dr	Client: Peak	Location: Charleston, SC



DAKOTA TECHNOLOGIES

		File: BESGP-11.MHP
Company: Dakota Technologies	Operator: Miller	Date: 10/20/2018
Project ID: 4210 Azalea Dr	Client: Peak	Location: Charleston, SC

Appendix E. Certificates of Analysis

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

February 06, 2019

Jonathon Gerst
Peak Hydrogeologic
470 Hogback Mt Rd
Tryon, NC 28782

RE: Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

Dear Jonathon Gerst:
Enclosed are the analytical results for sample(s) received by the laboratory on January 21, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Report revised to add 2 compounds per client request.

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

Sincerely,

Taylor Ezell
taylor.ezell@pacelabs.com
(704)875-9092
Project Manager

Enclosures

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

CERTIFICATIONS

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

Charlotte Certification IDs

9800 Kincey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

REPORT OF LABORATORY ANALYSIS

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

SAMPLE ANALYTE COUNT

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92414727001	**MW-9**	EPA 8260B	NSCQ	64	PASI-C
92414727002	**MW-16**	EPA 8260B	NSCQ	64	PASI-C
92414727003	**MW-10**	EPA 8260B	NSCQ	64	PASI-C
92414727004	**MW-19**	EPA 8260B	NSCQ	64	PASI-C
92414727005	**MW-4**	EPA 8260B	NSCQ	64	PASI-C
92414727006	**MW-11**	EPA 8260B	SAS	64	PASI-C
92414727007	**MW-18**	EPA 8260B	SAS	64	PASI-C
92414727008	**MW-17**	EPA 8260B	SAS	64	PASI-C

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

ANALYTICAL RESULTS

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

Sample: MW-9 **Lab ID: 92414727001** Collected: 01/20/19 08:00 Received: 01/21/19 11:25 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260B							
Acetone	ND	ug/L	25.0	1		01/23/19 21:16	67-64-1	
Benzene	ND	ug/L	1.0	1		01/23/19 21:16	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		01/23/19 21:16	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		01/23/19 21:16	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		01/23/19 21:16	75-27-4	
Bromoform	ND	ug/L	1.0	1		01/23/19 21:16	75-25-2	
Bromomethane	ND	ug/L	2.0	1		01/23/19 21:16	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		01/23/19 21:16	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		01/23/19 21:16	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		01/23/19 21:16	108-90-7	
Chloroethane	ND	ug/L	1.0	1		01/23/19 21:16	75-00-3	
Chloroform	ND	ug/L	5.0	1		01/23/19 21:16	67-66-3	
Chloromethane	ND	ug/L	1.0	1		01/23/19 21:16	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		01/23/19 21:16	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		01/23/19 21:16	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		01/23/19 21:16	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		01/23/19 21:16	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		01/23/19 21:16	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		01/23/19 21:16	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		01/23/19 21:16	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		01/23/19 21:16	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/23/19 21:16	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		01/23/19 21:16	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		01/23/19 21:16	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		01/23/19 21:16	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/23/19 21:16	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		01/23/19 21:16	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		01/23/19 21:16	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		01/23/19 21:16	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		01/23/19 21:16	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		01/23/19 21:16	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		01/23/19 21:16	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		01/23/19 21:16	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		01/23/19 21:16	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		01/23/19 21:16	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		01/23/19 21:16	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		01/23/19 21:16	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		01/23/19 21:16	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		01/23/19 21:16	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		01/23/19 21:16	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		01/23/19 21:16	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		01/23/19 21:16	91-20-3	
Styrene	ND	ug/L	1.0	1		01/23/19 21:16	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		01/23/19 21:16	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		01/23/19 21:16	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		01/23/19 21:16	127-18-4	
Toluene	ND	ug/L	1.0	1		01/23/19 21:16	108-88-3	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

Sample: MW-9 **Lab ID: 92414727001** Collected: 01/20/19 08:00 Received: 01/21/19 11:25 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260B							
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		01/23/19 21:16	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		01/23/19 21:16	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		01/23/19 21:16	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		01/23/19 21:16	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		01/23/19 21:16	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		01/23/19 21:16	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		01/23/19 21:16	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		01/23/19 21:16	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		01/23/19 21:16	108-67-8	
Vinyl acetate	ND	ug/L	2.0	1		01/23/19 21:16	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		01/23/19 21:16	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		01/23/19 21:16	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		01/23/19 21:16	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/23/19 21:16	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	102	%	70-130	1		01/23/19 21:16	460-00-4	
1,2-Dichloroethane-d4 (S)	89	%	70-130	1		01/23/19 21:16	17060-07-0	
Toluene-d8 (S)	103	%	70-130	1		01/23/19 21:16	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

Sample: MW-16 **Lab ID: 92414727002** Collected: 01/20/19 08:16 Received: 01/21/19 11:25 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260B							
Acetone	ND	ug/L	25.0	1		01/23/19 21:33	67-64-1	
Benzene	ND	ug/L	1.0	1		01/23/19 21:33	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		01/23/19 21:33	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		01/23/19 21:33	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		01/23/19 21:33	75-27-4	
Bromoform	ND	ug/L	1.0	1		01/23/19 21:33	75-25-2	
Bromomethane	ND	ug/L	2.0	1		01/23/19 21:33	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		01/23/19 21:33	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		01/23/19 21:33	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		01/23/19 21:33	108-90-7	
Chloroethane	ND	ug/L	1.0	1		01/23/19 21:33	75-00-3	M1
Chloroform	ND	ug/L	5.0	1		01/23/19 21:33	67-66-3	
Chloromethane	ND	ug/L	1.0	1		01/23/19 21:33	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		01/23/19 21:33	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		01/23/19 21:33	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		01/23/19 21:33	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		01/23/19 21:33	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		01/23/19 21:33	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		01/23/19 21:33	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		01/23/19 21:33	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		01/23/19 21:33	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/23/19 21:33	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		01/23/19 21:33	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		01/23/19 21:33	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		01/23/19 21:33	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/23/19 21:33	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		01/23/19 21:33	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		01/23/19 21:33	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		01/23/19 21:33	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		01/23/19 21:33	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		01/23/19 21:33	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		01/23/19 21:33	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		01/23/19 21:33	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		01/23/19 21:33	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		01/23/19 21:33	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		01/23/19 21:33	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		01/23/19 21:33	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		01/23/19 21:33	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		01/23/19 21:33	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		01/23/19 21:33	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		01/23/19 21:33	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		01/23/19 21:33	91-20-3	
Styrene	ND	ug/L	1.0	1		01/23/19 21:33	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		01/23/19 21:33	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		01/23/19 21:33	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		01/23/19 21:33	127-18-4	
Toluene	ND	ug/L	1.0	1		01/23/19 21:33	108-88-3	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

Sample: MW-16 **Lab ID: 92414727002** Collected: 01/20/19 08:16 Received: 01/21/19 11:25 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260B							
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		01/23/19 21:33	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		01/23/19 21:33	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		01/23/19 21:33	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		01/23/19 21:33	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		01/23/19 21:33	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		01/23/19 21:33	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		01/23/19 21:33	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		01/23/19 21:33	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		01/23/19 21:33	108-67-8	
Vinyl acetate	ND	ug/L	2.0	1		01/23/19 21:33	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		01/23/19 21:33	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		01/23/19 21:33	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		01/23/19 21:33	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/23/19 21:33	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	106	%	70-130	1		01/23/19 21:33	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	70-130	1		01/23/19 21:33	17060-07-0	
Toluene-d8 (S)	105	%	70-130	1		01/23/19 21:33	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

Sample: MW-10 **Lab ID: 92414727003** Collected: 01/20/19 08:41 Received: 01/21/19 11:25 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260B							
Acetone	ND	ug/L	25.0	1		01/26/19 04:13	67-64-1	
Benzene	**2.8**	ug/L	1.0	1		01/26/19 04:13	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		01/26/19 04:13	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		01/26/19 04:13	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		01/26/19 04:13	75-27-4	
Bromoform	ND	ug/L	1.0	1		01/26/19 04:13	75-25-2	
Bromomethane	ND	ug/L	2.0	1		01/26/19 04:13	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		01/26/19 04:13	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		01/26/19 04:13	56-23-5	
Chlorobenzene	**8.6**	ug/L	1.0	1		01/26/19 04:13	108-90-7	
Chloroethane	ND	ug/L	1.0	1		01/26/19 04:13	75-00-3	
Chloroform	ND	ug/L	5.0	1		01/26/19 04:13	67-66-3	
Chloromethane	ND	ug/L	1.0	1		01/26/19 04:13	74-87-3	
2-Chlorotoluene	**1.4**	ug/L	1.0	1		01/26/19 04:13	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		01/26/19 04:13	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		01/26/19 04:13	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		01/26/19 04:13	124-48-1	
Dibromomethane	ND	ug/L	1.0	1		01/26/19 04:13	74-95-3	
1,2-Dichlorobenzene	**9.1**	ug/L	1.0	1		01/26/19 04:13	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		01/26/19 04:13	541-73-1	
1,4-Dichlorobenzene	**2.8**	ug/L	1.0	1		01/26/19 04:13	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/26/19 04:13	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		01/26/19 04:13	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		01/26/19 04:13	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		01/26/19 04:13	75-35-4	
cis-1,2-Dichloroethene	**2.1**	ug/L	1.0	1		01/26/19 04:13	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		01/26/19 04:13	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		01/26/19 04:13	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		01/26/19 04:13	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		01/26/19 04:13	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		01/26/19 04:13	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		01/26/19 04:13	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		01/26/19 04:13	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		01/26/19 04:13	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		01/26/19 04:13	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		01/26/19 04:13	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		01/26/19 04:13	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		01/26/19 04:13	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		01/26/19 04:13	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		01/26/19 04:13	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		01/26/19 04:13	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		01/26/19 04:13	91-20-3	
Styrene	ND	ug/L	1.0	1		01/26/19 04:13	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		01/26/19 04:13	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		01/26/19 04:13	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		01/26/19 04:13	127-18-4	
Toluene	ND	ug/L	1.0	1		01/26/19 04:13	108-88-3	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

Sample: MW-10 **Lab ID: 92414727003** Collected: 01/20/19 08:41 Received: 01/21/19 11:25 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260B							
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		01/26/19 04:13	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		01/26/19 04:13	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		01/26/19 04:13	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		01/26/19 04:13	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		01/26/19 04:13	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		01/26/19 04:13	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		01/26/19 04:13	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	1		01/26/19 04:13	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	1		01/26/19 04:13	108-67-8	
Vinyl acetate	ND	ug/L	2.0	1		01/26/19 04:13	108-05-4	
Vinyl chloride	**24.4**	ug/L	1.0	1		01/26/19 04:13	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		01/26/19 04:13	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		01/26/19 04:13	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/26/19 04:13	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	104	%	70-130	1		01/26/19 04:13	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130	1		01/26/19 04:13	17060-07-0	
Toluene-d8 (S)	104	%	70-130	1		01/26/19 04:13	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

Sample: MW-19 **Lab ID: 92414727004** Collected: 01/20/19 08:55 Received: 01/21/19 11:25 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260B							
Acetone	ND	ug/L	62.5	2.5		01/26/19 04:30	67-64-1	
Benzene	**6.7**	ug/L	2.5	2.5		01/26/19 04:30	71-43-2	
Bromobenzene	ND	ug/L	2.5	2.5		01/26/19 04:30	108-86-1	
Bromochloromethane	ND	ug/L	2.5	2.5		01/26/19 04:30	74-97-5	
Bromodichloromethane	ND	ug/L	2.5	2.5		01/26/19 04:30	75-27-4	
Bromoform	ND	ug/L	2.5	2.5		01/26/19 04:30	75-25-2	
Bromomethane	ND	ug/L	5.0	2.5		01/26/19 04:30	74-83-9	
2-Butanone (MEK)	ND	ug/L	12.5	2.5		01/26/19 04:30	78-93-3	
Carbon tetrachloride	ND	ug/L	2.5	2.5		01/26/19 04:30	56-23-5	
Chlorobenzene	**10.1**	ug/L	2.5	2.5		01/26/19 04:30	108-90-7	
Chloroethane	ND	ug/L	2.5	2.5		01/26/19 04:30	75-00-3	
Chloroform	ND	ug/L	12.5	2.5		01/26/19 04:30	67-66-3	
Chloromethane	ND	ug/L	2.5	2.5		01/26/19 04:30	74-87-3	
2-Chlorotoluene	ND	ug/L	2.5	2.5		01/26/19 04:30	95-49-8	
4-Chlorotoluene	ND	ug/L	2.5	2.5		01/26/19 04:30	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	2.5		01/26/19 04:30	96-12-8	
Dibromochloromethane	ND	ug/L	2.5	2.5		01/26/19 04:30	124-48-1	
Dibromomethane	ND	ug/L	2.5	2.5		01/26/19 04:30	74-95-3	
1,2-Dichlorobenzene	**74.2**	ug/L	2.5	2.5		01/26/19 04:30	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2.5	2.5		01/26/19 04:30	541-73-1	
1,4-Dichlorobenzene	**4.0**	ug/L	2.5	2.5		01/26/19 04:30	106-46-7	
Dichlorodifluoromethane	ND	ug/L	2.5	2.5		01/26/19 04:30	75-71-8	
1,1-Dichloroethane	ND	ug/L	2.5	2.5		01/26/19 04:30	75-34-3	
1,2-Dichloroethane	ND	ug/L	2.5	2.5		01/26/19 04:30	107-06-2	
1,1-Dichloroethene	ND	ug/L	2.5	2.5		01/26/19 04:30	75-35-4	
cis-1,2-Dichloroethene	**386**	ug/L	2.5	2.5		01/26/19 04:30	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	2.5	2.5		01/26/19 04:30	156-60-5	
1,2-Dichloropropane	ND	ug/L	2.5	2.5		01/26/19 04:30	78-87-5	
1,3-Dichloropropane	ND	ug/L	2.5	2.5		01/26/19 04:30	142-28-9	
2,2-Dichloropropane	ND	ug/L	2.5	2.5		01/26/19 04:30	594-20-7	
1,1-Dichloropropene	ND	ug/L	2.5	2.5		01/26/19 04:30	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	2.5	2.5		01/26/19 04:30	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	2.5	2.5		01/26/19 04:30	10061-02-6	
Diisopropyl ether	ND	ug/L	2.5	2.5		01/26/19 04:30	108-20-3	
Ethylbenzene	ND	ug/L	2.5	2.5		01/26/19 04:30	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.5	2.5		01/26/19 04:30	87-68-3	
2-Hexanone	ND	ug/L	12.5	2.5		01/26/19 04:30	591-78-6	
p-Isopropyltoluene	ND	ug/L	2.5	2.5		01/26/19 04:30	99-87-6	
Methylene Chloride	ND	ug/L	12.5	2.5		01/26/19 04:30	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	12.5	2.5		01/26/19 04:30	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	2.5	2.5		01/26/19 04:30	1634-04-4	
Naphthalene	ND	ug/L	2.5	2.5		01/26/19 04:30	91-20-3	
Styrene	ND	ug/L	2.5	2.5		01/26/19 04:30	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	2.5	2.5		01/26/19 04:30	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.5	2.5		01/26/19 04:30	79-34-5	
Tetrachloroethene	ND	ug/L	2.5	2.5		01/26/19 04:30	127-18-4	
Toluene	ND	ug/L	2.5	2.5		01/26/19 04:30	108-88-3	

REPORT OF LABORATORY ANALYSIS

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(704)875-9092

ANALYTICAL RESULTS

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

Sample: MW-19 **Lab ID: 92414727004** Collected: 01/20/19 08:55 Received: 01/21/19 11:25 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260B							
1,2,3-Trichlorobenzene	ND	ug/L	2.5	2.5		01/26/19 04:30	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	2.5	2.5		01/26/19 04:30	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	2.5	2.5		01/26/19 04:30	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2.5	2.5		01/26/19 04:30	79-00-5	
Trichloroethene	ND	ug/L	2.5	2.5		01/26/19 04:30	79-01-6	
Trichlorofluoromethane	ND	ug/L	2.5	2.5		01/26/19 04:30	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	2.5		01/26/19 04:30	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	2.5	2.5		01/26/19 04:30	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	2.5	2.5		01/26/19 04:30	108-67-8	
Vinyl acetate	ND	ug/L	5.0	2.5		01/26/19 04:30	108-05-4	
Vinyl chloride	**341**	ug/L	2.5	2.5		01/26/19 04:30	75-01-4	
Xylene (Total)	ND	ug/L	2.5	2.5		01/26/19 04:30	1330-20-7	
m&p-Xylene	ND	ug/L	5.0	2.5		01/26/19 04:30	179601-23-1	
o-Xylene	ND	ug/L	2.5	2.5		01/26/19 04:30	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	102	%	70-130	2.5		01/26/19 04:30	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130	2.5		01/26/19 04:30	17060-07-0	
Toluene-d8 (S)	104	%	70-130	2.5		01/26/19 04:30	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

Sample: MW-4 **Lab ID: 92414727005** Collected: 01/20/19 09:12 Received: 01/21/19 11:25 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260B							
Acetone	ND	ug/L	125	5		01/26/19 07:08	67-64-1	
Benzene	**73.3**	ug/L	5.0	5		01/26/19 07:08	71-43-2	
Bromobenzene	ND	ug/L	5.0	5		01/26/19 07:08	108-86-1	
Bromochloromethane	ND	ug/L	5.0	5		01/26/19 07:08	74-97-5	
Bromodichloromethane	ND	ug/L	5.0	5		01/26/19 07:08	75-27-4	
Bromoform	ND	ug/L	5.0	5		01/26/19 07:08	75-25-2	
Bromomethane	ND	ug/L	10.0	5		01/26/19 07:08	74-83-9	
2-Butanone (MEK)	ND	ug/L	25.0	5		01/26/19 07:08	78-93-3	
Carbon tetrachloride	ND	ug/L	5.0	5		01/26/19 07:08	56-23-5	
Chlorobenzene	**798**	ug/L	5.0	5		01/26/19 07:08	108-90-7	
Chloroethane	ND	ug/L	5.0	5		01/26/19 07:08	75-00-3	
Chloroform	ND	ug/L	25.0	5		01/26/19 07:08	67-66-3	
Chloromethane	ND	ug/L	5.0	5		01/26/19 07:08	74-87-3	
2-Chlorotoluene	ND	ug/L	5.0	5		01/26/19 07:08	95-49-8	
4-Chlorotoluene	ND	ug/L	5.0	5		01/26/19 07:08	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	10.0	5		01/26/19 07:08	96-12-8	
Dibromochloromethane	ND	ug/L	5.0	5		01/26/19 07:08	124-48-1	
Dibromomethane	ND	ug/L	5.0	5		01/26/19 07:08	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	5.0	5		01/26/19 07:08	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	5.0	5		01/26/19 07:08	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	5.0	5		01/26/19 07:08	106-46-7	
Dichlorodifluoromethane	ND	ug/L	5.0	5		01/26/19 07:08	75-71-8	
1,1-Dichloroethane	ND	ug/L	5.0	5		01/26/19 07:08	75-34-3	
1,2-Dichloroethane	ND	ug/L	5.0	5		01/26/19 07:08	107-06-2	
1,1-Dichloroethene	ND	ug/L	5.0	5		01/26/19 07:08	75-35-4	
cis-1,2-Dichloroethene	**8.5**	ug/L	5.0	5		01/26/19 07:08	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	5		01/26/19 07:08	156-60-5	
1,2-Dichloropropane	ND	ug/L	5.0	5		01/26/19 07:08	78-87-5	
1,3-Dichloropropane	ND	ug/L	5.0	5		01/26/19 07:08	142-28-9	
2,2-Dichloropropane	ND	ug/L	5.0	5		01/26/19 07:08	594-20-7	
1,1-Dichloropropene	ND	ug/L	5.0	5		01/26/19 07:08	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	5.0	5		01/26/19 07:08	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	5.0	5		01/26/19 07:08	10061-02-6	
Diisopropyl ether	ND	ug/L	5.0	5		01/26/19 07:08	108-20-3	
Ethylbenzene	ND	ug/L	5.0	5		01/26/19 07:08	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	5.0	5		01/26/19 07:08	87-68-3	
2-Hexanone	ND	ug/L	25.0	5		01/26/19 07:08	591-78-6	
p-Isopropyltoluene	ND	ug/L	5.0	5		01/26/19 07:08	99-87-6	
Methylene Chloride	ND	ug/L	25.0	5		01/26/19 07:08	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	25.0	5		01/26/19 07:08	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	5.0	5		01/26/19 07:08	1634-04-4	
Naphthalene	ND	ug/L	5.0	5		01/26/19 07:08	91-20-3	
Styrene	ND	ug/L	5.0	5		01/26/19 07:08	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0	5		01/26/19 07:08	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0	5		01/26/19 07:08	79-34-5	
Tetrachloroethene	ND	ug/L	5.0	5		01/26/19 07:08	127-18-4	
Toluene	ND	ug/L	5.0	5		01/26/19 07:08	108-88-3	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

Sample: MW-4 **Lab ID: 92414727005** Collected: 01/20/19 09:12 Received: 01/21/19 11:25 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260B							
1,2,3-Trichlorobenzene	ND	ug/L	5.0	5		01/26/19 07:08	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	5.0	5		01/26/19 07:08	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	5.0	5		01/26/19 07:08	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	5.0	5		01/26/19 07:08	79-00-5	
Trichloroethene	ND	ug/L	5.0	5		01/26/19 07:08	79-01-6	
Trichlorofluoromethane	ND	ug/L	5.0	5		01/26/19 07:08	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	5.0	5		01/26/19 07:08	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	5.0	5		01/26/19 07:08	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	5.0	5		01/26/19 07:08	108-67-8	
Vinyl acetate	ND	ug/L	10.0	5		01/26/19 07:08	108-05-4	
Vinyl chloride	ND	ug/L	5.0	5		01/26/19 07:08	75-01-4	
Xylene (Total)	**64.0**	ug/L	5.0	5		01/26/19 07:08	1330-20-7	
m&p-Xylene	**54.0**	ug/L	10.0	5		01/26/19 07:08	179601-23-1	
o-Xylene	**10.0**	ug/L	5.0	5		01/26/19 07:08	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	97	%	70-130	5		01/26/19 07:08	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	70-130	5		01/26/19 07:08	17060-07-0	
Toluene-d8 (S)	105	%	70-130	5		01/26/19 07:08	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

Sample: MW-11 **Lab ID: 92414727006** Collected: 01/20/19 09:27 Received: 01/21/19 11:25 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260B							
Acetone	ND	ug/L	625	25		01/28/19 12:48	67-64-1	
Benzene	ND	ug/L	25.0	25		01/28/19 12:48	71-43-2	
Bromobenzene	ND	ug/L	25.0	25		01/28/19 12:48	108-86-1	
Bromochloromethane	ND	ug/L	25.0	25		01/28/19 12:48	74-97-5	
Bromodichloromethane	ND	ug/L	25.0	25		01/28/19 12:48	75-27-4	
Bromoform	ND	ug/L	25.0	25		01/28/19 12:48	75-25-2	
Bromomethane	ND	ug/L	50.0	25		01/28/19 12:48	74-83-9	
2-Butanone (MEK)	ND	ug/L	125	25		01/28/19 12:48	78-93-3	
Carbon tetrachloride	ND	ug/L	25.0	25		01/28/19 12:48	56-23-5	
Chlorobenzene	ND	ug/L	25.0	25		01/28/19 12:48	108-90-7	
Chloroethane	ND	ug/L	25.0	25		01/28/19 12:48	75-00-3	
Chloroform	ND	ug/L	125	25		01/28/19 12:48	67-66-3	
Chloromethane	ND	ug/L	25.0	25		01/28/19 12:48	74-87-3	
2-Chlorotoluene	ND	ug/L	25.0	25		01/28/19 12:48	95-49-8	
4-Chlorotoluene	ND	ug/L	25.0	25		01/28/19 12:48	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	50.0	25		01/28/19 12:48	96-12-8	
Dibromochloromethane	ND	ug/L	25.0	25		01/28/19 12:48	124-48-1	
Dibromomethane	ND	ug/L	25.0	25		01/28/19 12:48	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	25.0	25		01/28/19 12:48	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	25.0	25		01/28/19 12:48	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	25.0	25		01/28/19 12:48	106-46-7	
Dichlorodifluoromethane	ND	ug/L	25.0	25		01/28/19 12:48	75-71-8	
1,1-Dichloroethane	ND	ug/L	25.0	25		01/28/19 12:48	75-34-3	
1,2-Dichloroethane	ND	ug/L	25.0	25		01/28/19 12:48	107-06-2	
1,1-Dichloroethene	ND	ug/L	25.0	25		01/28/19 12:48	75-35-4	
cis-1,2-Dichloroethene	**2740**	ug/L	25.0	25		01/28/19 12:48	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	25.0	25		01/28/19 12:48	156-60-5	
1,2-Dichloropropane	ND	ug/L	25.0	25		01/28/19 12:48	78-87-5	
1,3-Dichloropropane	ND	ug/L	25.0	25		01/28/19 12:48	142-28-9	
2,2-Dichloropropane	ND	ug/L	25.0	25		01/28/19 12:48	594-20-7	
1,1-Dichloropropene	ND	ug/L	25.0	25		01/28/19 12:48	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	25.0	25		01/28/19 12:48	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	25.0	25		01/28/19 12:48	10061-02-6	
Diisopropyl ether	ND	ug/L	25.0	25		01/28/19 12:48	108-20-3	
Ethylbenzene	ND	ug/L	25.0	25		01/28/19 12:48	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	25.0	25		01/28/19 12:48	87-68-3	
2-Hexanone	ND	ug/L	125	25		01/28/19 12:48	591-78-6	
p-Isopropyltoluene	ND	ug/L	25.0	25		01/28/19 12:48	99-87-6	
Methylene Chloride	ND	ug/L	125	25		01/28/19 12:48	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	125	25		01/28/19 12:48	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	25.0	25		01/28/19 12:48	1634-04-4	
Naphthalene	ND	ug/L	25.0	25		01/28/19 12:48	91-20-3	
Styrene	ND	ug/L	25.0	25		01/28/19 12:48	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	25.0	25		01/28/19 12:48	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	25.0	25		01/28/19 12:48	79-34-5	
Tetrachloroethene	ND	ug/L	25.0	25		01/28/19 12:48	127-18-4	
Toluene	ND	ug/L	25.0	25		01/28/19 12:48	108-88-3	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

Sample: MW-11 **Lab ID: 92414727006** Collected: 01/20/19 09:27 Received: 01/21/19 11:25 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260B							
1,2,3-Trichlorobenzene	ND	ug/L	25.0	25		01/28/19 12:48	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	25.0	25		01/28/19 12:48	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	25.0	25		01/28/19 12:48	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	25.0	25		01/28/19 12:48	79-00-5	
Trichloroethene	ND	ug/L	25.0	25		01/28/19 12:48	79-01-6	
Trichlorofluoromethane	ND	ug/L	25.0	25		01/28/19 12:48	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	25.0	25		01/28/19 12:48	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	25.0	25		01/28/19 12:48	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	25.0	25		01/28/19 12:48	108-67-8	
Vinyl acetate	ND	ug/L	50.0	25		01/28/19 12:48	108-05-4	
Vinyl chloride	**89.9**	ug/L	25.0	25		01/28/19 12:48	75-01-4	
Xylene (Total)	ND	ug/L	25.0	25		01/28/19 12:48	1330-20-7	
m&p-Xylene	ND	ug/L	50.0	25		01/28/19 12:48	179601-23-1	
o-Xylene	ND	ug/L	25.0	25		01/28/19 12:48	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	102	%	70-130	25		01/28/19 12:48	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	70-130	25		01/28/19 12:48	17060-07-0	
Toluene-d8 (S)	100	%	70-130	25		01/28/19 12:48	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

Sample: MW-18 **Lab ID: 92414727007** Collected: 01/20/19 09:56 Received: 01/21/19 11:25 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260B							
Acetone	ND	ug/L	1000	40		01/28/19 12:31	67-64-1	
Benzene	ND	ug/L	40.0	40		01/28/19 12:31	71-43-2	
Bromobenzene	ND	ug/L	40.0	40		01/28/19 12:31	108-86-1	
Bromochloromethane	ND	ug/L	40.0	40		01/28/19 12:31	74-97-5	
Bromodichloromethane	ND	ug/L	40.0	40		01/28/19 12:31	75-27-4	
Bromoform	ND	ug/L	40.0	40		01/28/19 12:31	75-25-2	
Bromomethane	ND	ug/L	80.0	40		01/28/19 12:31	74-83-9	
2-Butanone (MEK)	ND	ug/L	200	40		01/28/19 12:31	78-93-3	
Carbon tetrachloride	ND	ug/L	40.0	40		01/28/19 12:31	56-23-5	
Chlorobenzene	ND	ug/L	40.0	40		01/28/19 12:31	108-90-7	
Chloroethane	ND	ug/L	40.0	40		01/28/19 12:31	75-00-3	
Chloroform	ND	ug/L	200	40		01/28/19 12:31	67-66-3	
Chloromethane	ND	ug/L	40.0	40		01/28/19 12:31	74-87-3	
2-Chlorotoluene	ND	ug/L	40.0	40		01/28/19 12:31	95-49-8	
4-Chlorotoluene	ND	ug/L	40.0	40		01/28/19 12:31	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	80.0	40		01/28/19 12:31	96-12-8	
Dibromochloromethane	ND	ug/L	40.0	40		01/28/19 12:31	124-48-1	
Dibromomethane	ND	ug/L	40.0	40		01/28/19 12:31	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	40.0	40		01/28/19 12:31	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	40.0	40		01/28/19 12:31	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	40.0	40		01/28/19 12:31	106-46-7	
Dichlorodifluoromethane	ND	ug/L	40.0	40		01/28/19 12:31	75-71-8	
1,1-Dichloroethane	ND	ug/L	40.0	40		01/28/19 12:31	75-34-3	
1,2-Dichloroethane	ND	ug/L	40.0	40		01/28/19 12:31	107-06-2	
1,1-Dichloroethene	ND	ug/L	40.0	40		01/28/19 12:31	75-35-4	
cis-1,2-Dichloroethene	**6080**	ug/L	40.0	40		01/28/19 12:31	156-59-2	M1
trans-1,2-Dichloroethene	ND	ug/L	40.0	40		01/28/19 12:31	156-60-5	
1,2-Dichloropropane	ND	ug/L	40.0	40		01/28/19 12:31	78-87-5	
1,3-Dichloropropane	ND	ug/L	40.0	40		01/28/19 12:31	142-28-9	
2,2-Dichloropropane	ND	ug/L	40.0	40		01/28/19 12:31	594-20-7	
1,1-Dichloropropene	ND	ug/L	40.0	40		01/28/19 12:31	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	40.0	40		01/28/19 12:31	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	40.0	40		01/28/19 12:31	10061-02-6	
Diisopropyl ether	ND	ug/L	40.0	40		01/28/19 12:31	108-20-3	
Ethylbenzene	ND	ug/L	40.0	40		01/28/19 12:31	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	40.0	40		01/28/19 12:31	87-68-3	
2-Hexanone	ND	ug/L	200	40		01/28/19 12:31	591-78-6	
p-Isopropyltoluene	ND	ug/L	40.0	40		01/28/19 12:31	99-87-6	
Methylene Chloride	ND	ug/L	200	40		01/28/19 12:31	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	200	40		01/28/19 12:31	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	40.0	40		01/28/19 12:31	1634-04-4	
Naphthalene	ND	ug/L	40.0	40		01/28/19 12:31	91-20-3	
Styrene	ND	ug/L	40.0	40		01/28/19 12:31	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	40.0	40		01/28/19 12:31	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	40.0	40		01/28/19 12:31	79-34-5	
Tetrachloroethene	ND	ug/L	40.0	40		01/28/19 12:31	127-18-4	
Toluene	ND	ug/L	40.0	40		01/28/19 12:31	108-88-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

Sample: MW-18 **Lab ID: 92414727007** Collected: 01/20/19 09:56 Received: 01/21/19 11:25 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260B							
1,2,3-Trichlorobenzene	ND	ug/L	40.0	40		01/28/19 12:31	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	40.0	40		01/28/19 12:31	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	40.0	40		01/28/19 12:31	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	40.0	40		01/28/19 12:31	79-00-5	
Trichloroethene	ND	ug/L	40.0	40		01/28/19 12:31	79-01-6	
Trichlorofluoromethane	ND	ug/L	40.0	40		01/28/19 12:31	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	40.0	40		01/28/19 12:31	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	40.0	40		01/28/19 12:31	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	40.0	40		01/28/19 12:31	108-67-8	
Vinyl acetate	ND	ug/L	80.0	40		01/28/19 12:31	108-05-4	
Vinyl chloride	**1170**	ug/L	40.0	40		01/28/19 12:31	75-01-4	
Xylene (Total)	ND	ug/L	40.0	40		01/28/19 12:31	1330-20-7	
m&p-Xylene	ND	ug/L	80.0	40		01/28/19 12:31	179601-23-1	
o-Xylene	ND	ug/L	40.0	40		01/28/19 12:31	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	40		01/28/19 12:31	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130	40		01/28/19 12:31	17060-07-0	
Toluene-d8 (S)	101	%	70-130	40		01/28/19 12:31	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(704)875-9092

ANALYTICAL RESULTS

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

Sample: MW-17 **Lab ID: 92414727008** Collected: 01/20/19 10:13 Received: 01/21/19 11:25 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260B							
Acetone	ND	ug/L	1000	40		01/28/19 13:05	67-64-1	
Benzene	ND	ug/L	40.0	40		01/28/19 13:05	71-43-2	
Bromobenzene	ND	ug/L	40.0	40		01/28/19 13:05	108-86-1	
Bromochloromethane	ND	ug/L	40.0	40		01/28/19 13:05	74-97-5	
Bromodichloromethane	ND	ug/L	40.0	40		01/28/19 13:05	75-27-4	
Bromoform	ND	ug/L	40.0	40		01/28/19 13:05	75-25-2	
Bromomethane	ND	ug/L	80.0	40		01/28/19 13:05	74-83-9	
2-Butanone (MEK)	ND	ug/L	200	40		01/28/19 13:05	78-93-3	
Carbon tetrachloride	ND	ug/L	40.0	40		01/28/19 13:05	56-23-5	
Chlorobenzene	ND	ug/L	40.0	40		01/28/19 13:05	108-90-7	
Chloroethane	ND	ug/L	40.0	40		01/28/19 13:05	75-00-3	
Chloroform	ND	ug/L	200	40		01/28/19 13:05	67-66-3	
Chloromethane	ND	ug/L	40.0	40		01/28/19 13:05	74-87-3	
2-Chlorotoluene	ND	ug/L	40.0	40		01/28/19 13:05	95-49-8	
4-Chlorotoluene	ND	ug/L	40.0	40		01/28/19 13:05	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	80.0	40		01/28/19 13:05	96-12-8	
Dibromochloromethane	ND	ug/L	40.0	40		01/28/19 13:05	124-48-1	
Dibromomethane	ND	ug/L	40.0	40		01/28/19 13:05	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	40.0	40		01/28/19 13:05	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	40.0	40		01/28/19 13:05	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	40.0	40		01/28/19 13:05	106-46-7	
Dichlorodifluoromethane	ND	ug/L	40.0	40		01/28/19 13:05	75-71-8	
1,1-Dichloroethane	ND	ug/L	40.0	40		01/28/19 13:05	75-34-3	
1,2-Dichloroethane	ND	ug/L	40.0	40		01/28/19 13:05	107-06-2	
1,1-Dichloroethene	ND	ug/L	40.0	40		01/28/19 13:05	75-35-4	
cis-1,2-Dichloroethene	**4950**	ug/L	40.0	40		01/28/19 13:05	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	40.0	40		01/28/19 13:05	156-60-5	
1,2-Dichloropropane	ND	ug/L	40.0	40		01/28/19 13:05	78-87-5	
1,3-Dichloropropane	ND	ug/L	40.0	40		01/28/19 13:05	142-28-9	
2,2-Dichloropropane	ND	ug/L	40.0	40		01/28/19 13:05	594-20-7	
1,1-Dichloropropene	ND	ug/L	40.0	40		01/28/19 13:05	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	40.0	40		01/28/19 13:05	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	40.0	40		01/28/19 13:05	10061-02-6	
Diisopropyl ether	ND	ug/L	40.0	40		01/28/19 13:05	108-20-3	
Ethylbenzene	ND	ug/L	40.0	40		01/28/19 13:05	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	40.0	40		01/28/19 13:05	87-68-3	
2-Hexanone	ND	ug/L	200	40		01/28/19 13:05	591-78-6	
p-Isopropyltoluene	ND	ug/L	40.0	40		01/28/19 13:05	99-87-6	
Methylene Chloride	ND	ug/L	200	40		01/28/19 13:05	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	200	40		01/28/19 13:05	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	40.0	40		01/28/19 13:05	1634-04-4	
Naphthalene	ND	ug/L	40.0	40		01/28/19 13:05	91-20-3	
Styrene	ND	ug/L	40.0	40		01/28/19 13:05	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	40.0	40		01/28/19 13:05	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	40.0	40		01/28/19 13:05	79-34-5	
Tetrachloroethene	ND	ug/L	40.0	40		01/28/19 13:05	127-18-4	
Toluene	ND	ug/L	40.0	40		01/28/19 13:05	108-88-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

Sample: MW-17 **Lab ID: 92414727008** Collected: 01/20/19 10:13 Received: 01/21/19 11:25 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260B							
1,2,3-Trichlorobenzene	ND	ug/L	40.0	40		01/28/19 13:05	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	40.0	40		01/28/19 13:05	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	40.0	40		01/28/19 13:05	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	40.0	40		01/28/19 13:05	79-00-5	
Trichloroethene	**4960**	ug/L	40.0	40		01/28/19 13:05	79-01-6	
Trichlorofluoromethane	ND	ug/L	40.0	40		01/28/19 13:05	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	40.0	40		01/28/19 13:05	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	40.0	40		01/28/19 13:05	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	40.0	40		01/28/19 13:05	108-67-8	
Vinyl acetate	ND	ug/L	80.0	40		01/28/19 13:05	108-05-4	
Vinyl chloride	**74.9**	ug/L	40.0	40		01/28/19 13:05	75-01-4	
Xylene (Total)	ND	ug/L	40.0	40		01/28/19 13:05	1330-20-7	
m&p-Xylene	ND	ug/L	80.0	40		01/28/19 13:05	179601-23-1	
o-Xylene	ND	ug/L	40.0	40		01/28/19 13:05	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	40		01/28/19 13:05	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130	40		01/28/19 13:05	17060-07-0	
Toluene-d8 (S)	100	%	70-130	40		01/28/19 13:05	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

QC Batch: 454080 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV Low Level SC
Associated Lab Samples: 92414727001, 92414727002

METHOD BLANK: 2480473 Matrix: Water
Associated Lab Samples: 92414727001, 92414727002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	01/23/19 18:38	
1,1,1-Trichloroethane	ug/L	ND	1.0	01/23/19 18:38	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	01/23/19 18:38	
1,1,2-Trichloroethane	ug/L	ND	1.0	01/23/19 18:38	
1,1-Dichloroethane	ug/L	ND	1.0	01/23/19 18:38	
1,1-Dichloroethene	ug/L	ND	1.0	01/23/19 18:38	
1,1-Dichloropropene	ug/L	ND	1.0	01/23/19 18:38	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	01/23/19 18:38	
1,2,3-Trichloropropane	ug/L	ND	1.0	01/23/19 18:38	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	01/23/19 18:38	
1,2,4-Trimethylbenzene	ug/L	ND	1.0	01/23/19 18:38	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	01/23/19 18:38	
1,2-Dichlorobenzene	ug/L	ND	1.0	01/23/19 18:38	
1,2-Dichloroethane	ug/L	ND	1.0	01/23/19 18:38	
1,2-Dichloropropane	ug/L	ND	1.0	01/23/19 18:38	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	01/23/19 18:38	
1,3-Dichlorobenzene	ug/L	ND	1.0	01/23/19 18:38	
1,3-Dichloropropane	ug/L	ND	1.0	01/23/19 18:38	
1,4-Dichlorobenzene	ug/L	ND	1.0	01/23/19 18:38	
2,2-Dichloropropane	ug/L	ND	1.0	01/23/19 18:38	
2-Butanone (MEK)	ug/L	ND	5.0	01/23/19 18:38	
2-Chlorotoluene	ug/L	ND	1.0	01/23/19 18:38	
2-Hexanone	ug/L	ND	5.0	01/23/19 18:38	
4-Chlorotoluene	ug/L	ND	1.0	01/23/19 18:38	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	01/23/19 18:38	
Acetone	ug/L	ND	25.0	01/23/19 18:38	
Benzene	ug/L	ND	1.0	01/23/19 18:38	
Bromobenzene	ug/L	ND	1.0	01/23/19 18:38	
Bromochloromethane	ug/L	ND	1.0	01/23/19 18:38	
Bromodichloromethane	ug/L	ND	1.0	01/23/19 18:38	
Bromoform	ug/L	ND	1.0	01/23/19 18:38	
Bromomethane	ug/L	ND	2.0	01/23/19 18:38	
Carbon tetrachloride	ug/L	ND	1.0	01/23/19 18:38	
Chlorobenzene	ug/L	ND	1.0	01/23/19 18:38	
Chloroethane	ug/L	ND	1.0	01/23/19 18:38	
Chloroform	ug/L	ND	5.0	01/23/19 18:38	
Chloromethane	ug/L	ND	1.0	01/23/19 18:38	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/23/19 18:38	
cis-1,3-Dichloropropene	ug/L	ND	1.0	01/23/19 18:38	
Dibromochloromethane	ug/L	ND	1.0	01/23/19 18:38	
Dibromomethane	ug/L	ND	1.0	01/23/19 18:38	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

METHOD BLANK: 2480473 Matrix: Water
Associated Lab Samples: 92414727001, 92414727002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	01/23/19 18:38	
Diisopropyl ether	ug/L	ND	1.0	01/23/19 18:38	
Ethylbenzene	ug/L	ND	1.0	01/23/19 18:38	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	01/23/19 18:38	
m&p-Xylene	ug/L	ND	2.0	01/23/19 18:38	
Methyl-tert-butyl ether	ug/L	ND	1.0	01/23/19 18:38	
Methylene Chloride	ug/L	ND	5.0	01/23/19 18:38	
Naphthalene	ug/L	ND	1.0	01/23/19 18:38	
o-Xylene	ug/L	ND	1.0	01/23/19 18:38	
p-Isopropyltoluene	ug/L	ND	1.0	01/23/19 18:38	
Styrene	ug/L	ND	1.0	01/23/19 18:38	
Tetrachloroethene	ug/L	ND	1.0	01/23/19 18:38	
Toluene	ug/L	ND	1.0	01/23/19 18:38	
trans-1,2-Dichloroethene	ug/L	ND	1.0	01/23/19 18:38	
trans-1,3-Dichloropropene	ug/L	ND	1.0	01/23/19 18:38	
Trichloroethene	ug/L	ND	1.0	01/23/19 18:38	
Trichlorofluoromethane	ug/L	ND	1.0	01/23/19 18:38	
Vinyl acetate	ug/L	ND	2.0	01/23/19 18:38	
Vinyl chloride	ug/L	ND	1.0	01/23/19 18:38	
Xylene (Total)	ug/L	ND	1.0	01/23/19 18:38	
1,2-Dichloroethane-d4 (S)	%	86	70-130	01/23/19 18:38	
4-Bromofluorobenzene (S)	%	101	70-130	01/23/19 18:38	
Toluene-d8 (S)	%	104	70-130	01/23/19 18:38	

LABORATORY CONTROL SAMPLE: 2480474

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	48.9	98	70-130	
1,1,1-Trichloroethane	ug/L	50	43.4	87	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	47.6	95	70-130	
1,1,2-Trichloroethane	ug/L	50	49.2	98	70-130	
1,1-Dichloroethane	ug/L	50	42.6	85	70-130	
1,1-Dichloroethene	ug/L	50	45.8	92	70-130	
1,1-Dichloropropene	ug/L	50	41.9	84	70-130	
1,2,3-Trichlorobenzene	ug/L	50	49.5	99	70-130	
1,2,3-Trichloropropane	ug/L	50	48.8	98	70-130	
1,2,4-Trichlorobenzene	ug/L	50	49.1	98	70-130	
1,2,4-Trimethylbenzene	ug/L	50	45.8	92	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	48.4	97	70-130	
1,2-Dichlorobenzene	ug/L	50	47.0	94	70-130	
1,2-Dichloroethane	ug/L	50	41.8	84	70-130	
1,2-Dichloropropane	ug/L	50	46.8	94	70-130	
1,3,5-Trimethylbenzene	ug/L	50	45.5	91	70-130	
1,3-Dichlorobenzene	ug/L	50	46.5	93	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

LABORATORY CONTROL SAMPLE: 2480474

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,3-Dichloropropane	ug/L	50	51.5	103	70-130	
1,4-Dichlorobenzene	ug/L	50	46.6	93	70-130	
2,2-Dichloropropane	ug/L	50	44.0	88	70-130	
2-Butanone (MEK)	ug/L	100	96.7	97	70-130	
2-Chlorotoluene	ug/L	50	46.1	92	70-130	
2-Hexanone	ug/L	100	99.2	99	70-130	
4-Chlorotoluene	ug/L	50	46.6	93	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	98.9	99	70-130	
Acetone	ug/L	100	89.6	90	70-130	
Benzene	ug/L	50	48.0	96	70-130	
Bromobenzene	ug/L	50	48.0	96	70-130	
Bromochloromethane	ug/L	50	39.5	79	70-130	
Bromodichloromethane	ug/L	50	47.2	94	70-130	
Bromoform	ug/L	50	47.1	94	70-130	
Bromomethane	ug/L	50	47.6	95	70-130	
Carbon tetrachloride	ug/L	50	48.3	97	70-130	
Chlorobenzene	ug/L	50	46.4	93	70-130	
Chloroethane	ug/L	50	37.1	74	70-130	
Chloroform	ug/L	50	39.9	80	70-130	
Chloromethane	ug/L	50	40.3	81	70-130	
cis-1,2-Dichloroethene	ug/L	50	42.2	84	70-130	
cis-1,3-Dichloropropene	ug/L	50	48.0	96	70-130	
Dibromochloromethane	ug/L	50	49.0	98	70-130	
Dibromomethane	ug/L	50	47.6	95	70-130	
Dichlorodifluoromethane	ug/L	50	42.8	86	70-130	
Diisopropyl ether	ug/L	50	44.9	90	70-130	
Ethylbenzene	ug/L	50	46.1	92	70-130	
Hexachloro-1,3-butadiene	ug/L	50	50.4	101	70-130	
m&p-Xylene	ug/L	100	92.8	93	70-130	
Methyl-tert-butyl ether	ug/L	50	44.3	89	70-130	
Methylene Chloride	ug/L	50	41.7	83	70-130	
Naphthalene	ug/L	50	47.2	94	70-130	
o-Xylene	ug/L	50	47.3	95	70-130	
p-Isopropyltoluene	ug/L	50	46.2	92	70-130	
Styrene	ug/L	50	48.6	97	70-130	
Tetrachloroethene	ug/L	50	48.6	97	70-130	
Toluene	ug/L	50	44.6	89	70-130	
trans-1,2-Dichloroethene	ug/L	50	42.9	86	70-130	
trans-1,3-Dichloropropene	ug/L	50	48.7	97	70-130	
Trichloroethene	ug/L	50	50.6	101	70-130	
Trichlorofluoromethane	ug/L	50	41.8	84	70-130	
Vinyl acetate	ug/L	100	88.2	88	70-130	
Vinyl chloride	ug/L	50	43.3	87	70-130	
Xylene (Total)	ug/L	150	140	93	70-130	
1,2-Dichloroethane-d4 (S)	%			91	70-130	
4-Bromofluorobenzene (S)	%			100	70-130	
Toluene-d8 (S)	%			99	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2480475 2480476

Parameter	Units	92414727002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	20.7	22.3	103	111	70-130	8	
1,1,1-Trichloroethane	ug/L	ND	20	20	22.1	22.5	111	112	70-130	2	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	20.4	20.6	102	103	70-130	1	
1,1,2-Trichloroethane	ug/L	ND	20	20	22.3	22.0	111	110	70-130	1	
1,1-Dichloroethane	ug/L	ND	20	20	21.6	21.4	108	107	70-130	1	
1,1-Dichloroethene	ug/L	ND	20	20	22.2	22.4	111	112	70-130	1	
1,1-Dichloropropene	ug/L	ND	20	20	21.3	21.0	107	105	70-130	2	
1,2,3-Trichlorobenzene	ug/L	ND	20	20	22.1	22.0	111	110	70-130	1	
1,2,3-Trichloropropane	ug/L	ND	20	20	21.5	21.9	108	109	70-130	2	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	20.3	19.9	101	99	70-130	2	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	20	21.5	21.1	108	105	70-130	2	
1,2-Dichlorobenzene	ug/L	ND	20	20	20.9	21.0	104	105	70-130	1	
1,2-Dichloroethane	ug/L	ND	20	20	21.2	21.3	106	106	70-130	0	
1,2-Dichloropropane	ug/L	ND	20	20	20.5	20.3	103	102	70-130	1	
1,3-Dichlorobenzene	ug/L	ND	20	20	20.7	21.2	104	106	70-130	2	
1,3-Dichloropropane	ug/L	ND	20	20	21.0	21.4	105	107	70-130	2	
1,4-Dichlorobenzene	ug/L	ND	20	20	20.2	19.6	101	98	70-130	3	
2,2-Dichloropropane	ug/L	ND	20	20	19.5	19.5	97	98	70-130	0	
2-Butanone (MEK)	ug/L	ND	40	40	43.2	45.3	108	113	70-130	5	
2-Chlorotoluene	ug/L	ND	20	20	20.5	20.7	102	103	70-130	1	
2-Hexanone	ug/L	ND	40	40	41.1	43.6	103	109	70-130	6	
4-Chlorotoluene	ug/L	ND	20	20	20.4	20.8	102	104	70-130	2	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	40	41.4	41.7	104	104	70-130	1	
Acetone	ug/L	ND	40	40	45.9	47.8	115	120	70-130	4	
Benzene	ug/L	ND	20	20	21.3	21.4	106	107	70-130	1	
Bromobenzene	ug/L	ND	20	20	20.9	21.3	104	107	70-130	2	
Bromochloromethane	ug/L	ND	20	20	23.3	22.8	117	114	70-130	2	
Bromodichloromethane	ug/L	ND	20	20	21.0	21.2	105	106	70-130	1	
Bromoform	ug/L	ND	20	20	20.4	19.8	102	99	70-130	3	
Bromomethane	ug/L	ND	20	20	18.3	14.4	92	72	70-130	24	
Carbon tetrachloride	ug/L	ND	20	20	22.8	21.3	114	107	70-130	7	
Chlorobenzene	ug/L	ND	20	20	20.7	21.3	104	106	70-130	3	
Chloroethane	ug/L	ND	20	20	45.2	36.9	226	184	70-130	20	M1
Chloroform	ug/L	ND	20	20	20.8	21.4	104	107	70-130	3	
Chloromethane	ug/L	ND	20	20	18.0	17.5	90	87	70-130	3	
cis-1,2-Dichloroethene	ug/L	ND	20	20	21.0	21.0	105	105	70-130	0	
cis-1,3-Dichloropropene	ug/L	ND	20	20	21.2	21.0	106	105	70-130	1	
Dibromochloromethane	ug/L	ND	20	20	20.7	20.8	104	104	70-130	0	
Dibromomethane	ug/L	ND	20	20	21.6	20.9	108	105	70-130	3	
Dichlorodifluoromethane	ug/L	ND	20	20	17.0	16.7	85	84	70-130	1	
Diisopropyl ether	ug/L	ND	20	20	20.2	20.7	101	104	70-130	3	
Ethylbenzene	ug/L	ND	20	20	20.6	21.1	103	106	70-130	3	
Hexachloro-1,3-butadiene	ug/L	ND	20	20	22.9	20.9	115	105	70-130	9	
m&p-Xylene	ug/L	ND	40	40	42.6	42.1	106	105	70-130	1	
Methyl-tert-butyl ether	ug/L	ND	20	20	19.8	19.9	99	100	70-130	1	
Methylene Chloride	ug/L	ND	20	20	19.6	19.5	98	98	70-130	1	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2480475 2480476

Parameter	Units	92414727002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Naphthalene	ug/L	ND	20	20	20.6	20.3	103	102	70-130	1	
o-Xylene	ug/L	ND	20	20	21.6	22.2	108	111	70-130	3	
p-Isopropyltoluene	ug/L	ND	20	20	20.3	20.9	102	104	70-130	3	
Styrene	ug/L	ND	20	20	19.9	20.9	100	104	70-130	5	
Tetrachloroethene	ug/L	ND	20	20	19.7	21.5	99	107	70-130	8	
Toluene	ug/L	ND	20	20	20.6	21.0	103	105	70-130	2	
trans-1,2-Dichloroethene	ug/L	ND	20	20	22.3	22.2	112	111	70-130	1	
trans-1,3-Dichloropropene	ug/L	ND	20	20	21.3	20.9	107	104	70-130	2	
Trichloroethene	ug/L	ND	20	20	21.1	20.8	106	104	70-130	2	
Trichlorofluoromethane	ug/L	ND	20	20	21.5	21.2	108	106	70-130	2	
Vinyl acetate	ug/L	ND	40	40	32.2	33.0	81	83	70-130	3	
Vinyl chloride	ug/L	ND	20	20	21.1	20.0	106	100	70-130	5	
Xylene (Total)	ug/L	ND	60	60	64.2	64.3	107	107	70-130	0	
1,2-Dichloroethane-d4 (S)	%						99	98	70-130		
4-Bromofluorobenzene (S)	%						98	101	70-130		
Toluene-d8 (S)	%						100	98	70-130		

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

QC Batch: 454605 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV Low Level SC
Associated Lab Samples: 92414727003, 92414727004, 92414727005

METHOD BLANK: 2482611 Matrix: Water
Associated Lab Samples: 92414727003, 92414727004, 92414727005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	01/26/19 02:10	
1,1,1-Trichloroethane	ug/L	ND	1.0	01/26/19 02:10	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	01/26/19 02:10	
1,1,2-Trichloroethane	ug/L	ND	1.0	01/26/19 02:10	
1,1-Dichloroethane	ug/L	ND	1.0	01/26/19 02:10	
1,1-Dichloroethene	ug/L	ND	1.0	01/26/19 02:10	
1,1-Dichloropropene	ug/L	ND	1.0	01/26/19 02:10	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	01/26/19 02:10	
1,2,3-Trichloropropane	ug/L	ND	1.0	01/26/19 02:10	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	01/26/19 02:10	
1,2,4-Trimethylbenzene	ug/L	ND	1.0	01/26/19 02:10	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	01/26/19 02:10	
1,2-Dichlorobenzene	ug/L	ND	1.0	01/26/19 02:10	
1,2-Dichloroethane	ug/L	ND	1.0	01/26/19 02:10	
1,2-Dichloropropane	ug/L	ND	1.0	01/26/19 02:10	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	01/26/19 02:10	
1,3-Dichlorobenzene	ug/L	ND	1.0	01/26/19 02:10	
1,3-Dichloropropane	ug/L	ND	1.0	01/26/19 02:10	
1,4-Dichlorobenzene	ug/L	ND	1.0	01/26/19 02:10	
2,2-Dichloropropane	ug/L	ND	1.0	01/26/19 02:10	
2-Butanone (MEK)	ug/L	ND	5.0	01/26/19 02:10	
2-Chlorotoluene	ug/L	ND	1.0	01/26/19 02:10	
2-Hexanone	ug/L	ND	5.0	01/26/19 02:10	
4-Chlorotoluene	ug/L	ND	1.0	01/26/19 02:10	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	01/26/19 02:10	
Acetone	ug/L	ND	25.0	01/26/19 02:10	
Benzene	ug/L	ND	1.0	01/26/19 02:10	
Bromobenzene	ug/L	ND	1.0	01/26/19 02:10	
Bromochloromethane	ug/L	ND	1.0	01/26/19 02:10	
Bromodichloromethane	ug/L	ND	1.0	01/26/19 02:10	
Bromoform	ug/L	ND	1.0	01/26/19 02:10	
Bromomethane	ug/L	ND	2.0	01/26/19 02:10	
Carbon tetrachloride	ug/L	ND	1.0	01/26/19 02:10	
Chlorobenzene	ug/L	ND	1.0	01/26/19 02:10	
Chloroethane	ug/L	ND	1.0	01/26/19 02:10	
Chloroform	ug/L	ND	5.0	01/26/19 02:10	
Chloromethane	ug/L	ND	1.0	01/26/19 02:10	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/26/19 02:10	
cis-1,3-Dichloropropene	ug/L	ND	1.0	01/26/19 02:10	
Dibromochloromethane	ug/L	ND	1.0	01/26/19 02:10	
Dibromomethane	ug/L	ND	1.0	01/26/19 02:10	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

METHOD BLANK: 2482611 Matrix: Water
Associated Lab Samples: 92414727003, 92414727004, 92414727005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	01/26/19 02:10	
Diisopropyl ether	ug/L	ND	1.0	01/26/19 02:10	
Ethylbenzene	ug/L	ND	1.0	01/26/19 02:10	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	01/26/19 02:10	
m&p-Xylene	ug/L	ND	2.0	01/26/19 02:10	
Methyl-tert-butyl ether	ug/L	ND	1.0	01/26/19 02:10	
Methylene Chloride	ug/L	ND	5.0	01/26/19 02:10	
Naphthalene	ug/L	ND	1.0	01/26/19 02:10	
o-Xylene	ug/L	ND	1.0	01/26/19 02:10	
p-Isopropyltoluene	ug/L	ND	1.0	01/26/19 02:10	
Styrene	ug/L	ND	1.0	01/26/19 02:10	
Tetrachloroethene	ug/L	ND	1.0	01/26/19 02:10	
Toluene	ug/L	ND	1.0	01/26/19 02:10	
trans-1,2-Dichloroethene	ug/L	ND	1.0	01/26/19 02:10	
trans-1,3-Dichloropropene	ug/L	ND	1.0	01/26/19 02:10	
Trichloroethene	ug/L	ND	1.0	01/26/19 02:10	
Trichlorofluoromethane	ug/L	ND	1.0	01/26/19 02:10	
Vinyl acetate	ug/L	ND	2.0	01/26/19 02:10	
Vinyl chloride	ug/L	ND	1.0	01/26/19 02:10	
Xylene (Total)	ug/L	ND	1.0	01/26/19 02:10	
1,2-Dichloroethane-d4 (S)	%	98	70-130	01/26/19 02:10	
4-Bromofluorobenzene (S)	%	104	70-130	01/26/19 02:10	
Toluene-d8 (S)	%	103	70-130	01/26/19 02:10	

LABORATORY CONTROL SAMPLE: 2482612

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	53.0	106	70-130	
1,1,1-Trichloroethane	ug/L	50	51.1	102	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	48.5	97	70-130	
1,1,2-Trichloroethane	ug/L	50	52.2	104	70-130	
1,1-Dichloroethane	ug/L	50	48.6	97	70-130	
1,1-Dichloroethene	ug/L	50	49.7	99	70-130	
1,1-Dichloropropene	ug/L	50	47.9	96	70-130	
1,2,3-Trichlorobenzene	ug/L	50	52.4	105	70-130	
1,2,3-Trichloropropane	ug/L	50	51.1	102	70-130	
1,2,4-Trichlorobenzene	ug/L	50	48.4	97	70-130	
1,2,4-Trimethylbenzene	ug/L	50	47.9	96	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	49.3	99	70-130	
1,2-Dichlorobenzene	ug/L	50	47.6	95	70-130	
1,2-Dichloroethane	ug/L	50	48.7	97	70-130	
1,2-Dichloropropane	ug/L	50	48.2	96	70-130	
1,3,5-Trimethylbenzene	ug/L	50	47.8	96	70-130	
1,3-Dichlorobenzene	ug/L	50	47.7	95	70-130	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

LABORATORY CONTROL SAMPLE: 2482612

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,3-Dichloropropane	ug/L	50	50.7	101	70-130	
1,4-Dichlorobenzene	ug/L	50	47.3	95	70-130	
2,2-Dichloropropane	ug/L	50	47.9	96	70-130	
2-Butanone (MEK)	ug/L	100	105	105	70-130	
2-Chlorotoluene	ug/L	50	46.7	93	70-130	
2-Hexanone	ug/L	100	103	103	70-130	
4-Chlorotoluene	ug/L	50	48.9	98	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	105	105	70-130	
Acetone	ug/L	100	104	104	70-130	
Benzene	ug/L	50	48.6	97	70-130	
Bromobenzene	ug/L	50	50.7	101	70-130	
Bromochloromethane	ug/L	50	50.6	101	70-130	
Bromodichloromethane	ug/L	50	50.5	101	70-130	
Bromoform	ug/L	50	50.1	100	70-130	
Bromomethane	ug/L	50	44.5	89	70-130	
Carbon tetrachloride	ug/L	50	50.2	100	70-130	
Chlorobenzene	ug/L	50	47.7	95	70-130	
Chloroethane	ug/L	50	48.9	98	70-130	
Chloroform	ug/L	50	46.1	92	70-130	
Chloromethane	ug/L	50	44.8	90	70-130	
cis-1,2-Dichloroethene	ug/L	50	47.4	95	70-130	
cis-1,3-Dichloropropene	ug/L	50	53.0	106	70-130	
Dibromochloromethane	ug/L	50	53.0	106	70-130	
Dibromomethane	ug/L	50	50.6	101	70-130	
Dichlorodifluoromethane	ug/L	50	47.4	95	70-130	
Diisopropyl ether	ug/L	50	49.6	99	70-130	
Ethylbenzene	ug/L	50	46.2	92	70-130	
Hexachloro-1,3-butadiene	ug/L	50	53.3	107	70-130	
m&p-Xylene	ug/L	100	94.7	95	70-130	
Methyl-tert-butyl ether	ug/L	50	53.3	107	70-130	
Methylene Chloride	ug/L	50	48.5	97	70-130	
Naphthalene	ug/L	50	49.1	98	70-130	
o-Xylene	ug/L	50	49.2	98	70-130	
p-Isopropyltoluene	ug/L	50	46.8	94	70-130	
Styrene	ug/L	50	46.9	94	70-130	
Tetrachloroethene	ug/L	50	47.8	96	70-130	
Toluene	ug/L	50	46.8	94	70-130	
trans-1,2-Dichloroethene	ug/L	50	49.7	99	70-130	
trans-1,3-Dichloropropene	ug/L	50	52.0	104	70-130	
Trichloroethene	ug/L	50	48.3	97	70-130	
Trichlorofluoromethane	ug/L	50	46.8	94	70-130	
Vinyl acetate	ug/L	100	111	111	70-130	
Vinyl chloride	ug/L	50	49.5	99	70-130	
Xylene (Total)	ug/L	150	144	96	70-130	
1,2-Dichloroethane-d4 (S)	%			103	70-130	
4-Bromofluorobenzene (S)	%			98	70-130	
Toluene-d8 (S)	%			99	70-130	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

MATRIX SPIKE SAMPLE: 2483323

Parameter	Units	92414486010 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20.5	103	70-130	
1,1,1-Trichloroethane	ug/L	ND	20	23.8	119	70-130	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	19.7	98	70-130	
1,1,2-Trichloroethane	ug/L	ND	20	22.3	112	70-130	
1,1-Dichloroethane	ug/L	ND	20	22.1	111	70-130	
1,1-Dichloroethene	ug/L	ND	20	24.9	125	70-130	
1,1-Dichloropropene	ug/L	ND	20	21.8	109	70-130	
1,2,3-Trichlorobenzene	ug/L	ND	20	21.1	106	70-130	
1,2,3-Trichloropropane	ug/L	ND	20	20.6	103	70-130	
1,2,4-Trichlorobenzene	ug/L	ND	20	20.3	101	70-130	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	20.1	101	70-130	
1,2-Dichlorobenzene	ug/L	ND	20	20.5	103	70-130	
1,2-Dichloroethane	ug/L	ND	20	23.3	117	70-130	
1,2-Dichloropropane	ug/L	ND	20	20.7	104	70-130	
1,3-Dichlorobenzene	ug/L	ND	20	20.1	101	70-130	
1,3-Dichloropropane	ug/L	ND	20	21.2	106	70-130	
1,4-Dichlorobenzene	ug/L	ND	20	20.0	100	70-130	
2,2-Dichloropropane	ug/L	ND	20	23.9	120	70-130	
2-Butanone (MEK)	ug/L	ND	40	46.1	115	70-130	
2-Chlorotoluene	ug/L	ND	20	19.9	99	70-130	
2-Hexanone	ug/L	ND	40	42.1	105	70-130	
4-Chlorotoluene	ug/L	ND	20	20.6	103	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	44.3	111	70-130	
Acetone	ug/L	ND	40	44.2	111	70-130	
Benzene	ug/L	ND	20	21.5	108	70-130	
Bromobenzene	ug/L	ND	20	20.1	100	70-130	
Bromochloromethane	ug/L	ND	20	25.3	126	70-130	
Bromodichloromethane	ug/L	ND	20	22.0	110	70-130	
Bromoform	ug/L	ND	20	20.0	100	70-130	
Bromomethane	ug/L	ND	20	20.5	103	70-130	
Carbon tetrachloride	ug/L	ND	20	23.9	119	70-130	
Chlorobenzene	ug/L	ND	20	21.1	105	70-130	
Chloroethane	ug/L	ND	20	24.3	121	70-130	
Chloroform	ug/L	ND	20	21.7	108	70-130	
Chloromethane	ug/L	ND	20	21.0	105	70-130	
cis-1,2-Dichloroethene	ug/L	4.0	20	26.7	113	70-130	
cis-1,3-Dichloropropene	ug/L	ND	20	21.8	109	70-130	
Dibromochloromethane	ug/L	ND	20	21.0	105	70-130	
Dibromomethane	ug/L	ND	20	22.9	115	70-130	
Dichlorodifluoromethane	ug/L	ND	20	22.0	110	70-130	
Diisopropyl ether	ug/L	ND	20	22.1	111	70-130	
Ethylbenzene	ug/L	ND	20	21.0	105	70-130	
Hexachloro-1,3-butadiene	ug/L	ND	20	22.1	110	70-130	
m&p-Xylene	ug/L	ND	40	41.3	103	70-130	
Methyl-tert-butyl ether	ug/L	ND	20	21.4	107	70-130	
Methylene Chloride	ug/L	ND	20	23.0	115	70-130	
Naphthalene	ug/L	ND	20	19.1	95	70-130	

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REPORT OF LABORATORY ANALYSIS

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(704)875-9092

QUALITY CONTROL DATA

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

MATRIX SPIKE SAMPLE: 2483323

Parameter	Units	92414486010 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
o-Xylene	ug/L	ND	20	21.5	108	70-130	
p-Isopropyltoluene	ug/L	ND	20	19.9	100	70-130	
Styrene	ug/L	ND	20	20.5	103	70-130	
Tetrachloroethene	ug/L	1.0	20	21.0	100	70-130	
Toluene	ug/L	ND	20	20.7	104	70-130	
trans-1,2-Dichloroethene	ug/L	ND	20	22.6	113	70-130	
trans-1,3-Dichloropropene	ug/L	ND	20	21.4	107	70-130	
Trichloroethene	ug/L	4.6	20	27.0	112	70-130	
Trichlorofluoromethane	ug/L	ND	20	23.8	119	70-130	
Vinyl acetate	ug/L	ND	40	45.7	114	70-130	
Vinyl chloride	ug/L	ND	20	23.4	117	70-130	
Xylene (Total)	ug/L	ND	60	62.8	105	70-130	
1,2-Dichloroethane-d4 (S)	%				117	70-130	
4-Bromofluorobenzene (S)	%				101	70-130	
Toluene-d8 (S)	%				100	70-130	

SAMPLE DUPLICATE: 2483322

Parameter	Units	92414486009 Result	Dup Result	RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	ND		
1,1,1-Trichloroethane	ug/L	ND	ND		
1,1,2,2-Tetrachloroethane	ug/L	ND	ND		
1,1,2-Trichloroethane	ug/L	ND	ND		
1,1-Dichloroethane	ug/L	ND	ND		
1,1-Dichloroethene	ug/L	ND	ND		
1,1-Dichloropropene	ug/L	ND	ND		
1,2,3-Trichlorobenzene	ug/L	ND	ND		
1,2,3-Trichloropropane	ug/L	ND	ND		
1,2,4-Trichlorobenzene	ug/L	ND	ND		
1,2-Dibromo-3-chloropropane	ug/L	ND	ND		
1,2-Dichlorobenzene	ug/L	ND	ND		
1,2-Dichloroethane	ug/L	ND	ND		
1,2-Dichloropropane	ug/L	ND	ND		
1,3-Dichlorobenzene	ug/L	ND	ND		
1,3-Dichloropropane	ug/L	ND	ND		
1,4-Dichlorobenzene	ug/L	ND	ND		
2,2-Dichloropropane	ug/L	ND	ND		
2-Butanone (MEK)	ug/L	ND	ND		
2-Chlorotoluene	ug/L	ND	ND		
2-Hexanone	ug/L	ND	ND		
4-Chlorotoluene	ug/L	ND	ND		
4-Methyl-2-pentanone (MIBK)	ug/L	ND	ND		
Acetone	ug/L	ND	ND		
Benzene	ug/L	ND	ND		
Bromobenzene	ug/L	ND	ND		

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

SAMPLE DUPLICATE: 2483322

Parameter	Units	92414486009 Result	Dup Result	RPD	Qualifiers
Bromochloromethane	ug/L	ND	ND		
Bromodichloromethane	ug/L	ND	ND		
Bromoform	ug/L	ND	ND		
Bromomethane	ug/L	ND	ND		
Carbon tetrachloride	ug/L	ND	ND		
Chlorobenzene	ug/L	ND	ND		
Chloroethane	ug/L	ND	ND		
Chloroform	ug/L	ND	ND		
Chloromethane	ug/L	ND	ND		
cis-1,2-Dichloroethene	ug/L	ND	ND		
cis-1,3-Dichloropropene	ug/L	ND	ND		
Dibromochloromethane	ug/L	ND	ND		
Dibromomethane	ug/L	ND	ND		
Dichlorodifluoromethane	ug/L	ND	ND		
Diisopropyl ether	ug/L	ND	ND		
Ethylbenzene	ug/L	ND	ND		
Hexachloro-1,3-butadiene	ug/L	ND	ND		
m&p-Xylene	ug/L	ND	ND		
Methyl-tert-butyl ether	ug/L	ND	ND		
Methylene Chloride	ug/L	ND	ND		
Naphthalene	ug/L	ND	ND		
o-Xylene	ug/L	ND	ND		
p-Isopropyltoluene	ug/L	ND	ND		
Styrene	ug/L	ND	ND		
Tetrachloroethene	ug/L	1.5	1.4	7	
Toluene	ug/L	ND	ND		
trans-1,2-Dichloroethene	ug/L	ND	ND		
trans-1,3-Dichloropropene	ug/L	ND	ND		
Trichloroethene	ug/L	4.5	4.6	1	
Trichlorofluoromethane	ug/L	ND	ND		
Vinyl acetate	ug/L	ND	ND		
Vinyl chloride	ug/L	ND	ND		
Xylene (Total)	ug/L	ND	ND		
1,2-Dichloroethane-d4 (S)	%	96	118	20	
4-Bromofluorobenzene (S)	%	103	100	4	
Toluene-d8 (S)	%	102	105	3	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

QC Batch: 454820 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV Low Level SC
Associated Lab Samples: 92414727006, 92414727007, 92414727008

METHOD BLANK: 2483500 Matrix: Water
Associated Lab Samples: 92414727006, 92414727007, 92414727008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	01/28/19 11:39	
1,1,1-Trichloroethane	ug/L	ND	1.0	01/28/19 11:39	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	01/28/19 11:39	
1,1,2-Trichloroethane	ug/L	ND	1.0	01/28/19 11:39	
1,1-Dichloroethane	ug/L	ND	1.0	01/28/19 11:39	
1,1-Dichloroethene	ug/L	ND	1.0	01/28/19 11:39	
1,1-Dichloropropene	ug/L	ND	1.0	01/28/19 11:39	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	01/28/19 11:39	
1,2,3-Trichloropropane	ug/L	ND	1.0	01/28/19 11:39	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	01/28/19 11:39	
1,2,4-Trimethylbenzene	ug/L	ND	1.0	01/28/19 11:39	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	01/28/19 11:39	
1,2-Dichlorobenzene	ug/L	ND	1.0	01/28/19 11:39	
1,2-Dichloroethane	ug/L	ND	1.0	01/28/19 11:39	
1,2-Dichloropropane	ug/L	ND	1.0	01/28/19 11:39	
1,3,5-Trimethylbenzene	ug/L	ND	1.0	01/28/19 11:39	
1,3-Dichlorobenzene	ug/L	ND	1.0	01/28/19 11:39	
1,3-Dichloropropane	ug/L	ND	1.0	01/28/19 11:39	
1,4-Dichlorobenzene	ug/L	ND	1.0	01/28/19 11:39	
2,2-Dichloropropane	ug/L	ND	1.0	01/28/19 11:39	
2-Butanone (MEK)	ug/L	ND	5.0	01/28/19 11:39	
2-Chlorotoluene	ug/L	ND	1.0	01/28/19 11:39	
2-Hexanone	ug/L	ND	5.0	01/28/19 11:39	
4-Chlorotoluene	ug/L	ND	1.0	01/28/19 11:39	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	01/28/19 11:39	
Acetone	ug/L	ND	25.0	01/28/19 11:39	
Benzene	ug/L	ND	1.0	01/28/19 11:39	
Bromobenzene	ug/L	ND	1.0	01/28/19 11:39	
Bromochloromethane	ug/L	ND	1.0	01/28/19 11:39	
Bromodichloromethane	ug/L	ND	1.0	01/28/19 11:39	
Bromoform	ug/L	ND	1.0	01/28/19 11:39	
Bromomethane	ug/L	ND	2.0	01/28/19 11:39	
Carbon tetrachloride	ug/L	ND	1.0	01/28/19 11:39	
Chlorobenzene	ug/L	ND	1.0	01/28/19 11:39	
Chloroethane	ug/L	ND	1.0	01/28/19 11:39	
Chloroform	ug/L	ND	5.0	01/28/19 11:39	
Chloromethane	ug/L	ND	1.0	01/28/19 11:39	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/28/19 11:39	
cis-1,3-Dichloropropene	ug/L	ND	1.0	01/28/19 11:39	
Dibromochloromethane	ug/L	ND	1.0	01/28/19 11:39	
Dibromomethane	ug/L	ND	1.0	01/28/19 11:39	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

METHOD BLANK: 2483500 Matrix: Water
Associated Lab Samples: 92414727006, 92414727007, 92414727008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	01/28/19 11:39	
Diisopropyl ether	ug/L	ND	1.0	01/28/19 11:39	
Ethylbenzene	ug/L	ND	1.0	01/28/19 11:39	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	01/28/19 11:39	
m&p-Xylene	ug/L	ND	2.0	01/28/19 11:39	
Methyl-tert-butyl ether	ug/L	ND	1.0	01/28/19 11:39	
Methylene Chloride	ug/L	ND	5.0	01/28/19 11:39	
Naphthalene	ug/L	ND	1.0	01/28/19 11:39	
o-Xylene	ug/L	ND	1.0	01/28/19 11:39	
p-Isopropyltoluene	ug/L	ND	1.0	01/28/19 11:39	
Styrene	ug/L	ND	1.0	01/28/19 11:39	
Tetrachloroethene	ug/L	ND	1.0	01/28/19 11:39	
Toluene	ug/L	ND	1.0	01/28/19 11:39	
trans-1,2-Dichloroethene	ug/L	ND	1.0	01/28/19 11:39	
trans-1,3-Dichloropropene	ug/L	ND	1.0	01/28/19 11:39	
Trichloroethene	ug/L	ND	1.0	01/28/19 11:39	
Trichlorofluoromethane	ug/L	ND	1.0	01/28/19 11:39	
Vinyl acetate	ug/L	ND	2.0	01/28/19 11:39	
Vinyl chloride	ug/L	ND	1.0	01/28/19 11:39	
Xylene (Total)	ug/L	ND	1.0	01/28/19 11:39	
1,2-Dichloroethane-d4 (S)	%	103	70-130	01/28/19 11:39	
4-Bromofluorobenzene (S)	%	101	70-130	01/28/19 11:39	
Toluene-d8 (S)	%	102	70-130	01/28/19 11:39	

LABORATORY CONTROL SAMPLE: 2483501

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	53.9	108	70-130	
1,1,1-Trichloroethane	ug/L	50	51.4	103	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	51.9	104	70-130	
1,1,2-Trichloroethane	ug/L	50	52.8	106	70-130	
1,1-Dichloroethane	ug/L	50	49.2	98	70-130	
1,1-Dichloroethene	ug/L	50	51.3	103	70-130	
1,1-Dichloropropene	ug/L	50	48.7	97	70-130	
1,2,3-Trichlorobenzene	ug/L	50	51.5	103	70-130	
1,2,3-Trichloropropane	ug/L	50	50.6	101	70-130	
1,2,4-Trichlorobenzene	ug/L	50	52.9	106	70-130	
1,2,4-Trimethylbenzene	ug/L	50	48.6	97	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	48.7	97	70-130	
1,2-Dichlorobenzene	ug/L	50	49.4	99	70-130	
1,2-Dichloroethane	ug/L	50	45.9	92	70-130	
1,2-Dichloropropane	ug/L	50	50.4	101	70-130	
1,3,5-Trimethylbenzene	ug/L	50	50.2	100	70-130	
1,3-Dichlorobenzene	ug/L	50	49.2	98	70-130	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

LABORATORY CONTROL SAMPLE: 2483501

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,3-Dichloropropane	ug/L	50	52.4	105	70-130	
1,4-Dichlorobenzene	ug/L	50	48.8	98	70-130	
2,2-Dichloropropane	ug/L	50	52.6	105	70-130	
2-Butanone (MEK)	ug/L	100	109	109	70-130	
2-Chlorotoluene	ug/L	50	49.7	99	70-130	
2-Hexanone	ug/L	100	109	109	70-130	
4-Chlorotoluene	ug/L	50	49.6	99	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	105	105	70-130	
Acetone	ug/L	100	99.0	99	70-130	
Benzene	ug/L	50	50.8	102	70-130	
Bromobenzene	ug/L	50	49.9	100	70-130	
Bromochloromethane	ug/L	50	51.7	103	70-130	
Bromodichloromethane	ug/L	50	51.7	103	70-130	
Bromoform	ug/L	50	52.9	106	70-130	
Bromomethane	ug/L	50	44.5	89	70-130	
Carbon tetrachloride	ug/L	50	50.6	101	70-130	
Chlorobenzene	ug/L	50	50.2	100	70-130	
Chloroethane	ug/L	50	43.3	87	70-130	
Chloroform	ug/L	50	46.4	93	70-130	1g
Chloromethane	ug/L	50	45.5	91	70-130	
cis-1,2-Dichloroethene	ug/L	50	48.6	97	70-130	
cis-1,3-Dichloropropene	ug/L	50	54.1	108	70-130	
Dibromochloromethane	ug/L	50	49.7	99	70-130	1g
Dibromomethane	ug/L	50	51.4	103	70-130	
Dichlorodifluoromethane	ug/L	50	47.8	96	70-130	
Diisopropyl ether	ug/L	50	51.4	103	70-130	
Ethylbenzene	ug/L	50	50.6	101	70-130	
Hexachloro-1,3-butadiene	ug/L	50	52.9	106	70-130	
m&p-Xylene	ug/L	100	101	101	70-130	
Methyl-tert-butyl ether	ug/L	50	51.6	103	70-130	
Methylene Chloride	ug/L	50	48.1	96	70-130	
Naphthalene	ug/L	50	50.7	101	70-130	
o-Xylene	ug/L	50	51.8	104	70-130	
p-Isopropyltoluene	ug/L	50	51.0	102	70-130	
Styrene	ug/L	50	52.7	105	70-130	
Tetrachloroethene	ug/L	50	53.9	108	70-130	
Toluene	ug/L	50	47.8	96	70-130	
trans-1,2-Dichloroethene	ug/L	50	49.4	99	70-130	
trans-1,3-Dichloropropene	ug/L	50	53.8	108	70-130	
Trichloroethene	ug/L	50	52.4	105	70-130	
Trichlorofluoromethane	ug/L	50	46.9	94	70-130	
Vinyl acetate	ug/L	100	110	110	70-130	
Vinyl chloride	ug/L	50	48.9	98	70-130	
Xylene (Total)	ug/L	150	153	102	70-130	
1,2-Dichloroethane-d4 (S)	%			98	70-130	
4-Bromofluorobenzene (S)	%			102	70-130	
Toluene-d8 (S)	%			97	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
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QUALITY CONTROL DATA

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2483502 2483503

Parameter	Units	92414727007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	800	800	832	843	104	105	70-130	1	
1,1,1-Trichloroethane	ug/L	ND	800	800	899	886	112	111	70-130	1	
1,1,2,2-Tetrachloroethane	ug/L	ND	800	800	805	818	101	102	70-130	2	
1,1,2-Trichloroethane	ug/L	ND	800	800	823	842	103	105	70-130	2	
1,1-Dichloroethane	ug/L	ND	800	800	874	855	109	107	70-130	2	
1,1-Dichloroethene	ug/L	ND	800	800	918	899	115	112	70-130	2	
1,1-Dichloropropene	ug/L	ND	800	800	848	822	106	103	70-130	3	
1,2,3-Trichlorobenzene	ug/L	ND	800	800	811	833	101	104	70-130	3	
1,2,3-Trichloropropane	ug/L	ND	800	800	773	787	97	98	70-130	2	
1,2,4-Trichlorobenzene	ug/L	ND	800	800	804	842	101	105	70-130	5	
1,2-Dibromo-3-chloropropane	ug/L	ND	800	800	736	764	92	95	70-130	4	
1,2-Dichlorobenzene	ug/L	ND	800	800	800	810	100	101	70-130	1	
1,2-Dichloroethane	ug/L	ND	800	800	798	800	100	100	70-130	0	
1,2-Dichloropropane	ug/L	ND	800	800	810	825	101	103	70-130	2	
1,3-Dichlorobenzene	ug/L	ND	800	800	797	824	100	103	70-130	3	
1,3-Dichloropropane	ug/L	ND	800	800	829	840	104	105	70-130	1	
1,4-Dichlorobenzene	ug/L	ND	800	800	798	807	100	101	70-130	1	
2,2-Dichloropropane	ug/L	ND	800	800	907	886	113	111	70-130	2	
2-Butanone (MEK)	ug/L	ND	1600	1600	1700	1660	106	104	70-130	2	
2-Chlorotoluene	ug/L	ND	800	800	821	837	103	105	70-130	2	
2-Hexanone	ug/L	ND	1600	1600	1590	1590	99	99	70-130	0	
4-Chlorotoluene	ug/L	ND	800	800	820	835	102	104	70-130	2	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1600	1600	1540	1590	96	99	70-130	3	
Acetone	ug/L	ND	1600	1600	1560	1500	98	94	70-130	4	
Benzene	ug/L	ND	800	800	839	855	105	107	70-130	2	
Bromobenzene	ug/L	ND	800	800	798	817	100	102	70-130	2	
Bromochloromethane	ug/L	ND	800	800	897	889	112	111	70-130	1	
Bromodichloromethane	ug/L	ND	800	800	807	841	101	105	70-130	4	
Bromoform	ug/L	ND	800	800	707	747	88	93	70-130	6	
Bromomethane	ug/L	ND	800	800	823	787	103	98	70-130	4	
Carbon tetrachloride	ug/L	ND	800	800	825	829	103	104	70-130	0	
Chlorobenzene	ug/L	ND	800	800	813	840	102	105	70-130	3	
Chloroethane	ug/L	ND	800	800	881	848	110	106	70-130	4	
Chloroform	ug/L	ND	800	800	832	833	101	101	70-130	0	
Chloromethane	ug/L	ND	800	800	775	766	97	96	70-130	1	
cis-1,2-Dichloroethene	ug/L	6080	800	800	6540	6510	57	54	70-130	0	M1
cis-1,3-Dichloropropene	ug/L	ND	800	800	838	855	105	107	70-130	2	
Dibromochloromethane	ug/L	ND	800	800	750	785	94	98	70-130	5	
Dibromomethane	ug/L	ND	800	800	800	836	100	105	70-130	4	
Dichlorodifluoromethane	ug/L	ND	800	800	752	754	94	94	70-130	0	
Diisopropyl ether	ug/L	ND	800	800	815	836	102	104	70-130	3	
Ethylbenzene	ug/L	ND	800	800	827	850	103	106	70-130	3	
Hexachloro-1,3-butadiene	ug/L	ND	800	800	890	905	111	113	70-130	2	
m&p-Xylene	ug/L	ND	1600	1600	1690	1710	105	107	70-130	1	
Methyl-tert-butyl ether	ug/L	ND	800	800	825	837	103	105	70-130	1	
Methylene Chloride	ug/L	ND	800	800	930	910	99	97	70-130	2	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2483502 2483503

Parameter	Units	92414727007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Naphthalene	ug/L	ND	800	800	740	781	92	98	70-130	5	
o-Xylene	ug/L	ND	800	800	848	862	106	108	70-130	2	
p-Isopropyltoluene	ug/L	ND	800	800	844	859	105	107	70-130	2	
Styrene	ug/L	ND	800	800	835	864	104	108	70-130	3	
Tetrachloroethene	ug/L	ND	800	800	867	888	108	111	70-130	2	
Toluene	ug/L	ND	800	800	789	804	99	100	70-130	2	
trans-1,2-Dichloroethene	ug/L	ND	800	800	889	868	111	108	70-130	2	
trans-1,3-Dichloropropene	ug/L	ND	800	800	810	841	101	105	70-130	4	
Trichloroethene	ug/L	ND	800	800	872	864	109	108	70-130	1	
Trichlorofluoromethane	ug/L	ND	800	800	838	853	105	107	70-130	2	
Vinyl acetate	ug/L	ND	1600	1600	1670	1730	105	108	70-130	3	
Vinyl chloride	ug/L	1170	800	800	1980	1930	101	95	70-130	2	
Xylene (Total)	ug/L	ND	2400	2400	2530	2570	106	107	70-130	2	
1,2-Dichloroethane-d4 (S)	%						105	103	70-130		
4-Bromofluorobenzene (S)	%						101	102	70-130		
Toluene-d8 (S)	%						98	98	70-130		

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

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-C	Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

1g	Initial calibration evaluation met acceptance criteria. Compound did not meet additional accuracy assessment for percent error for the following compounds
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 4210 Azalea Dr.-GW-Revised Report
Pace Project No.: 92414727

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92414727001	**MW-9**	EPA 8260B	454080		
92414727002	**MW-16**	EPA 8260B	454080		
92414727003	**MW-10**	EPA 8260B	454605		
92414727004	**MW-19**	EPA 8260B	454605		
92414727005	**MW-4**	EPA 8260B	454605		
92414727006	**MW-11**	EPA 8260B	454820		
92414727007	**MW-18**	EPA 8260B	454820		
92414727008	**MW-17**	EPA 8260B	454820		

Pace Analytical®	Document Name: Sample Condition Upon Receipt(SCUR)	Document Revised: February 7, 2018 Page 1 of 2
	Document No.: F-CAR-CS-033-Rev.06	Issuing Authority: Pace Carolinas Quality Office

Laboratory receiving samples: Asheville ☑ Eden ☐ Greenwood ☐ Huntersville ☐ Raleigh ☐ Mechanicsville ☐

Sample Condition Upon Receipt

Client Name: Peak Hydrogeologic

Project # WO#: 92414727

92414727

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

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

Date/Initials Person Examining Contents: TD 1/21/19

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

Biological Tissue Frozen? ☐ Yes ☐ No ☑ N/A

Thermometer: ☐ IR Gun ID: 931046

Type of Ice: ☑ Wet ☐ Blue ☐ None

Cooler Temp (°C): 4.7 Correction Factor: Add/Subtract (°C) 0

Cooler Temp Corrected (°C): 4.7

Temp should be above freezing to 6°C

☐ Samples out of temp criteria. Samples on ice, cooling process has begun

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

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

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

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☐ Yes	☑ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No	☐ N/A	9.
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☑ No	☐ N/A	10.
Trip Blank Present?	☐ Yes	☑ No	☐ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	

Field Data Required? ☐ Yes ☐ No

COMMENTS/SAMPLE DISCREPANCY

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: Date/Time:

Project Manager SCURF Review: (TR) Date: 1/22

Project Manager SRF Review: (TR) Date: 1/22

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottle

Project # WO#:92414727

PM: PTE Due Date: 01/28/19

CLIENT: 92-Peak Hydr

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1	\				\	\	\	\			\		\	\	\	3									\	\		
2	\				\	\	\	\			\		\	\	\	3									\	\		
3	\				\	\	\	\			\		\	\	\	3									\	\		
4	\				\	\	\	\			\		\	\	\	3									\	\		
5	\				\	\	\	\			\		\	\	\	3									\	\		
6	\				\	\	\	\			\		\	\	\	3									\	\		
7	\				\	\	\	\			\		\	\	\	3									\	\		
8	\				\	\	\	\			\		\	\	\	3									\	\		
9	\				\	\	\	\			\		\	\	\										\	\		
10	\				\	\	\	\			\		\	\	\										\	\		
11	\				\	\	\	\			\		\	\	\										\	\		
12	\				\	\	\	\			\		\	\	\										\	\		

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

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

Pace Analytical®
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

2184452

Section A Required Client Information:

Company: Peak Hydrogeologic PLLC
Address: 470 Hogback Mtn Rd
Tryon NC 28782
Email To: jgerst@peakhydrogeologic.com
Phone: 828 817 5209 Fax:
Requested Due Date/TAT: std.

Section B Required Project Information:

Report To:
Copy To:
Purchase Order No.:
Project Name: 4210 Azalea Dr. - GW
Project Number: 1857-18

Section C Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

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

Site Location STATE: SC

Section D Required Client Information

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

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

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N: VOC 8260	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-9	WT				1/20/19	800		3				✓					✓		001
2	MW-16	"				"	816		"				✓					✓		002
3	MW-10	"				"	841		"				✓					✓		003
4	MW-19	"				"	855		"				✓					✓		004
5	MW-4	"				"	912		"				✓					✓		005
6	MW-11	"				"	927		"				✓					✓		006
7	MW-18	"				"	956		"				✓					✓		007
8	MW-17	"				"	1013		"				✓					✓		008
9																				
10																				
11																				
12																				

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	JDG / Peak HG	1/21/19	1125	[signature]	1-21-19	1125				
	[signature]	1-21-19	1225	[signature]	1/21/19	1225	4.7	Y	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Jonathan D Gerst
SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 1/20/19

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

Appendix F. Indoor Air Sampling Results (General Engineering Laboratories)

GEL Engineering LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.769.7378 F 843.769.7397

www.gel.com

Memorandum

April 30, 2019

To: Mr. D. Maybank Hagood
William M. Bird & Company, Inc.

From: Tom Putney, P.G.
Tom Hutto, P.G.

Re: Indoor Air Quality Sampling Results
Office Building - 4210 Azalea Drive
North Charleston, South Carolina

This memorandum summarizes the indoor air quality (IAQ) assessment that William M. Bird & Company, Inc. (Bird) requested that GEL Engineering, LLC (GEL) conduct to evaluate potential soil vapor intrusion at the Bird office building located at 4210 Azalea Drive in North Charleston, South Carolina. Bird voluntarily undertook this assessment.

SAMPLE COLLECTION

On February 17, 2019, four IAQ samples were collected from the interior of the building and an ambient exterior (outdoor) air sample was collected adjacent to the building. Additionally, a duplicate of one of the interior air samples was collected for quality control. Sample locations are shown on the Figure 1. Prior to sampling, GEL CIH Ron Sharpe visited the building to select sample locations and inspect for materials (discussed below) which could potentially contribute target chemicals to indoor air.

Air sampling was performed using certified clean Summa canisters and regulators. Summa canisters for IAQ sampling were placed at the breathing zone level of the building to simulate building occupant exposure. Windows and doors remained closed throughout the air sampling to the degree feasible. Furthermore, the Heating, Ventilation, and Air-Conditioning (HVAC) systems were operated in normal occupancy mode to simulate typical office conditions. Due to the inability of IAQ sampling to differentiate between: 1) vapors, mists, and/or gases from household and industrial products (e.g., cleaners, perfumes, detergents, food, cosmetics, etc.) that may be present and/or in use inside a building; 2) ambient air entering from the exterior of the building; and/or 3) vapors coming from the underlying soil, the following efforts were made to limit the potential for false positives:

- Only the chemicals (listed below) previously detected in groundwater were analyzed.
- The building was inspected on February 5, 2019, prior to sampling, to document the presence of household and industrial products which may contribute volatile organic compounds (VOCs) to indoor air. Containers of paints, fuel, and adhesive observed during the building walk-through were removed from the building at least a week prior to sampling. Pesticide application, carpet cleaning, and other chemical cleaning activities inside the building were not conducted during the week preceding sample collection.

- An Exterior Ambient Control/Reference (EAC) sample was collected from an outdoor location near the building's entrance throughout the duration of the IAQ sampling to allow comparison of IAQ results to ambient outdoor air.

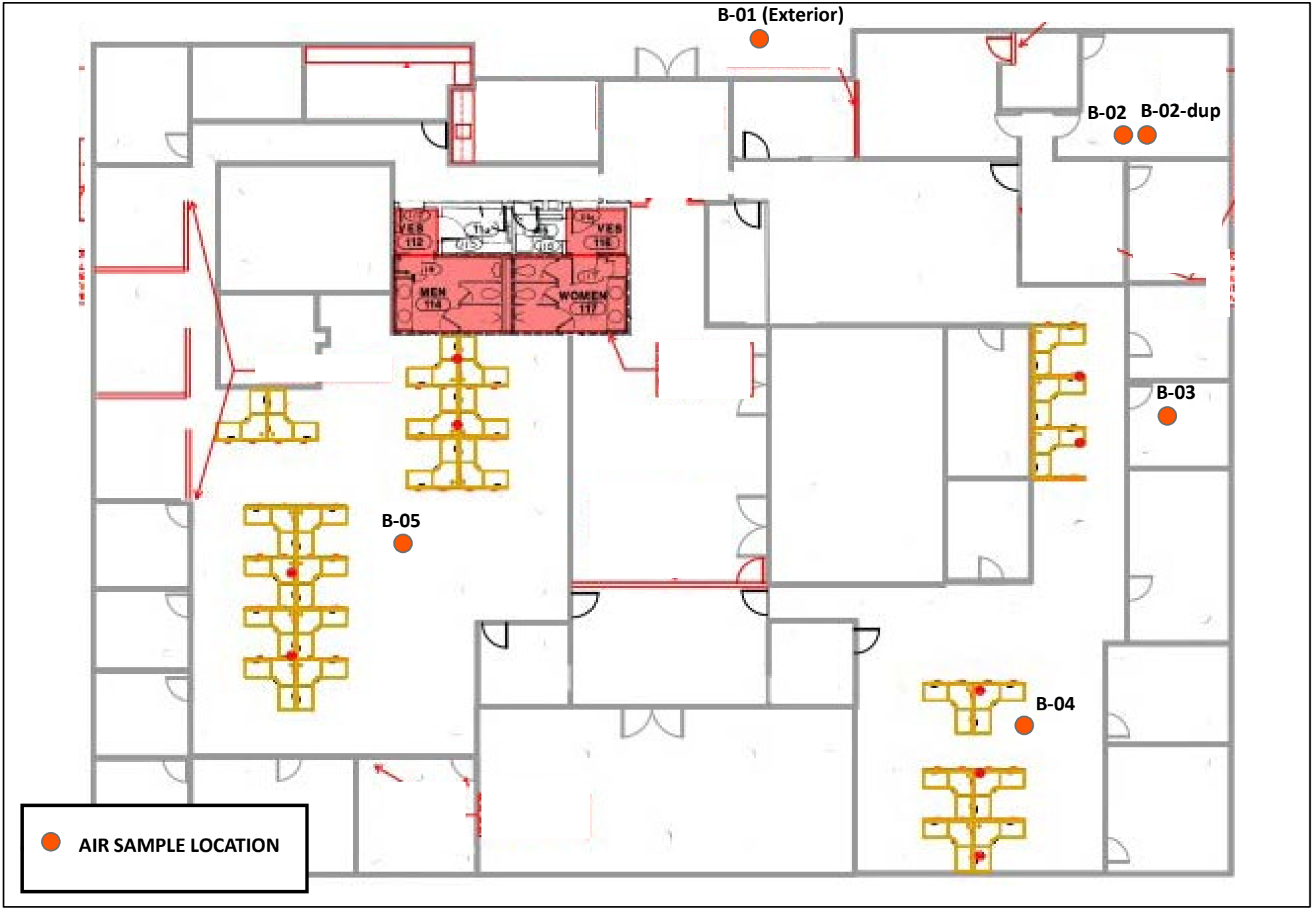
The regulator valves on the cannisters were pre-set to allow inflow of ambient air from the sampled areas into the 6-liter summa canister for up to an 8-hour period (sample collection time). After air sampling was complete, regulators were removed, and the Summa canisters were capped and shipped to Eurofins/Air Toxics Laboratories. Air samples were analyzed by modified EPA Method TO-15-Low Level for the following parameters, which have been detected in groundwater at the site: tetrachloroethylene (PCE), trichloroethylene, cis-1,2-dichloroethylene (cis-1,2-DCE), trans-1,2-dichloroethylene, vinyl chloride (VC), 1,1-dichloroethane, 1,2-dichlorethane (1,2-DCA), 1,1-dichloroethylene, chlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene (1,4-DCB), 1,2,4-trimethylbenzene (1,2,4-TMB), 1,3,5-trimethylbenzene, benzene, toluene, ethylbenzene, and xylenes.

ANALYTICAL RESULTS

Results from TO-15 Low Level analysis are summarized in Table 1. Table 1 compares interior and exterior air sample results to EPA Regional Screening Levels (RSLs) for industrial indoor air (November 2018 Summary Tables – THQ = 1.0) and Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PELs). Laboratory certificates of analysis and chain of custody documentation are attached.

The VOCs 1,2,4-TMB, 1,2-DCA, 1,4-DCB, benzene, cis-1,2-DCE, ethylbenzene, m,p-xylenes, PCE, toluene, and VC were detected in one or more of the interior air samples. Of the detected compounds only PCE concentrations exceed the EPA RSL for industrial indoor air (47 ug/m^3). PCE detected in three of the four interior samples and the duplicate of sample B-02 exceed the RSL, with concentrations ranging from 48 to 62 ug/m^3. Although the RSL is exceeded, the detected concentrations are orders of magnitude lower than OSHA PELs.

Benzene, m,p-xylenes, and toluene were detected in the exterior air sample at estimated concentrations less than the method reporting limits.



GEL Engineering, LLC
a Member of THE GEL GROUP, INC.
P.O. BOX 30712 CHARLESTON, SC 29417
2040 SAVAGE ROAD 29407
(843) 769-7378 FAX (843) 769-7397
WWW.GEL.COM
ENGINEERING ENVIRONMENTAL ANALYTICAL

INDOOR AIR SAMPLING RESULTS
WILLIAM M BIRD & COMPANY, INC.
4210 AZALEA DRIVE
NORTH CHARLESTON, SOUTH CAROLINA

AIR SAMPLING LOCATIONS

PROJECT: bird00118 | DATE: April 24, 2019 | FIGURE 1

Table 1
Summary of Indoor Air Quality Sampling Results
William Bird Company
4210 Azalea Drive
North Charleston, South Carolina

Constituent	Industrial RSL for Indoor Air	OSHA PEL	Units	Ambient Exterior Air		Indoor Air									
				B-01		B-02		B-02-Dup		B-03		B-04		B-05	
				Sample Date	2/17/2019	Sample Date	2/17/2019	Sample Date	2/17/2019	Sample Date	2/17/2019	Sample Date	2/17/2019	Sample Date	2/17/2019
				Dilution:	1.49	Dilution:	1.54	Dilution:	1.61	Dilution:	1.3	Dilution:	1.59	Dilution:	1.63
				Lab Result	Qual.	Lab Result	Qual.	Lab Result	Qual.	Lab Result	Qual.	Lab Result	Qual.	Lab Result	Qual.
1,1-Dichloroethane	7.7	405,000	µg/m3		ND		ND		ND		ND		ND		ND
1,1-Dichloroethene	880	20,000 [a,b]	µg/m3		ND		ND		ND		ND		ND		ND
1,2,4-Trimethylbenzene	260	123,000 [a,b,c]	µg/m3		ND	**0.19**	J	**0.22**	J	**0.20**	J	**0.32**	J	**0.21**	J
1,2-Dichlorobenzene	880	60,000 [d]	µg/m3		ND		ND		ND		ND		ND		ND
1,2-Dichloroethane	0.470	200,000	µg/m3		ND	**0.12**	J	**0.12**	J	**0.12**	J	**0.14**	J	**0.16**	J
1,3,5-Trimethylbenzene	260	123,000 [a,b,c]	µg/m3		ND		ND		ND		ND		ND		ND
1,3-Dichlorobenzene	NE	12,000 [e,f]	µg/m3		ND		ND		ND		ND		ND		ND
1,4-Dichlorobenzene	1.1	450,000	µg/m3		ND	**0.20**	J	**0.23**	J	**0.14**	J	**0.15**	J	**0.18**	J
Benzene	1.6	3,000	µg/m3	**0.41**	J	**0.42**	J	**0.64**		**0.41**	J	**0.43**	J	**0.38**	J
Chlorobenzene	220	350,000	µg/m3		ND		ND		ND		ND		ND		ND
Cis-1,2-Dichloroethene	NE	790,000 [c]	µg/m3		ND	**0.42**	J	**0.79**			ND		ND		ND
Ethyl Benzene	4.9	435,000	µg/m3		ND	**0.20**	J	**0.27**	J	**0.20**	J	**0.24**	J	**0.22**	J
m,p-Xylene	NE	435,000 [c]	µg/m3	**0.19**	J	**0.70**		**1.00**		**0.61**		**0.78**		**0.70**	J
o-Xylene	440	435,000 [c]	µg/m3		ND	**0.24**	J	**0.29**	J	**0.23**	J	**0.31**	J	**0.25**	J
Tetrachloroethene	47	680,000	µg/m3		ND	**48**		**54**		**44**		**50**		**62**	
Toluene	22000	750,000	µg/m3	**0.36**	J	**3.20**		**3.30**		**3.00**		**3.40**		**4.40**	
Trans-1,2-Dichloroethene	NE	790,000 [c]	µg/m3		ND		ND		ND		ND		ND		ND
Trichloroethene	3	540,000	µg/m3		ND		ND		ND		ND		ND		ND
Vinyl Chloride	2.8	2,600	µg/m3		ND	**0.14**	J	**0.16**	J		ND		ND		ND

Notes:
1 - µg/m^3 = micrograms per cubic meter
2 - Sample B-02-DUP is a field duplicate sample of B-02.
3 - Detected concentrations are in **bold** text
4 - Data qualifier "J" indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
5 - Data qualifier "ND" indicates the analyte was analyzed for, but was not detected above the reported sample quantitation limit.
6 - Industrial RSL for indoor air is United States EPA Regional Screening Level for industrial indoor air from November 2018 Summary Tables.
7 - Yellow highlighting indicates concentration exceeds industrial RSL for indoor air.
8 - OSHA PEL = Occupational Safety & Health Administration Permissible Exposure Limit
9 - NE = Not Established
10 - ND = None Detected

Footnotes:
a - No published OSHA PEL currently exists
b - American Conference of Governmental Industrial Hygienists' Threshold Limit Value (ACGIH TLV)
c - All isomers
d - Extrapolated form the OSHA published ceiling limit of 300,000
e - No published OSHA PEL, ACGIH TLV, or National Institute for Occupational Safety & health Administration Recommended Expsoure Limit (NIOSH REL)
f - German Research Foundation Maximum Allowable Concentration (DFG MAK)

eurofins | Air Toxics

3/4/2019
Mr. Tom Putney
General Engineering Laboratories (GEL)
2040 Savage Road

Charleston SC 29407

Project Name: Bird IAQ
Project #: Bird00118
Workorder #: 1902388

Dear Mr. Tom Putney

The following report includes the data for the above referenced project for sample(s) received on 2/19/2019 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Brian Whittaker at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Brian Whittaker

Project Manager

eurofins | Air Toxics

WORK ORDER #: 1902388

Work Order Summary

CLIENT:	Mr. Tom Putney General Engineering Laboratories (GEL) 2040 Savage Road Charleston, SC 29407	**BILL TO:**	Mr. Tom Putney General Engineering Laboratories (GEL) 2040 Savage Road Charleston, SC 29407
PHONE:	843-769-7378 x4270	**P.O. #**	
FAX:	843-766-1178	**PROJECT #**	Bird00118 Bird IAQ
DATE RECEIVED:	02/19/2019	**CONTACT:**	Brian Whittaker
DATE COMPLETED:	03/04/2019		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	B-01	Modified TO-15	3.1 "Hg	5 psi
02A	B-02	Modified TO-15	4.5 "Hg	4.6 psi
03A	B-02-Dup	Modified TO-15	5.1 "Hg	4.9 psi
04A	B-03	Modified TO-15	0.5 psi	5 psi
05A	B-04	Modified TO-15	4.7 "Hg	5 psi
06A	B-05	Modified TO-15	5.5 "Hg	4.9 psi
07A	Lab Blank	Modified TO-15	NA	NA
08A	CCV	Modified TO-15	NA	NA
09A	LCS	Modified TO-15	NA	NA
09AA	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 03/04/19

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

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LABORATORY NARRATIVE
Modified TO-15
General Engineering Laboratories (GEL)
Workorder# 1902388

Six 6 Liter Summa Canister (100% Cert Ambient) samples were received on February 19, 2019. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-15***	***ATL Modifications***
Initial Calibration	</=30% RSD with 2 compounds allowed out to < 40% RSD	</=30% RSD with 4 compounds allowed out to < 40% RSD
Blank and standards	Zero Air	UHP Nitrogen provides a higher purity gas matrix than zero air

Receiving Notes

Despite the use of flow controllers for sample collection, the final canister vacuum for sample B-03 was measured at ambient pressure at the laboratory. A leak test indicated that the canister valve was functioning properly.

A revised Chain of Custody (COC) was provided by the client on 02/26/2019.

Analytical Notes

As per project specific client request the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit. All The canisters used for this project have been certified to the Reporting Limit for the target analytes included in this workorder. Concentrations that are below the level at which the canister was certified may be false positives.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Bird IAQ

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Client ID:	B-01		
Lab ID:	1902388-01A	**Date/Time Analyzed:**	2/23/19 06:19 PM
Date/Time Collected:	2/17/19 04:55 PM	**Dilution Factor:**	1.49
Media:	6 Liter Summa Canister (100% Cert Ambier	**Instrument/Filename:**	msd21.i / 21022318

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethane	75-34-3	0.033	0.30	0.60	Not Detected
1,1-Dichloroethene	75-35-4	0.071	0.30	0.59	Not Detected
1,2,4-Trimethylbenzene	95-63-6	0.16	0.37	0.73	Not Detected
1,2-Dichlorobenzene	95-50-1	0.092	0.45	0.90	Not Detected
1,2-Dichloroethane	107-06-2	0.090	0.30	0.60	Not Detected
1,3,5-Trimethylbenzene	108-67-8	0.11	0.37	0.73	Not Detected
1,3-Dichlorobenzene	541-73-1	0.12	0.45	0.90	Not Detected
1,4-Dichlorobenzene	106-46-7	0.12	0.45	0.90	Not Detected
Benzene	71-43-2	0.13	0.24	0.48	0.41 J
Chlorobenzene	108-90-7	0.054	0.34	0.68	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.066	0.30	0.59	Not Detected
Ethyl Benzene	100-41-4	0.12	0.32	0.65	Not Detected
m,p-Xylene	108-38-3	0.090	0.32	0.65	0.19 J
o-Xylene	95-47-6	0.088	0.32	0.65	Not Detected
Tetrachloroethene	127-18-4	0.071	0.50	1.0	Not Detected
Toluene	108-88-3	0.038	0.28	0.56	0.36 J
trans-1,2-Dichloroethene	156-60-5	0.046	0.30	0.59	Not Detected
Trichloroethene	79-01-6	0.11	0.40	0.80	Not Detected
Vinyl Chloride	75-01-4	0.030	0.19	0.38	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	122

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Bird IAQ

Client ID:	B-01		
Lab ID:	1902388-01A	**Date/Time Analyzed:**	2/23/19 06:19 PM
Date/Time Collected:	2/17/19 04:55 PM	**Dilution Factor:**	1.49
Media:	6 Liter Summa Canister (100% Cert Ambier	**Instrument/Filename:**	msd21.i / 21022318

Surrogates	CAS#	Limits	%Recovery
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	98

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Bird IAQ

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Client ID:	B-02		
Lab ID:	1902388-02A	**Date/Time Analyzed:**	2/23/19 06:54 PM
Date/Time Collected:	2/17/19 05:05 PM	**Dilution Factor:**	1.54
Media:	6 Liter Summa Canister (100% Cert Ambier	**Instrument/Filename:**	msd21.i / 21022319

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethane	75-34-3	0.034	0.31	0.62	Not Detected
1,1-Dichloroethene	75-35-4	0.073	0.30	0.61	Not Detected
1,2,4-Trimethylbenzene	95-63-6	0.16	0.38	0.76	0.19 J
1,2-Dichlorobenzene	95-50-1	0.095	0.46	0.92	Not Detected
1,2-Dichloroethane	107-06-2	0.093	0.31	0.62	0.12 J
1,3,5-Trimethylbenzene	108-67-8	0.12	0.38	0.76	Not Detected
1,3-Dichlorobenzene	541-73-1	0.12	0.46	0.92	Not Detected
1,4-Dichlorobenzene	106-46-7	0.12	0.46	0.92	0.20 J
Benzene	71-43-2	0.14	0.24	0.49	0.42 J
Chlorobenzene	108-90-7	0.056	0.35	0.71	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.068	0.30	0.61	0.42 J
Ethyl Benzene	100-41-4	0.12	0.33	0.67	0.20 J
m,p-Xylene	108-38-3	0.094	0.33	0.67	0.70
o-Xylene	95-47-6	0.091	0.33	0.67	0.24 J
Tetrachloroethene	127-18-4	0.074	0.52	1.0	48
Toluene	108-88-3	0.040	0.29	0.58	3.2
trans-1,2-Dichloroethene	156-60-5	0.048	0.30	0.61	Not Detected
Trichloroethene	79-01-6	0.11	0.41	0.83	Not Detected
Vinyl Chloride	75-01-4	0.031	0.20	0.39	0.14 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	115

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Bird IAQ

Client ID:	B-02		
Lab ID:	1902388-02A	**Date/Time Analyzed:**	2/23/19 06:54 PM
Date/Time Collected:	2/17/19 05:05 PM	**Dilution Factor:**	1.54
Media:	6 Liter Summa Canister (100% Cert Ambier	**Instrument/Filename:**	msd21.i / 21022319

Surrogates	CAS#	Limits	%Recovery
4-Bromofluorobenzene	460-00-4	70-130	101
Toluene-d8	2037-26-5	70-130	96

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Bird IAQ

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Client ID:	B-02-Dup		
Lab ID:	1902388-03A	**Date/Time Analyzed:**	2/23/19 08:04 PM
Date/Time Collected:	2/17/19 05:07 PM	**Dilution Factor:**	1.61
Media:	6 Liter Summa Canister (100% Cert Ambier	**Instrument/Filename:**	msd21.i / 21022321

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethane	75-34-3	0.036	0.32	0.65	Not Detected
1,1-Dichloroethene	75-35-4	0.076	0.32	0.64	Not Detected
1,2,4-Trimethylbenzene	95-63-6	0.17	0.40	0.79	0.22 J
1,2-Dichlorobenzene	95-50-1	0.099	0.48	0.97	Not Detected
1,2-Dichloroethane	107-06-2	0.097	0.32	0.65	0.12 J
1,3,5-Trimethylbenzene	108-67-8	0.12	0.40	0.79	Not Detected
1,3-Dichlorobenzene	541-73-1	0.12	0.48	0.97	Not Detected
1,4-Dichlorobenzene	106-46-7	0.12	0.48	0.97	0.23 J
Benzene	71-43-2	0.14	0.26	0.51	0.64
Chlorobenzene	108-90-7	0.058	0.37	0.74	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.071	0.32	0.64	0.79
Ethyl Benzene	100-41-4	0.12	0.35	0.70	0.27 J
m,p-Xylene	108-38-3	0.098	0.35	0.70	1.0
o-Xylene	95-47-6	0.095	0.35	0.70	0.29 J
Tetrachloroethene	127-18-4	0.077	0.55	1.1	54
Toluene	108-88-3	0.041	0.30	0.61	3.3
trans-1,2-Dichloroethene	156-60-5	0.050	0.32	0.64	Not Detected
Trichloroethene	79-01-6	0.12	0.43	0.86	Not Detected
Vinyl Chloride	75-01-4	0.032	0.20	0.41	0.16 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	117

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Bird IAQ

Client ID:	B-02-Dup		
Lab ID:	1902388-03A	**Date/Time Analyzed:**	2/23/19 08:04 PM
Date/Time Collected:	2/17/19 05:07 PM	**Dilution Factor:**	1.61
Media:	6 Liter Summa Canister (100% Cert Ambier	**Instrument/Filename:**	msd21.i / 21022321

Surrogates	CAS#	Limits	%Recovery
4-Bromofluorobenzene	460-00-4	70-130	100
Toluene-d8	2037-26-5	70-130	100

Client ID:	B-03		
Lab ID:	1902388-04A	**Date/Time Analyzed:**	2/23/19 10:04 PM
Date/Time Collected:	2/17/19 05:15 PM	**Dilution Factor:**	1.30
Media:	6 Liter Summa Canister (100% Cert Ambier	**Instrument/Filename:**	msd21.i / 21022324

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethane	75-34-3	0.029	0.26	0.53	Not Detected
1,1-Dichloroethene	75-35-4	0.062	0.26	0.52	Not Detected
1,2,4-Trimethylbenzene	95-63-6	0.14	0.32	0.64	0.20 J
1,2-Dichlorobenzene	95-50-1	0.080	0.39	0.78	Not Detected
1,2-Dichloroethane	107-06-2	0.079	0.26	0.53	0.12 J
1,3,5-Trimethylbenzene	108-67-8	0.10	0.32	0.64	Not Detected
1,3-Dichlorobenzene	541-73-1	0.10	0.39	0.78	Not Detected
1,4-Dichlorobenzene	106-46-7	0.10	0.39	0.78	0.14 J
Benzene	71-43-2	0.12	0.21	0.42	0.41 J
Chlorobenzene	108-90-7	0.047	0.30	0.60	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.057	0.26	0.52	Not Detected
Ethyl Benzene	100-41-4	0.10	0.28	0.56	0.20 J
m,p-Xylene	108-38-3	0.079	0.28	0.56	0.61
o-Xylene	95-47-6	0.077	0.28	0.56	0.23 J
Tetrachloroethene	127-18-4	0.062	0.44	0.88	44
Toluene	108-88-3	0.033	0.24	0.49	3.0
trans-1,2-Dichloroethene	156-60-5	0.040	0.26	0.52	Not Detected
Trichloroethene	79-01-6	0.096	0.35	0.70	Not Detected
Vinyl Chloride	75-01-4	0.026	0.17	0.33	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	118

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Bird IAQ

Client ID:	B-03		
Lab ID:	1902388-04A	**Date/Time Analyzed:**	2/23/19 10:04 PM
Date/Time Collected:	2/17/19 05:15 PM	**Dilution Factor:**	1.30
Media:	6 Liter Summa Canister (100% Cert Ambier	**Instrument/Filename:**	msd21.i / 21022324

Surrogates	CAS#	Limits	%Recovery
4-Bromofluorobenzene	460-00-4	70-130	97
Toluene-d8	2037-26-5	70-130	100

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Bird IAQ

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Client ID:	B-04		
Lab ID:	1902388-05A	**Date/Time Analyzed:**	2/23/19 08:43 PM
Date/Time Collected:	2/17/19 05:20 PM	**Dilution Factor:**	1.59
Media:	6 Liter Summa Canister (100% Cert Ambier	**Instrument/Filename:**	msd21.i / 21022322

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethane	75-34-3	0.036	0.32	0.64	Not Detected
1,1-Dichloroethene	75-35-4	0.075	0.32	0.63	Not Detected
1,2,4-Trimethylbenzene	95-63-6	0.17	0.39	0.78	0.32 J
1,2-Dichlorobenzene	95-50-1	0.098	0.48	0.96	Not Detected
1,2-Dichloroethane	107-06-2	0.096	0.32	0.64	0.14 J
1,3,5-Trimethylbenzene	108-67-8	0.12	0.39	0.78	Not Detected
1,3-Dichlorobenzene	541-73-1	0.12	0.48	0.96	Not Detected
1,4-Dichlorobenzene	106-46-7	0.12	0.48	0.96	0.15 J
Benzene	71-43-2	0.14	0.25	0.51	0.43 J
Chlorobenzene	108-90-7	0.058	0.36	0.73	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.070	0.32	0.63	Not Detected
Ethyl Benzene	100-41-4	0.12	0.34	0.69	0.24 J
m,p-Xylene	108-38-3	0.096	0.34	0.69	0.78
o-Xylene	95-47-6	0.094	0.34	0.69	0.31 J
Tetrachloroethene	127-18-4	0.076	0.54	1.1	50
Toluene	108-88-3	0.041	0.30	0.60	3.4
trans-1,2-Dichloroethene	156-60-5	0.049	0.32	0.63	Not Detected
Trichloroethene	79-01-6	0.12	0.43	0.85	Not Detected
Vinyl Chloride	75-01-4	0.032	0.20	0.41	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	120

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Bird IAQ

Client ID:	B-04		
Lab ID:	1902388-05A	**Date/Time Analyzed:**	2/23/19 08:43 PM
Date/Time Collected:	2/17/19 05:20 PM	**Dilution Factor:**	1.59
Media:	6 Liter Summa Canister (100% Cert Ambier	**Instrument/Filename:**	msd21.i / 21022322

Surrogates	CAS#	Limits	%Recovery
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	102

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Bird IAQ

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Client ID:	B-05		
Lab ID:	1902388-06A	**Date/Time Analyzed:**	2/23/19 09:24 PM
Date/Time Collected:	2/17/19 05:25 PM	**Dilution Factor:**	1.63
Media:	6 Liter Summa Canister (100% Cert Ambier	**Instrument/Filename:**	msd21.i / 21022323

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethane	75-34-3	0.036	0.33	0.66	Not Detected
1,1-Dichloroethene	75-35-4	0.077	0.32	0.65	Not Detected
1,2,4-Trimethylbenzene	95-63-6	0.18	0.40	0.80	0.21 J
1,2-Dichlorobenzene	95-50-1	0.10	0.49	0.98	Not Detected
1,2-Dichloroethane	107-06-2	0.099	0.33	0.66	0.16 J
1,3,5-Trimethylbenzene	108-67-8	0.12	0.40	0.80	Not Detected
1,3-Dichlorobenzene	541-73-1	0.13	0.49	0.98	Not Detected
1,4-Dichlorobenzene	106-46-7	0.12	0.49	0.98	0.18 J
Benzene	71-43-2	0.15	0.26	0.52	0.38 J
Chlorobenzene	108-90-7	0.059	0.38	0.75	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.072	0.32	0.65	Not Detected
Ethyl Benzene	100-41-4	0.12	0.35	0.71	0.22 J
m,p-Xylene	108-38-3	0.099	0.35	0.71	0.70 J
o-Xylene	95-47-6	0.097	0.35	0.71	0.25 J
Tetrachloroethene	127-18-4	0.078	0.55	1.1	62
Toluene	108-88-3	0.042	0.31	0.61	4.4
trans-1,2-Dichloroethene	156-60-5	0.050	0.32	0.65	Not Detected
Trichloroethene	79-01-6	0.12	0.44	0.88	Not Detected
Vinyl Chloride	75-01-4	0.033	0.21	0.42	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	116

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Bird IAQ

Client ID:	B-05		
Lab ID:	1902388-06A	**Date/Time Analyzed:**	2/23/19 09:24 PM
Date/Time Collected:	2/17/19 05:25 PM	**Dilution Factor:**	1.63
Media:	6 Liter Summa Canister (100% Cert Ambier	**Instrument/Filename:**	msd21.i / 21022323

Surrogates	CAS#	Limits	%Recovery
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	98

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Bird IAQ

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Client ID:	Lab Blank		
Lab ID:	1902388-07A	**Date/Time Analyzed:**	2/23/19 10:36 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd21.i / 21022306c

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethane	75-34-3	0.022	0.20	0.40	Not Detected
1,1-Dichloroethene	75-35-4	0.047	0.20	0.40	Not Detected
1,2,4-Trimethylbenzene	95-63-6	0.11	0.24	0.49	Not Detected
1,2-Dichlorobenzene	95-50-1	0.062	0.30	0.60	Not Detected
1,2-Dichloroethane	107-06-2	0.060	0.20	0.40	Not Detected
1,3,5-Trimethylbenzene	108-67-8	0.077	0.24	0.49	Not Detected
1,3-Dichlorobenzene	541-73-1	0.078	0.30	0.60	Not Detected
1,4-Dichlorobenzene	106-46-7	0.077	0.30	0.60	Not Detected
Benzene	71-43-2	0.090	0.16	0.32	Not Detected
Chlorobenzene	108-90-7	0.036	0.23	0.46	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.044	0.20	0.40	Not Detected
Ethyl Benzene	100-41-4	0.077	0.22	0.43	Not Detected
m,p-Xylene	108-38-3	0.061	0.22	0.43	Not Detected
o-Xylene	95-47-6	0.059	0.22	0.43	Not Detected
Tetrachloroethene	127-18-4	0.048	0.34	0.68	Not Detected
Toluene	108-88-3	0.026	0.19	0.38	Not Detected
trans-1,2-Dichloroethene	156-60-5	0.031	0.20	0.40	Not Detected
Trichloroethene	79-01-6	0.074	0.27	0.54	Not Detected
Vinyl Chloride	75-01-4	0.020	0.13	0.26	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	105

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Bird IAQ

Client ID:	Lab Blank		
Lab ID:	1902388-07A	**Date/Time Analyzed:**	2/23/19 10:36 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd21.i / 21022306c

Surrogates	CAS#	Limits	%Recovery
4-Bromofluorobenzene	460-00-4	70-130	101
Toluene-d8	2037-26-5	70-130	100

Client ID:	CCV		
Lab ID:	1902388-08A	**Date/Time Analyzed:**	2/23/19 08:14 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd21.i / 21022302

Compound	CAS#	%Recovery
1,1-Dichloroethane	75-34-3	102
1,1-Dichloroethene	75-35-4	100
1,2,4-Trimethylbenzene	95-63-6	116
1,2-Dichlorobenzene	95-50-1	84
1,2-Dichloroethane	107-06-2	98
1,3,5-Trimethylbenzene	108-67-8	110
1,3-Dichlorobenzene	541-73-1	84
1,4-Dichlorobenzene	106-46-7	79
Benzene	71-43-2	100
Chlorobenzene	108-90-7	97
cis-1,2-Dichloroethene	156-59-2	105
Ethyl Benzene	100-41-4	108
m,p-Xylene	108-38-3	106
o-Xylene	95-47-6	103
Tetrachloroethene	127-18-4	92
Toluene	108-88-3	102
trans-1,2-Dichloroethene	156-60-5	103
Trichloroethene	79-01-6	98
Vinyl Chloride	75-01-4	101

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	101

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Bird IAQ

Client ID:	CCV		
Lab ID:	1902388-08A	**Date/Time Analyzed:**	2/23/19 08:14 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd21.i / 21022302

Surrogates	CAS#	Limits	%Recovery
4-Bromofluorobenzene	460-00-4	70-130	110
Toluene-d8	2037-26-5	70-130	101

Client ID:	LCS		
Lab ID:	1902388-09A	**Date/Time Analyzed:**	2/23/19 08:49 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd21.i / 21022303

Compound	CAS#	%Recovery
1,1-Dichloroethane	75-34-3	103
1,1-Dichloroethene	75-35-4	104
1,2,4-Trimethylbenzene	95-63-6	111
1,2-Dichlorobenzene	95-50-1	85
1,2-Dichloroethane	107-06-2	96
1,3,5-Trimethylbenzene	108-67-8	109
1,3-Dichlorobenzene	541-73-1	86
1,4-Dichlorobenzene	106-46-7	84
Benzene	71-43-2	98
Chlorobenzene	108-90-7	93
cis-1,2-Dichloroethene	156-59-2	117
Ethyl Benzene	100-41-4	100
m,p-Xylene	108-38-3	106
o-Xylene	95-47-6	106
Tetrachloroethene	127-18-4	90
Toluene	108-88-3	99
trans-1,2-Dichloroethene	156-60-5	90
Trichloroethene	79-01-6	97
Vinyl Chloride	75-01-4	106

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	100

* % Recovery is calculated using unrounded analytical results.

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Bird IAQ

Client ID:	LCS		
Lab ID:	1902388-09A	**Date/Time Analyzed:**	2/23/19 08:49 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd21.i / 21022303

Surrogates	CAS#	Limits	%Recovery
4-Bromofluorobenzene	460-00-4	70-130	106
Toluene-d8	2037-26-5	70-130	102

* % Recovery is calculated using unrounded analytical results.

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Bird IAQ

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Client ID:	LCSD		
Lab ID:	1902388-09AA	**Date/Time Analyzed:**	2/23/19 09:24 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd21.i / 21022304

Compound	CAS#	%Recovery
1,1-Dichloroethane	75-34-3	101
1,1-Dichloroethene	75-35-4	102
1,2,4-Trimethylbenzene	95-63-6	117
1,2-Dichlorobenzene	95-50-1	83
1,2-Dichloroethane	107-06-2	95
1,3,5-Trimethylbenzene	108-67-8	112
1,3-Dichlorobenzene	541-73-1	81
1,4-Dichlorobenzene	106-46-7	80
Benzene	71-43-2	98
Chlorobenzene	108-90-7	96
cis-1,2-Dichloroethene	156-59-2	113
Ethyl Benzene	100-41-4	104
m,p-Xylene	108-38-3	104
o-Xylene	95-47-6	108
Tetrachloroethene	127-18-4	95
Toluene	108-88-3	100
trans-1,2-Dichloroethene	156-60-5	88
Trichloroethene	79-01-6	95
Vinyl Chloride	75-01-4	104

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	98

* % Recovery is calculated using unrounded analytical results.

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN
Bird IAQ

Client ID:	LCSD		
Lab ID:	1902388-09AA	**Date/Time Analyzed:**	2/23/19 09:24 AM
Date/Time Collected:	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd21.i / 21022304

Surrogates	CAS#	Limits	%Recovery
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	100

* % Recovery is calculated using unrounded analytical results.

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Analysis Request /Canister Chain of Custody

180 Blue Ravine Rd. Suite B, Folsom, CA 95630
Phone (800) 985-5955, Fax (916) 351-8279

For Laboratory Use Only
PO: ______ Workorder #: 1902388

page __ of __

Client:	GEL Engineering
Project Name:	Bird IAQ
Project Manager:	Thomas Brinney — Project #: Bird0019
Sampler:	Derek Anderson
Site Name:	William M. Bird
Special Instructions/Notes:	
Turnaround Time (Rush surcharges may apply):	Standard ✓ Rush ______ (specify)

Lab ID	Field Sample Identification(Location)	Can #	Flow Controller #	Start Sampling Information Date	Start Sampling Information Time	Stop Sampling Information Date	Stop Sampling Information Time	Canister Vacuum/Pressure Initial (in Hg)	Canister Vacuum/Pressure Final (in Hg)	Lab Use Only Receipt	Lab Use Only Final (psig) Gas: N_2 / He	Requested Analyses TO-15-LL	Requested Analyses Reporting List attached		
01A	B-01	61791	23401	2/17/19	0855	2/17/19	1655	28	4.5			X			
02A	B-02	61110	23724	2/17/19	0905	2/17/19	1705	26.5	3			X			
03A	B-02-Dup	61947	25185	2/17/19	0907	2/17/19	1707	28.5	5			X			
04A	B-03	60381	23700	2/17/19	0915	2/17/19	1715	30	2			X			
05A	B-04	60492	23444	2/17/19	0920	2/17/19	1720	27	4			X			
06A	B-05	60193	23460	2/17/19	0925	2/17/19	1725	26.5	5.5			X			

Relinquished by: (Signature/Affiliation) [signature] GEL Engineering	Date 2/18/19	Time 1200	Received by: (Signature/Affiliation) [signature]	Date 2/19/19	Time 1026
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time

Shipper Name: [signature] | Custody Seals Intact? Yes No None

Sample Transportation Notice: Relinquishing signature on this document indicates that samples are shipped in compliance with all applicable local, State, Federal, and international laws, regulations, and ordinances of any kind. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins Air Toxics against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T Hotline (800) 467-4922

Revised COC Received 2/26/19

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Analysis Request /Canister Chain of Custody

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Phone (800) 985-5955; Fax (916) 351-8279

page--of ---

Client: GEL Engineering
Project Name: Bird IAG
Project Manager: Thomas Putney Project # Bird00118
Sampler: Derek Anderson
Site Name: William M Bird

Special Instructions/Notes:

Turnaround Time (Rush surcharges may apply)
Standard ✓ Rush _____ (specify)

Lab ID	Field Sample Identification(Location)	Can #	Flow Controller #	Start Sampling Information		Stop Sampling Information		Canister Vacuum/Pressure		Lab Use Only		Requested Analyses			
				Date	Time	Date	Time	Initial (in Hg)	Final (in Hg)	Receipt	Final (psig) Gas: N_2 / He	TO-15-LL	Reporting List attached		
01A	B-01	6L1791	23401	2/17/19	0855	2/17/19	1655	28	4.5			X			
02A	B-02	6L1110	23741	2/17/19	0905	2/17/19	1705	26.5	3			X			
03A	B-02-Dup	6L1547	23485	2/17/19	0907	2/17/19	1707	28.5	5			X			
04A	B-03	6L0381	23700	2/17/19	0915	2/17/19	1715	30	2	0.5 PSI	5 PSI	X			
05A	B-04	6L0492	23444	2/17/19	0920	2/17/19	1720	27	4			X			
06A	B-05	6L0179	23460	2/17/19	0925	2/17/19	1725	26.5	5.5			X			

Pressurized by: JV
Date: 02/22/19
Nitrogen / Helium

Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
Derek Anderson GEL Engineering				2/19/19	1035
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time

Lab Use Only

Shipper Name: FedEx | Custody Seals Intact? | Yes | No | None

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