Prepared for:

CAPITAL CITY BANK
1301 Metropolitan Boulevard
Tallahassee, FL 32308

VOLUNTARY INVESTIGATION AND REMEDIATION PLAN
Grantville Mill
41 Industrial Way
Grantville, GA 30220

Prepared by:

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March 2015

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EPS

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1 INTRODUCTION

1.1 Overview

This Voluntary Investigation and Remediation Plan (VIRP) is being submitted for the Grantville Mill site comprised of two parcels as listed on the Hazardous Site Inventory (HSI), Site Number 10912. This VIRP was prepared by Environmental Planning Specialists, Inc. (EPS) on behalf of Capital City Bank (CCB), owner of one of the two parcels and the one where the contaminant release is suspected to have occurred. CCB is pursuing a cooperative agreement with Grantville Mill LLC, owner of the second parcel comprising the Site, to allow both properties to qualify under the Voluntary Remediation Program (VRP).

The VRP Application and Checklist form is included in Appendix A. The tax map and warranty deed for the CCB property are provided in Appendix B.

1.2 Site Location and Description

The CCB property, Coweta County Parcel ID G050008008, totals 13.48 acres. The Site address is 41 Industrial Way, Grantville, Georgia and is located at latitude 33°14'15"N and 84°49'54"W (Figure 1). The other parcel comprising HSI Site Number 10912, Coweta County Parcel ID G050008008A, is owned by Grantville Mill, LLC and may be brought into the VRP as an additional qualifying property. The Site is approximately 0.2 miles northeast of the City of Grantville, GA.

The property was first developed in the early 1900s as a cotton mill to make uniforms and canvas during World War I. The mill later became West Point Peppermill's Grantville Mill, operating into the early 1980s when the mill was closed. Since that time, buildings within the facility have been leased to various companies. One of the tenants, Tropic Formals, Ltd., operated a formals clothing business in one of the former mill buildings, at the southwest portion of the mill complex, between 1980 and 1993. Tropic Formals was a RCRA listed handler of tetrachloroethene (PCE) until it changed its registration status to a non-waste generator on December 31, 1993. The Site is listed on the basis of a documented PCE release to groundwater. The building is now occupied by a wholesale book seller.

Properties bordering the Site are shown on Figure 2 and include:

- to the North - residences;
- to the Northeast - wooded vacant land (Grantville Mill LLC parcel);
- to the East - CSX rail line and Grantville City Cemetery;
- to the South and Southwest - residences; and
- to the West and Northwest – City park complex.

1.3 Purpose

The purpose of this document is to support an application for enrollment into the Voluntary Remediation Program. This document presents a current understanding of conditions at the Site, a preliminary Conceptual Site Model (CSM), potential remedial options, identification of data gaps and a plan to address those gaps, and a milestone schedule.

1.4 Property Eligibility

The Site meets the eligibility criteria for the VRP. A release of regulated substances on the Site has been confirmed. The Site is not listed on the National Priorities List, is not currently undergoing response activities required by an order of the Regional Administrator of the United States Environmental Protection Agency (USEPA), and is not required to have a permit under Code Section 12-8-66. Qualifying the Site under the VRP program would not violate the terms and conditions under which the division operates and administers remedial programs by delegation or by similar authorization from the USEPA. There are no outstanding liens filed against the Site pursuant to Code Sections 12-8-96 and 12-13-12.

1.5 Participant Eligibility

The VRP applicant is the owner of the Site and is in compliance with all orders, judgments, statutes, rules, and regulations subject to the enforcement authority of the Director with respect to this Site.

2 SUMMARY OF PRIOR INVESTIGATIONS

2.1 Environmental Assessment

A summary of prior groundwater investigations to date is presented in Section 2. Locations for groundwater samples discussed herein are shown on Figures 3A through 3C. Data from past groundwater sampling events are provided in Appendix C1, comprised of three events in 2010, 2013, and 2014 (multiple events). Table 1 is a summary of detected constituents from the groundwater sampling events described below.

February 2010 (Figure 3A)

The PCE condition in the shallow aquifer was initially characterized by Aerostar Environmental (Aerostar) as a part of a Phase II Environmental Site Assessment. Aerostar installed and sampled three temporary wells: (i) TW-1, located east of the former Tropic Formals along Industrial Way; (ii) TW-2, located approximately 1,110 feet (ft.) northeast of the former Tropic Formals; and (iii) TW-4, located near the northern Property boundary approximately 250 ft. northeast of the former Tropic Formals. PCE was reported at 2,000 micrograms per liter (µg/L) in TW-4 and non-detect in TW-1 and TW-2.

August 2013 (Figure 3B)

Ardaman & Associates, Inc. (Ardaman) installed three temporary monitoring wells to confirm the prior depicted PCE condition at the Site: (i) ATMW-N, located in the vicinity of TW-4; (ii) ATMW-S, located east of the former Tropical Formals; and (iii) ATMW-E, located approximately 450 ft. northeast of the former Tropic Formals. The following PCE concentrations were reported: (i) 330 µg/L in ATMW-N, (ii) non-detect in ATMW-S, and (iii) 0.28 µg/L in ATMW-E.

April, May, June 2014 (Figure 3C)

Ardaman installed and sampled seven permanent monitoring wells in two separate mobilizations to further characterize the environmental condition in the shallow aquifer. In April 2014, Ardaman installed permanent monitoring wells MW-1, MW-2, MW-4, and MW-5. Additional permanent monitoring wells MW-3, MW-5D (deeper offset well to MW-5), and MW-6 were installed and sampled in May 2014. Well MW-5D was sampled again in June 2014 to verify the PCE condition deeper in surficial aquifer. The screened interval for each of these wells are listed in the table below. The groundwater sampling results are described in the CSM (Section 3).

Well ID	MW-1	MW-2	MW-3	MW-4	MW-5	MW-5D	MW-6
Screened Interval (ft. bgs)	18-28	12-22	16-26	17-27	23-33	55-65	14-24
PCE (µg/L)	3.9	28.7	2.3	11.8	598	9.8 (May), 0.79 (June)	379

2.2 Water Supply Wells

A water source appraisal report prepared by Huber Engineering Company, Inc. (HEC), dated April 18, 2009, states that historical files indicate Grantville Mill once contained five water supply wells constructed as shown in the table below.

Well No.	Well Diameter (in.)	Well Depth (ft.)	Well Yield (gpm)
No. 1	8	500	65
No. 2	8	385	38
No. 3	10	700	27
No. 4	10	700	16
No. 5	8	385	35

The HEC report does not provide the current status of all five wells. A separate report on the feasibility of bottle water supply potential was prepared by the University of Georgia College of Agricultural and Environmental Science (Wolfe et al., 2012), which identifies two water supply wells on the Site property (labeled GM1 and GM2 in their report) and two water supply wells southwest of the Site owned by the City of Grantville (labeled as GC1 and GC2). Locations of these four water supply wells are shown on Figure 4.

The 2012 report provides a table of general water quality test results of sampled obtained from each of the four water supply wells in May 2012, as well as a table of general information for each well. These tables are provided herein in Appendix C2. A separate water quality report exists for an earlier sampling of one of the Grantville Mill water supply wells, identified as "Grantville Mill #2960 performed by Altamaha Laboratories May 20, 2008 and provided in Appendix C3 herein. It is believed this well was well GM1 from the later sampling, as this is the higher yielding of the two water supply wells at the Site. The 2008 sampling was more comprehensive in the analytical parameters tested, which included volatile organic compounds (VOC) and semi-volatile organic compounds (SVOC) including pesticides. VOC and SVOC/pesticides are non detect with the exception of the following trace-level detections of VOC (all are well below federal maximum contaminant level (MCL) drinking water standards):

- 1,2-Dichloropropane 0.8 µg/L [MCL of 5 µg/L;
- Toluene 3.1 µg/L [MCL of 1000 µg/L]; and
- Chlordane 0.3 µg/L [MCL of 2 µg/L].

3 PRELIMINARY CONCEPTUAL SITE MODEL (CSM)

3.1 Overview

The CSM is intended to establish a common knowledge base about the Site and its environmental condition to facilitate the development of remedial action objectives, and to allow an informed decision regarding possible remedial action measures. Sufficient information for the Site is available from past investigations and the scientific literature to develop a preliminary CSM that presents: (i) the surface and subsurface features at the Site, (ii) the nature and extent of the environmental condition, (iii) fate and transport characteristics of chemicals of potential concern (COPC) at the Site, and (iv) potential receptors and exposure pathways. This review allows the identification of data gaps (Section 3.6) that will address regulatory program obligations, and facilitate refinement of the various elements of the CSM (submitted in the course of routine VRP Progress Reports).

3.2 Site Features

3.2.1 Topography and Surface Features

The Site is located in Coweta County, which falls in the Greenville Slope District of the Piedmont Physiographic Province (Piedmont Province) in Georgia. The Greenville Slope District is characterized by rolling topography that gradually decreases in elevation from approximately 1,000 ft. above mean sea level (amsl) in the northeast to 600 ft. amsl in the southwest. Open valleys with broad, rounded divides and deeper valleys with narrow, rounded divides cover the southwestern and northeastern portion of the district, respectively. The southern boundary of the district follows the base of the northern side of Pine Mountain. All streams in the Greenville Slope

A U.S. Geological Survey (USGS) Light Detection and Ranging ("LiDAR") topographic map showing 2-ft. contour intervals is included in Figure 5. The Site is located on the eastern flank of a U-shaped valley, oriented to north-northeast. Site elevation decreases from approximately 880 ft. amsl along Industrial Way to 824 ft. amsl at the northeastern boundary of the CCB parcel, sloping down to an elevation of around 800 ft. amsl at the northern boundary of the Grantville Mill LLC parcel (Figure 5). The valley floor begins to be expressed about midway between monitoring wells MW-5 and MW-6, extending to the location of MW-2 and beyond to a floodplain feature.

The southwestern portion of the CCB parcel is largely covered by impermeable surfaces (paved parking lots and buildings). Grassed or cleared areas become more widespread moving toward the northeastern boundary of the CCB parcel, away from the former Tropic Formals building. The Grantville Mill LLC parcel is wooded.

3.2.2 Surface Water Features

Surface water features in the vicinity of the Site are depicted on the USGS Quadrangle Map, shown in Figure 6. At the local scale of the Site, an intermittent unnamed stream begins north of the City of Grantville cemetery and flows beneath the rail line to the north along the extreme northeast border of the CCB parcel and then centralized within the Grantville Mill LLC parcel continuing in a northerly direction for another 1160 ft. (approximate) beyond the northern boundary of the Grantville Mill LLC parcel where it transitions into a perennial unnamed stream. This stream extends for approximately 0.6 miles where it empties into Messiers Creek. Messiers Creek flows in a westerly direction discharging into the New River in about 1.6 miles, which continues in westerly direction for another 17 miles (approximate) discharging into the Chattahoochee River above Lake West Point.

3.2.3 General Hydrogeologic Conditions

3.2.3.1 Site Geologic and Hydrogeologic Setting

Soils in the Piedmont, such as at Grantville Mill, are derived from underlying metamorphic rocks through weathering, disintegration, and decay where the predominant metamorphic rocks are gneisses and schists. According to the National Resources Conservation Service's web Soil Survey, the residuum beneath the surface across the Site contains predominantly sandy clay loam and sandy loam derived from mica schist and gneiss to approximately 4.5 feet bgs. The Piedmont typically consists of crystalline bedrock with discontinuous fractures containing water, which are hydraulically connected to overlying saprolite (partially weathered rock (PWR) and soil (or residuum)). The degree of fracturing and size of the fracture apertures (openings) in the crystalline bedrock generally decreases with depth. One well (MW-5D) was terminated approximately 65 ft. below ground surface (bgs), appearing to have encountered the PWR around 42 ft. bgs based upon the well drilling log. Top of bedrock was not encountered at MW-5D, but likely exists somewhere in the range of 65 to 85 ft. based upon other sites in the Piedmont.

Groundwater in the Piedmont Province occurs under unconfined conditions where the potentiometric surface mimics ground surface topography. Along topographically low areas, the water table typically occurs within the saprolite portion of the hydrogeological profile. Along topographically high areas, the water table often occurs in underlying crystalline bedrock. The saprolite portion of the hydrogeological system generally contains significantly more fluid compared to the same volume of bedrock. The crystalline bedrock exhibits essentially no primary porosity/permeability and relies upon secondary permeability features such as fractures and faults for the transmission and storage of groundwater. These secondary features generally are not abundant and of relatively small apertures, which limits the amount of fluid flowing through the bedrock. This is why water supply wells such as those on the Site typically extend to as much as 500-700 ft. bgs, and are open-hole installations to allow maximum available yield from intersected fractures.

Figure 7 is a hydrogeologic cross section oriented from south to north along the direction of groundwater flow across the Site. Monitoring well installation details (i.e., screened intervals) and PCE detections are also shown on the cross section.

3.2.3.2 Groundwater Direction and Flow Velocity

The depth to the water table and groundwater flow direction at the Site were determined by Ardaman following the installation of permanent monitoring wells in April 2014. Wells were surveyed relative to a site vertical datum and groundwater depths were measured, facilitating the development of a potentiometric surface map for the Site (Figure 8). Depth to groundwater ranged from 10.55 ft. (MW-2) to 34.94 ft. (MW-5D) bgs. Groundwater flow direction mimics the ground surface topography as is typical in the Piedmont, moving in a northeasterly direction across the CCB parcel then turning to a more northerly direction along the Grantville Mill LLC parcel. The hydraulic gradient is approximately 0.035 ft./ft. Groundwater flow is expected to continue in a northerly direction beyond MW-2 following the axis of the valley floor.

Ardaman performed a falling head permeability test on well MW-5 to determine the hydraulic conductivity of the Site's upper aquifer material. The data was analyzed using the Hvorslev Slug Test method (Hvorslev, 1951) and the hydraulic conductivity was calculated at $8.5 \cdot 10^{-4}$ cm/s. Groundwater velocity was calculated according to the standard Darcy velocity equation as follows:

Q=Ki/n where

K is hydraulic conductivity

i is the hydraulic gradient

n is the effective porosity (assumed to be 0.2)

Using the hydraulic conductivity from the falling head permeability test ($8.5 \cdot 10^{-4}$ cm/s), and the measured Site hydraulic gradient (0.035 ft./ft.), and an assumed effective porosity of 20%, the groundwater velocity in the upper aquifer is calculated to be approximately 150 ft./yr.

3.3 Compliance Status of Regulated Constituents

3.3.1 Detected Regulated Constituents and Associated Delineation Criteria

Thus far the only environmental media sampled at the Site is groundwater. Appendix C1 provides laboratory reports for prior sampling of the Site monitoring wells. This historical data was used to determine the list of detected regulated constituents at the Site and their corresponding delineation criteria.

Six constituents regulated under Georgia's HSRA have been detected in groundwater at the Site: (i) PCE, (ii) trichloroethene (TCE), (iii) cis-1,2-dichloroethene (cisDCE), (iv) trichlorofluoromethane, (v) chloroform, and (vi) bromodichloromethane. Delineation criteria were determined for all six constituents detected in groundwater for the Site; however, chloroform and bromodichloromethane detections are suspected to be residuals associated with municipal water used during well installation. Trihalomethanes, such as chloroform and bromodichloromethane, occur when naturally occurring organic matter reacts with disinfectants (e.g. chlorine and chloramine) during water treatment.

Printouts of all worksheets files used to calculate the groundwater Type 1, Type 2, Type 3, and Type 4 RRS are attached in Appendix D. The worksheets contain physical and chemical properties for the various chemicals as well as toxicity criteria and exposure assumptions.

Delineation criteria for groundwater are based on the default Residential scenario Type 1 Risk Reduction Standards (RRSs). According to the HSRA Rules, the Type 1 RRS is developed from Table 1 of Appendix III of the HSRA Rules. The delineation criteria for groundwater for this Site are shown on Table 2. This table also shows statistical information (minimum, maximum, and average concentrations) regarding each constituent observed at the Site. Of the six regulated constituents detected in groundwater, PCE is the only constituent that exceeds the Type 1 RRS.

Due to the absence of data, soil RRS were not calculated for the Site at this time. Soil RRA and the corresponding delineation criteria for soil will be determined subsequent to future soil investigation at the Site in the area of suspected PCE release.

3.4 Environmental Conditions On-Site

3.4.1 Overview

EPS has compiled prior environmental data records pertaining to the Site into a relational database and Geographic Information System (GIS). The primary focus of the past groundwater investigations characterized groundwater conditions in the area of suspected PCE release and also along the anticipated horizontal boundary of the PCE plume, with one deeper monitoring well for the purpose of vertical delineation. The discussion that follows below details the nature and extent of VOCs in groundwater (with emphasis on PCE as it is the only VOC to exceed its Type 1 RRS), and identifies data gaps for the Site.

3.4.2 Nature and Extent of Groundwater Contamination

3.4.2.1 Groundwater COPC for the Site

PCE is considered the sole COPC in groundwater at this time, as it is the only VOC to exceed its Type 1 RRS. The list of groundwater COPC may be expanded based upon additional groundwater monitoring and investigation planned for the Site.

3.4.2.2 Area of Release

Based on historical information and sampling conducted to date, the location of highest PCE concentration in groundwater is located in the vicinity of the northern corner of the former Tropic Formals. The highest concentrations of PCE in groundwater are in the range of approximately 600 µg/L (MW-5) to as high as 2,000 µg/L (prior temporary well TW-4 coincident with subsequent monitoring well MW-6, which reported a PCE concentration of 379 µg/L).

3.4.2.3 Source Area Characteristic

PCE is nearly immiscible in water and as such, occur as non-aqueous phase liquid (NAPL) in the subsurface environment. PCE has a higher specific gravity than water and is considered a DNAPL (dense NAPL). In the event of a release to the subsurface, the volume of mobile NAPL depletes as the product descends and residual product is left behind in soil column.

To date, no investigation has been conducted to assess the chemical condition of the vadose zone soil in the area of suspected release. A DNAPL source is suspected in instances where a monitoring well exhibits a groundwater concentration exceeding 1% of the effective solubility of the chemical of interest (USEPA, 1992); this is known as the "1% solubility rule of thumb". PCE was not detected above the 1% product solubility for PCE (2,060 µg/L) in any of the monitoring well samples collected during the April and May 2014 groundwater sampling events. The highest PCE was detected at a concentration of 598 µg/L (well MW-5) in the shallow aquifer. One prior result from the February 2010 temporary wells reported a result of 2,000 µg/L approximating the 1% PCE solubility level, however a permanent monitoring well was later installed at this location reporting a significantly lower PCE concentration of 379 µg/L.

3.4.2.4 Stability, Extent, and Degradation of the Plume

The plume associated was characterized initially in March 2010, again in August 2013, and most extensively in April/May 2014. Figure 9 shows the PCE concentrations from the 2014 event. Based on the collective April/May 2014 groundwater sampling results, the aqueous plume appears to be stable. Groundwater data from temporary wells in March 2010 and August 2013 and co-located monitoring wells in April/May 2014 show comparable PCE concentrations in the groundwater plume over time, suggesting the plume may have reached a steady-state transport condition.

Sampling results from MW-2 indicate that the plume extends at least 900 ft. northeast of the former Tropic Formals and is not delineated in the down-gradient direction. The aqueous plume is also not delineated within the CCB property to the east or west. Additionally, more groundwater data is needed to tighten delineation between MW-6 (on-Site) and MW-1 (off-Site). Delineation has been demonstrated up-gradient (well MW-3) of the former Tropics Formals. In the vertical dimension, the PCE concentration appears to decrease along a sharp gradient. During the April and May 2014 sampling events, PCE is reported as high as 598 µg/L (MW-5) in the shallow surficial aquifer whereas the reported concentration of PCE deeper in the aquifer is 9.8 µg/L (MW-5D). Well MW-5D was resampled in June 2014 and PCE was detected at 0.79 µg/L.

Intrinsic degradation of PCE appears to be occurring as evidenced by the presence of daughter products resulting from reductive dechlorination; however intrinsic degradation at the Site is not yet well understood. The dechlorination sequence is from PCE to TCE to cisDCE to vinyl chloride (VC), and finally to benign ethene/ethane. TCE is present in a few of the monitoring well locations also reporting PCE. cisDCE is present in one monitoring well (MW-2) further along the flow path, which also reported PCE and TCE. VC was not detected in any of the wells, suggesting that degradation has stalled at the Site.

3.4.3 Fate and Transport of PCE

3.4.3.1 General Physical-Chemical Characteristics

With respect to fate and transport of a DNAPL, such as PCE, there are three states of interest: (i) free-phase (mobile) DNAPL, (ii) residual (immobile) DNAPL, and (iii) dissolved-phase DNAPL constituents. Following release at the soil surface, DNAPL descends through the soil column primarily due to gravity. DNAPL migrates vertically through the vadose zone and subsequently into the saturated zone until it loses continuity and is immobilized by capillary forces in the soil/aquifer matrix. During downward migration, the DNAPL may encounter low permeability stratigraphic units and accumulate as a "pool" or migrate laterally along the less permeable layer. As the DNAPL migrates through the vadose zone, a globule trail of residual product and sorbed-phase contamination is left. The globules in this trail are incapable of further migration under most circumstances. In the event of a small release at the soil surface, the entire DNAPL may become immobile before reaching groundwater as product is lost to these processes. The specific gravity (density) of PCE is listed in the embedded table below, along with other physical-chemical properties described herein.

The presence of free-phase or residual PCE DNAPL and sorbed-phase PCE in the vadose and/or saturated zones provides a long-term source of dissolved-phase PCE to groundwater. The dissolved-phase concentration in the area of DNAPL is limited by PCE solubility. Once in a dissolved-phase state, PCE is transported by groundwater primarily along the direction of the groundwater flow (advection), and to a lesser extent cross- or up-gradient due to dispersion and diffusion. The aqueous phase plume is subject to attenuation processes such as diffusion, adsorption, volatilization and degradation. These attenuation processes result in a gradational decrease in the PCE concentration along the path of groundwater flow. All aqueous plumes will eventually reach a steady-state condition where the plume edges no longer expand due to these processes.

Two attenuation processes, adsorption and volatilization, are highly dependent on individual constituent physical-chemical properties. Adsorption onto aquifer materials (e.g. clay minerals, iron and manganese oxides, organic matter, etc.) slows (retards) the migration of a constituent along the groundwater flow path. The extent of retardation is a function of constituent's affinity for the aquifer matrix relative to groundwater, which is quantified by a soil-water partition coefficient (K_{oc}). Constituents, such as PCE , that exhibit a K_{oc} value of less than 100 L/kg weakly to moderately partition to soil. Volatilization, is a function of a compounds affinity for air relative to water or soil and is quantified by the Henry's constant (H_{cc}). PCE is highly to moderately volatile based on its reported H_{cc}. If PCE occurs in groundwater beneath a building, volatilization may result in the accumulation of vapor-phase PCE within the soil matrix beneath the building footprint (i.e., sub-slab soil vapor).

Constituent	Density (mg/L)	Solubility (mg/L)	H_{cc} ($atm \cdot m^3 \cdot mol^{-1}$)	Koc (L/kg)
PCE	1.623	206	$1.77 \cdot 10^{-2}$	94.94

3.4.3.2 Degradation Processes of Chlorinated Ethenes

Degradation processes are limited by the indigenous microorganism population and site chemical conditions, e.g. electron acceptor/donor concentrations and aquifer geochemistry. PCE (parent) and its degradation (daughter) products, TCE, cisDCE and VC are subject to abiotic and biotic degradation. PCE and TCE undergo biotic reductive dechlorination primarily to cisDCE and VC by several microorganisms under reducing conditions, however only one microorganism, *Dehalococcoides sp.*, is known to completely dechlorinate PCE and TCE to ethene or ethane under reducing conditions. In the majority of groundwater systems, reductive dechlorination stops at cisDCE or VC indicating geochemical conditions or the appropriate microorganisms are not available for complete degradation. Alternate pathways to complete degradation however, are known. Several investigations conducted by the United States Geological Survey (USGS) with aquifer and streambed sediments have demonstrated that microbial oxidation of the daughter products cis-DCE and VC is significant and results in complete dechlorination of PCE/TCE (USGS, 2014). The combination of reductive dechlorination under anaerobic conditions followed by aerobic microbial oxidation of the daughter products provides a second possible pathway for complete degradation of PCE to ethene in groundwater plumes. PCE may also may also be degraded abiotically by reduced mineral surfaces such as iron sulfides and adsorbed ferrous iron (Lee and Batchelor, 2002).

As discussed earlier in Section 3, the presence of TCE and cisDCE further along the flow path of the aqueous plume indicates that reductive chlorination is occurring at the Site. However, the reported concentrations of PCE relative to that of daughter products is indicative of modest degradation. Additionally, the degradation process appears to have stalled, as VC has not been detected along the flow path of the plume. Thus, Site conditions are limiting for complete reductive dechlorination (e.g. substrate or microorganism limited).

3.5 Potential Receptors and Exposure Pathways

3.5.1 On-Site Receptors and Exposure Pathways

On-Site receptors (current and potential future) include Site Workers, Trespassers, and Construction Workers. On-site receptors may be exposed to PCE via dermal exposure or ingestion of groundwater. Other potential media of potential exposure include contaminated soil (dermal exposure, ingestion, inhalation) and sub-slab soil gas (leading to possible indoor air exposure/inhalation), though the PCE condition in these media is not yet well understood.

Figure 10 is a conceptualization of Site conditions, exposure pathways, and receptors.

- Current/Future Site Worker: It is anticipated that the Site will continue to operate in its current capacity for the foreseeable future. Receptors associated with this type of land use can potentially have long-term exposure to site-related chemicals in groundwater and surface soil via ingestion and dermal contact. Concrete or asphalt coverings may prevent worker exposure to PCE contamination in underlying soil. Exposure to site workers is more likely to occur via the inhalation of volatiles in indoor air. Potential vapor intrusion pathways will be evaluated during future investigations; however, based on preliminary

groundwater sampling results, it is anticipated that if such vapor migration is occurring that the concentrations of these chemicals in indoor air would be well below the applicable OSHA standards. The Occupational Health and Safety Administration (OSHA) permissible exposure limit (PEL) based on an 8-hr time weighted average (TWA) is 100 ppmv for PCE (~678 mg/m^3 air).

- Current/Future Construction Worker: Construction workers could potentially have short-term (<1 year) exposure to chemicals in mixed surface and subsurface soil (0-10 ft. bgs) via ingestion, dermal contact, and inhalation of volatiles and particulates. The distribution of soil contamination is not well understood for the Site, however with a robust health and safety program in place, exposure to construction workers can be managed according to OSHA Hazardous Waste Operations (Hazwoper) protocols.

3.5.2 Off-Site Receptors and Exposure Pathways

The Site is within the northeastern portion of the City of Grantville limits. The land to west and south of the Site is used primarily for commercial development. Grantville City Cemetery and wooded vacant land lie to the east and northeast of the Site, respectively. The area is served by the City of Grantville public water supply and sewage system. There are no known users of groundwater in the vicinity of the Site, however a thorough records search will be undertaken for verification. The primary potential exposure pathway for off-Site receptors is for PCE vapor intrusion, although based on the available data this pathway appears negligible but will be thoroughly evaluated in the course of the VRP assessments.

3.6 Summary Existing Data Gaps

A summary of all existing data gaps in the CSM are described below.

Delineation of the Aqueous Plume

To date, full down- and side-gradient delineation of the PCE groundwater plume has not been demonstrated. EPS has proposed installing a total of six new permanent monitoring wells as a means of tightening delineation to the west and east of the suspected release area, to the north between wells MW-6 and MW-1 in the residential area, and to the northeast down-gradient of MW-2 on the Grantville Mill LLC parcel. The location of the proposed wells are shown in Figure 11.

All wells, including the on-Site water supply wells, pre-existing monitoring wells, and proposed new monitoring wells, will be sampled for VOC to refine the plume delineation in both the horizontal and vertical dimensions.

Intrinsic Degradation of PCE and Daughter Products

Intrinsic degradation of PCE and TCE appears to be occurring at the Site, but is not well understood. An in-well treatability study will elucidate the degradation process by quantifying the microbial communities at the Site and determining Site geochemical parameters limiting to degradation. An in-well treatability study will also provide conclusions and recommendations for potential remedial options described in Section 4 of this report.

Source Area Characterization

Soil sampling will be performed in the area of the former Tropics Formals. This will involve sampling on a uniform grid (25-ft spacing) as shown on Figure 12, involving location within and outside the former Tropical Formals building. Soil will be sampled using a direct-push drilling rig and will consist of sampling at prescribed depth intervals of 1 ft. and 4 ft. bgs, with borings extending to refusal depth and additional samples collected as warranted based upon elevated photoionization detector (PID) readings.

4 PRELIMINARY REMEDIATION PLAN

4.1 Overview

Preliminary evaluations of potential remedial options for groundwater are provided in this section, developed from the existing CSM as described in Section 3. It is premature to evaluate soil and soil gas remedial options in the absence of data. Accordingly, remedial options for soil and soil gas are to-be-determined subsequent to demonstrating that remedial action is necessary.

4.2 Evaluation of Potential Remedial Options for Groundwater

4.2.1 Screening of Remedial Options

As illustrated in Section 3, PCE is the dominant component of the aqueous plume at the Site. The presence of TCE and cisDCE indicate intrinsic degradation of chlorinated ethenes is occurring, with daughter products reported at lower concentrations compared to PCE in all wells.

Based on these site-specific conditions, the following remedial options are presented for the groundwater: (i) monitoring natural attenuation, (ii) enhanced in-situ bioremediation, (iii) in-situ chemical oxidation (ISCO), and (iv) a combination of options (1) through (3).

4.2.2 Description of Remedial Options for Groundwater

4.2.2.1 Monitored Natural Attenuation

Monitored natural attenuation (MNA) relies on natural processes (abiotic degradation, biodegradation, sorption, evaporation, etc.) to reduce or "attenuate" concentrations of contaminants in the environment. An MNA approach may be a viable option at Grantville Mill subject to demonstrating through continued monitoring and/or predictive groundwater modeling that Site conditions are favorable for PCE degradation. The extent of attenuation must be sufficient to reduce COI concentrations to RRS at a to-be-determined Point of Exposure.

The following data gaps must be addressed under an MNA approach:

1. obtaining additional data on Site geochemical parameters (electron donor concentrations, temperature, pH, oxidation-reduction potential, alkalinity, etc.) to evaluate the feasibility of MNA (according to an EPA scoring matrix);
2. completing delineation of groundwater PCE;
3. establishing the appropriate Point of Exposure;
4. performing additional groundwater monitoring over time to assess PCE attenuation rates and data trends; and
5. completing a groundwater flow/solute transport model to predict the PCE condition at the Point of Exposure.

4.2.2.2 Enhanced In-situ Bioremediation

An enhanced in-situ bioremediation approach augments biodegradation of organic constituents in groundwater by stimulating and maintaining the growth and reproduction of indigenous microorganisms. Enhanced in-situ bioremediation involves a delivery system that provides one or more of the following depending on limiting Site condition: (i) electron acceptor/donor, (ii) nutrients, e.g., nitrogen or phosphorus, and (iii) a carbon source.

An enhanced in-situ bioremediation approach is considered a viable option to reduce PCE groundwater concentrations if Site conditions are favorable for supporting microorganisms capable of reductive dechlorination, and a long-term management strategy is reasonable for the Site. Reductive dechlorination is a well understood process capable of complete conversion of PCE and TCE to benign ethene/ethane. The resources to implement enhanced bioremediation are commercially available.

Data gaps that must be addressed under an enhanced in-situ bioremediation approach include:

1. performing a preliminary evaluation for the feasibility of enhanced bioremediation, i.e. assess Site geochemistry and general MNA parameters;
2. performing a treatability study to test for the presence of indigenous microorganism capable of degrading PCE and its degradation products and for aquifer parameters that may be limiting to an enhanced bioremediation approach.

4.2.2.3 In-Situ Chemical Oxidation

In-situ chemical oxidation (ISCO) treatment reduces the concentrations of environmental contaminants by introducing a strong chemical oxidizer directly into the contaminated media. ISCO is generally considered a viable remedial option for PCE dissolved in groundwater. The appropriateness of ISCO depends on matching the oxidant and delivery system (e.g. standard injection well, screw auger mixing, and hydraulic fracture well injection) to the Site-specific contaminants and conditions. Based on the contaminants and conditions at the Site, the potential chemical oxidants considered include permanganate and persulfate.

Data gaps that must be addressed under an ISCO approach include:

1. collecting additional Site-specific data to design an ISCO approach, e.g. geochemical parameters; and
2. performing a bench-scale ISCO treatability study to determine soil acidity and natural oxidant demand (NOD).

5 MILESTONE SCHEDULE

The Projected Milestone Schedule (Appendix E) is benchmarked according to acceptance into the VRP.

6 REFERENCES

Clark & Zisa, *A Physiographic Map of Georgia*, Department of Natural Resources, Georgia Geologic Survey, 1987.

U.S. Environmental Protection Agency, Region 4, *Field Branches Quality System and Technical Procedures*, Athens, Georgia.

TABLES

Table 1. Summary of Prior Groundwater Sampling

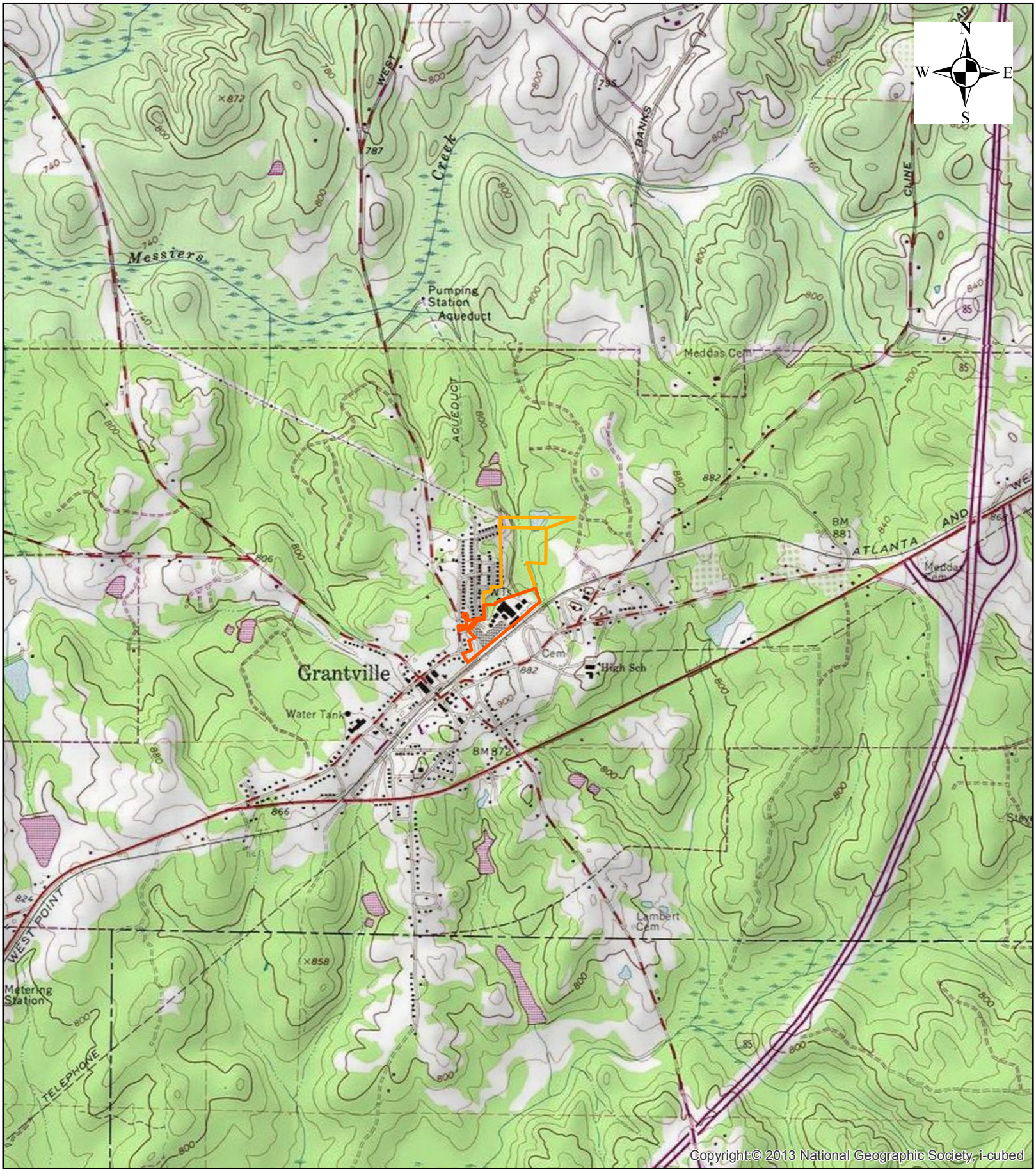
Well	Date Collected	Tetrachloro ethene	Trichloro ethene	cis 1,2-Dichloroethene	Chloroform	Bormodichloro methane	Trichloroflour omethane
TW-1	Feb-10	ND					
TW-2	Feb-10	ND					
TW-4	Feb-10	2000					
ATMW-N	Aug-13	330	ND	ND	ND	ND	ND
ATMW-E	Aug-13	0.28	ND	ND	ND	ND	ND
ATMW-S	Aug-13	ND	ND	ND	ND	ND	ND
MW-1	Apr-14	3.9	ND	ND	1.6	0.42	ND
MW-2	Apr-14	28.7	3.3	0.95	ND	ND	11.3
MW-3	May-14	2.3	ND	ND	ND	ND	ND
MW-4	Apr-14	11.8	ND	ND	6	1.5	ND
MW-5	Apr-14	598	ND	ND	ND	ND	ND
MW-5D	May-14	9.8	6.9	ND	12.1	ND	ND
MW-5D	Jun-14	0.79	3.7	ND	5.3	ND	ND
MW-6	May-14	379	ND	ND	1.1	ND	ND

ND non detect
Units micrograms per liter (μg/L)

Table 2. Groundwater Delineation Criteria

	Type 1 RRS (μg/L) [delineation criteria]
Tetrachloroethene	5
Trichloroethene	5
cis 1,2-Dichloroethene	70
Chloroform	80
Bormodichloromethane	80
Trichloroflouromethane	2000

FIGURES



Capital City Bank parcel

Grantville Mill LLC parcel

0 1,000 2,000
Feet

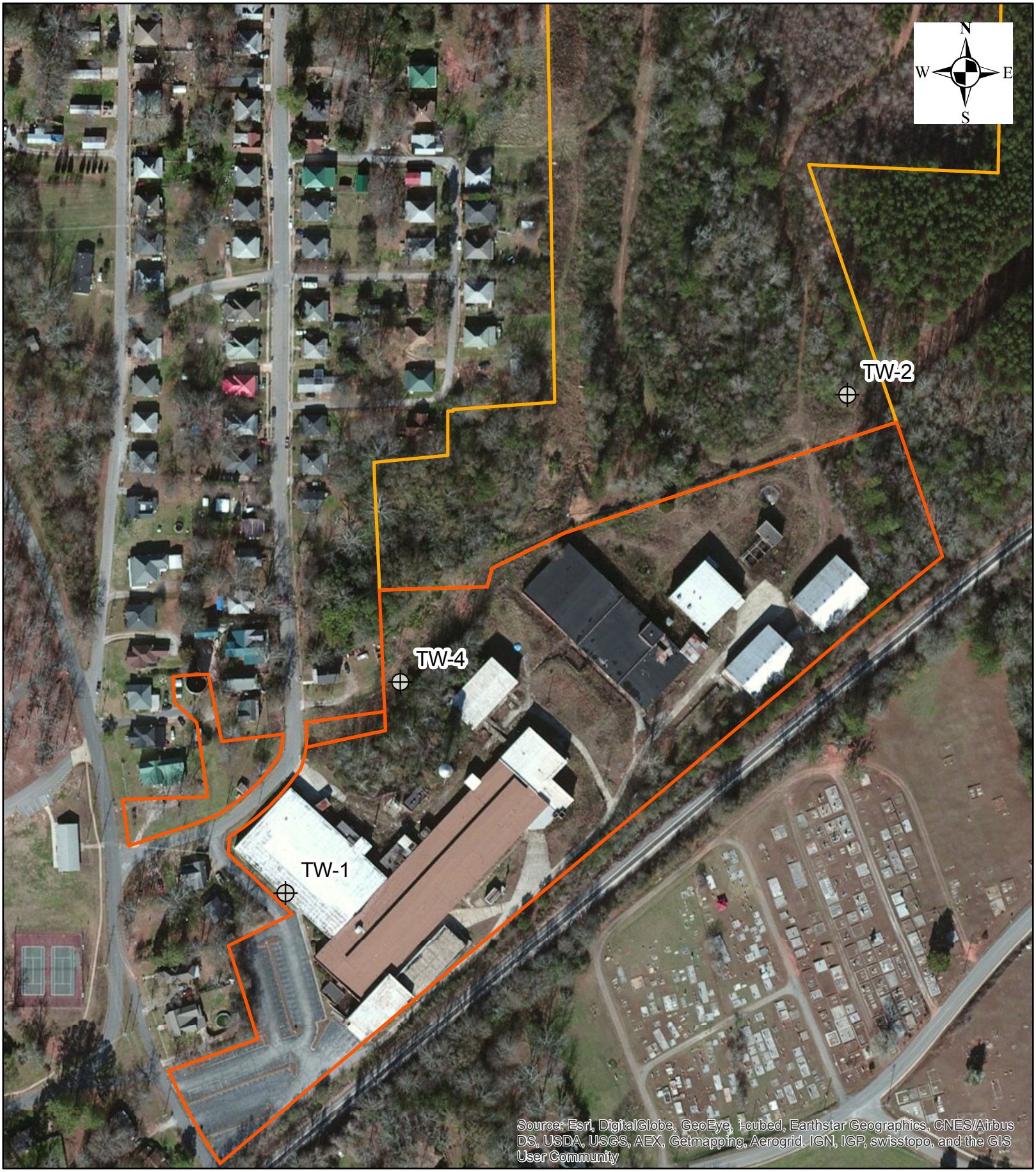
Figure 1
Site Location

Capital City Bank parcel

Grantville Mill LLC parcel

0 250 500
Feet

Figure 2
Aerial Photograph Site Vicinity



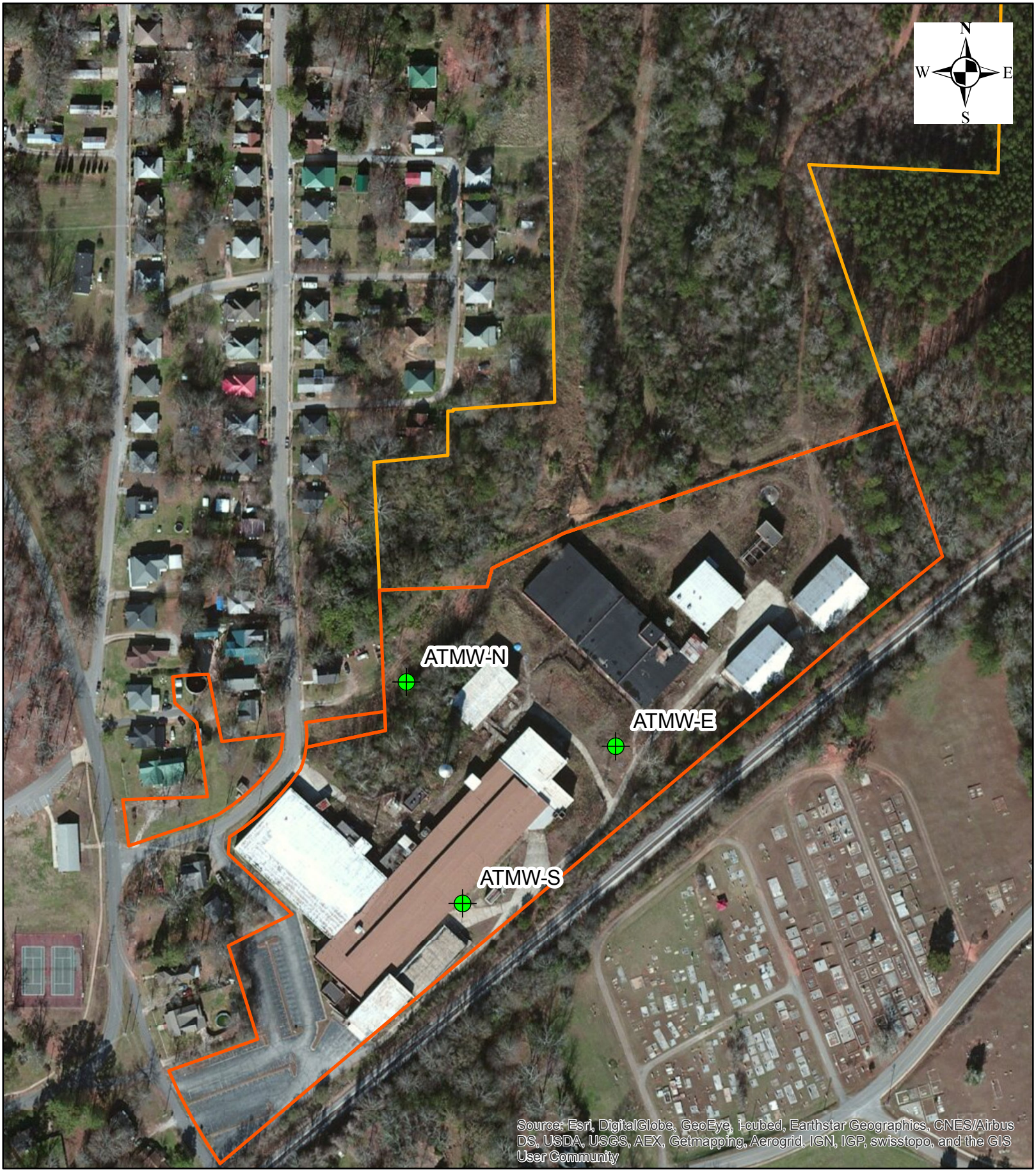
Capital City Bank parcel

Grantville Mill LLC parcel

Aerostar Temporary Wells

0 100 200
Feet

Figure 3A
Aerostar Temporary Wells
March 2010



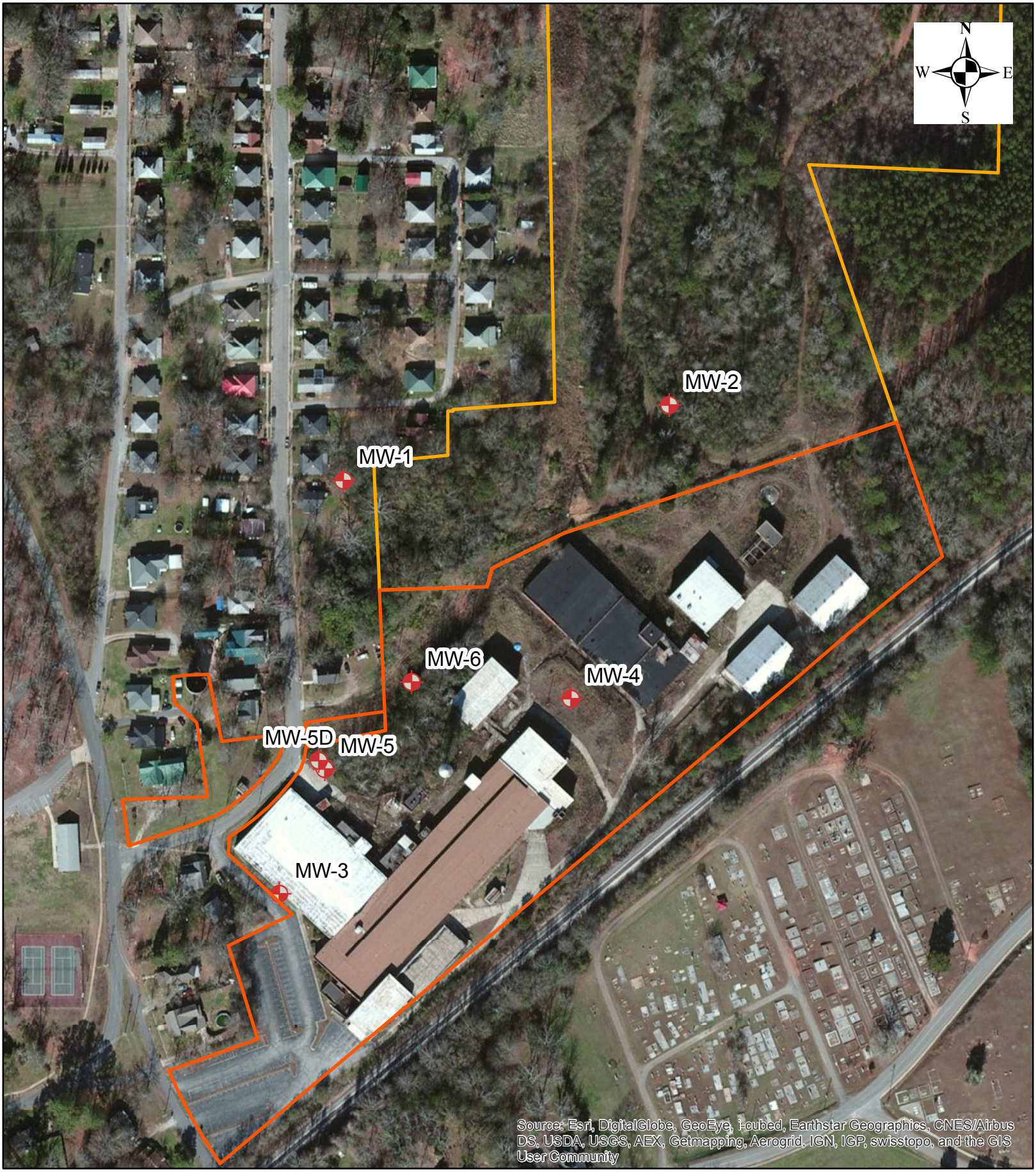
Capital City Bank parcel

Grantville Mill LLC parcel

Ardaman Temporary Wells

0 100 200
Feet

Figure 3B
ArdamanTemporary Wells
August 2013



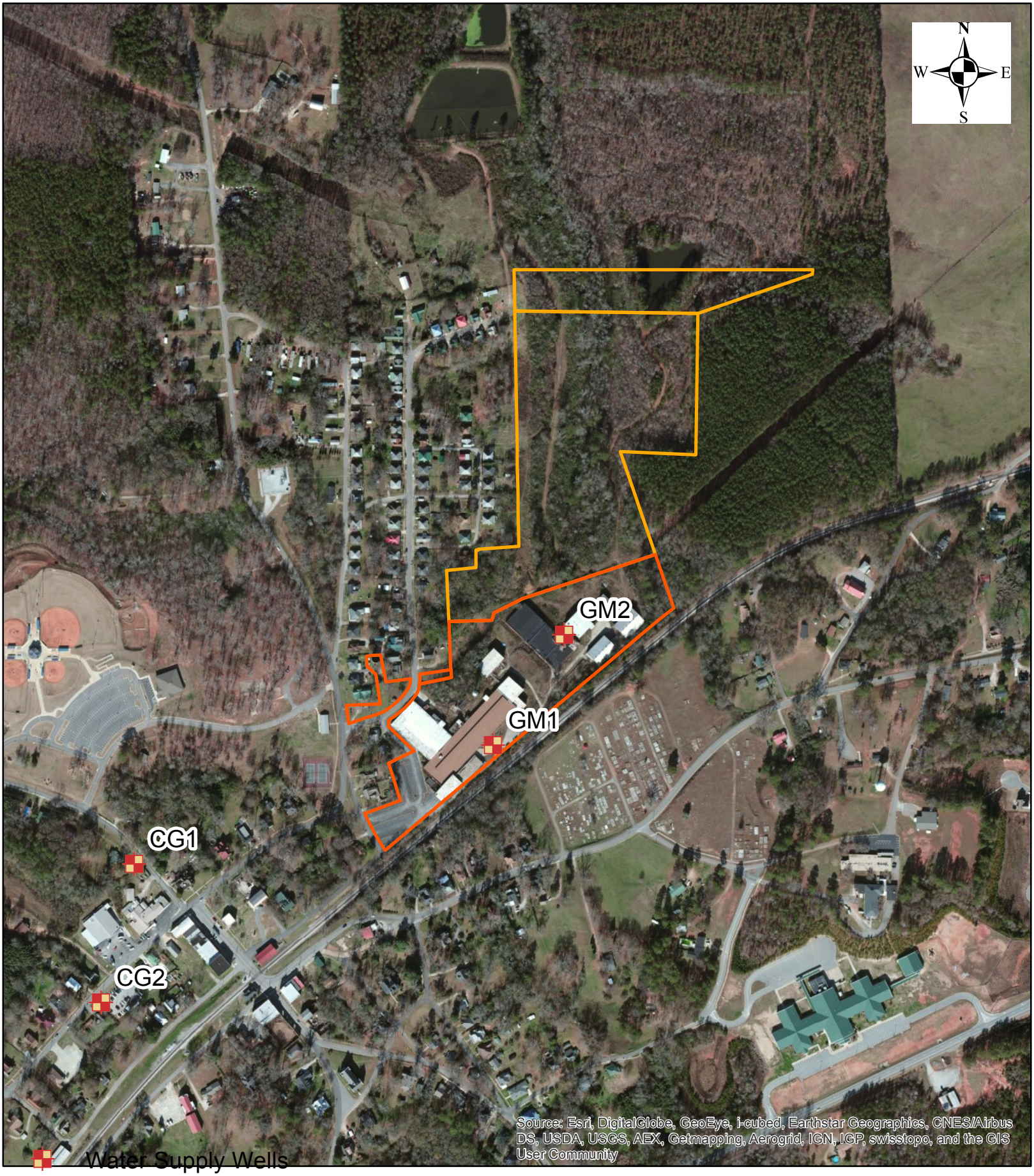
Capital City Bank parcel

Grantville Mill LLC parcel

Ardaman Monitoring Wells

0 100 200
Feet

Figure 3C
Ardaman Monitoring Wells
April-May 2014



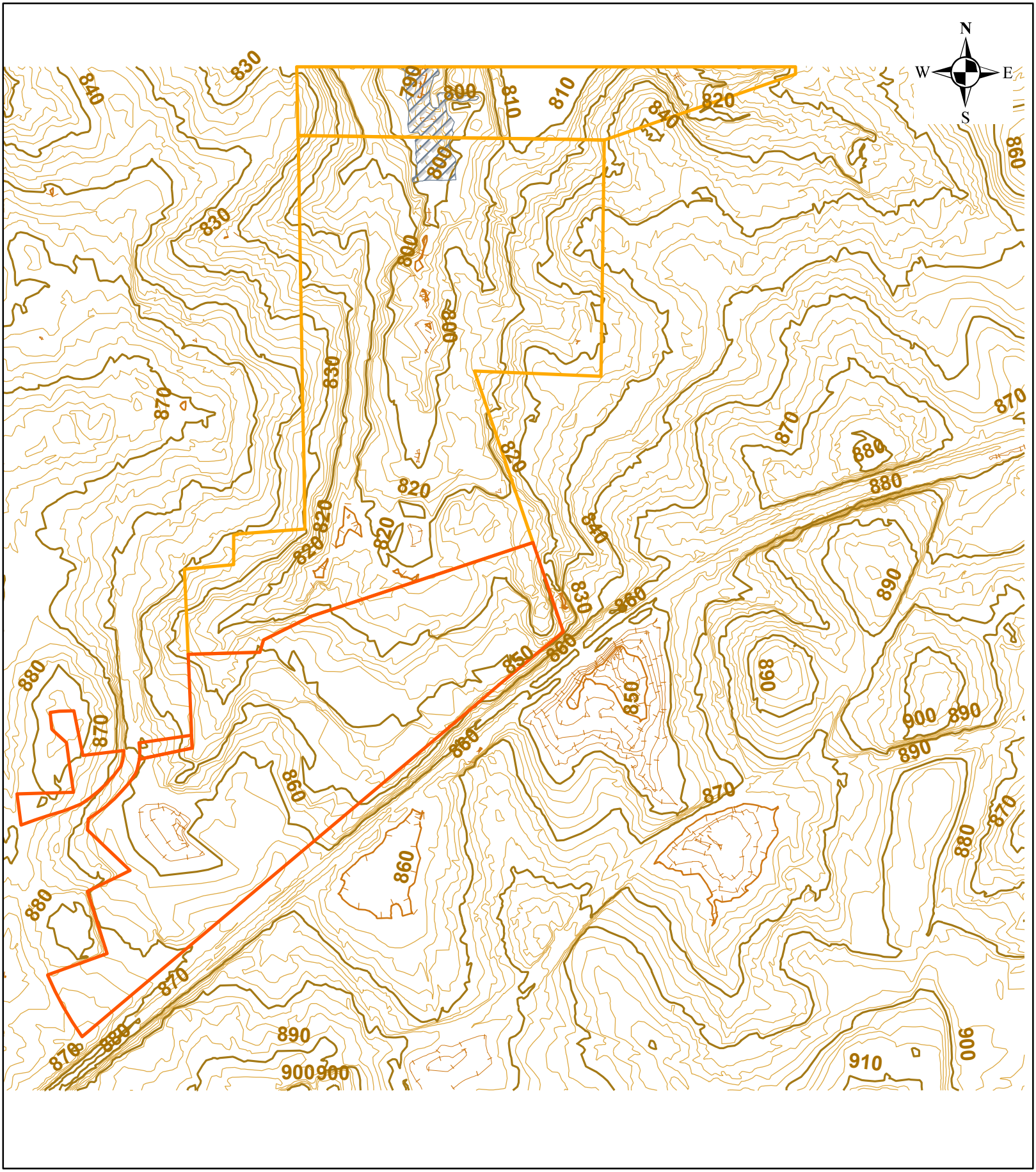
Water Supply Wells

Capital City Bank parcel

Grantville Mill LLC parcel

0 250 500
Feet

Figure 4
Water Supply Wells



Capital City Bank parcel

Grantville Mill LLC parcel

Flood Plain

0 150 300
Feet

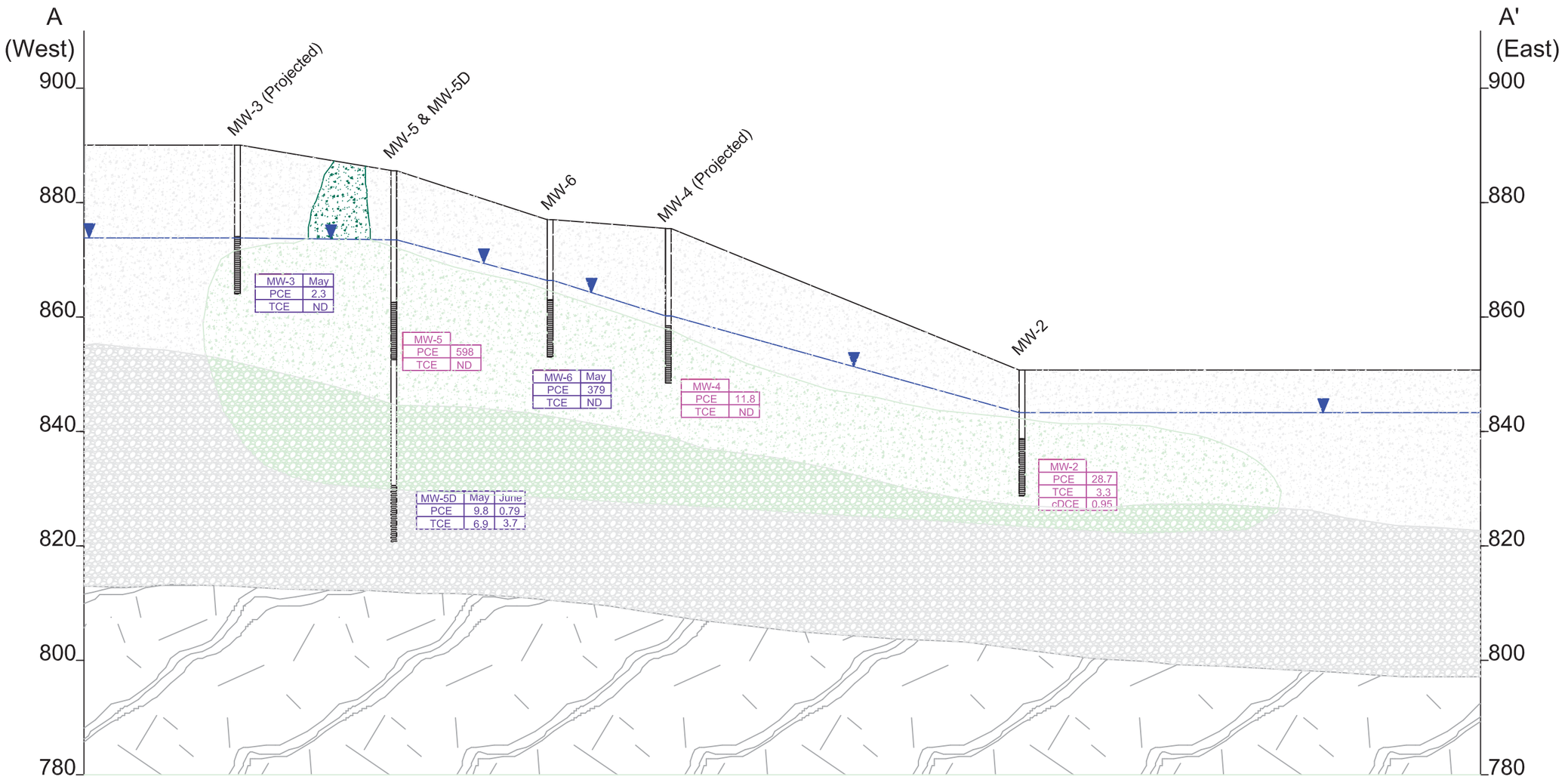
Figure 5
LiDAR Topography

Capital City Bank parcel

Grantville Mill LLC parcel

0 500 1,000
Feet

Figure 6
Surface Water Features



VERT. SCALE (FT)

40
20
0

0 150 300

HORIZ. SCALE (FEET)

EPS

LEGEND

- Residuum (Soil)
- PARTIALLY WEATHERED ROCK
- BEDROCK
- WATER TABLE ELEVATION April 2014
- Projected — WELL PROJECTED INTO PLANE OF CROSS-SECTION
- APPROXIMATE GROUNDWATER PLUME
- THEORETICAL EXTENT OF SOILS ABOVE PCE CSAT (110 mg/kg)
- SCREENED INTERVAL

Well ID	
PCE	17
TCE	29

Sample results (ppb) In April 2014
ND = Non-detect

Well ID	May	June
PCE	17	34
TCE	2.9	ND

Sample Results (ppb) In May/June 2014
ND = Non-detect

Hydrogeologic Profile A - A'

Grantville Mill
Grantville, GA

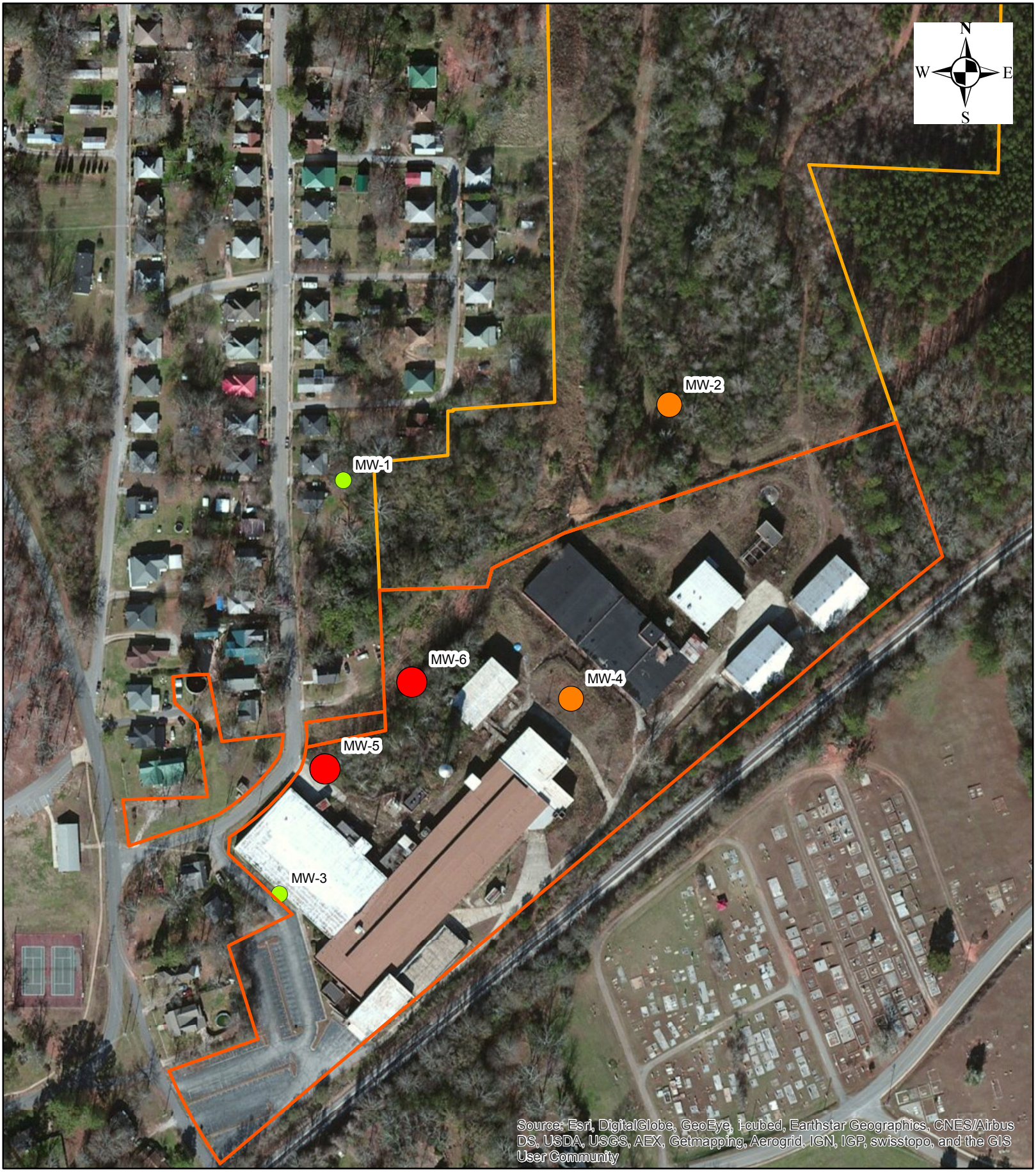
Figure No. 7

0 50 100
Feet

Potentiometric Surface

Ardaman Monitoring Wells

Figure 8
Potentiometric Surface



Capital City Bank parcel

Grantville Mill LLC parcel

Ardaman Monitoring Wells

PCE_ppb

< 5

5-10

10-100

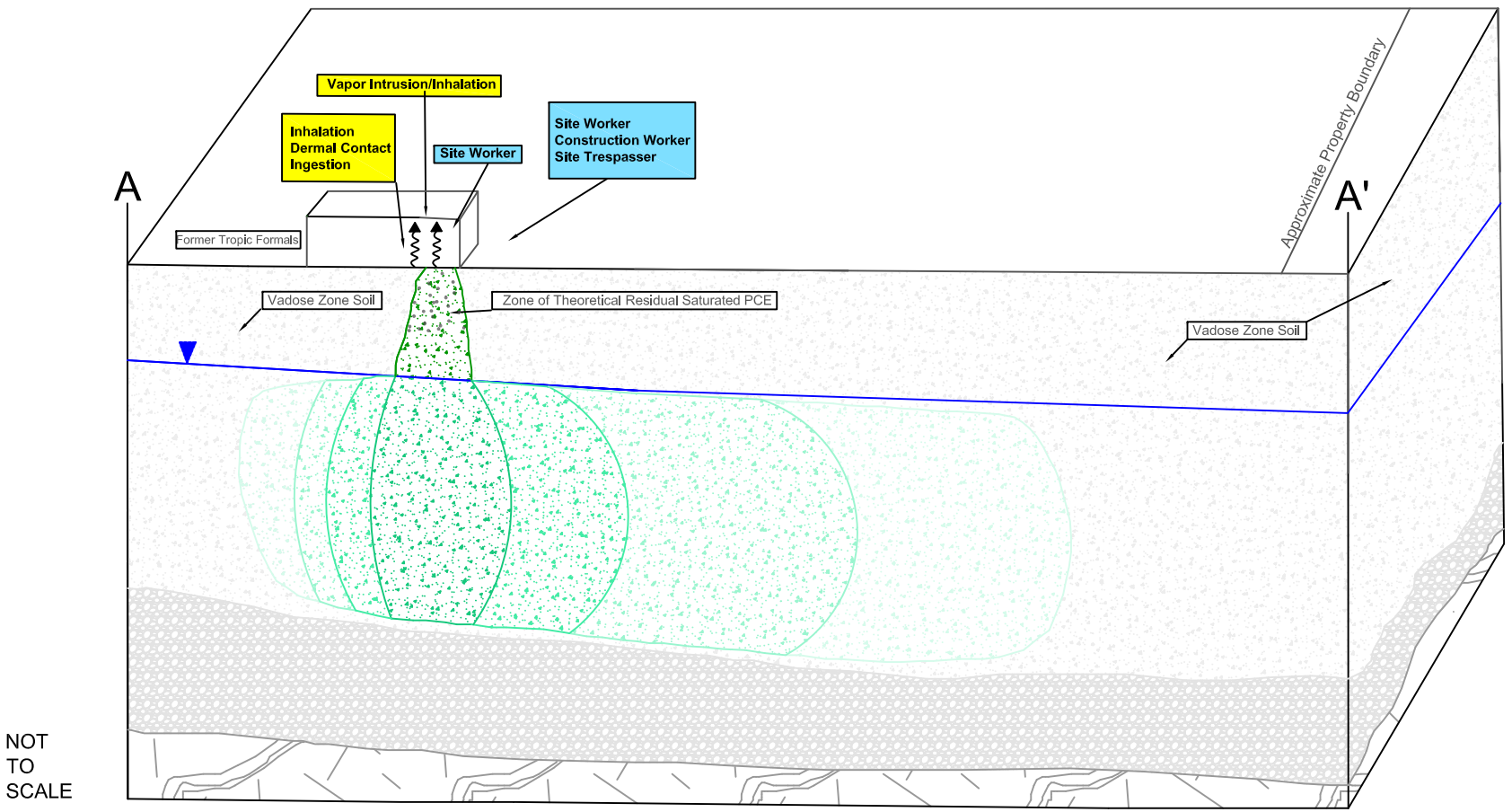
> 100

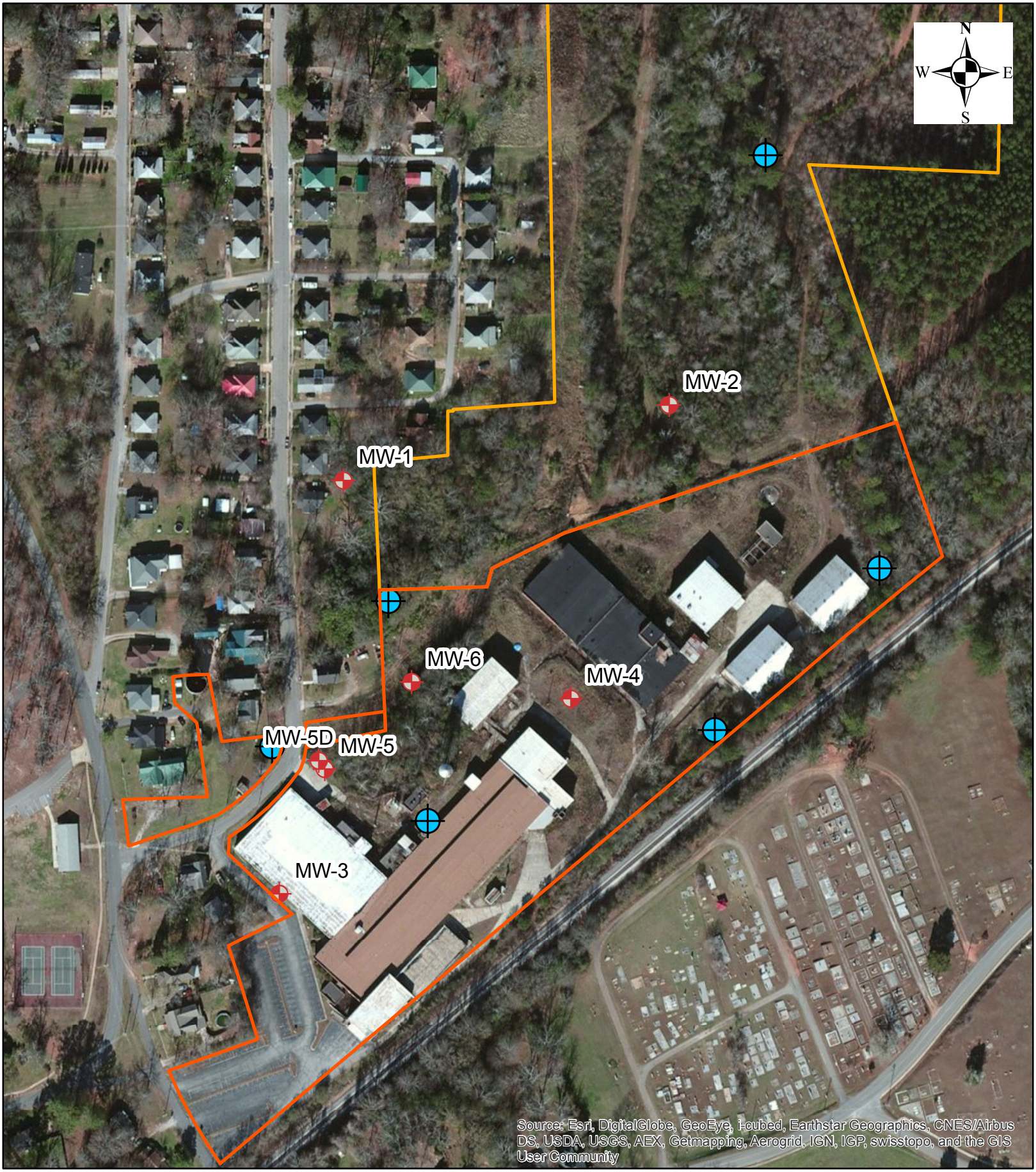
0 100 200

Feet

Figure 9

Groundwater PCE Conditions


Vapor Intrusion/Inhalation
Inhalation
Dermal Contact
Ingestion
Site Worker
Site Worker
Construction Worker
Site Trespasser
A
A'
Approximate Property Boundary
Former Tropic Formals
Vadose Zone Soil
Zone of Theoretical Residual Saturated PCE
Vadose Zone Soil
NOT
TO
SCALE
APPROXIMATE WATER TABLE
POTENTIAL EXPOSURE RECEPTOR
POTENTIAL EXPOSURE PATHWAY
APPROXIMATE POTENTIOMETRIC SURFACE
RESIDUUM (SOIL)
PARTIALLY WEATHERED ROCK
BEDROCK
INTENSITY OF AQUEOUS PLUME
HIGHER CONCENTRATION
TRACE CONCENTRATION
CONTAMINATED VADOSE ZONE SOIL



Capital City Bank parcel

Grantville Mill LLC parcel

Proposed New Monitoring Wells

Ardaman Monitoring Wells

0 100 200

Feet

Figure 11
Proposed Monitoring Wells

Proposed Soil Sampling Location

Figure 12
Proposed Soil Sampling Locations

APPENDIX A

VOLUNTARY REMEDIATION PROGRAM APPLICATION FORM AND CHECKLIST

Voluntary Investigation and Remediation Plan Application Form and Checklist

VRP APPLICANT INFORMATION					
COMPANY NAME	Capital City Bank				
CONTACT PERSON/TITLE	Kyle Phelps, Senior V.P.				
ADDRESS	304 East Tennessee St., Tallahassee, FL 32301				
PHONE	850-402-7960	**FAX**	850-402-7729	**E-MAIL**	Phelps.Kyle@ccbg.com

GEORGIA CERTIFIED PROFESSIONAL GEOLOGIST OR PROFESSIONAL ENGINEER OVERSEEING CLEANUP					
NAME	Kirk Kessler			**GA PE/PG NUMBER**	PG# 685
COMPANY	Environmental Planning Specialist, Inc.				
ADDRESS	1050 Crown Pointe Parkway Ste. 550, Atlanta, GA 30338				
PHONE	404-315-9113	**FAX**	404-315-8509	**E-MAIL**	kkessler@envplanning.com

APPLICANT'S CERTIFICATION

In order to be considered a qualifying property for the VRP:

(1) The property must have a release of regulated substances into the environment;
(2) The property shall not be:
- (A) Listed on the federal National Priorities List pursuant to the federal Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. Section 9601.
- (B) Currently undergoing response activities required by an order of the regional administrator of the federal Environmental Protection Agency; or
- (C) A facility required to have a permit under Code Section 12-8-66.

(3) Qualifying the property under this part would not violate the terms and conditions under which the division operates and administers remedial programs by delegation or similar authorization from the United States Environmental Protection Agency.
(4) Any lien filed under subsection (e) of Code Section 12-8-96 or subsection (b) of Code Section 12-13-12 against the property shall be satisfied or settled and released by the director pursuant to Code Section 12-8-94 or Code Section 12-13-6.

In order to be considered a participant under the VRP:
- (1) The participant must be the property owner of the voluntary remediation property or have express permission to enter another's property to perform corrective action.
- (2) The participant must not be in violation of any order, judgment, statute, rule, or regulation subject to the enforcement authority of the director.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

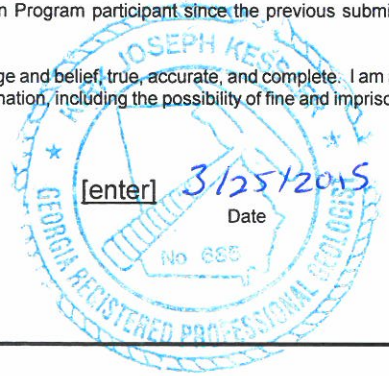
I also certify that this property is eligible for the Voluntary Remediation Program (VRP) as defined in Code Section 12-8-105 and I am eligible as a participant as defined in Code Section 12-8-106.

APPLICANT'S SIGNATURE			
APPLICANT'S NAME/TITLE (PRINT)	**Kyle Phelps**	**DATE**	3/23/15

QUALIFYING PROPERTY INFORMATION (For additional qualifying properties, please refer to the last page of application form)				
HAZARDOUS SITE INVENTORY INFORMATION (if applicable)				
HSI Number	10912	Date HSI Site listed	8/31/2010	
HSI Facility Name	Grantville Mill	NAICS CODE	Vacant Property	
PROPERTY INFORMATION				
TAX PARCEL ID	G050008008, G050008008A	PROPERTY SIZE (ACRES)	13.48, 15.69	
PROPERTY ADDRESS	41 Industrial Way			
CITY	Grantville	COUNTY	Coweta	
STATE	Georgia	ZIPCODE	30220	
LATITUDE (decimal format)	33.2375	LONGITUDE (decimal format)	84.8317	
PROPERTY OWNER INFORMATION				
PROPERTY OWNER(S)	Capital City Bank	PHONE #	850-402-7960	
MAILING ADDRESS	304 East Tennessee St.			
CITY	Tallahassee	STATE/ZIPCODE	FL 32301	

ITEM #	DESCRIPTION OF REQUIREMENT	Location in VRP (i.e. pg., Table #, Figure #, etc.)	For EPD Comment Only (Leave Blank)
1.	**$5,000 APPLICATION FEE** IN THE FORM OF A CHECK PAYABLE TO THE GEORGIA DEPARTMENT OF NATURAL RESOURCES. (PLEASE LIST CHECK DATE AND CHECK NUMBER IN COLUMN TITLED "LOCATION IN VRP." PLEASE DO NOT INCLUDE A SCANNED COPY OF CHECK IN ELECTRONIC COPY OF APPLICATION.)	**Attached to cover letter**	
2.	**WARRANTY DEED(S)** FOR QUALIFYING PROPERTY.	**Appendix B**	
3.	**TAX PLAT** OR OTHER FIGURE INCLUDING QUALIFYING PROPERTY BOUNDARIES, ABUTTING PROPERTIES, AND TAX PARCEL IDENTIFICATION NUMBER(S).	**Appendix B**	
4.	**ONE (1) PAPER COPY AND TWO (2) COMPACT DISC (CD) COPIES** OF THE VOLUNTARY REMEDIATION PLAN IN A SEARCHABLE PORTABLE DOCUMENT FORMAT (PDF).	**Included**	
5.	The VRP participant's initial plan and application must include, using all reasonably available current information to the extent known at the time of application, a graphic three-dimensional preliminary conceptual site model (CSM) including a preliminary remediation plan with a table of delineation standards, brief supporting text, charts, and figures (no more than 10 pages, total) that illustrates the site's surface and subsurface setting, the known or suspected source(s) of contamination, how contamination might move within the environment, the potential human health and ecological receptors, and the complete or incomplete exposure pathways that may exist at the site; the preliminary CSM must be updated as the investigation and remediation progresses and an up-to-date CSM must be included in each semi-annual status report submitted to the director by the participant; a **PROJECTED MILESTONE SCHEDULE** for investigation and remediation of the site, and after enrollment as a participant, must update the schedule in each semi-annual status report to the director describing implementation of the plan	**Body of text and appendices**	

	during the preceding period. A Gantt chart format is preferred for the milestone schedule. The following four (4) generic milestones are required in all initial plans with the results reported in the participant's next applicable semi-annual reports to the director. The director may extend the time for or waive these or other milestones in the participant's plan where the director determines, based on a showing by the participant, that a longer time period is reasonably necessary:		
5.a.	Within the first 12 months after enrollment, the participant must complete horizontal delineation of the release and associated constituents of concern on property where access is available at the time of enrollment;	**To be completed**	
5.b.	Within the first 24 months after enrollment, the participant must complete horizontal delineation of the release and associated constituents of concern extending onto property for which access was not available at the time of enrollment;	**To be completed**	
5.c.	Within 30 months after enrollment, the participant must update the site CSM to include vertical delineation, finalize the remediation plan and provide a preliminary cost estimate for implementation of remediation and associated continuing actions; and	**To be completed**	
5.d.	Within 60 months after enrollment, the participant must submit the compliance status report required under the VRP, including the requisite certifications.	**To be completed**	
6.	**SIGNED AND SEALED PE/PG CERTIFICATION** AND SUPPORTING DOCUMENTATION: "I certify under penalty of law that this report and all attachments were prepared by me or under my direct supervision in accordance with the Voluntary Remediation Program Act (O.C.G.A. Section 12-8-101, et seq.). I am a professional engineer/professional geologist who is registered with the Georgia State Board of Registration for Professional Engineers and Land Surveyors/Georgia State Board of Registration for Professional Geologists and I have the necessary experience and am in charge of the investigation and remediation of this release of regulated substances. Furthermore, to document my direct oversight of the Voluntary Remediation Plan development, implementation of corrective action, and long term monitoring, I have attached a monthly summary of hours invoiced and description of services provided by me to the Voluntary Remediation Program participant since the previous submittal to the Georgia Environmental Protection Division. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." Kirk Kessler, GA PG# 685 Printed Name and GA PE/PG Number Signature and Stamp [enter] 3/25/2015 Date		



ADDITIONAL QUALIFYING PROPERTIES (COPY THIS PAGE AS NEEDED)

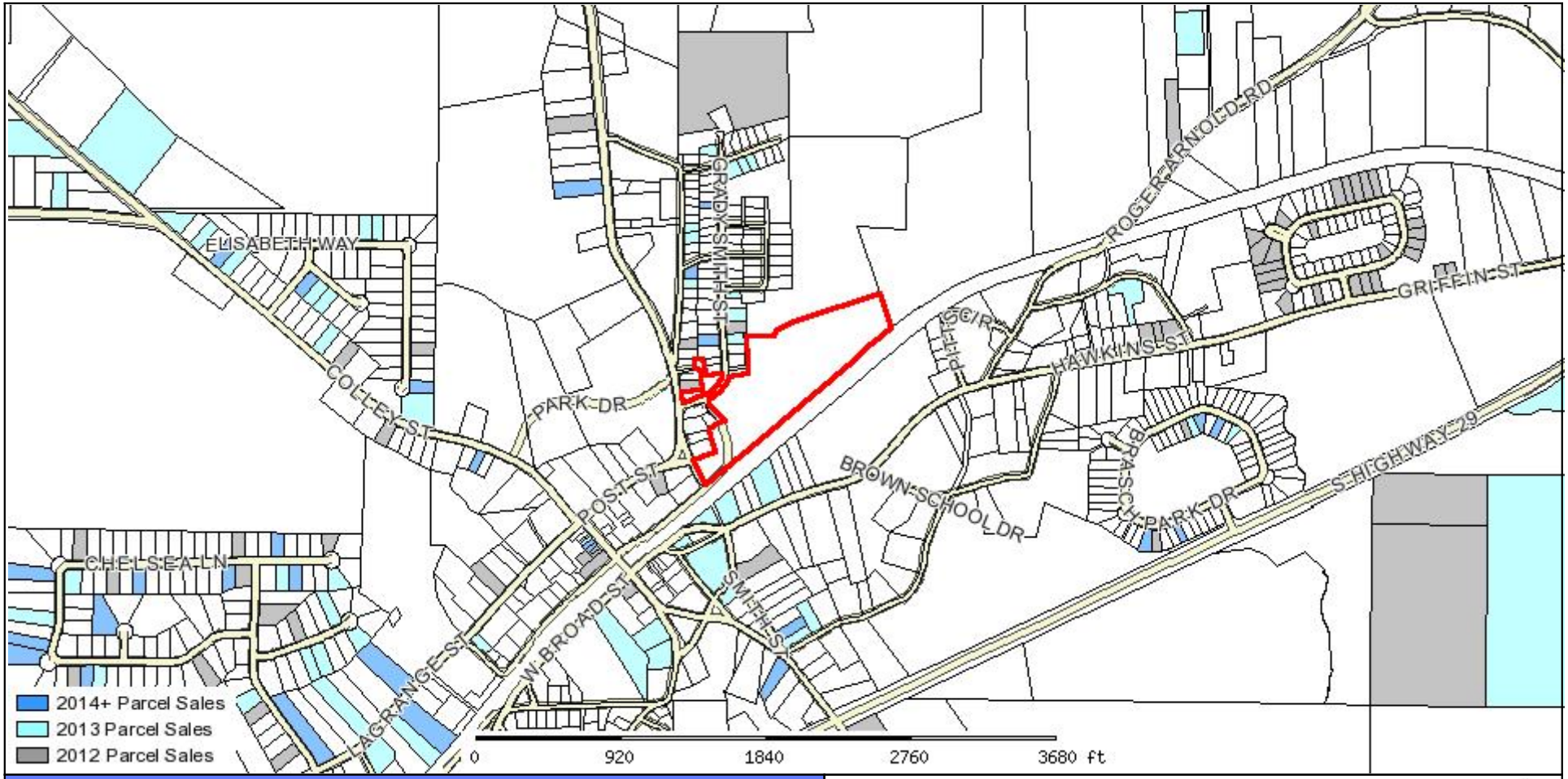
PROPERTY INFORMATION			
TAX PARCEL ID		PROPERTY SIZE (ACRES)	
PROPERTY ADDRESS			
CITY		COUNTY	
STATE		ZIPCODE	
LATITUDE (decimal format)		LONGITUDE (decimal format)	
PROPERTY OWNER INFORMATION			
PROPERTY OWNER(S)		PHONE #	
MAILING ADDRESS			
CITY		STATE/ZIPCODE	

PROPERTY INFORMATION			
TAX PARCEL ID		PROPERTY SIZE (ACRES)	
PROPERTY ADDRESS			
CITY		COUNTY	
STATE		ZIPCODE	
LATITUDE (decimal format)		LONGITUDE (decimal format)	
PROPERTY OWNER INFORMATION			
PROPERTY OWNER(S)		PHONE #	
MAILING ADDRESS			
CITY		STATE/ZIPCODE	

PROPERTY INFORMATION			
TAX PARCEL ID		PROPERTY SIZE (ACRES)	
PROPERTY ADDRESS			
CITY		COUNTY	
STATE		ZIPCODE	
LATITUDE (decimal format)		LONGITUDE (decimal format)	
PROPERTY OWNER INFORMATION			
PROPERTY OWNER(S)		PHONE #	
MAILING ADDRESS			
CITY		STATE/ZIPCODE	

APPENDIX B

TAX MAP AND WARRANTY DEED



Coweta County Assessor			
Parcel: G05 0008 008 Acres: 13.48			
Name:	CAPITAL CITY BANK	Land Value	$144,660.00
Site:	0	Building Value	$300,000.00
Sale:	$1,847,016 on 07-2010 Reason=07 Qual=U	Misc Value	$0.00
Mail:	1301 METROPOLITAN BLVD TALLAHASSEE, FL 32308	Total Value:	$444,660.00

Date printed: 02/10/15 : 08:23:45

IT IS ORDERED as set forth below:

Date: July 13, 2010

W. H. Drake
U.S. Bankruptcy Court Judge

UNITED STATES BANKRUPTCY COURT
NORTHERN DISTRICT OF GEORGIA
NEWNAN DIVISION

IN RE:	:	CHAPTER 11
GRANTVILLE MILL, LLC,	:	CASE NO. 10-10354-whd
Debtor	:	

ORDER APPROVING SALE FREE AND CLEAR OF LIENS, CLAIMS, AND ENCUMBRANCES

The above named Debtor filed its MOTION FOR ENTRY OF ORDERS PURSUANT TO 11 U.S.C. §§ 105 AND 363 (A) AUTHORIZING AND SCHEDULING AN AUCTION AT WHICH THE DEBTOR WILL SOLICIT THE HIGHEST OR BEST BID FOR THE SALE OF SUBSTANTIALLY ALL OF ITS PROPERTY; (B) APPROVING BID PROCEDURES GOVERNING THE PROPOSED SALE; AND (C) APPROVING THE SALE OF THE PROPERTY TO THE PARTY SUBMITTING THE HIGHEST OR BEST BID (the "Motion") on June 4, 2010. On June 10, 2010, the Court entered its ORDER ESTABLISHING SALE PROCEDURES, SCHEDULING AUCTION, AND SCHEDULING HEARING ON APPROVAL OF SALE (the "Procedures Order"). The property that was the subject of the Motion consists of two adjoining parcels: (i) a tract of unimproved property consisting of approximately 40 acres (the "Unimproved Tract") that is collateral for a debt owed Branch Banking & Trust ("BB&T"), and (ii) a tract of improved property consisting of approximately 14 acres (the "Improved Tract") that is collateral for a debt owed Capital City Bank ("CCB").

The Procedures Order set forth certain procedures for the sale and authorized BB&T and CBB to credit bid on their respective collateral. The matter came before the Court on June 25,

2010, following a reset of the hearing originally scheduled for June 18, 2010. At the hearing, the Debtor announced that it received only one Qualified Bid (as defined in the Procedures Order), to wit: a Credit bid from CBB of $1,847,016.44. There being no objections to the sale of the Improved Tract,[1] and based on the record in the case, the Court accepts the following representations of the parties:

A. The Court has jurisdiction over the Motion and the transaction contemplated therein pursuant to 28 U.S.C. §§ 157 and 1334. This matter is a core proceeding pursuant to 28 U.S.C. § 157(b) (2) (A) and (N). Venue of this case and the Motion in this district is proper under 28 U.S.C. §§ 1408 and 1409.

B. The statutory predicates for the relief sought in the Motion are Sections 105 and 363 of 11 U.S.C. §§ 101 et seq. (as amended, modified or supplemented, the "Bankruptcy Code"), and Bankruptcy Rules 2002, 6004, and 9014.

C. The transaction contemplated by the Motion was negotiated and has been and is undertaken by the Debtor and CBB without collusion or fraud, and in good faith within the meaning of Section 363(m) of the Bankruptcy Code. As a result of the foregoing, the Debtor and CBB are entitled to the protections of Section 363(m) of the Bankruptcy Code.

D. Neither the Debtor nor CBB have engaged in any conduct that would cause or permit the proposed sale to be avoided under Section 363(n) of the Bankruptcy Code.

E. A reasonable opportunity to object or be heard with respect to the Motion and the relief requested therein has been afforded to all interested persons and entities.

For all of the foregoing and after due deliberation, the Court ORDERS, ADJUDGES, AND DECREES THAT:

1. The sale of the Improved Tract, the legal description of which is attached hereto as Exhibit "A," to CBB free and clear of all liens, claims, rights, interests, and encumbrances of any kind or nature whatsoever is hereby APPROVED.

2. The Debtor is authorized to execute and deliver, and empowered to execute such documents as are reasonably necessary to effectuate the sale approved herein.

3. This Order shall be binding in all respects upon all creditors of the Debtor, all successors and assigns of CBB, and the Debtor. Nothing contained in any Chapter 11 plan confirmed in this bankruptcy case or in the confirmation order confirming any such Chapter 11 plan shall conflict with or derogate from the provisions of the Sales Contract or this Order.

4. The sale contemplated herein was undertaken by CBB in good faith, as that term is used in Section 363(m) of the Bankruptcy Code, and accordingly, the reversal or modification on appeal of the authorization provided herein to consummate the sale shall not affect the

[1] Although BB&T filed a limited objection, BB&T's collateral is not the subject of this sale and BB&T has no objection to entry of this Order.

validity of the sale of the Improved Tract to CBB, unless such authorization is duly stayed pending such appeal. CBB is a purchaser in good faith of the Improved Tract and is entitled to all of the protections afforded by Section 363(m) of the Bankruptcy Code.

5. The stay of orders authorizing the use, sale, or lease of property as provided for in Bankruptcy Rule 6004(g) shall not apply to this Order, and this Order is immediately effective and enforceable.

** END OF DOCUMENT**

Order prepared and presented by:
LAMBERTH, CIFELLI, STOKES,
ELLIS & NASON, P.A.

/s/ G. Frank Nason, IV
G. Frank Nason, IV
Georgia Bar No. 535160
3343 Peachtree Road, NE, Suite 550
Atlanta, GA 30326-1022
(404) 262-7373
Counsel for Debtors

Parties to be Served:

G. Frank Nason, IV, Lamberth, Cifelli, Stokes, Ellis & Nason, P.A., 3343 Peachtree Road, NE, Suite 550, Atlanta, GA 30326

R. Jeneane Treace, United States Trustee, 362 Richard B. Russell Federal Building, 75 Spring, Street, Atlanta, GA 30303

Donya M. Byrnside, Parker Hudson Rainer & Dobbs, LLP, 285 Peachtree Center Avenue, Suite 1500, Atlanta, GA 30303

John D. Andrle, Esq., 3525 Piedmont Rd., NE, Suite 700, Atlanta, GA 30305

EXHIBIT "A" FOLLOWS

BK:3213 PG:30

EXHIBIT "A"

ALL THOSE TRACTS TRACT OR PARCELS OF LAND LYING AND BEING IN LAND LOT 244 OF THE 2ND DISTRICT, OF COWETA COUNTY, GEORGIA, BEING TRACT A 12.9389 ACRES TRACT B 0.103 ACRES AND TRACT C 0.5448 ACRES. BEING A TOTAL OF 13.59 ACRES AS PER PLAT RECORDED IN PLAT BOOK 88, PAGES 155, RECORDS OF COWETA COUNTY, GEROGIA, WHICH PLAT IS BY REFERENCE IN CORPORATED HEREIN AND MADE A PART HEREOF.

PT # 2010-003666

DOC# 011071
FILED IN OFFICE
08/04/2010 02:53 PM
BK:3588 PG:171-173
CINDY G BROWN
CLERK OF SUPERIOR COURT
COWETA COUNTY

Cindy G. Brown

REAL ESTATE TRANSFER TAX
PAID: $0.00 ✓

STATE OF GEORGIA

COUNTY OF COWETA

✓Upon recording, please return to:
G. Frank Nason, IV, Esq.
Lamberth, Cifelli, Stokes,
Ellis & Nason, P.A.
3343 Peachtree Road NE
Suite 550
Atlanta, Georgia 30326

WARRANTY DEED

THIS INDENTURE, made the 30th day of July, 2010, between **GRANTVILLE MILL, LLC, a Georgia Limited Liability Company,** as party of the first part, hereinafter called Grantor, and **CAPITAL CITY BANK, whose address is 1301 Metropolitan Blvd., Tallahassee, Florida 32308,** as party or parties of the second part, hereinafter called Grantee, (the words "Grantor" and Grantee" to include their respective heirs, successors and assigns where the context requires or permits).

WITNESSETH: That Grantor, for and in consideration of the sum of Ten Dollars ($10.00) and other good and valuable consideration, in hand paid at and before the sealing and delivery of these presents, the receipt whereof is hereby acknowledged, has granted, bargained, sold, aliened, conveyed and confirmed, and by these presents does grant, bargain, sell, alien, convey and confirm unto the said Grantee the property described on Exhibit "A" attached hereto (the "Property").

This Warranty Deed is an absolute conveyance, the Grantor having sold pursuant to the "Order Approving Sale Free and Clear of Liens, Claims, and Encumbrances" entered July 13, 2010, in the bankruptcy case styled *In re Grantville Mill, LLC,* Case No. 10-10354, United States Bankruptcy Court, Northern District of Georgia.

This Warranty Deed is executed and delivered by Grantor and is received by Grantee as an absolute conveyance of Grantor's interest in the Property. Grantor hereby declares that this conveyance is freely and fairly made.

This Conveyance is made subject to all zoning ordinances, easements and restrictions of record affecting said described property.

3/14 mm

TO HAVE AND TO HOLD the said described property to Grantee, so that neither the Grantor nor its successors nor any other person or persons claiming under it shall at any time hereafter, by any way or means, have claim or demand any right, title, or interest in or to the aforesaid property or its appurtenances or any part thereof.

IN WITNESS WHEREOF, the Grantor has signed and sealed this deed, the day and year above written.

Signed, sealed and delivered
in the presence of:

UNOFFICIAL WITNESS

NOTARY PUBLIC

OFFICIAL SEAL
LINDA W MCLANE
Notary Public, Georgia
Cobb County
My Commission Expires
Jan. 3, 2014

GRANTVILLE MILL, LLC

BY: _____ (SEAL)
LARRY R. WITT
MANAGING MEMBER

EXHIBIT "A"

ALL THOSE TRACTS TRACT OR PARCELS OF LAND LYING AND BEING IN LAND LOT 244 OF THE 2ND DISTRICT, OF COWETA COUNTY, GEORGIA, BEING TRACT A 12.9389 ACRES TRACT B 0.103 ACRES AND TRACT C 0.5448 ACRES. BEING A TOTAL OF 13.59 ACRES AS PER PLAT RECORDED IN PLAT BOOK 88, PAGES 155, RECORDS OF COWETA COUNTY, GEROGIA, WHICH PLAT IS BY REFERENCE IN CORPORATED HEREIN AND MADE A PART HEREOF.

APPENDIX C

PRIOR INVESTIGATIONS DATA

APPENDIX C1

PRIOR GROUNDWATER SAMPLING RESULTS

IntraNet
Lab Services, LLLP

Report of Analyses

Project Information

Client Name	:	Ardaman & Associates
Project Manager	:	Steve Reecy, P.E.
Project Name	:	Grandville 14-1081
Purchase Order#	:	
FAC#	:	
WO#	:	

Laboratory Information

Laboratory Utilized	:	Pace Analytical Services
Laboratory Report #	:	35135146
FLDOH/NELAC#	:	E83079
Laboratory Address	:	8 East Tower Circle, Ormond Beach, FL 32174
Laboratory Phone #	:	386-672-5668

3838 Killearn Center Court · Tallahassee, FL 32309 · Phone: (850) 385-9400 · Fax: (850) 385-2469

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

May 02, 2014

Project Manager
Ardaman & Associates
3175 W. Thorpe St
Tallahassee, FL 32303

RE: Project: Grandville 14-1081
Pace Project No.: 35135146

Dear Project Manager:
Enclosed are the analytical results for sample(s) received by the laboratory on April 23, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Sakina Mckenzie
sakina.mckenzie@pacelabs.com
Project Manager

Enclosures

cc: Ms. Ava O'Hollearn, IntraNet Lab Services, LLLP

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

CERTIFICATIONS

Project: Grandville 14-1081
Pace Project No.: 35135146

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alabama Certification #: 41320
Arizona Certification #: AZ0735
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maine Certification #: FL01264
Maryland Certification: #346
Massachusetts Certification #: M-FL1264
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
Nevada Certification: FL NELAC Reciprocity
New Hampshire Certification #: 2958
New Jersey Certification #: FL765
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
Washington Certification #: C955
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

SAMPLE SUMMARY

Project: Grandville 14-1081
Pace Project No.: 35135146

Lab ID	Sample ID	Matrix	Date Collected	Date Received
35135146001	**MW1**	Water	04/18/14 13:00	04/23/14 10:15
35135146002	**MW2**	Water	04/18/14 12:25	04/23/14 10:15
35135146003	**MW4**	Water	04/18/14 11:50	04/23/14 10:15
35135146004	**MW5**	Water	04/18/14 11:10	04/23/14 10:15

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

SAMPLE ANALYTE COUNT

Project: Grandville 14-1081
Pace Project No.: 35135146

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
35135146001	**MW1**	EPA 8260	JLR	33	PASI-O
35135146002	**MW2**	EPA 8260	JLR	33	PASI-O
35135146003	**MW4**	EPA 8260	JLR	33	PASI-O
35135146004	**MW5**	EPA 8260	JLR	33	PASI-O

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

SUMMARY OF DETECTION

Project: Grandville 14-1081
Pace Project No.: 35135146

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
35135146001	**MW1**					
EPA 8260	Bromodichloromethane	0.42 I	ug/L	0.60	05/01/14 15:11	
EPA 8260	Chloroform	1.6	ug/L	1.0	05/01/14 15:11	
EPA 8260	Tetrachloroethene	3.9	ug/L	1.0	05/01/14 15:11	
35135146002	**MW2**					
EPA 8260	cis-1,2-Dichloroethene	0.95 I	ug/L	1.0	05/01/14 15:36	
EPA 8260	Tetrachloroethene	28.7	ug/L	1.0	05/01/14 15:36	
EPA 8260	Trichloroethene	3.3	ug/L	1.0	05/01/14 15:36	
EPA 8260	Trichlorofluoromethane	11.3	ug/L	1.0	05/01/14 15:36	
35135146003	**MW4**					
EPA 8260	Bromodichloromethane	1.5	ug/L	0.60	04/27/14 00:29	
EPA 8260	Chloroform	6.0	ug/L	1.0	04/27/14 00:29	
EPA 8260	Tetrachloroethene	11.8	ug/L	1.0	04/27/14 00:29	
35135146004	**MW5**					
EPA 8260	Tetrachloroethene	598	ug/L	10.0	05/01/14 12:35	

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

ANALYTICAL RESULTS

Project: Grandville 14-1081
Pace Project No.: 35135146

Sample: MW1 **Lab ID: 35135146001** Collected: 04/18/14 13:00 Received: 04/23/14 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Bromodichloromethane	**0.42 I**	ug/L	0.60	0.27	1		05/01/14 15:11	75-27-4	
Bromoform	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:11	75-25-2	
Bromomethane	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:11	74-83-9	
Carbon tetrachloride	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:11	56-23-5	
Chlorobenzene	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:11	108-90-7	
Chloroethane	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:11	75-00-3	
2-Chloroethylvinyl ether	**0.50U**	ug/L	10.0	0.50	1		05/01/14 15:11	110-75-8	
Chloroform	**1.6**	ug/L	1.0	0.50	1		05/01/14 15:11	67-66-3	
Chloromethane	**0.62U**	ug/L	1.0	0.62	1		05/01/14 15:11	74-87-3	
Dibromochloromethane	**0.26U**	ug/L	0.50	0.26	1		05/01/14 15:11	124-48-1	
1,2-Dichlorobenzene	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:11	95-50-1	
1,3-Dichlorobenzene	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:11	541-73-1	
1,4-Dichlorobenzene	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:11	106-46-7	
Dichlorodifluoromethane	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:11	75-71-8	
1,1-Dichloroethane	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:11	75-34-3	
1,2-Dichloroethane	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:11	107-06-2	
1,1-Dichloroethene	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:11	75-35-4	
cis-1,2-Dichloroethene	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:11	156-59-2	
trans-1,2-Dichloroethene	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:11	156-60-5	
1,2-Dichloropropane	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:11	78-87-5	
cis-1,3-Dichloropropene	**0.25U**	ug/L	0.50	0.25	1		05/01/14 15:11	10061-01-5	
trans-1,3-Dichloropropene	**0.25U**	ug/L	0.50	0.25	1		05/01/14 15:11	10061-02-6	
Methylene Chloride	**2.5U**	ug/L	5.0	2.5	1		05/01/14 15:11	75-09-2	
1,1,2,2-Tetrachloroethane	**0.12U**	ug/L	0.50	0.12	1		05/01/14 15:11	79-34-5	
Tetrachloroethene	**3.9**	ug/L	1.0	0.50	1		05/01/14 15:11	127-18-4	
1,1,1-Trichloroethane	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:11	71-55-6	
1,1,2-Trichloroethane	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:11	79-00-5	
Trichloroethene	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:11	79-01-6	
Trichlorofluoromethane	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:11	75-69-4	
Vinyl chloride	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:11	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-114		1		05/01/14 15:11	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	86-125		1		05/01/14 15:11	17060-07-0	
Toluene-d8 (S)	100	%	87-113		1		05/01/14 15:11	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

ANALYTICAL RESULTS

Project: Grandville 14-1081
Pace Project No.: 35135146

Sample: MW2 **Lab ID: 35135146002** Collected: 04/18/14 12:25 Received: 04/23/14 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Bromodichloromethane	**0.27U**	ug/L	0.60	0.27	1		05/01/14 15:36	75-27-4	
Bromoform	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:36	75-25-2	
Bromomethane	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:36	74-83-9	
Carbon tetrachloride	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:36	56-23-5	
Chlorobenzene	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:36	108-90-7	
Chloroethane	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:36	75-00-3	
2-Chloroethylvinyl ether	**0.50U**	ug/L	10.0	0.50	1		05/01/14 15:36	110-75-8	
Chloroform	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:36	67-66-3	
Chloromethane	**0.62U**	ug/L	1.0	0.62	1		05/01/14 15:36	74-87-3	
Dibromochloromethane	**0.26U**	ug/L	0.50	0.26	1		05/01/14 15:36	124-48-1	
1,2-Dichlorobenzene	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:36	95-50-1	
1,3-Dichlorobenzene	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:36	541-73-1	
1,4-Dichlorobenzene	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:36	106-46-7	
Dichlorodifluoromethane	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:36	75-71-8	
1,1-Dichloroethane	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:36	75-34-3	
1,2-Dichloroethane	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:36	107-06-2	
1,1-Dichloroethene	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:36	75-35-4	
cis-1,2-Dichloroethene	**0.95 I**	ug/L	1.0	0.50	1		05/01/14 15:36	156-59-2	
trans-1,2-Dichloroethene	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:36	156-60-5	
1,2-Dichloropropane	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:36	78-87-5	
cis-1,3-Dichloropropene	**0.25U**	ug/L	0.50	0.25	1		05/01/14 15:36	10061-01-5	
trans-1,3-Dichloropropene	**0.25U**	ug/L	0.50	0.25	1		05/01/14 15:36	10061-02-6	
Methylene Chloride	**2.5U**	ug/L	5.0	2.5	1		05/01/14 15:36	75-09-2	
1,1,2,2-Tetrachloroethane	**0.12U**	ug/L	0.50	0.12	1		05/01/14 15:36	79-34-5	
Tetrachloroethene	**28.7**	ug/L	1.0	0.50	1		05/01/14 15:36	127-18-4	
1,1,1-Trichloroethane	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:36	71-55-6	
1,1,2-Trichloroethane	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:36	79-00-5	
Trichloroethene	**3.3**	ug/L	1.0	0.50	1		05/01/14 15:36	79-01-6	
Trichlorofluoromethane	**11.3**	ug/L	1.0	0.50	1		05/01/14 15:36	75-69-4	
Vinyl chloride	**0.50U**	ug/L	1.0	0.50	1		05/01/14 15:36	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-114		1		05/01/14 15:36	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	86-125		1		05/01/14 15:36	17060-07-0	
Toluene-d8 (S)	100	%	87-113		1		05/01/14 15:36	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

ANALYTICAL RESULTS

Project: Grandville 14-1081
Pace Project No.: 35135146

Sample: MW4 **Lab ID: 35135146003** Collected: 04/18/14 11:50 Received: 04/23/14 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Bromodichloromethane	**1.5**	ug/L	0.60	0.27	1		04/27/14 00:29	75-27-4	
Bromoform	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:29	75-25-2	
Bromomethane	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:29	74-83-9	
Carbon tetrachloride	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:29	56-23-5	
Chlorobenzene	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:29	108-90-7	
Chloroethane	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:29	75-00-3	
2-Chloroethylvinyl ether	**0.50U**	ug/L	10.0	0.50	1		04/27/14 00:29	110-75-8	
Chloroform	**6.0**	ug/L	1.0	0.50	1		04/27/14 00:29	67-66-3	
Chloromethane	**0.62U**	ug/L	1.0	0.62	1		04/27/14 00:29	74-87-3	
Dibromochloromethane	**0.26U**	ug/L	0.50	0.26	1		04/27/14 00:29	124-48-1	
1,2-Dichlorobenzene	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:29	95-50-1	
1,3-Dichlorobenzene	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:29	541-73-1	
1,4-Dichlorobenzene	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:29	106-46-7	
Dichlorodifluoromethane	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:29	75-71-8	
1,1-Dichloroethane	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:29	75-34-3	
1,2-Dichloroethane	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:29	107-06-2	
1,1-Dichloroethene	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:29	75-35-4	
cis-1,2-Dichloroethene	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:29	156-59-2	
trans-1,2-Dichloroethene	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:29	156-60-5	
1,2-Dichloropropane	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:29	78-87-5	
cis-1,3-Dichloropropene	**0.25U**	ug/L	0.50	0.25	1		04/27/14 00:29	10061-01-5	
trans-1,3-Dichloropropene	**0.25U**	ug/L	0.50	0.25	1		04/27/14 00:29	10061-02-6	
Methylene Chloride	**2.5U**	ug/L	5.0	2.5	1		04/27/14 00:29	75-09-2	
1,1,2,2-Tetrachloroethane	**0.12U**	ug/L	0.50	0.12	1		04/27/14 00:29	79-34-5	
Tetrachloroethene	**11.8**	ug/L	1.0	0.50	1		04/27/14 00:29	127-18-4	
1,1,1-Trichloroethane	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:29	71-55-6	
1,1,2-Trichloroethane	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:29	79-00-5	
Trichloroethene	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:29	79-01-6	
Trichlorofluoromethane	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:29	75-69-4	
Vinyl chloride	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:29	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	94	%	70-114		1		04/27/14 00:29	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	86-125		1		04/27/14 00:29	17060-07-0	
Toluene-d8 (S)	98	%	87-113		1		04/27/14 00:29	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

ANALYTICAL RESULTS

Project: Grandville 14-1081
Pace Project No.: 35135146

Sample: MW5 **Lab ID: 35135146004** Collected: 04/18/14 11:10 Received: 04/23/14 10:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Bromodichloromethane	**0.27U**	ug/L	0.60	0.27	1		04/27/14 00:54	75-27-4	
Bromoform	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:54	75-25-2	
Bromomethane	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:54	74-83-9	
Carbon tetrachloride	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:54	56-23-5	
Chlorobenzene	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:54	108-90-7	
Chloroethane	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:54	75-00-3	
2-Chloroethylvinyl ether	**0.50U**	ug/L	10.0	0.50	1		04/27/14 00:54	110-75-8	
Chloroform	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:54	67-66-3	
Chloromethane	**0.62U**	ug/L	1.0	0.62	1		04/27/14 00:54	74-87-3	
Dibromochloromethane	**0.26U**	ug/L	0.50	0.26	1		04/27/14 00:54	124-48-1	
1,2-Dichlorobenzene	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:54	95-50-1	
1,3-Dichlorobenzene	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:54	541-73-1	
1,4-Dichlorobenzene	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:54	106-46-7	
Dichlorodifluoromethane	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:54	75-71-8	
1,1-Dichloroethane	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:54	75-34-3	
1,2-Dichloroethane	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:54	107-06-2	
1,1-Dichloroethene	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:54	75-35-4	
cis-1,2-Dichloroethene	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:54	156-59-2	
trans-1,2-Dichloroethene	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:54	156-60-5	
1,2-Dichloropropane	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:54	78-87-5	
cis-1,3-Dichloropropene	**0.25U**	ug/L	0.50	0.25	1		04/27/14 00:54	10061-01-5	
trans-1,3-Dichloropropene	**0.25U**	ug/L	0.50	0.25	1		04/27/14 00:54	10061-02-6	
Methylene Chloride	**2.5U**	ug/L	5.0	2.5	1		04/27/14 00:54	75-09-2	
1,1,2,2-Tetrachloroethane	**0.12U**	ug/L	0.50	0.12	1		04/27/14 00:54	79-34-5	
Tetrachloroethene	**598**	ug/L	10.0	5.0	10		05/01/14 12:35	127-18-4	
1,1,1-Trichloroethane	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:54	71-55-6	
1,1,2-Trichloroethane	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:54	79-00-5	
Trichloroethene	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:54	79-01-6	
Trichlorofluoromethane	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:54	75-69-4	
Vinyl chloride	**0.50U**	ug/L	1.0	0.50	1		04/27/14 00:54	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	93	%	70-114		1		04/27/14 00:54	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	86-125		1		04/27/14 00:54	17060-07-0	
Toluene-d8 (S)	96	%	87-113		1		04/27/14 00:54	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALITY CONTROL DATA

Project: Grandville 14-1081
Pace Project No.: 35135146

QC Batch: MSV/11485 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV
Associated Lab Samples: 35135146003, 35135146004

METHOD BLANK: 888432 Matrix: Water
Associated Lab Samples: 35135146003, 35135146004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	0.50U	1.0	04/26/14 22:24	
1,1,2,2-Tetrachloroethane	ug/L	0.12U	0.50	04/26/14 22:24	
1,1,2-Trichloroethane	ug/L	0.50U	1.0	04/26/14 22:24	
1,1-Dichloroethane	ug/L	0.50U	1.0	04/26/14 22:24	
1,1-Dichloroethene	ug/L	0.50U	1.0	04/26/14 22:24	
1,2-Dichlorobenzene	ug/L	0.50U	1.0	04/26/14 22:24	
1,2-Dichloroethane	ug/L	0.50U	1.0	04/26/14 22:24	
1,2-Dichloropropane	ug/L	0.50U	1.0	04/26/14 22:24	
1,3-Dichlorobenzene	ug/L	0.50U	1.0	04/26/14 22:24	
1,4-Dichlorobenzene	ug/L	0.50U	1.0	04/26/14 22:24	
2-Chloroethylvinyl ether	ug/L	0.50U	10.0	04/26/14 22:24	
Bromodichloromethane	ug/L	0.27U	0.60	04/26/14 22:24	
Bromoform	ug/L	0.50U	1.0	04/26/14 22:24	
Bromomethane	ug/L	0.50U	1.0	04/26/14 22:24	
Carbon tetrachloride	ug/L	0.50U	1.0	04/26/14 22:24	
Chlorobenzene	ug/L	0.50U	1.0	04/26/14 22:24	
Chloroethane	ug/L	0.50U	1.0	04/26/14 22:24	
Chloroform	ug/L	0.50U	1.0	04/26/14 22:24	
Chloromethane	ug/L	0.62U	1.0	04/26/14 22:24	
cis-1,2-Dichloroethene	ug/L	0.50U	1.0	04/26/14 22:24	
cis-1,3-Dichloropropene	ug/L	0.25U	0.50	04/26/14 22:24	
Dibromochloromethane	ug/L	0.26U	0.50	04/26/14 22:24	
Dichlorodifluoromethane	ug/L	0.50U	1.0	04/26/14 22:24	
Methylene Chloride	ug/L	2.5U	5.0	04/26/14 22:24	
Tetrachloroethene	ug/L	0.50U	1.0	04/26/14 22:24	
trans-1,2-Dichloroethene	ug/L	0.50U	1.0	04/26/14 22:24	
trans-1,3-Dichloropropene	ug/L	0.25U	0.50	04/26/14 22:24	
Trichloroethene	ug/L	0.50U	1.0	04/26/14 22:24	
Trichlorofluoromethane	ug/L	0.50U	1.0	04/26/14 22:24	
Vinyl chloride	ug/L	0.50U	1.0	04/26/14 22:24	
1,2-Dichloroethane-d4 (S)	%	102	86-125	04/26/14 22:24	
4-Bromofluorobenzene (S)	%	90	70-114	04/26/14 22:24	
Toluene-d8 (S)	%	97	87-113	04/26/14 22:24	

LABORATORY CONTROL SAMPLE: 888433

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.6	98	70-130	
1,1,2,2-Tetrachloroethane	ug/L	20	18.9	94	70-130	
1,1,2-Trichloroethane	ug/L	20	20.0	100	70-130	
1,1-Dichloroethane	ug/L	20	20.1	101	70-130	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALITY CONTROL DATA

Project: Grandville 14-1081
Pace Project No.: 35135146

LABORATORY CONTROL SAMPLE: 888433

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	20	18.6	93	70-130	
1,2-Dichlorobenzene	ug/L	20	18.4	92	70-130	
1,2-Dichloroethane	ug/L	20	19.6	98	70-130	
1,2-Dichloropropane	ug/L	20	19.8	99	70-130	
1,3-Dichlorobenzene	ug/L	20	18.8	94	70-130	
1,4-Dichlorobenzene	ug/L	20	18.3	91	70-130	
2-Chloroethylvinyl ether	ug/L	20	18.7	93	70-130	
Bromodichloromethane	ug/L	20	19.3	96	70-130	
Bromoform	ug/L	20	17.6	88	68-130	
Bromomethane	ug/L	20	18.7	93	38-179	
Carbon tetrachloride	ug/L	20	19.5	98	70-130	
Chlorobenzene	ug/L	20	19.7	98	70-130	
Chloroethane	ug/L	20	19.7	99	59-149	
Chloroform	ug/L	20	19.1	96	70-130	
Chloromethane	ug/L	20	23.1	115	68-130	
cis-1,2-Dichloroethene	ug/L	20	20.1	101	70-130	
cis-1,3-Dichloropropene	ug/L	20	20.4	102	70-130	
Dibromochloromethane	ug/L	20	18.5	92	70-130	
Dichlorodifluoromethane	ug/L	20	20.3	101	67-130	
Methylene Chloride	ug/L	20	19.0	95	70-130	
Tetrachloroethene	ug/L	20	22.9	115	66-133	
trans-1,2-Dichloroethene	ug/L	20	18.6	93	70-130	
trans-1,3-Dichloropropene	ug/L	20	19.6	98	70-130	
Trichloroethene	ug/L	20	19.7	98	70-130	
Trichlorofluoromethane	ug/L	20	18.1	91	70-131	
Vinyl chloride	ug/L	20	21.6	108	69-140	
1,2-Dichloroethane-d4 (S)	%			95	86-125	
4-Bromofluorobenzene (S)	%			98	70-114	
Toluene-d8 (S)	%			102	87-113	

MATRIX SPIKE SAMPLE: 888434

Parameter	Units	35134844001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	<0.50	20	23.8	119	47-141	
1,1,2,2-Tetrachloroethane	ug/L	<0.12	20	21.9	110	49-131	
1,1,2-Trichloroethane	ug/L	<0.50	20	20.9	105	50-130	
1,1-Dichloroethane	ug/L	<0.50	20	23.2	116	54-137	
1,1-Dichloroethene	ug/L	<0.50	20	23.1	116	45-155	
1,2-Dichlorobenzene	ug/L	<0.50	20	21.5	108	43-130	
1,2-Dichloroethane	ug/L	<0.50	20	21.9	109	54-130	
1,2-Dichloropropane	ug/L	<0.50	20	22.1	111	53-130	
1,3-Dichlorobenzene	ug/L	<0.50	20	20.7	103	47-128	
1,4-Dichlorobenzene	ug/L	<0.50	20	21.3	107	38-130	
2-Chloroethylvinyl ether	ug/L	<0.50	20	35.4	177	20-183	
Bromodichloromethane	ug/L	<0.27	20	21.6	108	46-130	
Bromoform	ug/L	<0.50	20	18.2	91	32-130	
Bromomethane	ug/L	<0.50	20	12.7	63	20-152	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALITY CONTROL DATA

Project: Grandville 14-1081
Pace Project No.: 35135146

MATRIX SPIKE SAMPLE: 888434

Parameter	Units	35134844001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Carbon tetrachloride	ug/L	<0.50	20	24.5	123	37-137	
Chlorobenzene	ug/L	<0.50	20	21.7	108	46-130	
Chloroethane	ug/L	<0.50	20	21.8	109	48-159	
Chloroform	ug/L	<0.50	20	22.3	112	51-130	
Chloromethane	ug/L	<0.62	20	11.6	58	39-144	
cis-1,2-Dichloroethene	ug/L	<0.50	20	22.7	113	54-130	
cis-1,3-Dichloropropene	ug/L	<0.25	20	21.2	106	45-130	
Dibromochloromethane	ug/L	<0.26	20	20.2	101	43-130	
Dichlorodifluoromethane	ug/L	<0.50	20	29.9	149	38-151	
Methylene Chloride	ug/L	<2.5	20	21.7	109	51-135	
Tetrachloroethene	ug/L	<0.50	20	16.9	84	26-130	
trans-1,2-Dichloroethene	ug/L	<0.50	20	22.5	112	48-142	
trans-1,3-Dichloropropene	ug/L	<0.25	20	19.5	97	45-130	
Trichloroethene	ug/L	<0.50	20	22.9	115	42-133	
Trichlorofluoromethane	ug/L	<0.50	20	24.6	123	46-146	
Vinyl chloride	ug/L	<0.50	20	22.1	111	57-142	
1,2-Dichloroethane-d4 (S)	%				101	86-125	
4-Bromofluorobenzene (S)	%				98	70-114	
Toluene-d8 (S)	%				101	87-113	

SAMPLE DUPLICATE: 888435

Parameter	Units	35134844006 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/L	<0.50	0.50U		40	
1,1,2,2-Tetrachloroethane	ug/L	<0.12	0.12U		40	
1,1,2-Trichloroethane	ug/L	<0.50	0.50U		40	
1,1-Dichloroethane	ug/L	<0.50	0.50U		40	
1,1-Dichloroethene	ug/L	<0.50	0.50U		40	
1,2-Dichlorobenzene	ug/L	<0.50	0.50U		40	
1,2-Dichloroethane	ug/L	<0.50	0.50U		40	
1,2-Dichloropropane	ug/L	<0.50	0.50U		40	
1,3-Dichlorobenzene	ug/L	<0.50	0.50U		40	
1,4-Dichlorobenzene	ug/L	<0.50	0.50U		40	
2-Chloroethylvinyl ether	ug/L	<0.50	0.50U		40	
Bromodichloromethane	ug/L	<0.27	0.27U		40	
Bromoform	ug/L	<0.50	0.50U		40	
Bromomethane	ug/L	<0.50	0.50U		40	
Carbon tetrachloride	ug/L	<0.50	0.50U		40	
Chlorobenzene	ug/L	<0.50	0.50U		40	
Chloroethane	ug/L	<0.50	0.50U		40	
Chloroform	ug/L	<0.50	0.50U		40	
Chloromethane	ug/L	<0.62	0.62U		40	
cis-1,2-Dichloroethene	ug/L	<0.50	0.50U		40	
cis-1,3-Dichloropropene	ug/L	<0.25	0.25U		40	
Dibromochloromethane	ug/L	<0.26	0.26U		40	
Dichlorodifluoromethane	ug/L	<0.50	0.50U		40	
Methylene Chloride	ug/L	<2.5	2.5U		40	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALITY CONTROL DATA

Project: Grandville 14-1081
Pace Project No.: 35135146

SAMPLE DUPLICATE: 888435

Parameter	Units	35134844006 Result	Dup Result	RPD	Max RPD	Qualifiers
Tetrachloroethene	ug/L	<0.50	0.50U		40	
trans-1,2-Dichloroethene	ug/L	<0.50	0.50U		40	
trans-1,3-Dichloropropene	ug/L	<0.25	0.25U		40	
Trichloroethene	ug/L	<0.50	0.50U		40	
Trichlorofluoromethane	ug/L	<0.50	0.50U		40	
Vinyl chloride	ug/L	<0.50	0.50U		40	
1,2-Dichloroethane-d4 (S)	%	108	106	1		
4-Bromofluorobenzene (S)	%	96	104	8		
Toluene-d8 (S)	%	102	99	3		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALITY CONTROL DATA

Project: Grandville 14-1081
Pace Project No.: 35135146

QC Batch: MSV/11527 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV
Associated Lab Samples: 35135146001, 35135146002

METHOD BLANK: 891375 Matrix: Water
Associated Lab Samples: 35135146001, 35135146002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	0.50U	1.0	05/01/14 10:15	
1,1,2,2-Tetrachloroethane	ug/L	0.12U	0.50	05/01/14 10:15	
1,1,2-Trichloroethane	ug/L	0.50U	1.0	05/01/14 10:15	
1,1-Dichloroethane	ug/L	0.50U	1.0	05/01/14 10:15	
1,1-Dichloroethene	ug/L	0.50U	1.0	05/01/14 10:15	
1,2-Dichlorobenzene	ug/L	0.50U	1.0	05/01/14 10:15	
1,2-Dichloroethane	ug/L	0.50U	1.0	05/01/14 10:15	
1,2-Dichloropropane	ug/L	0.50U	1.0	05/01/14 10:15	
1,3-Dichlorobenzene	ug/L	0.50U	1.0	05/01/14 10:15	
1,4-Dichlorobenzene	ug/L	0.50U	1.0	05/01/14 10:15	
2-Chloroethylvinyl ether	ug/L	0.50U	10.0	05/01/14 10:15	
Bromodichloromethane	ug/L	0.27U	0.60	05/01/14 10:15	
Bromoform	ug/L	0.50U	1.0	05/01/14 10:15	
Bromomethane	ug/L	0.50U	1.0	05/01/14 10:15	
Carbon tetrachloride	ug/L	0.50U	1.0	05/01/14 10:15	
Chlorobenzene	ug/L	0.50U	1.0	05/01/14 10:15	
Chloroethane	ug/L	0.50U	1.0	05/01/14 10:15	
Chloroform	ug/L	0.50U	1.0	05/01/14 10:15	
Chloromethane	ug/L	0.62U	1.0	05/01/14 10:15	
cis-1,2-Dichloroethene	ug/L	0.50U	1.0	05/01/14 10:15	
cis-1,3-Dichloropropene	ug/L	0.25U	0.50	05/01/14 10:15	
Dibromochloromethane	ug/L	0.26U	0.50	05/01/14 10:15	
Dichlorodifluoromethane	ug/L	0.50U	1.0	05/01/14 10:15	
Methylene Chloride	ug/L	2.5U	5.0	05/01/14 10:15	
Tetrachloroethene	ug/L	0.50U	1.0	05/01/14 10:15	
trans-1,2-Dichloroethene	ug/L	0.50U	1.0	05/01/14 10:15	
trans-1,3-Dichloropropene	ug/L	0.25U	0.50	05/01/14 10:15	
Trichloroethene	ug/L	0.50U	1.0	05/01/14 10:15	
Trichlorofluoromethane	ug/L	0.50U	1.0	05/01/14 10:15	
Vinyl chloride	ug/L	0.50U	1.0	05/01/14 10:15	
1,2-Dichloroethane-d4 (S)	%	101	86-125	05/01/14 10:15	
4-Bromofluorobenzene (S)	%	101	70-114	05/01/14 10:15	
Toluene-d8 (S)	%	100	87-113	05/01/14 10:15	

LABORATORY CONTROL SAMPLE: 891376

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	21.2	106	70-130	
1,1,2,2-Tetrachloroethane	ug/L	20	22.6	113	70-130	
1,1,2-Trichloroethane	ug/L	20	21.1	105	70-130	
1,1-Dichloroethane	ug/L	20	21.0	105	70-130	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALITY CONTROL DATA

Project: Grandville 14-1081
Pace Project No.: 35135146

LABORATORY CONTROL SAMPLE: 891376

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	20	21.4	107	70-130	
1,2-Dichlorobenzene	ug/L	20	21.4	107	70-130	
1,2-Dichloroethane	ug/L	20	20.4	102	70-130	
1,2-Dichloropropane	ug/L	20	21.0	105	70-130	
1,3-Dichlorobenzene	ug/L	20	21.3	107	70-130	
1,4-Dichlorobenzene	ug/L	20	20.7	103	70-130	
2-Chloroethylvinyl ether	ug/L	20	16.3	81	70-130	
Bromodichloromethane	ug/L	20	21.0	105	70-130	
Bromoform	ug/L	20	22.0	110	68-130	
Bromomethane	ug/L	20	17.3	87	38-179	
Carbon tetrachloride	ug/L	20	21.3	106	70-130	
Chlorobenzene	ug/L	20	21.8	109	70-130	
Chloroethane	ug/L	20	22.8	114	59-149	
Chloroform	ug/L	20	20.1	100	70-130	
Chloromethane	ug/L	20	24.8	124	68-130	
cis-1,2-Dichloroethene	ug/L	20	21.9	110	70-130	
cis-1,3-Dichloropropene	ug/L	20	21.3	106	70-130	
Dibromochloromethane	ug/L	20	21.6	108	70-130	
Dichlorodifluoromethane	ug/L	20	21.9	110	67-130	
Methylene Chloride	ug/L	20	19.5	97	70-130	
Tetrachloroethene	ug/L	20	17.1	85	66-133	
trans-1,2-Dichloroethene	ug/L	20	20.7	103	70-130	
trans-1,3-Dichloropropene	ug/L	20	21.9	110	70-130	
Trichloroethene	ug/L	20	20.7	104	70-130	
Trichlorofluoromethane	ug/L	20	21.3	107	70-131	
Vinyl chloride	ug/L	20	22.8	114	69-140	
1,2-Dichloroethane-d4 (S)	%			106	86-125	
4-Bromofluorobenzene (S)	%			100	70-114	
Toluene-d8 (S)	%			99	87-113	

MATRIX SPIKE SAMPLE: 891378

Parameter	Units	35135461004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	0.50U	20	20.6	103	47-141	
1,1,2,2-Tetrachloroethane	ug/L	0.12U	20	20.4	102	49-131	
1,1,2-Trichloroethane	ug/L	0.50U	20	19.9	99	50-130	
1,1-Dichloroethane	ug/L	0.50U	20	20.1	100	54-137	
1,1-Dichloroethene	ug/L	0.50U	20	20.9	104	45-155	
1,2-Dichlorobenzene	ug/L	0.50U	20	19.2	96	43-130	
1,2-Dichloroethane	ug/L	0.50U	20	19.2	96	54-130	
1,2-Dichloropropane	ug/L	0.50U	20	19.8	99	53-130	
1,3-Dichlorobenzene	ug/L	0.50U	20	18.4	92	47-128	
1,4-Dichlorobenzene	ug/L	0.50U	20	18.3	92	38-130	
2-Chloroethylvinyl ether	ug/L	0.50U	20	0.50U	0	20-183	J(M1)
Bromodichloromethane	ug/L	0.27U	20	20.4	102	46-130	
Bromoform	ug/L	0.50U	20	18.7	93	32-130	
Bromomethane	ug/L	0.50U	20	11.1	56	20-152	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALITY CONTROL DATA

Project: Grandville 14-1081
Pace Project No.: 35135146

MATRIX SPIKE SAMPLE: 891378

Parameter	Units	35135461004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Carbon tetrachloride	ug/L	0.50U	20	21.6	108	37-137	
Chlorobenzene	ug/L	0.50U	20	20.3	102	46-130	
Chloroethane	ug/L	0.50U	20	22.2	111	48-159	
Chloroform	ug/L	0.50U	20	20.0	100	51-130	
Chloromethane	ug/L	0.62U	20	17.5	88	39-144	
cis-1,2-Dichloroethene	ug/L	0.50U	20	20.8	104	54-130	
cis-1,3-Dichloropropene	ug/L	0.25U	20	19.3	97	45-130	
Dibromochloromethane	ug/L	0.26U	20	20.3	101	43-130	
Dichlorodifluoromethane	ug/L	0.50U	20	25.4	127	38-151	
Methylene Chloride	ug/L	2.5U	20	18.7	94	51-135	
Tetrachloroethene	ug/L	0.50U	20	15.3	77	26-130	
trans-1,2-Dichloroethene	ug/L	0.50U	20	19.3	96	48-142	
trans-1,3-Dichloropropene	ug/L	0.25U	20	19.2	96	45-130	
Trichloroethene	ug/L	0.50U	20	19.3	96	42-133	
Trichlorofluoromethane	ug/L	0.50U	20	24.4	122	46-146	
Vinyl chloride	ug/L	0.50U	20	23.4	117	57-142	
1,2-Dichloroethane-d4 (S)	%				97	86-125	J(S0)
4-Bromofluorobenzene (S)	%				99	70-114	
Toluene-d8 (S)	%				99	87-113	

SAMPLE DUPLICATE: 891377

Parameter	Units	35135461003 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/L	0.50U	0.50U		40	
1,1,2,2-Tetrachloroethane	ug/L	0.12U	0.12U		40	
1,1,2-Trichloroethane	ug/L	0.50U	0.50U		40	
1,1-Dichloroethane	ug/L	0.50U	0.50U		40	
1,1-Dichloroethene	ug/L	0.50U	0.50U		40	
1,2-Dichlorobenzene	ug/L	0.50U	0.50U		40	
1,2-Dichloroethane	ug/L	0.50U	0.50U		40	
1,2-Dichloropropane	ug/L	0.50U	0.50U		40	
1,3-Dichlorobenzene	ug/L	0.50U	0.50U		40	
1,4-Dichlorobenzene	ug/L	0.50U	0.50U		40	
2-Chloroethylvinyl ether	ug/L	0.50U	0.50U		40	
Bromodichloromethane	ug/L	0.27U	0.27U		40	
Bromoform	ug/L	0.50U	0.50U		40	
Bromomethane	ug/L	0.50U	0.50U		40	
Carbon tetrachloride	ug/L	0.50U	0.50U		40	
Chlorobenzene	ug/L	0.50U	0.50U		40	
Chloroethane	ug/L	0.50U	0.50U		40	
Chloroform	ug/L	0.50U	0.50U		40	
Chloromethane	ug/L	0.62U	0.62U		40	
cis-1,2-Dichloroethene	ug/L	0.50U	0.50U		40	
cis-1,3-Dichloropropene	ug/L	0.25U	0.25U		40	
Dibromochloromethane	ug/L	0.26U	0.26U		40	
Dichlorodifluoromethane	ug/L	0.50U	0.50U		40	
Methylene Chloride	ug/L	2.5U	2.5U		40	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALITY CONTROL DATA

Project: Grandville 14-1081
Pace Project No.: 35135146

SAMPLE DUPLICATE: 891377

Parameter	Units	35135461003 Result	Dup Result	RPD	Max RPD	Qualifiers
Tetrachloroethene	ug/L	0.50U	0.50U		40	
trans-1,2-Dichloroethene	ug/L	0.50U	0.50U		40	
trans-1,3-Dichloropropene	ug/L	0.25U	0.25U		40	
Trichloroethene	ug/L	0.50U	0.50U		40	
Trichlorofluoromethane	ug/L	0.50U	0.50U		40	
Vinyl chloride	ug/L	0.50U	0.50U		40	
1,2-Dichloroethane-d4 (S)	%	97	103	6		
4-Bromofluorobenzene (S)	%	96	95	1		
Toluene-d8 (S)	%	99	99	.7		

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALIFIERS

Project: Grandville 14-1081
Pace Project No.: 35135146

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

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-O	Pace Analytical Services - Ormond Beach

ANALYTE QUALIFIERS

I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J(M1)	Estimated Value. Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
J(S0)	Estimated Value. Surrogate recovery outside laboratory control limits.

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Grandville 14-1081
Pace Project No.: 35135146

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
35135146001	**MW1**	EPA 8260	MSV/11527		
35135146002	**MW2**	EPA 8260	MSV/11527		
35135146003	**MW4**	EPA 8260	MSV/11485		
35135146004	**MW5**	EPA 8260	MSV/11485		

IntraNet Lab Services, LLLP

Chain of Custody Record

Modified from DEP Form # 62-770.900(2)

IntraNet Lab Services, LLLP
Address: 3838 Killearn Center Court
Tallahassee, FL 32309
Phone: (850) 385-9400
Fax: (850) 385-2469

Company Name: Ardaman & Associates
Address: 3175 W. Tharpe St.
City: Tallahassee State: FL Zip: 32303
Project Name: Grandville 14-1081
Project Manager: Steve Reecy

LAB ANALYSIS

Preservatives (see codes): H

PARAMETER: 8260-VOHs

FDEP Facility No:
Project Address:

Matrix Codes: GW Groundwater; S Soil; SE Sediment; A Air; SW Surface Water; W Water (Blanks); O Other (specify)

Preservative Codes: H Hydrochloric + Ice; I Ice Only; N Nitric Acid + Ice; S Sulfuric Acid + Ice; O Other (specify); SVK 2xH_2O+1xCH_3OH+Ice

Item #	Field ID No.	Date Collected	Time Collected	Matrix (see codes)	# of Cont.	Grab or Composite	COMMENTS/NOTES
	MW1	4/18/14	13:00	GW	3		X
	MW2	"	12:25	GW	3		X
	MW4	"	11:50	GW	3		X
	MW5	"	~~11:20~~ 11:10	GW	3		X
				GW	3		X

SV 4.18.14

WO# : 35135146

35135146

Total Number of Containers: 15 12

Sampling Kit #: Equip. #:

Sampled By [print name(s)]/ Affiliation:

Sampler(s) Signature:

Turnaround Time Request
_____ Standard
_____ Rush
Date Required _____

Shipment Method
Out: Via:
Returned: Via:

Samples Recd. on ice? Yes No
Cooler No.(s) /Temp (°C)
_____ / _____
_____ / _____
_____ / _____
_____ / _____
(lab use only)

Item No.	Relinquished by / Affiliation:	Date / Time:	Received by / Affiliation:	Date / Time:
	Kit Prep: Dan O'Keefe / IDS	4-17-14 1107	~~4-17-14~~	4.17.14 1107
	Sean M	4-21-14 0840	Dan O'Keefe / IDS	4-21-14 0840
	Dan O'Keefe / IDS	4-22-14 1730	FedEx	4-22-14 1730
	FedEx		TR JC	4 23 14 1015

Additional Comments:
T-16.5 + 0 + 1.5

IntraNet
Lab Services, LLLP

Report of Analyses

Project Information

Client Name	:	Ardaman & Associates
Project Manager	:	Steve Reecy, P.E.
Project Name	:	Grandville 14-1081
Purchase Order#	:	
FAC#	:	
WO#	:	

Laboratory Information

Laboratory Utilized	:	Pace Analytical Services
Laboratory Report #	:	35139608
FLDOH/NELAC#	:	E83079
Laboratory Address	:	8 East Tower Circle, Ormond Beach, FL 32174
Laboratory Phone #	:	386-682-5668

3838 Killearn Center Court · Tallahassee, FL 32309 · Phone: (850) 385-9400 · Fax: (850) 385-2469

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

June 03, 2014

Project Manager
Ardaman & Associates
3175 W. Thorpe St
Tallahassee, FL 32303

RE: Project: Grandville 14-1081
Pace Project No.: 35139608

Dear Project Manager:
Enclosed are the analytical results for sample(s) received by the laboratory on May 28, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Sakina Mckenzie
sakina.mckenzie@pacelabs.com
Project Manager

Enclosures

cc: Ms. Ava O'Hollearn, IntraNet Lab Services, LLLP

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

CERTIFICATIONS

Project: Grandville 14-1081
Pace Project No.: 35139608

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alabama Certification #: 41320
Arizona Certification #: AZ0735
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maine Certification #: FL01264
Maryland Certification: #346
Massachusetts Certification #: M-FL1264
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
Nevada Certification: FL NELAC Reciprocity
New Hampshire Certification #: 2958
New Jersey Certification #: FL765
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
Washington Certification #: C955
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

SAMPLE SUMMARY

Project: Grandville 14-1081
Pace Project No.: 35139608

Lab ID	Sample ID	Matrix	Date Collected	Date Received
35139608001	**MW-6**	Water	05/22/14 11:25	05/28/14 12:00
35139608002	**MW-5D**	Water	05/22/14 12:50	05/28/14 12:00
35139608003	**MW-3**	Water	05/22/14 13:20	05/28/14 12:00

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

SAMPLE ANALYTE COUNT

Project: Grandville 14-1081
Pace Project No.: 35139608

Lab ID	Sample ID	Method	Analysts	Analytes Reported
35139608001	**MW-6**	EPA 8260	SK	34
35139608002	**MW-5D**	EPA 8260	SK	34
35139608003	**MW-3**	EPA 8260	SK	34

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

SUMMARY OF DETECTION

Project: Grandville 14-1081
Pace Project No.: 35139608

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
35139608001	**MW-6**					
EPA 8260	Chloroform	1.1	ug/L	1.0	05/29/14 07:04	
EPA 8260	Tetrachloroethene	379	ug/L	10.0	06/02/14 11:36	
35139608002	**MW-5D**					
EPA 8260	Chloroform	12.1	ug/L	1.0	05/29/14 07:29	
EPA 8260	Tetrachloroethene	9.8	ug/L	1.0	05/29/14 07:29	
EPA 8260	Trichloroethene	6.9	ug/L	1.0	05/29/14 07:29	
35139608003	**MW-3**					
EPA 8260	Tetrachloroethene	2.3	ug/L	1.0	05/29/14 07:54	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

ANALYTICAL RESULTS

Project: Grandville 14-1081
Pace Project No.: 35139608

Sample: MW-6 **Lab ID: 35139608001** Collected: 05/22/14 11:25 Received: 05/28/14 12:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Bromodichloromethane	**0.27U**	ug/L	0.60	0.27	1		05/29/14 07:04	75-27-4	
Bromoform	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:04	75-25-2	
Bromomethane	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:04	74-83-9	
Carbon tetrachloride	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:04	56-23-5	
Chlorobenzene	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:04	108-90-7	
Chloroethane	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:04	75-00-3	
2-Chloroethylvinyl ether	**0.50U**	ug/L	10.0	0.50	1		05/29/14 07:04	110-75-8	
Chloroform	**1.1**	ug/L	1.0	0.50	1		05/29/14 07:04	67-66-3	
Chloromethane	**0.62U**	ug/L	1.0	0.62	1		05/29/14 07:04	74-87-3	L3
Dibromochloromethane	**0.26U**	ug/L	0.50	0.26	1		05/29/14 07:04	124-48-1	
1,2-Dichlorobenzene	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:04	95-50-1	
1,3-Dichlorobenzene	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:04	541-73-1	
1,4-Dichlorobenzene	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:04	106-46-7	
Dichlorodifluoromethane	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:04	75-71-8	
1,1-Dichloroethane	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:04	75-34-3	
1,2-Dichloroethane	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:04	107-06-2	
1,2-Dichloroethene (Total)	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:04	540-59-0	N2
1,1-Dichloroethene	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:04	75-35-4	
cis-1,2-Dichloroethene	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:04	156-59-2	
trans-1,2-Dichloroethene	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:04	156-60-5	
1,2-Dichloropropane	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:04	78-87-5	
cis-1,3-Dichloropropene	**0.25U**	ug/L	0.50	0.25	1		05/29/14 07:04	10061-01-5	
trans-1,3-Dichloropropene	**0.25U**	ug/L	0.50	0.25	1		05/29/14 07:04	10061-02-6	
Methylene Chloride	**2.5U**	ug/L	5.0	2.5	1		05/29/14 07:04	75-09-2	
1,1,2,2-Tetrachloroethane	**0.12U**	ug/L	0.50	0.12	1		05/29/14 07:04	79-34-5	
Tetrachloroethene	**379**	ug/L	10.0	5.0	10		06/02/14 11:36	127-18-4	
1,1,1-Trichloroethane	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:04	71-55-6	
1,1,2-Trichloroethane	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:04	79-00-5	
Trichloroethene	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:04	79-01-6	
Trichlorofluoromethane	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:04	75-69-4	
Vinyl chloride	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:04	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	116	%	70-114		1		05/29/14 07:04	460-00-4	J(S0)
1,2-Dichloroethane-d4 (S)	91	%	86-125		1		05/29/14 07:04	17060-07-0	
Toluene-d8 (S)	101	%	87-113		1		05/29/14 07:04	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

ANALYTICAL RESULTS

Project: Grandville 14-1081
Pace Project No.: 35139608

Sample: MW-5D **Lab ID: 35139608002** Collected: 05/22/14 12:50 Received: 05/28/14 12:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Bromodichloromethane	**0.27U**	ug/L	0.60	0.27	1		05/29/14 07:29	75-27-4	
Bromoform	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:29	75-25-2	
Bromomethane	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:29	74-83-9	
Carbon tetrachloride	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:29	56-23-5	
Chlorobenzene	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:29	108-90-7	
Chloroethane	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:29	75-00-3	
2-Chloroethylvinyl ether	**0.50U**	ug/L	10.0	0.50	1		05/29/14 07:29	110-75-8	
Chloroform	**12.1**	ug/L	1.0	0.50	1		05/29/14 07:29	67-66-3	
Chloromethane	**0.62U**	ug/L	1.0	0.62	1		05/29/14 07:29	74-87-3	L3
Dibromochloromethane	**0.26U**	ug/L	0.50	0.26	1		05/29/14 07:29	124-48-1	
1,2-Dichlorobenzene	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:29	95-50-1	
1,3-Dichlorobenzene	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:29	541-73-1	
1,4-Dichlorobenzene	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:29	106-46-7	
Dichlorodifluoromethane	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:29	75-71-8	
1,1-Dichloroethane	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:29	75-34-3	
1,2-Dichloroethane	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:29	107-06-2	
1,2-Dichloroethene (Total)	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:29	540-59-0	N2
1,1-Dichloroethene	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:29	75-35-4	
cis-1,2-Dichloroethene	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:29	156-59-2	
trans-1,2-Dichloroethene	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:29	156-60-5	
1,2-Dichloropropane	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:29	78-87-5	
cis-1,3-Dichloropropene	**0.25U**	ug/L	0.50	0.25	1		05/29/14 07:29	10061-01-5	
trans-1,3-Dichloropropene	**0.25U**	ug/L	0.50	0.25	1		05/29/14 07:29	10061-02-6	
Methylene Chloride	**2.5U**	ug/L	5.0	2.5	1		05/29/14 07:29	75-09-2	
1,1,2,2-Tetrachloroethane	**0.12U**	ug/L	0.50	0.12	1		05/29/14 07:29	79-34-5	
Tetrachloroethene	**9.8**	ug/L	1.0	0.50	1		05/29/14 07:29	127-18-4	
1,1,1-Trichloroethane	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:29	71-55-6	
1,1,2-Trichloroethane	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:29	79-00-5	
Trichloroethene	**6.9**	ug/L	1.0	0.50	1		05/29/14 07:29	79-01-6	
Trichlorofluoromethane	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:29	75-69-4	
Vinyl chloride	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:29	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	117	%	70-114		1		05/29/14 07:29	460-00-4	J(S0)
1,2-Dichloroethane-d4 (S)	96	%	86-125		1		05/29/14 07:29	17060-07-0	
Toluene-d8 (S)	99	%	87-113		1		05/29/14 07:29	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

ANALYTICAL RESULTS

Project: Grandville 14-1081
Pace Project No.: 35139608

Sample: MW-3 **Lab ID: 35139608003** Collected: 05/22/14 13:20 Received: 05/28/14 12:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Bromodichloromethane	**0.27U**	ug/L	0.60	0.27	1		05/29/14 07:54	75-27-4	
Bromoform	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:54	75-25-2	
Bromomethane	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:54	74-83-9	
Carbon tetrachloride	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:54	56-23-5	
Chlorobenzene	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:54	108-90-7	
Chloroethane	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:54	75-00-3	
2-Chloroethylvinyl ether	**0.50U**	ug/L	10.0	0.50	1		05/29/14 07:54	110-75-8	
Chloroform	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:54	67-66-3	
Chloromethane	**0.62U**	ug/L	1.0	0.62	1		05/29/14 07:54	74-87-3	L3
Dibromochloromethane	**0.26U**	ug/L	0.50	0.26	1		05/29/14 07:54	124-48-1	
1,2-Dichlorobenzene	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:54	95-50-1	
1,3-Dichlorobenzene	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:54	541-73-1	
1,4-Dichlorobenzene	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:54	106-46-7	
Dichlorodifluoromethane	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:54	75-71-8	
1,1-Dichloroethane	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:54	75-34-3	
1,2-Dichloroethane	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:54	107-06-2	
1,2-Dichloroethene (Total)	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:54	540-59-0	N2
1,1-Dichloroethene	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:54	75-35-4	
cis-1,2-Dichloroethene	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:54	156-59-2	
trans-1,2-Dichloroethene	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:54	156-60-5	
1,2-Dichloropropane	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:54	78-87-5	
cis-1,3-Dichloropropene	**0.25U**	ug/L	0.50	0.25	1		05/29/14 07:54	10061-01-5	
trans-1,3-Dichloropropene	**0.25U**	ug/L	0.50	0.25	1		05/29/14 07:54	10061-02-6	
Methylene Chloride	**2.5U**	ug/L	5.0	2.5	1		05/29/14 07:54	75-09-2	
1,1,2,2-Tetrachloroethane	**0.12U**	ug/L	0.50	0.12	1		05/29/14 07:54	79-34-5	
Tetrachloroethene	**2.3**	ug/L	1.0	0.50	1		05/29/14 07:54	127-18-4	
1,1,1-Trichloroethane	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:54	71-55-6	
1,1,2-Trichloroethane	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:54	79-00-5	
Trichloroethene	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:54	79-01-6	
Trichlorofluoromethane	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:54	75-69-4	
Vinyl chloride	**0.50U**	ug/L	1.0	0.50	1		05/29/14 07:54	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	115	%	70-114		1		05/29/14 07:54	460-00-4	J(S0)
1,2-Dichloroethane-d4 (S)	92	%	86-125		1		05/29/14 07:54	17060-07-0	
Toluene-d8 (S)	101	%	87-113		1		05/29/14 07:54	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALITY CONTROL DATA

Project: Grandville 14-1081
Pace Project No.: 35139608

QC Batch: MSV/11809 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV
Associated Lab Samples: 35139608001, 35139608002, 35139608003

METHOD BLANK: 913774 Matrix: Water
Associated Lab Samples: 35139608001, 35139608002, 35139608003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	0.50U	1.0	05/28/14 23:05	
1,1,2,2-Tetrachloroethane	ug/L	0.12U	0.50	05/28/14 23:05	
1,1,2-Trichloroethane	ug/L	0.50U	1.0	05/28/14 23:05	
1,1-Dichloroethane	ug/L	0.50U	1.0	05/28/14 23:05	
1,1-Dichloroethene	ug/L	0.50U	1.0	05/28/14 23:05	
1,2-Dichlorobenzene	ug/L	0.50U	1.0	05/28/14 23:05	
1,2-Dichloroethane	ug/L	0.50U	1.0	05/28/14 23:05	
1,2-Dichloroethene (Total)	ug/L	0.50U	1.0	05/28/14 23:05	N2
1,2-Dichloropropane	ug/L	0.50U	1.0	05/28/14 23:05	
1,3-Dichlorobenzene	ug/L	0.50U	1.0	05/28/14 23:05	
1,4-Dichlorobenzene	ug/L	0.50U	1.0	05/28/14 23:05	
2-Chloroethylvinyl ether	ug/L	0.50U	10.0	05/28/14 23:05	
Bromodichloromethane	ug/L	0.27U	0.60	05/28/14 23:05	
Bromoform	ug/L	0.50U	1.0	05/28/14 23:05	
Bromomethane	ug/L	0.50U	1.0	05/28/14 23:05	
Carbon tetrachloride	ug/L	0.50U	1.0	05/28/14 23:05	
Chlorobenzene	ug/L	0.50U	1.0	05/28/14 23:05	
Chloroethane	ug/L	0.50U	1.0	05/28/14 23:05	
Chloroform	ug/L	0.50U	1.0	05/28/14 23:05	
Chloromethane	ug/L	0.62U	1.0	05/28/14 23:05	
cis-1,2-Dichloroethene	ug/L	0.50U	1.0	05/28/14 23:05	
cis-1,3-Dichloropropene	ug/L	0.25U	0.50	05/28/14 23:05	
Dibromochloromethane	ug/L	0.26U	0.50	05/28/14 23:05	
Dichlorodifluoromethane	ug/L	0.50U	1.0	05/28/14 23:05	
Methylene Chloride	ug/L	2.5U	5.0	05/28/14 23:05	
Tetrachloroethene	ug/L	0.50U	1.0	05/28/14 23:05	
trans-1,2-Dichloroethene	ug/L	0.50U	1.0	05/28/14 23:05	
trans-1,3-Dichloropropene	ug/L	0.25U	0.50	05/28/14 23:05	
Trichloroethene	ug/L	0.50U	1.0	05/28/14 23:05	
Trichlorofluoromethane	ug/L	0.50U	1.0	05/28/14 23:05	
Vinyl chloride	ug/L	0.50U	1.0	05/28/14 23:05	
1,2-Dichloroethane-d4 (S)	%	95	86-125	05/28/14 23:05	
4-Bromofluorobenzene (S)	%	120	70-114	05/28/14 23:05	S3
Toluene-d8 (S)	%	96	87-113	05/28/14 23:05	

LABORATORY CONTROL SAMPLE: 913775

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	21.7	109	70-130	
1,1,2,2-Tetrachloroethane	ug/L	20	18.6	93	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALITY CONTROL DATA

Project: Grandville 14-1081
Pace Project No.: 35139608

LABORATORY CONTROL SAMPLE: 913775

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,2-Trichloroethane	ug/L	20	21.1	105	70-130	
1,1-Dichloroethane	ug/L	20	17.9	90	70-130	
1,1-Dichloroethene	ug/L	20	20.3	101	70-130	
1,2-Dichlorobenzene	ug/L	20	21.0	105	70-130	
1,2-Dichloroethane	ug/L	20	20.2	101	70-130	
1,2-Dichloroethene (Total)	ug/L	40	38.3	96	70-130	N2
1,2-Dichloropropane	ug/L	20	17.7	88	70-130	
1,3-Dichlorobenzene	ug/L	20	21.4	107	70-130	
1,4-Dichlorobenzene	ug/L	20	21.3	107	70-130	
2-Chloroethylvinyl ether	ug/L	20	17.7	89	70-130	
Bromodichloromethane	ug/L	20	21.6	108	70-130	
Bromoform	ug/L	20	21.9	110	68-130	
Bromomethane	ug/L	20	27.1	135	38-179	
Carbon tetrachloride	ug/L	20	23.1	115	70-130	
Chlorobenzene	ug/L	20	22.2	111	70-130	
Chloroethane	ug/L	20	20.5	103	59-149	
Chloroform	ug/L	20	20.4	102	70-130	
Chloromethane	ug/L	20	33.6	168	68-130	J(L0)
cis-1,2-Dichloroethene	ug/L	20	19.2	96	70-130	
cis-1,3-Dichloropropene	ug/L	20	19.0	95	70-130	
Dibromochloromethane	ug/L	20	22.3	111	70-130	
Dichlorodifluoromethane	ug/L	20	19.4	97	67-130	
Methylene Chloride	ug/L	20	18.5	92	70-130	
Tetrachloroethene	ug/L	20	23.6	118	66-133	
trans-1,2-Dichloroethene	ug/L	20	19.1	95	70-130	
trans-1,3-Dichloropropene	ug/L	20	18.9	95	70-130	
Trichloroethene	ug/L	20	24.5	122	70-130	
Trichlorofluoromethane	ug/L	20	23.6	118	70-131	
Vinyl chloride	ug/L	20	20.0	100	69-140	
1,2-Dichloroethane-d4 (S)	%			89	86-125	
4-Bromofluorobenzene (S)	%			111	70-114	
Toluene-d8 (S)	%			103	87-113	

MATRIX SPIKE SAMPLE: 916164

Parameter	Units	35139370002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	0.50U	20	20.4	102	47-141	
1,1,2,2-Tetrachloroethane	ug/L	0.12U	20	15.8	79	49-131	
1,1,2-Trichloroethane	ug/L	0.50U	20	19.5	98	50-130	
1,1-Dichloroethane	ug/L	0.50U	20	18.1	90	54-137	
1,1-Dichloroethene	ug/L	0.50U	20	21.1	106	45-155	
1,2-Dichlorobenzene	ug/L	0.50U	20	18.3	92	43-130	
1,2-Dichloroethane	ug/L	0.50U	20	18.6	93	54-130	
1,2-Dichloroethene (Total)	ug/L	0.50U	40	35.7	89	50-150	N2
1,2-Dichloropropane	ug/L	0.50U	20	18.2	91	53-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALITY CONTROL DATA

Project: Grandville 14-1081
Pace Project No.: 35139608

MATRIX SPIKE SAMPLE: 916164

Parameter	Units	35139370002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,3-Dichlorobenzene	ug/L	0.50U	20	19.8	99	47-128	
1,4-Dichlorobenzene	ug/L	0.50U	20	19.6	98	38-130	
2-Chloroethylvinyl ether	ug/L	0.50U	20	0.50U	0	20-183	J(M1)
Bromodichloromethane	ug/L	0.27U	20	19.8	99	46-130	
Bromoform	ug/L	0.50U	20	20.2	101	32-130	
Bromomethane	ug/L	0.50U	20	20.5	102	20-152	
Carbon tetrachloride	ug/L	0.50U	20	23.3	116	37-137	
Chlorobenzene	ug/L	0.50U	20	21.1	105	46-130	
Chloroethane	ug/L	0.50U	20	20.9	105	48-159	
Chloroform	ug/L	0.50U	20	18.6	93	51-130	
Chloromethane	ug/L	0.62U	20	27.6	138	39-144	
cis-1,2-Dichloroethene	ug/L	0.50U	20	17.6	88	54-130	
cis-1,3-Dichloropropene	ug/L	0.25U	20	16.9	85	45-130	
Dibromochloromethane	ug/L	0.26U	20	22.0	110	43-130	
Dichlorodifluoromethane	ug/L	0.50U	20	25.6	128	38-151	
Methylene Chloride	ug/L	2.5U	20	18.5	93	51-135	
Tetrachloroethene	ug/L	0.50U	20	20.7	103	26-130	
trans-1,2-Dichloroethene	ug/L	0.50U	20	18.1	91	48-142	
trans-1,3-Dichloropropene	ug/L	0.25U	20	16.7	83	45-130	
Trichloroethene	ug/L	0.50U	20	21.3	106	42-133	
Trichlorofluoromethane	ug/L	0.50U	20	25.7	129	46-146	
Vinyl chloride	ug/L	0.50U	20	18.7	93	57-142	
1,2-Dichloroethane-d4 (S)	%				97	86-125	
4-Bromofluorobenzene (S)	%				114	70-114	
Toluene-d8 (S)	%				99	87-113	

SAMPLE DUPLICATE: 916163

Parameter	Units	35139370001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/L	0.50U	0.50U		40	
1,1,2,2-Tetrachloroethane	ug/L	0.12U	0.12U		40	
1,1,2-Trichloroethane	ug/L	0.50U	0.50U		40	
1,1-Dichloroethane	ug/L	0.50U	0.50U		40	
1,1-Dichloroethene	ug/L	0.50U	0.50U		40	
1,2-Dichlorobenzene	ug/L	0.50U	0.50U		40	
1,2-Dichloroethane	ug/L	0.50U	0.50U		40	
1,2-Dichloroethene (Total)	ug/L	0.50U	0.50U		40	N2
1,2-Dichloropropane	ug/L	0.50U	0.50U		40	
1,3-Dichlorobenzene	ug/L	0.50U	0.50U		40	
1,4-Dichlorobenzene	ug/L	0.50U	0.50U		40	
2-Chloroethylvinyl ether	ug/L	0.50U	0.50U		40	
Bromodichloromethane	ug/L	0.27U	0.27U		40	
Bromoform	ug/L	0.50U	0.50U		40	
Bromomethane	ug/L	0.50U	0.50U		40	
Carbon tetrachloride	ug/L	0.50U	0.50U		40	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALITY CONTROL DATA

Project: Grandville 14-1081
Pace Project No.: 35139608

SAMPLE DUPLICATE: 916163

Parameter	Units	35139370001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chlorobenzene	ug/L	0.50U	0.50U		40	
Chloroethane	ug/L	0.50U	0.50U		40	
Chloroform	ug/L	0.50U	0.50U		40	
Chloromethane	ug/L	0.62U	0.62U		40	
cis-1,2-Dichloroethene	ug/L	0.50U	0.50U		40	
cis-1,3-Dichloropropene	ug/L	0.25U	0.25U		40	
Dibromochloromethane	ug/L	0.26U	0.26U		40	
Dichlorodifluoromethane	ug/L	0.50U	0.50U		40	
Methylene Chloride	ug/L	2.5U	2.5U		40	
Tetrachloroethene	ug/L	0.50U	0.50U		40	
trans-1,2-Dichloroethene	ug/L	0.50U	0.50U		40	
trans-1,3-Dichloropropene	ug/L	0.25U	0.25U		40	
Trichloroethene	ug/L	0.50U	0.50U		40	
Trichlorofluoromethane	ug/L	0.50U	0.50U		40	
Vinyl chloride	ug/L	0.50U	0.50U		40	
1,2-Dichloroethane-d4 (S)	%	97	92	5		
4-Bromofluorobenzene (S)	%	111	113	2		J(IS)
Toluene-d8 (S)	%	103	97	6		

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALIFIERS

Project: Grandville 14-1081
Pace Project No.: 35139608

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

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.

ANALYTE QUALIFIERS

J(IS)	Estimated Value. The internal standard recovery associated with this result exceeds the lower control limit. The reported result should be considered an estimated value.
J(L0)	Estimated Value. Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
J(M1)	Estimated Value. Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
J(S0)	Estimated Value. Surrogate recovery outside laboratory control limits.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
N2	The lab does not hold TNI accreditation for this parameter.
S3	Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Grandville 14-1081
Pace Project No.: 35139608

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
35139608001	**MW-6**	EPA 8260	MSV/11809		
35139608002	**MW-5D**	EPA 8260	MSV/11809		
35139608003	**MW-3**	EPA 8260	MSV/11809		

IntraNet Lab Services, LLLP

Chain of Custody Record

Modified from DEP Form # 62-770.900(2)

IntraNet Lab Services, LLLP
Address: 3838 Killearn Center Court
Tallahassee, FL 32309
Phone: (850) 385-9400
Fax: (850) 385-2469

Company Name: Ardaman & Associates

Address: 3175 W. Tharpe St.

City: Tallahassee State: FL Zip: 32303

Project Name: Grandville 14-1081

Project Manager: Steve Reecy

FDEP Facility No:

Project Address:

LAB ANALYSIS

Preservatives (see codes)

Item #	Field ID No.	Date Collected	Time Collected	Matrix (see codes)	# of Cont.	PARAMETER	H	8260-VOHs							
	MW-6	5.22.14	1125	GW	3			X							
	MW-5D	5.22.14	1250	GW	3			X							
	MW-3	5.22.14	1320	GW	3			X							

Matrix Codes: GW Groundwater; S Soil; SE Sediment; A Air; SW Surface Water; W Water (Blanks); O Other (specify)

Preservative Codes: H Hydrochloric + Ice; I Ice Only; N Nitric Acid + Ice; S Sulfuric Acid + Ice; O Other (specify); SVK 2xH2O+1xCH3OH+Ice

Grab or Composite | COMMENTS/NOTES

WO# : 35139608

35139608

Total Number of Containers: 9

Sampling Kit #: Equip. #:

Sampled By [print name(s)]/ Affiliation:

Sampler(s) Signature:

Turnaround Time Request: X Standard; Rush

Date Required:

Samples Recd. on ice? Yes No

Cooler No.(s)/Temp (°C): 5.2 T-165

Shipment Method

Out: Via:

Returned: Via:

(lab use only)

Item No.	Relinquished by / Affiliation:	Date / Time:	Received by / Affiliation:	Date / Time:
	Kit Prep: Dan O'Dell/AS	5-21-14 1430	Sam MLI	5.21.14 1430
	Sam MLI	5.23.14 0938	Dan O'Dell/AS	5-23-14 0938
	Dan O'Dell/AS	5-27-14 0730	FedEx	5-27-14 1730
	FedEx		Courier	5/28/14 1200

Additional Comments:

IntraNet
Lab Services, LLLP

Report of Analyses

Project Information

Client Name	:	Ardaman & Associates
Project Manager	:	Steve Reecy, P.E.
Project Name	:	Grantville 14-1081
Purchase Order#	:	
FAC#	:	
WO#	:	

Laboratory Information

Laboratory Utilized	:	Pace Analytical Services
Laboratory Report #	:	35144292
FLDOH/NELAC#	:	E83079
Laboratory Address	:	8 East Tower Circle, Ormond Beach, FL 32174
Laboratory Phone #	:	386-672-5668

3838 Killearn Center Court · Tallahassee, FL 32309 · Phone: (850) 385-9400 · Fax: (850) 385-2469

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

July 10, 2014

Project Manager
Ardaman & Associates
3175 W. Thorpe St
Tallahassee, FL 32303

RE: Project: Grantville 14-1081
Pace Project No.: 35144292

Dear Project Manager:
Enclosed are the analytical results for sample(s) received by the laboratory on July 02, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Sakina Mckenzie
sakina.mckenzie@pacelabs.com
Project Manager

Enclosures

cc: Ms. Ava O'Hollearn, IntraNet Lab Services, LLLP

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

CERTIFICATIONS

Project: Grantville 14-1081
Pace Project No.: 35144292

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alabama Certification #: 41320
Arizona Certification #: AZ0735
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Massachusetts Certification #: M-FL1264
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
Nevada Certification: FL NELAC Reciprocity
New Hampshire Certification #: 2958
New Jersey Certification #: FL765
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
Washington Certification #: C955
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

SAMPLE SUMMARY

Project: Grantville 14-1081
Pace Project No.: 35144292

Lab ID	Sample ID	Matrix	Date Collected	Date Received
35144292001	**MW-5D**	Water	06/30/14 09:00	07/02/14 11:05

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(386)672-5668

SAMPLE ANALYTE COUNT

Project: Grantville 14-1081
Pace Project No.: 35144292

Lab ID	Sample ID	Method	Analysts	Analytes Reported
35144292001	**MW-5D**	EPA 8260	SK	34

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

SUMMARY OF DETECTION

Project: Grantville 14-1081
Pace Project No.: 35144292

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
35144292001	**MW-5D**					
EPA 8260	Chloroform	5.3	ug/L	1.0	07/08/14 06:47	
EPA 8260	Tetrachloroethene	0.79	I ug/L	1.0	07/08/14 06:47	
EPA 8260	Trichloroethene	3.7	ug/L	1.0	07/08/14 06:47	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

ANALYTICAL RESULTS

Project: Grantville 14-1081
Pace Project No.: 35144292

Sample: MW-5D **Lab ID: 35144292001** Collected: 06/30/14 09:00 Received: 07/02/14 11:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Bromodichloromethane	**0.27U**	ug/L	0.60	0.27	1		07/08/14 06:47	75-27-4	
Bromoform	**0.50U**	ug/L	1.0	0.50	1		07/08/14 06:47	75-25-2	
Bromomethane	**0.50U**	ug/L	1.0	0.50	1		07/08/14 06:47	74-83-9	
Carbon tetrachloride	**0.50U**	ug/L	1.0	0.50	1		07/08/14 06:47	56-23-5	
Chlorobenzene	**0.50U**	ug/L	1.0	0.50	1		07/08/14 06:47	108-90-7	
Chloroethane	**0.50U**	ug/L	1.0	0.50	1		07/08/14 06:47	75-00-3	
2-Chloroethylvinyl ether	**0.50U**	ug/L	10.0	0.50	1		07/08/14 06:47	110-75-8	
Chloroform	**5.3**	ug/L	1.0	0.50	1		07/08/14 06:47	67-66-3	
Chloromethane	**0.62U**	ug/L	1.0	0.62	1		07/08/14 06:47	74-87-3	
Dibromochloromethane	**0.26U**	ug/L	0.50	0.26	1		07/08/14 06:47	124-48-1	
1,2-Dichlorobenzene	**0.50U**	ug/L	1.0	0.50	1		07/08/14 06:47	95-50-1	
1,3-Dichlorobenzene	**0.50U**	ug/L	1.0	0.50	1		07/08/14 06:47	541-73-1	
1,4-Dichlorobenzene	**0.50U**	ug/L	1.0	0.50	1		07/08/14 06:47	106-46-7	
Dichlorodifluoromethane	**0.50U**	ug/L	1.0	0.50	1		07/08/14 06:47	75-71-8	
1,1-Dichloroethane	**0.50U**	ug/L	1.0	0.50	1		07/08/14 06:47	75-34-3	
1,2-Dichloroethane	**0.50U**	ug/L	1.0	0.50	1		07/08/14 06:47	107-06-2	
1,2-Dichloroethene (Total)	**0.50U**	ug/L	1.0	0.50	1		07/08/14 06:47	540-59-0	N2
1,1-Dichloroethene	**0.50U**	ug/L	1.0	0.50	1		07/08/14 06:47	75-35-4	
cis-1,2-Dichloroethene	**0.50U**	ug/L	1.0	0.50	1		07/08/14 06:47	156-59-2	
trans-1,2-Dichloroethene	**0.50U**	ug/L	1.0	0.50	1		07/08/14 06:47	156-60-5	
1,2-Dichloropropane	**0.50U**	ug/L	1.0	0.50	1		07/08/14 06:47	78-87-5	
cis-1,3-Dichloropropene	**0.25U**	ug/L	0.50	0.25	1		07/08/14 06:47	10061-01-5	
trans-1,3-Dichloropropene	**0.25U**	ug/L	0.50	0.25	1		07/08/14 06:47	10061-02-6	
Methylene Chloride	**2.5U**	ug/L	5.0	2.5	1		07/08/14 06:47	75-09-2	
1,1,2,2-Tetrachloroethane	**0.12U**	ug/L	0.50	0.12	1		07/08/14 06:47	79-34-5	
Tetrachloroethene	**0.79 I**	ug/L	1.0	0.50	1		07/08/14 06:47	127-18-4	
1,1,1-Trichloroethane	**0.50U**	ug/L	1.0	0.50	1		07/08/14 06:47	71-55-6	
1,1,2-Trichloroethane	**0.50U**	ug/L	1.0	0.50	1		07/08/14 06:47	79-00-5	
Trichloroethene	**3.7**	ug/L	1.0	0.50	1		07/08/14 06:47	79-01-6	
Trichlorofluoromethane	**0.50U**	ug/L	1.0	0.50	1		07/08/14 06:47	75-69-4	
Vinyl chloride	**0.50U**	ug/L	1.0	0.50	1		07/08/14 06:47	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	103	%	70-114		1		07/08/14 06:47	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	86-125		1		07/08/14 06:47	17060-07-0	
Toluene-d8 (S)	100	%	87-113		1		07/08/14 06:47	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALITY CONTROL DATA

Project: Grantville 14-1081
Pace Project No.: 35144292

QC Batch: MSV/12136 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV
Associated Lab Samples: 35144292001

METHOD BLANK: 946938 Matrix: Water
Associated Lab Samples: 35144292001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	0.50U	1.0	07/07/14 22:48	
1,1,2,2-Tetrachloroethane	ug/L	0.12U	0.50	07/07/14 22:48	
1,1,2-Trichloroethane	ug/L	0.50U	1.0	07/07/14 22:48	
1,1-Dichloroethane	ug/L	0.50U	1.0	07/07/14 22:48	
1,1-Dichloroethene	ug/L	0.50U	1.0	07/07/14 22:48	
1,2-Dichlorobenzene	ug/L	0.50U	1.0	07/07/14 22:48	
1,2-Dichloroethane	ug/L	0.50U	1.0	07/07/14 22:48	
1,2-Dichloroethene (Total)	ug/L	0.50U	1.0	07/07/14 22:48	N2
1,2-Dichloropropane	ug/L	0.50U	1.0	07/07/14 22:48	
1,3-Dichlorobenzene	ug/L	0.50U	1.0	07/07/14 22:48	
1,4-Dichlorobenzene	ug/L	0.50U	1.0	07/07/14 22:48	
2-Chloroethylvinyl ether	ug/L	0.50U	10.0	07/07/14 22:48	
Bromodichloromethane	ug/L	0.27U	0.60	07/07/14 22:48	
Bromoform	ug/L	0.50U	1.0	07/07/14 22:48	
Bromomethane	ug/L	0.50U	1.0	07/07/14 22:48	
Carbon tetrachloride	ug/L	0.50U	1.0	07/07/14 22:48	
Chlorobenzene	ug/L	0.50U	1.0	07/07/14 22:48	
Chloroethane	ug/L	0.50U	1.0	07/07/14 22:48	
Chloroform	ug/L	0.50U	1.0	07/07/14 22:48	
Chloromethane	ug/L	0.62U	1.0	07/07/14 22:48	
cis-1,2-Dichloroethene	ug/L	0.50U	1.0	07/07/14 22:48	
cis-1,3-Dichloropropene	ug/L	0.25U	0.50	07/07/14 22:48	
Dibromochloromethane	ug/L	0.26U	0.50	07/07/14 22:48	
Dichlorodifluoromethane	ug/L	0.50U	1.0	07/07/14 22:48	
Methylene Chloride	ug/L	2.5U	5.0	07/07/14 22:48	
Tetrachloroethene	ug/L	0.50U	1.0	07/07/14 22:48	
trans-1,2-Dichloroethene	ug/L	0.50U	1.0	07/07/14 22:48	
trans-1,3-Dichloropropene	ug/L	0.25U	0.50	07/07/14 22:48	
Trichloroethene	ug/L	0.50U	1.0	07/07/14 22:48	
Trichlorofluoromethane	ug/L	0.50U	1.0	07/07/14 22:48	
Vinyl chloride	ug/L	0.50U	1.0	07/07/14 22:48	
1,2-Dichloroethane-d4 (S)	%	104	86-125	07/07/14 22:48	
4-Bromofluorobenzene (S)	%	104	70-114	07/07/14 22:48	
Toluene-d8 (S)	%	103	87-113	07/07/14 22:48	

LABORATORY CONTROL SAMPLE: 946939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	18.8	94	70-130	
1,1,2,2-Tetrachloroethane	ug/L	20	19.4	97	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, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALITY CONTROL DATA

Project: Grantville 14-1081
Pace Project No.: 35144292

LABORATORY CONTROL SAMPLE: 946939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,2-Trichloroethane	ug/L	20	20.1	100	70-130	
1,1-Dichloroethane	ug/L	20	17.4	87	70-130	
1,1-Dichloroethene	ug/L	20	17.2	86	70-130	
1,2-Dichlorobenzene	ug/L	20	19.9	100	70-130	
1,2-Dichloroethane	ug/L	20	18.5	93	70-130	
1,2-Dichloroethene (Total)	ug/L	40	36.0	90	70-130	N2
1,2-Dichloropropane	ug/L	20	18.3	91	70-130	
1,3-Dichlorobenzene	ug/L	20	19.0	95	70-130	
1,4-Dichlorobenzene	ug/L	20	19.4	97	70-130	
2-Chloroethylvinyl ether	ug/L	20	21.4	107	70-130	
Bromodichloromethane	ug/L	20	18.9	95	70-130	
Bromoform	ug/L	20	20.2	101	68-130	
Bromomethane	ug/L	20	18.6	93	38-179	
Carbon tetrachloride	ug/L	20	18.8	94	70-130	
Chlorobenzene	ug/L	20	19.2	96	70-130	
Chloroethane	ug/L	20	18.4	92	59-149	
Chloroform	ug/L	20	19.2	96	70-130	
Chloromethane	ug/L	20	18.7	93	68-130	
cis-1,2-Dichloroethene	ug/L	20	18.2	91	70-130	
cis-1,3-Dichloropropene	ug/L	20	19.3	96	70-130	
Dibromochloromethane	ug/L	20	20.1	100	70-130	
Dichlorodifluoromethane	ug/L	20	20.8	104	67-130	
Methylene Chloride	ug/L	20	17.8	89	70-130	
Tetrachloroethene	ug/L	20	17.6	88	66-133	
trans-1,2-Dichloroethene	ug/L	20	17.8	89	70-130	
trans-1,3-Dichloropropene	ug/L	20	19.5	98	70-130	
Trichloroethene	ug/L	20	18.5	93	70-130	
Trichlorofluoromethane	ug/L	20	19.1	95	70-131	
Vinyl chloride	ug/L	20	17.0	85	69-140	
1,2-Dichloroethane-d4 (S)	%			95	86-125	
4-Bromofluorobenzene (S)	%			108	70-114	
Toluene-d8 (S)	%			102	87-113	

MATRIX SPIKE SAMPLE: 949927

Parameter	Units	35144362005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	0.50U	20	18.8	94	47-141	
1,1,2,2-Tetrachloroethane	ug/L	0.12U	20	17.2	86	49-131	
1,1,2-Trichloroethane	ug/L	0.50U	20	17.7	88	50-130	
1,1-Dichloroethane	ug/L	0.50U	20	16.2	81	54-137	
1,1-Dichloroethene	ug/L	0.50U	20	16.6	83	45-155	
1,2-Dichlorobenzene	ug/L	0.50U	20	19.4	97	43-130	
1,2-Dichloroethane	ug/L	0.50U	20	18.2	91	54-130	
1,2-Dichloroethene (Total)	ug/L	0.50U	40	35.0	88	50-150	N2
1,2-Dichloropropane	ug/L	0.50U	20	17.6	88	53-130	

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, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALITY CONTROL DATA

Project: Grantville 14-1081
Pace Project No.: 35144292

MATRIX SPIKE SAMPLE: 949927

Parameter	Units	35144362005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,3-Dichlorobenzene	ug/L	0.50U	20	17.9	90	47-128	
1,4-Dichlorobenzene	ug/L	0.50U	20	17.6	88	38-130	
2-Chloroethylvinyl ether	ug/L	0.50U	20	0.50U	0	20-183	J(M1)
Bromodichloromethane	ug/L	0.27U	20	17.7	88	46-130	
Bromoform	ug/L	0.50U	20	18.3	92	32-130	
Bromomethane	ug/L	0.50U	20	15.5	78	20-152	
Carbon tetrachloride	ug/L	0.50U	20	19.3	97	37-137	
Chlorobenzene	ug/L	0.50U	20	18.2	91	46-130	
Chloroethane	ug/L	0.50U	20	19.9	100	48-159	
Chloroform	ug/L	0.50U	20	17.7	88	51-130	
Chloromethane	ug/L	0.62U	20	16.7	83	39-144	
cis-1,2-Dichloroethene	ug/L	0.50U	20	17.6	88	54-130	
cis-1,3-Dichloropropene	ug/L	0.25U	20	17.8	89	45-130	
Dibromochloromethane	ug/L	0.26U	20	18.5	92	43-130	
Dichlorodifluoromethane	ug/L	0.50U	20	27.5	137	38-151	
Methylene Chloride	ug/L	2.5U	20	16.6	83	51-135	
Tetrachloroethene	ug/L	0.50U	20	16.9	85	26-130	
trans-1,2-Dichloroethene	ug/L	0.50U	20	17.4	87	48-142	
trans-1,3-Dichloropropene	ug/L	0.25U	20	17.3	86	45-130	
Trichloroethene	ug/L	0.50U	20	18.4	92	42-133	
Trichlorofluoromethane	ug/L	0.50U	20	22.8	114	46-146	
Vinyl chloride	ug/L	0.50U	20	21.0	105	57-142	
1,2-Dichloroethane-d4 (S)	%				101	86-125	
4-Bromofluorobenzene (S)	%				106	70-114	
Toluene-d8 (S)	%				102	87-113	

SAMPLE DUPLICATE: 949926

Parameter	Units	35144362004 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/L	0.50U	0.50U		40	
1,1,2,2-Tetrachloroethane	ug/L	0.12U	0.12U		40	
1,1,2-Trichloroethane	ug/L	0.50U	0.50U		40	
1,1-Dichloroethane	ug/L	0.50U	0.50U		40	
1,1-Dichloroethene	ug/L	0.50U	0.50U		40	
1,2-Dichlorobenzene	ug/L	0.50U	0.50U		40	
1,2-Dichloroethane	ug/L	0.50U	0.50U		40	
1,2-Dichloroethene (Total)	ug/L	0.50U	0.50U		40	N2
1,2-Dichloropropane	ug/L	0.50U	0.50U		40	
1,3-Dichlorobenzene	ug/L	0.50U	0.50U		40	
1,4-Dichlorobenzene	ug/L	0.50U	0.50U		40	
2-Chloroethylvinyl ether	ug/L	0.50U	0.50U		40	
Bromodichloromethane	ug/L	0.27U	0.27U		40	
Bromoform	ug/L	0.50U	0.50U		40	
Bromomethane	ug/L	0.50U	0.50U		40	
Carbon tetrachloride	ug/L	0.50U	0.50U		40	

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, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALITY CONTROL DATA

Project: Grantville 14-1081
Pace Project No.: 35144292

SAMPLE DUPLICATE: 949926

Parameter	Units	35144362004 Result	Dup Result	RPD	Max RPD	Qualifiers
Chlorobenzene	ug/L	0.50U	0.50U		40	
Chloroethane	ug/L	0.50U	0.50U		40	
Chloroform	ug/L	0.50U	0.50U		40	
Chloromethane	ug/L	0.62U	0.62U		40	
cis-1,2-Dichloroethene	ug/L	0.50U	0.50U		40	
cis-1,3-Dichloropropene	ug/L	0.25U	0.25U		40	
Dibromochloromethane	ug/L	0.26U	0.26U		40	
Dichlorodifluoromethane	ug/L	0.50U	0.50U		40	
Methylene Chloride	ug/L	2.5U	2.5U		40	
Tetrachloroethene	ug/L	0.50U	0.50U		40	
trans-1,2-Dichloroethene	ug/L	0.50U	0.50U		40	
trans-1,3-Dichloropropene	ug/L	0.25U	0.25U		40	
Trichloroethene	ug/L	0.50U	0.50U		40	
Trichlorofluoromethane	ug/L	0.50U	0.50U		40	
Vinyl chloride	ug/L	0.50U	0.50U		40	
1,2-Dichloroethane-d4 (S)	%	99	104	5		
4-Bromofluorobenzene (S)	%	107	97	10		
Toluene-d8 (S)	%	97	105	7		

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, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALIFIERS

Project: Grantville 14-1081
Pace Project No.: 35144292

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

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

LOD - Limit of Detection.

LOQ - Limit of Quantitation.

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J(M1)	Estimated Value. Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold TNI accreditation for this parameter.

Pace Analytical Services, Inc.
8 East Tower Circle
Ormond Beach, FL 32174
(386)672-5668

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Grantville 14-1081
Pace Project No.: 35144292

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
35144292001	**MW-5D**	EPA 8260	MSV/12136		

IntraNet Lab Services, LLLP

Chain of Custody Record

Modified from DEP Form # 62-770.900(2)

IntraNet Lab Services, LLLP
Address: 3838 Killearn Center Court
Tallahassee, FL 32309
Phone: (850) 385-9400
Fax: (850) 385-2469

Company Name: Ardaman & Associates

Address: 3175 W. Tharpe St.

City: Tallahassee State: FL Zip: 32303

Project Name: Grantville 14-1081

Project Manager: Steve Reecy

FDEP Facility No:

Project Address:

LAB ANALYSIS — Preservatives (see codes): H

PARAMETER: 8260-VOHs

Item #	Field ID No.	Date Collected	Time Collected	Matrix (see codes)	# of Cont.	8260-VOHs (H)	Grab or Composite	COMMENTS/NOTES
	MW-5D	6/30/14	9:00	GW	3	X		

Total Number of Containers: 3

WO#: 35144292

Sampling Kit #: Equip. #:

Matrix Codes:
- GW Groundwater
- S Soil
- SE Sediment
- A Air
- SW Surface Water
- W Water (Blanks)
- O Other (specify)

Preservative Codes:
- H Hydrochloric + Ice
- I Ice Only
- N Nitric Acid + Ice
- S Sulfuric Acid + Ice
- O Other (specify)
- SVK $2xH_2O + 1xCH_3OH$ + Ice

Turnaround Time Request: X Standard ___ Rush

Date Required:

Samples Recd. on ice? Yes No

Cooler No.(s)/Temp (°C): 1 / 3.3

Sampled By [print name(s)]/ Affiliation:

Sampler(s) Signature:

Item No.	Relinquished by / Affiliation:	Date / Time:	Received by / Affiliation:	Date / Time:
	KitPrep: [signature] AAS	6-27-14 1255	[signature] MEI	6/27/14 1300
	[signature]	6.30.14 1433	[signature] / ILS	6-30-14 @ 1434
	[signature] / ILS	7-1-14 @ 1730	FedEx	
	FedEx		[signature]	7/2/14 1105

Shipment Method — Out: Via: Returned: Via:

(lab use only)

Additional Comments:

APPENDIX C2

WATER SUPPLY WELL SAMPLING MAY 2012

Table 1. Water Quality Test Results for Grantville Well, May, 2012

		Sample ID		STANDARD	Result	Recommendation
		1	2			
Lab ID		*5256*	*5257*			
pH	units	5.8	5.9	6.5 - 8.5	No	Neutralization
Alkalinity	mg/L	15.00	14.00			
Hardness	mg/L	25.56	25.29			
TDS	mg/L	71.00	84.00	<500	OK	
Conductivity	µS/cm	88.0	105.1			
Turbidity	NTU	36.00	16.40	< 5	No	Filtration
Color	units	56.00	96.00	<15	No	Filtration
Al	mg/L	<0.03	<0.03	<0.05	OK	
B	mg/L	<0.01	<0.01			
Ca	mg/L	7.00	6.92			
Cl	mg/L	10.71	10.77	<250	OK	
CO_2	mg/L	43.36	36.07			
Cr	mg/L	<0.01	<0.01	<0.1	OK	
Cu	mg/L	<0.01	<0.01	<1	OK	
F	mg/L	0.05	0.05	<2	OK	
Fe	mg/L	0.74	0.19	<0.3	Mixed	Filtration
K	mg/L	2.68	2.57			
Mg	mg/L	1.96	1.94			
Mn	mg/L	<0.01	<0.01	<0.05	OK	
Mo	mg/L	<0.01	<0.01			
Na	mg/L	8.07	8.06			
Ni	mg/L	<0.01	<0.01			
NO_2-N	mg/L	<0.02	<0.02			
NO_3-N	mg/L	1.98	1.98	<10	OK	
NO_3NO_2-N	mg/L	1.98	1.98			
P	mg/L	<0.06	<0.06			
PO_4	mg/L	<0.05	<0.05			
Si	mg/L	7.32	7.23			
SO_4	mg/L	7.76	7.67	<250	OK	
Zn	mg/L	0.03	0.01	<5	OK	
Lab ID		*FEW12:9744*	*FEW12:9745*			
Escherichia coli	CFU/100 mL	<1	<1	<1	OK	
Total coliform	CFU/100 mL	155.3	64.4	<1	No	Disinfection

Table 2. Grantville Well Information.

	Date	CG1	CG2		GM1	GM2	Source
Latitude		33.235575	33.234017		33.236933	33.238172	Google Earth
Longitude		-84.836828	-84.837256		-84.832053	-84.831114	Google Earth
Well depth, ft		600 (?)	600 (?)		> 300	> 300	Field
Casing size		14"	14"		8"	10"	Field
Casing type		steel	steel		steel	steel	Field
Pump		#N/A	Grundfos 2HP		none	none	Field
Surface elevation, ft		860.0	855.0		868.0	842.5	USGS (approx)
Top of casing, ft		1.0	1.0		3.3	1.2	Field
Depth to water, ft	4/6/2012	19.5	#N/A		30.0	2.6	Field
before pumping	5/10/2012	#N/A	#N/A		29.7	2.2	Field
max drawdown	5/10/2012	#N/A	#N/A		31.3	18.5	Field
Water level, ft	4/6/2012	841.6	#N/A		841.3	841.1	calculated
before pumping	5/10/2012	#N/A	#N/A		841.5	841.5	calculated
steady state during pumping	5/10/2012	#N/A	#N/A		840.0	825.2	calculated
max drawdown	5/10/2012	#N/A	#N/A		1.6	16.3	calculated
Aquifer test							
pumping rate, gpm	5/10/2012	#N/A	#N/A		#N/A	18.6	Field
specific capacity, gpm/ft	5/10/2012	#N/A	#N/A		#N/A	1.1	calculated
Temperature, C	4/6/2012	17.9	#N/A		17.6	18.0	Field
before pumping	5/10/2012	#N/A	#N/A		#N/A	18.0	Field
max drawdown	5/10/2012	#N/A	#N/A		#N/A	18.0	Field
Sp, Conductance, uS/cm	4/6/2012	130	#N/A		79	77	Field
before pumping	5/10/2012	#N/A	#N/A		#N/A	78.0	Field
max drawdown	5/10/2012	#N/A	#N/A		#N/A	87.0	Field
pH	4/6/2012	5.3	#N/A		5.3	7.0	Field
before pumping	5/10/2012	#N/A	#N/A		#N/A	7.0	Field
max drawdown	5/10/2012	#N/A	#N/A		#N/A	5.6	Field
DO, mg/L	4/6/2012	4.2	#N/A		5.0	0.6	Field
before pumping	5/10/2012	#N/A	#N/A		#N/A	0.8	Field
max drawdown	5/10/2012	#N/A	#N/A		#N/A	4.7	Field
Total Coliform, CFU/100 mL	5/10/2012	#N/A	#N/A		#N/A	155.3	Lab Analysis
	5/10/2012	#N/A	#N/A		#N/A	64.4	Lab Analysis
E. Coli, CFU/100 ml	5/10/2012	#N/A	#N/A		#N/A	< 1	Lab Analysis
	5/10/2012	#N/A	#N/A		#N/A	< 1	Lab Analysis
Turbidty, NTU	5/10/2012	#N/A	#N/A		#N/A	53	Field
Alkalinity, mg/L							
Total	5/10/2012	#N/A	#N/A		#N/A	17.5	Field
Phenolphthalein	5/10/2012	#N/A	#N/A		#N/A	0.0	Field

APPENDIX C3

WATER SUPPLY WELL SAMPLING MAY 2008

Underwriters Laboratories Inc.®

Water Quality Report
South Bend Office
110 South Hill Street
South Bend, IN 46617-2702 USA
www.ul.com/water
tel: 1 574 233 4777
fax: 1 574 233 8207
Customer Service: 1 800 332 4345

DRINKING WATER LABORATORY REPORT

This report contains 13 pages.
(including the cover page)

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

NELAP NARRATIVE PAGE

Client: Altamaha Laboratories Report #: 204104NP

Underwriters Laboratories Inc. is a NELAP accredited laboratory. All reported results meet the requirements of the NELAP standards.

UL contact person: Traci Chlebowski

NELAP requires complete reporting of deviations from method requirements, regardless of the suspected impact on the data. Quality control failures not reported within the report summary are noted here.

Method 515.3

The SS-2,4-dichlorophenylacetic acid recovery in the sample submitted for analysis was low (66%) outside the acceptance limits of 70-130% recovery. Any result is potentially low biased.

Method 524.2

Toluene was also present in the associated LTB at 0.6 ug/L, and its presence in the sample may be due to background contamination.

There were no additional quality control failures.

Kelly Soto Project Manager 6/24/2008

Authorized By Title Date

Underwriters Laboratories Inc.
110 S. Hill Street, South Bend, IN 46617-2702 USA
T:: 800.332.4345 / F:: 574.233.8207 / W:: ul.com

Georgia Department of Agriculture
Bottled Water Certification

Firm: Grantville Mill #2960 **Dates of Analyses:** 05/21/08 to 06/10/08

State/Country: Georgia / USA **Source (by name or No.):**

[X] Source Sample [ ] Finished Product Sample

START-UP AND ANNUAL TESTING

(b)(4)(i)(B) Contaminant	MCL (mg/L)	Results	MDL	Contaminant	MCL (mg/L)	Results	MDL
Chemical Quality							
Aluminum	0.2	**0.067**	0.002				
Arsenic	0.01	BDL	0.002	Total Dissolved Solids 1	500	**81**	10
Chloride 1	250.0	**11**	2.0	Zinc 1	5.0	**0.02**	0.005
Iron 1	0.3	**0.12**	0.02	Trihalomethanes (Total)	0.08	**0.001**	*
Manganese 1	0.05	**0.0085**	0.002				
Phenols	0.001	BDL	0.001	Fluoride	***	BDL	0.1
Silver	0.1	BDL	0.0004				
Sulfate 1	250.0	**8.1**	5.0				

*** See Table 1 and 2 (21CFR Part 165) 1. Mineral water is exempt from allowable level. The exemptions are aesthetically based allowable on allowable levels and do not relate to a health concern.

Contaminant (b)(4)(iii)(A)	MCL (mg/L)	Results	MDL	Contaminant	MCL (mg/L)	Results	MDL
Inorganic Chemicals/Physical							
Antimony	0.006	BDL	0.001	Total Nitrate/Nitrite	10.0	**2.4**	‡
Barium	2.0	**0.064**	0.002	Selenium	0.05	BDL	0.002
Beryllium	0.004	BDL	0.0003	Thallium	0.002	BDL	0.0004
Cadmium	0.005	BDL	0.001	Color	15 units	BDL	5.0
Cyanide	0.2	BDL	0.02	Corrosivity		NT	NA
Chromium	0.1	BDL	0.002	Total Plate Count		NT	1
Copper	1.0	**0.0016**	0.001	Coliform	< 1/100 mL	NT	1
Lead	0.005	BDL	0.001	Fecal Coliform	0	NT	10
Mercury	0.002	BDL	0.0001	pH		**5.95**	NA
Nickel	0.1	BDL	0.001				
Nitrite	1.0	BDL	0.01				

(b)(4)(iii)(B) Contaminant	MCL (mg/L)	Results	MDL	Contaminant	MCL (mg/L)	Results	MDL
VOC's				1,2-Dichloropropane	0.005	**0.0008**	0.0005
				Ethylbenzene	0.7	BDL	0.0005
Benzene	0.005	BDL	0.0005	Monochlorobenzene	0.1	BDL	0.0005
Carbon Tetrachloride	0.005	BDL	0.0005	Styrene	0.1	BDL	0.0005
o-Dichlorobenzene	0.6	BDL	0.0005	Tetrachloroethylene	0.005	BDL	0.0005
p-Dichlorobenzene	0.075	BDL	0.0005	Toluene	1.0	**0.0031**	0.0005
1,2-Dichloroethane	0.005	BDL	0.0005	1,2,4-Trichlorobenzene	0.07	BDL	0.0005
1,1-Dichloroethylene	0.007	BDL	0.0005	1,1,2-Trichlorethane	0.005	BDL	0.0005
cis-1,2-Dichloroethylene	0.07	BDL	0.0005	1,1,1-Trichloroethane	0.20	BDL	0.0005
trans-1,2-Dichloroethylene	0.1	BDL	0.0005	Trichloroethylene	0.005	BDL	0.0005
Dichloromethane	0.005	BDL	0.0005	Vinyl Chloride	0.002	BDL	0.0002
				Xylenes(Total)	10.0	BDL	0.0005

* The detection limit for each individual trihalomethane is 0.0005 mg/L.

‡ The detection limit for nitrate is 0.1 mg/L. The detection limit for nitrite is 0.01 mg/L.

Note: This report is to be submitted to the Georgia Department of Agriculture.

Report Number: 204104

(b)(4)(iii)(C) Contaminant	MCL (mg/L)	Results	MDL	Contaminant	MCL (mg/L)	Results	MDL
SOC's				Ethylene dibromide	0.00005	BDL	0.00001
				Glyphosate	0.7	BDL	0.006
Alachlor	0.002	BDL	0.0001	Heptachlor	0.0004	BDL	0.00004
Atrazine	0.003	BDL	0.0001	Heptachlor epoxide	0.0002	BDL	0.00002
Benzo(a)pyrene	0.0002	BDL	0.00002	Hexachlorobenzene	0.001	BDL	0.0001
Carbofuran	0.04	BDL	0.0009	Hexachlorocyclopentadiene	0.05	BDL	0.0001
Chlordane	0.002	**0.0003**	0.0001				
Dalapon	0.2	BDL	0.001	Lindane	0.0002	BDL	0.00002
1,2-Dibromo-3-chloropropane	0.0002	BDL	0.00001	Methoxychlor	0.04	BDL	0.0001
2,4-D	0.07	BDL	0.0001	Oxamyl	0.2	BDL	0.001
Di(2-ethylhexyl)adipate	0.4	BDL	0.0006	Pentachlorophenol	0.001	BDL	0.00004
Dinoseb	0.007	BDL	0.0001	PCB's	0.0005	BDL	£
Diquat	0.02	BDL	0.0004	Picloram	0.5	BDL	0.0001
Endothall	0.1	BDL	0.009	Simazine	0.004	BDL	0.00007
Endrin	0.002	BDL	0.00001	2,3,7,8-TCDD (Dioxin)	3X10-8	BDL	5X10-9
				Toxaphene	0.003	BDL	0.001
				2,4,5-TP (Silvex)	0.05	BDL	0.0001

£ Aroclor 1016: 0.00008; Aroclor 1221: 0.00019; Aroclor 1232: 0.00023; Aroclor 1242: 0.00026; Aroclor 1248: 0.0001; Aroclor 1254: 0.0001; Aroclor 1260: 0.0002

Note: Total Phenols analysis performed by ELAB, Inc.

Note: See attached page for additional comments.

BDL = Below detection limit NT = Not tested NA = Not Applicable

Note: UL has demonstrated it can achieve these report limits in reagent water, but cannot document them in all sample matrices.

Radiological

1. The bottled water shall not contain a combined radium 226 and radium 228 activity in excess of 5 picocuries per liter of water.

2. The bottled water shall not contain a gross alpha particle activity (including radium 226, but excluding radon and uranium) in excess of 15 picocuries per liter of water.

3. **The bottled water shall not contain beta particle and photon radioactivity from man-made radionuclides in excess of that which would produce an annual dose equivalent to the total body or any internal organ of 4 millirems per year calculated on the basis of an intake of 2 liters of the water per day.

Contaminant	MDL	Results	MCL	Units
Gross Alpha	2.25	0.43 +/- 1.22	15	pCi/L
Gross Beta	2.5	2.0 +/- 2.2	**	pCi/L
Radium 226	0.61	0.33 +/- 0.39	5	pCi/L
Radium 228	0.85	0.38 +/- 0.53	5	pCi/L

Kelly D. Clear — Reviewed By — 06/24/08 — Date

Jessie Varab — Finalized By — 6-24-08 — Date

Underwriters Laboratories — Laboratory

Report Number: 204104

Supporting Documents?

[ ] Yes [X] No

If "yes" notary is not required

State of Indiana SS: County of St. Joseph

Before me the undersigned, a Notary Public for Starke County, State of Indiana, personally appeared Kelly Clear and Jessie Varab, and acknowledged the execution of this instrument this twenty-fourth day of June 2008.

Kelly Trott

Kelly Trott, Notary Public

My commission expires: May 16, 2016

Revised 10 December 1996 (FR vol.61, No.59, 3/26/96)

the standard in safety

Underwriters Laboratories

Laboratory Report

Client: Altamaha Laboratories

Attn: Trey Pearson
707 Cameron Drive
Blackshear, GA 31516

Report: 204104
Priority: Standard Written
Status: Final
PWS ID: Not Supplied

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
1852032	Grantville Mill #2960	531.1	05/20/08 09:45	Client	05/21/08 09:45
1852033	Grantville Mill #2960	515.3	05/20/08 09:45	Client	05/21/08 09:45
1852034	Grantville Mill #2960	549.2	05/20/08 09:45	Client	05/21/08 09:45
1852035	Grantville Mill #2960	504.1	05/20/08 09:45	Client	05/21/08 09:45
1852036	Grantville Mill #2960	548.1	05/20/08 09:45	Client	05/21/08 09:45
1852037	Grantville Mill #2960	547	05/20/08 09:45	Client	05/21/08 09:45
1852038	Grantville Mill #2960	552.2	05/20/08 09:45	Client	05/21/08 09:45
1852039	Grantville Mill #2960	525.2	05/20/08 09:45	Client	05/21/08 09:45
1852040	Grantville Mill #2960	505	05/20/08 09:45	Client	05/21/08 09:45
1852041	Grantville Mill #2960	1613	05/20/08 09:45	Client	05/21/08 09:45
1852042	Grantville Mill #2960	2150 B	05/20/08 09:45	Client	05/21/08 09:45
1852043	Grantville Mill #2960	7110 B	05/20/08 09:45	Client	05/21/08 09:45
1852044	Grantville Mill #2960	7500-Ra B	05/20/08 09:45	Client	05/21/08 09:45
1852044	Grantville Mill #2960	7500-Ra D	05/20/08 09:45	Client	05/21/08 09:45
1852045	Grantville Mill #2960	4500-Cl F	05/20/08 09:45	Client	05/21/08 09:45
1852046	Grantville Mill #2960	2120 B	05/20/08 09:45	Client	05/21/08 09:45
1852047	Grantville Mill #2960	335.4	05/20/08 09:45	Client	05/21/08 09:45
1852048	Grantville Mill #2960	200.8	05/20/08 09:45	Client	05/21/08 09:45
1852048	Grantville Mill #2960	245.1	05/20/08 09:45	Client	05/21/08 09:45
1852048	Grantville Mill #2960	200.7	05/20/08 09:45	Client	05/21/08 09:45
1852049	Grantville Mill #2960	300.0	05/20/08 09:45	Client	05/21/08 09:45
1852049	Grantville Mill #2960	300.1	05/20/08 09:45	Client	05/21/08 09:45
1852050	Grantville Mill #2960	314.0	05/20/08 09:45	Client	05/21/08 09:45
1852051	Grantville Mill #2960	524.2	05/20/08 09:45	Client	05/21/08 09:45
1852054	Grantville Mill #2960	150.1	05/20/08 09:45	Client	05/21/08 09:45
1852054	Grantville Mill #2960	160.1	05/20/08 09:45	Client	05/21/08 09:45
1852054	Grantville Mill #2960	180.1	05/20/08 09:45	Client	05/21/08 09:45
1852054	Grantville Mill #2960	300.0	05/20/08 09:45	Client	05/21/08 09:45
1852054	Grantville Mill #2960	353.2	05/20/08 09:45	Client	05/21/08 09:45
1852054	Grantville Mill #2960	353.2	05/20/08 09:45	Client	05/21/08 09:45
1852054	Grantville Mill #2960	4500-Cl G	05/20/08 09:45	Client	05/21/08 09:45
1852054	Grantville Mill #2960	380-75WE	05/20/08 09:45	Client	05/21/08 09:45

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1852054	Grantville Mill #2960	4500-ClO2 D	05/20/08 09:45	Client	05/21/08 09:45
1852055	Grantville Mill #2960	420.4	05/20/08 09:45	Client	05/21/08 09:45

Report Summary

Note: See attached page for additional comments.

NY Lab ELAP #: 11398

Note: In the Method 314.0 analysis, the value reported for the sample submitted for anlaysis is greater than the calculated MDL of 0.2 ug/L and less than the current MRL of 4.0 ug/L.

Note: Total Phenols analysis was performed by ELAB, Inc., Ormond Beach, FL.

Detailed quantitative results are presented on the following pages.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Traci Chlebowski at (574) 233-4777.

Kelly Trotto — Authorized Signature

Project Manager — Title

6/24/2008 — Date

Client Name: Altamaha Laboratories
Report #: 204104

00005

Client Name: Altamaha Laboratories Report #: 204104

Sampling Point: Grantville Mill #2960 PWS ID: Not Supplied

General Chemistry

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
---	pH	150.1	6.5-8.5 &	N/A	**5.95**	pH units	---	05/21/08 17:46	1852054
---	Solids, Dissolved	160.1	500 &	10	**81**	mg/L	---	05/22/08 13:37	1852054
---	Turbidity	180.1	---	1.0	**1.6**	NTU	---	05/21/08 16:47	1852054
---	Color (Apparent)	2120 B	5 &	5.0	< 5.0	Pt/Co units	---	05/21/08 16:22	1852046
---	Color (True)	2120 B	5 &	5.0	< 5.0	Pt/Co units	---	05/21/08 16:22	1852046
---	Odor	2150 B	---	1.00	< 1.00	TON	---	05/21/08 16:52	1852042
16887-00-6	Chloride	300.0	250 &	2.0	**11**	mg/L	---	05/22/08 05:37	1852054
14998-27-7	Chlorite	300.0	1000 &	10	< 10	ug/L	---	05/23/08 15:24	1852049
14808-79-8	Sulfate	300.0	250 &	5.0	**8.1**	mg/L	---	05/22/08 05:37	1852054
15541-45-4	Bromate	300.1	10 &	5.0	< 5.0	ug/L	---	05/22/08 23:36	1852049
14797-73-0	Perchlorate	314.0	---	0.2	**3 J**	ug/L	---	05/30/08 17:11	1852050
57-12-5	Cyanide, Total	335.4	0.1 &	0.02	< 0.02	mg/L	05/27/08 10:39	05/28/08 09:55	1852047
14797-55-8	Nitrate	353.2	10 &	0.1	**2.4**	mg/L	---	05/21/08 18:06	1852054
14797-65-0	Nitrite	353.2	1 &	0.01	< 0.01	mg/L	---	05/21/08 17:27	1852054
16984-48-8	Fluoride	380-75WE	2 &	0.1	< 0.1	mg/L	---	06/05/08 13:21	1852054
51-75-2	Dichloramine	4500-Cl F	---	0.1	< 0.1	mg/L	---	05/21/08 16:59	1852045
10599-90-3	Monochloramine	4500-Cl F	4 &	0.1	< 0.1	mg/L	---	05/21/08 16:59	1852045
10025-85-1	Nitrogen trichloride	4500-Cl F	---	0.2	< 0.2	mg/L	---	05/21/08 16:59	1852045
7782-50-5	Chlorine, Residual (Free)	4500-Cl G	---	0.05	< 0.05	mg/L	---	05/21/08 15:50	1852054
10049-04-4	Chlorine Dioxide, Residual	4500-ClO2 D	0.8 &	0.5	< 0.5	mg/L	---	05/21/08 17:09	1852054

Metals

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
7439-89-6	Iron	200.7	0.3 &	0.02	**0.12**	mg/L	---	05/30/08 16:11	1852048
7429-90-5	Aluminum	200.8	200 &	2.0	**67**	ug/L	---	06/04/08 13:55	1852048
7440-36-0	Antimony	200.8	6 &	1.0	< 1.0	ug/L	---	06/04/08 13:55	1852048
7440-38-2	Arsenic	200.8	10 &	2.0	< 2.0	ug/L	---	06/04/08 13:55	1852048
7440-39-3	Barium	200.8	1000 &	2.0	**64**	ug/L	---	06/04/08 13:55	1852048
7440-41-7	Beryllium	200.8	4 &	0.3	< 0.3	ug/L	---	06/04/08 13:55	1852048
7440-43-9	Cadmium	200.8	5 &	1.0	< 1.0	ug/L	---	06/04/08 13:55	1852048
7440-47-3	Chromium	200.8	50 &	2.0	< 2.0	ug/L	---	06/04/08 13:55	1852048
7440-50-8	Copper	200.8	1000 &	1.0	**1.6**	ug/L	---	06/04/08 13:55	1852048
7439-92-1	Lead	200.8	5 &	1.0	< 1.0	ug/L	---	06/04/08 13:55	1852048
7439-96-5	Manganese	200.8	50 &	2.0	**8.5**	ug/L	---	06/04/08 13:55	1852048
7440-02-0	Nickel	200.8	100 &	1.0	< 1.0	ug/L	---	06/04/08 13:55	1852048
7782-49-2	Selenium	200.8	10 &	2.0	< 2.0	ug/L	---	06/04/08 13:55	1852048
7440-22-4	Silver	200.8	25 &	0.4	< 0.4	ug/L	---	06/04/08 13:55	1852048
7440-28-0	Thallium	200.8	2 &	0.4	< 0.4	ug/L	---	06/04/08 13:55	1852048
7440-66-6	Zinc	200.8	5000 &	5.0	**20**	ug/L	---	06/04/08 13:55	1852048
7439-97-6	Mercury	245.1	1 &	0.1	< 0.1	ug/L	06/10/08 11:30	06/10/08 15:35	1852048

Radionuclides

Client Name: Altamaha Laboratories Report #: 204104

Analyte ID #	Analyte	Method	Reg Limit	DL**	Result	Units	Preparation Date	Analyzed	UL ID #
7440-61-1	Uranium	200.8	30 &	1.00	0.56 ± 0.29	ug/L	---	06/04/08 13:55	1852048
---	Gross Alpha	7110 B	15 &	2.25	0.43 ± 1.22	pCi/L	05/28/08 10:30	05/30/08 08:36	1852043
---	Gross Beta	7110 B	50 &	2.5	2.0 ± 2.2	pCi/L	05/28/08 10:30	05/30/08 08:36	1852043
13982-63-3	Radium-226	7500-Ra B	---	0.61	0.33 ± 0.39	pCi/L	05/28/08 10:30	06/04/08 13:37	1852044
15262-20-1	Radium-228	7500-Ra D	---	0.85	0.38 ± 0.53	pCi/L	05/28/08 10:30	06/04/08 11:11	1852044
---	Combined Radium	calc.	5 &	---	**0.71 ± 0.66**	pCi/L	05/28/08 10:30	06/04/08 13:37	1852044

** Detection Limit (DL) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Disinfection Byproducts

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
631-64-1	Dibromoacetic acid	552.2	---	1.0	< 1.0	ug/L	05/30/08 08:00	05/30/08 20:30	1852038
79-43-6	Dichloroacetic acid	552.2	---	1.0	< 1.0	ug/L	05/30/08 08:00	05/30/08 20:30	1852038
79-08-3	Monobromoacetic acid	552.2	---	1.0	< 1.0	ug/L	05/30/08 08:00	05/30/08 20:30	1852038
79-11-8	Monochloroacetic acid	552.2	---	2.0	< 2.0	ug/L	05/30/08 08:00	05/30/08 20:30	1852038
76-03-9	Trichloroacetic acid	552.2	---	1.0	< 1.0	ug/L	05/30/08 08:00	05/30/08 20:30	1852038
---	Total HAA5	552.2	60 &	2.0	< 2.0	ug/L	05/30/08 08:00	05/30/08 20:30	1852038

Semi-volatile Organic Chemicals

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed	UL ID #
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-Dioxin	1613	30 &	5.0	< 5.0	pg/L	05/28/08 08:07	05/30/08 21:25	1852041
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	504.1	0.2 &	0.01	< 0.01	ug/L	05/29/08 15:30	05/30/08 02:07	1852035
106-93-4	1,2-Dibromoethane (EDB)	504.1	0.05 &	0.01	< 0.01	ug/L	05/29/08 15:30	05/30/08 02:07	1852035
12674-11-2	Aroclor 1016	505	---	0.08	< 0.08	ug/L	05/30/08 07:30	05/30/08 17:17	1852040
11104-28-2	Aroclor 1221	505	---	0.19	< 0.19	ug/L	05/30/08 07:30	05/30/08 17:17	1852040
11141-16-5	Aroclor 1232	505	---	0.23	< 0.23	ug/L	05/30/08 07:30	05/30/08 17:17	1852040
53469-21-9	Aroclor 1242	505	---	0.26	< 0.26	ug/L	05/30/08 07:30	05/30/08 17:17	1852040
12672-29-6	Aroclor 1248	505	---	0.1	< 0.1	ug/L	05/30/08 07:30	05/30/08 17:17	1852040
11097-69-1	Aroclor 1254	505	---	0.1	< 0.1	ug/L	05/30/08 07:30	05/30/08 17:17	1852040
11096-82-5	Aroclor 1260	505	---	0.2	< 0.2	ug/L	05/30/08 07:30	05/30/08 17:17	1852040
57-74-9	Chlordane	505	2 &	0.1	**0.3**	ug/L	05/30/08 07:30	05/30/08 17:17	1852040
8001-35-2	Toxaphene	505	3 &	1.0	< 1.0	ug/L	05/30/08 07:30	05/30/08 17:17	1852040
94-75-7	2,4-D	515.3	70 &	0.1	< 0.1	ug/L	06/02/08 05:51	06/05/08 04:08	1852033
75-99-0	Dalapon	515.3	200 &	1.0	< 1.0	ug/L	06/02/08 05:51	06/05/08 04:08	1852033
1918-00-9	Dicamba	515.3	---	0.1	< 0.1	ug/L	06/02/08 05:51	06/05/08 04:08	1852033
88-85-7	Dinoseb	515.3	7 &	0.1	< 0.1	ug/L	06/02/08 05:51	06/05/08 04:08	1852033
87-86-5	Pentachlorophenol	515.3	1 &	0.04	< 0.04	ug/L	06/02/08 05:51	06/05/08 04:08	1852033
1918-02-1	Picloram	515.3	500 &	0.1	< 0.1	ug/L	06/02/08 05:51	06/05/08 04:08	1852033
93-72-1	2,4,5-TP (Silvex)	515.3	10 &	0.1	< 0.1	ug/L	06/02/08 05:51	06/05/08 04:08	1852033
15972-60-8	Alachlor	525.2	2 &	0.1	< 0.1	ug/L	06/02/08 08:00	06/05/08 09:29	1852039
309-00-2	Aldrin	525.2	---	0.1	< 0.1	ug/L	06/02/08 08:00	06/05/08 09:29	1852039
1912-24-9	Atrazine	525.2	3 &	0.1	< 0.1	ug/L	06/02/08 08:00	06/05/08 09:29	1852039
50-32-8	Benzo[a]pyrene	525.2	0.2 &	0.02	< 0.02	ug/L	06/02/08 08:00	06/05/08 09:29	1852039
58-89-9	gamma-BHC (Lindane)	525.2	0.2 &	0.02	< 0.02	ug/L	06/02/08 08:00	06/05/08 09:29	1852039
23184-66-9	Butachlor	525.2	---	0.1	< 0.1	ug/L	06/02/08 08:00	06/05/08 09:29	1852039
60-57-1	Dieldrin	525.2	---	0.1	< 0.1	ug/L	06/02/08 08:00	06/05/08 09:29	1852039
103-23-1	Di(2-ethylhexyl)adipate	525.2	400 &	0.6	< 0.6	ug/L	06/02/08 08:00	06/05/08 09:29	1852039
117-81-7	Di(2-ethylhexyl)phthalate	525.2	6 &	0.6	< 0.6	ug/L	06/02/08 08:00	06/05/08 09:29	1852039

72-20-8	Endrin	525.2	2 &	0.01	< 0.01	ug/L	06/02/08 08:00	06/05/08 09:29	1852039
76-44-8	Heptachlor	525.2	0.4 &	0.04	< 0.04	ug/L	06/02/08 08:00	06/05/08 09:29	1852039
1024-57-3	Heptachlor epoxide	525.2	0.2 &	0.02	< 0.02	ug/L	06/02/08 08:00	06/05/08 09:29	1852039
118-74-1	Hexachlorobenzene	525.2	1 &	0.1	< 0.1	ug/L	06/02/08 08:00	06/05/08 09:29	1852039
77-47-4	Hexachlorocyclopentadiene	525.2	50 &	0.1	< 0.1	ug/L	06/02/08 08:00	06/05/08 09:29	1852039
72-43-5	Methoxychlor	525.2	40 &	0.1	< 0.1	ug/L	06/02/08 08:00	06/05/08 09:29	1852039
51218-45-2	Metolachlor	525.2	---	0.1	< 0.1	ug/L	06/02/08 08:00	06/05/08 09:29	1852039
21087-64-9	Metribuzin	525.2	---	0.1	< 0.1	ug/L	06/02/08 08:00	06/05/08 09:29	1852039
1918-16-7	Propachlor	525.2	---	0.1	< 0.1	ug/L	06/02/08 08:00	06/05/08 09:29	1852039
122-34-9	Simazine	525.2	4 &	0.07	< 0.07	ug/L	06/02/08 08:00	06/05/08 09:29	1852039
116-06-3	Aldicarb	531.1	3 &	0.5	< 0.5	ug/L	06/03/08 07:40	06/05/08 07:21	1852032
1646-88-4	Aldicarb sulfone	531.1	3 &	0.7	< 0.7	ug/L	06/03/08 07:40	06/05/08 07:21	1852032
1646-87-3	Aldicarb sulfoxide	531.1	4 &	0.5	< 0.5	ug/L	06/03/08 07:40	06/05/08 07:21	1852032
63-25-2	Carbaryl	531.1	---	0.5	< 0.5	ug/L	06/03/08 07:40	06/05/08 07:21	1852032
1563-66-2	Carbofuran	531.1	40 &	0.9	< 0.9	ug/L	06/03/08 07:40	06/05/08 07:21	1852032
16655-82-6	3-Hydroxycarbofuran	531.1	---	0.5	< 0.5	ug/L	06/03/08 07:40	06/05/08 07:21	1852032
16752-77-5	Methomyl	531.1	---	0.5	< 0.5	ug/L	06/03/08 07:40	06/05/08 07:21	1852032
23135-22-0	Oxamyl	531.1	200 &	1.0	< 1.0	ug/L	06/03/08 07:40	06/05/08 07:21	1852032
1071-83-6	Glyphosate	547	700 &	6.0	< 6.0	ug/L	05/30/08 13:00	05/31/08 12:52	1852037
145-73-3	Endothall	548.1	100 &	9.0	< 9.0	ug/L	05/22/08 08:00	05/23/08 21:30	1852036
85-00-7	Diquat	549.2	20 &	0.4	< 0.4	ug/L	05/22/08 05:45	05/22/08 17:30	1852034

Any positive Aroclor result would require analysis for total PCB as decachlorobiphenyl by method 508A (MCL = 0.5 ug/L)

Volatile Organic Chemicals

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
71-43-2	Benzene	524.2	1 &	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
108-86-1	Bromobenzene	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
74-97-5	Bromochloromethane	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
75-27-4	Bromodichloromethane	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
75-25-2	Bromoform	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
74-83-9	Bromomethane	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
104-51-8	n-Butylbenzene	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
135-98-8	sec-Butylbenzene	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
98-06-6	tert-Butylbenzene	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
56-23-5	Carbon tetrachloride	524.2	5 &	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
108-90-7	Chlorobenzene	524.2	50 &	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
75-00-3	Chloroethane	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
67-66-3	Chloroform	524.2	---	0.5	**1.0**	ug/L	---	05/22/08 11:01	1852051
74-87-3	Chloromethane	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
95-49-8	2-Chlorotoluene	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
106-43-4	4-Chlorotoluene	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
124-48-1	Dibromochloromethane	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	524.2	---	0.2	< 0.2	ug/L	---	05/22/08 11:01	1852051
106-93-4	1,2-Dibromoethane (EDB)	524.2	---	0.2	< 0.2	ug/L	---	05/22/08 11:01	1852051
74-95-3	Dibromomethane	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
95-50-1	1,2-Dichlorobenzene	524.2	600 &	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
541-73-1	1,3-Dichlorobenzene	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
106-46-7	1,4-Dichlorobenzene	524.2	75 &	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
75-71-8	Dichlorodifluoromethane	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051

75-34-3	1,1-Dichloroethane	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
107-06-2	1,2-Dichloroethane	524.2	2 &	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
75-35-4	1,1-Dichloroethylene	524.2	2 &	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
156-59-2	cis-1,2-Dichloroethylene	524.2	70 &	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
156-60-5	trans-1,2-Dichloroethylene	524.2	100 &	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
75-09-2	Dichloromethane	524.2	3 &	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
78-87-5	1,2-Dichloropropane	524.2	5 &	0.5	**0.8**	ug/L	---	05/22/08 11:01	1852051
142-28-9	1,3-Dichloropropane	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
594-20-7	2,2-Dichloropropane	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
563-58-6	1,1-Dichloropropylene	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
10061-01-5	cis-1,3-Dichloropropylene	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
10061-02-6	trans-1,3-Dichloropropylene	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
100-41-4	Ethylbenzene	524.2	700 &	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
87-68-3	Hexachlorobutadiene	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
98-82-8	Isopropylbenzene	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
99-87-6	4-Isopropyltoluene	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
1634-04-4	Methyl-t-butyl ether (MTBE)	524.2	70 &	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
91-20-3	Naphthalene	524.2	300 &	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
103-65-1	n-Propylbenzene	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
100-42-5	Styrene	524.2	100 &	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
630-20-6	1,1,1,2-Tetrachloroethane	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
79-34-5	1,1,2,2-Tetrachloroethane	524.2	1 &	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
127-18-4	Tetrachloroethylene	524.2	1 &	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
108-88-3	Toluene	524.2	1000 &	0.5	**3.1**	ug/L	---	05/22/08 11:01	1852051
87-61-6	1,2,3-Trichlorobenzene	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
120-82-1	1,2,4-Trichlorobenzene	524.2	9 &	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
71-55-6	1,1,1-Trichloroethane	524.2	30 &	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
79-00-5	1,1,2-Trichloroethane	524.2	3 &	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
79-01-6	Trichloroethylene	524.2	1 &	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
75-69-4	Trichlorofluoromethane	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
96-18-4	1,2,3-Trichloropropane	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
95-63-6	1,2,4-Trimethylbenzene	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
108-67-8	1,3,5-Trimethylbenzene	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
75-01-4	Vinyl chloride	524.2	2 &	0.2	< 0.2	ug/L	---	05/22/08 11:01	1852051
95-47-6	1,2-Xylene	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
---	1,3 + 1,4-Xylene	524.2	---	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051
1330-20-7	Xylenes, Total	524.2	1000 &	0.5	< 0.5	ug/L	---	05/22/08 11:01	1852051

Compliance monitoring for 1,2-Dibromo-3-chloropropane (DBCP) must be done using EPA method 504.1.

Compliance monitoring for 1,2-Dibromoethane (EDB) must be done using EPA method 504.1.

Reference Lab Tests

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed	UL ID #
---	Phenols, Total	420.4	0.001 &	0.0010	< 0.0010	mg/L	---	05/30/08 11:37	1852055

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL	SOQ
Symbol:	*	^	!	&

Laboratory Report

Client: Altamaha Laboratories

Attn: Trey Pearson
707 Cameron Drive
Blackshear, GA 31516

Report: 204104
Priority: Standard Written
Status: Final
PWS ID: Not Supplied

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
1852056	Grantville Mill #2960	9215 B	05/20/08 09:45	Client	05/21/08 09:45
1852056	Grantville Mill #2960	9223 B	05/20/08 09:45	Client	05/21/08 09:45

Report Summary

The analysis was cancelled at the request of the client.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call us at (574) 233-4777.

Kelly Soto — Authorized Signature

Project Manager — Title

6/24/2008 — Date

Underwriters Laboratories Inc.
110 S. Hill Street, South Bend, IN 46617-2702 USA
T:: 800.332.4345 / F:: 574.233.8207 / W:: ul.com

: 00011

Underwriters Laboratories

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fax (574) 233-8207

www.ul.com/water

Please print legibly.

Order # 159577 Batch# 204104

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CHAIN OF CUSTODY RECORD

Page 1 of 2

REPORT TO: Altamaha Laboratories
PO Box 618 / 707 CAMERON DR
Blackshear, GA 31516
altalabs@bellsouth.net

SAMPLER (Signature)

BILL TO: SAME

COMPLIANCE MONITORING: Yes ✓ / No

STATE (of sample origin)	PWS ID#	POPULATION SERVED	SOURCE WATER
Georgia		N/A	

PROJECT NAME: Grantville Mill

PO#:

Will use earliest time given TC 5/21/08

LAB Number	COLLECTION DATE	COLLECTION TIME	AM	PM	SAMPLING SITE	TEST NAME	SAMPLE REMARKS	CHLORINATED YES	CHLORINATED NO	# OF CONTAINERS	MATRIX CODE	TURNAROUND TIME
1	5/20/08	945-1025	X		Grantville Mill #2960	Bottled water analysis as per Quote 7207	*See below		X	41		
2												
3												
4						Cond = 100µS						
5						pH = 5.1						
6						TEMP = 65.4°F						
7	1852032					531				2		
8	1852033					515				2		
9	1852034					549				1		
10	1852035					504				2		
11	1852036					548				2		
12	1852037					547				2		
13	1852038					HAA				3		
14	1852039					525				2		

RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED BY:(Signature)	DATE	TIME
to UPS	5/20/08	1200 AM PM			AM PM
RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED BY:(Signature)	DATE	TIME
		AM PM			AM PM
RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED FOR LABORATORY BY:	DATE	TIME
		AM PM	Keela Posey	5-21-08	0945 AM PM

LAB RESERVES THE RIGHT TO RETURN UNUSED PORTIONS OF NON-AQUEOUS SAMPLES TO CLIENT

LAB COMMENTS
per client- reports are needed for GA+NY+CA. TC 5/21/08

CONDITIONS UPON RECEIPT (check one): X Iced: Wet / Blue ____ Ambient Temperature: 3.2 °C Upon Receipt ____ N/A

MATRIX CODES:
DW-DRINKING WATER
RW-REAGENT WATER
GW-GROUND WATER
EW-EXPOSURE WATER
SW-SURFACE WATER
PW-POOL WATER
WW-WASTE WATER

TURN-AROUND TIME (TAT) - SURCHARGES

SW = Standard Written: (15 working days)	0%	**IV*** = Immediate Verbal: (3 working days)	100%
RV* = Rush Verbal: (5 Working days)	50%	**IW*** =Immediate Written: (3 working days)	125%
RW* = Rush Written: (5 working days)	75%	**SP*** = Weekend, Holiday	CALL
		STAT* = Less than 48 hours	CALL

*-Please call, Expedited service not available for all testing

Samples received unannounced with less than 48 hours holding time remaining may be subject to additional charges

Shipping
UL-SBN-SHIP-F-002-07
Effective Date:
10/24/2007

Sample analysis will be provided according to the standard UL GSA/Water Services Terms, which are available upon request. Any other terms proposed by Customer are deemed material alterations and are rejected unless expressly agree to in writing by UL.

*Unable to control flow. Output from well through 2" pipe. Just

Underwriters Laboratories

110 S. Hill Street
South Bend, IN 46617
(800) 332-4345
fax (574) 233-8207

www.ul.com/water

Please print legibly. TC

Order # 159591 Batch# 204104

Shaded area for lab use only

CHAIN OF CUSTODY RECORD

Page 2 of 2

REPORT TO:	SAMPLER (Signature)	STATE (of sample origin)	PWS ID#	PROJECT NAME	PO#

BILL TO:	COMPLIANCE MONITORING	Yes	No	POPULATION SERVED	SOURCE WATER

	LAB Number	COLLECTION DATE	COLLECTION TIME	AM	PM	SAMPLING SITE	TEST NAME	SAMPLE REMARKS	CHLORINATED YES	CHLORINATED NO	# OF CONTAINERS	MATRIX CODE	TURNAROUND TIME
1	1852040	5-20-08	0945-10:15				505				2		
2	1852041						DIOXIN				3		
3	1852055						T PHENOLS				1		
4	1852042	KP 5-21-08					ODOR				1		
5	1852043						GA & B				1		
6	1852044						R226/228	5-21-08 KP			2		
7	1852054					TOC	~~TOC 5-21-08 NOT ON~~	~~ORDER~~			1		
8	1852045						CHLORAMINES				1		
9	1852046						COLOR				1		
10	1852047						CYANIDE				1		
11	1852048						METALS				1		
12	1852056						TC/HPC (1) - DO NOT RUN PER TREY - HPC TO BE RAN AT ALTAMAHA. TC 5/21						
13	1852049						BROMATE (1)	COC completed by:					
14	1852050						PERCHLORATE (1)	Kellen Posey					

RELINQUISHED BY:(Signature)	DATE	TIME AM PM	RECEIVED BY:(Signature)	DATE	TIME AM PM
RELINQUISHED BY:(Signature)	DATE	TIME AM PM	RECEIVED BY:(Signature)	DATE	TIME AM PM
RELINQUISHED BY:(Signature)	DATE	TIME AM PM	RECEIVED FOR LABORATORY BY: Kellen Posey	DATE 5-21-08	TIME 0945 AM PM

LAB RESERVES THE RIGHT TO RETURN UNUSED PORTIONS OF NON-AQUEOUS SAMPLES TO CLIENT

LAB COMMENTS

1852051 VOC (3)
1852052 504 LTB 5-7-08 0930 (1)
1852053 VOC EB 5-7-08 0930 (1) KP
we will use the ~~oldest~~ earliest time. 5-21-08

CONDITIONS UPON RECEIPT (check one): Temperature TC 5/21/08

X Iced: Wet / Blue ____ Ambient 3.2 °C Upon Receipt ____ N/A

MATRIX CODES:

DW-DRINKING WATER
RW-REAGENT WATER
GW-GROUND WATER
EW-EXPOSURE WATER
SW-SURFACE WATER
PW-POOL WATER
WW-WASTE WATER

TURN-AROUND TIME (TAT) - SURCHARGES

SW = Standard Written: (15 working days)	0%	**IV*** = Immediate Verbal: (3 working days)	100%
RV* = Rush Verbal: (5 Working days)	50%	**IW*** =Immediate Written: (3 working days)	125%
RW* = Rush Written: (5 working days)	75%	**SP*** = Weekend, Holiday	CALL
		STAT* = Less than 48 hours	CALL

*-Please call, Expedited service not available for all testing

Samples received unannounced with less than 48 hours holding time remaining may be subject to additional charges

Shipping
UL-SBN-SHIP-F-002-07
Effective Date:
10/24/2007

Sample analysis will be provided according to the standard UL GSA/Water Services Terms, which are available upon request. Any other terms proposed by Customer are deemed material alterations and are rejected unless expressly agree to in writing by UL.

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INVOICE 123460

Billed to

Altamaha Laboratories
Trey Pearson
707 Cameron Drive
Blackshear, GA 31516

Altamaha Laboratories
Trey Pearson
707 Cameron Drive
Blackshear, GA 31516

INVOICE DATE	DUE DATE	REPORT NO.	CLIENT NO.	TERMS	YOUR NO.	OUR NO.
06/24/08	07/24/08	204104	11590	Net 30 Days	Grantville Mill	159597

Description/Matrix/Sample Type	*Unit Price*	*Qty*	*$ Disc*	*% Disc*	*Net*
Bromate/DW/FS	$100.00	1	$0.00	0.00%	$100.00
Bromide, Chlorate, Chlorite/DW/FS	$25.00	1	$0.00	0.00%	$25.00
Carbamates - Phase II & V/DW/FS	$200.00	1	$0.00	0.00%	$200.00
Chloramines/DW/FS	$35.00	1	$0.00	0.00%	$35.00
Chlorinated Acids - Phase II & V by 515.3/DW/FS	$225.00	1	$0.00	0.00%	$225.00
Chlorine Dioxide, Residual/DW/FS	$25.00	1	$0.00	0.00%	$25.00
Chlorine, Residual (Free)/DW/FS	$20.00	1	$0.00	0.00%	$20.00
Color (Apparent & True)/DW/FS	$25.00	1	$0.00	0.00%	$25.00
Cyanide, Total/DW/FS	$40.00	1	$0.00	0.00%	$40.00
Dioxin/DW/FS	$450.00	1	$0.00	0.00%	$450.00
Diquat/DW/FS	$175.00	1	$0.00	0.00%	$175.00
EDB/DBCP/DW/FS	$95.00	1	$0.00	0.00%	$95.00
Endothall/DW/FS	$165.00	1	$0.00	0.00%	$165.00
Fluoride, Chloride, Nitrate, Sulfate/DW/FS	$50.00	1	$0.00	0.00%	$50.00
Fluoride/DW/FS	$25.00	1	$0.00	0.00%	$25.00
Glyphosate/DW/FS	$140.00	1	$0.00	0.00%	$140.00
Gross Alpha & Beta/DW/FS	$65.00	1	$0.00	0.00%	$65.00
Haloacetic Acids 5/DW/FS	$180.00	1	$0.00	0.00%	$180.00
ICP-AES Metals Scan/DW/FS	$15.00	1	$0.00	0.00%	$15.00
ICP-MS Metals Scan/DW/FS	$192.00	1	$0.00	0.00%	$192.00
Mercury/DW/FS	$30.00	1	$0.00	0.00%	$30.00
Nitrogen, Nitrate/DW/FS	$25.00	1	$0.00	0.00%	$25.00
Nitrogen, Nitrite/DW/FS	$25.00	1	$0.00	0.00%	$25.00
Odor/DW/FS	$30.00	1	$0.00	0.00%	$30.00
Perchlorate/DW/FS	$110.00	1	$0.00	0.00%	$110.00
Phase I,II & V Regulated & Unregulated Volatiles/DW/FS	$165.00	1	$0.00	0.00%	$165.00
Phase II & V 525/DW/FS	$325.00	1	$0.00	0.00%	$325.00
Phase II & V PCB/Toxaphene/Chlordane/DW/FS	$95.00	1	$0.00	0.00%	$95.00
Phenols, Total/DW/FS	$42.00	1	$0.00	0.00%	$42.00
Radium-226/DW/FS	$92.50	1	$0.00	0.00%	$92.50
Radium-228/DW/FS	$92.50	1	$0.00	0.00%	$92.50
Solids, Dissolved/DW/FS	$12.00	1	$0.00	0.00%	$12.00
Turbidity/DW/FS	$12.00	1	$0.00	0.00%	$12.00
pH/DW/FS	$12.00	1	$0.00	0.00%	$12.00

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INVOICE 123460

Billed to

Altamaha Laboratories
Trey Pearson
707 Cameron Drive
Blackshear, GA 31516

Altamaha Laboratories
Trey Pearson
707 Cameron Drive
Blackshear, GA 31516

INVOICE DATE	DUE DATE	REPORT NO.	CLIENT NO.	TERMS	YOUR NO.	OUR NO.
06/24/08	07/24/08	204104	11590	Net 30 Days	Grantville Mill	159597

Description/Matrix/Sample Type	*Unit Price*	*Qty*	*$ Disc*	*% Disc*	*Net*
Extended Reporting					$50.00
Sample Kit, Bottles, Preservatives	No Charge				
Collection Instructions	No Charge				
State Approved Report, if req'd	No Charge				
Standard Outgoing Shipping	No Charge				

Site Description:

Total Tests 34 **Total($ US)** **$3,365.00**

See Enclosed report for details.

A Finance Charge of 1.5% per month may be added to past-due accounts.

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APPENDIX D

RISK REDUCTION STANDARDS

DEVELOPMENT OF GROUNDWATER RISK REDUCTION STANDARDS (RRS)

Overview

RRSs were derived for all constituents detected in groundwater that are regulated in Appendix III of the HSRA rules, Media Target Concentrations and Standard Exposure Assumptions. Table D-1 shows the regulated constituents that have been detected at the Site. Groundwater Risk Reduction Standards (RRS) were developed consistent with the following references:

- Georgia Department of Natural Resources Environmental Protection Division ("EPD") Hazardous Site Response Act ("HSRA") rules and regulations (Chapter §391-3-19; GA EPD Reg §391-3-19);
- HSRA Guidance (www.georgiaepd.org/documents/hsraguideCSRRS.html); and
- Risk Assessment Guidance for Superfund ("RAGS"), Volume I - Human Health Evaluation Manual Part B, Development of Risk Based Preliminary Remediation Goals [EPA,1991].

As Stated in Section 3.3.1 of the VRP application ("Regulated Constituents of Interest and Delineation Criteria"), soil RRS were not derived due to the absence of soil data. Printouts of all worksheet files used to calculate the groundwater Type 1, Type 2, Type 3, and Type 4 RRS are included in Tables D-1 through D-8.

Sources of Toxicity Values and Physical/Chemical Factors

The physical-chemical characteristics and toxicity values used to calculate the RRSs are shown in Table D-2 and D-3, respectively. The most recent publication (January 2015) of EPA's Regional Screening Level ("RSL") tables were used as sources of both toxicity criteria and physical-chemical properties for each constituent.

Risk and Hazard Calculations

Table D-4 and D-5 show the risk and hazard calculations for exposure to groundwater. The equations used were obtained from EPA's RAGS document (EPA, 1991), per the HSRA Rules. The equations are shown on each table and below the equations are the exposure factors relating to the adult resident, child resident, and industrial worker scenarios. The exposure factors are either from the HSRA Rules or HSRA Guidance.

Residential and Non-Residential RRS

The Residential RRS (Type 1 and 2) and Non-Residential RRS (Type 3 and 4) are shown on Table D-6 and D-7, respectively. The Residential RRS is the higher of the Type 1 and Type 2 RRS. Similarly, the Non-Residential RRS is the higher of the Type 3 and Type 4 RRS.

An example calculation for Type 2 and Type 4 RRS for PCE is provided in Table D-8.

Finally, a summary of all of the RRSs compared to the maximum detected concentrations at the Site is shown on Table D-9.

Table D-1. HSRA Values for Constituents Detected in Groundwater

Parameter	CASText	Table 1 GW (mg/L)	GA MCL (mg/L)
Chloroform	67-66-3	0.08	
cis-1,2-Dichloroethene	156-59-2	0.07	0.07
Dichlorobromomethane	75-27-4	0.08	
Freon-11	75-69-4	2	
Tetrachloroethene	127-18-4	0.005	0.005
Trichloroethene	79-01-6	0.005	0.005

Table D-2. Physical-Chemical Parameters

Analyte	CAS	Organic Carbon Partition Coefficient (K_{oc}) (cm^3/g)	Diffusivity in air (D_a) (cm^2/s)	Henry's Law Constant (H') (unitless)	Henry's Law Constant at reference temperature of 25 °C (H) ($atm\text{-}m^3/mol$)	Volatile	Dei = Da x $E^{0.33}$	Kd* = Koc x OC	Kas =(H/Kd) x 41	α cm^2/s	VF m^3/kg
Chloroform	67-66-3	31.82	0.0769197	0.1500409	0.00367	V	0.054397637	0.6364	0.236439346	0.002493616	2755.65166
cis-1,2-Dichloroethene	156-59-2	39.6	0.0884088	0.1668029	0.00408	V	0.062522733	0.792	0.211212121	0.002572859	2726.217452
Dichlorobromomethane	75-27-4	31.82	0.0562629	0.0866721	0.00212	V	0.039789141	0.6364	0.136580767	0.001074421	4280.972603
Freon-11	75-69-4	43.89	0.065356	3.9656582	0.097	V	0.046219785	0.8778	4.530644794	0.022154444	504.4891272
Tetrachloroethene	127-18-4	94.94	0.0504664	0.7236304	0.0177	V	0.035689855	1.8988	0.382188751	0.002571879	2638.832893
Trichloroethene	79-01-6	60.7	0.0686618	0.4026983	0.00985	V	0.048557648	1.214	0.332660626	0.003074409	2436.301759

* Kd values fo metals are taken from SSG assuming a pH of 6.8

SSG -EPA Soil Screening Guidance - Values are calculated values unless otherwise indicated as measured.

ORNL RAIS - Oak Ridge National Laboratory Risk Assessment Information System

EPI Suite -EPI (Estimation Programs Interface) Suite™

Calculated - from H' - Where H' =H*41

$$VF\ (m^3/kg) = \frac{(LS \times V \times DH)}{A} \times \frac{(\pi \times \alpha \times T)^{1/2}}{(2 \times D_{ei} \times E \times K_{as} \times 10^{-3}\ kg/g)}$$

$$\alpha = \frac{(D_{ei} \times E)}{E + \rho_s(1-E)/K_{as}}$$

LS =		m	length of side of contaminated area
V =		m/s	wind speed in mixing zone
DH =		m	diffusion height
A =		cm^2	area of contamination
π =			
D_{ei} =		cm^2/s	effective diffusivity
D_i =			molecular diffusivity (cm^2/s)
E =			total soil porosity
ρ_s =		g/m^3	density of soil solids
Kas =			soil/air partition coefficient (g soil/cm^3 air)
	Chemical specific		Henry's law constant ($atm\text{-}m^3/mol$)
			soil-water partition coefficient
	Chemical specific		organic carbon partition coefficient
	0.02		soil organic carbon content fraction
T =	790000000		exposure interval

Table D-3. Toxicity Factors

Analyte	CAS	NonCancer Toxicity Values			Cancer Toxicity Values			
		Oral RfD	Inhalation RFC	Inhalation RfD	Oral CSF	Inhalation Unit Risk	Inhalation CSF	Cancer Class
		mg/kg-day	mg/m3	mg/kg-day	per mg/kg-day	per ug/m3	per mg/kg-day	
Chloroform	67-66-3	1.00E-02	9.80E-02	0.028	3.10E-02	2.30E-05	0.0805	B2
cis-1,2-Dichloroethene	156-59-2	2.00E-03						
Dichlorobromomethane	75-27-4	2.00E-02			6.20E-02	3.70E-05	0.1295	
Freon-11	75-69-4	3.00E-01	7.00E-01	0.2				
Tetrachloroethene	127-18-4	6.00E-03	4.00E-02	0.01142857	2.10E-03	2.60E-07	0.00091	B
Trichloroethene	79-01-6	5.00E-04	2.00E-03	0.00057143	4.60E-02	4.10E-06	0.01435	A

Values are from the EPA Regional Screening Level Summary Table (May 2014), except where noted

IRIS: Intigrated Risk Information System (www.epa.gov/IRIS/)

$$RfD = \frac{RFC\ (mg/kg\text{-}d) \times 20\ (m^3/d)}{70\ (kg)}$$

$$CSF = \frac{IUR\ (\mu g/m^3) \times 70\ kg \times 1000\ \mu g/mg}{20\ (m^3/d)}$$

Table D-4. Groundwater Risk Calculations

Analyte	CAS	Volatile?	Oral CSF	Inhalation CSF	RAGS Eqn. 1								
					Adult			Child			Worker		
					Ingestion	Inhalation	Total	Ingestion	Inhalation	Total	Ingestion	Inhalation	Total
			per mg/kg-day	per mg/kg-day	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Chloroform	67-66-3	V	3.10E-02	0.0805	0.02747312	0.00282126	0.0025585	0.058871	0.0030228	0.0028751	0.0923097	0.0035548	0.003423
cis-1,2-Dichloroethene	156-59-2	V											
Dichlorobromomethane	75-27-4	V	6.20E-02	0.1295	0.01373656	0.00175375	0.0015552	0.0294355	0.001879	0.0017663	0.0461548	0.0022097	0.0021088
Freon-11	75-69-4	V											
Tetrachloroethene	127-18-4	V	2.10E-03	0.00091	0.40555556	0.24957265	0.1544974	0.8690476	0.2673993	0.2044818	1.3626667	0.3144615	0.2555
Trichloroethene	79-01-6	V	4.60E-02	0.01435	0.01851449	0.01582656	0.0085327	0.0396739	0.016957	0.0118796	0.0622087	0.0199415	0.0151008

$$\text{Ingestion/Oral C (mg/kg)} = \frac{TR \times BW \times AT}{EF \times ED \times (SFo \times IRw)}$$

$$\text{Inhalation C (mg/kg)} = \frac{TR \times BW \times AT}{EF \times ED \times (SFi \times K \times IRa)}$$

Note: Inhalation pathway not calculated if not volatile

$$\text{RAGS Eqn 1} = \frac{TR \times BW \times AT}{EF \times ED \times [(SFo \times IRw) + (SFi \times K \times IRa)]}$$

Parameter		Adult		Child		Worker	
		Value	Source	Value	Source	Value	Source
Body Weight, Adult (kg)	BW	70	1	15	2	70	1
Exposure Frequency, Resident Adult (d/yr)	EF	350	1	350	1	250	1
Exposure Duration, Resident Adult (yr)	ED	30	1	6	2	25	1
Soil Ingestion, Resident Adult (mg/d)	IRs	114	1	200	2	50	1
Water ingestion, Resident Adult (L/d)	IRw	2	1	1	1	1	1
Inhalation Rate, Resident Adult (m^3/d)	IRa	15	1	15	2	20	1
Averaging Time, Cancer, Adult (d)	AT	25550	1	25550	1	25550	1
Target Risk	TR	1E-05	1	1E-05	1	1E-05	1
Water-to-air volatilization factor (L/m3)	K	0.5	1	0.5	1	0.5	1
Particulate Emission Factor (m3/kg)	PEF	4630000000	1	4630000000	1	4630000000	1
IngFactor		0.000851667		0.001825		0.0028616	
InhFactor		0.000227111		0.000243333		0.00028616	

Notes:

Source 1 - GaEPD Reg 391-3-19 Appendix III, Table 3

Source 2 - HSRA Guidance http://www.georgiaepd.org/Documents/hsraguideCSRRRS.html

Table D-5. Groundwater Hazard Calculations

Analyte	CAS	Volatile?	Oral RfD	Inhalation RfD	RAGS Eqn. 2								
					Adult			Child			Worker		
					Ingestion	Inhalation	Total	Ingestion	Inhalation	Total	Ingestion	Inhalation	Total
			mg/kg-day	mg/kg-day	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Chloroform	67-66-3	V	1.00E-02	0.028	0.365	0.27253333	0.156030534	0.156428571	0.0584	0.042524272	1.022	0.28616	0.2235625
cis-1,2-Dichloroethene	156-59-2	V	2.00E-03		0.073		0.073	0.031285714		0.031285714	0.2044		0.2044
Dichlorobromomethane	75-27-4	V	2.00E-02		0.73		0.73	0.312857143		0.312857143	2.044		2.044
Freon-11	75-69-4	V	3.00E-01	0.2	10.95	1.94666667	1.652830189	4.692857143	0.41714286	0.383090379	30.66	2.044	1.91625
Tetrachloroethene	127-18-4	V	6.00E-03	0.0114286	0.219	0.1112381	0.073768421	0.093857143	0.02383673	0.019009042	0.6132	0.1168	0.098112
Trichloroethene	79-01-6	V	5.00E-04	0.0005714	0.01825	0.0055619	0.004262774	0.007821429	0.00119184	0.001034238	0.0511	0.00584	0.005241026

Lead GSL based on Appendix III concentration

$$\text{Ingestion/Oral C (mg/kg)} = \frac{\text{THI x BW x AT}}{\text{EF x ED x (1/RfDo x IRw)}}$$

$$\text{Inhalation C (mg/kg)} = \frac{\text{THI x BW x AT}}{\text{EF x ED x (1/RfDi x K x IRa)}}$$

Note: Inhalation pathway not calculated if not volatile

$$\text{RAGS Eqn 2} = \frac{\text{THI x BW x AT}}{\text{EF x ED x [(1/RfDo x IRw) + (1/RfDi x K x IRa)]}}$$

Parameter		Adult Value	Adult Source	Child Value	Child Source	Worker Value	Worker Source	
Body Weight, Adult (kg)	BW	70	1	15	2	70	1	
Exposure Frequency, Resident Adult (d/yr)	EF	350	1	350	1	250	1	
Exposure Duration, Resident Adult (yr)	ED	30	1	6	2	25	1	
Soil Ingestion, Resident Adult (mg/d)	IRs	114	1	200	2	50	1	
Water ingestion, Resident Adult (L/d)	IRw	2	1	1	1	1	1	
Inhalation Rate, Resident Adult (m^3/d)	IRa	15	1	15	2	20	1	
Averaging Time, Noncancer, Adult (d)	AT	10950	1	2190	1	9125	1	Exposure Duration x 365 days
Target hazard quotient	THQ	1	1	1	1	1	1	
Water-to-air volatilization factor (L/m3)	K	0.5	1	0.5	1	0.5	1	
Particulate Emission Factor (m3/kg)	PEF	4630000000	1	4630000000	1	4630000000	1	
IngFactor		36.5		15.64285714		102.2		
InhFactor		9.733333333		2.085714286		10.22		

Notes:

Source 1 - GaEPD Reg 391-3-19 Appendix III, Table 3

Source 2 - HSRA Guidance http://www.georgiaepd.org/Documents/hsraguideCSRRRS.html

Table D-6. Groundwater Residential Risk Reduction Standards

Analyte	CAS	TYPE 1 GW RRS				TYPE 2 GW RRS								Residential GW RRS - higher of Type 1 and 2
		Rule 391-3-19-.07(6)(b) and Guidance: The lesser of Table 1 App III and GA MCL (or where NA, the higher of DL or Bkg)				Rule 391-3-19-.07(7)(b): The lesser of Items 1 and 2 (or where NA, the higher of Table 1 App III, background or DL)								
						Item 1: RAGS Eqn 2 (NC)		Item 2: RAGS Eqn 1 (C)			Alternate, if NA			
		Table 1, App III	GA MCL	Bkg*	Type 1 GW RRS	Adult	Child	Adult	Child	Lesser of Items 1 and 2	Table 1, App III	Bkg*	Type 2 GW RRS	
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L		mg/L	mg/L	mg/L	mg/L
Chloroform	67-66-3	0.08			0.08	0.15603	0.04252	0.00256	0.00288	0.00256	0.080		0.003	0.08
cis-1,2-Dichloroethene	156-59-2	0.07	0.07		0.07	0.07300	0.03129			0.03129	0.070		0.031	0.07
Dibromochloromethane	124-48-1	0.08			0.08	0.73000	0.31286	0.00194	0.00230	0.00194	0.080		0.002	0.08
Freon-11	75-69-4	2			2	1.65283	0.38309			0.38309	2.00		0.383	2
Tetrachloroethene	127-18-4	0.005	0.005		0.005	0.07377	0.01901	0.15450	0.20448	0.01901	0.005		0.019	0.01900904
Trichloroethene	79-01-6	0.005	0.005		0.005	0.00426	0.00103	0.00853	0.01188	0.00103	0.005		0.001	0.005

Table D-7. Groundwater Non-Residential Risk Reduction Standards

Analyte	CAS	TYPE 3 GW RRS	TYPE 4 GW RRS						
		Rule 391-3-19-.07(8)(c) Same as Type 1 GW RRS	Rule 391-3-19-.07(9)(c): The lesser of Items 1 and 2 (or where NA, the higher of Table 1 App III, background and DL)						
			Item 1 RAGS Eqn 2 (NC)	Item 2 RAGS Eqn 1 (C)	Lesser of Items 1 and 2	Alternate		Type 4 GW RRS	Non-Residential RRS - higher of Type 3 and 4
						Table 1 App III	Bkg*		
		mg/L	mg/L	mg/L	mg/L	mg/L		mg/L	mg/L
Chloroform	67-66-3	0.08	0.22356	0.00342	0.00342	0.08		0.00342	0.080
cis-1,2-Dichloroethene	156-59-2	0.07	0.20440		0.20440	0.07		0.20440	0.204
Dibromochloromethane	124-48-1	0.08	2.04400	0.00278	0.00278	0.08		0.00278	0.080
Freon-11	75-69-4	2	1.91625		1.91625	2		1.91625	2.000
Tetrachloroethene	127-18-4	0.005	0.09811	0.25550	0.09811	0.005		0.09811	0.098
Trichloroethene	79-01-6	0.005	0.00524	0.01510	0.00524	0.005		0.00524	0.005

Table D-8. Example RRS Calculation for PCE

Volatilization Factor

$$VF\ (m^3/kg) = \frac{(LS \times V \times DH)}{A} \times \frac{(\pi \times \alpha \times T)^{1/2}}{(2 \times D_{ei} \times E \times K_{as} \times 10^{-3}\ kg/g)}$$

LS =	45	m
V =	2.25	m/s
DH =	2	m
A =	20300000	cm^2
π =	3.14	
T =	790000000	s

$$\alpha = \frac{(D_{ei} \times E)}{E + \rho_s(1-E)/K_{as}}\ cm^2/s$$

$D_{ei} = D_i \times E^{0.33}$ cm^2/s

$D_i =$ 5.05 E-2 cm^2/s

$E =$ 0.35

D_{ei} = 0.0504664 x 0.350^.33 = **0.0357**

$\rho_s =$ 2.65 g/m^3

Kas = (H/Kd) x 41

H = 0.0177

Kd = Koc x OC

Koc= 94.94

OC = 0.02

Kd = 94.94 x 0.02 = **1.8988**

Kas = (0.0177/1.8988) x 41 = **0.3822**

$$\textbf{α} = \frac{0.04 \times 0.35}{0.35 + 2.65(1-0.35)/0.382} = \textbf{0.002572}$$

$$\textbf{VF} = \frac{(45 \times 2.25 \times 2)}{20300000} \times \frac{(3.1416 \times 0.002572 \times 790000000)^{0.5}}{(2 \times 0.04 \times 0.35 \times 0.382 \times 10^{-3})}$$

$$= \frac{203}{20300000} \times \frac{2526}{9.5E\text{-}06} = \boxed{\textbf{2638.832}}$$

Table D-8. Example RRS Calculation for PCE

Residential Groundwater Noncancer

$$\text{RAGS Eqn 2} = \frac{\text{THI} \times \text{BW} \times \text{AT}}{\text{EF} \times \text{ED} \times [(1/\text{RfDo} \times \text{IRw}) + (1/\text{RfDi} \times \text{K} \times \text{IRa})]}$$

	Adult	Child	Site Worker
THI	1	1	1
BW (kg)	70	15	70
AT (d)	10950	2190	9125
EF (d/yr)	350	350	250
ED (yr)	30	6	25
RfDo (mg/kg-d)	6.00E-03	6.00E-03	6.00E-03
Irs (mg/d)	114	200	50
RfDi (mg/kg-day)	1.14E-02	1.14E-02	1.14E-02
Ira (m^3/d)	15	15	20
VF (m^3/kg)	2.64E+03	2.64E+03	2638.832
PEF (m^3/kg)	4630000000	4630000000	4630000000
K (L/m^3)	0.5	0.5	0.5
Irw (L/d)	2	1	1

$$\text{Adult Eqn 2} = \frac{1 \times 70\ \text{kg} \times 10950\ \text{d}}{350\ \text{d/yr} \times 30\ \text{yr} \times [(1/(0.006\ \text{mg/kg-d}) \times 2\ \text{L/d}) + (1/(0.0114\ \text{mg/kg-d}) \times 0.5\ \text{L/m}^3 \times 15\ \text{m}^3\text{/d}))}$$

$$= \frac{766500}{1.04\text{E+}07} = \boxed{\mathbf{0.07377}}$$

$$\text{Child Eqn 2} = \frac{1 \times 15\ \text{kg} \times 2190\ \text{d}}{350\ \text{d/yr} \times 6\ \text{yr} \times [(1/(0.006\ \text{mg/kg-d}) \times 1\ \text{L/d}) + (1/(0.0114\ \text{mg/kg-d}) \times 0.5\ \text{L/m}^3 \times 15\ \text{m}^3\text{/d}))}$$

$$= \frac{32850}{1.73\text{E+}06} = \boxed{\mathbf{0.01901}}$$

$$\text{Site Worker Eqn 2} = \frac{1 \times 70\ \text{kg} \times 9125\ \text{d}}{250\ \text{d/yr} \times 25\ \text{yr} \times [(1/(0.006\ \text{mg/kg-d}) \times 1\ \text{L/d}) + (1/(0.0114\ \text{mg/kg-d}) \times 0.5\ \text{L/m}^3 \times 20\ \text{m}^3\text{/d}))}$$

$$= \frac{638750}{6.51\text{E+}06} = \boxed{\mathbf{0.09811}}$$

Table D-8. Example RRS Calculation for PCE

Residential Groundwater Cancer

$$\text{RAGS Eqn 1} = \frac{TR \times BW \times AT}{EF \times ED \times [(SFo \times IRw) + (SFi \times K \times IRa)]}$$

	Adult/Child/Worker
TR	0.00001
Sfo (mg/kg-d)	2.10E-03
Sfi (mg/kg-d)	9.10E-04
AT (d)	25550

$$\text{Adult Eqn 1} = \frac{0.00001 \times 70\ kg \times 25550\ d}{350\ d/yr \times 30\ yr \times [(.00210\ mg/kg\text{-}d \times 2\ L/d) + (0.000910\ mg/kg\text{-}d \times 0.5\ L/m^3 \times 15\ m^3/d)]}$$

$$= \frac{18}{1.16E+02} = \boxed{\mathbf{0.15450}}$$

$$\text{Child Eqn 1} = \frac{0.00001 \times 15\ kg \times 25550\ d}{350\ d/yr \times 6\ yr \times [(.00210\ mg/kg\text{-}d \times 1\ L/d) + (0.000910\ mg/kg\text{-}d \times 0.5\ L/m^3 \times 15\ m^3/d)]}$$

$$= \frac{4}{1.87E+01} = \boxed{\mathbf{0.20448}}$$

$$\text{Site Worker Eqn 1} = \frac{0.00001 \times 70\ kg \times 25550\ d}{250\ d/yr \times 25\ yr \times [(.00210\ mg/kg\text{-}d \times 1\ L/d) + (0.000910\ mg/kg\text{-}d \times 0.5\ L/m^3 \times 20\ m^3/d)]}$$

$$= \frac{18}{7.00E+01} = \boxed{\mathbf{0.25550}}$$

Table D-8. Example RRS Calculation for PCE

Groundwater RRS Type 1/2

Type 1: Minimum of:	
Table 1, App III	0.005
GA MCL	0.005
Type 1 RRS =	**0.005**
Type 2: Minimum of:	
Adult Eqn 2	0.074
Child Eqn 2	0.019
Adult Eqn 1	0.154
Child Eqn 1	0.204
Type 2 RRS =	**0.019**
Res GW RRS: max of Type 1/2	**0.019**

Groundwater RRS Type 3/4

Type 3: Minimum of:	
Table 1, App III	0.005
GA MCL	0.005
Type 1 RRS =	**0.005**
Type 4: Minimum of:	
Worker Eqn 2	0.098
Worker Eqn 1	0.256
Type 4 RRS=	**0.098**
Non-Res GW RRS: max of Type 3/4	**0.098**

Table D-9. Summary of Groundwater Risk Reduction Standards

Analyte	CAS	Groundwater					
		Type 1 RRS (Delineation) mg/L	Type 2 RRS mg/L	Residential RRS mg/L	Type 3 RRS mg/L	Type 4 RRS mg/L	Non-Residential RRS mg/L
Chloroform	67-66-3	0.080	0.003	0.080	0.080	0.003	0.080
cis-1,2-Dichloroethene	156-59-2	0.070	0.031	0.070	0.070	0.204	0.204
Dibromochloromethane	124-48-1	0.080	0.002	0.080	0.080	0.003	0.080
Freon-11	75-69-4	2.000	0.383	2.000	2.000	1.916	2.000
Tetrachloroethene	127-18-4	0.005	0.019	0.019	0.005	0.098	0.098
Trichloroethene	79-01-6	0.005	0.001	0.005	0.005	0.005	0.005

APPENDIX E

MILESTONE SCHEDULE

Project Milestone Schedule
Grantville Mill, GA HSI Site

ID	Task Name		Year 1		Year 2		Year 3		Year 4		Year 5	
			6mo	12mo	18mo	24mo	30mo	36mo	42mo	48mo	54mo	60mo
1	VIRP Approval	X										
2	Semi-Annual Progress Reports		■		■		■		■		■	
3	Source Area Investigation / Soil Delineation		■	■								
4	On-site Horizontal Groundwater Delineation		■	■								
5	Off-site Horizontal Groundwater Delineation (if necessary)		■	■	■	■						
6	Vertical Groundwater Delineation (if necessary)		■	■	■	■						
7	Updated CSM, Final Remdiation Plan, and Cost Estimate						■					
8	Remedial Activities							■	■	■	■	■
9	Compliance Status Report											■