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July 13, 2015

Mr. David Brownlee
Georgia Department of Natural Resources
2 Martin Luther King Jr. Drive S.E., Suite 1462
Atlanta, GA 30334-9000

Subject: **Transmittal of Semi-annual Groundwater Monitoring Report #14**
January 2015 through June 2015
Chemtrade Site, HSI#10498,
East Point, GA

Dear Mr. Brownlee:

On behalf of Chemtrade Solutions LLC, we are pleased to provide you with a paper copy and an electronic copy of the Semi-annual Groundwater Monitoring Report #14, January 2015 through June 2015 for the above referenced site.

If you have any questions regarding this report, please feel free to give me a call at (678) 202-9500.

Sincerely,
Geosyntec Consultants, Inc.

Brian D. Jacobson, P.E.
Senior Engineer

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13 July 2015

David Brownlee
Georgia Environmental Protection Division
Hazardous Site Response Program
2 Martin Luther King Jr Dr., Ste 1462E
Atlanta, Georgia 30334

Subject: July 2015 VRP Semi-Annual Progress Report Comments
Chemtrade Site, East Point, Georgia
HSI# 10498

Dear Mr. David Brownlee:

On behalf of Chemtrade Solutions LLC (Chemtrade), Geosyntec is pleased to offer the following responses to comments received from the Georgia Environmental Protection Division (EPD), dated June 18, 2015. In addition, Semi-Annual Groundwater Monitoring Report No. 14 is being transmitted with this letter.

RESPONSE TO COMMENTS FROM EPD

Comment No. 1:

According to the January 2015 Response to Comments, Chemtrade plans to sample the onsite groundwater well GWC-03 to address the concerns associated with the impacts identified at the previous boring location DB-04 (Comment 2). EPD recommends that the shallow well, GWC-03S be sampled rather than the deeper GWC-03D.

Response:

Chemtrade performed additional sampling on GCW-3D on 16 March 2015. The GCW-03D sample was analyzed for volatile organic chemicals (VOCs) using EPA Method 8260, semivolatile organic compounds (SVOCs) using EPA Method 8270, organochlorine pesticides using EPA Method 8081, and PCBs using EPA Method 8082.

GCW-03D is screened from 28 to 38 ft bgs. The screen is set in the partially weathered rock that is in direct connection with the sand layers above. GCW-03S well is screened between 11 and 21 ft bgs. The boring logs shows sand (SP) observed between 18.5 feet to 20 feet, silty sand (SP-SM) observed between 23.5 ft to 25 ft bgs, and sand with mica (SP-SM) observed between 23.5 to 25 ft bgs. Auger refusal was at 25.5 ft bgs. The sand layers connect the two screened intervals

and dissolved constituents would be expected to be found in both wells. This is demonstrated by the similarity of the sulfate concentrations in the two wells with GCW-03D typically displaying higher concentrations. In order to reach the well groundwater would have to cross a natural ground water divide, located generally in alignment with the storm drains, between DB-04 and GCW-03D so floating material could not cross the storm drain. The absence of detection of petroleum compounds indicates the oily material observed at DB-04 is from an off-site source. Additionally, the GCW-03S well may have a greater surface water infiltration impacts demonstrated by sulfate concentrations typically only 30 percent of the observed concentration at GCW-03D. Chemtrade was concerned the additional dilution would reduce any constituents below the detection limit at GCW-03S.

Please see Section 3.2.1.1 in Semi-Annual Groundwater Monitoring Report No. 14 for the complete discussion of the sampling results.

Comment No. 2:

In accordance with the discussions held during the meeting on May 21, 2015 between EPD and site representatives, please ensure that the remedial action work plan to be completed for the site, noted in the January 2015 Response to Comments, includes utilization of an institutional control in the form of a Uniform Environmental Covenant (UEC). The UEC should address any involvement of the City of East Point in future site related corrective action activities, including details associated with the continued monitoring and maintenance of the planned storm sewer slip lining remedy.

Response:

Chemtrade will develop a UEC for the entire site after the final remedy is developed. It would be preferred by Chemtrade to develop separate UECs for the Newell and City of East Point portions of the site. The restrictions and monitoring are different and the UEC for the Newell property can likely be negotiated and executed with the current site information. Additionally, Chemtrade already has an environmental restriction, as part of the Commercial Purchase and Sale Agreement (VRP application, Attachment B) in place for the Newell property that states:

4. Restricted Uses: The Limited Warranty Deed delivered at the Closing by seller shall provide that none of the following uses shall be permitted on the Property: (a) residence(s) for human habitation; (b) hotels; (c) hospitals; (d) day care centers for children or senior citizens; or (e) schools (collectively, the "Restricted Uses").

The City of East Point property requires additional information and potentially input from a third party. A separate UEC should be developed after these issues are resolved.

Comment No. 3:

It was noted both during the above referenced meeting and in the VRP Report that historic property information and data from a past boring on the property immediately up gradient of the site indicate the presence of a former acid pit that may be potentially acting as a source of groundwater and surface water impacts upstream/upgradient of the site. Please note that EPD will contact the upgradient property owner in order to confirm any potential release to soil/groundwater/surface water.

Response:

Chemtrade requests that EPD provide any information obtained regarding offsite sources or releases to further the understanding of the impacts at the Charles A. Green Recreational Facilities.

Comment No. 4:

Please ensure that future VRP Progress Reports include a comparison of site data to the applicable Type 1/4 risk reduction standards/clean-up criteria. A figure should also be included to illustrate the concentrations within groundwater/surface water and the lateral extent of the area exceeding the compliance criteria.

Response:

Two additional figures were prepared and added to the semi-annual report. The areas of the site with significant concentrations of sulfate and aluminum in groundwater are in non-residential areas so only Type IV RRS, developed as part of the VRP application, are presented on the figures.

Comment No. 5:

EPD concurs with the request to revise the submittal dates for the Semi-annual VRP Progress Report from April/October to January/July. The next VRP Progress Report will be due July 10, 2015.

Response:

Chemtrade will submit future reports on January 10 and July 10 after each semi-annual sampling event.

We hope the above responses are acceptable to EPD. If you have any questions or wish to discuss our proposed path forward, please contact either Mr. Rob Savarese of Chemtrade at (610) 348-0042 or Mr. Brian Jacobson of Geosyntec at (678) 202-9500.

Sincerely,

Brian D. Jacobson, P.E.
Senior Engineer

James Deitsch, Ph.D, P.E.
Senior Engineer

Copies to: Rob Savarese, Chemtrade
Hollister Hill, Troutman Sanders LLP
Brad Bowman, City of East Point

GR5060/GenChem RTC JULY2015

Prepared for

Chemtrade Solutions LLC
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SEMI-ANNUAL GROUNDWATER MONITORING REPORT NO. 14 JANUARY THROUGH JUNE 2015

CHEMTRADE SITE
EAST POINT, GEORGIA
HSI# 10498

Prepared by

Geosyntec consultants

engineers | scientists | innovators
1255 Roberts Boulevard, Suite 200
Kennesaw, Georgia 30144

Project Number GR5060

July 2015

PROFESSIONAL ENGINEER CERTIFICATION

I certify that I am a qualified engineer who has received a baccalaureate or post-graduate degree in the natural science or engineering, and have sufficient training and experience in environmental assessment and corrective measures, as demonstrated by state registration and completion of accredited university courses, that enable me to make sound professional judgments. I further certify that this report was prepared by myself or by a subordinate working under my direction.

_____

Brian D. Jacobson, P.E.
Registered Professional Engineer
Georgia Registration #23332

Geosyntec consultants

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1. INTRODUCTION

1.1 Background

1.1.1 Site Location and Description

The Chemtrade Solutions LLC (Chemtrade), formerly General Chemical LCC facility (Site) is located on Central Avenue in the City of East Point, Fulton County, Georgia (**Figure 1-1**). The approximate Site location corresponds to latitude of 33.67 and longitude of 84.44. The Site property is bounded by North Martin Street and the Charles A. Green Recreational Facilities on the north side, Randall and Bayard Streets on the east side, Central Avenue and an industrial (metal recycling) facility on the south side, and Central Avenue on the west side. The general area surrounding the Site consists of industrial land uses bordered by some residential properties toward the north and northeast directions. Another industrial site is located on the adjacent property to the northwest of the Site.

The Site, as shown in an aerial view on **Figure 1-1**, consists of a process building, a warehouse structure, and an office building. During operation, there were four Hi-Clay Alumina (HCA) storage cells (herein referred to as HCA cells) located on the Site. These cells were removed during the period of 2003 to 2005, and the area was returned to beneficial use in 2006.

1.1.2 Summary of Recent Regulatory Activities

Subsequent to the issue of the 2002 Corrective Action Plan (CAP), General Chemical voluntarily elected to remove the HCA material from the on-site cells.

Following excavation and removal of the HCA, a revised CAP was issued by General Chemical on 2 October 2006. A Georgia Environmental Protection Division (GaEPD) letter dated 16 January 2007 provided comments and a request for additional work followed by resubmission of the revised CAP.

General Chemical submitted a revised CAP incorporating GaEPD comments on 30 March 2007.

GaEPD completed review and issued a conditional approval of the revised CAP on 4 September 2007. Pursuant to the revised CAP, groundwater and surface water samples were collected for aluminum and sulfate analysis.

General Chemical submitted a voluntary remediation plan application (VRPA) in January 2013. The VRPA proposed: (i) delineation of the horizontal extent of sulfate contamination in groundwater; (ii) continued semi-annual sampling of monitoring wells screened in the partially weathered rock (PWR) and surface water sampling locations; (iii) conduct a storm water drain assessment and implement any necessary repairs to prevent groundwater from entering the storm drain system; and (iv) institutional controls on affected properties through the placement of unified environmental covenants.

In a letter dated 10 April 2013, GaEPD approved the VRPA. GaEPD issued comments on the VRPA on 12 April 2013.

General Chemical LLC was acquired by Chemtrade Solutions LLC on 24 January 2014. The General Chemical LLC name will be used when historically accurate and Chemtrade Solutions will be used for activities after the acquisition date.

1.2 Objectives and Scope

The objective of this report is to present the results for the semi-annual groundwater monitoring activities conducted at the Site in October 2014. This is the fifth semi-annual report submitted to GaEPD following approval of the VRPA in April 2013. However, this report is issued as "Semi-annual Groundwater Monitoring Report No.14" to avoid confusion with previous reports issued under the CAP. This report provides a summary of the activities performed and the results of the field and laboratory measurements that were obtained during this monitoring period.

This report presents the results of the following activities:

- Sampling of 6 on-site wells (**Figure 1-2**);
- Sampling of 3 off-site wells (**Figure 1-2**); and
- Sampling of surface water at one on-site and three off-site locations (**Figure 1-3**).

1.3 Overview

This semi-annual groundwater monitoring report summarizes the results of field sampling activities performed by Geosyntec in March 2015. The report is organized as follows:

- Section 2 presents a summary of site characterization information including site geology and hydrogeology, field investigations, nature and extent of environmental impact, and site-specific groundwater and contaminant transport conceptual modeling.

- Section 3 presents the results from sampling of monitoring wells and surface water from the Site.

- Section 4 discusses the sampling procedures used to obtain groundwater and stormwater samples from the Site

- Section 5 summarizes the results of quality assurance/quality control (QA/QC) evaluation of the data obtained during this monitoring period.

- Section 6 presents conclusions that are based on the data and provide recommendations for future activities.

- Data from this monitoring period are presented in the Appendices. Analytical laboratory reports for water samples are presented in **Appendix A**. Field Forms used during well sampling are presented in **Appendix B**.

2 SITE CHARACTERIZATION

2.1 Site Geology and Hydrogeology

This section presents an overview of the Site hydrogeologic conditions. Information on the Site hydrogeology was obtained during the Site investigation activities, conducted in May 1998 in support of the Compliance Status Report (CSR) [Geosyntec, 1999].

The occurrence and movement of groundwater in the Piedmont formation is generally within two hydrogeologic units. A shallow hydrogeologic unit typically occurs within the soils and saprolite (weathered residuum which mantles bedrock). A layer of partially weathered rock (PWR) typically forms a transition between the saprolite and the fractured bedrock. A deeper hydrogeologic unit generally occurs within the fractured bedrock.

Groundwater in the shallow hydrogeologic unit usually occurs under water table (i.e., unconfined) conditions. Groundwater flow is controlled by local topographic features, where recharge occurs in upland areas and discharge occurs in drainage features such as streams, rivers, or lakes. Recharge to the shallow hydrogeologic unit is primarily the result of infiltrating precipitation. Groundwater in the deeper water-bearing zone is associated with secondary porosity (fractures or open spaces) within the crystalline bedrock and flow is controlled by the distribution and degree of interconnection of these openings in the rock. The deeper hydrogeologic unit is fully saturated.

Based on the results of the field investigation, the shallow hydrogeologic unit is conceptualized as an unconfined, homogeneous, and isotropic deposit of sandy clay with a hydraulic conductivity of approximately 4×10^{-5} to 2×10^{-4} cm/s, a hydraulic gradient of approximately 0.003 to 0.03, and an effective porosity of about 20 percent. Groundwater is believed to generally flow at about 16.4 ft per year from west to east across the Site and advection is believed to be the dominant contaminant transport mechanism.

The Site is in an area of relatively steep topography adjacent to a small intermittent stream that discharges to the South River. As can be seen on the aerial photograph of the Site presented in **Figure 1.2**, industrial operations at the Site have resulted in regrading and leveling of a significant portion of the Site (i.e., vegetated areas east of the process buildings). Groundwater flow at the Site is generally west to east.

The lithology of the Site consists primarily of clayey fill material overlying saprolite as depicted on **Figure**s **2-1 through 2-3**, which illustrate hydrogeologic cross-sections that show the Site features and geology. The fill material, which varies in thickness, covers most of the Site and consists of sandy to gravelly red micaceous clay. The saprolite, encountered in all fourteen of the monitoring wells drilled at the Site, consists of highly weathered schist consisting of orange to red clay with kaolinite and mica. Foliation and other relict rock texture are still well preserved and were visible in samples, but the material comprises mostly clay and mica which is formed by the deep weathering of the feldspar minerals. Competent bedrock, as defined by auger refusal, was generally encountered between 20 to 60 feet below ground surface (bgs).

2.2 Summary of Previous Site Investigations

The aluminum concentrations observed in the Site soil during the course of the CSR investigation are within the range typically seen in Piedmont soils (i.e., 70,000 to 100,000 mg/kg). The samples, in which the aluminum concentrations were elevated, were limited to locations of accumulation of more strongly weathered material. Therefore, based on detected concentrations of aluminum in soil samples, industrial activities at the Site have not resulted in a significant increase in aluminum concentrations in the soil [Geosyntec, 1999].

The HCA was removed between 2003 and 2006. Sulfate concentrations vary according to the nature of the material analyzed and were related to the proximity to former HCA cells. In places where the undisturbed soils directly underlie former HCA cells, sulfate concentrations in these soils were typically higher than those of other undisturbed soils. Following removal of the HCA, underlying soils were sampled and analyzed for sulfate, and soils exhibiting sulfate concentrations over 10,300 mg/kg (95% Upper Confidence Limit for all samples was 3,143 mg/kg) were removed.

3. GROUNDWATER AND STORM DRAIN SAMPLING

This section presents the details of the sampling of six on-site wells, and three off-site groundwater wells and one on-site and three off-site stormwater storm drains.

3.1 Groundwater Potentiometric Conditions

Groundwater elevations were measured prior to sampling wells during the March sampling event. The measurements were performed on 16 March 2015. All monitoring wells were gauged. The water level measurements from delineation soil borings and PZ-07 were not gauged during this round of sampling. The groundwater sampling and water level measurements from the delineation borings are attached as Addendum 1 to this report. The results of the groundwater elevation measurements are provided in **Table 3-1**.

The potentiometric map for March 2015 readings is shown in **Figure 3-1**. This map shows the typical Piedmont pattern of flow following topography towards surface water features, which act as collectors and discharge points for the groundwater. Since there are no streams at the Site, the groundwater is flowing towards the local topographic low which is aligned parallel with North Martin Street and the storm drain system. The general potentiometric pattern is consistent with the overall drainage flow pattern to the east-southeast towards the South River.

Water level measurements were recorded in wells screened in saprolite and shallow competent rock. In preparing the potentiometric map from water level measurements, generally no distinction was made as to whether the wells were shallow or deep, in saprolite or bedrock. Such distinctions were not appropriate for two reasons: (i) the Piedmont is characterized by a single saturated zone consisting of saprolite and bedrock that are hydraulically connected; and (ii) the vertical components of the head gradient are similar or small compared to the horizontal components.

3.2 Groundwater Sampling

3.2.1 Introduction

Groundwater samples were collected on 16-17 March 2015. Groundwater samples were submitted for analysis for sulfate using EPA Method 9056A and aluminum using EPA Method 6010C. The pH was measured in the field using EPA Method 150.1. The

groundwater sampling results are presented in **Table 3-2**. Laboratory results are presented in **Appendix A** and field forms are presented in **Appendix B**.

3.2.1.1 Additional Sampling

Additional samples were collected at GCW-03D to evaluate if site constituents were similar to oily soil found in the delineation boring at DB-04. The GCW-03D sample was analyzed for volatile organic chemicals (VOCs) using EPA Method 8260, semivolatile organic compounds (SVOCs) using EPA Method 8270, organochlorine pesticides using EPA Method 8081, and PCBs using EPA Method 8082.

The only constituents detected were isomers of Lindane at concentrations at or below the Lindane MCL of 0.2 ug/l. The measured concentrations were BHC-alpha 0.1 ug/l, BHC-beta 0.2 ug/l, BHC-delta 0.2 ug/l and BHC-gamma (Lindane) 0.1 ug/l.

Lindane is a common pesticide known for environmental persistence and has been banned since 2007. It was never used as part of the plant processes or operations.

No VOCs or SVOCs including compounds typical of oil, gasoline, or diesel fuel were detected. The SVOC results were noted to have low recoveries for the MS/MSD sample. However, the MS/MSD was run on a sample from a different site.

GCW-03D is screened from 28 to 38 ft bgs. The screen is set in the partially weathered rock that is in direct connection with the sand layers above SAND observed between 18.5 feet to 20 feet and silty SAND observed between 23.5 ft to 25 ft. The GCW-03S well is screened between 11 and 21 feet bgs. The sand layers connect the two screened intervals and dissolved constituents would be expected to be found in both wells. This is demonstrated by the similarity of the sulfate concentrations in the two wells with GCW-03D typically displaying higher concentrations. Groundwater would have to cross a natural ground water divide, located generally in alignment with the storm drains, between DB-04 and GCW-03D. The absence of detection of petroleum compounds indicates the oily material observed at DB-04 is from an off-site source.

3.2.2 Groundwater Constituent Summary

Sulfate was detected at all monitoring during the March 2015 sampling event. The sulfate concentrations were lower in the off-site wells, 130 mg/l at EPW-01 at the northwestern boundary of the Site, and 24 mg/l at EPW-02 to the east of the Site.

Sulfate concentration in off-site well EPW-03D was 26 mg/l. On-site well OW-1A at the western boundary was measured at 55 mg/l. The background monitoring well GCW-01D at the upgradient edge of the site had 210 mg/l of sulfate. The results indicate groundwater entering the site contains background concentrations of sulfate between 55 to 130 mg/l as measured at OW-1A and EPW-01. These values are also consistent with the upgradient storm drain location SW-09 where sulfate has been measured between <0.1 to 110 mg/l. Sulfate concentrations along the northern property boundary at GCW-04D drastically decreased during this semi-annual period. In October 2014 the concentration was 3,000 mg/l and in March 2015 the concentration was 9.8 mg/l. The well is located outside the former impoundment areas. At the next sampling event all the wells in the GCW-04 cluster will be sampled to confirm the changes are consistent across the soil profile at the location. Sulfate at the eastern boundary at GCW-02D and GCW-03D were 2,000 and 3,800 mg/l, respectively. The source area monitoring well (GCW-05) sulfate concentration was 530 mg/l.

Aluminum was detected at seven of the nine monitoring wells during the March 2015 sampling event. The concentrations were low at the off-site wells, 13.8 mg/l at EPW-01 at the northwestern boundary of the Site and <0.1 at EPW-02 and EPW-03D, located to the east and northeast of the Site, respectively. On-site well OW-1A at the western boundary had 0.8 mg/l of aluminum. The background monitoring wells GCW- 01D at the upgradient edge of the site contained 6.0 mg/l. The results indicate groundwater entering the site contains background concentrations of aluminum between 0.8 to 13.8 as measured at OW-1A and EPW-01. These values are also consistent with the upgradient storm drain location SW-09 where aluminum has been measured between <0.1 to 4.87 mg/l. The aluminum concentration along the northern property boundary at GCW-04D was 0.1 mg/l which is a drastic decrease from 333 mg/l, as measured in March 2014. Aluminum concentration is directly related to pH. The pH of GCW-04D has increased to background levels resulting in the decrease in aluminum concentration. Aluminum concentrations at the eastern boundary at GCW-02D and GCW-03D were 193 and 298 mg/l, respectively. The source area monitoring well (GCW-05) aluminum concentration was 0.1 mg/l.

The pH measurements were generally consistent across the Site. The off-site wells EPW-01, -02, and -03 ranged from 4.2 to 5.8 standard units (s.u.). The upgradient wells GCW-01D and OW-1A were 3.9 and 4.1 s.u. respectively. The northern and eastern wells GCW-02D and GCW-03D were similar and measured at 3.3 and 3.2 s.u. The pH for source area monitoring well (GCW-05) was measured at 6.7 s.u.

3.2.3 Comparison to Previous Results for Groundwater

Table 3-3 summarizes statistical trend analysis of both aluminum and sulfate data in groundwater. Mann-Kendall trend analysis was performed using available data for each monitoring well at a 95% confidence level. The procedure and methodologies employed in the analysis of the data are consistent with Georgia EPD and United States Environmental Protection Agency (EPA) recommended procedures. These methods meet the performance criteria specified in the rules of the Georgia EPD, Chapter 391-3-4-.14(19) and the technical standards described in the EPA "Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Unified Guidance," dated March 2009.

Historical trend graphs for sulfate and pH are shown in **Figure 3-2**. Sulfate concentrations generally decreased or were stable in off-site and on-site wells in groundwater. The sulfate concentrations in monitoring wells GCW-01D, GCW-03D, GCW-04D, GCW-05, EPW-03D and OW-1A showed a statistically significant decreasing trend. This is consistent with the previous semi-annual report except that EPW-01 is now increasing but generally stable at 130 mg/l. Neither decreasing nor increasing trends were calculated for sulfate concentrations in monitoring wells GCW-02D, and EPW-02. Similarly, aluminum concentrations also decreased or were stable in groundwater. A statistically significant decreasing trend was calculated for aluminum in monitoring wells GCW-04D, EPW-02 and OW-01A. Neither decreasing nor increasing trends were calculated for aluminum in the remainder of the wells. The pH measurements were generally stable except for an increase at GCW-04D from 4.1 to 6.9. The pH measured at on-site wells was generally lower than the pH measured at the off-site wells except for the source area well which had a pH similar to background.

Several conditions not related to the site may slow the return of the site to background concentrations of site constituents, following removal of source materials. These include the following:

- The pH of the groundwater in upgradient wells (OW-1A and GCW-01D) is low. Measured pH values 4.1 and 3.9 s.u. respectively. The low pH condition of groundwater entering the site will slow a return to background conditions for pH and aluminum.

- The pH of rainwater at the site was measured at less than 5 during the HCA removal, therefore infiltrating rainfall will not have a significant effect in terms of raising the groundwater pH in the short-term.

- The area surrounding the site has a number of other sources of sulfate in groundwater resulting from previous operations. Potential sulfate sources include a former battery cracking plant, a former fertilizer manufacturer, two off-site HCA disposal areas operated by others, and a former agricultural chemical manufacturer.

- The former fertilizer manufacturer (Furman Fertilizer) operated an acid pit (Sanborn, 1925). Downgradient of the acid pits at delineation boring DB-05 sulfate was observed at a concentration of 1,000 mg/l. The delineation boring location is upgradient and side gradient to the former HCA impoundments.

It is encouraging that no significant impacts have been detected at downgradient wells EPW-02 or EPW-03D. The sulfate concentrations at EPW-02 appear stable and are similar or lower than regional background conditions of 46 to 130 mg/l as observed at well EPW-01. EPW-03D is located approximately 200 feet from the site boundary. Sulfate concentrations at EPW-03D are similar to the regional background, and trends are decreasing. The pH trend at the EPW-03D is stable and typical for the Piedmont with measurements generally around 5.5. The decreasing sulfate concentrations and stable pH indicate impacts from the site, if they ever existed, are minimal and decreasing with time. The concentration of constituents of concern from both on-site and off-site sources appear to have attenuated to background levels prior to reaching EPW-02 or EPW-03D.

The removal of the HCA source material appears to be resulting in the site returning to background conditions over time. The sulfate concentrations are in decline at downgradient wells. However, it will take time for residuals to mix with infiltration and incoming groundwater and for geochemical conditions to stabilize.

Comparisons of the Site groundwater to Type 4 Risk Reduction Standards (RRS) for sulfate and aluminum are presented in **Figures 3-4 and 3-5**.

3.3 Storm Drain Sampling

3.3.1 Introduction

Storm drain water samples were collected from one on-site and three off-site storm drains in March 2015. Surface water flows in the storm drain system in the following sequence: SW-09, SW-06, SW-02, SW-07 from upstream to downstream. The purpose of the storm drain sampling program was to evaluate potential impacts to the storm drain system as requested by GaEPD. Stormwater samples were submitted for analysis for sulfate using EPA Method 9056A and aluminum using EPA Method 6010C. The pH was measured in the field using EPA Method 150.1. The stormwater sampling locations are shown on **Figure 1-3**. The stormwater sampling results are presented in **Table 3-4**. Laboratory results are presented in **Appendix A** and field forms are presented in **Appendix B**.

3.3.1.1 Additional Sampling

Additional samples were collected at two manholes labeled as SW-04A and SW-05A on **Figure 3-6**. The samples were collected to evaluate changes in concentration along the storm drain. In addition to analytical samples, the connection path of a number of manholes was confirmed by dropping numbered ping pong balls at upstream locations and collecting the balls at downstream locations. The additional information gathered by storm drain tracing is reflecting in Figure 3-4. The northern storm drain takes the following path:

- SW-09 – A manhole and normal monitoring location;
- SW-08 – A buried manhole near 1st base of the western field;
- SW-08A – An accessible location behind the scorers box;
- SW-07A – A buried manhole near the 3rd base line of the eastern field;
- SW-09A – A manhole across the sidewalk from SW-06;
- SW-05A – A manhole in the parking lot;

- SW-04A – A manhole in the parking lot with a branch entering from the north; and

- SW-04 – A manhole that connects the northern storm drain and southern storm drain.

The sulfate concentration at SW-09 was 67 mg/l which may be background or may be slightly affected by a potential source at the Former Acid Pits.

Two half-inch diameter leaks were observed entering the storm drain near SW-08A and the water entering the storm drain had a sulfate concentration of 690 mg/l when measured in November 2014. The leak contributed a less than half of the total flow. The sulfate concentration at SW-05A was 380 mg/l. These results indicate none to minimal additional sulfate impact along the storm drain between these two locations.

The sulfate concentration at SW-04A was 160 mg/l. This reduction is consistent with the additional flow observed entering the manhole from the north, assuming it is not impacted with sulfate.

The southern storm drain takes the following path:

- SW-07AA – A buried manhole between 2nd and 3rd base on the western field;

- SW-07B – A buried manhole with a 12” pipe entering the sidewall;

- SW-07X –A buried manhole near the scoreboard;

- SW-06 – A drop inlet and normal monitoring location;

- SW-05 – A manhole located in the parking lot; and

- SW-04 – A manhole that connects the northern storm drain and southern storm drain.

The sulfate concentration at SW-07X and SW-06 was 2,200 mg/l at both locations in October 2014. This indicates negligible sulfate impact between the two manholes. The average of the SW-06 concentration of 2,200 mg/l and the SW-04A concentration of 160 mg/l is 1,180 mg/l which is consistent with the measured concentration at SW-02.

This indicates negligible sulfate impact between the two manholes. Note the flows appeared similar but could not be measured directly since the manholes could not be entered.

Based on the above results and observations, the impact appears to be primarily between SW-07AA and SW-07X. However, SW-07AA is not accessible and the sulfate could all result from upstream of that location. Chemtrade proposes to excavate and sample the SW-07AA location and attempt to locate the upstream source.

Based on the potentiometric map shown on **Figure 3-1**, the upstream path for ground water impacting this section of the storm drain is near the Former Acid Pit and not the former HCA impoundments. Additional characterization of the Former Acid Pit area should be performed by the responsible party to characterize this potential source.

3.3.2 Storm Drain Constituent Summary

Sulfate was detected in all four storm drain samples during the March 2015 sampling event. The upgradient (SW-09) sulfate concentration was measured at 67 mg/l. A sample was collected cross-gradient (SW-06) at a location in the Charles A. Green Recreational Facilities. Sulfate was measured at 2,000 mg/l. At the on-site location (SW-02), sulfate was measured at 1,100 mg/l. The sulfate concentration at the discharge of the storm drain to surface water at SW-07 was measured at 500 mg/l.

Aluminum was detected at three of the four storm drain water monitoring locations during the March 2015 sampling event. The upgradient (SW-09) aluminum concentration was non-detect. The sample for aluminum collected cross-gradient (SW-06) was measured at 172 mg/l. At the on-site location (SW-02) aluminum was measured at 87.0 mg/l. The aluminum concentration at the discharge of the storm drain to surface water at SW-07 was measured at 35.1 mg/l.

3.3.3 Comparison to Previous Results for Storm Drains

Table 3-5 summarizes statistical trend analysis of both aluminum and sulfate data in storm drains. Mann-Kendall trend analysis was performed using available data for each monitoring well at a 95% confidence level. The procedure and methodologies employed in the analysis of the data are consistent with Georgia EPD and United States Environmental Protection Agency (EPA) recommended procedures. These methods meet the performance criteria specified in the rules of the Georgia EPD, Chapter 391-3-

4-.14(19) and the technical standards described in the EPA "Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Unified Guidance," dated March 2009.

Historical trend graphs for sulfate, aluminum and pH are shown in **Figure 3-3**. Sulfate concentrations were generally stable or increasing. Aluminum concentrations were generally stable or increasing between sampling events. The pH measurements were relatively stable showing minor changes between sampling events at the same location.

Several conditions not related to the site may slow the return of the site to background concentrations of site constituents, following removal of source materials. These include the following:

- The pH of rainwater at the site was measured at less than 5 during the HCA removal, therefore infiltrating rainfall will not have a significant effect in terms of raising the stormwater pH.

- The area surrounding the site has a number of other sources of sulfate in groundwater resulting from previous operations. Potential sulfate sources include a former battery cracking plant, a former fertilizer manufacturer, two off-site HCA disposal areas operated by others, and a former agricultural chemical manufacturer.

- The former fertilizer manufacturer (Furman Fertilizer) operated an acid pit (Sanborn, 1925). Downgradient of the acid pits at delineation boring DB-05 sulfate was observed at a concentration of 1,000 mg/l. The delineation boring location is upgradient and side gradient to the former HCA impoundments.

4. SAMPLE COLLECTION PROCEDURES

4.1 Summary

In March 2015, samples were collected from 9 monitoring wells. Samples from monitoring wells were collected using dedicated tubing and low-flow purging techniques. Samples were placed in 250 ml polyethylene containers. The containers for aluminum were acidified with approximately 2 ml of nitric acid. Sulfate samples were preserved by refrigeration. The sampling containers and preservatives were provided by Analytical Services, Inc. located in Norcross, Georgia. The containers were labeled and stored on ice in a cooler until time for shipment to the laboratory. The samples were packed in ice in a cooler and shipped by overnight courier or hand delivered to the laboratory. Chain-of-custody documents were completed and included with each shipment.

4.2 Monitoring Well Sampling Procedure

Monitoring wells were sampled using peristaltic pumps. Peristaltic pumps were used since the depth to water was less than 29 ft bgs, which is the maximum practical lift a peristaltic pump can achieve. The advantages of peristaltic pumps are that they produce low rates of flow with minimal surging and can be decontaminated more thoroughly when compared to bailers or other types of pumps by simply replacing the tubing in the pump head. The pump-head tubing is silicone, while the down-hole tubing is polyethylene.

Low flow purging is conducted by purging groundwater from the well at a low, constant rate for an extended period of time with the pump intake set directly opposite the well screen. This method creates a localized flow system in the well directly between the screen and pump intake, eliminating the need to remove large volumes of casing storage while ensuring that the sample collected is representative of the surrounding ground water. For this project, a purge rate of approximately 500 mL/min was extracted until the turbidity was stable at less than 20 NTUs or until other field parameters were stable. Additionally, a purge volume of at least five gallons was removed, when possible, to represent at least three pore volumes of the screened zone of the well.

To ensure that the samples collected are representative of the ground water in the formation, field parameters are measured throughout the purging process. Temperature (^{o}C), conductivity (mS/cm), pH (s.u.), redox potential (mV), and turbidity (NTU) are measured using a Horiba U-52 or equivalent water quality meter. Measurements were taken in an enclosed flow-through cell to minimize the effects of contact with air.

After the field parameters have stabilized, the flow-through cell was disconnected and the sample is collected directly from the pump discharge tubing without adjusting the flow rate. This method ensures that the sample is representative of the ground water surrounding the respective location.

4.3 Groundwater Sampling Decontamination Procedure

Down well tubing was dedicated to each monitoring well by securing to the well cap and placing the tubing completely in the well when not in use. Pump-head tubing for the peristaltic pump was discarded after each use.

4.4 Storm Drain Sampling Procedure

Storm drain water was sampled using peristaltic pumps or by hand. The pump-head tubing is silicone, while the down-hole tubing is polyethylene. Three locations were sampled for sulfate during the sewer line inspection which also took place during October 2014. The samples were collected from upstream to downstream so SW Pipe Sample 1 was taken at SW-09, SW Pipe Sample 3 was taken at SW-06 and SW Pipe Sample 5 was taken at SW-02.

Storm drain water sampling was performed at the upgradient (SW-09), on-site (SW-02) and cross-gradient (SW-06) locations by lowering tubing into storm drain manholes and placing the end of the tube near the outlet for the manhole. This ensured water from multiple inlets was mixed prior to sample collection. The downgradient (SW-07) sample was collected by hand at the outlet to the storm drain at the discharge to the stream.

For peristaltic pump samples, a purge rate of approximately 500 mL/min was maintained until the turbidity was stable at less than 20 NTUs or until other field parameters were stable. To ensure that the samples collected are representative of the storm drain water, field parameters are measured throughout the purging process. Temperature (^{o}C), conductivity (mS/cm), pH (s.u.), redox potential (mV), and turbidity

(NTU) are measured using a Horiba U-52 or equivalent water quality meter. Measurements were taken in an enclosed flow-through cell to minimize the effects of contact with air.

After the field parameters have stabilized, the flow-through cell was disconnected and the sample is collected directly from the pump discharge tubing without adjusting the flow rate. This method ensures that the sample is representative of the storm drain water surrounding the respective location.

For hand samples, a location near the center of the flow and free of surface debris was selected. The sample was collected from beneath the surface by inserting the container opening down into the water then inverting underwater. The field parameters were measured by inserting the water quality instrument in the flow at the sampling location.

4.5 Storm Drain Sampling Decontamination Procedure

Drop tubing and pump-head tubing for the peristaltic pump were discarded after each use.

5. QUALITY ASSURANCE/QUALITY CONTROL

The field and analytical data from this reported semi-annual groundwater monitoring period was reviewed by Mr. Brian Jacobson with Geosyntec. The data review included evaluation of the field and laboratory quality assurance/quality control (QA/QC) parameters in order to assess the integrity of the data obtained for this project including: documentation, holding times, laboratory control samples, and laboratory matrix spike analyses. The documentation and results of the QA/QC analyses are found in the laboratory reports provided in **Appendix A**. Evaluation of these parameters was used to assess the precision, accuracy, representativeness, comparability, and completeness of the data.

Based on the review of the field and laboratory data, the data obtained from this field investigation are considered to be of acceptable quality and are fully usable with the qualifications as designated by the data validation process. Details of the QA/QC review of the data are presented in the following sections.

5.1 Documentation

Field sampling forms and chain-of-custody forms were evaluated for completeness. Field records were considered to be usable and to provide a reasonable record of field activities and samples collected. This review indicated that field sampling and custody transfer procedures were adequately documented and the integrity of the samples was not compromised.

5.2 Holding Times

All samples were processed and analyzed by the laboratory using the correct analytical methods and within the prescribed holding times.

5.3 Reporting Limits

The laboratory reporting limits for sulfate by Method 9056A varied from 5 to 1000 mg/l depending on the required dilution to measure a result. The laboratory reporting limits for aluminum by Method 6010C varied between 0.1 mg/l and 2 mg/l. The required quantitation limits for this project were met for all data, except in cases where sample dilution was required because of high concentrations of target analytes or matrix interference.

5.4 Accuracy

The accuracy of the data was evaluated by examining the percent recovery (%R) of matrix spikes and matrix spike duplicate (MS and MSD), and laboratory control samples (LCS). A post digestion spike was also performed for aluminum analysis to evaluate possible matrix effects of the digestate. The %Rs met the laboratory-specific QC limits for the laboratory QC LCS samples. The MS samples for sulfate and aluminum were outside the %R limits for MS and MSD samples as well as for the post digestion spike. The low recoveries were due to the low spike concentration in relation to the actual sample concentration of aluminum and sulfate (sample concentration much greater than the spiked amount). The data were judged acceptable for use based on the acceptable %R for the LCS samples.

5.5 Representativeness

Representativeness was evaluated to assess the degree to which sample results represent the actual concentrations of constituents in groundwater. Representativeness was evaluated qualitatively by reviewing sampling procedures and laboratory analytical procedures. Based on this review, the samples yielded results that provided a good qualitative representation of constituent concentrations in groundwater.

A qualitative evaluation of representativeness was also performed by examining the analysis of laboratory method blanks. Constituents were not detected above the reporting limit in any of the method blanks. This evaluation further demonstrates that the analytical data are representative of actual conditions.

5.6 Comparability

The current field and laboratory methods were compared to methods used during past monitoring periods in order to evaluate the comparability of data obtained during the current monitoring period to data previously obtained. The recommended reporting limits were used for all constituents. The data presented in this report are consistent with the data presented in previous reports.

5.7 Completeness

Completeness was measured by determining the percentage of usable data obtained from samples for this project. The project sample results were found to be 100 percent complete and usable without qualification.

6. CONCLUSIONS

6.1 Groundwater

The results of the seven years of data collection indicate concentrations of constituents of concern are generally showing significant decreasing trends for on-site monitoring wells. The HCA source material has been removed for over eight years. While many factors can influence concentrations at any given point in time, (e.g., time since removal of the source, hydrogeologic conditions, and precipitation patterns) it is encouraging to see that concentrations of monitored constituents in the latest round of sampling indicate a decrease and that the general trend is decreasing. Groundwater levels (elevations) have been generally stable since 2008.

Sulfate concentrations show a statistically significant decreasing trend in four of five on-site groundwater wells. The decreasing trends are consistent with source removal followed by natural attenuation of the remaining pore water.

Aluminum concentrations did not vary in a consistent direction between sampling events. Total aluminum concentration is pH dependent and since Piedmont soils contain high levels of naturally occurring aluminum, this phenomenon is not unexpected. Additionally, aluminum hydroxide can migrate as a colloid in groundwater. As shown in **Figure 6-1**, on-site wells consistently had aluminum concentrations above solubility limits indicating solid colloidal aluminum was likely being measured in the groundwater samples. Elimination of the colloidal aluminum would result in at least an order of magnitude reduction in total aluminum measured. For example, as shown on **Figure 6-1**, the measured total aluminum concentration was 29 mg/l, whereas the maximum soluble concentration at pH 4.0 is 0.6 mg/l, a 98 percent decrease from the reported value. The natural filtering of the aluminum floc particles by the soil as the water migrates off site may explain the rapid reduction in observed aluminum concentrations with increasing distance from the former source area.

The pH measurements were generally stable or increasing towards neutral between the sampling events. While this is encouraging, we believe that local precipitation which has been measured with a pH less than 5 standard units will limit recovery of groundwater pH. The depressed pH will continue to allow naturally occurring aluminum to be mobilized from site soils. However, the aluminum does not appear to migrate off site.

6.2 Storm Drains

Eighteen sampling events have been performed for storm drains. Storm drain water and groundwater are related due to leaks in the storm drains that allow the infiltration/exfiltration of stormwater and groundwater depending on the relative water levels. The stormwater constituent concentrations and pH will vary slowly due to the low groundwater flow velocity across the Site (previously estimated at 16.4 ft. per year). The potential presence of off-site sources may slow the return of the stormwater to background conditions. Factors that may slow a return to background include the following:

- The pH of the groundwater in upgradient wells (OW-1A and GCW-01D) is low. Measured pH values were 4.1 and 3.9 s.u., respectively. The low pH values of groundwater entering the Site will slow a return to background conditions of stormwater mixed with groundwater exiting the Site. The pH of stormwater in the cross-gradient sampling location (SW-06) was measured at 3.8 s.u. This water mixes with on-site stormwater lowering the pH.

- The pH of rainwater at the Site was measured at less than 5 during the HCA removal, therefore infiltrated rainfall and stormwater will not have a significant effect in terms of raising the stormwater pH in the short-term.

- The area surrounding the Site has a number of other sources of sulfate in groundwater resulting from previous operations. These sources may be contributing the elevated sulfate concentrations noted at SW-06 that were measured at 2,000 mg/l. Potential sulfate sources include a former battery cracking plant, a former fertilizer manufacturer, two off-site HCA disposal areas operated by others, and a former agricultural chemical manufacturer.

The sulfate concentrations at the upgradient monitoring point (SW-09) were lower than on-site (SW-02) or cross-gradient (SW-06) monitoring points. Downgradient (SW-07) sulfate concentration at the exit to the storm drain and the start of open channel flow was measured at 500 mg/l which is greater than the background concentration of 46 to 51 mg/l.

The on-site (SW-02) concentrations of what (sulfate, aluminum, something else, or all constituents tested?) were lower than the cross-gradient (SW-06) concentrations during

the last sampling event. Since the on-site source has been removed and potential off-site sources likely remain the relative contribution from the Site would be expected to continue to decrease with time. As presented in **Figure 3-3**, the time trend analysis shows a continued impact from the cross-gradient SW-06, which is consistent with source removal on site and active potential impacts by a residual plume.

7. REFERENCES

Geosyntec (1999), "*Compliance Status Report*", General Chemical Corporation, East Point, Georgia", prepared by Geosyntec Consultants, February 1999

Geosyntec (2002), "*Revised Corrective Action Plan, General Chemical Corporation, East Point, Georgia"*, prepared by Geosyntec Consultants, February 2002

Geosyntec (2006), "*Site restoration Report, General Chemical Corporation, East Point, Georgia"*, prepared by Geosyntec Consultants, February 2006

Geosyntec (2007), "*Revised Corrective Action Plan, General Chemical Corporation, East Point, Georgia"*, prepared by Geosyntec Consultants, February 2007

Geosyntec (2013), "*Voluntary Remediation Plan Application, General Chemical Corporation, East Point, Georgia"*, prepared by Geosyntec Consultants, January 2013

Sanborn (1925), "1925 Sanborn Fire Map", covering General Chemical Parcel, Atlanta, Georgia

TABLES

Table 3-1
Well Construction Data and Groundwater Elevations
March 2015
Chemtrade Solutions Site
East Point, Georgia

Location	Well Casing Elevation	Adjacent Soil Elevation	Screen Interval (ft bgs)	Depth to Water (ft)	Groundwater Elevation (ft msl)
				Mar-15	Mar-15
GCW-01S	1023.6	1024.0	15-25	10.9	1012.7
GCW-01M	1023.8	1024.1	34-44	11.1	1012.7
GCW-01D	1023.9	1024.2	58-68	10.5	1013.4
GCW-02S	983.6	983.9	16-26	5.0	978.6
GCW-02D	983.4	983.8	34-44	3.5	980.0
GCW-02V	984.7	985.0	85.5-95.5	3.5	981.2
GCW-03S	981.3	981.6	11-21	5.0	976.3
GCW-03D	981.2	981.6	28-38	4.3	976.9
GCW-04S	996.6	997.0	13-23	8.6	988.0
GCW-04M	997.0	997.4	30-40	9.1	987.9
GCW-04D	996.8	997.1	50-60	8.4	988.3
GCW-04V	996.7	997.0	114-124	9.3	987.4
GCW-05	995.1	994.9	80-90	4.7	990.4
EPW-01	1017.5	1017.7	24.51[(1)]	17.0	1000.5
EPW-02	980.0	980.3	19.41[(1)]	9.8	970.2
EPW-03S	984.5	984.8	12-22	9.6	974.9
EPW-03M	984.3	984.6	29-39	9.4	974.9
EPW-03D	984.6	984.9	46-56	9.4	975.2
OW-1A[(2)]	1030.6	1027.9	23.5-33.5[(3)]	13.4	1017.2

Notes:
[(1)]: Screen length is unknown. Total depth of the well is indicated in the Table.
[(2)]: Well OW-1A has a casing extending above ground surface 2.7 ft.
[(3)]: Screen interval measured 7 November 2012.
NA: Not available

Table 3-2
Groundwater Sampling Results
March 2015
Chemtrade Solutions Site
East Point, Georgia

Location	pH (-) EPA 150.1	Sulfate (mg/l) EPA 9056A	Aluminum (mg/l) EPA6010C
GCW-01D	3.9	210.0	6.0
GCW-02D	3.3	2000.0	193.0
GCW-03D	3.2	3800.0	298.0
GCW-04D	6.9	9.8	0.6
GCW-05	6.7	530.0	0.1
EPW-01	4.2	130.0	13.8
EPW-02	5.5	24.0	<0.1
EPW-03D	5.8	26.0	<0.1
OW-1A	4.1	55.0	0.8
Duplicates	--	230[(1)]	5.8[(1)]

Notes:
[(1)]: Duplicate was taken from GCW-01D

Table 3-3
Summary of Statistical Trend Analysis
In Groundwater Samples
Chemtrade Solutions Site
East Point, Georgia

Well ID	Parameter	Mann-Kendall Trend Analysis at 95% Confidence Level
GCW-01D	Alumimum	No Trend
GCW-02D		No Trend
GCW-03D		No Trend
GCW-04D		Decreasing
GCW-05		No Trend
EPW-01		No Trend
EPW-02		Decreasing
EPW-03D		No Trend
OW-1A		Decreasing
GCW-01D	Sulfate	Decreasing
GCW-02D		No Trend
GCW-03D		Decreasing
GCW-04D		Decreasing
GCW-05		Decreasing
EPW-01		Increasing
EPW-02		No Trend
EPW-03D		Decreasing
OW-1A		Decreasing

Table 3-4
Storm Drain Sampling Results
March 2015
Chemtrade Solutions Site
East Point, Georgia

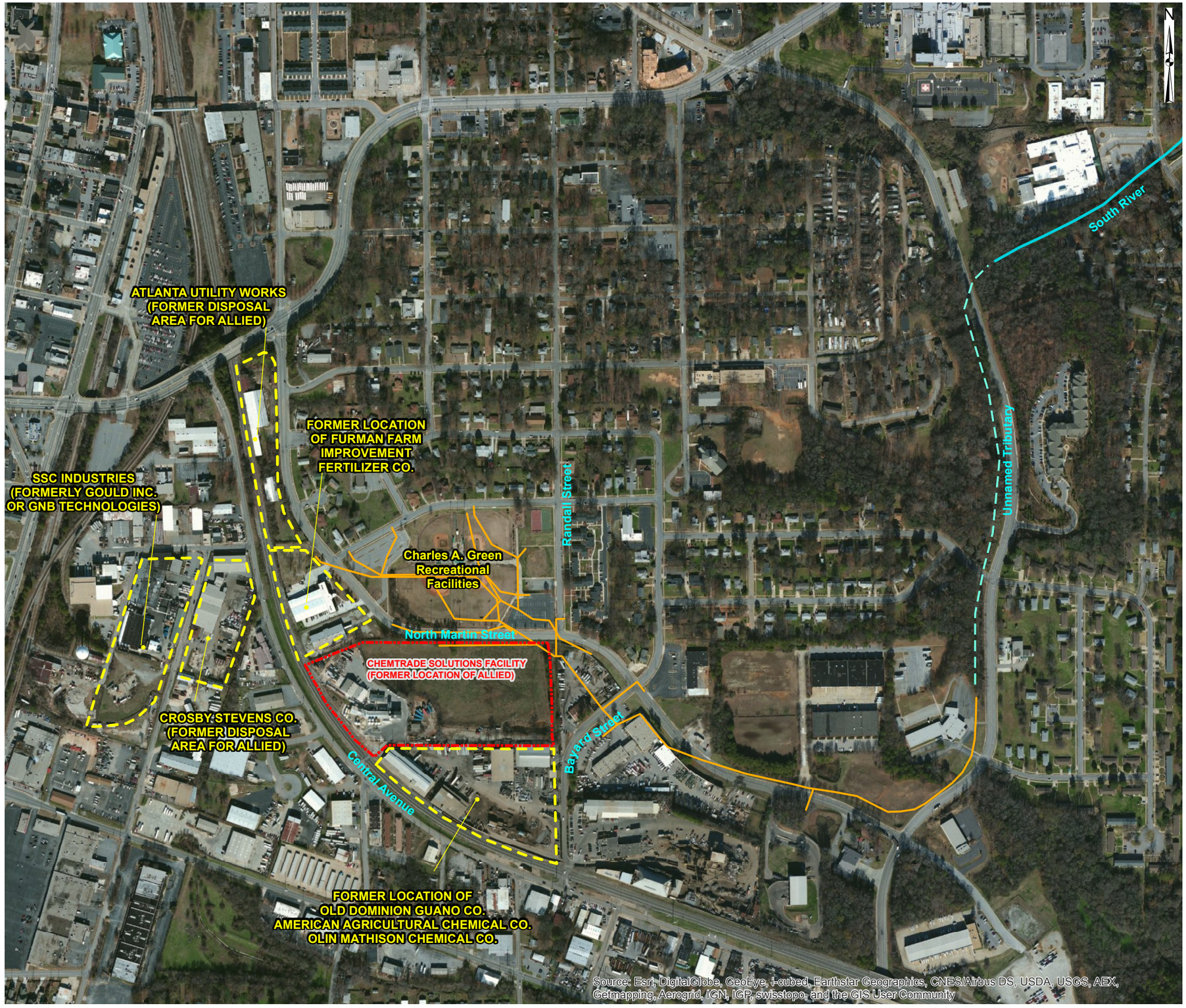
Location	Description	pH (-) EPA 150.1	Sulfate (mg/l) EPA 9056A	Aluminum (mg/l) EPA6010C
SW-02	On-site	4.1	1100.0	87.0
SW-06	Cross-Gradient	3.8	2000.0	172.0
SW-07	Downgradient	4.4	500.0	35.1
SW-09	Upgradient	6.3	67.0	<0.1
Duplicate	Duplicate SW-02	--	1100.0	81.7

Note: SW-02 (Sample 5), SW-06 (Sample 4), and SW-09 (Sample 1) were tested for sulfate as part of the stormwater inspection on 24 October 2014.

Table 3-5
Summary of Statistical Trend Analysis
In Storm Drain Samples
Chemtrade Solutions Site
East Point, Georgia

Sample Location	Parameter	Mann-Kendall Trend Analysis at 95% Confidence Level
SW-02	Alumimum	Increasing
SW-06		Increasing
SW-07		No Trend
SW-09		No Trend
SW-02	Sulfate	Increasing
SW-06		Increasing
SW-07		No Trend
SW-09		No Trend

FIGURES



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SITE VICINITY MAP

Chemtrade Solutions
EAST POINT, GEORGIA

Legend

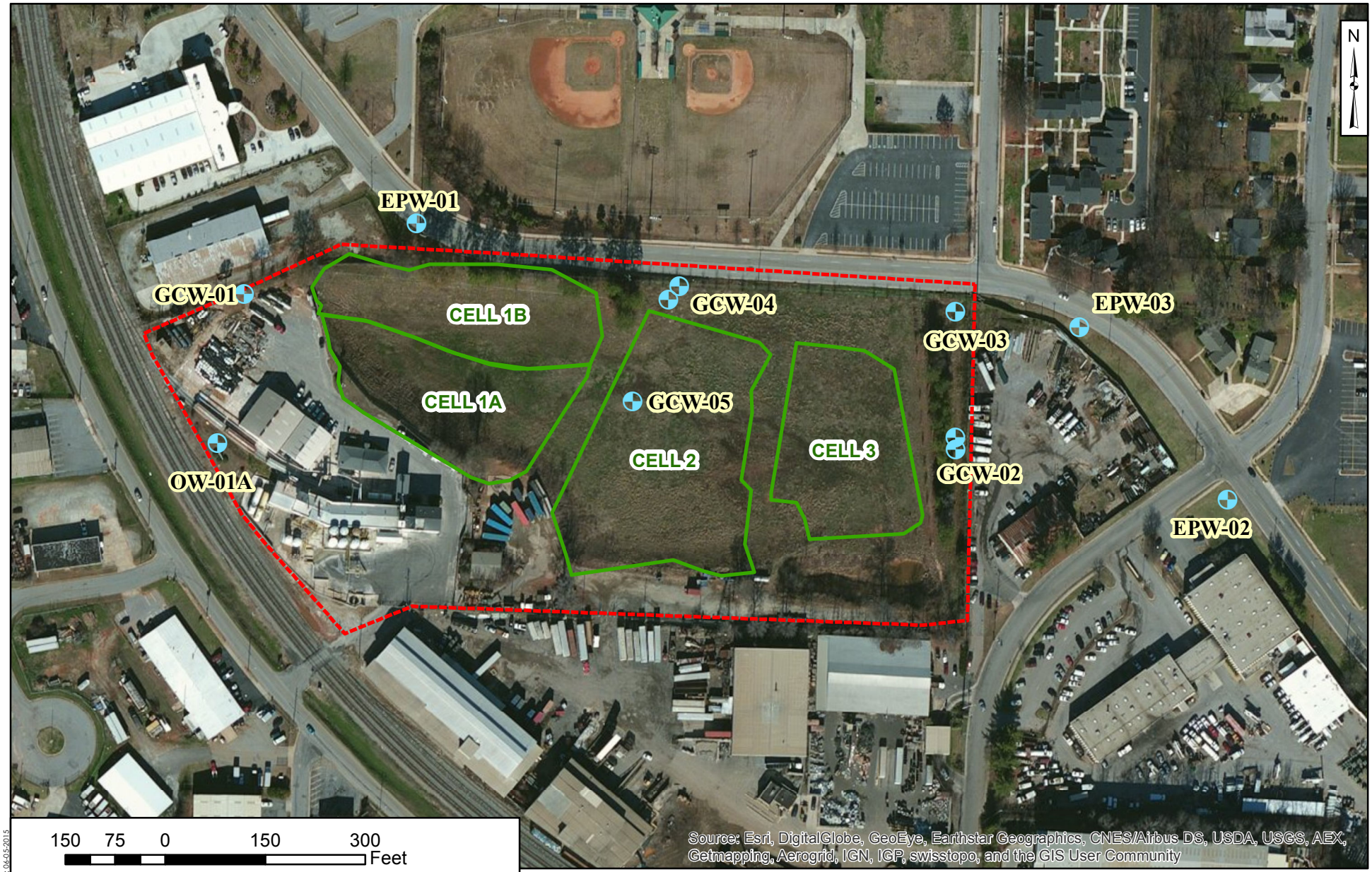
- Approximate Property Line
- Approximate Site Property
- Storm Drain
- Unnamed Tributary
- SouthRiver

500 250 0 500 1,000
Feet

Geosyntec consultants

ATLANTA, GEORGIA

January 2015	SCALE: 1" = 500'
PROJECT NO. GR5060	FIGURE NO. 1-1
DOCUMENT NO.	FILE NO. Figure 1-2.mxd



Legend
- Monitoring Well
- Excavation Cell
- Approximate Property Boundary

Geosyntec consultants
Kennesaw, GA

December 2014

MONITORING WELLS LOCATION MAP

Chemtrade Solutions, East Point, GA

Figure **1-2**

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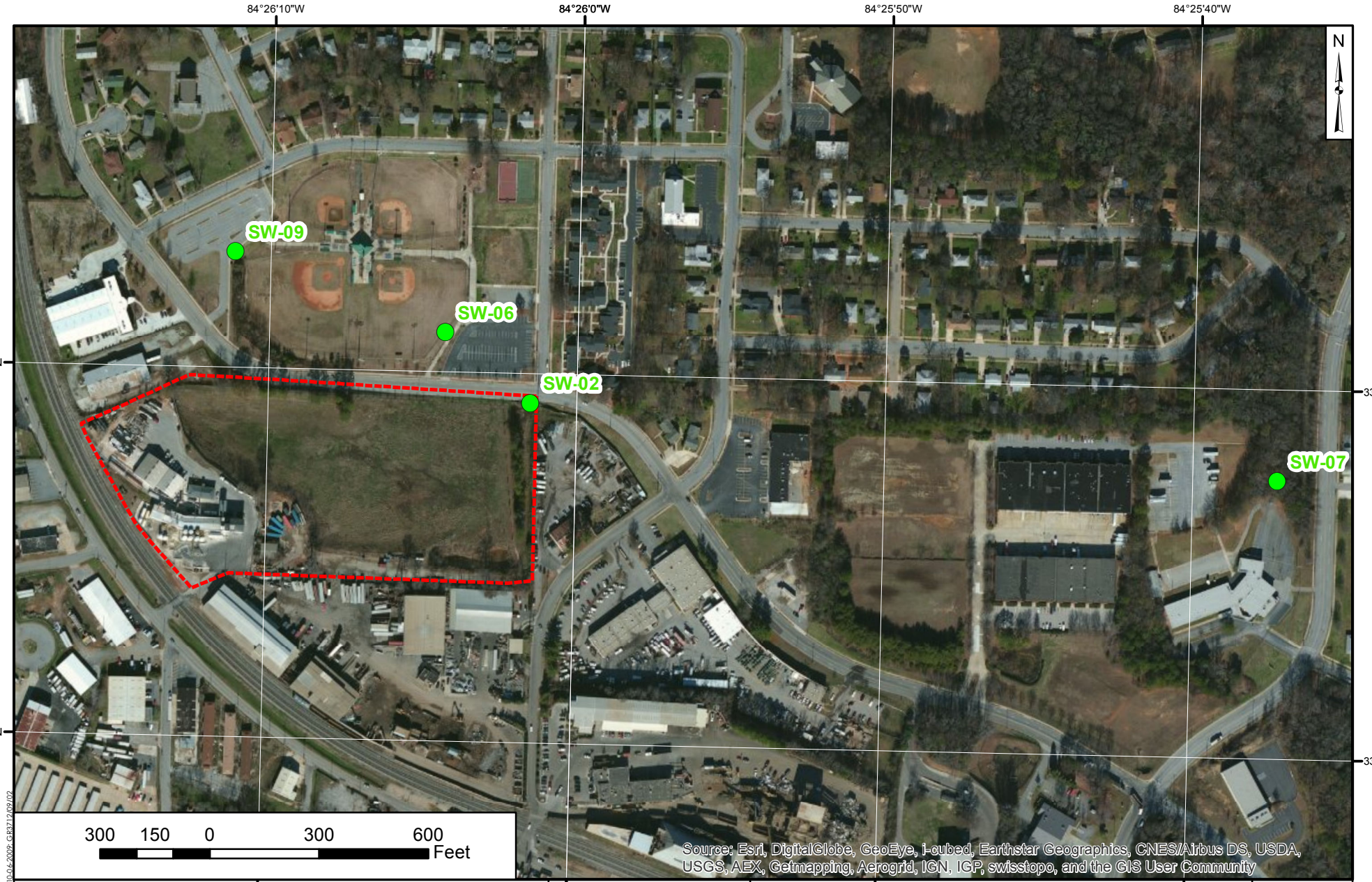

Legend

Surface Water Sample Location

Approximate Property Boundary

Geosyntec consultants
Kennesaw, GA

December 2014

STORM DRAIN SAMPLE LOCATION MAP

Chemtrade Solutions, Atlanta, GA

Figure
1-3

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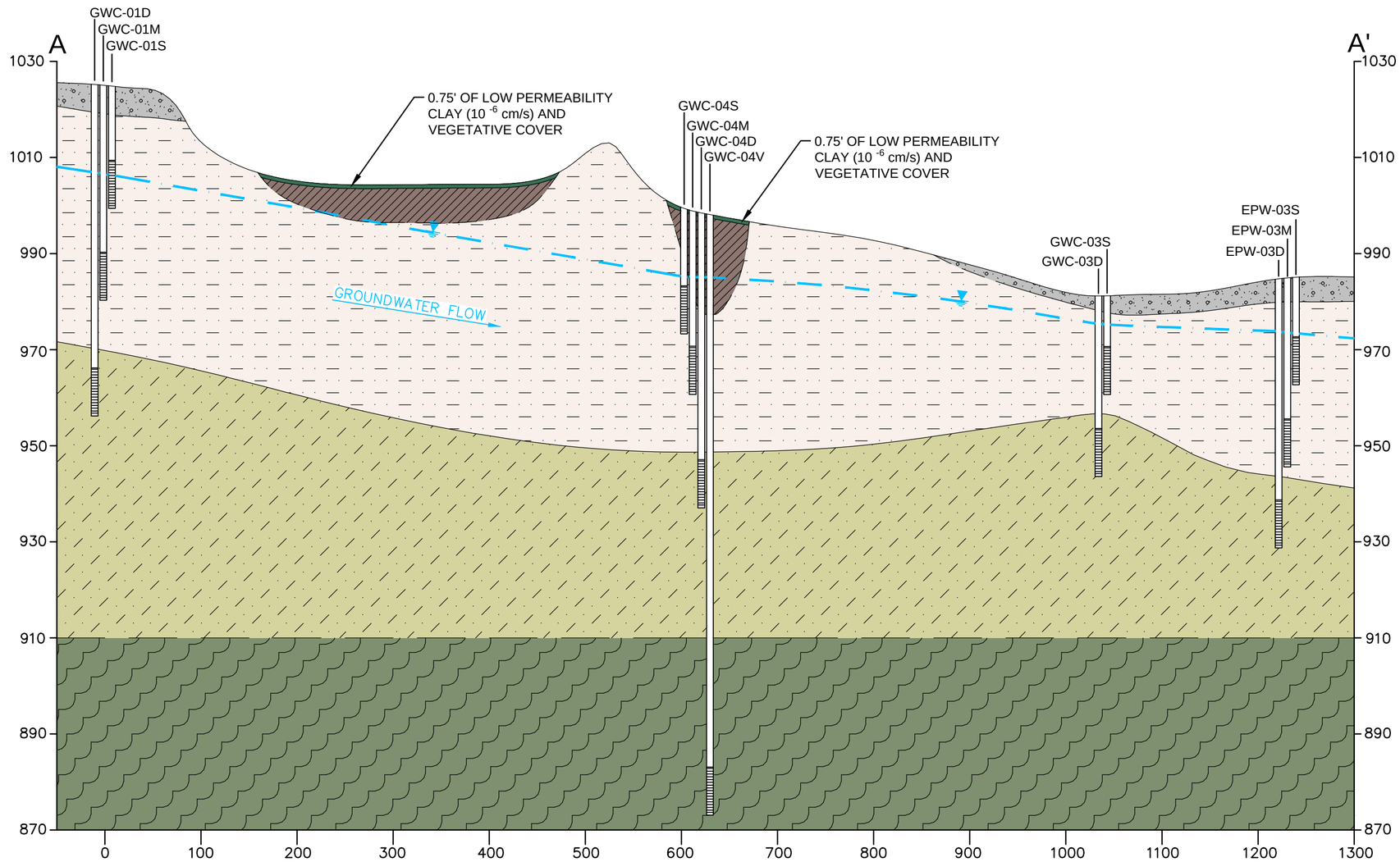
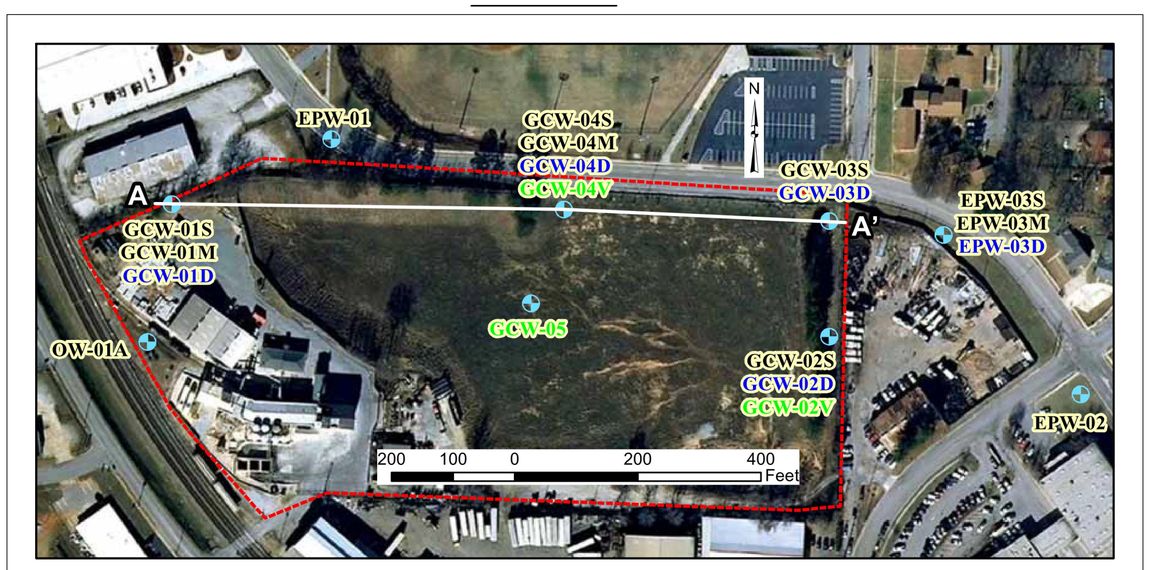
GEOLOGIC AND HYDROGEOLOGIC CROSS SECTION ALONG A-A'



KEY MAP



LEGEND

- 0.75' THICK LOW PERMEABILITY CLAY (10 $^{-6}$ cm/s) AND VEGETATIVE COVER
- GRAVELLEY CLAY, FILL
- CLAY, FILL AFTER EXCAVATION
- SILTY SAND, RELICT SCHISTOCITY, MICACEOUS (SAPROLITE)
- PARTRIALLY WEATHERED SCHIST
- BEDROCK (SCHIST)
- LITHOLOGIC CONTACT, DASHED WHERE INFERRED
- MONITORING WELL SCREEN ZONE WITH WATER ELEVATION (FEET MSL), NOVEMBER, 2012

0 100' 200'

HORIZONTAL SCALE IN FEET
VERTICAL EXAGGERATION = 5X

Geosyntec consultants

DATE:	JUN-13	SCALE:	AS SHOWN
PROJECT NO.	GR5060/12	FILE NO.	5060F001
DOCUMENT NO.	GA 130020	FIGURE NO.	2-1

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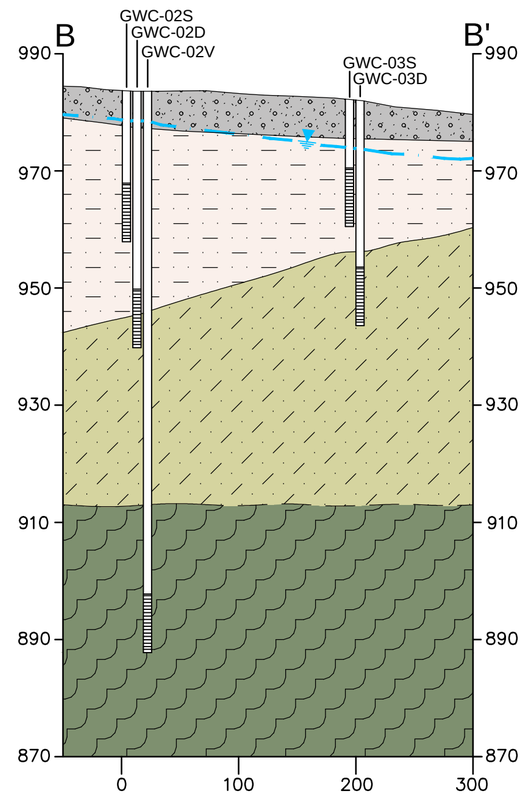
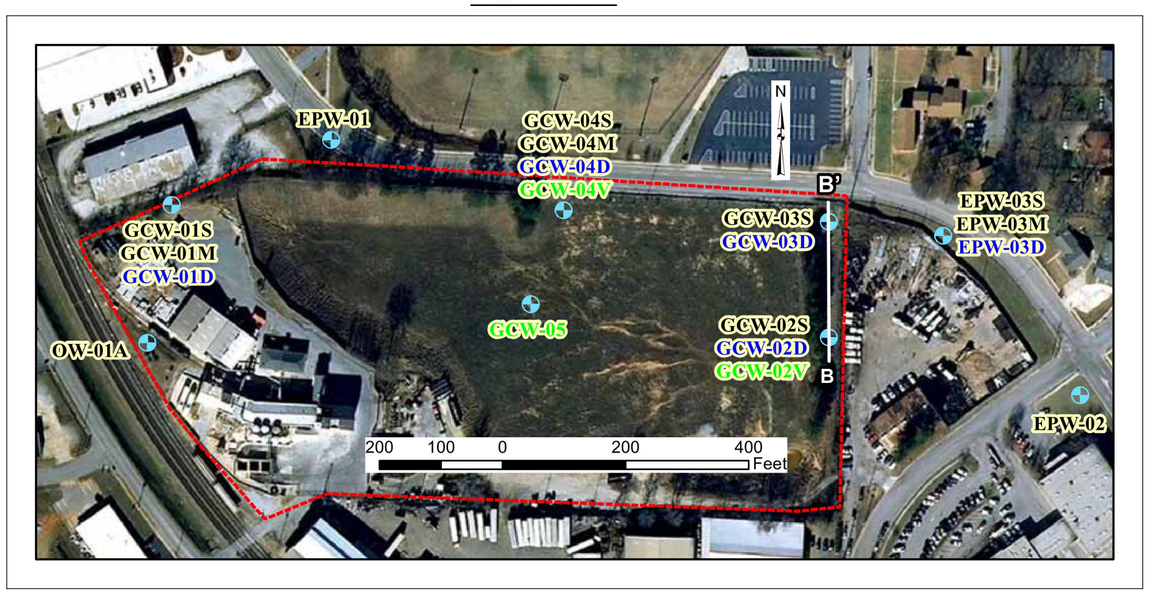
GEOLOGIC AND HYDROGEOLOGIC CROSS SECTION ALONG B-B'



KEY MAP



LEGEND

- GRAVELLEY CLAY, FILL
- SILTY SAND, RELICT SCHISTOCITY, MICACEOUS (SAPROLITE)
- PARTRIALLY WEATHERED SCHIST
- BEDROCK (SCHIST)
- LITHOLOGIC CONTACT, DASHED WHERE INFERRED
- MONITORING WELL SCREEN ZONE WITH WATER ELEVATION (FEET MSL), NOVEMBER, 2012

0 100' 200'

HORIZONTAL SCALE IN FEET
VERTICAL EXAGGERATION = 5X

Geosyntec consultants

DATE:	JUN–13	SCALE:	AS SHOWN
PROJECT NO.	GR5060/12	FILE NO.	5060F001
DOCUMENT NO.	GA 130020	FIGURE NO.	2-2

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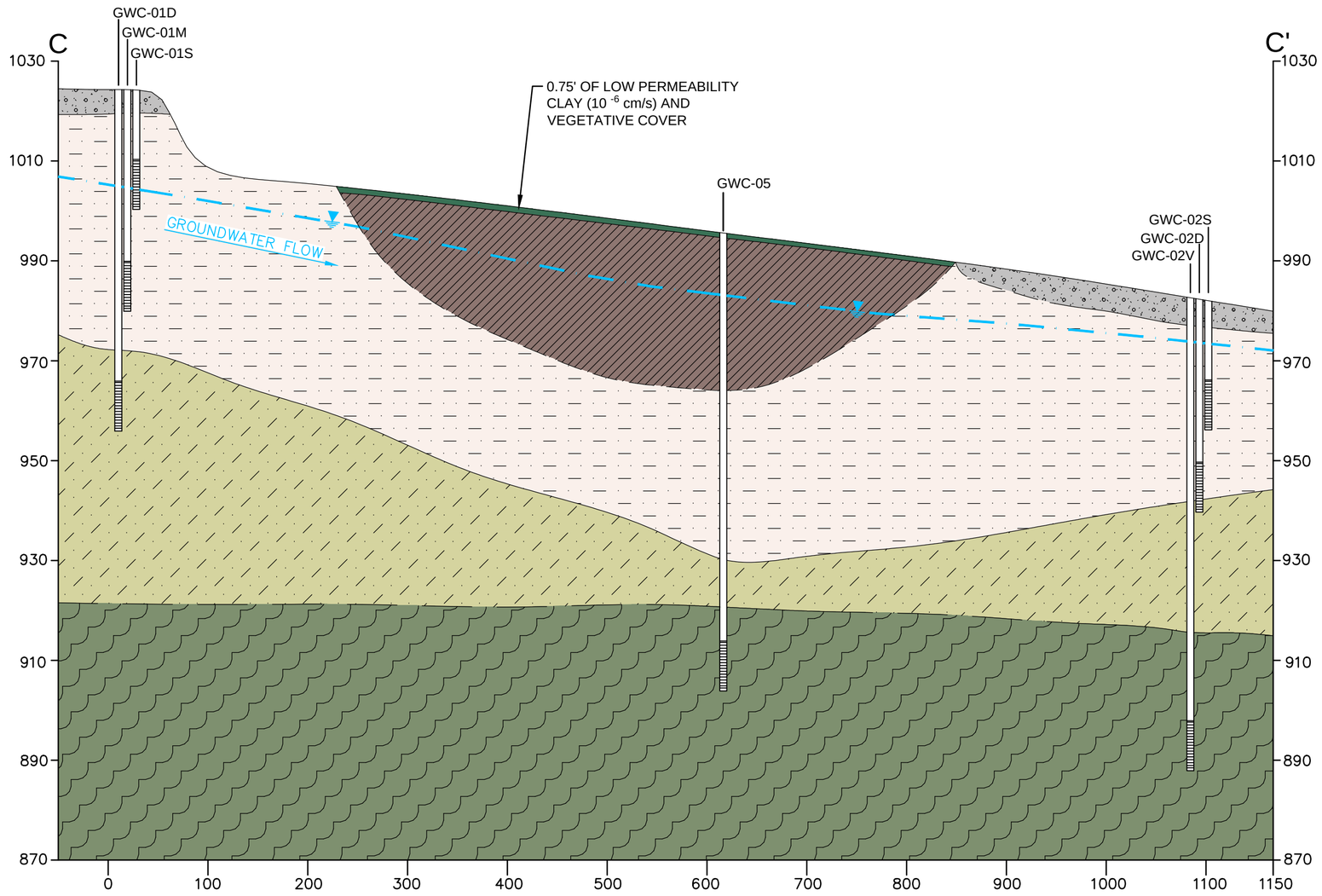
GEOLOGIC AND HYDROGEOLOGIC CROSS SECTION ALONG C-C'



KEY MAP

LEGEND

- 0.75' THICK LOW PERMEABILITY CLAY (10 $^{-6}$ cm/s) AND VEGETATIVE COVER
- GRAVELLEY CLAY, FILL
- CLAY, FILL AFTER EXCAVATION
- SILTY SAND, RELICT SCHISTOCITY, MICACEOUS (SAPROLITE)
- PARTRIALLY WEATHERED SCHIST
- BEDROCK (SCHIST)
- LITHOLOGIC CONTACT, DASHED WHERE INFERRED
- MONITORING WELL SCREEN ZONE WITH WATER ELEVATION (FEET MSL), NOVEMBER, 2012

0 100' 200'

HORIZONTAL SCALE IN FEET
VERTICAL EXAGGERATION = 5X

Geosyntec consultants

DATE:	JUN-13	SCALE:	AS SHOWN
PROJECT NO.	GR5060/12	FILE NO.	5060F001
DOCUMENT NO.	GA 130020	FIGURE NO.	2-3

L:\CADD\G\GENERAL CHEMICAL\MODIFICATION\HYDROGEOLOGIC CROSS SECTION GR3712.08.03\FIGURES\5060F001

Legend

- Monitoring Well (Elevation in ft MSL)
- March 2015 Groundwater Contours (Dashed where Inferred)
- Excavation Cell
- Approximate Property Boundary

200 100 0 200 400 Feet

Geosyntec consultants

Kennesaw, GA

June 2015

POTENTIOMETRIC SURFACE MAP

Chemtrade Solutions, East Point, GA

Figure 3-1

N:\geochem\GIS\MXDs\2015\DVIfru 06-05-2015

Figure 3-2
Monitoring Well Sulfate and pH Trends
Chemtrade Solutions Site
East Point, Georgia

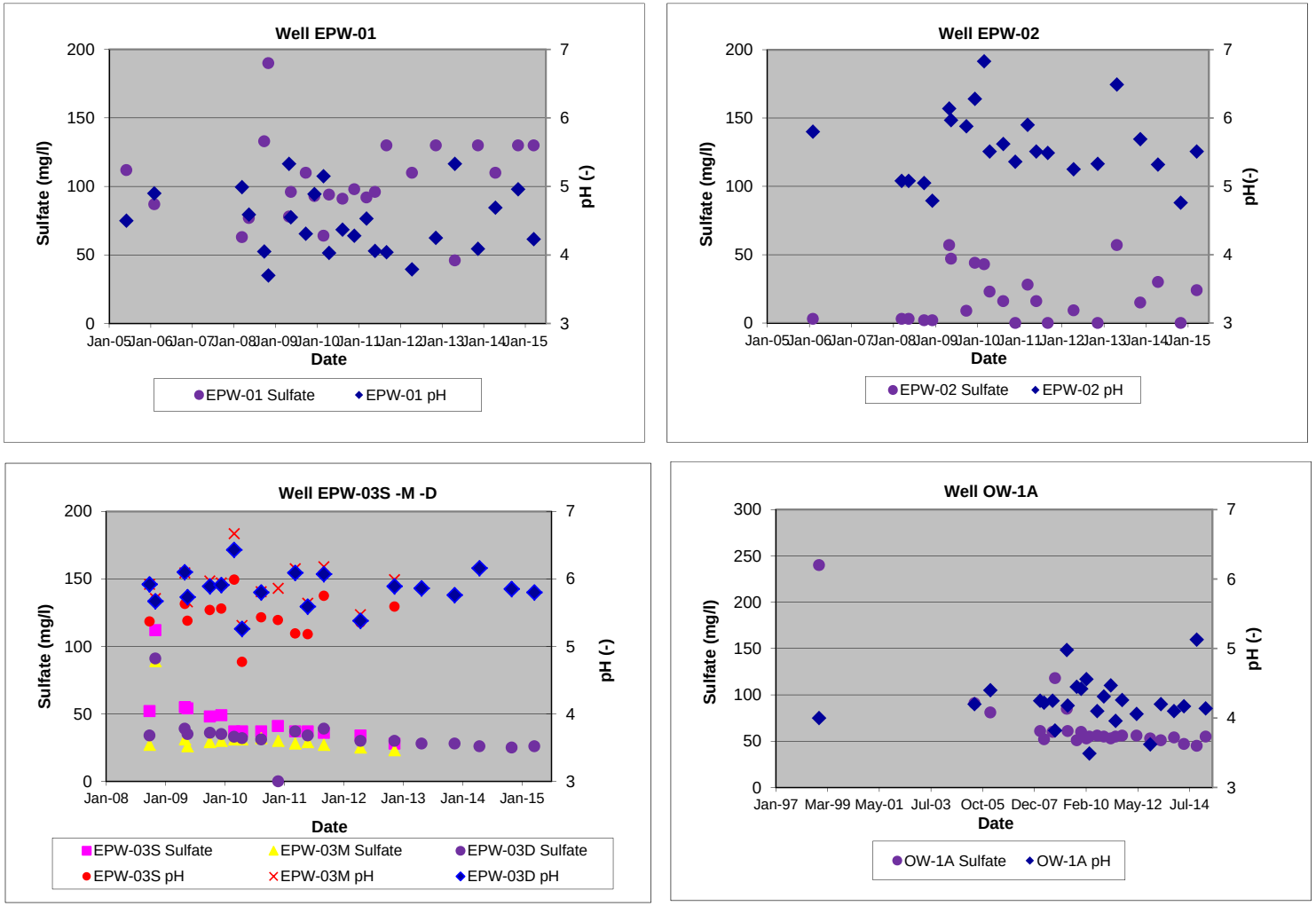
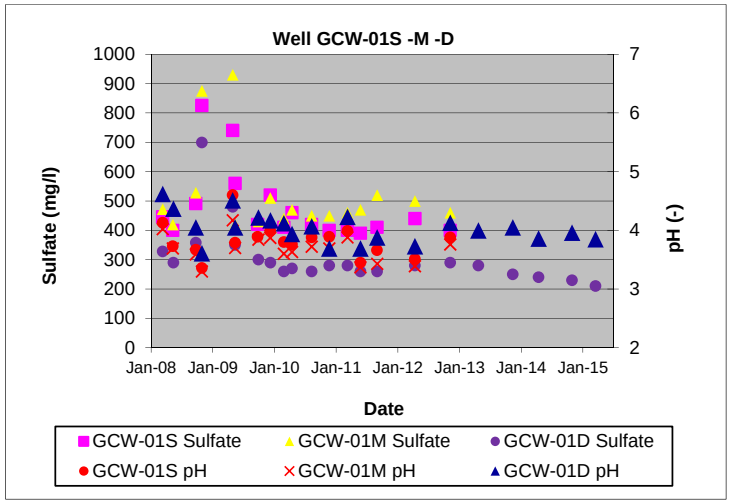
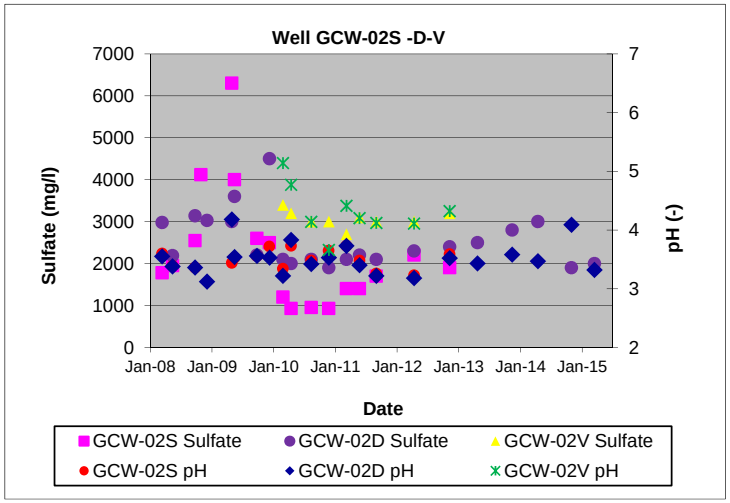
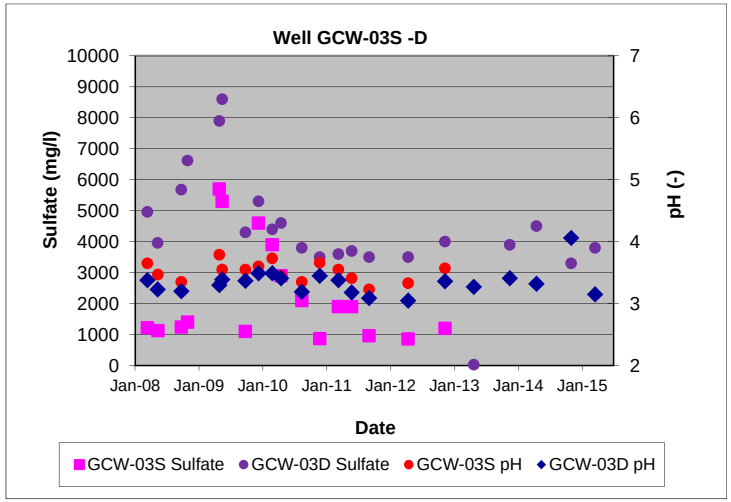


Figure 3-2 (Cont)
Monitoring Well Sulfate and pH Trends
Chemtrade Solutions Site
East Point, Georgia







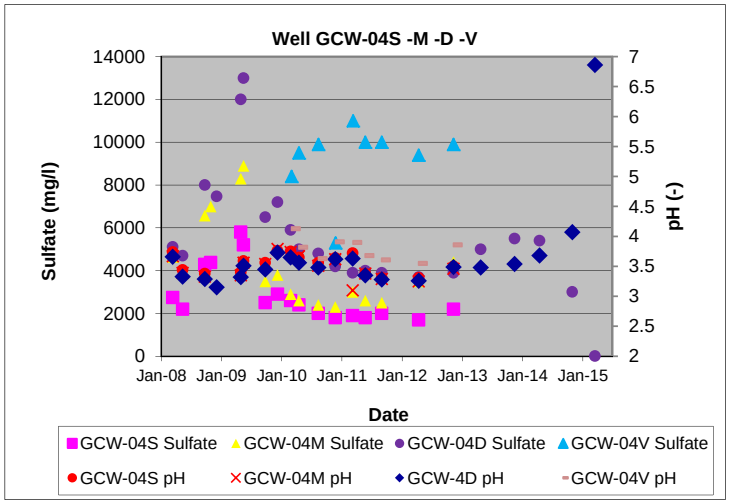


Figure 3-2 (Cont)
Monitoring Well Sulfate and pH Trends
Chemtrade Solutions Site
East Point, Georgia

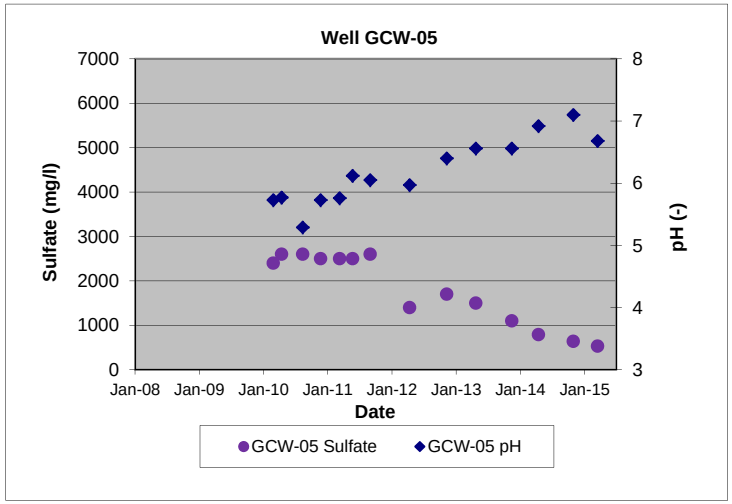
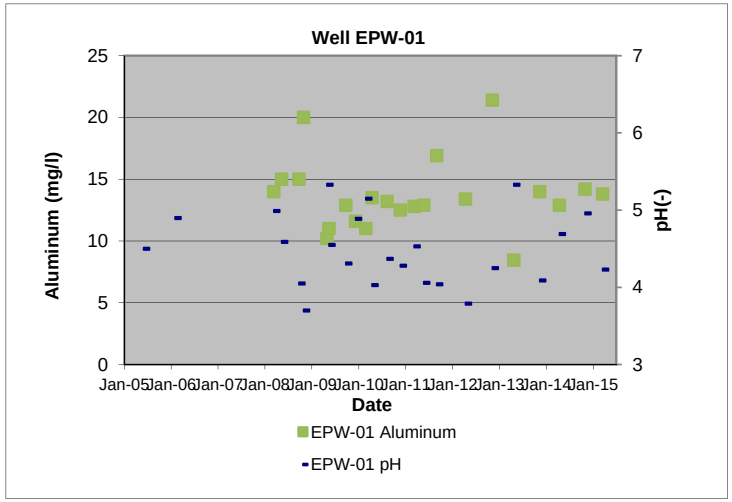
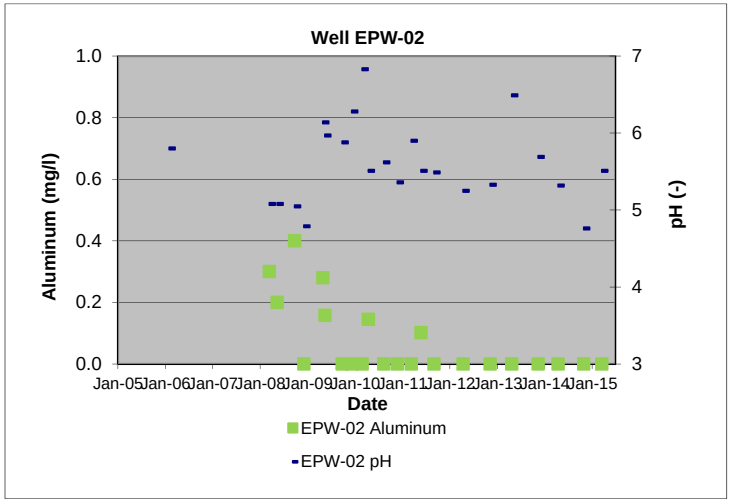
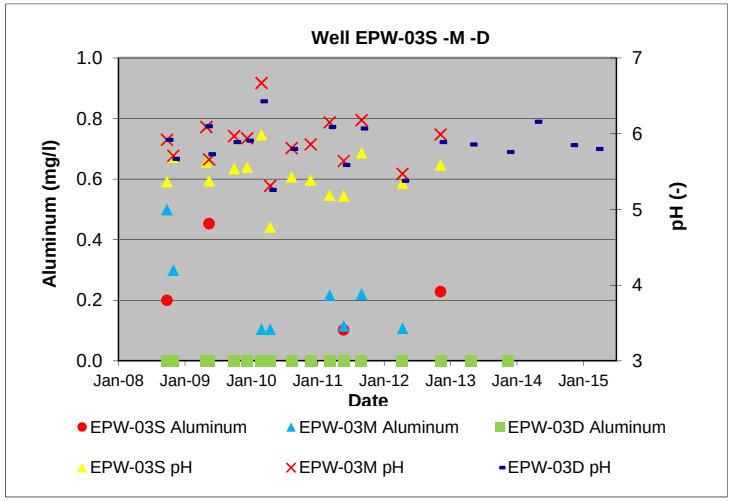


Figure 3-2 (Cont)
Monitoring Well Aluminum and pH Trends
Chemtrade Solutions Site
East Point, Georgia







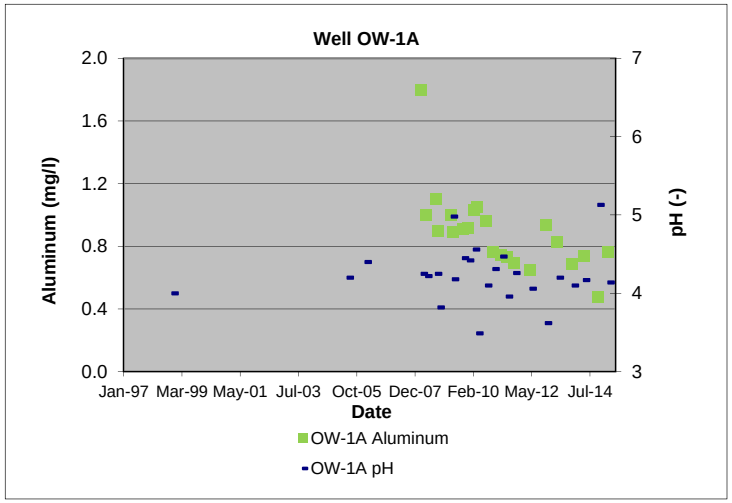
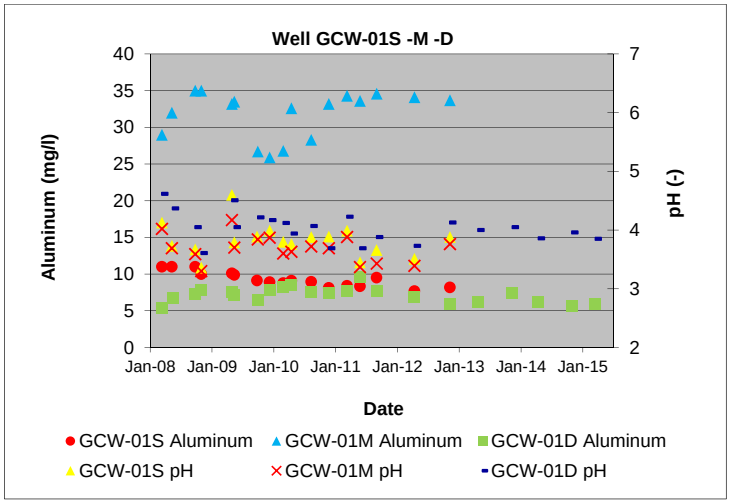
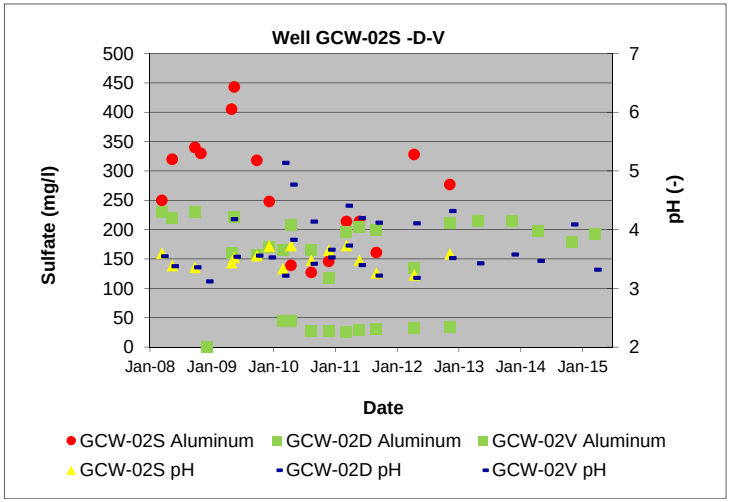
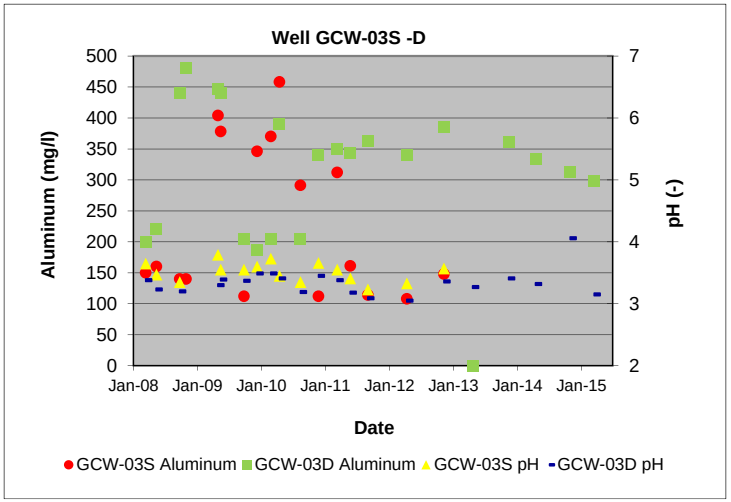


Figure 3-2 (Cont)
Monitoring Well Aluminum and pH Trends
Chemtrade Solutions Site
East Point, Georgia







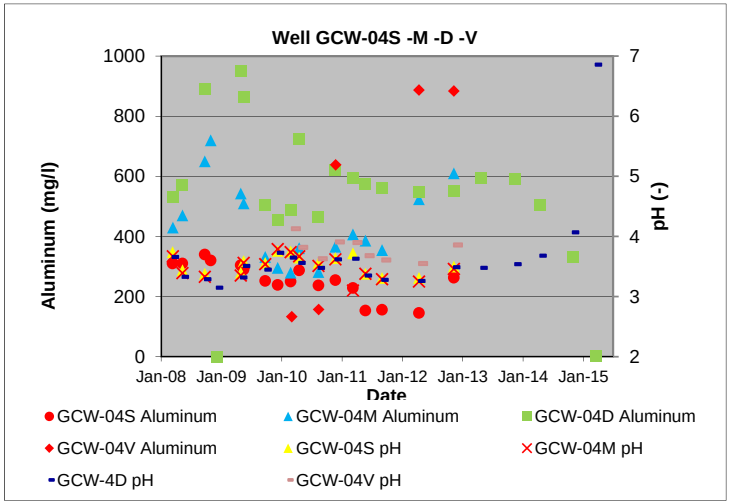


Figure 3-2 (Cont)
Monitoring Well Aluminum and pH Trends
Chemtrade Solutions Site
East Point, Georgia

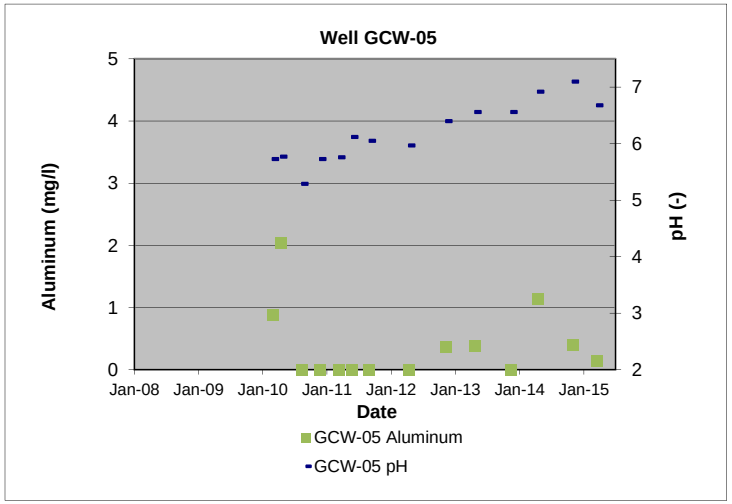
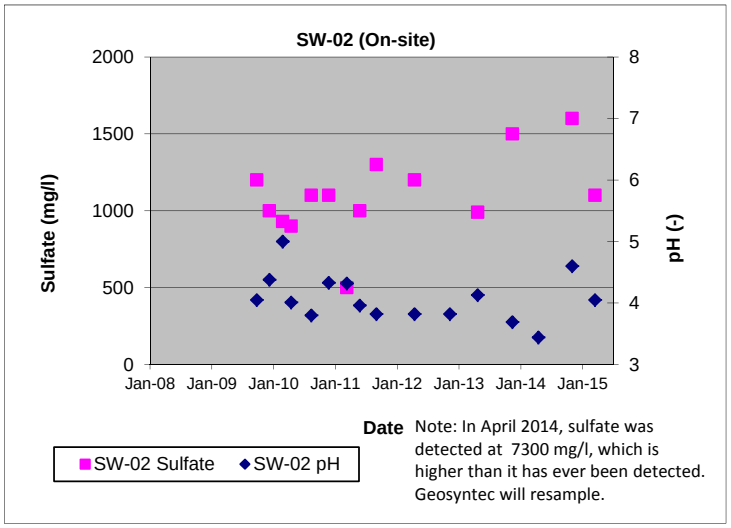
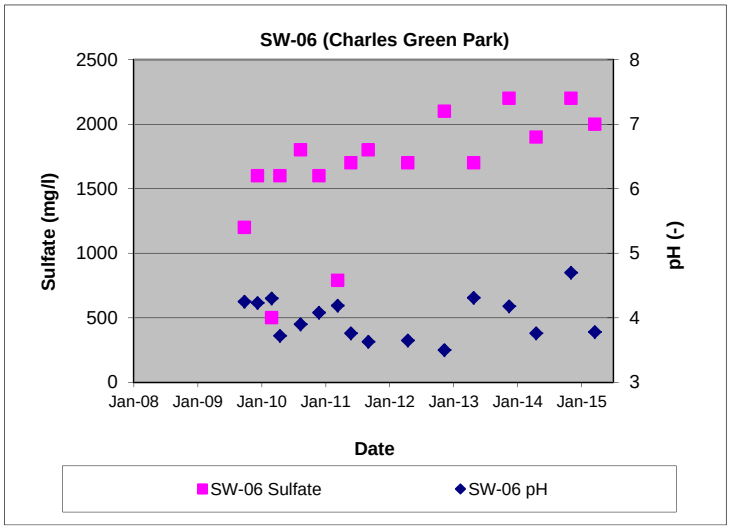
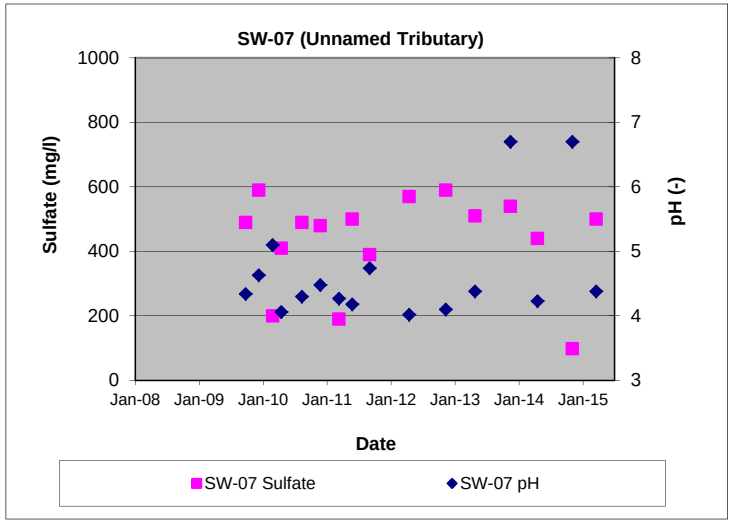


Figure 3-3
Storm Drain Sulfate and pH Trends
Chemtrade Solutions Site
East Point, Georgia







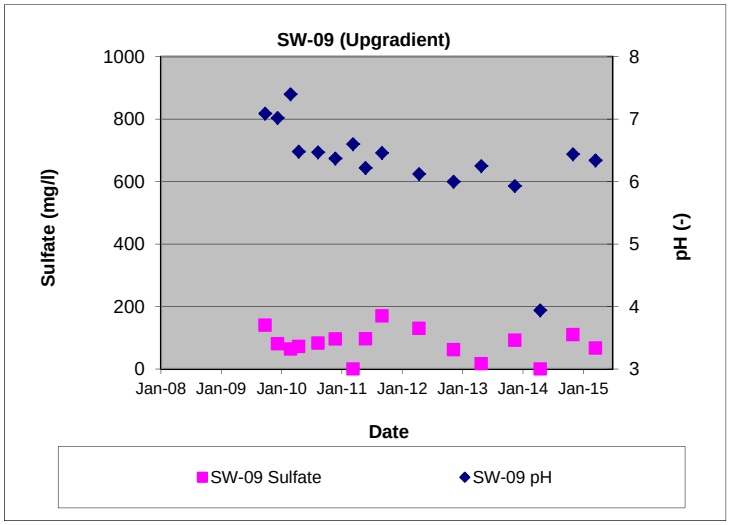
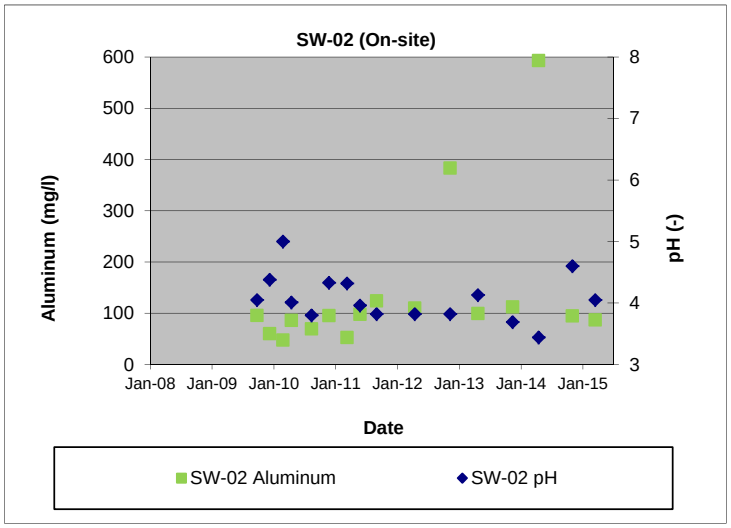
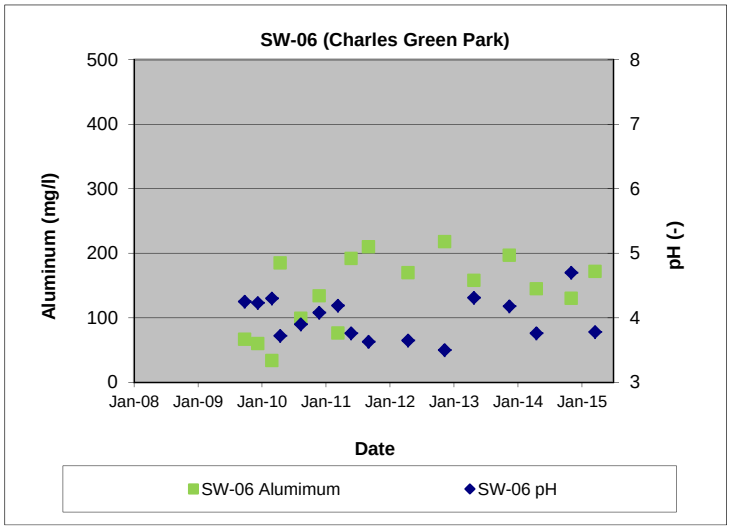
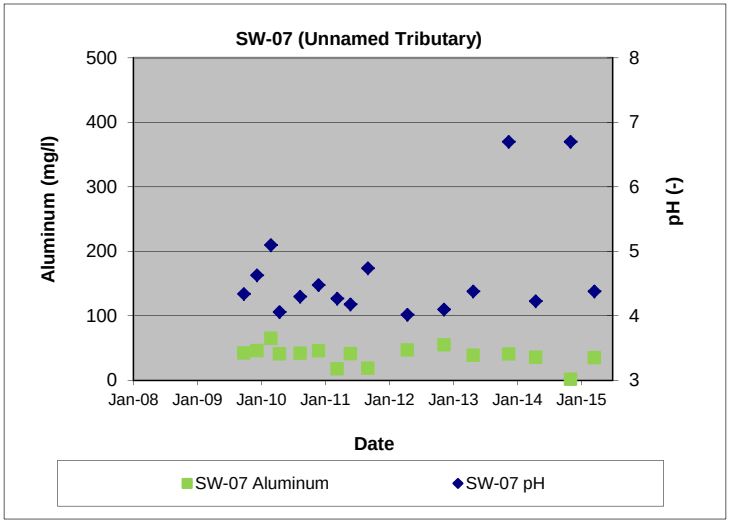
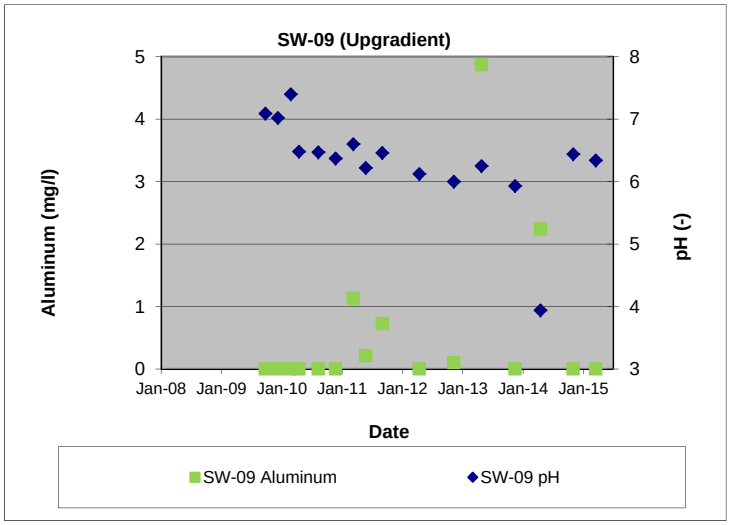


Figure 3-3 (Cont)
Storm Drain Aluminum and pH Trends
Chemtrade Solutions Site
East Point, Georgia









Legend

- Monitoring Well
- Sulfate Concentration (mg/L)
- Sulfate Concentration (Inferred)
- Approximate Property Boundary

Geosyntec consultants
Kennesaw, GA

June 2015

SULFATE CONCENTRATION ISOPLETH ABOVE THE TYPE 4 RRS

Chemtrade Solutions, East Point, GA

Figure

3-4

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Legend

- Monitoring Well
- Aluminum Concentration (mg/L)
- Aluminum Concentration (inferred)
- Approximate Property Boundary

Geosyntec consultants
Kennesaw, GA

June 2015

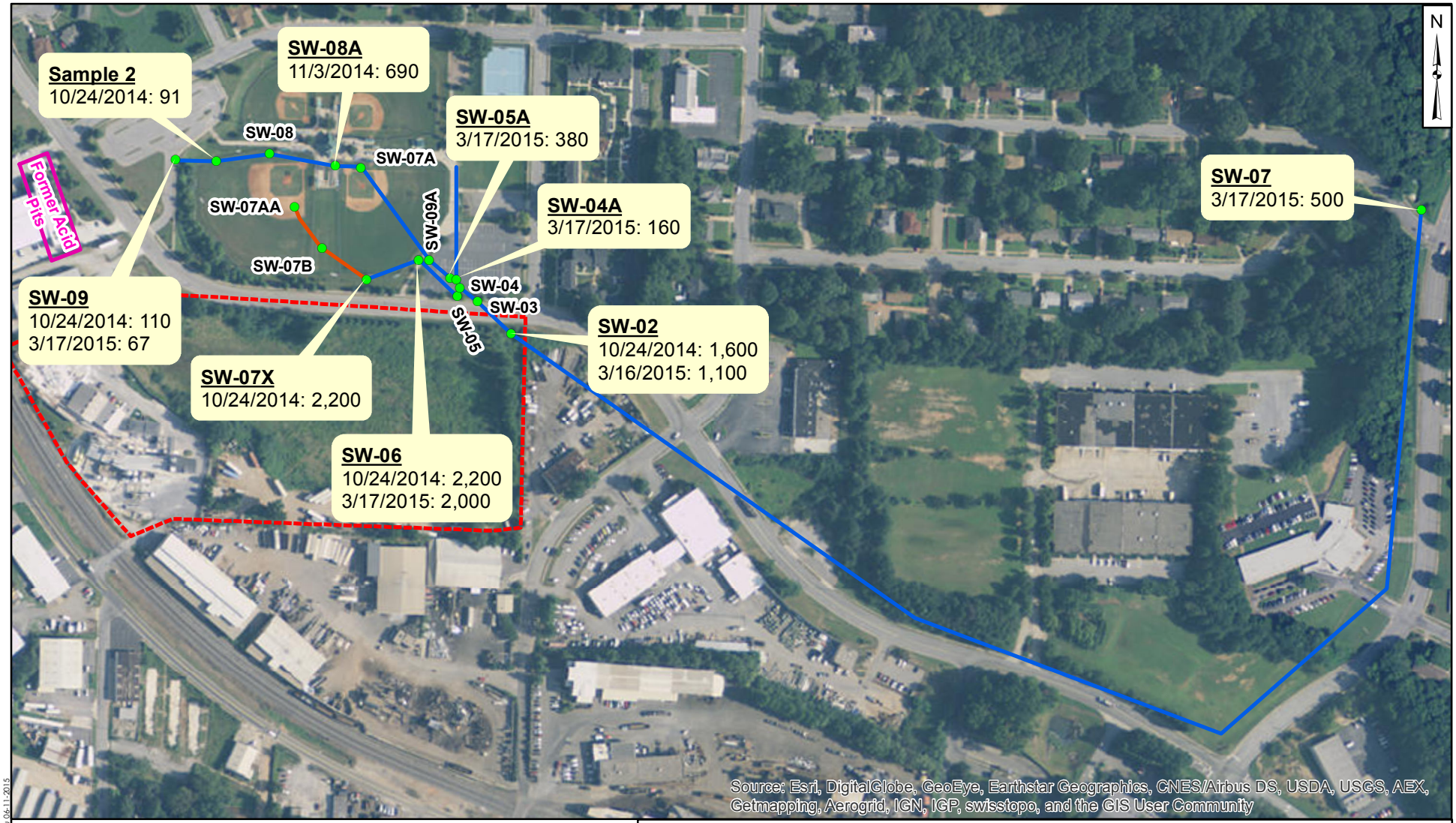
ALUMINUM CONCENTRATION ISOPLETH ABOVE THE TYPE 4 RRS

Chemtrade Solutions, East Point, GA

Figure

3-5

N:\genchem\GIS\MXDs\2015_dy\fig_07-01-2015



Legend

- Storm Drain Sample (Sulfate Concentration in mg/L)
- Storm Drain
- Candidate for Slip Lining
- Former Acid Pits
- Approximate Property Boundary

345 172.5 0 345 690 Feet

Geosyntec consultants
Kennesaw, GA

June 2015

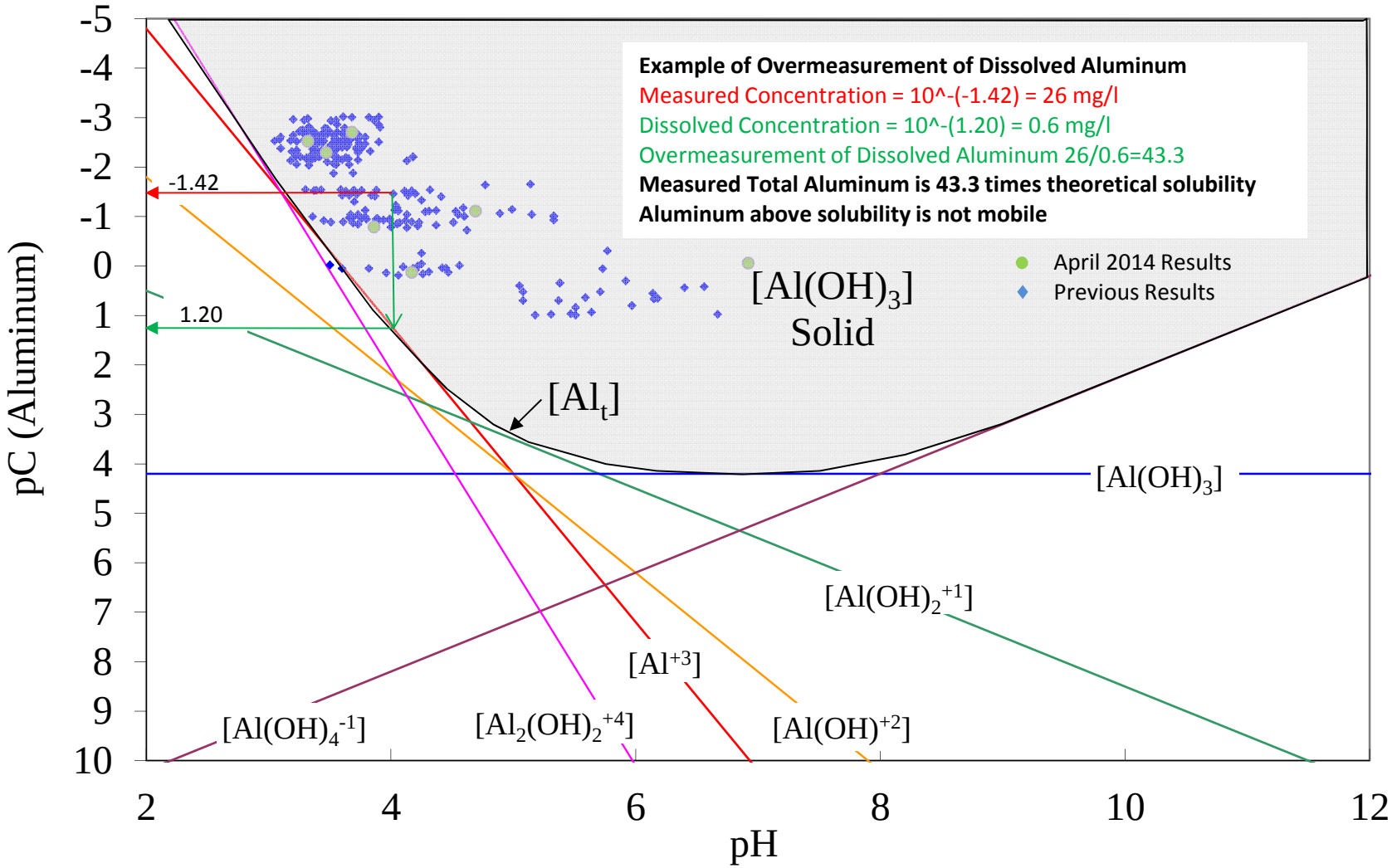
SULFATE CONCENTRATION IN STORM DRAIN

Chemtrade Solutions, East Point, GA

Figure **3-6**

N:\geochem\GIS\MXDs\October 2014 Potmap.mxd/DYlfu 06-11-2015

Figure 6-1
Chemtrade Solutions
Groundwater Sampling
April 2014
Aluminum Results Analysis



APPENDIX A

GROUNDWATER AND STORM DRAIN LABORATORY RESULTS

ASI

ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092
(770) 734-4200 FAX (770) 734-4201

Laboratory Report

Prepared For:

Geosyntec Consultants Inc.
1255 Roberts Blvd N.W.
Kennesaw, GA 30144

Attention: Mr. Brian Jacobson

Report Number: AYC0580
April 01, 2015
Project: General Chemical
Project #:5060

We appreciate the opportunity to provide the analytical support for your project. The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Approved:

Project Manager

This report may not be reproduced, except in full, without written approval from Analytical Services, Inc.
Analytical Services, Inc. certifies that the following analytical results meet all requirements of the National Environmental Laboratory Accreditation Conference(NELAC).
All test results relate only to the samples analyzed.

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Geosyntec Consultants Inc.
1255 Roberts Blvd N.W.
Kennesaw GA, 30144
Attention: Mr. Brian Jacobson

April 01, 2015

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GCW-04D-0315	AYC0580-01	Ground Water	03/16/15 13:00	03/19/15 10:20
GCW-05-0315	AYC0580-02	Ground Water	03/16/15 13:48	03/19/15 10:20
GCW-02D-0315	AYC0580-03	Ground Water	03/16/15 14:40	03/19/15 10:20
GCW-3D-0315	AYC0580-04	Ground Water	03/16/15 15:25	03/19/15 10:20
SW-02-0315	AYC0580-05	Storm Water	03/16/15 16:00	03/19/15 10:20
Dup-01-0315	AYC0580-06	Storm Water	03/16/15 00:00	03/19/15 10:20
EPW-01-0315	AYC0580-07	Ground Water	03/17/15 09:43	03/19/15 10:20
EPW-3D-0315	AYC0580-08	Ground Water	03/17/15 10:22	03/19/15 10:20
SW-09	AYC0580-09	Storm Water	03/17/15 13:15	03/19/15 10:20
Trip Blank	AYC0580-10	Ground Water	03/16/15 00:00	03/19/15 10:20
EPW-02-0315	AYC0580-11	Ground Water	03/17/15 11:05	03/19/15 10:20
GCW-01D-0315	AYC0580-12	Ground Water	03/17/15 11:50	03/19/15 10:20
Dup-2-0315	AYC0580-13	Ground Water	03/17/15 00:00	03/19/15 10:20
OW-1A-0315	AYC0580-14	Ground Water	03/17/15 12:35	03/19/15 10:20
SW-04-0315 SW-04A	AYC0580-15	Storm Water	03/17/15 14:20	03/19/15 10:20
SW-07-0315	AYC0580-16	Storm Water	03/17/15 14:55	03/19/15 10:20
SW-06-0315	AYC0580-17	Storm Water	03/17/15 13:36	03/19/15 10:20
SW-05-0315 SW-05A	AYC0580-18	Storm Water	03/17/15 14:01	03/19/15 10:20

Relabeled to avoid duplicate field locations

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Kennesaw GA, 30144
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April 01, 2015

Case Narrative

Semi-volatile Organic Compound Analysis by Method 8270D (CN and QM-10 Qualifiers):

For Batch 5030594, low recoveries for most target analytes were observed due to suspected loss of extract during final concentration. MS, MSD and surrogate recoveries were as expected with some low recoveries in the MS/MSD due to the matrix interference caused by significant amounts of clay-like sediment present in the samples (parent sample was not from this project) indicating that only the LCS was affected.

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Geosyntec Consultants Inc.
1255 Roberts Blvd N.W.
Kennesaw GA, 30144
Attention: Mr. Brian Jacobson

April 01, 2015

Report No.: AYC0580
Client ID: GCW-04D-0315
Date/Time Sampled: 3/16/2015 1:00:00PM
Matrix: Ground Water

Project: General Chemical
Lab Number ID: AYC0580-01
Date/Time Received: 3/19/2015 10:20:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Inorganic Anions										
Sulfate	9.8	5.0	mg/L	EPA 9056A		1	3/30/15 12:42	3/30/15 12:42	5030572	TAK
Metals, Total										
Aluminum	0.578	0.100	mg/L	EPA 6010C		1	3/24/15 9:55	3/24/15 19:12	5030620	FBS

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Geosyntec Consultants Inc.
1255 Roberts Blvd N.W.
Kennesaw GA, 30144
Attention: Mr. Brian Jacobson

April 01, 2015

Report No.: AYC0580
Client ID: GCW-05-0315
Date/Time Sampled: 3/16/2015 1:48:00PM
Matrix: Ground Water

Project: General Chemical
Lab Number ID: AYC0580-02
Date/Time Received: 3/19/2015 10:20:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Inorganic Anions										
Sulfate	530	250	mg/L	EPA 9056A		50	3/20/15 23:42	3/20/15 23:42	5030572	TAK
Metals, Total										
Aluminum	0.137	0.100	mg/L	EPA 6010C		1	3/24/15 9:55	3/24/15 19:16	5030620	FBS

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110 Technology Parkway, Norcross, GA 30092
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Geosyntec Consultants Inc.
1255 Roberts Blvd N.W.
Kennesaw GA, 30144
Attention: Mr. Brian Jacobson

April 01, 2015

Report No.: AYC0580
Client ID: GCW-02D-0315
Date/Time Sampled: 3/16/2015 2:40:00PM
Matrix: Ground Water

Project: General Chemical
Lab Number ID: AYC0580-03
Date/Time Received: 3/19/2015 10:20:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Inorganic Anions										
Sulfate	2000	250	mg/L	EPA 9056A		50	3/21/15 0:02	3/21/15 0:02	5030572	TAK
Metals, Total										
Aluminum	193	0.100	mg/L	EPA 6010C		1	3/24/15 9:55	3/24/15 19:01	5030620	FBS

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1255 Roberts Blvd N.W.
Kennesaw GA, 30144
Attention: Mr. Brian Jacobson

April 01, 2015

Report No.: AYC0580
Client ID: GCW-3D-0315
Date/Time Sampled: 3/16/2015 3:25:00PM
Matrix: Ground Water

Project: General Chemical
Lab Number ID: AYC0580-04
Date/Time Received: 3/19/2015 10:20:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Inorganic Anions										
Sulfate	3800	500	mg/L	EPA 9056A		100	3/21/15 0:23	3/21/15 0:23	5030572	TAK
Metals, Total										
Aluminum	298	0.100	mg/L	EPA 6010C		1	3/24/15 9:55	3/24/15 19:27	5030620	FBS
Volatile Organic Compounds by EPA 8260										
Acetone	ND	100	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Acrolein	ND	50	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Acrylonitrile	ND	50	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Allyl Chloride (3-Chloropropylene)	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Benzene	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Bromobenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Bromochloromethane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Bromodichloromethane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Bromoform	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Bromomethane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
n-Butylbenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
sec-Butylbenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
tert-Butylbenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Carbon Disulfide	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Carbon Tetrachloride	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Chlorobenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
1-Chlorobutane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Chloroethane	ND	5.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Chloroform	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Chloromethane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
2-Chlorotoluene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
4-Chlorotoluene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Dibromochloromethane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
1,2-Dibromo-3-chloropropane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
1,2-Dibromoethane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Dibromomethane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
1,2-Dichlorobenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
1,3-Dichlorobenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
1,4-Dichlorobenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092
(770) 734-4200 FAX (770) 734-4201

Geosyntec Consultants Inc.
1255 Roberts Blvd N.W.
Kennesaw GA, 30144
Attention: Mr. Brian Jacobson

April 01, 2015

Report No.: AYC0580
Client ID: GCW-3D-0315
Date/Time Sampled: 3/16/2015 3:25:00PM
Matrix: Ground Water

Project: General Chemical
Lab Number ID: AYC0580-04
Date/Time Received: 3/19/2015 10:20:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Volatile Organic Compounds by EPA 8260										
Dichlorodifluoromethane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
1,1-Dichloroethane	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
1,2-Dichloroethane	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
1,1-Dichloroethene	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
cis-1,2-Dichloroethene	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
trans-1,2-Dichloroethene	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
1,2-Dichloropropane	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
1,3-Dichloropropane	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
2,2-Dichloropropane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
1,1-Dichloropropene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
cis-1,3-Dichloropropene	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
trans-1,3-Dichloropropene	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Ethylbenzene	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Ethyl Methacrylate	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Hexachlorobutadiene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
p-Isopropyltoluene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Hexachloroethane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Iodomethane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Isopropylbenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Methacrylonitrile	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Methyl Acrylate	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Methyl Butyl Ketone (2-Hexanone)	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Methylene Chloride	ND	5.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Methyl Ethyl Ketone (2-Butanone)	ND	100	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Methyl Methacrylate	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
4-Methyl-2-pentanone (MIBK)	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Methyl-tert-Butyl Ether	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Naphthalene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
2-Nitropropane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Propionitrile (Ethyl Cyanide)	ND	20	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
n-Propylbenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Styrene	ND	5.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
1,1,1,2-Tetrachloroethane	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Tetrachloroethene	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Tetrahydrofuran	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART

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Matrix: Ground Water

Project: General Chemical
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Date/Time Received: 3/19/2015 10:20:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Volatile Organic Compounds by EPA 8260										
Toluene	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
1,2,3-Trichlorobenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
1,2,4-Trichlorobenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
1,1,1-Trichloroethane	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
1,1,2-Trichloroethane	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Trichloroethene	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Trichlorofluoromethane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
1,2,3-Trichloropropane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
1,2,4-Trimethylbenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
1,3,5-Trimethylbenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Vinyl Acetate	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Vinyl Chloride	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
m+p-Xylene	ND	5.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
o-Xylene	ND	5.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Xylenes, total	ND	5.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:45	5030589	ART
Surrogate: Dibromofluoromethane	*98 %*	*80-120*		*EPA 8260B*			*3/23/15 8:45*	*3/23/15 11:45*	*5030589*	
Surrogate: 1,2-Dichloroethane-d4	*100 %*	*78-120*		*EPA 8260B*			*3/23/15 8:45*	*3/23/15 11:45*	*5030589*	
Surrogate: Toluene-d8	*98 %*	*80-120*		*EPA 8260B*			*3/23/15 8:45*	*3/23/15 11:45*	*5030589*	
Surrogate: 4-Bromofluorobenzene	*102 %*	*80-120*		*EPA 8260B*			*3/23/15 8:45*	*3/23/15 11:45*	*5030589*	
Semivolatile Organic Compounds by EPA 8270										
Acenaphthene	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Acenaphthylene	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Anthracene	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Benzo(a)anthracene	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Benzo(a)pyrene	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Benzo(b)fluoranthene	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Benzo(ghi)perylene	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Benzo(k)fluoranthene	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Benzoic acid	ND	50	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Benzyl alcohol	ND	20	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Benzyl butyl phthalate	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
4-Bromophenyl phenyl ether	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Di-n-butyl phthalate	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
4-Chloroaniline	ND	20	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Bis(2-chloroethoxy)methane	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS

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Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Semivolatile Organic Compounds by EPA 8270										
Bis(2-chloroethyl)ether	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Bis(2-chloroisopropyl)ether	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
4-Chloro-3-methylphenol	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
2-Chloronaphthalene	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
2-Chlorophenol	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
4-Chlorophenyl phenyl ether	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Chrysene	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Dibenzo(a,h)anthracene	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Dibenzofuran	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
1,2-Dichlorobenzene	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
1,3-Dichlorobenzene	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
1,4-Dichlorobenzene	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
3,3´-Dichlorobenzidine	ND	20	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
2,4-Dichlorophenol	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Diethyl phthalate	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
2,4-Dimethylphenol	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Dimethyl phthalate	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
4,6-Dinitro-2-methylphenol	ND	50	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
2,4-Dinitrophenol	ND	50	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
2,4-Dinitrotoluene	ND	20	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
2,6-Dinitrotoluene	ND	20	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Bis(2-ethylhexyl)phthalate	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Fluoranthene	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Fluorene	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Hexachlorobenzene	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Hexachlorobutadiene	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Hexachlorocyclopentadiene	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Hexachloroethane	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Isophorone	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
2-Methylnaphthalene	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
2-Methylphenol (o-cresol)	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
3+4-Methylphenol (m+p-cresol)	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Naphthalene	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
2-Nitroaniline	ND	50	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
3-Nitroaniline	ND	50	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS

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Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Semivolatile Organic Compounds by EPA 8270										
4-Nitroaniline	ND	50	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Nitrobenzene	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
2-Nitrophenol	ND	50	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
4-Nitrophenol	ND	50	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
N-Nitrosodimethylamine	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
N-Nitrosodiphenylamine/Diphenylamine	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
N-Nitrosodi-n-propylamine	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Di-n-octyl phthalate	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Pentachlorophenol	ND	20	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Phenanthrene	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Phenol	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Pyrene	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
1,2,4-Trichlorobenzene	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
2,4,5-Trichlorophenol	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
2,4,6-Trichlorophenol	ND	10	ug/L	EPA 8270D		1	3/23/15 9:20	3/25/15 2:17	5030594	JRS
Surrogate: 2-Fluorophenol	*34 %*	*11-120*		*EPA 8270D*			*3/23/15 9:20*	*3/25/15 2:17*	*5030594*	
Surrogate: Phenol-d6	*26 %*	*10-120*		*EPA 8270D*			*3/23/15 9:20*	*3/25/15 2:17*	*5030594*	
Surrogate: Nitrobenzene-d5	*46 %*	*15-120*		*EPA 8270D*			*3/23/15 9:20*	*3/25/15 2:17*	*5030594*	
Surrogate: 2-Fluorobiphenyl	*43 %*	*23-120*		*EPA 8270D*			*3/23/15 9:20*	*3/25/15 2:17*	*5030594*	
Surrogate: 2,4,6-Tribromophenol	*65 %*	*36-120*		*EPA 8270D*			*3/23/15 9:20*	*3/25/15 2:17*	*5030594*	
Surrogate: p-Terphenyl-dl4	*81 %*	*53-121*		*EPA 8270D*			*3/23/15 9:20*	*3/25/15 2:17*	*5030594*	
Organochlorine Pesticides by EPA 8081										
Aldrin	ND	0.1	ug/L	EPA 8081B		1	3/23/15 9:20	3/26/15 14:56	5030593	SFI
BHC-alpha	0.1	0.1	ug/L	EPA 8081B		1	3/23/15 9:20	3/26/15 14:56	5030593	SFI
BHC-beta	0.2	0.1	ug/L	EPA 8081B		1	3/23/15 9:20	3/26/15 14:56	5030593	SFI
BHC-delta	0.2	0.1	ug/L	EPA 8081B		1	3/23/15 9:20	3/26/15 14:56	5030593	SFI
BHC-gamma (Lindane)	0.1	0.1	ug/L	EPA 8081B		1	3/23/15 9:20	3/26/15 14:56	5030593	SFI
Chlordane	ND	0.5	ug/L	EPA 8081B		1	3/23/15 9:20	3/26/15 14:56	5030593	SFI
4,4'-DDD	ND	0.1	ug/L	EPA 8081B		1	3/23/15 9:20	3/26/15 14:56	5030593	SFI
4,4'-DDE	ND	0.1	ug/L	EPA 8081B		1	3/23/15 9:20	3/26/15 14:56	5030593	SFI
4,4'-DDT	ND	0.1	ug/L	EPA 8081B		1	3/23/15 9:20	3/26/15 14:56	5030593	SFI
Dieldrin	ND	0.1	ug/L	EPA 8081B		1	3/23/15 9:20	3/26/15 14:56	5030593	SFI
Endosulfan I	ND	0.5	ug/L	EPA 8081B		1	3/23/15 9:20	3/26/15 14:56	5030593	SFI
Endosulfan II	ND	0.5	ug/L	EPA 8081B		1	3/23/15 9:20	3/26/15 14:56	5030593	SFI
Endosulfan sulfate	ND	0.5	ug/L	EPA 8081B		1	3/23/15 9:20	3/26/15 14:56	5030593	SFI

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110 Technology Parkway, Norcross, GA 30092
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Geosyntec Consultants Inc.
1255 Roberts Blvd N.W.
Kennesaw GA, 30144
Attention: Mr. Brian Jacobson

April 01, 2015

Report No.: AYC0580
Client ID: GCW-3D-0315
Date/Time Sampled: 3/16/2015 3:25:00PM
Matrix: Ground Water

Project: General Chemical
Lab Number ID: AYC0580-04
Date/Time Received: 3/19/2015 10:20:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Organochlorine Pesticides by EPA 8081										
Endrin	ND	0.2	ug/L	EPA 8081B		1	3/23/15 9:20	3/26/15 14:56	5030593	SFI
Endrin aldehyde	ND	0.2	ug/L	EPA 8081B		1	3/23/15 9:20	3/26/15 14:56	5030593	SFI
Endrin ketone	ND	0.2	ug/L	EPA 8081B		1	3/23/15 9:20	3/26/15 14:56	5030593	SFI
Heptachlor	ND	0.1	ug/L	EPA 8081B		1	3/23/15 9:20	3/26/15 14:56	5030593	SFI
Heptachlor epoxide	ND	0.1	ug/L	EPA 8081B		1	3/23/15 9:20	3/26/15 14:56	5030593	SFI
Methoxychlor	ND	0.3	ug/L	EPA 8081B		1	3/23/15 9:20	3/26/15 14:56	5030593	SFI
Toxaphene	ND	2.0	ug/L	EPA 8081B		1	3/23/15 9:20	3/26/15 14:56	5030593	SFI
Surrogate: Tetrachloro-m-xylene	*78 %*	*27-148*		*EPA 8081B*			*3/23/15 9:20*	*3/26/15 14:56*	*5030593*	
Surrogate: Decachlorobiphenyl	*112 %*	*10-155*		*EPA 8081B*			*3/23/15 9:20*	*3/26/15 14:56*	*5030593*	
PCBs by EPA 8082										
PCB 1016	ND	1.0	ug/L	EPA 8082A		1	3/25/15 14:45	3/25/15 18:21	5030675	SFI
PCB 1221	ND	1.0	ug/L	EPA 8082A		1	3/25/15 14:45	3/25/15 18:21	5030675	SFI
PCB 1232	ND	1.0	ug/L	EPA 8082A		1	3/25/15 14:45	3/25/15 18:21	5030675	SFI
PCB 1242	ND	1.0	ug/L	EPA 8082A		1	3/25/15 14:45	3/25/15 18:21	5030675	SFI
PCB 1248	ND	1.0	ug/L	EPA 8082A		1	3/25/15 14:45	3/25/15 18:21	5030675	SFI
PCB 1254	ND	1.0	ug/L	EPA 8082A		1	3/25/15 14:45	3/25/15 18:21	5030675	SFI
PCB 1260	ND	1.0	ug/L	EPA 8082A		1	3/25/15 14:45	3/25/15 18:21	5030675	SFI
Surrogate: Decachlorobiphenyl	*93 %*	*17-144*		*EPA 8082A*			*3/25/15 14:45*	*3/25/15 18:21*	*5030675*	

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April 01, 2015

Report No.: AYC0580
Client ID: SW-02-0315
Date/Time Sampled: 3/16/2015 4:00:00PM
Matrix: Storm Water

Project: General Chemical
Lab Number ID: AYC0580-05
Date/Time Received: 3/19/2015 10:20:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Inorganic Anions										
Sulfate	1100	250	mg/L	EPA 9056A		50	3/21/15 0:44	3/21/15 0:44	5030572	TAK
Metals, Total										
Aluminum	87.0	0.100	mg/L	EPA 6010C		1	3/24/15 9:55	3/24/15 19:31	5030620	FBS

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April 01, 2015

Report No.: AYC0580
Client ID: Dup-01-0315
Date/Time Sampled: 3/16/2015 12:00:00AM
Matrix: Storm Water

Project: General Chemical
Lab Number ID: AYC0580-06
Date/Time Received: 3/19/2015 10:20:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Inorganic Anions										
Sulfate	1100	250	mg/L	EPA 9056A		50	3/21/15 1:04	3/21/15 1:04	5030572	TAK
Metals, Total										
Aluminum	81.7	0.100	mg/L	EPA 6010C		1	3/24/15 9:55	3/24/15 19:34	5030620	FBS

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April 01, 2015

Report No.: AYC0580
Client ID: EPW-01-0315
Date/Time Sampled: 3/17/2015 9:43:00AM
Matrix: Ground Water

Project: General Chemical
Lab Number ID: AYC0580-07
Date/Time Received: 3/19/2015 10:20:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Inorganic Anions										
Sulfate	130	50	mg/L	EPA 9056A		10	3/21/15 1:25	3/21/15 1:25	5030572	TAK
Metals, Total										
Aluminum	13.8	0.100	mg/L	EPA 6010C		1	3/24/15 9:55	3/24/15 19:38	5030620	FBS

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April 01, 2015

Report No.: AYC0580
Client ID: EPW-3D-0315
Date/Time Sampled: 3/17/2015 10:22:00AM
Matrix: Ground Water

Project: General Chemical
Lab Number ID: AYC0580-08
Date/Time Received: 3/19/2015 10:20:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Inorganic Anions										
Sulfate	26	5.0	mg/L	EPA 9056A		1	3/21/15 1:46	3/21/15 1:46	5030572	TAK
Metals, Total										
Aluminum	ND	0.100	mg/L	EPA 6010C		1	3/24/15 9:55	3/24/15 19:42	5030620	FBS

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April 01, 2015

Report No.: AYC0580
Client ID: SW-09
Date/Time Sampled: 3/17/2015 1:15:00PM
Matrix: Storm Water

Project: General Chemical
Lab Number ID: AYC0580-09
Date/Time Received: 3/19/2015 10:20:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Inorganic Anions										
Sulfate	67	10	mg/L	EPA 9056A		2	3/30/15 13:03	3/30/15 13:03	5030572	TAK
Metals, Total										
Aluminum	ND	0.100	mg/L	EPA 6010C		1	3/24/15 9:55	3/24/15 19:45	5030620	FBS

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April 01, 2015

Report No.: AYC0580
Client ID: Trip Blank
Date/Time Sampled: 3/16/2015 12:00:00AM
Matrix: Ground Water

Project: General Chemical
Lab Number ID: AYC0580-10
Date/Time Received: 3/19/2015 10:20:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Volatile Organic Compounds by EPA 8260										
Acetone	ND	100	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Acrolein	ND	50	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Acrylonitrile	ND	50	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Allyl Chloride (3-Chloropropylene)	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Benzene	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Bromobenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Bromochloromethane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Bromodichloromethane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Bromoform	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Bromomethane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
n-Butylbenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
sec-Butylbenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
tert-Butylbenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Carbon Disulfide	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Carbon Tetrachloride	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Chlorobenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
1-Chlorobutane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Chloroethane	ND	5.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Chloroform	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Chloromethane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
2-Chlorotoluene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
4-Chlorotoluene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Dibromochloromethane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
1,2-Dibromo-3-chloropropane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
1,2-Dibromoethane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Dibromomethane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
1,2-Dichlorobenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
1,3-Dichlorobenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
1,4-Dichlorobenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
trans-1,4-Dichloro-2-butene	ND	5.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Dichlorodifluoromethane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
1,1-Dichloroethane	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
1,2-Dichloroethane	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
1,1-Dichloroethene	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
cis-1,2-Dichloroethene	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
trans-1,2-Dichloroethene	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART

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Geosyntec Consultants Inc.
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Kennesaw GA, 30144
Attention: Mr. Brian Jacobson

April 01, 2015

Report No.: AYC0580
Client ID: Trip Blank
Date/Time Sampled: 3/16/2015 12:00:00AM
Matrix: Ground Water

Project: General Chemical
Lab Number ID: AYC0580-10
Date/Time Received: 3/19/2015 10:20:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Volatile Organic Compounds by EPA 8260										
1,2-Dichloropropane	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
1,3-Dichloropropane	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
2,2-Dichloropropane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
1,1-Dichloropropene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
cis-1,3-Dichloropropene	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
trans-1,3-Dichloropropene	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Ethylbenzene	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Ethyl Methacrylate	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Hexachlorobutadiene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
p-Isopropyltoluene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Hexachloroethane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Iodomethane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Isopropylbenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Methacrylonitrile	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Methyl Acrylate	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Methyl Butyl Ketone (2-Hexanone)	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Methylene Chloride	ND	5.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Methyl Ethyl Ketone (2-Butanone)	ND	100	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Methyl Methacrylate	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
4-Methyl-2-pentanone (MIBK)	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Methyl-tert-Butyl Ether	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Naphthalene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
2-Nitropropane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Propionitrile (Ethyl Cyanide)	ND	20	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
n-Propylbenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Styrene	ND	5.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
1,1,1,2-Tetrachloroethane	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Tetrachloroethene	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Tetrahydrofuran	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Toluene	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
1,2,3-Trichlorobenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
1,2,4-Trichlorobenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
1,1,1-Trichloroethane	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
1,1,2-Trichloroethane	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Trichloroethene	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART

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Attention: Mr. Brian Jacobson

April 01, 2015

Report No.: AYC0580
Client ID: Trip Blank
Date/Time Sampled: 3/16/2015 12:00:00AM
Matrix: Ground Water

Project: General Chemical
Lab Number ID: AYC0580-10
Date/Time Received: 3/19/2015 10:20:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Volatile Organic Compounds by EPA 8260										
Trichlorofluoromethane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
1,2,3-Trichloropropane	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
1,2,4-Trimethylbenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
1,3,5-Trimethylbenzene	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Vinyl Acetate	ND	10	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Vinyl Chloride	ND	2.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
m+p-Xylene	ND	5.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
o-Xylene	ND	5.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Xylenes, total	ND	5.0	ug/L	EPA 8260B		1	3/23/15 8:45	3/23/15 11:16	5030589	ART
Surrogate: Dibromofluoromethane	*98 %*	*80-120*		*EPA 8260B*			*3/23/15 8:45*	*3/23/15 11:16*	*5030589*	
Surrogate: 1,2-Dichloroethane-d4	*98 %*	*78-120*		*EPA 8260B*			*3/23/15 8:45*	*3/23/15 11:16*	*5030589*	
Surrogate: Toluene-d8	*99 %*	*80-120*		*EPA 8260B*			*3/23/15 8:45*	*3/23/15 11:16*	*5030589*	
Surrogate: 4-Bromofluorobenzene	*103 %*	*80-120*		*EPA 8260B*			*3/23/15 8:45*	*3/23/15 11:16*	*5030589*	

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April 01, 2015

Report No.: AYC0580
Client ID: EPW-02-0315
Date/Time Sampled: 3/17/2015 11:05:00AM
Matrix: Ground Water

Project: General Chemical
Lab Number ID: AYC0580-11
Date/Time Received: 3/19/2015 10:20:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Inorganic Anions										
Sulfate	24	5.0	mg/L	EPA 9056A		1	3/21/15 5:16	3/21/15 5:16	5030572	TAK
Metals, Total										
Aluminum	ND	0.100	mg/L	EPA 6010C		1	3/24/15 9:55	3/24/15 19:49	5030620	FBS

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Attention: Mr. Brian Jacobson

April 01, 2015

Report No.: AYC0580
Client ID: GCW-01D-0315
Date/Time Sampled: 3/17/2015 11:50:00AM
Matrix: Ground Water

Project: General Chemical
Lab Number ID: AYC0580-12
Date/Time Received: 3/19/2015 10:20:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Inorganic Anions										
Sulfate	210	50	mg/L	EPA 9056A		10	3/21/15 3:09	3/21/15 3:09	5030572	TAK
Metals, Total										
Aluminum	5.95	0.100	mg/L	EPA 6010C		1	3/24/15 9:55	3/24/15 19:53	5030620	FBS

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April 01, 2015

Report No.: AYC0580
Client ID: Dup-2-0315
Date/Time Sampled: 3/17/2015 12:00:00AM
Matrix: Ground Water

Project: General Chemical
Lab Number ID: AYC0580-13
Date/Time Received: 3/19/2015 10:20:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Inorganic Anions										
Sulfate	230	50	mg/L	EPA 9056A		10	3/21/15 5:58	3/21/15 5:58	5030572	TAK
Metals, Total										
Aluminum	5.81	0.100	mg/L	EPA 6010C		1	3/24/15 9:55	3/24/15 19:56	5030620	FBS

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April 01, 2015

Report No.: AYC0580
Client ID: OW-1A-0315
Date/Time Sampled: 3/17/2015 12:35:00PM
Matrix: Ground Water

Project: General Chemical
Lab Number ID: AYC0580-14
Date/Time Received: 3/19/2015 10:20:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Inorganic Anions										
Sulfate	55	10	mg/L	EPA 9056A		2	3/21/15 6:20	3/21/15 6:20	5030572	TAK
Metals, Total										
Aluminum	0.763	0.100	mg/L	EPA 6010C		1	3/25/15 10:05	3/25/15 14:17	5030658	FBS

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April 01, 2015

Report No.: AYC0580
Client ID: SW-04-0315 SW-04A
Date/Time Sampled: 3/17/2015 2:20:00PM
Matrix: Storm Water

Project: General Chemical
Lab Number ID: AYC0580-15
Date/Time Received: 3/19/2015 10:20:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Inorganic Anions										
Sulfate	160	25	mg/L	EPA 9056A		5	3/30/15 13:23	3/30/15 13:23	5030572	TAK
Metals, Total										
Aluminum	7.25	0.100	mg/L	EPA 6010C		1	3/25/15 10:05	3/25/15 14:20	5030658	FBS

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April 01, 2015

Report No.: AYC0580
Client ID: SW-07-0315
Date/Time Sampled: 3/17/2015 2:55:00PM
Matrix: Storm Water

Project: General Chemical
Lab Number ID: AYC0580-16
Date/Time Received: 3/19/2015 10:20:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Inorganic Anions										
Sulfate	500	100	mg/L	EPA 9056A		20	3/30/15 13:44	3/30/15 13:44	5030572	TAK
Metals, Total										
Aluminum	35.1	0.100	mg/L	EPA 6010C		1	3/25/15 10:05	3/25/15 13:42	5030658	FBS

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April 01, 2015

Report No.: AYC0580
Client ID: SW-06-0315
Date/Time Sampled: 3/17/2015 1:36:00PM
Matrix: Storm Water

Project: General Chemical
Lab Number ID: AYC0580-17
Date/Time Received: 3/19/2015 10:20:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Inorganic Anions										
Sulfate	2000	500	mg/L	EPA 9056A		100	3/21/15 7:23	3/21/15 7:23	5030572	TAK
Metals, Total										
Aluminum	172	0.100	mg/L	EPA 6010C		1	3/25/15 10:05	3/25/15 14:24	5030658	FBS

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April 01, 2015

Report No.: AYC0580
Client ID: SW-05-0315 SW-05A
Date/Time Sampled: 3/17/2015 2:01:00PM
Matrix: Storm Water

Project: General Chemical
Lab Number ID: AYC0580-18
Date/Time Received: 3/19/2015 10:20:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
Inorganic Anions										
Sulfate	380	50	mg/L	EPA 9056A		10	3/21/15 8:06	3/21/15 8:06	5030572	TAK
Metals, Total										
Aluminum	20.0	0.100	mg/L	EPA 6010C		1	3/25/15 10:05	3/25/15 14:27	5030658	FBS

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April 01, 2015

Report No.: AYC0580

Inorganic Anions - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5030572 - EPA 9056A										
Blank (5030572-BLK1)					Prepared & Analyzed: 03/20/15					
Sulfate	ND	5.0	mg/L							
LCS (5030572-BS1)					Prepared & Analyzed: 03/20/15					
Sulfate	9.73	5.0	mg/L	10.000		97	90-110			
Matrix Spike (5030572-MS1)		**Source: AYC0580-08**			Prepared & Analyzed: 03/21/15					
Sulfate	32.9	5.0	mg/L	10.000	26.3	66	90-110			QM-05
Matrix Spike (5030572-MS2)		**Source: AYC0580-11**			Prepared & Analyzed: 03/21/15					
Sulfate	31.4	5.0	mg/L	10.000	24.1	72	90-110			QM-05
Matrix Spike Dup (5030572-MSD1)		**Source: AYC0580-08**			Prepared & Analyzed: 03/21/15					
Sulfate	32.8	5.0	mg/L	10.000	26.3	65	90-110	0.3	15	QM-05

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Report No.: AYC0580

Metals, Total - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5030620 - EPA 3010A										
Blank (5030620-BLK1)					Prepared & Analyzed: 03/24/15					
Aluminum	ND	0.100	mg/L							
LCS (5030620-BS1)					Prepared & Analyzed: 03/24/15					
Aluminum	1.01	0.100	mg/L	1.0000		101	80-120			
Matrix Spike (5030620-MS1)		**Source: AYC0580-03**			Prepared & Analyzed: 03/24/15					
Aluminum	197	0.100	mg/L	1.0000	193	440	75-125			QM-02
Matrix Spike Dup (5030620-MSD1)		**Source: AYC0580-03**			Prepared & Analyzed: 03/24/15					
Aluminum	190	0.100	mg/L	1.0000	193	0	75-125	4	20	QM-02
Post Spike (5030620-PS1)		**Source: AYC0580-03**			Prepared & Analyzed: 03/24/15					
Aluminum	191		mg/L	1.0000	193	0	80-120			QM-02
Batch 5030658 - EPA 3010A										
Blank (5030658-BLK1)					Prepared & Analyzed: 03/25/15					
Aluminum	ND	0.100	mg/L							
LCS (5030658-BS1)					Prepared & Analyzed: 03/25/15					
Aluminum	1.04	0.100	mg/L	1.0000		104	80-120			
Matrix Spike (5030658-MS1)		**Source: AYC0580-16**			Prepared & Analyzed: 03/25/15					
Aluminum	36.9	0.100	mg/L	1.0000	35.1	182	75-125			QM-02
Matrix Spike Dup (5030658-MSD1)		**Source: AYC0580-16**			Prepared & Analyzed: 03/25/15					
Aluminum	36.2	0.100	mg/L	1.0000	35.1	114	75-125	2	20	

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Metals, Total - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5030658 - EPA 3010A										
Post Spike (5030658-PS1)		**Source: AYC0580-16**			Prepared & Analyzed: 03/25/15					
Aluminum	36.7		mg/L	1.0000	35.1	163	80-120			QM-02

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April 01, 2015

Report No.: AYC0580

Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5030589 - EPA 5030B										
Blank (5030589-BLK1)					Prepared & Analyzed: 03/23/15					
Acetone	ND	100	ug/L							
Acrolein	ND	50	ug/L							
Acrylonitrile	ND	50	ug/L							
Allyl Chloride (3-Chloropropylene)	ND	10	ug/L							
Benzene	ND	2.0	ug/L							
Bromobenzene	ND	10	ug/L							
Bromochloromethane	ND	10	ug/L							
Bromodichloromethane	ND	10	ug/L							
Bromoform	ND	10	ug/L							
Bromomethane	ND	10	ug/L							
n-Butylbenzene	ND	10	ug/L							
sec-Butylbenzene	ND	10	ug/L							
tert-Butylbenzene	ND	10	ug/L							
Carbon Disulfide	ND	10	ug/L							
Carbon Tetrachloride	ND	2.0	ug/L							
Chlorobenzene	ND	10	ug/L							
1-Chlorobutane	ND	10	ug/L							
Chloroethane	ND	5.0	ug/L							
Chloroform	ND	2.0	ug/L							
Chloromethane	ND	10	ug/L							
2-Chlorotoluene	ND	10	ug/L							
4-Chlorotoluene	ND	10	ug/L							
Dibromochloromethane	ND	10	ug/L							
1,2-Dibromo-3-chloropropane	ND	10	ug/L							
1,2-Dibromoethane	ND	10	ug/L							
Dibromomethane	ND	10	ug/L							
1,2-Dichlorobenzene	ND	10	ug/L							
1,3-Dichlorobenzene	ND	10	ug/L							
1,4-Dichlorobenzene	ND	10	ug/L							
trans-1,4-Dichloro-2-butene	ND	5.0	ug/L							
Dichlorodifluoromethane	ND	10	ug/L							
1,1-Dichloroethane	ND	2.0	ug/L							
1,2-Dichloroethane	ND	2.0	ug/L							
1,1-Dichloroethene	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	2.0	ug/L							
trans-1,2-Dichloroethene	ND	2.0	ug/L							
1,2-Dichloropropane	ND	2.0	ug/L							
1,3-Dichloropropane	ND	2.0	ug/L							
2,2-Dichloropropane	ND	10	ug/L							
1,1-Dichloropropene	ND	10	ug/L							
cis-1,3-Dichloropropene	ND	2.0	ug/L							

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Report No.: AYC0580

Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5030589 - EPA 5030B										
Blank (5030589-BLK1)					Prepared & Analyzed: 03/23/15					
trans-1,3-Dichloropropene	ND	2.0	ug/L							
Ethylbenzene	ND	2.0	ug/L							
Ethyl Methacrylate	ND	10	ug/L							
Hexachlorobutadiene	ND	10	ug/L							
p-Isopropyltoluene	ND	10	ug/L							
Hexachloroethane	ND	10	ug/L							
Iodomethane	ND	10	ug/L							
Isopropylbenzene	ND	10	ug/L							
Methacrylonitrile	ND	10	ug/L							
Methyl Acrylate	ND	10	ug/L							
Methyl Butyl Ketone (2-Hexanone)	ND	10	ug/L							
Methylene Chloride	ND	5.0	ug/L							
Methyl Ethyl Ketone (2-Butanone)	ND	100	ug/L							
Methyl Methacrylate	ND	10	ug/L							
4-Methyl-2-pentanone (MIBK)	ND	10	ug/L							
Methyl-tert-Butyl Ether	ND	10	ug/L							
Naphthalene	ND	10	ug/L							
2-Nitropropane	ND	10	ug/L							
Propionitrile (Ethyl Cyanide)	ND	20	ug/L							
n-Propylbenzene	ND	10	ug/L							
Styrene	ND	5.0	ug/L							
1,1,1,2-Tetrachloroethane	ND	2.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	2.0	ug/L							
Tetrachloroethene	ND	2.0	ug/L							
Tetrahydrofuran	ND	10	ug/L							
Toluene	ND	2.0	ug/L							
1,2,3-Trichlorobenzene	ND	10	ug/L							
1,2,4-Trichlorobenzene	ND	10	ug/L							
1,1,1-Trichloroethane	ND	2.0	ug/L							
1,1,2-Trichloroethane	ND	2.0	ug/L							
Trichloroethene	ND	2.0	ug/L							
Trichlorofluoromethane	ND	10	ug/L							
1,2,3-Trichloropropane	ND	10	ug/L							
1,2,4-Trimethylbenzene	ND	10	ug/L							
1,3,5-Trimethylbenzene	ND	10	ug/L							
Vinyl Acetate	ND	10	ug/L							
Vinyl Chloride	ND	2.0	ug/L							
m+p-Xylene	ND	5.0	ug/L							
o-Xylene	ND	5.0	ug/L							
Xylenes, total	ND	5.0	ug/L							
Surrogate: Dibromofluoromethane	*49*		*ug/L*	*50.000*		*99*	*80-120*			

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April 01, 2015

Report No.: AYC0580

Volatile Organic Compounds by EPA 8260 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5030589 - EPA 5030B										
Blank (5030589-BLK1)					Prepared & Analyzed: 03/23/15					
Surrogate: 1,2-Dichloroethane-d4	*48*		*ug/L*	*50.000*		*96*	*78-120*			
Surrogate: Toluene-d8	*50*		*ug/L*	*50.000*		*100*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*52*		*ug/L*	*50.000*		*103*	*80-120*			
LCS (5030589-BS1)					Prepared & Analyzed: 03/23/15					
Benzene	48		ug/L	50.000		96	67-134			
Chlorobenzene	49		ug/L	50.000		98	69-122			
1,1-Dichloroethene	48		ug/L	50.000		96	58-142			
Toluene	46		ug/L	50.000		93	68-127			
Trichloroethene	49		ug/L	50.000		99	72-132			
Surrogate: Dibromofluoromethane	*49*		*ug/L*	*50.000*		*97*	*80-120*			
Surrogate: 1,2-Dichloroethane-d4	*49*		*ug/L*	*50.000*		*97*	*78-120*			
Surrogate: Toluene-d8	*49*		*ug/L*	*50.000*		*98*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*52*		*ug/L*	*50.000*		*104*	*80-120*			
Matrix Spike (5030589-MS1)		**Source: AYC0550-07**			Prepared & Analyzed: 03/23/15					
Benzene	52		ug/L	50.000	ND	105	67-134			
Chlorobenzene	52		ug/L	50.000	ND	104	69-122			
1,1-Dichloroethene	47		ug/L	50.000	ND	94	58-142			
Toluene	51		ug/L	50.000	ND	101	68-127			
Trichloroethene	52		ug/L	50.000	ND	105	72-132			
Surrogate: Dibromofluoromethane	*49*		*ug/L*	*50.000*		*97*	*80-120*			
Surrogate: 1,2-Dichloroethane-d4	*48*		*ug/L*	*50.000*		*97*	*78-120*			
Surrogate: Toluene-d8	*50*		*ug/L*	*50.000*		*100*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*51*		*ug/L*	*50.000*		*101*	*80-120*			
Matrix Spike Dup (5030589-MSD1)		**Source: AYC0550-07**			Prepared & Analyzed: 03/23/15					
Benzene	51		ug/L	50.000	ND	102	67-134	3	9	
Chlorobenzene	50		ug/L	50.000	ND	101	69-122	3	13	
1,1-Dichloroethene	51		ug/L	50.000	ND	101	58-142	7	9	
Toluene	51		ug/L	50.000	ND	101	68-127	0.08	9	
Trichloroethene	52		ug/L	50.000	ND	104	72-132	1	11	
Surrogate: Dibromofluoromethane	*50*		*ug/L*	*50.000*		*99*	*80-120*			
Surrogate: 1,2-Dichloroethane-d4	*49*		*ug/L*	*50.000*		*98*	*78-120*			
Surrogate: Toluene-d8	*49*		*ug/L*	*50.000*		*99*	*80-120*			
Surrogate: 4-Bromofluorobenzene	*52*		*ug/L*	*50.000*		*104*	*80-120*			

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April 01, 2015

Report No.: AYC0580

Semivolatile Organic Compounds by EPA 8270 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5030594 - EPA 3510C										
Blank (5030594-BLK1)					Prepared: 03/23/15 Analyzed: 03/24/15					
Acenaphthene	ND	10	ug/L							
Acenaphthylene	ND	10	ug/L							
Anthracene	ND	10	ug/L							
Benzo(a)anthracene	ND	10	ug/L							
Benzo(a)pyrene	ND	10	ug/L							
Benzo(b)fluoranthene	ND	10	ug/L							
Benzo(ghi)perylene	ND	10	ug/L							
Benzo(k)fluoranthene	ND	10	ug/L							
Benzoic acid	ND	50	ug/L							
Benzyl alcohol	ND	20	ug/L							
Benzyl butyl phthalate	ND	10	ug/L							
4-Bromophenyl phenyl ether	ND	10	ug/L							
Di-n-butyl phthalate	ND	10	ug/L							
4-Chloroaniline	ND	20	ug/L							
Bis(2-chloroethoxy)methane	ND	10	ug/L							
Bis(2-chloroethyl)ether	ND	10	ug/L							
Bis(2-chloroisopropyl)ether	ND	10	ug/L							
4-Chloro-3-methylphenol	ND	10	ug/L							
2-Chloronaphthalene	ND	10	ug/L							
2-Chlorophenol	ND	10	ug/L							
4-Chlorophenyl phenyl ether	ND	10	ug/L							
Chrysene	ND	10	ug/L							
Dibenzo(a,h)anthracene	ND	10	ug/L							
Dibenzofuran	ND	10	ug/L							
1,2-Dichlorobenzene	ND	10	ug/L							
1,3-Dichlorobenzene	ND	10	ug/L							
1,4-Dichlorobenzene	ND	10	ug/L							
3,3´-Dichlorobenzidine	ND	20	ug/L							
2,4-Dichlorophenol	ND	10	ug/L							
Diethyl phthalate	ND	10	ug/L							
2,4-Dimethylphenol	ND	10	ug/L							
Dimethyl phthalate	ND	10	ug/L							
4,6-Dinitro-2-methylphenol	ND	50	ug/L							
2,4-Dinitrophenol	ND	50	ug/L							
2,4-Dinitrotoluene	ND	20	ug/L							
2,6-Dinitrotoluene	ND	20	ug/L							
Bis(2-ethylhexyl)phthalate	ND	10	ug/L							
Fluoranthene	ND	10	ug/L							
Fluorene	ND	10	ug/L							
Hexachlorobenzene	ND	10	ug/L							
Hexachlorobutadiene	ND	10	ug/L							

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Kennesaw GA, 30144
Attention: Mr. Brian Jacobson

April 01, 2015

Report No.: AYC0580

Semivolatile Organic Compounds by EPA 8270 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5030594 - EPA 3510C										
Blank (5030594-BLK1)					Prepared: 03/23/15 Analyzed: 03/24/15					
Hexachlorocyclopentadiene	ND	10	ug/L							
Hexachloroethane	ND	10	ug/L							
Indeno(1,2,3-cd)pyrene	ND	10	ug/L							
Isophorone	ND	10	ug/L							
2-Methylnaphthalene	ND	10	ug/L							
2-Methylphenol (o-cresol)	ND	10	ug/L							
3+4-Methylphenol (m+p-cresol)	ND	10	ug/L							
Naphthalene	ND	10	ug/L							
2-Nitroaniline	ND	50	ug/L							
3-Nitroaniline	ND	50	ug/L							
4-Nitroaniline	ND	50	ug/L							
Nitrobenzene	ND	10	ug/L							
2-Nitrophenol	ND	50	ug/L							
4-Nitrophenol	ND	50	ug/L							
N-Nitrosodimethylamine	ND	10	ug/L							
N-Nitrosodiphenylamine/Diphenylamine	ND	10	ug/L							
N-Nitrosodi-n-propylamine	ND	10	ug/L							
Di-n-octyl phthalate	ND	10	ug/L							
Pentachlorophenol	ND	20	ug/L							
Phenanthrene	ND	10	ug/L							
Phenol	ND	10	ug/L							
Pyrene	ND	10	ug/L							
1,2,4-Trichlorobenzene	ND	10	ug/L							
2,4,5-Trichlorophenol	ND	10	ug/L							
2,4,6-Trichlorophenol	ND	10	ug/L							
Surrogate: 2-Fluorophenol	*31*		*ug/L*	*100.00*		*31*	*11-120*			
Surrogate: Phenol-d6	*23*		*ug/L*	*100.00*		*23*	*10-120*			
Surrogate: Nitrobenzene-d5	*21*		*ug/L*	*50.000*		*42*	*15-120*			
Surrogate: 2-Fluorobiphenyl	*20*		*ug/L*	*50.000*		*41*	*23-120*			
Surrogate: 2,4,6-Tribromophenol	*55*		*ug/L*	*100.00*		*55*	*36-120*			
Surrogate: p-Terphenyl-dl4	*39*		*ug/L*	*50.000*		*77*	*53-121*			

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April 01, 2015

Report No.: AYC0580

Semivolatile Organic Compounds by EPA 8270 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5030594 - EPA 3510C										
LCS (5030594-BS1)					Prepared: 03/23/15 Analyzed: 03/24/15					
Acenaphthene	5.8	10	ug/L	50.000		12	47-120			CN
4-Chloro-3-methylphenol	27	10	ug/L	100.00		27	43-120			CN
2-Chlorophenol	21	10	ug/L	100.00		21	30-120			CN
1,4-Dichlorobenzene	3.5	10	ug/L	50.000		7	25-120			CN
2,4-Dinitrotoluene	12	20	ug/L	50.000		24	55-120			CN
4-Nitrophenol	14	50	ug/L	100.00		14	14-120			CN
N-Nitrosodi-n-propylamine	7.0	10	ug/L	50.000		14	38-120			CN
Pentachlorophenol	32	20	ug/L	100.00		32	47-120			CN
Phenol	16	10	ug/L	100.00		16	12-120			CN
Pyrene	18	10	ug/L	50.000		36	53-120			CN
1,2,4-Trichlorobenzene	3.7	10	ug/L	50.000		7	29-120			CN
Surrogate: 2-Fluorophenol	*17*		*ug/L*	*100.00*		*17*	*11-120*			*CN*
Surrogate: Phenol-d6	*13*		*ug/L*	*100.00*		*13*	*10-120*			*CN*
Surrogate: Nitrobenzene-d5	*4.4*		*ug/L*	*50.000*		*9*	*15-120*			*CN*
Surrogate: 2-Fluorobiphenyl	*4.9*		*ug/L*	*50.000*		*10*	*23-120*			*CN*
Surrogate: 2,4,6-Tribromophenol	*28*		*ug/L*	*100.00*		*28*	*36-120*			*CN*
Surrogate: p-Terphenyl-dl4	*23*		*ug/L*	*50.000*		*46*	*53-121*			*CN*
Matrix Spike (5030594-MS1)		**Source: AYC0603-24**			Prepared: 03/23/15 Analyzed: 03/24/15					
Acenaphthene	17	10	ug/L	50.000	ND	34	40-120			QM-10
4-Chloro-3-methylphenol	43	10	ug/L	100.00	ND	43	45-120			QM-10
2-Chlorophenol	35	10	ug/L	100.00	ND	35	33-120			
1,4-Dichlorobenzene	12	10	ug/L	50.000	ND	24	10-120			
2,4-Dinitrotoluene	22	20	ug/L	50.000	ND	44	46-122			QM-10
4-Nitrophenol	23	50	ug/L	100.00	ND	23	15-120			
N-Nitrosodi-n-propylamine	19	10	ug/L	50.000	ND	38	35-120			
Pentachlorophenol	56	20	ug/L	100.00	ND	56	40-120			
Phenol	19	10	ug/L	100.00	ND	19	12-120			
Pyrene	28	10	ug/L	50.000	ND	56	54-120			
1,2,4-Trichlorobenzene	13	10	ug/L	50.000	ND	26	12-120			
Surrogate: 2-Fluorophenol	*21*		*ug/L*	*100.00*		*21*	*11-120*			
Surrogate: Phenol-d6	*16*		*ug/L*	*100.00*		*16*	*10-120*			
Surrogate: Nitrobenzene-d5	*14*		*ug/L*	*50.000*		*29*	*15-120*			
Surrogate: 2-Fluorobiphenyl	*15*		*ug/L*	*50.000*		*30*	*23-120*			
Surrogate: 2,4,6-Tribromophenol	*50*		*ug/L*	*100.00*		*50*	*36-120*			
Surrogate: p-Terphenyl-dl4	*30*		*ug/L*	*50.000*		*59*	*53-121*			

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Attention: Mr. Brian Jacobson

April 01, 2015

Report No.: AYC0580

Semivolatile Organic Compounds by EPA 8270 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5030594 - EPA 3510C										
Matrix Spike Dup (5030594-MSD1)		**Source: AYC0603-24**			Prepared: 03/23/15 Analyzed: 03/24/15					
Acenaphthene	22	10	ug/L	50.000	ND	44	40-120	25	29	
4-Chloro-3-methylphenol	59	10	ug/L	100.00	ND	59	45-120	31	29	QM-10
2-Chlorophenol	42	10	ug/L	100.00	ND	42	33-120	17	32	
1,4-Dichlorobenzene	14	10	ug/L	50.000	ND	27	10-120	15	31	
2,4-Dinitrotoluene	30	20	ug/L	50.000	ND	60	46-122	30	26	QM-10
4-Nitrophenol	30	50	ug/L	100.00	ND	30	15-120	26	35	
N-Nitrosodi-n-propylamine	24	10	ug/L	50.000	ND	48	35-120	22	28	
Pentachlorophenol	73	20	ug/L	100.00	ND	73	40-120	27	27	
Phenol	22	10	ug/L	100.00	ND	22	12-120	12	30	
Pyrene	36	10	ug/L	50.000	ND	71	54-120	24	21	QM-10
1,2,4-Trichlorobenzene	16	10	ug/L	50.000	ND	32	12-120	18	32	
Surrogate: 2-Fluorophenol	*23*		*ug/L*	*100.00*		*23*	*11-120*			
Surrogate: Phenol-d6	*18*		*ug/L*	*100.00*		*18*	*10-120*			
Surrogate: Nitrobenzene-d5	*19*		*ug/L*	*50.000*		*37*	*15-120*			
Surrogate: 2-Fluorobiphenyl	*19*		*ug/L*	*50.000*		*39*	*23-120*			
Surrogate: 2,4,6-Tribromophenol	*67*		*ug/L*	*100.00*		*67*	*36-120*			
Surrogate: p-Terphenyl-dl4	*37*		*ug/L*	*50.000*		*74*	*53-121*			
Batch 5030723 - EPA 3510C										
Blank (5030723-BLK1)					Prepared: 03/26/15 Analyzed: 03/27/15					
Acenaphthene	ND	20	ug/L							
Acenaphthylene	ND	20	ug/L							
Anthracene	ND	20	ug/L							
Benzo(a)anthracene	ND	20	ug/L							
Benzo(a)pyrene	ND	20	ug/L							
Benzo(b)fluoranthene	ND	20	ug/L							
Benzo(ghi)perylene	ND	20	ug/L							
Benzo(k)fluoranthene	ND	20	ug/L							
Benzoic acid	ND	100	ug/L							
Benzyl alcohol	ND	40	ug/L							
Benzyl butyl phthalate	ND	20	ug/L							
4-Bromophenyl phenyl ether	ND	20	ug/L							
Di-n-butyl phthalate	ND	20	ug/L							
4-Chloroaniline	ND	40	ug/L							
Bis(2-chloroethoxy)methane	ND	20	ug/L							
Bis(2-chloroethyl)ether	ND	20	ug/L							
Bis(2-chloroisopropyl)ether	ND	20	ug/L							
4-Chloro-3-methylphenol	ND	20	ug/L							
2-Chloronaphthalene	ND	20	ug/L							
2-Chlorophenol	ND	20	ug/L							
4-Chlorophenyl phenyl ether	ND	20	ug/L							

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Semivolatile Organic Compounds by EPA 8270 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5030723 - EPA 3510C										
Blank (5030723-BLK1)					Prepared: 03/26/15 Analyzed: 03/27/15					
Chrysene	ND	20	ug/L							
Dibenzo(a,h)anthracene	ND	20	ug/L							
Dibenzofuran	ND	20	ug/L							
1,2-Dichlorobenzene	ND	20	ug/L							
1,3-Dichlorobenzene	ND	20	ug/L							
1,4-Dichlorobenzene	ND	20	ug/L							
3,3´-Dichlorobenzidine	ND	40	ug/L							
2,4-Dichlorophenol	ND	20	ug/L							
Diethyl phthalate	ND	20	ug/L							
2,4-Dimethylphenol	ND	20	ug/L							
Dimethyl phthalate	ND	20	ug/L							
4,6-Dinitro-2-methylphenol	ND	100	ug/L							
2,4-Dinitrophenol	ND	100	ug/L							
2,4-Dinitrotoluene	ND	40	ug/L							
2,6-Dinitrotoluene	ND	40	ug/L							
Bis(2-ethylhexyl)phthalate	ND	20	ug/L							
Fluoranthene	ND	20	ug/L							
Fluorene	ND	20	ug/L							
Hexachlorobenzene	ND	20	ug/L							
Hexachlorobutadiene	ND	20	ug/L							
Hexachlorocyclopentadiene	ND	20	ug/L							
Hexachloroethane	ND	20	ug/L							
Indeno(1,2,3-cd)pyrene	ND	20	ug/L							
Isophorone	ND	20	ug/L							
2-Methylnaphthalene	ND	20	ug/L							
2-Methylphenol (o-cresol)	ND	20	ug/L							
3+4-Methylphenol (m+p-cresol)	ND	20	ug/L							
Naphthalene	ND	20	ug/L							
2-Nitroaniline	ND	100	ug/L							
3-Nitroaniline	ND	100	ug/L							
4-Nitroaniline	ND	100	ug/L							
Nitrobenzene	ND	20	ug/L							
2-Nitrophenol	ND	100	ug/L							
4-Nitrophenol	ND	100	ug/L							
N-Nitrosodimethylamine	ND	20	ug/L							
N-Nitrosodiphenylamine/Diphenylamine	ND	20	ug/L							
N-Nitrosodi-n-propylamine	ND	20	ug/L							
Di-n-octyl phthalate	ND	20	ug/L							
Pentachlorophenol	ND	40	ug/L							
Phenanthrene	ND	20	ug/L							
Phenol	ND	20	ug/L							

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Semivolatile Organic Compounds by EPA 8270 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5030723 - EPA 3510C										
Blank (5030723-BLK1)					Prepared: 03/26/15 Analyzed: 03/27/15					
Pyrene	ND	20	ug/L							
1,2,4-Trichlorobenzene	ND	20	ug/L							
2,4,5-Trichlorophenol	ND	20	ug/L							
2,4,6-Trichlorophenol	ND	20	ug/L							
Surrogate: 2-Fluorophenol	*99*		*ug/L*	*200.00*		*50*	*11-120*			
Surrogate: Phenol-d6	*81*		*ug/L*	*200.00*		*41*	*10-120*			
Surrogate: Nitrobenzene-d5	*64*		*ug/L*	*100.00*		*64*	*15-120*			
Surrogate: 2-Fluorobiphenyl	*67*		*ug/L*	*100.00*		*67*	*23-120*			
Surrogate: 2,4,6-Tribromophenol	*150*		*ug/L*	*200.00*		*74*	*36-120*			
Surrogate: p-Terphenyl-dl4	*79*		*ug/L*	*100.00*		*79*	*53-121*			
LCS (5030723-BS1)					Prepared: 03/26/15 Analyzed: 03/27/15					
Acenaphthene	88	20	ug/L	100.00		88	47-120			
4-Chloro-3-methylphenol	210	20	ug/L	200.00		104	43-120			
2-Chlorophenol	170	20	ug/L	200.00		83	30-120			
1,4-Dichlorobenzene	66	20	ug/L	100.00		66	25-120			
2,4-Dinitrotoluene	91	40	ug/L	100.00		91	55-120			
4-Nitrophenol	100	100	ug/L	200.00		50	14-120			
N-Nitrosodi-n-propylamine	96	20	ug/L	100.00		96	38-120			
Pentachlorophenol	180	40	ug/L	200.00		88	47-120			
Phenol	110	20	ug/L	200.00		57	12-120			
Pyrene	93	20	ug/L	100.00		93	53-120			
1,2,4-Trichlorobenzene	76	20	ug/L	100.00		76	29-120			
Surrogate: 2-Fluorophenol	*110*		*ug/L*	*200.00*		*56*	*11-120*			
Surrogate: Phenol-d6	*98*		*ug/L*	*200.00*		*49*	*10-120*			
Surrogate: Nitrobenzene-d5	*74*		*ug/L*	*100.00*		*74*	*15-120*			
Surrogate: 2-Fluorobiphenyl	*83*		*ug/L*	*100.00*		*83*	*23-120*			
Surrogate: 2,4,6-Tribromophenol	*190*		*ug/L*	*200.00*		*96*	*36-120*			
Surrogate: p-Terphenyl-dl4	*95*		*ug/L*	*100.00*		*95*	*53-121*			

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Report No.: AYC0580

Organochlorine Pesticides by EPA 8081 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5030593 - EPA 3510C										
Blank (5030593-BLK1)					Prepared: 03/23/15 Analyzed: 03/26/15					
Aldrin	ND	0.1	ug/L							
BHC-alpha	ND	0.1	ug/L							
BHC-beta	ND	0.1	ug/L							
BHC-delta	ND	0.1	ug/L							
BHC-gamma (Lindane)	ND	0.1	ug/L							
Chlordane	ND	0.5	ug/L							
4,4'-DDD	ND	0.1	ug/L							
4,4'-DDE	ND	0.1	ug/L							
4,4'-DDT	ND	0.1	ug/L							
Dieldrin	ND	0.1	ug/L							
Endosulfan I	ND	0.5	ug/L							
Endosulfan II	ND	0.5	ug/L							
Endosulfan sulfate	ND	0.5	ug/L							
Endrin	ND	0.2	ug/L							
Endrin aldehyde	ND	0.2	ug/L							
Endrin ketone	ND	0.2	ug/L							
Heptachlor	ND	0.1	ug/L							
Heptachlor epoxide	ND	0.1	ug/L							
Methoxychlor	ND	0.3	ug/L							
Toxaphene	ND	2.0	ug/L							
Surrogate: Tetrachloro-m-xylene	*0.617*		*ug/L*	*1.0000*		*62*	*27-148*			
Surrogate: Decachlorobiphenyl	*0.848*		*ug/L*	*1.0000*		*85*	*10-155*			
LCS (5030593-BS1)					Prepared: 03/23/15 Analyzed: 03/26/15					
Aldrin	1.9	0.1	ug/L	2.5000		75	42-153			
BHC-alpha	2.0	0.1	ug/L	2.5000		78	54-143			
BHC-beta	2.1	0.1	ug/L	2.5000		86	60-153			
BHC-delta	1.6	0.1	ug/L	2.5000		64	55-136			
BHC-gamma (Lindane)	2.0	0.1	ug/L	2.5000		79	53-146			
4,4'-DDD	1.9	0.1	ug/L	2.5000		76	61-167			
4,4'-DDE	2.0	0.1	ug/L	2.5000		79	57-168			
4,4'-DDT	2.0	0.1	ug/L	2.5000		80	38-191			
Dieldrin	1.9	0.1	ug/L	2.5000		78	61-151			
Endosulfan I	2.0	0.5	ug/L	2.5000		82	57-154			
Endosulfan II	1.9	0.5	ug/L	2.5000		78	58-164			
Endosulfan sulfate	2.1	0.5	ug/L	2.5000		83	59-167			
Endrin	2.0	0.2	ug/L	2.5000		82	43-165			
Endrin aldehyde	2.0	0.2	ug/L	2.5000		79	44-153			
Endrin ketone	2.1	0.2	ug/L	2.5000		85	67-141			
Heptachlor	2.0	0.1	ug/L	2.5000		78	51-161			
Heptachlor epoxide	2.0	0.1	ug/L	2.5000		81	62-156			

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Organochlorine Pesticides by EPA 8081 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5030593 - EPA 3510C										
LCS (5030593-BS1)					Prepared: 03/23/15 Analyzed: 03/26/15					
Surrogate: Tetrachloro-m-xylene	*0.671*		*ug/L*	*1.0000*		*67*	*27-148*			
Surrogate: Decachlorobiphenyl	*0.835*		*ug/L*	*1.0000*		*84*	*10-155*			
Matrix Spike (5030593-MS1)		**Source: AYC0580-04**			Prepared: 03/23/15 Analyzed: 03/26/15					
Aldrin	1.8	0.1	ug/L	2.5000	ND	70	18-148			
BHC-alpha	1.8	0.1	ug/L	2.5000	0.1	66	15-167			
BHC-beta	1.9	0.1	ug/L	2.5000	0.2	69	10-174			
BHC-delta	1.5	0.1	ug/L	2.5000	0.2	52	27-142			
BHC-gamma (Lindane)	1.8	0.1	ug/L	2.5000	0.1	68	27-143			
4,4'-DDD	2.0	0.1	ug/L	2.5000	ND	79	36-161			
4,4'-DDE	1.9	0.1	ug/L	2.5000	ND	76	10-189			
4,4'-DDT	2.1	0.1	ug/L	2.5000	ND	82	10-186			
Dieldrin	1.9	0.1	ug/L	2.5000	ND	77	31-153			
Endosulfan I	2.0	0.5	ug/L	2.5000	ND	81	20-162			
Endosulfan II	2.0	0.5	ug/L	2.5000	ND	78	36-157			
Endosulfan sulfate	2.0	0.5	ug/L	2.5000	ND	81	15-184			
Endrin	2.0	0.2	ug/L	2.5000	ND	82	28-177			
Endrin aldehyde	2.0	0.2	ug/L	2.5000	ND	81	10-152			
Endrin ketone	2.1	0.2	ug/L	2.5000	ND	82	20-166			
Heptachlor	1.8	0.1	ug/L	2.5000	ND	72	25-160			
Heptachlor epoxide	1.9	0.1	ug/L	2.5000	ND	76	35-152			
Surrogate: Tetrachloro-m-xylene	*0.650*		*ug/L*	*1.0000*		*65*	*27-148*			
Surrogate: Decachlorobiphenyl	*0.833*		*ug/L*	*1.0000*		*83*	*10-155*			
Matrix Spike Dup (5030593-MSD1)		**Source: AYC0580-04**			Prepared: 03/23/15 Analyzed: 03/26/15					
Aldrin	2.0	0.1	ug/L	2.5000	ND	81	18-148	14	39	
BHC-alpha	2.0	0.1	ug/L	2.5000	0.1	73	15-167	10	40	
BHC-beta	2.2	0.1	ug/L	2.5000	0.2	83	10-174	17	47	
BHC-delta	1.7	0.1	ug/L	2.5000	0.2	63	27-142	17	42	
BHC-gamma (Lindane)	2.1	0.1	ug/L	2.5000	0.1	80	27-143	15	32	
4,4'-DDD	2.3	0.1	ug/L	2.5000	ND	92	36-161	16	32	
4,4'-DDE	2.2	0.1	ug/L	2.5000	ND	88	10-189	14	43	
4,4'-DDT	2.3	0.1	ug/L	2.5000	ND	93	10-186	12	42	
Dieldrin	2.2	0.1	ug/L	2.5000	ND	86	31-153	11	44	
Endosulfan I	2.2	0.5	ug/L	2.5000	ND	87	20-162	7	33	
Endosulfan II	2.2	0.5	ug/L	2.5000	ND	88	36-157	12	31	
Endosulfan sulfate	2.3	0.5	ug/L	2.5000	ND	91	15-184	12	37	
Endrin	2.3	0.2	ug/L	2.5000	ND	93	28-177	13	30	
Endrin aldehyde	2.2	0.2	ug/L	2.5000	ND	90	10-152	10	37	
Endrin ketone	2.3	0.2	ug/L	2.5000	ND	94	20-166	13	43	
Heptachlor	2.0	0.1	ug/L	2.5000	ND	80	25-160	10	42	
Heptachlor epoxide	2.2	0.1	ug/L	2.5000	ND	87	35-152	13	34	

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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092
(770) 734-4200 FAX (770) 734-4201

Geosyntec Consultants Inc.
1255 Roberts Blvd N.W.
Kennesaw GA, 30144
Attention: Mr. Brian Jacobson

April 01, 2015

Report No.: AYC0580

Organochlorine Pesticides by EPA 8081 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5030593 - EPA 3510C										
Matrix Spike Dup (5030593-MSD1)		**Source: AYC0580-04**			Prepared: 03/23/15 Analyzed: 03/26/15					
Surrogate: Tetrachloro-m-xylene	*0.710*		*ug/L*	*1.0000*		*71*	*27-148*			
Surrogate: Decachlorobiphenyl	*0.983*		*ug/L*	*1.0000*		*98*	*10-155*			
Batch 5030784 - EPA 3510C										
Blank (5030784-BLK1)					Prepared & Analyzed: 03/30/15					
Aldrin	ND	0.1	ug/L							
BHC-alpha	ND	0.1	ug/L							
BHC-beta	ND	0.1	ug/L							
BHC-delta	ND	0.1	ug/L							
BHC-gamma (Lindane)	ND	0.1	ug/L							
Chlordane	ND	0.5	ug/L							
4,4'-DDD	ND	0.1	ug/L							
4,4'-DDE	ND	0.1	ug/L							
4,4'-DDT	ND	0.1	ug/L							
Dieldrin	ND	0.1	ug/L							
Endosulfan I	ND	0.5	ug/L							
Endosulfan II	ND	0.5	ug/L							
Endosulfan sulfate	ND	0.5	ug/L							
Endrin	ND	0.2	ug/L							
Endrin aldehyde	ND	0.2	ug/L							
Endrin ketone	ND	0.2	ug/L							
Heptachlor	ND	0.1	ug/L							
Heptachlor epoxide	ND	0.1	ug/L							
Methoxychlor	ND	0.3	ug/L							
Toxaphene	ND	2.0	ug/L							
Surrogate: Tetrachloro-m-xylene	*0.852*		*ug/L*	*1.0000*		*85*	*27-148*			
Surrogate: Decachlorobiphenyl	*0.869*		*ug/L*	*1.0000*		*87*	*10-155*			

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Attention: Mr. Brian Jacobson

April 01, 2015

Report No.: AYC0580

Organochlorine Pesticides by EPA 8081 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5030784 - EPA 3510C										
LCS (5030784-BS1)					Prepared & Analyzed: 03/30/15					
Aldrin	2.2	0.1	ug/L	2.5000		88	42-153			
BHC-alpha	2.2	0.1	ug/L	2.5000		87	54-143			
BHC-beta	2.3	0.1	ug/L	2.5000		94	60-153			
BHC-delta	1.6	0.1	ug/L	2.5000		66	55-136			
BHC-gamma (Lindane)	2.1	0.1	ug/L	2.5000		86	53-146			
4,4'-DDD	2.0	0.1	ug/L	2.5000		79	61-167			
4,4'-DDE	2.0	0.1	ug/L	2.5000		81	57-168			
4,4'-DDT	2.0	0.1	ug/L	2.5000		82	38-191			
Dieldrin	2.1	0.1	ug/L	2.5000		84	61-151			
Endosulfan I	2.2	0.5	ug/L	2.5000		89	57-154			
Endosulfan II	2.1	0.5	ug/L	2.5000		82	58-164			
Endosulfan sulfate	2.1	0.5	ug/L	2.5000		84	59-167			
Endrin	2.2	0.2	ug/L	2.5000		88	43-165			
Endrin aldehyde	2.0	0.2	ug/L	2.5000		81	44-153			
Endrin ketone	2.1	0.2	ug/L	2.5000		84	67-141			
Heptachlor	2.3	0.1	ug/L	2.5000		91	51-161			
Heptachlor epoxide	2.1	0.1	ug/L	2.5000		86	62-156			
Surrogate: Tetrachloro-m-xylene	*0.906*		*ug/L*	*1.0000*		*91*	*27-148*			
Surrogate: Decachlorobiphenyl	*0.838*		*ug/L*	*1.0000*		*84*	*10-155*			
Matrix Spike (5030784-MS1)		**Source: AYC0692-15**			Prepared & Analyzed: 03/30/15					
Aldrin	2.2	0.1	ug/L	2.5000	ND	90	18-148			
BHC-alpha	2.2	0.1	ug/L	2.5000	ND	89	15-167			
BHC-beta	2.4	0.1	ug/L	2.5000	ND	95	10-174			
BHC-delta	1.8	0.1	ug/L	2.5000	ND	72	27-142			
BHC-gamma (Lindane)	2.3	0.1	ug/L	2.5000	ND	90	27-143			
4,4'-DDD	2.2	0.1	ug/L	2.5000	ND	88	36-161			
4,4'-DDE	2.2	0.1	ug/L	2.5000	ND	88	10-189			
4,4'-DDT	2.3	0.1	ug/L	2.5000	ND	92	10-186			
Dieldrin	2.2	0.1	ug/L	2.5000	ND	88	31-153			
Endosulfan I	2.3	0.5	ug/L	2.5000	ND	92	20-162			
Endosulfan II	2.2	0.5	ug/L	2.5000	ND	87	36-157			
Endosulfan sulfate	2.3	0.5	ug/L	2.5000	ND	91	15-184			
Endrin	2.4	0.2	ug/L	2.5000	ND	95	28-177			
Endrin aldehyde	2.3	0.2	ug/L	2.5000	ND	90	10-152			
Endrin ketone	2.4	0.2	ug/L	2.5000	ND	96	20-166			
Heptachlor	2.3	0.1	ug/L	2.5000	ND	92	25-160			
Heptachlor epoxide	2.3	0.1	ug/L	2.5000	ND	90	35-152			
Surrogate: Tetrachloro-m-xylene	*0.833*		*ug/L*	*1.0000*		*83*	*27-148*			
Surrogate: Decachlorobiphenyl	*0.932*		*ug/L*	*1.0000*		*93*	*10-155*			

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1255 Roberts Blvd N.W.
Kennesaw GA, 30144
Attention: Mr. Brian Jacobson

April 01, 2015

Report No.: AYC0580

Organochlorine Pesticides by EPA 8081 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5030784 - EPA 3510C										
Matrix Spike Dup (5030784-MSD1)		**Source: AYC0692-15**			Prepared & Analyzed: 03/30/15					
Aldrin	2.3	0.1	ug/L	2.5000	ND	90	18-148	0.6	39	
BHC-alpha	2.2	0.1	ug/L	2.5000	ND	88	15-167	0.3	40	
BHC-beta	2.4	0.1	ug/L	2.5000	ND	94	10-174	1	47	
BHC-delta	1.8	0.1	ug/L	2.5000	ND	73	27-142	2	42	
BHC-gamma (Lindane)	2.3	0.1	ug/L	2.5000	ND	91	27-143	0.9	32	
4,4'-DDD	2.3	0.1	ug/L	2.5000	ND	92	36-161	5	32	
4,4'-DDE	2.3	0.1	ug/L	2.5000	ND	91	10-189	3	43	
4,4'-DDT	2.4	0.1	ug/L	2.5000	ND	96	10-186	4	42	
Dieldrin	2.3	0.1	ug/L	2.5000	ND	90	31-153	3	44	
Endosulfan I	2.3	0.5	ug/L	2.5000	ND	91	20-162	0.9	33	
Endosulfan II	2.3	0.5	ug/L	2.5000	ND	90	36-157	4	31	
Endosulfan sulfate	2.4	0.5	ug/L	2.5000	ND	97	15-184	7	37	
Endrin	2.4	0.2	ug/L	2.5000	ND	98	28-177	3	30	
Endrin aldehyde	2.3	0.2	ug/L	2.5000	ND	94	10-152	4	37	
Endrin ketone	2.5	0.2	ug/L	2.5000	ND	101	20-166	5	43	
Heptachlor	2.4	0.1	ug/L	2.5000	ND	94	25-160	2	42	
Heptachlor epoxide	2.3	0.1	ug/L	2.5000	ND	92	35-152	2	34	
Surrogate: Tetrachloro-m-xylene	*0.833*		*ug/L*	*1.0000*		*83*	*27-148*			
Surrogate: Decachlorobiphenyl	*1.03*		*ug/L*	*1.0000*		*103*	*10-155*			

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1255 Roberts Blvd N.W.
Kennesaw GA, 30144
Attention: Mr. Brian Jacobson

April 01, 2015

Report No.: AYC0580

PCBs by EPA 8082 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 5030675 - EPA 3510C										
Blank (5030675-BLK1)					Prepared & Analyzed: 03/25/15					
PCB 1016	ND	1.0	ug/L							
PCB 1221	ND	1.0	ug/L							
PCB 1232	ND	1.0	ug/L							
PCB 1242	ND	1.0	ug/L							
PCB 1248	ND	1.0	ug/L							
PCB 1254	ND	1.0	ug/L							
PCB 1260	ND	1.0	ug/L							
Surrogate: Decachlorobiphenyl	*0.678*		*ug/L*	*1.0000*		*68*	*17-144*			
LCS (5030675-BS1)					Prepared & Analyzed: 03/25/15					
PCB 1016	5.2	1.0	ug/L	5.0000		104	47-120			
PCB 1260	5.3	1.0	ug/L	5.0000		106	51-126			
Surrogate: Decachlorobiphenyl	*0.720*		*ug/L*	*1.0000*		*72*	*17-144*			
Matrix Spike (5030675-MS1)		**Source: AYC0603-25**			Prepared & Analyzed: 03/25/15					
PCB 1016	4.9	1.0	ug/L	5.0000	ND	98	10-183			
PCB 1260	4.9	1.0	ug/L	5.0000	ND	97	19-141			
Surrogate: Decachlorobiphenyl	*0.466*		*ug/L*	*1.0000*		*47*	*17-144*			
Matrix Spike Dup (5030675-MSD1)		**Source: AYC0603-25**			Prepared & Analyzed: 03/25/15					
PCB 1016	5.1	1.0	ug/L	5.0000	ND	102	10-183	5	18	
PCB 1260	5.0	1.0	ug/L	5.0000	ND	100	19-141	2	27	
Surrogate: Decachlorobiphenyl	*0.384*		*ug/L*	*1.0000*		*38*	*17-144*			

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Kennesaw GA, 30144
Attention: Mr. Brian Jacobson

April 01, 2015

Laboratory Certifications

Code	Description	Number	Expires
LA	Louisiana	02069	06/30/2015
NC	North Carolina	381	12/31/2015
NELAC	FL DOH (Non-Pot. Water, Solids) Eff:: 07/01/2013	E87315	06/30/2015
SC	South Carolina	98011001	06/30/2015
TX	Texas	T104704397-08-TX	03/31/2015
VA	Virginia	1340	12/14/2015

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April 01, 2015

Legend

Definition of Laboratory Terms

ND - None Detected at the Reporting Limit
TIC - Tentatively Identified Compound
CFU - Colony Forming Units
SOP - Method run per ASI Standard Operating Procedure
RL - Reporting Limit
DF - Dilution Factor
***** - Analyte not included in the NELAC list of certified analytes.

Sample Information

N-Nitrosodiphenylamine breaks down to diphenylamine in the GCMS; both analytes are reported as N-Nitrososdiphenylamine. ASI is not NELAC certified for diphenylamine.

Phthalic acid and phthalic anhydride are reported as dimethyl phthalate

Maleic acid and maleic anhydride are reported as dimethyl malate

1,2-Diphenylhydrazine breaks down to azobenzene in the GCMS; both analytes are reported as azobenzene

Definition of Qualifiers

QM-10 MS and/or MSD recoveries not within Quality Control Acceptance criteria. See Case Narrative.

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD and/or PDS due to suspected matrix interference. Sample results for the QC batch were accepted based on acceptable LCS recoveries.

QM-02 The spike recovery is outside acceptance limits due to insignificant spike amount as compared to sample concentration.

CN See Case Narrative for further details.

Note: Unless otherwise noted, all results are reported on an as received basis.

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1255 Roberts Blvd N.W.
Kennesaw GA, 30144
Attention: Mr. Brian Jacobson

April 01, 2015

241643

CHAIN OF CUSTODY RECORD

ASI ANALYTICAL SERVICES, INC.
ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS
110 TECHNOLOGY PARKWAY NORCROSS, GA 30092
(770) 734-4200 : FAX (770) 734-4201 : www.asi-lab.com

PAGE: 1 OF 2

CLIENT NAME: ~~CHEMTRADE~~ GEOSYNTEC

CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 1255 Roberts Blvd, Suite 200 Kennesaw GA 30144

REPORT TO: Brian Jacobson CC:

REQUESTED COMPLETION DATE: PO #:

PROJECT NAME/STATE: CHEMTRADE, GA

PROJECT #: GL5000.2014

ANALYSIS REQUESTED: CONTAINER TYPE: P P V A A; PRESERVATION: 3 7 1 1 7; # of CONTAINERS: 1 1 1 1 1; COMMENTS: 10010 Al Sulfate; 8260; 8081; 8270

DATE	TIME	MATRIX CODE*	COMPOSITE/GRAB	SAMPLE IDENTIFICATION	# of containers	REMARKS/ADDITIONAL INFORMATION
3/16/15	13:00	GW	X	GCW-04D-0315	2	1
3/16/15	13:48	GW	X	GCW-05-0315	2	2
3/16/15	14:40	GW	X	GCW-02D-0315	2	3
3/16/15	15:25	GW	X	GCW-3D-0315	9	4
3/16/15	16:10	ST	X	SW-02-0315	2	5
3/16/15	—	ST	X	DUP-01-0315	2	6
3/17/15	9:43	GW	X	EBW-01-0315	2	7
3/17/15	10:22	GW	X	EBW-3D-0315	2	8
3/17/15	13:15	ST	X	SW-09	2	9
				TEMP BLANK	1	
				TRIP BLANK	1	10 PO# 1500443

CONTAINER TYPE: P - PLASTIC; A - AMBER GLASS; G - CLEAR GLASS; V - VOA VIAL; S - STERILE; O - OTHER

PRESERVATION: 1 - HCl, ≤6°C; 2 - H_2SO_4, ≤6°C; 3 - HNO_3; 4 - NaOH, ≤6°C; 5 - NaOH/ZnAc, ≤6°C; 6 - $Na_2S_2O_3$, ≤6°C; 7 - ≤6°C not frozen

*MATRIX CODES: DW - DRINKING WATER; WW - WASTEWATER; GW - GROUNDWATER; SW - SURFACE WATER; ST - STORM WATER; W - WATER; S - SOIL; SL - SLUDGE; SD - SOLID; A - AIR; L - LIQUID; P - PRODUCT

SAMPLED BY AND TITLE: Kyle Graham; DATE/TIME: 3/18/15 15:00; RELINQUISHED BY: [signature]; DATE/TIME: 3/18/15 14:00

RECEIVED BY: Kyle Graham; DATE/TIME: 3/18/15; RELINQUISHED BY: [signature]; DATE/TIME:

RECEIVED BY LAB: [signature]; DATE/TIME: 3/18/15 1020; SAMPLE SHIPPED VIA: UPS FEDEX USPS COURIER CLIENT OTHER; Custody Seal: Broken Not Present; # of Coolers: 3; Cooler ID:

pH checked: No NA; TCL: No NA; Temperature: Min: 3°C Max: 3°C; Intact: Broken Not Present

FOR LAB USE ONLY: LAB #: A7L0580; Entered into LIMS:

Revised 2013-10-31

ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
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Geosyntec Consultants Inc.
1255 Roberts Blvd N.W.
Kennesaw GA, 30144
Attention: Mr. Brian Jacobson

April 01, 2015

241642

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ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS
110 TECHNOLOGY PARKWAY NORCROSS, GA 30092
(770) 734-4200 : FAX (770) 734-4201 : www.asi-lab.com

CHAIN OF CUSTODY RECORD

PAGE: 2 OF 2

CLIENT NAME: GEOSYNTEC
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 1255 Roberts Blvd, Suite 200 Kennesaw GA 30144
REPORT TO: Brian Jacobson CC:
REQUESTED COMPLETION DATE: PO #:
PROJECT NAME/STATE: CHEMTRADE, GA
PROJECT #: GR5060.2014

DATE	TIME	MATRIX CODE* (COMPOSITE / GRAB)	# of CONTAINERS	SAMPLE IDENTIFICATION	ANALYSIS REQUESTED (CONTAINER TYPE: P; PRESERVATION: 3, 7)	LAB #
3/17/15	11:05	GW	2	EPIN-02-0315		11
3/17/15	11:50	GW	2	GW-01D-0315		12
3/17/15	—	GW	2	DUP-2-0315		13
3/17/15	12:35	GW	2	OW-A-0315		14
3/17/15	14:20	ST	2	SW-04-0315		15
3/17/15	14:55	ST	2	SW-07-0315		16
3/17/15	13:36	ST	2	SW-06-0315		17
3/17/15	14:01	ST	2	SW-05-0315		18
			1	TEMP BLANK		

ANALYSIS REQUESTED: 6010 Gold; 7470 Hg; 6010 Al, Sulfate; 300 Cl

CONTAINER TYPE: P - PLASTIC; A - AMBER GLASS; G - CLEAR GLASS; V - VOA VIAL; S - STERILE; O - OTHER

PRESERVATION: 1 - HCl, ≤6°C; 2 - H_2SO_4, ≤6°C; 3 - HNO_3; 4 - NaOH, ≤6°C; 5 - NaOH/ZnAc, ≤6°C; 6 - $Na_2S_2O_3$, ≤6°C; 7 - ≤6°C not frozen

*MATRIX CODES: DW - DRINKING WATER; WW - WASTEWATER; GW - GROUNDWATER; SW - SURFACE WATER; ST - STORM WATER; W - WATER; S - SOIL; SL - SLUDGE; SD - SOLID; A - AIR; L - LIQUID; P - PRODUCT

REMARKS/ADDITIONAL INFORMATION

SAMPLED BY AND TITLE: SHILA GURBANI, STAFF ENGINEER — DATE/TIME: 3/18/15
RELINQUISHED BY: — DATE/TIME: 3/18/15 1410
RECEIVED BY: — DATE/TIME:
RELINQUISHED BY: — DATE/TIME:
RECEIVED BY/LAB: — DATE/TIME: 3/19/15 1020
SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER CLIENT OTHER
pH checked: Yes No N/A — Temp: — Temp Blank/Type: — Cooler Seal: Intact Broken Not Present — Max: 3.6 Min: 3.6 — # of Coolers: 3 — Cooler ID:
FOR LAB USE ONLY — LAB #: A4L0580 — Entered into LIMS: VM

4637
2571
3372/3370/3361

Revised 2013-10-31

ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092
(770) 734-4200 FAX (770) 734-4201

LOG-IN CHECKLIST **Printed: 4/1/2015 12:16:40PM**

Attn: Mr. Brian Jacobson

Client: Geosyntec Consultants Inc.
Project: General Chemical
Date Received: 03/19/15 10:20

Work Order: AYC0580
Logged In By: Charles Hawks

OBSERVATIONS

#Samples: 18 **#Containers:** 44

Minimum Temp(C): 3.0 **Maximum Temp(C):** 3.0 **Custody Seal(s) Used:** Yes

CHECKLIST ITEMS

COC included with Samples	YES
Sample Container(s) Intact	YES
Chain of Custody Complete	YES
Sample Container(s) Match COC	YES
Custody seal Intact	YES
Temperature in Compliance	YES
Sufficient Sample Volume for Analysis	YES
Zero Headspace Maintained for VOA Analyses	YES
Samples labeled preserved (If Applicable)	YES
Samples received within Allowable Hold Times	YES
Samples Received on Ice	YES
Preservation Confirmed	YES

Comments:

APPENDIX B

GROUNDWATER AND STORM DRAIN SAMPLING FORM

Geosyntec consultants

Water Level Measurements

Project.: Chemtrade - East Point Date: 3/16/15

Proj.No.:GR5060.2014 Name: J. Ivanowski / S. Glabman

Well	Time	DTW	Well	Time	DTW
GCW-01M	10:03	11.05			
GCW-01D	10:05	10.45			
GCW-01S	10:07	10.93			
OW-1A	10:09	13.43			
GCW-02D	10:30	3.49			
GCW-02S	10:34	3.96			
GCW-02V	10:36	3.50			
GCW-03S	10:40	4.95			
GCW-03D	10:42	4.30			
EPW-02	10:53	9.80			
EPW-3D	10:56	9.36			
EPW-03S	10:59	9.62			
EPW-03M	11:02	9.42			
EPW-01	11:08	~~17.00~~ 17.00			
GCW-04S	12:06	8.64			
GCW-04M	12:08	9.09			
GCW-04D	12:10	8.42			
GCW-04V	12:12	9.31			
GCW-05	13:15	4.68			

Geosyntec consultants

Ground Water Parameters for Low-Flow Sampling

Site: Chemtrade - East Point Project No.: GR5060.2014
Monitoring Well: GCW-04D Sampling Date: 03/16/15
Sample ID: GCW-04D-0315 Sampler: JI/SG

Time	Start Purge	Readings	Start Samp.	End Samp.	Temperature (°C)	pH	Conductivity (mS/cm)	Redox Potential (± mv)	Turbidity (NTU)	DO (mg/L)	Appearance of Water
12:28	✓	✓			18.7	6.50	~~0.153~~ SG	27	39.7	3.32	Clear
12:33		✓			18.25	6.82	0.147	33	32.2	2.28	Clear
12:38		✓			18.45	6.86	0.147	38	28.2	1.99	"
12:42		✓			18.53	6.87	0.147	42	27.3	1.74	"
12:48		✓			18.81	6.87	0.146	47	23.7	1.65	"
12:53		✓			19.01	6.87	0.146	50	19.7	1.59	"
12:58		✓			19.23	6.86	0.146	53	16.1	1.58	"
13:00				✓							

Split, Blank, Duplicate, & Filtered Samples

Sample ID	Description

Miscellaneous

Initial Depth to Water: 8.42 ft
Final Depth to Water: — ft
Total Purge Volume: 3 gal
Pump Rate: 0.13 gpm

Weather: Sunny, 78°

Notes: (well condition, nearby activities or changes in land use, odors, problems, deviations from plan, etc.)

Geosyntec consultants

Ground Water Parameters for Low-Flow Sampling

Site: Chemtrade - East Point Project No.: GR5060.2014
Monitoring Well: GCW-05 Sampling Date: 03/16/15
Sample ID: GCW-05-0315 Sampler: JI/SG

Time	Start Purge	Readings	Start Samp.	End Samp.	Temperature (°C)	pH	Conductivity (mS/cm)	Redox Potential (± mv)	Turbidity (NTU)	DO (mg/L)	Appearance of Water
13:16	X										
13:19		X			20.69	6.71	1.25	80	14.8	0.55	clear
13:24		X			20.04	6.69	1.12	67	13.9	0.00	"
13:30		X			19.82	6.69	1.11	62	18.0	0.00	"
13:37		X			19.71	6.69	1.12	59	20.8	0.00	"
13:45		X			19.75	6.68	1.12	58	26.2	0.00	"
13:48				X							

SG

Split, Blank, Duplicate, & Filtered Samples

Sample ID	Description

SG

Miscellaneous

Initial Depth to Water: 4.68 ft
Final Depth to Water: — ft
Total Purge Volume: 3 gal
Pump Rate: 0.12 gpm

Weather: Sunny - 78°

Notes: (well condition, nearby activities or changes in land use, odors, problems, deviations from plan, etc.)

Geosyntec consultants

Ground Water Parameters for Low-Flow Sampling

Site: Chemtrade - East Point Project No.: GR5060.2014
Monitoring Well: GCW-02D Sampling Date: 03/16/15
Sample ID: GCW-02D-0315 Sampler: JI/SG

Time	Start Purge	Readings	Start Samp.	End Samp.	Temperature (°C)	pH	Conductivity (mS/cm)	Redox Potential (± mv)	Turbidity (NTU)	DO (mg/L)	Appearance of Water
14:10	✓										clear
14:18		✓			18.55	3.65	1.87	241	7.38	5.12	clear
14:23		✓			18.25	3.37	2.38	231	5.01	0.10	clear
14:28		✓			18.28	3.35	2.44	235	4.00	0.00	clear
14:33		✓			18.38	3.33	2.45	240	1.74	0.00	clear
14:38		✓			18.30	3.32	2.43	245	0.82	0.00	clear
14:40				✓							

SO

Split, Blank, Duplicate, & Filtered Samples

Sample ID	Description

SO

Miscellaneous

Initial Depth to Water: 3.49 ft
Final Depth to Water: — ft
Total Purge Volume: 2.3 gal
Pump Rate: 0.1 gpm

Weather:

Notes: (well condition, nearby activities or changes in land use, odors, problems, deviations from plan, etc.)

Geosyntec consultants

Ground Water Parameters for Low-Flow Sampling

Site: Chemtrade - East Point Project No.: GR5060.2014
Monitoring Well: GCW-3D Sampling Date: 03/16/15
Sample ID: GCW-3D-0315 Sampler: JF/SG

Time	Start Purge	Readings	Start Samp.	End Samp.	Temperature (°C)	pH	Conductivity (mS/cm)	Redox Potential (± mv)	Turbidity (NTU)	DO (mg/L)	Appearance of Water
14:54	✓		✓								
14:57		✓			19.34	3.19	3.08	276	4.72	4.10	Clear
15:04		✓			18.84	3.18	3.12	277	1.30	1.75	"
15:11		✓			18.67	3.15	3.18	279	0.92	0.00	"
15:17		✓			18.67	3.16	3.19	280	0.92	0.00	"
15:22		✓			18.62	3.15	3.19	281	0.65	0.00	"
15:25				✓							

SG

Split, Blank, Duplicate, & Filtered Samples

Sample ID	Description

SG

Miscellaneous

Initial Depth to Water: _____ ft
Final Depth to Water: _____ ft
Total Purge Volume: _____ gal
Pump Rate: _____ gpm

Weather:

Notes: (well condition, nearby activities or changes in land use, odors, problems, deviations from plan, etc.)

Geosyntec consultants

Ground Water Parameters for Low-Flow Sampling

Site: Chemtrade - East Point Project No.: GR5060.2014

Monitoring Well: SW-02 Sampling Date: 3/16/15

Sample ID: SW-02-0315 Sampler: J. Ivanowski

Time	Start Purge	Readings	Start Samp.	End Samp.	Temperature (°C)	pH	Conductivity (mS/cm)	Redox Potential (± mv)	Turbidity (NTU)	DO (mg/L)	Appearance of Water
15:55	X	X			21.71	4.05	1.29	261	1.14	6.38	clear.
16:00				X							

SG

Split, Blank, Duplicate, & Filtered Samples

Sample ID	Description
DUP-01-0315	sulfate field duplicate
DUP-01-0315	Al field duplicate

Miscellaneous

Initial Depth to Water: — ft

Final Depth to Water: — ft

Total Purge Volume: — gal

Pump Rate: 0.2 gpm

Weather: Sunny 80°

Notes: (well condition, nearby activities or changes in land use, odors, problems, deviations from plan, etc.)

Geosyntec consultants

Ground Water Parameters for Low-Flow Sampling

Site: Chemtrade - East Point Project No.: GR5060.2014
Monitoring Well: EPW-01 Sampling Date: 03/17/15
Sample ID: EPW-01-0315 Sampler: JI/SG

Time	Start Purge	Readings	Start Samp.	End Samp.	Temperature (°C)	pH	Conductivity (mS/cm)	Redox Potential (± mv)	Turbidity (NTU)	DO (mg/L)	Appearance of Water
9:18	✓		✓								
9:20		✓			16.39	4.19	0.257	300	1.32	1.45	clear
9:25		✓			16.63	4.19	0.246	300	1.49	1.07	clear
9:30		✓			16.66	4.18	0.242	300	0.33	0.58	clear
9:35		✓			16.70	4.21	0.239	298	0.16	0.20	clear
9:40		✓			16.74	4.23	0.236	296	0.00	0.00	clear
9:43				✓							

SG

Split, Blank, Duplicate, & Filtered Samples

Sample ID	Description

SG

Miscellaneous

Initial Depth to Water: 17.00 ft
Final Depth to Water: — ft
Total Purge Volume: 2 gal
Pump Rate: 0.09 gpm

Weather: sunny, 51°

Notes: (well condition, nearby activities or changes in land use, odors, problems, deviations from plan, etc.)

Geosyntec consultants

Ground Water Parameters for Low-Flow Sampling

Site: Chemtrade - East Point Project No.: GR5060.2014
Monitoring Well: EPW-3D Sampling Date: 3/17/15
Sample ID: EPW-3D-0315 Sampler: JI/SG

Time	Start Purge	Readings	Start Samp.	End Samp.	Temperature (°C)	pH	Conductivity (mS/cm)	Redox Potential (± mv)	Turbidity (NTU)	DO (mg/L)	Appearance of Water
9:58	✓										
9:59		✓			18.06	3.33	0.134	341	0.85	7.91	Clear
10:04		✓			18.39	5.78	0.295	219	0.00	2.73	"
10:09		✓			18.60	5.80	0.304	215	0.00	2.58	"
10:15		✓			18.74	5.80	0.301	211	0.00	2.44	"
10:20		✓			18.79	5.80	0.302	208	0.00	2.46	"
10:22			✓								

SG

Split, Blank, Duplicate, & Filtered Samples

Sample ID	Description

SG

Miscellaneous

Initial Depth to Water: 9.36 ft
Final Depth to Water: — ft
Total Purge Volume: 2 gal
Pump Rate: 0.1 gpm

Weather: Sunny, 60°

Notes: (well condition, nearby activities or changes in land use, odors, problems, deviations from plan, etc.)

Geosyntec consultants

Ground Water Parameters for Low-Flow Sampling

Site: Chemtrade - East Point Project No.: GR5060.2014
Monitoring Well: EPW-02 Sampling Date: 03/17/15
Sample ID: EPW-02-0315 Sampler: JI/SG

Time	Start Purge	Readings	Start Samp.	End Samp.	Temperature (°C)	pH	Conductivity (mS/cm)	Redox Potential (± mv)	Turbidity (NTU)	DO (mg/L)	Appearance of Water
10:35	✓										
10:44		✓			18.31	5.87	0.266	163	3.29	0.00	clear
10:49		✓			18:24	5.81	0.241	148	1.85	0.00	"
10:54		✓			18.43	5.67	0.199	148	1.10	0.00	"
10:59		✓			18.56	5.57	0.178	150	0.41	0.00	"
11:04		✓			18.68	5.51	0.167	151	0.20	0.00	"
11:05				✓							

SG

Split, Blank, Duplicate, & Filtered Samples

Sample ID	Description
	SG

Miscellaneous

Initial Depth to Water: 9.8 ft
Final Depth to Water: — ft
Total Purge Volume: 2 gal
Pump Rate: 0.1 gpm

Weather: sunny 70s

Notes: (well condition, nearby activities or changes in land use, odors, problems, deviations from plan, etc.)
When purge started, lot of ants + dirt were pulling from the well. Took 5 mins to purge that out before the water was free of bugs/dirt.

Geosyntec consultants

Ground Water Parameters for Low-Flow Sampling

Site: Chemtrade - East Point Project No.: GR5060.2014
Monitoring Well: GCW-01D Sampling Date: 03/17/15
Sample ID: GCW-01D-0315 Sampler: JJ/SG

Time	Start Purge	Readings	Start Samp.	End Samp.	Temperature (°C)	pH	Conductivity (mS/cm)	Redox Potential (± mv)	Turbidity (NTU)	DO (mg/L)	Appearance of Water
11:25	✓		✓								
11:26		✓			20.66	4.24	0.436	223	0.07	5.47	Clear
11:32		✓			19.90	3.88	0.435	243	0.00	3.90	"
11:37		✓			19.80	3.86	0.431	250	0.00	3.54	"
11:42		✓			19.94	3.86	0.429	254	0.00	4.09	"
11:47		✓			19.86	3.85	0.429	258	0.00	3.95	"
11:50		~~✓~~ SG		✓							

SG

Split, Blank, Duplicate, & Filtered Samples

Sample ID	Description
DUP-2-0315	Sulfate, field duplicate
DUP-2-0315	Aluminum, field duplicate

Miscellaneous

Initial Depth to Water: 10.45 ft
Final Depth to Water: — ft
Total Purge Volume: 2 gal
Pump Rate: 0.1 gpm

Weather: Sunny, 70s

Notes: (well condition, nearby activities or changes in land use, odors, problems, deviations from plan, etc.)

Geosyntec consultants

Ground Water Parameters for Low-Flow Sampling

Site: Chemtrade - East Point Project No.: GR5060.2014
Monitoring Well: OW-1A Sampling Date: 03/17/15
Sample ID: OW-1A-0315 Sampler: SG

Time	Start Purge	Readings	Start Samp.	End Samp.	Temperature (°C)	pH	Conductivity (mS/cm)	Redox Potential (± mv)	Turbidity (NTU)	DO (mg/L)	Appearance of Water
12:10 PM	✓										
12:14 PM		✓			19.23	4.13	0.172	257	0.90	6.29	Clear
12:19 PM		✓			18.86	4.14	0.163	257	0.90	4.84	"
12:24 PM		✓			18.90	4.14	0.162	258	0.00	4.79	"
12:29 PM		✓			19.03	4.14	0.162	259	0.00	4.88	"
12:34 PM		✓			19.04	4.14	0.162	259	0.00	4.78	
12:35 PM				✓							

SG

Split, Blank, Duplicate, & Filtered Samples

Sample ID	Description
	SG

Miscellaneous

Initial Depth to Water: 13.43 ft
Final Depth to Water: — ft
Total Purge Volume: 2 gal
Pump Rate: 0.1 gpm

Weather: sunny, 70s

Notes: (well condition, nearby activities or changes in land use, odors, problems, deviations from plan, etc.)

Geosyntec consultants

Ground Water Parameters for Low-Flow Sampling

Site: Chemtrade - East Point Project No.: GR5060.2014
Monitoring Well: SW-09 Sampling Date: 3/17/15
Sample ID: SW-09-0315 Sampler: J. Ivanowski

Time	Start Purge	Readings	Start Samp.	End Samp.	Temperature (°C)	pH	Conductivity (mS/cm)	Redox Potential (± mv)	Turbidity (NTU)	DO (mg/L)	Appearance of Water
13:10	X										
13:12		X			20.28	6.08	0.305	172	3.92	6.89	clear
13:15		X	X	X	19.70	6.34	0.288	159	4.43	6.03	clear

Split, Blank, Duplicate, & Filtered Samples

Sample ID	Description

Miscellaneous

Initial Depth to Water: — ft
Final Depth to Water: — ft
Total Purge Volume: — gal
Pump Rate: 0.2 gpm

Weather: Sunny 77°

Notes: (well condition, nearby activities or changes in land use, odors, problems, deviations from plan, etc.)

Geosyntec consultants

Ground Water Parameters for Low-Flow Sampling

Site: Chemtrade - East Point Project No.: GR5060.2014

Monitoring Well: SW-06 Sampling Date: 3/17/15

Sample ID: SW-06-0315 Sampler: J. Ivanowski

Time	Start Purge	Readings	Start Samp.	End Samp.	Temperature (°C)	pH	Conductivity (mS/cm)	Redox Potential (± mv)	Turbidity (NTU)	DO (mg/L)	Appearance of Water
13:31	X										
13:34		X			19.37	3.82	1.88	.257	1.65	5.66	clear
13:36		X	X	X	18.36	3.78	1.90	0.265	1.58	4.84	" "

Split, Blank, Duplicate, & Filtered Samples

Sample ID	Description

Miscellaneous

Initial Depth to Water: — ft

Final Depth to Water: — ft

Total Purge Volume: — gal

Pump Rate: 0.2 gpm

Weather: sunny 78

Notes: (well condition, nearby activities or changes in land use, odors, problems, deviations from plan, etc.)

Geosyntec consultants

Ground Water Parameters for Low-Flow Sampling

Site: Chemtrade - East Point Project No.: GR5060.2014
Monitoring Well: JW-05 Sampling Date: 3/17/15
Sample ID: SW-05-0315 Sampler: JI/SG

Time	Start Purge	Readings	Start Samp.	End Samp.	Temperature (°C)	pH	Conductivity (mS/cm)	Redox Potential (± mv)	Turbidity (NTU)	DO (mg/L)	Appearance of Water
14:00	X										
14:01		✓	✓	✓	20.43	4.30	0.794	251	1.15	5.94	Clear

SG

Split, Blank, Duplicate, & Filtered Samples

Sample ID	Description

SG

Miscellaneous

Initial Depth to Water: — ft
Final Depth to Water: — ft
Total Purge Volume: — gal
Pump Rate: 0.2 gpm

Weather: Sunny, 78°

Notes: (well condition, nearby activities or changes in land use, odors, problems, deviations from plan, etc.)

Geosyntec consultants

Ground Water Parameters for Low-Flow Sampling

Site: Chemtrade - East Point Project No.: GR5060.2014
Monitoring Well: SW-04 Sampling Date: 3/17/15
Sample ID: SW-04-0315 Sampler: JI/SG

Time	Start Purge	Readings	Start Samp.	End Samp.	Temperature (°C)	pH	Conductivity (mS/cm)	Redox Potential (± mv)	Turbidity (NTU)	DO (mg/L)	Appearance of Water
14:18	✓										
14:19		✓			20.19	5.29	0.519	204	~~115~~ 29.4 SG	5.11	Clear
14:20			✓	✓							
						SG					

Split, Blank, Duplicate, & Filtered Samples		Miscellaneous
Sample ID	Description	Initial Depth to Water: — ft
	SG	Final Depth to Water: — ft
		Total Purge Volume: — gal
		Pump Rate: 0.2 gpm

Weather: Sunny, 78°

Notes: (well condition, nearby activities or changes in land use, odors, problems, deviations from plan, etc.)

Geosyntec consultants

Ground Water Parameters for Low-Flow Sampling

Site: Chemtrade - East Point Project No.: GR5060.2014

Monitoring Well: SW-07 Sampling Date: 3/17/15

Sample ID: SW-07-0315 Sampler: J. Ivanowski

Time	Start Purge	Readings	Start Samp.	End Samp.	Temperature (°C)	pH	Conductivity (mS/cm)	Redox Potential (± mv)	Turbidity (NTU)	DO (mg/L)	Appearance of Water
14:52		X									
14:55				X	17.22	4.38	0.760	247	12.4	8.18	blue-green, clear

Split, Blank, Duplicate, & Filtered Samples

Sample ID	Description

Miscellaneous

Initial Depth to Water: — ft

Final Depth to Water: — ft

Total Purge Volume: — gal

Pump Rate: — gpm

Weather: Sunny 78°

Notes: (well condition, nearby activities or changes in land use, odors, problems, deviations from plan, etc.)