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October 14, 2014
AGL Macon - 0176740

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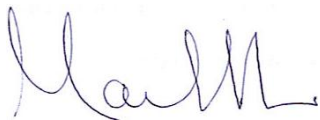
**Subject: Voluntary Investigation and Remediation Plan
Atlanta Gas Light Company
Former Manufactured Gas Plant Site Macon, Georgia
HSI #10511**

Dear Mr. Brownlee:

Attached please find one hard copy and two cd copies of the *Voluntary Investigation and Remediation Plan* for the Atlanta Gas Light Company Former Manufactured Gas Plant Site located in Macon Georgia.

Should you have any questions, please do not hesitate to contact me.

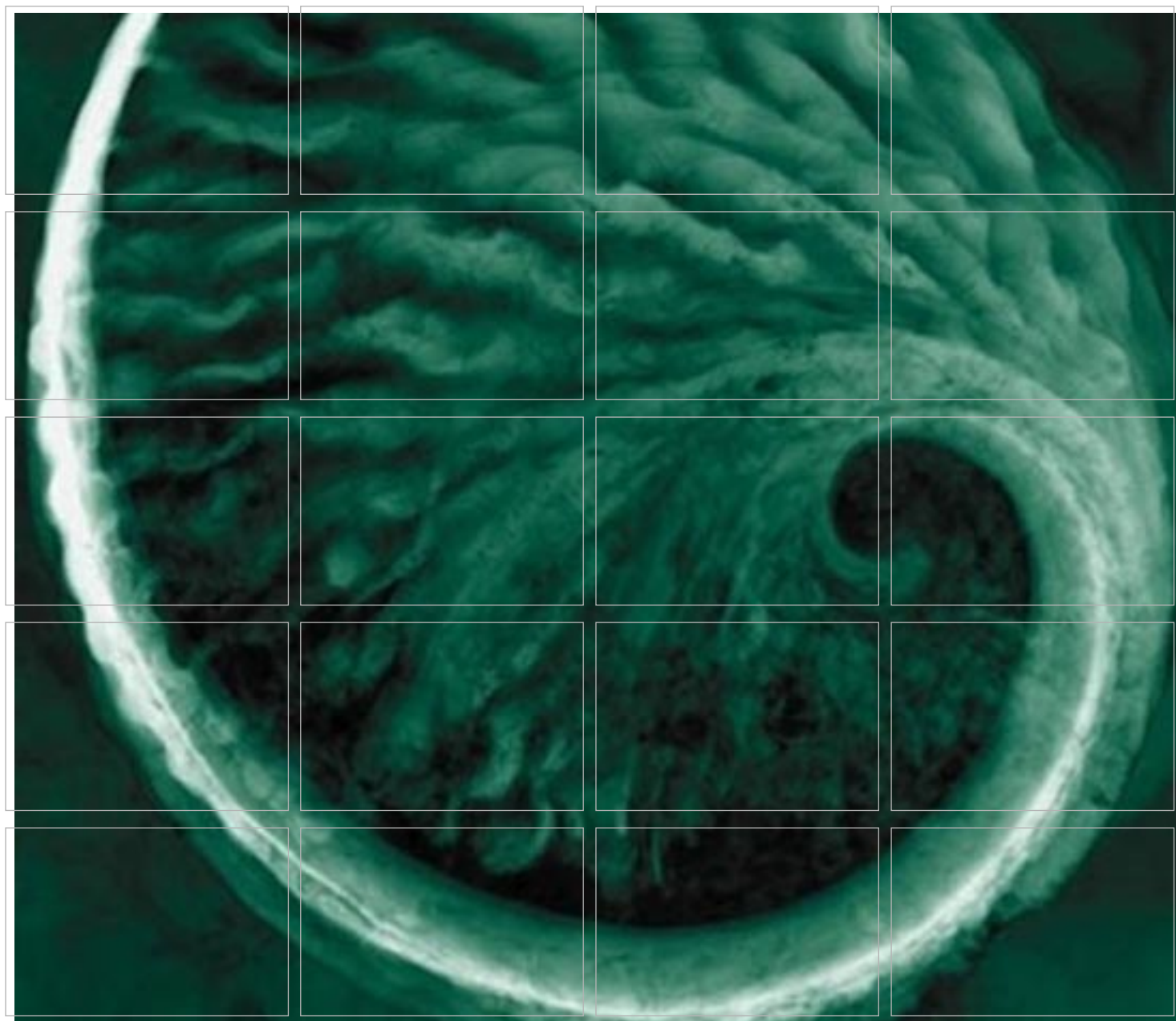
Sincerely,



Mark Fleri
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Attachments

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Voluntary Investigation and Remediation Plan

Atlanta Gas Light Company
Former Manufactured Gas Plant Site
Macon, Georgia
HSI #10511

October 2014

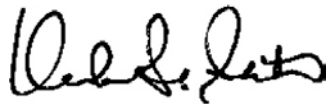
Atlanta Gas Light Company

Voluntary Investigation and Remediation Plan

Former Manufactured Gas
Plant Site
Macon, Georgia HSI #10511

October 2014

ERM Project No. 0176740



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ACRONYMS AND ABBREVIATIONS

AGLC	Atlanta Gas Light Company
AMSL	Above Mean Sea Level
BCWP	Bedrock Characterization Work Plan
BDWP	Basis of Design Work Plan
BDWPBG	Basis of Design Work Plan for Bedrock Groundwater
bgs	Below Ground Surface
BPLM	By-Product Like Material
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
CAP	Corrective Action Plan
CAP-A	Corrective Action Plan Addendum
CCP	Central City Park
cm	Centimeter
cm/sec	Centimeter(s) per Second
COI	Constituents of Interest
CSI	Compliance Status Investigation
CSM	Conceptual Site Model
CSR	Compliance Status Report
DNAPL	Dense Non-Aqueous Phase Liquid
EA	Environmental Assessment
EM	Electromagnetic
ECM	Environment Cost Management
EQuIS	Environmental Quality Information System
EPA	Environmental Protection Agency
EPD	Environmental Protection Division
ERM	Environmental Resources Management
FFS	Focused Feasibility Study
ft	Feet or Foot
ft/day	Feet per Day
GPC	Georgia Power Company
gpm	Gallons per Minute
GPR	Ground Penetrating Radar
G&M	Geraghty & Miller, Inc.
HASP	Health and Safety Plan
Hg	Mercury
HSI	Hazardous Site Inventory
HSRA	Hazardous Site Response Act
IDW	Investigation Derived Waste
ISCO	In-Situ Chemical Oxidation
iSOC®	In-Situ Oxygen Curtain
ISS	In-Situ Stabilization
K	Hydraulic Conductivity
LAW	Law Environmental
lbs	Pounds
LNAPL	Light Non-Aqueous Phase Liquid
MGP	Manufactured Gas Plant

ACRONYMS AND ABBREVIATIONS continued

MI&P	Macon Iron & Paper
mm	Millimeter
MNA	Monitored Natural Attenuation
MUDA	Macon Urban Development Authority
NAPL	Non-Aqueous Phase Liquid
NPL	National Priorities List
NTU	Nephelometric Turbidity Units
O.C.G.A	Official Code of Georgia
OLM	Oil-Like Material
OSWER	Office of Solid Waste and Emergency Response
PA	Preliminary Assessment
PAHs	Polycyclic Aromatic Hydrocarbons
psi	Pounds per Square Inch
POTW	Publicly Owned Treatment Works
PTWP	Pilot Test Work Plan
PWR	Partially Weathered Rock
RACR	Remedial Action Completion Report
RRS	Risk Reduction Standards
RETEC	The RETEC Group, Inc.
ROW	Right-of-Way
SI	Site Inspection
TLM	Tar-Like Material
UCS	Unconfined Compressive Strength
UEC	Uniform Environmental Covenant
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VI	Vapor Intrusion
VIRP	Voluntary Investigation and Remediation Plan
VEFR	Vacuum Enhanced Fluid Recovery
VOCs	Volatile Organic Compounds
VRP	Voluntary Remediation Program
VRPA	Voluntary Remediation Program Act
WILLIAMS	Williams Environmental Services, Inc.
µg/L	Micrograms per Liter

1.0 INTRODUCTION

1.1 PURPOSE

This Voluntary Investigation and Remediation Plan (VIRP) is being submitted on behalf of Atlanta Gas Light Company (AGLC) and Georgia Power Company (GPC) for the former Macon Manufactured Gas Plant (MGP) site located in Macon, Bibb County, Georgia (Figure 1-1). Two MGP facilities formerly operated in this area. Figure 1-2 presents the site, surrounding features and the location of these MGP sites. AGLC has requested that the former Macon MGP Site, Hazardous Sites Inventory (HSI) #10511 be entered into the Georgia Voluntary Remediation Program (VRP). For the purposes of this document, the term “Site” is defined as the portion AGLC’s contiguous property and any other owner’s property potentially impacted by the former MGP operations. Currently, both former facilities are regulated as one site under the Georgia Environmental Protection Division (EPD) Hazardous Sites Response Act (HSRA), and are listed on the EPD HSI as site number 10511.

AGLC and GPC have performed a series of investigations and implemented numerous EPD-approved corrective actions at the Site. As discussed below, AGLC and GPC have addressed MGP impacts in the unsaturated and saturated materials on several parcels. Detailed information regarding previous corrective actions is provided in Section 2.3.2. This VIRP addresses the remaining MGP impacts in soil and groundwater at the Site (See Section 1.2 below for applicant and qualifying properties).

In correspondence dated January 17, 2012, EPD requested submittal of a Corrective Action Plan Addendum (CAP-A) to address shallow (alluvial) groundwater and bedrock groundwater impacts at the Site. In correspondence dated August 13, 2013, AGLC documented the agreement reached at a July 8, 2013 meeting with the EPD that established a separate schedule for delivery of a CAP-A to address the alluvial groundwater impacts, and a separate Bedrock Groundwater CAP-A to address MGP impacts in bedrock groundwater. The CAP-A for alluvial groundwater was submitted to EPD on February 18, 2014. After further discussion between EPD and AGLC, it was agreed that the Macon MGP Site is a candidate for enrollment in the VRP, and that submittal of a Voluntary Investigation and Remediation Plan (VIRP) would be acceptable to EPD in lieu of a bedrock groundwater CAP. This VIRP incorporates the previously submitted CAP-A for alluvial groundwater.

The purpose of this VIRP is to provide EPD with information to support enrollment in the VRP of AGLC-owned and non-AGLC owned parcels impacted by the former MGP operations above applicable cleanup standards. In addition, the VIRP describes planned activities that will be completed to bring the Site into compliance with the applicable VRP cleanup standards as required by the Georgia Voluntary Remediation Program Act (VRPA).

The VRP Application Form and Checklist are included in [Appendix A](#) of this VIRP. Warranty deeds for the qualifying properties are included in [Appendix B](#).

1.2 *QUALIFYING PROPERTIES & PARTICIPANT ELIGIBILITY*

The AGLC property and surrounding parcels owned by other parties meet the eligibility criteria for the VRP. The qualifying properties included in the VRP application are provided on [Figure 1-3](#). The properties consist of an AGLC-owned parcel located at 306 Terminal Avenue, parcels owned by Macon Bibb County Urban Development Authority (MUDA) located at 137 Mulberry Street and 122 Walnut Street (and an unnumbered utility parcel on 6th Street), and parcels owned by the City of Macon and Norfolk Southern Railroad (undefined addresses or parcel identifiers). Agreements have been reached with the City of Macon and Norfolk Southern. An agreement with MUDA is pending, but the property is anticipated to be included as a qualifying property. Existing agreements (right-of-entry) are provided in [Appendix B](#).

None of the properties are listed on the National Priorities List (NPL), or are currently undergoing response activities required by an order of the Regional Administrator of the United States Environmental Protection Agency (USEPA), or are a facility required to have a permit under Official Code of Georgia (O.C.G.A) Section 12-8-66. There are currently no outstanding liens filed against any of the qualifying properties pursuant to O.C.G.A Sections 12-8-96 and 12-13-12. Qualifying the indicated properties under the VRP would not violate the terms and conditions under which the division operates and administers remedial programs by delegation or by similar authorization from the USEPA. In addition, qualification of the indicated properties would not violate any order, judgment, statute, rule or regulation subject to the enforcement authority of the Director of the EPD. In the event additional affected properties are identified, AGLC will notify EPD and revise the VIRP accordingly, through semiannual progress reports.

This document is organized into six Sections, following this introduction:

- Section 2.0 provides site background and historical information, including a description of the AGLC Macon Site, history of MGP operations, and a summary of completed investigations and corrective actions.
- Section 3.0 describes the preliminary Conceptual Site Model (CSM). The CSM provides details of surface and subsurface conditions, discusses constituents of interest (COI), distribution and nature of COI in impacted media, media delineation standards, and potential receptors and exposure pathways.
- Section 4.0 includes details of planned investigation activities necessary to refine the CSM.
- Section 5.0 describes the planned remedial activities necessary to update the CSM and ultimately bring the Site into compliance with applicable cleanup standards as required by the VRPA.
- Section 6.0 outlines the preliminary schedule and cost for planned remedial activities, including groundwater monitoring and reporting.
- Section 7.0 provides a list of the documents referenced in the VIRP.

2.0 *SITE BACKGROUND AND HISTORY*

2.1 *MANUFACTURED GAS PLANT SITE HISTORY*

Two MGP facilities formerly operated at the Macon MGP Site. MGPs were commonly used in the 1800s through the 1950s for producing manufactured gas using coal gas processes, water gas/carbureted gas processes, and/or oil gas processes. Each of these processes results in the generation of residual material such as tars, liquors, sludges, coal fragments, and gas purifying wastes. This residual material includes by-product like material (BPLM), commonly described as oil-like material (OLM) or tar-like material (TLM) residue, and non-aqueous phase liquid (NAPL).

One of the MGP facilities formerly operated at the Macon MGP Site was located southeast of 6th Street and one was located northwest of 6th Street. The Site has a fairly complex history of ownership and operational usage, and there are periods of time where very little is known about operations at either MGP facility. BPLM generated at both facilities is known to have impacted soil and groundwater at the Site. Details of each MGP are provided in the following Sections.

2.2 *SOURCES OF RELEASE*

2.2.1 *Mulberry Street MGP Site*

The former MGP located at 137 Mulberry Street (southeast of 6th Street) is known to have undocumented and historical releases from gas processing operations, and has been the subject of numerous investigation and corrective actions since the 1980s. Within this VIRP, this portion of the Macon MGP site will be referred to as the Mulberry Street MGP (this area has also been referred to as the Eastern Portion MGP in previous correspondence). The property is bounded by Walnut Street, 7th Street, Mulberry Street, and 6th Street, and is currently owned by MUDA.

Historical documentation indicates that all three gas generating processes previously discussed were utilized at the Mulberry Street MGP. MGP operations at the property began in the mid-1850s and continued for nearly 100 years. Structures formerly located on the property included three gas holders, four tar wells, several purifying tanks, and various oil and crude oil tanks (ThermoRetec, 2001). Due to the proximity of each potential source and the similarity of

regulated substances associated with each, determining if a release had occurred from any particular potential source is difficult; however, extensive subsurface investigations have been completed at the site to define the extent of MGP-related impacts to soil and groundwater.

2.2.2 *Western Portion MGP Site*

Investigation of the property northwest of 6th Street began in 2005 when MGP-impacted groundwater was detected at an alluvial groundwater monitoring well located upgradient of the Mulberry Street MGP. In 2007, soil and groundwater impacts requiring additional investigation were identified during the demolition of structures on the property. The results of the investigation established that this location was a separate former MGP site that used different MGP production processes relative to the Mulberry MGP.

An 1872 artist rendering of Macon depicts a two-holder gas plant located northwest of 6th Street, where Terminal Avenue is currently located. A detailed description of site operations and associated structures is unavailable due to the fact that the site operation history predates typical historical MGP sources (e.g., Browns Directory). The operational timeframe is estimated to be from at least 1872 based on the artist rendering to before 1889 based on the absence of the MGP plant on the first available (1889) Sanborn fire insurance map.

Observations made during the excavation of test pits in 2008 revealed the presence of brick and wood fibers potentially associated with MGP structures. Results of forensic analyses performed on samples collected during the Supplemental Site Characterization – MW-09 Area (ECM, 2009) indicated that the impacts were related to an MGP operation involving burning resin which was different from historic operations performed at the Mulberry Street MGP.

Data suggests that impacts to soil and/or groundwater from the Western Portion MGP may have impacted portions of properties presently owned by AGLC, Norfolk Southern, Prodigy Holdings LLC, and the City of Macon (i.e., right-of-ways). [Appendix C](#) addresses the planned remedial action associated with the Western Portion MGP site.

2.3 *REGULATORY HISTORY*

AGLC and EPD entered into Consent Order EPD-HSR-227 on July 11, 2000. The Consent Order required that AGLC take actions to remove and/or treat in place all source material and soil, remove free phase contamination to the extent practicable, and remove and/or treat in place groundwater to the degree

necessary to bring the Macon MGP Site into compliance with applicable Risk Reduction Standards (RRS) as defined by HSRA. Implementation of a groundwater monitoring program is also required by the Consent Order. In October and November 2010, EPD requested that AGLC either implement corrective action in accordance with the previously-approved 2006 CAP-A (RETEC, 2006), or develop updated corrective action options specifically for the Western Portion MGP. In correspondence to EPD dated January 5, 2011, AGLC notified EPD that a Focused Feasibility Study (FFS) would be submitted by April 15, 2011 and a CAP-A would be prepared following approval of the FFS to address soil and shallow groundwater impacts in the Western Portion MGP.

As requested by EPD, a Groundwater CAP-A documenting corrective actions to be taken to address the unsaturated and saturated alluvial MGP impacts associated with the Western Portion MGP was submitted on February 18, 2014 (ERM, 2014). The 2014 CAP-A proposed excavation for unsaturated soils and in situ solidification (ISS) into the saprolite for MGP source materials below the water table located in the Western Portion. The proposed corrective actions are consistent with previous remedies at the Site, and are consistent with the Focused Feasibility Study - Western Portion and MW-101 Area (ECM, 2011). As corrective actions outlined in the 2014 CAP-A will be initiated during the first quarter of 2015 (i.e., assumed to be after acceptance of the Site into the VRP), the February 2014 CAP-A is included in this VIRP as [Appendix C](#).

During a meeting between EPD and AGLC personnel in July 2014, it was agreed that the Macon MGP Site was a candidate for entry into the GA VRP. This VIRP and VRP Application ([Appendix A](#)) serves as the requisite submittal for entry into the VRP program. The site-specific COIs addressed in the February 2014 CAP-A and this VIRP have been selected based on correspondence dated January 17, 2012, in which EPD requested that COIs match those presented in RETEC's January 2004 Compliance Status Report (CSR; RETEC, 2004a). A list of site specific COIs is presented in [Table 2-1](#), and includes volatile organic compounds (VOCs, such as benzene) polycyclic aromatic hydrocarbons (PAHs, such as naphthalene), and inorganic compounds (i.e., metals and cyanide). AGLC has been conducting groundwater monitoring and sampling on a semiannual basis in select groundwater monitoring wells for the COI and monitored natural attenuation (MNA) parameters listed in [Table 2-1](#).

2.3.1 *Summary of Previous Investigations*

This Section provides a summary of significant investigative activities that have been performed at the Site (i.e., at the Mulberry Street and Western Portion MGP sites as well as neighboring properties). Investigation activities associated with

the Mulberry Street (Eastern Portion) MGP began in 1986. Investigation of the Western Portion began in 2005. Additional details of previous investigations are included in historical reports and in the 2014 CAP-A, included in this document as [Appendix C](#). Locations of existing alluvial (shallow and intermediate depth) and bedrock groundwater monitoring wells are depicted on [Figure 1-2](#) for reference.

- 1986 – 1987: Law Environmental (LAW) conducted the first investigation of the Mulberry Street site. The investigation included geophysical exploration, test pit excavation and the collection of soil and groundwater samples for laboratory analysis.
- 1991: Preliminary Assessment (PA) of the Mulberry Street site conducted by LAW (LAW, 1991). The PA included a review of available file material, reconnaissance of the former MGP property, a narrative of the former MGP operations, collection and analysis of soil and groundwater samples, and a limited survey of potential human and environmental receptors.
- 1992: LAW conducted a Site Inspection (SI; LAW, 1992) which included completion of twenty-two soil borings for the collection and analysis of soil samples, installation of groundwater monitoring wells MW-4, MW-5, and MW-6, collection and analysis of groundwater samples, evaluation of soil physical characteristics, slug testing of monitoring wells, evaluation of surface drainage features, and review of available geologic literature.
- 1997 and 1998: Williams Environmental (Williams) performed an Environmental Assessment (EA) which included defining the horizontal and vertical extent of COI in soil and groundwater identified during the PA and SI. Eighty-six soil borings, nineteen groundwater monitoring wells, and five structure wells were installed. Other tasks included an investigation for determining the presence of potential NAPL in source structures, aquifer characterization, physical testing of soil and BPLM samples, collection of corrective action feasibility information, and characterization of materials in source areas for possible remedial alternatives (Williams, 1998).
- 1999 - 2000: Williams performed a Compliance Status Investigation (CSI) which included further horizontal and vertical delineation of source material and COI in soil and groundwater, bedrock aquifer characterization including geophysical investigation of bedrock conditions, and Ocmulgee River sediment sampling. Over one hundred soil borings were completed, ten groundwater monitoring wells were installed, and seventy-three sediment borings were advanced during the CSI (Williams, 2000).

- December 2000: Submittal of the Macon Site Soil and Groundwater Corrective Action Plan (ThermoRetec, 2001). The CAP specified a HSRA Type 5 remedy with excavation and ISS to address soil and source material associated with the Mulberry Street MGP.
- January 5, 2001: EPD approved the CAP and associated Type 5 remedy for the Mulberry Street site.
- February 2001 and December 2001: Revisions to the CAP were made to incorporate the results of a Basis of Design Work Plan (BDWP) completed in October 2001 (ThermoRetec, 2002).
- February 2004: The Basis of Design Work Plan for Bedrock Groundwater (BDWPBG) was submitted to EPD on February 26, 2004, and a second revised BDWPBG was submitted on June 30, 2004 (RETEC, 2004b). Implementation of the 2004 BDWPBG consisted of in situ chemical oxidation (ISCO) using modified Fenton's Reagent injected into on-site injection wells, and is discussed in detail in Section 2 of the April 2006 Groundwater CAP-A (RETEC, 2006).
- December 2004: Upon implementation of the BDWPBG, additional characterization was deemed necessary when groundwater impacts in bedrock downgradient of MW-12D were detected in MW-110(D) and MW-111D.
- December 2004: The Bedrock Characterization Work Plan (BCWP), submitted on December 17, 2004, outlined the plan to install additional bedrock wells to better characterize impacts to bedrock groundwater near MW-110(D) and MW-111D (RETEC, 2004c). The BCWP was implemented in June 2005, with conditions specified by EPD in the conditional approval in February 2005.
- February 2005: Bedrock monitoring wells MW-112D and MW-113D were installed downgradient of MW-111D and MW-110(D), respectively, and MW-114D was installed cross gradient of MW-12D.
- April 2005: Geophysical investigations were conducted to aid in designing a remedy to address the impacts observed at MW-110(D) and MW-111D. Results indicated that bedrock beneath the Macon MGP Site contains a relatively small number of low-yielding fractures. At static or equilibrium conditions, the ambient groundwater flow rates (which are closely related to seepage velocity) of water through fractures in each of the ten bedrock wells tested ranged from less than 0.0001 gallons per minute (gpm) to 0.0024 gpm. Therefore, unless water is pumped from the bedrock zone, the rate of flow in this zone is very low to almost none at all (RETEC, 2006).

- June 2005: The Groundwater Corrective Action Plan Addendum (Groundwater CAP-A) was submitted to EPD by RETEC on June 30, 2005. AGLC responded to EPD comments on November 11, 2005, and in that response, another process was suggested for submittal of the Basis of Design Work Plans (BDWPs). After additional comments and responses, the final Groundwater CAP-A (RETEC, 2006) was submitted on April 10, 2006.
- November 2005: Soil investigations were initiated at the Western Portion in the area of MW-09, and the results indicated that site-specific COIs were present in soil at relatively higher concentrations than anticipated as MW-09 is located upgradient of the Mulberry Street MGP area and the extent of impacts was expected to be limited and decrease with distance from the Mulberry Street MGP (RETEC, 2006). Additional investigation activities proposed in the Groundwater CAP-A were performed from August 2006 through October 2008.
- June 2006: A second phase of the bedrock remedy to address the off-site impacts observed in MW-110(D) and MW-111D was approved by EPD. Observations of groundwater flow conditions during remedy implementation indicated that fractures in the bedrock aquifer in the vicinity of the intersection of Walnut Street and 7th Street are hydraulically connected. Additional details of the injection activities are included in the Remedial Action Completion Report (RACR) for Bedrock Groundwater (AECOM, 2008), and the RACR for the Area Downgradient of the ISS Mass (AECOM, 2010).
- November 2006 through February 2007: Following BPLM characterization activities, additional geophysical characterization activities were conducted to further define bedrock groundwater downgradient of the ISS. Characterization activities included pneumatic slug testing of five shallow bedrock test wells (MW-110(D), MW-111D, MW-200D, MW-207D, and IW-1). Results are reported in the Focused Feasibility Study for Alluvium in the Area Downgradient of the ISS Mass (ENSR, 2008). The reported hydraulic conductivity (K) for alluvial groundwater was modeled to be approximately 5.0 ft./day, with an estimated groundwater seepage velocity of approximately 0.20 ft./day.
- January 2007 and February 2007: NAPL adsorbent (FLUTe) liners were installed in select bedrock groundwater monitoring wells that had elevated concentrations of benzene and naphthalene that might indicate the presence of BPLM (MW-110(D), MW-110D, MW-111D, MW-201D, MW-204D, MW-205D, IW-1, IW-2, and IW-3) in order to determine the locations possible BPLM-bearing fractures in the bedrock. Results of the NAPL investigation indicated a lack of significant BPLM-bearing fractures in bedrock monitoring wells, and that the few fractures that were observed are located in the upper 10 feet of bedrock (AECOM, 2008, Appendix C).

- December 2007: The former Macon Iron & Paper (MI&P) building was razed to facilitate continued ISCO injection as proposed in the CAP-A, but post-demolition conditions warranted the need for further investigation. AECOM's investigation in December 2007 and follow-up work in March 2008 found residual BPLM impacts in the subsurface. A total of eleven soil borings were advanced and three temporary wells were installed as part of the investigation. All depths of TLM observed in the borings were below the water table.
- August 2009: Supplemental site characterization activities including the advancement of forty-one direct push soil borings and the collection of ten soil samples for forensic fuel fingerprint analysis were performed in August 2009. Results of the forensic analyses indicated that the impacts were related to the Western Portion MGP operation involving burning resin, which was different from historic operations performed at the Mulberry Street MGP (ECM, 2009).
- January and February 2010: Data gap investigations performed in the Western Portion MPG, including the installation of twenty additional soil borings and eleven monitoring wells, were performed at the site. Results of the investigation are detailed in ERM's April 8, 2011 Data Gap Investigation Report, which was submitted as an Appendix to ECM's 2011 FFS - Western Portion and MW-101 Area. The FFS recommended ISS with limited excavation as the selected remedy for the Western Portion.
- October and November 2010: As the proposed remedy (ISS with excavation) in the 2011 FFS was a change from the 2006 CAP-A, a revised CAP was determined necessary following some additional delineation to fill in data gaps and to confirm vertical and horizontal delineation above the RRS, with additional pre-design investigation tasks to provide necessary data inputs for remedy design.
- March 2013: Advancement of twenty-six soil borings (SB-900 through SB-925) around the perimeter of the proposed remediation footprint in the western portion of the site in an effort to delineate soil COIs. In addition, the advancement of thirty-six soil borings (SB-950 through SB-985) inside the footprint of the proposed corrective action to define the vertical extent of soil COI exceeding the Type 4 RRS (ERM, 2014). Results of the investigation are included in [Appendix C](#).
- March 2013: Installation of three bedrock groundwater monitoring wells (MW-12DRR, MW-205DD, and MW-302DD) to evaluate the vertical and horizontal extent of MGP impacts in the bedrock aquifer in the area downgradient of the ISS on MUDA property. Boring Logs and Well Construction Diagrams are included as [Appendix D](#).

- April 2013: Advancement of thirty-eight soil borings as part of investigations to design the remedy for the Western Portion and MW-101 Area groundwater (ERM, 2014). Results of the investigation are included in [Appendix C](#).
- September 2013: Installation of temporary monitoring wells DTW-1 through DTW-6 downgradient of the planned corrective action for the Western Portion, along the fringe of the existing ISS mass on the MUDA property; installation of DTW-7 through DTW-18 in the MW-101 area; and installation of DTW-20 through DTW-29 to evaluate the extent of dissolved phase impacts associated with the Western Portion MGP. Results of the dissolved phase investigation are included in [Appendix C](#).
- November 2013: Advancement of eight soil borings (NS-1 through NS-8) to refine the extent of potential MGP residual impacts to the northwest of the Western Portion on property owned by Norfolk Southern. Residual MGP impacts were observed in five borings. Results of the investigation are included in [Appendix C](#).
- November 2013: Installation of four bedrock groundwater monitoring wells (MW-304D, MW-305D, MW-306D, and MW-307D) to further assess MGP-impacts to bedrock groundwater downgradient of the Macon MGP site, and installation of one upgradient bedrock monitoring well (MW-308D). Boring Logs and Well Construction Diagrams are included in [Appendix D](#).
- February 2014: The Western Portion and MW-101 Area Groundwater CAP-A (ERM, 2014) was submitted to EPD. The 2014 CAP-A included delineation sample results from the 2013 soil boring and dissolved phase investigations, and proposed excavation for unsaturated soils and ISS for MGP source materials below the water table for corrective action for source material located in the Western Portion. Proposed activities are scheduled to begin in 2015.

2.3.2 *Summary of Previous Corrective Actions*

This Section describes significant corrective actions that have been performed for the contaminated media at the Site. Previous corrective actions performed for source material in the overburden and shallow groundwater in the Western Portion MGP area are summarized in Section 1.2 of the 2014 CAP-A, and for source material in the overburden and shallow groundwater in the MW-101 area in Section 1.3 of the 2014 CAP-A. The dates and locations of the corrective actions are presented in Figure 1-4 of the 2014 CAP-A (included as [Appendix C](#)).

- January 2000 through March 2000: Soil remediation in Central City Park was conducted in accordance with the Central City Park (CCP) Corrective

Action Plan (ThermoRetec, 1999) to remove unsaturated soils near the intersection of Walnut Street and 7th Street. Excavation included areas with Type 3 RRS exceedances from soil borings SB-131 through SB-178 and SB-182 through SB-184. Results were submitted to EPD in the Soil Removal Completion Report – CCP (Appendix A of the Soil Remediation Closure Report for OU-2 and OU-4; RETEC, 2002b).

- December 2000: Submittal of the CAP for Sediments on the Ocmulgee River (ThermoRetec, 2000) for the removal of TLM and impacted sediment in the Ocmulgee River adjacent to the former Mulberry Street site. This CAP included an Ecological Risk Assessment and Human Health Risk Assessment. Sediment remediation was performed during September 2001 and October 2001 in adherence to the EPD-approved CAP dated December 28, 2000; the Army Corps of Engineers' permit dated July 24, 2001; and the EPD Water Quality Certification issued on March 12, 2001. Sediment remediation activities, which included capping the sediments with rip-rap, were summarized in the Sediment Removal Completion Report, Upper and Lower Outfalls – Ocmulgee River (RETEC, 2002a).
- October 2001: Development a Basis of Design Work Plan (BDWP; ThermoRetec, 2002), for soil remediation at the Mulberry Street MGP. The BDWP was implemented in 2002, and the activities are summarized in the Soil Remediation Closure Report for OU-2 and OU-4, (RETEC, 2002b). ISS and excavation were completed at the Mulberry Street MGP site in August 2002. The limits of ISS extended across the site and ended approximately 30-feet west and 20 feet north of MW-101. Details regarding the remediation are provided in RETEC's 2002 Soil Remediation Closure Report for OU-2 and OU-4. Additional ISS activities were performed at the Mulberry Street MGP in 2009-2010 and are summarized in the RACR for the Area Downgradient of the ISS Mass (AECOM, 2010).
- September 2001 through August 2002: Unsaturated soils at the Mulberry Street MPG property were remediated by excavation and saturated soils at the site were stabilized using a portland cement based ISS procedure. Based on the extent of known MGP impacts, all impacted soils (RRS exceedances) above the water table were excavated and soil impacts below the water table were stabilized in accordance with the approved CAP and design parameters provided in the Soil Remediation Closure Report for OU2 and OU4 (RETEC, 2002b).
- January 2004: Submittal of the CSR (RETEC, 2004a). Results of Mulberry Street MGP delineation and investigation and remediation activities are summarized in the 2004 CSR. [Figure 2-1](#) presents the previous parcel certification, as indicated below. The Soil Certification is provided within the January 2004 CSR. This report certifies soil for existing properties and adjacent parcels for compliance under HSRA, as noted below:

Type 1 Risk Reduction Standards for Soil

- Parcel No. OC-27-1A
- Parcel No. OC-27-1C
- Parcel No. OC-107-1A

Type 2 Risk Reduction Standards for Soil

- Parcel No. OC-14-1A
- Parcel No. OC-14-1AA
- Parcel No. OC-26-3A
- Parcel No. OC-107-1B
- Portions of Railroad Switching Yard and Right-of-Way of CSX Transportation (leased by Georgia Central)

Type 3 Risk Reduction Standards for Soil

- Central City Park

Type 4 Risk Reduction Standards for Soil

- Parcel No. OC-15-5A
- Parcel No. OC-26-7A
- Parcel No. OC-26-8C
- Parcel No. OC-107-2A
- Parcel No. OC-107-3A
- Sixth Street and Right-of-Ways between Walnut and Mulberry Streets
- Seventh Street and Right-of-Ways between Walnut and Mulberry Streets
- Mulberry Street and Right-of-Ways between Sixth and Seventh Streets
- Walnut Street and Right-of-Ways between Sixth and Seventh Streets

Type 5 Risk Reduction standards for Soil

- Parcel No. OC-15-1A
- Parcel No. OC-15-4A
- Parcel No. OC-15-6A

Certifications for River Sediments

The following property is in compliance with sediment removal and clean-up goals in accordance with the standards established per the approved Corrective Action Plan for Sediments in the Ocmulgee River dated January 5, 2001.

- Lower Outfall of the Ocmulgee River

The following property is in compliance with the sediment removal and clean-up goals in accordance with the standards established per the approved Corrective Action Plan for Sediments in the Ocmulgee River dated January 5, 2001 and is also in compliance with the Type 5 risk reduction standards.

- Upper Outfall of the Ocmulgee River

- 2004: Pilot studies were performed in the areas of MW-101 (adjacent to the ISS mass on the Mulberry Street site and MW-9 (Western Portion MGP site) to evaluate the effectiveness of an oxygen diffusion technology (in-situ oxygen curtain) (iSOC®) to promote biodegradation of COI in the alluvial aquifer in areas where groundwater exceeded applicable cleanup standards.
- July 2004: The iSOC® system was installed in an injection well (IW-4) in the MW-101 area and began operation. The system operated continuously except for brief maintenance periods until February 2005, after concentrations of COIs (benzene and naphthalene) were reduced to below their detection limit. The system was turned off in February 2005.
- 2004: In situ chemical oxidation (ISCO), using modified Fenton's reagent, was pilot tested in an attempt to reduce the benzene and naphthalene groundwater concentrations in bedrock well MW-12D. However, due to the concentrations observed in MW-110(D) and MW-111D, the EPD requested further characterization of the off-site bedrock impacts, and consequently MW-112D and MW-113D were installed downgradient of MW-111D and MW-110(D), respectively, and MW-114D was installed cross gradient of MW-12D and the ISCO injection wells .
- December 2004: RETEC submitted a Pilot Test Work Plan (PTWP) for the MW-09 Area of the Western Portion on December 17, 2004 for a study of oxygen enhanced bioremediation using in-situ oxygen curtain (iSOC®) technology, and a bench-scale study for in situ chemical oxidation (ISCO). The PTWP was approved by the EPD on February 10, 2005.
- February 2005: The pilot study for enhanced bioremediation was implemented on February 25, 2005 in accordance with the PTWP. Results of the iSOC® pilot study indicated that oxygen-enhanced bioremediation may not be effective in reducing the benzene and naphthalene concentrations in the MW-09 area. This suggested that the residual impacts in the saturated zone near the MW-09 area were not amenable to aerobic bioremediation due to insufficient oxygen delivery and distribution capability. The pilot study results are summarized in the June 30, 2005 Groundwater CAP Addendum (RETEC, 2006).

- April 2005: Geophysical investigations were also conducted to aid in designing an additional remedy to address the impacts observed at MW-110(D) and MW-111D. Benzene and naphthalene concentrations in the newly installed wells (MW-112D through MW-114D) were all below applicable detection limits, therefore, the bedrock plume downgradient of the ISS mass was considered to be adequately characterized (RETEC, 2006).
- June 2006: A second phase of the bedrock remedy to address the off-site impacts observed in MW-110(D) and MW-111D was approved by EPD. This phase of the bedrock remedy, conducted in June 2006, also consisted of ISCO with modified Fenton's Reagent, but was coupled with groundwater extraction in order to assist with oxidant distribution in the fractured bedrock and to minimize plume displacement downgradient of the injection points. During implementation of this phase, an increase in the groundwater elevations in the alluvial wells was observed almost immediately upon start of injection and extraction, indicated hydraulic communication between alluvial groundwater and bedrock groundwater in the vicinity of the intersection of Walnut Street and 7th Street. After the third day of injection coupled with extraction, dense non-aqueous phase liquid (DNAPL) was observed in MW-111D, while globules of TLM were observed in MW-110(D). When DNAPL and other BPLM continued to be observed in the effluent from the off-site wells (MW-110(D) and MW-111D), the chemical oxidant was placed by gravity feed into MW-110(D) and MW-111D at the end of every day in an effort to treat the area immediately adjacent to the wells. In summary, over a 30-day period, a total of approximately 12,000 gallons of 12 percent modified Fenton's Reagent was injected into the bedrock aquifer and a total of approximately 90,000 gallons of groundwater was extracted and treated prior to proper disposal to the Macon publicly owned treatment works (POTW).
- 2007: ISCO activities were implemented in the Western Portion in 2007 in accordance with the April 2006 CAP-A and extended to the edge of an existing building. The building was demolished in December 2007 to facilitate further ISCO. However, ISCO activities were suspended pending further investigation of the extent and nature of impacts.
- May 2008: Following investigation and delineation of the impacts beneath the former MI&Paper building footprint, a treatability study was performed with soil and groundwater collected from the subsurface beneath the building. Results of the treatability found that modified Fenton's Reagent, the oxidant that was currently in use at the site, was best suited for optimal chemical oxidation beneath the building footprint. Although it was estimated that an oxidant demand similar to what was calculated in the south was needed to treat the TLM blebs and stringers, given that there was initial evidence of free product and a thicker impacted zone, the injection scheme was modified to require tighter

spacing and an increased injection depth range to achieve the same results.

- September 2009 through December 2009: Additional ISS completed in the eastern corner of the Mulberry Street site. A total of 16,010 cubic yards of alluvial soil was solidified through the completion of 621 ISS columns. The ISS mass keyed into the existing ISS mass and extended to the Walnut Street and 7th Street right-of-ways. In addition, a total of 19,680 tons of impacted soil was excavated. The remedial activities are summarized in the 2010 RACR (AECOM, 2010). Following corrective actions to the overburden, the only remaining shallow groundwater impacts above RRS at the Mulberry Street MGP were in the vicinity of at MW-101, adjacent to the ISS mass.
- 2010: A Groundwater CAP-A, prepared by ERM and submitted to the EPD on May 7, 2010 provided modifications to the April 2006 CAP-A, by updating the monitoring network and sampling frequency. The 2010 Groundwater CAP-A specified semiannual samples to be analyzed for benzene and naphthalene and annual groundwater samples to be collected for analysis of COI and MNA parameters, with groundwater monitoring reports to be prepared semiannually. In accordance with the correspondence sent to EPD on January 5, 2011, semiannual sampling was expanded to include benzene, toluene, ethylbenzene, and xylene (BTEX), naphthalene, and metals.
- February 2011: Completion of a Vacuum Enhanced Fluid Recovery (VEFR) event to recover DNAPL accumulated in MW-111D. Approximately 0.75 feet of DNAPL was measured in MW-111D prior to the VEFR event. The event was conducted for 6.75 hours, removing approximately 1,395 gallons of liquid, including 40 gallons of DNAPL and an equivalent of 0.2 gallons of hydrocarbons contained in the off-gas vapor. A copy of the subcontractor report detailing the event is included as [Appendix E](#).
- September 2013: Completion of a VEFR event to recover DNAPL accumulated in MW-111D. Approximately 0.96 feet of DNAPL was measured in MW-111D prior to the VEFR event. The event was conducted for 5.5 hours, removing approximately 899 gallons of total fluid, and an estimated total of 1.6 pounds of hydrocarbons, including approximately 0.2 equivalent gallon of OLM. A copy of the subcontractor report detailing the event is included as [Appendix E](#).
- February 2014: The Western Portion and MW-101 Area Groundwater CAP-A (ERM, 2014) proposed excavation for unsaturated soils and ISS for MGP source materials below the water table for corrective action for source material located in the Western Portion MGP area. Proposed activities are scheduled to begin in 2015. This February 2014 CAP-A is

being incorporated into the current VIRP, and it is intended that this work also be completed under the VRP.

A CSM has been developed based on data obtained during historic and recent investigations documented in previous reports, and from published literature reviews. The objective of the CSM is to illustrate current Site conditions and describe the processes that control the transport, migration, and possible impacts to potential human and ecological receptors.

3.1

GEOLOGY

3.1.1

Regional Geology

The southern part of Macon, Bibb County, Georgia, is located in the Coastal Plain physiographic province and the northern part lies within the Piedmont province (Clark and Zisa, 1976). The Coastal Plain province in Bibb County is divided into three distinct physiographic regions that include the Sand Hills, Red Hills, and Tifton Upland. The region around the Site lies within the Sand Hills region and is characterized by light-colored sands and clays of Late Cretaceous age that slope gently towards the southeast (Husted et. al. 1978; Legrand 1962; RETEC 2006). The Piedmont province is characterized by a rolling to hilly upland area of moderate relief that slopes gently to the south (RETEC, 2006).

The region around the Site consists of an alluvial river-cut terrace within the Atlantic Coastal Plain province, approximately one-quarter mile west of the Ocmulgee River (Clark and Zisa, 1976; RETEC, 2006; ENSR, 2008). Elevations in the area range from approximately 275 to 325 feet above mean sea level (AMSL) (United States Geological Survey [USGS] Topographic Map Macon West and Macon East, Georgia; [Figure 1-1](#)) (ENSR, 2008). The area is underlain by up to 40 feet of Pleistocene- to recent-age alluvial deposits described as unsorted sand, gravel, and clay (RETEC, 2006; ENSR, 2008).

Below the alluvial deposits, the Late Eocene upper sand member of the Barnwell red sands grading downward into interbedded yellow sand and clay (Husted et. al., 1978). The Cretaceous-age Tuscaloosa Formation lies unconformably below the Barnwell Formation and consists of fine- to coarse-grained, subangular, micaceous, arkosic sands that are interbedded with gray to green, locally iron-stained kaolinitic, micaceous sandy clays (Legrand, 1956; Husted et. al. 1978). The base of the Tuscaloosa in this area dips slightly to the southeast and lies unconformably above crystalline bedrock. The Tuscaloosa Formation is underlain by Precambrian

and older Paleozoic crystalline rocks that include mica schist, felsic gneiss and schist, and granite and granite gneiss (Couch et. al., 1996).

ERM conducted a lineament analysis for the area surrounding the Site as linear features present at the ground surface (i.e., lineaments) commonly represent surface expressions of bedrock structural features. As such, by mapping the orientations of lineaments, one can infer the orientation of the regional-scale bedrock structural features. The predominant lineament orientations interpreted by ERM are northeast-southwest and northwest-southeast, with a secondary set of lineaments oriented north-south and east-west ([Figure 3-1](#)).

3.1.2

Site Geology

Previous investigations and remediation activities have identified geologic units consisting of fill material; unconsolidated alluvial deposits; sandy clays of the Tuscaloosa Formation; a clayey to silty saprolite; and a granitic gneiss bedrock (Williams, 2000; RETEC, 2006). Throughout most of the Site, the fill material is comprised of a combination of sand, silt, clay, and gravel and is encountered from the ground surface to depths ranging from approximately 0.2 to 15 ft. bgs. The fill material is thickest in the MW-09 area and diminishes near the perimeter of the Site.

The alluvial deposits underlying the fill material generally grade downward from sandy clays and clayey sands, to silty sands, further to sands and gravelly sands (RETEC, 2006). The alluvial sands and gravels have been subdivided into upper, middle, and lower sands and gravels (ENSR, 2008).

The alluvial deposits overlie the Cretaceous-age Tuscaloosa Formation (where present) and the older, underlying saprolite. The Tuscaloosa Formation is generally found west and north of Sixth Street and tapers off in the western/northwestern portion of the Mulberry Street MGP Site, consistent with the orientation of the overlying beds. The Tuscaloosa is encountered from 5 to 23 feet bgs and thickness ranges from approximately 3.5 to 11 ft. (ENSR, 2008).

The base of the Tuscaloosa formation lies unconformably above a saprolite unit. Saprolite, a product of rock decomposition that is formed through in situ chemical weathering, is characteristic of the region (Pavich, 1996). It is characterized by the presence of relict structures present in the original unweathered rock and exhibits the original rock makeup. The saprolite encountered at the Site is generally a clayey silt characterized by relict foliation and structures associated with the parent igneous and metamorphic rock. The thickness of the saprolite at the Site ranges from 6.5 to 30 feet (RETEC, 2006; ENSR, 2008).

The saprolite at the Site is not considered to be a porous media due to the limited number of fractures observed during subsurface investigations. The decomposition of granitic gneiss, abundant in both muscovite and biotite mica, has formed sheet silicates that weather readily into clays. The resulting saprolite has a low flow capacity with low permeability and little to no secondary porosity resulting from fractures in the parent rock (RETEC, 2006; ENSR, 2008). The saprolite contact, as determined from review of historic boring logs and cross-Sections, dips downward from southwest to northeast (Figure 3-2). The saprolite elevation ranges from approximately 302 feet AMSL (at BGS-02) to 268 feet AMSL (at MW-113D) (RETEC, 2006; ECM, 2011; ERM, 2011).

The underlying bedrock consists of a granitic gneiss containing both open and fused fractures that diminish with depth (RETEC, 2006). In June 2005, COLOG performed geophysical logging in ten well boreholes at the Site (RETEC, 2006, Appendix D). The results of the geophysical logging demonstrated that the fractures vary in aperture and dip angles range from 10 to 85 degrees from horizontal. Bedrock fractures demonstrate a primary fracture orientation to the east and southeast and flow lines are generally parallel to fracture orientations (Figure 3-2). Figure 3-3 presents optical televiewer digital borehole images demonstrating the nature of fractures present in shallow bedrock at the Site. The majority of fractures exhibit small apertures, with limited exceptions (e.g., 32.8 – 33.4 ft. bgs in MW-111D). Chemical weathering of the mafic portion of the gneiss has resulted in a porous texture (open cavities) ranging in thickness from 1 millimeter (mm) to 2 centimeters (cm). The number of open cavities and fractures appears to decrease with depth (RETEC, 2006; ENSR, 2008).

3.2 *HYDROGEOLOGY*

3.2.1 *Regional Hydrogeology*

The Ocmulgee River is located approximately 1,000 feet northeast of the Site. Sand and gravel deposits within the alluvium are the most permeable geologic deposits in the vicinity of the Site. Recharge to the Tuscaloosa occurs in outcrop areas west of the Ocmulgee River. Groundwater in the alluvium and Tuscaloosa is expected discharge into the Ocmulgee River. The Paleozoic-aged and older igneous and metamorphic rocks, and their associated saprolites generally exhibit low transmissivities. Groundwater within these bedrock units is expected to discharge upward into the overlying geologic strata and ultimately to the Ocmulgee River (ENSR, 2008).

3.2.2

Site Hydrogeology

Groundwater is present in portions of the fill material, the alluvium, the Tuscaloosa Formation, saprolite and bedrock. Groundwater is typically first encountered at a depth ranging from 6-20 feet below land surface. Imported backfill material, consisting of clays, silty clays and sandy clays, replaced the fill in all or part of the Site and was compacted to at least 95 percent compaction, resulting in a low permeability. The sands and gravels at the base of the alluvium appear to provide preferential pathways for groundwater flow. In the eastern area, the base of the alluvium contains an alluvial clay, lying directly above the saprolite in some areas, and these combined units appear to serve as an aquitard consisting of clays, silty clays, and clayey silts (ENSR, 2008). The Tuscaloosa causes a perched water table in upgradient, western monitoring wells, near the MW-09 and MW-108 clusters (ENSR, 2008).

3.2.2.1

Alluvium Hydrogeology

Groundwater within the alluvium flows predominantly to the southeast (RETEC, 2006). [Figure 3-4](#) presents August 2013 potentiometric surface for the alluvium groundwater at the site. The geometric mean of hydraulic conductivity values for wells screened in the alluvium was determined to be 1.68×10^{-3} centimeters per second (cm/sec) (or approximately 5 feet per day [ft./day]) (RETEC, 2006; ENSR, 2008). In the western portion of the Site, shallow groundwater predominantly flows eastward around the In-Situ Stabilization (ISS) mass toward the Ocmulgee River. The ISS mass has created an obstacle for groundwater flow since the mass has a hydraulic conductivity several orders of magnitude lower than the surrounding alluvial aquifer (i.e., 10^{-9} to 10^{-6} cm/sec) (ENSR, 2008). The presence of the ISS mass has resulted in a slight mounding, reducing the hydraulic gradient upgradient (northwest) of the Site).

With a hydraulic gradient of approximately 0.01 (along ISS mass) and an estimated effective porosity of approximately 0.25, the groundwater seepage velocity in the alluvium is approximately 7.05×10^{-5} cm/sec (0.20 ft./day). The vertical gradient of the alluvium is slightly downward (ENSR, 2008).

3.2.2.2

Bedrock Hydrogeology

Average potentiometric surface contours for the shallow bedrock aquifer are shown on [Figure 3-5](#). Typical depths to bedrock are 30-50 feet below land surface, with the potentiometric surface ranging from 6-20 feet below land surface. Average groundwater elevation data are plotted to eliminate anomalies in the dataset or short-term perturbations in the flow regime. As shown on [Figure 3-5](#), groundwater in shallow bedrock flows primarily toward the east and southeast. There also appears to be a northeasterly component of groundwater flow,

indicating that a groundwater flow divide appears to transect the northern portion of the site (note: this apparent groundwater flow divide is based largely on one data point: MW-22D). Groundwater flow within fractured bedrock aquifers is controlled by a combination of hydraulic gradients and fracture orientations. As shown on [Figure 3-2](#), the primary orientation of bedrock fractures at the site is to the southeast, which is consistent with the groundwater flow direction indicated by the hydraulic gradient, suggesting that site groundwater flows primarily in this direction.

A sustainable yield pumping test was performed in bedrock well MW-12D in October 2003 (RETEC, 2006). Steady-state equilibrium was achieved with a discharge rate of 0.5 gallons per minute (gpm). Based on interpretation of the pumping test data, a hydraulic conductivity of $3.4\text{E-}06$ cm/sec ($9.6\text{E-}03$ ft./day) was calculated for the pumping well (RETEC, 2006). Hydraulic conductivity values calculated for nearby bedrock monitoring wells (i.e., MW-111D, MW-200D, MW-207D, and IW-1) ranged from $4.6\text{E-}04$ to $9.2\text{E-}04$ cm/sec (1.3 to 2.6 ft./day) (ENSR, 2008). In contrast, the hydraulic conductivity value calculated for MW-110D [replacement well for MW-110(D)] was $7.1\text{E-}03$ cm/sec (20 ft./day) due to the presence of a larger-aperture water-bearing fracture (ENSR, 2008). In general, optical televiewer borehole images confirmed that there are very few large-aperture, high-permeability bedrock fractures present in shallow bedrock at the Site ([Figure 3-3](#)). One of the few large-aperture fractures in shallow bedrock was observed in MW-110(D) ([Figure 3-3](#)), which exhibits a hydraulic conductivity value that is an order of magnitude higher than other nearby bedrock wells.

Interpretation of the pumping test data suggests that the shallow fracture network is well connected in the vicinity of 7th and Walnut Streets. This finding is based on the results of previous pumping and injection work combined with the pneumatic testing and bedrock groundwater extraction work performed in advance of the FLUTe liner installation (ENSR, 2008). Bedrock groundwater had a fairly uniform response to pumping indicating that the upper, fractured bedrock aquifer is well connected and there are no significant preferential flow pathways. With a hydraulic gradient of approximately 0.013 and an estimated effective porosity of approximately 0.05, the groundwater seepage velocity of the bedrock is approximately $1.76\text{E-}04$ cm/sec (0.50 ft./day). The vertical gradient of the bedrock is slightly downward (ENSR, 2008).

3.3

NATURE AND EXTENT OF CONTAMINANTS OF CONCERN

Residual MGP impacts persist in unsaturated and saturated soils in the Western Portion MGP area. Groundwater impacts associated with historic MGP

operations persist in the alluvial groundwater on both the Western Portion MGP and the Mulberry Street MGP sites.

3.3.1 *Distribution in Soils*

The 2014 CAP-A (ERM, 2014; [Appendix C](#)) provides details of the distribution of MGP-related impacts in unsaturated and saturated soils in the Western Portion MGP area, including figures depicting the vertical and horizontal extent of residual BPLM as determined during numerous site investigations. As presented in Section 2.0, the parcels associated with the former remedial efforts at the Mulberry Street MGP site have been certified compliant with RRSs, and further evaluation is not warranted (RETEC, 2004).

3.3.2 *Distribution of DNAPL*

Evidence of DNAPL has been identified at the Site at locations shown on [Figure 3-6](#). DNAPL was observed during the installation of MW-305D, located downgradient of the ISS, along the eastern side of 7th Street, in 2013. The DNAPL was encountered in the saprolite zone near the top of bedrock, at a depth of approximately 31 ft. bgs. DNAPL was not observed during the drilling and installation of any other bedrock wells completed in 2013.

DNAPL was first observed in MW-111D June 2006 during groundwater extraction from the well as part of ISCO injection activities. DNAPL continues to be observed at MW-111D, located at the intersection of Walnut Street and 7th Street. Prior to completion of the most recent VEFR event (September 23, 2013), approximately 0.96 feet of DNAPL had accumulated in the well. Since the previous VEFR event (February 2011) a total of 1.6 pounds of DNAPL were recovered in September 2013 (amount reflecting approximately 30 months of accumulation between extraction events). Based on this data, the rate of accumulation of DNAPL in MW-111D is estimated to be at most approximately 0.053 pounds per month. ([Figure 3-6](#)). A copy of the February 2011 and the September 2013 VEFR reports are included as [Appendix E](#).

DNAPL was first observed in MW-302D while purging the well during the May 2011 groundwater sampling event. DNAPL has since been sporadically detected on the probe tip during gauging of the well. There has never been measurable accumulation in the well. An estimated total of 0.7 pound of hydrocarbons was removed during this event during the September 2013 VEFR event.

In 2007 NAPL adsorbent (FLUTe) liners were inserted into select bedrock wells in order to investigate the presence of DNAPL and the location of NAPL-bearing fractures in the test wells if present. FLUTe work at well MW-200D provided the most useful insight into the depth of the major BPLM-bearing fractures. At this well location, three fractures between approximately 27 to 33 ft. bgs contained

evidence of mobile DNAPL. At other wells where FLUTes were installed, the only evidence of DNAPL was noted as a few blebs in the liners at MW-201D (29 ft. bgs) and MW-110(D) (33.7 ft. bgs). The extent of DNAPL in the bedrock setting at the site is considered of limited consequence, as a result of the following site specific observations:

- The presence of DNAPL has been delineated at the site;
- Accumulation of DNAPL is not routinely encountered in bedrock wells (only 1 in 34 wells, low frequency of detection);
- The DNAPL areal extent is limited, and is present within road/railroad ROWs adjacent to the site;
- The site geology (i.e. bedrock fractures and bedrock topography) does not support migration of DNAPL;
- In a few cases, blebs and stringers have been identified through the use of unique investigatory techniques or through sampling efforts, yet DNAPL accumulation is not routinely observed;
- The largest distance of DNAPL migration from the site is <75 feet, after a potential depositional period of >100 years.

More discussion regarding DNAPL fate and transport is provided in Section 3.5 below.

3.3.3 *Dissolved Phase Distribution*

Mono aromatic hydrocarbons (VOCs, such as benzene) and PAHs (such as naphthalene) have been detected in alluvial and bedrock groundwater at the site.

[Appendix C](#) presents the dissolved phase distribution of the MGP impacts that persist in alluvial groundwater (above bedrock). Specifically dissolved phase impacts are present in the vicinity of the proposed ISS remedy at the Western Portion MGP, and in the vicinity of MW-101, near the eastern edge of the ISS on the Mulberry Street MGP site ([Figure 3-7](#)). [Figures 3-8](#) and [3-9](#) depict the distribution of benzene (representative of the distribution of mono aromatic hydrocarbons) in bedrock during February and August, 2014, respectively. [Figures 3-10](#) and [3-11](#) depict the distribution of naphthalene (representative of the distribution of PAHs) in bedrock during February and August, 2014, respectively. The lateral and vertical extent of mono aromatic hydrocarbons and PAHs has been delineated relative to applicable regulatory standards, which are discussed below.

Delineation standards under the VRP allow for the delineation of contaminants to the default Type 1 residential RRS. Delineation for all media at the site has been completed.

3.4.1

Soil

A summary of previously EPD-approved RRS for Site COIs in soil is provided in [Table 3-1](#). Previously completed corrective actions associated with the Mulberry Street MGP have addressed soils on that property and in the vicinity of the intersection of Walnut Street and 7th Street (See [Figure 2-1](#)). The planned corrective actions presented in the February 18, 2014 CAP-A ([Appendix C](#)) will address the saturated and unsaturated MGP impacts associated with the Western Portion MGP where soils exceed the applicable RRS (as Target Remediation Goals).

3.4.2

Shallow Groundwater

The proposed RRSs for a partial list of COIs detected above background in groundwater were presented in the 2004 CSR (RETEC, 2004) and subsequently approved by EPD, while proposed RRSs for the remaining COIs were presented in the Semiannual Ground Water Monitoring Report: May and August 2012 Sampling Events (ERM, 2012). A summary of EPD-approved RRS for Site COI in groundwater is provided in [Table 3-2](#). The extent of dissolved phase COI in alluvial groundwater is shown on [Figure 3-7](#), based on data collected through December 2013. The benzene and naphthalene contours shown on the figure represent the current, EPD-approved RRS of 5 µg/L and 20 µg/L, respectively. Depth to shallow groundwater typically ranges from 6-20 feet below land surface.

3.4.3

Bedrock Groundwater

A summary of EPD-approved RRS for Site COI in groundwater is provided in [Table 3-2](#). Laboratory analytical results for groundwater samples collected from bedrock monitoring wells in February and August 2013 are summarized in [Table 3-3](#), and the laboratory analytical reports are included as [Appendix F](#). Only benzene and naphthalene in bedrock groundwater currently exceed the EPD-approved RRS for the Macon MGP Site.

Typical depths to bedrock are 30-50 feet below land surface, with the potentiometric surface ranging from 6-20 feet below land surface. The extent of benzene in bedrock groundwater in February 2014 and August 2014 is shown in [Figures 3-8](#) and [3-9](#), respectively. The extent of naphthalene in bedrock

groundwater in February 2014 and August 2014 is shown on [Figures 3-10 and 3-11](#), respectively. The applicable RRS (benzene = 5 µg/L and naphthalene = 20 µg/L) are displayed on the appropriate figures.

3.5 *CONTAMINANT FATE AND TRANSPORT*

3.5.1 *Soils*

Mono aromatic hydrocarbons present within the vadose zone are susceptible to leaching to groundwater as precipitation infiltrates the subsurface and migrates downward to the water table. In addition, these compounds can partition to the vapor phase and migrate via advective and diffusive transport mechanisms within the vadose zone.

Similarly, PAHs can also leach to groundwater and the lower molecular weight PAH (e.g. naphthalene) can also partition to the vapor phase. However, due to the relatively low solubility and volatility of PAHs, these compounds typically remain in vadose zone soil longer than mono aromatic hydrocarbons.

3.5.2 *DNAPL Migration Pathway*

Coal tar is a DNAPL that is characterized by densities typically ranging from 1.01 to 1.20 kilograms per cubic meter and viscosities ranging from 20 to 100 centipoise (USEPA, 2003). Tars from water-gas or oil-gas processes are generally less viscous and lighter than water and may behave as light non-aqueous phase liquid (LNAPL).

Upon release into the subsurface, DNAPL does not mix with groundwater, but persists as a hydrophobic separate phase as it moves through the subsurface. The migration of DNAPL in the subsurface is controlled by a combination of gravity, viscous forces, capillary forces, and geologic heterogeneities. For a DNAPL to migrate in any direction, its entry pressure must be greater than the capillary pressure of the pore space or fracture into which the DNAPL is flowing. A DNAPL will migrate vertically downward because of its relatively high density until it encounters a capillary barrier (i.e., relatively lower permeability geologic lens or layer), which retards or halts vertical DNAPL migration, resulting in lateral migration along the capillary barrier. When the driving force on a DNAPL body cannot overcome capillary resistance, the DNAPL will stop flowing and will pool in that area (Poulsen and Kueper, 1992; Kueper et al., 1993; Brewster et al., 1995).

At this Site, DNAPL migrated downward through the alluvium until it reached the saprolite surface where it appears to have migrated into a topographic depression in the saprolite surface, which is shown on [Figure 3-2](#). Because the saprolite surface increases in elevation to the north and east of this topographic low, the DNAPL was and is not able to spread laterally beyond this topographic depression.

To the extent that the DNAPL pool overlies any bedrock fractures, the DNAPL could have entered fractured bedrock. However, as shown on [Figure 3-3](#), the majority of fractures in shallow bedrock exhibit relatively small apertures. It is very difficult for coal-tar DNAPL to enter small-aperture fractures, such as these, as there is not enough entry pressure to overcome the capillary pressure within these fractures. Where larger aperture fractures are present (e.g., at 32.9 to 33.6 ft. bgs in MW-111D, as shown on [Figure 3-3](#)), DNAPL can enter the competent fractured bedrock. However, very few larger-aperture fractures have been observed at the site. Thus, DNAPL is not expected to have migrated significantly into competent bedrock. This assumption is supported by the groundwater quality data collected from deeper bedrock wells installed at the Site, which exhibit low concentrations of mono aromatic hydrocarbons and PAHs.

3.5.3 *Dissolved Phase COIs*

Coal tar is a complex mixture of numerous compounds, including mono and polycyclic aromatic hydrocarbons, phenols, and heterocyclic oxygen, sulfur and nitrogen compounds (Cohen and Mercer, 1993). Of these constituents, benzene, toluene, ethylbenzene, and xylenes (i.e., mono aromatic hydrocarbons) and naphthalene (a PAH) are typically the most soluble compounds present in the DNAPL. Due to their greater solubility, these compounds preferentially partition from the DNAPL into the aqueous phase, resulting in depletion of these compounds from the DNAPL over time. Thus, the chemical and physical characteristics of the DNAPL change over time.

Of these compounds, benzene and naphthalene are the most commonly detected compounds in groundwater and are typically present at the highest concentrations. As such, benzene and naphthalene are the primary COIs at the Site and their distribution is considered to be representative of the distribution of dissolved-phase contaminants at the Site.

According to the Kueper et al. (2003), “[t]he chemical composition of the plume will be a function of the chemical composition of the DNAPL”. Therefore, the plume would expect to be dominated by higher effective solubility compounds at an early time, gradually shifting later towards higher concentrations of the

lower solubility compounds.” Using this rationale, [Figure 3-12](#) presents dissolved-phase chemical speciation data for wells located in proximity to DNAPL to demonstrate the nature and variability of the DNAPL chemical signature at the Site. This figure demonstrates that, in general, the remaining DNAPL is relatively enriched in PAHs over mono aromatic hydrocarbons in areas where DNAPL is present. Over time, this enrichment will continue to increase until mono aromatic hydrocarbons are depleted from the remaining DNAPL. Given the relatively lower solubility of PAHs, the size of the dissolved-phase plume is expected to decrease as the DNAPL continues to age. In addition, corrective actions are proposed within this VIRP, to further reduce the impact of DNAPL on dissolved phase COIs (See Section 5.0).

3.5.4 *Plume Migration and Transport Processes*

Groundwater and dissolved-phase COI migration will occur predominantly within the most permeable portions of the subsurface, which at this site is the alluvial sand and gravel deposits. As the COIs migrate within groundwater, several processes act to attenuate the concentrations and limit the plume dimensions. These processes include dispersion, dilution due to recharge, and matrix diffusion. As discussed in Section 3.5.5, additional biological processes act to further attenuation COI migration in groundwater.

Groundwater and dissolved-phase COI migration in bedrock is controlled by a combination of factors, including bedrock fracture orientation and interconnectivity, and hydraulic gradients. Similar to overburden, dispersion, dilution and matrix diffusion result in COI attenuation along the groundwater flow path.

Given the limited distribution of COIs in groundwater beyond the footprint of the DNAPL (as shown on [Figures 3-6 through 3-9](#)), it is clear that attenuation processes are effectively limiting plume migration at this site.

3.5.5 *Natural Attenuation Processes*

As noted in the above plume migration and transport processes discussion, benzene and naphthalene are the two most prevalent COIs in Site groundwater. As aromatic hydrocarbons, these compounds attenuate through similar natural attenuation processes but at different rates. These COIs are discussed separately in the following subsections. In addition, there is a section devoted to other PAHs, which represent some of the most recalcitrant of the organic compounds present at the Site.

Benzene is a monoaromatic hydrocarbon that is relatively soluble in water and has a high vapor pressure. Benzene has a moderately low affinity to bind to organic carbon in the soil matrix and tends to migrate in groundwater with limited retardation. Due to its moderate solubility in water and high vapor pressure, benzene will partition into the gas phase from groundwater.

Benzene undergoes natural attenuation in the environment by volatilization, adsorption, and biodegradation. The major mass removal processes for benzene are aerobic and anaerobic biodegradation. Benzene is readily biodegraded under aerobic conditions by naturally occurring microorganisms utilizing oxygen as the electron acceptor. The final end-products of this biodegradation process are carbon dioxide and water. Since oxygen recharge at most sites is slow relative to the rate of depletion due to biodegradation, aerobic biodegradation of benzene and other hydrocarbons results in the depletion of oxygen. As oxygen is depleted, subsurface conditions become anaerobic and the redox potential decreases. As the redox potential drops below 100 millivolts, the major biodegradation processes shift to anaerobic processes that use nitrate, sulfate, iron or manganese as electron acceptors and methanogenesis (methane production). Benzene biodegrades slower than other monoaromatic hydrocarbons (e.g. toluene) through anaerobic processes and tends to persist in anaerobic groundwater. However, laboratory and field data have shown that nitrate-, sulfate- and iron-reduction, as well as methanogenesis, will support benzene biodegradation with the production of carbon dioxide and methane. No abiotic degradation pathways are known for benzene in the subsurface; however, photolysis will occur in air.

Given the various biological degradation pathways, benzene readily attenuates in groundwater, as supported by the limited distribution of benzene in Site groundwater.

Naphthalene is a PAH with two fused aromatic rings. Naphthalene is much less soluble and volatile than benzene; however, it is the most soluble PAH and the only PAH that is considered slightly volatile. Similar to benzene, naphthalene undergoes natural attenuation in the environment by adsorption, biodegradation and, to a limited extent, volatilization. The major mass removal processes for naphthalene are aerobic and anaerobic biodegradation by naturally occurring microorganisms. The final end-products of this biodegradation process are carbon dioxide and water. No abiotic degradation pathways are known for naphthalene in the subsurface; however, photolysis will occur in air.

Given the various biological degradation pathways, naphthalene readily attenuates in groundwater, as supported by the limited distribution of naphthalene in Site groundwater.

3.5.6

Other PAHs

PAH are hydrophobic compounds, such as naphthalene, with multiple aromatic ring structures and are generally grouped by the number of aromatic rings in the structure. As the number of rings increase, and thus the molecular weight increases, the solubility and volatility decrease and the affinity for binding to soil organic carbon increases. For example, phenanthrene, which is a three-membered ring structure, is more than ten-fold less soluble and more than 100-fold less volatile than naphthalene. Phenanthrene and other 3-ring PAHs will dissolve in water to a limited extent but will be significantly retarded relative to groundwater flow due to strong binding to soil. The PAHs with four- and five-membered ring structures are significantly less soluble and less volatile with even higher affinities for soil. These compounds tend to remain bound to soil particles and do not significantly dissolve in groundwater. Elevated concentrations of these higher molecular weight compounds, however, can occur in groundwater due to binding to colloidal particles or other suspended particulates.

Since biological degradation occurs in the aqueous phase, the rate of biodegradation of these compounds is inversely proportional to solubility. Phenanthrene is biodegraded under aerobic conditions and under anaerobic conditions by nitrate and sulfate reduction through pathways similar to those of naphthalene. Four and five-ring PAHs such as benz(a)anthracene show limited biodegradation under aerobic and anaerobic conditions. No abiotic degradation pathways are known for these PAH in the subsurface; however, photolysis will occur in air.

As noted above, these multi-ring PAHs will become relatively enriched over time as the more soluble components of the DNAPL dissolve and are attenuated in groundwater. However, given that these multi-ring PAHs are not particularly mobile, the distribution of these compounds in the environment will be largely constrained to the DNAPL footprint and immediate vicinity.

3.6

EXPOSURE ASSESSMENT

This Section provides a human health exposure assessment for the properties being entered into the VRP. Potential receptors are identified based on existing and potential future land use and the physical setting of the site (e.g., soil characteristics, hydrogeology, and groundwater use). The exposure assessment

identifies potentially complete exposure pathways for receptors, considering the following components:

- 1) *Constituent source and release mechanism* (e.g., releases of constituents during operations)
- 2) *Receiving medium* (e.g., environmental media impacted from the primary source release) and *environmental transport/migration* (e.g., volatilization from the subsurface, lateral migration in groundwater),
- 3) *Exposure medium* (i.e., the point of potential human exposure with the affected medium), and
- 4) *Exposure route* (i.e., means of entry into the receptor's body, including ingestion, inhalation, dermal contact).

In the absence of any one of the above elements, an exposure pathway is considered incomplete, and by definition, there is no risk or hazard (USEPA, 1989). Additionally, the existence of a complete exposure pathway does not indicate the presence of significant or unacceptable risk of harm to human health. A constituent's concentration (in soil, water, and air), the frequency and duration of an individual's exposure, and the potential toxicity of the constituent are critical factors in determining whether there is a risk of harm. This section examines (a) whether individuals may be present on the subject properties, and are therefore identified as potential receptors, and (b) whether there is a reasonable likelihood for activities that can result in contact with environmental media containing site-related COIs, i.e., potentially complete exposure pathways. This section further provides an outline of how potential exposure (and resulting potential risk) will be addressed in accordance with the VRP to achieve certification of property uses with the least restrictions feasible.

In the VRP, the Uniform Environmental Covenants (UECs) and various controls (e.g., engineering, institutional) can play a role in controlling future use of the properties and use of the soil and water resources. For example, groundwater use controls will affect the potential for future exposure to groundwater beneath the properties. The role of the planned UECs and controls are recognized in the discussion herein, however, the final form of UECs and any controls will be determined for each parcel following implementation of remediation and confirmation of post-remedy conditions.

3.6.1 *Historical Source and Release of Constituents*

During operation of the MGP facilities, MGP constituents appear to have been released from sources involved in the manufacture or storage of gas or its by-products. Section 2.0 identified known and potential sources of the COIs, which are generally described as undocumented, historical releases from operations and storage associated with the MGP facilities. Extensive investigation (see Section 2.3.1) has provided a detailed understanding of the extent of MGP-related impacts to soil and groundwater.

3.6.2

Affected Environmental Media and Constituent Transport

The site-specific COIs identified in soil and groundwater are listed in [Tables 3-1 and 3-2](#), and include VOCs, PAHs, and inorganic compounds (i.e., metals, cyanide). A description of the nature and extent (i.e., delineation) of constituents in soil, alluvial groundwater, and bedrock groundwater is presented in detail in Section 3.4 and, along with land use, forms the basis for identification of potential receptors and potential exposure pathways.

The fate and transport of COIs is also important to the identification of potential receptors, as it provides an understanding of ‘receiving’ media that could potentially serve as points of exposure. In general, exposure assessments typically consider constituent migration pathways such as:

- Vertical leaching/transport through the subsurface, e.g., to deeper soil and groundwater
- Lateral migration within groundwater, e.g., to surface water or water supply wells
- Overland surface flow /storm water runoff, e.g., to surface water features
- Volatilization from soil and groundwater, e.g., to ambient or indoor air

The fate and transport of COIs at the site is discussed in detail in Section 3.5, which identifies potential migration pathways for COIs within and between environmental media. The typical potential migration pathways summarized above, and the site-specific characteristics (Section 3.0), were considered in the development of the receptor/exposure model summarized in the following sections.

3.6.3

Exposure Setting and Land Use

Potential receptors and their exposure pathways are identified based on current and reasonably anticipated, or covenant-defined, future land use and groundwater use. To support the land and groundwater use assessment, Geraghty & Miller, Inc. (G&M) was contracted by AGLC to perform a potential receptor study at the site, which was updated by Williams and summarized in the 2000 CAP (ThermoRetec, 2000). The potential receptor survey included a land use survey, water well survey, and an evaluation of surface water flow/storm water runoff conditions. The results of the survey are included in the discussion below and updated where appropriate. In particular, the water well survey was updated to reflect current information provided by the Macon Department of Public Health during September 2014.

The current land use of the parcels included in this VIRP can generally be described as non-residential and include the following. The AGLC and MUDA properties are currently vacant and vegetated, with no active use. The MUDA property is secured by fencing to limit trespassing. The City of Macon parcels (Mulberry and 6th; Terminal Avenue; 7th and Walnut) include roads and associated rights of way for vehicular traffic. The Norfolk Southern parcel includes an active railroad track. The contiguous parcels are generally surrounded by industrial/commercial property (Figure 1-3).

Future land use is expected to remain the same for the Norfolk Southern property and City of Macon roadway parcels. The specific use for the MUDA and AGLC properties has not been determined at this time, and compliance with VRP criteria while minimizing use restrictions for these properties is a goal of this remediation plan.

There are no known water supply wells within the impacted groundwater footprint or beneath any portion of the properties included in the VRP or within 1,000 feet of the extent of known groundwater contamination. Therefore, groundwater (alluvial or bedrock) from beneath the properties is not presently used as a drinking water supply or for any other purpose. Monitor wells on the parcels are used for investigative and remediation activities. According to the City of Macon Water Department, public drinking water is obtained exclusively from the Ocmulgee River approximately three miles upstream from the former MGP facility, and is the only source of water for the Macon water system. Of the wells identified as completed within a mile of the site (based on United States Geological Survey records and information obtained from the City of Macon Health Department) none are located downgradient of the site between the site and the Ocmulgee River (alluvial and bedrock groundwater discharge point). Wells located upgradient, cross-gradient, or on the other side of the Ocmulgee River within a mile appear to be for industrial use (e.g., process water, irrigation), with no public supply or domestic use identified.

The shallow alluvial zone and the bedrock zone naturally provide limited groundwater yield in the immediate vicinity of the Site, resulting in limited utility of these zones locally for water supply. Additionally, the completed and proposed stabilization of soil within the saturated alluvial zone in the ISS areas is estimated to reduce the hydraulic conductivity to 10^{-6} cm/sec or less. With such low hydraulic conductivity, it would not be practical to draw sufficient water from a well as a supply source for residential or non-residential purposes in the

ISS areas.

3.6.3.3 *Covenants and Controls*

The voluntary remediation proposed in this plan will achieve protection of human health and the environment through remedial actions and also through the use of institutional controls in the form of covenants. Compliance with VRP criteria will be demonstrated after execution of all covenants and controls.

UECs are one element of the plan to address future potential exposure to COIs in affected media at the subject properties. The UECs will be applied, where needed, to define intended use of the properties as well as any special considerations or limitations for use of the soil and water resources. For example, groundwater use restrictions will be applied by covenant to alluvial groundwater beneath the properties. Other controls may include, for example, the use of an appropriate Health and Safety Plan (HASP) to effectively manage subsurface soil worker exposures for intrusive activities. Engineering controls such as ISS have been used (e.g., MUDA property) and will be used in some areas to address potential exposure to COIs in saturated zones (alluvial ground water). The applicable covenants and controls will be specific to the soil and ground water conditions of each parcel and will be documented in the Compliance Status Report at the completion of the planned work.

Additionally, covenants will be developed in accordance with Georgia Rule 391-3-19-.08(7), to prohibit activities on the property that may substantially interfere with a remedial action, operation and maintenance, long term monitoring, or other measures to ensure the integrity of the remedial action.

3.6.4 *Potential Receptors*

Current Land Use: For the current land uses identified above (Section 3.6.3.1), there are no routine (e.g., daily) receptors for soil or ground water contact on the VRP properties. Construction/utility workers are potential receptors at present should utilities currently in place require maintenance or repair. In general, this represents an infrequent or non-routine activity of rare occurrence and limited duration.

During implementation of the planned remediation activities, human health exposures would be limited to construction/remediation workers. These short-term receptors (remediation workers) are not representative of the general public, and are subject to controls and health and safety requirements from OSHA that apply to workers providing cleanup of for potentially impacted media.

Future Land Use: If redevelopment occurs for select parcels for non-residential purposes, potential receptors may include construction workers for tasks that may incur contact or exposure to impaired media, utility workers who install subsurface utility lines and periodically excavate trenches to replace, maintain, or repair these lines, and workers who traverse the property and/or work inside or outside potential new commercial/industrial buildings. Should mixed end use be appropriate, additional potential receptors may be identified.

Although groundwater in the alluvial and bedrock zones eventually flows to the Ocmulgee River, existing groundwater data indicate that dissolved phase COIs in alluvial and bedrock groundwater are attenuating rapidly and well in advance of reaching the river (See Section 3.5.3). The extent of groundwater impact by site-related COIs is delineated within the footprint of properties to be included in the VRP and possibly (e.g. to be confirmed or refuted) on property(s) where further investigations are planned (See Section 4.2). COIs are not being transported to surface water through overland flow/storm water runoff. Therefore, the Ocmulgee River, and users of this resource, are not identified as receptors for site-related COIs.

3.6.5 *Exposure Media and Potential Exposure Pathways*

This section identifies the potential exposure pathways and exposure routes (ingestion, dermal contact, inhalation) for COIs in soil and ground water for each property, if applicable, and associated potential receptors. As discussed in the introduction to this section (Section 3.6), the presence of a potential receptor, and even a complete exposure pathway, does not indicate the presence of significant or unacceptable risk of harm to human health; additional factors such as constituent concentration, exposure frequency and duration are critical factors in determining whether there is a risk of harm. Potential exposure media considered in this assessment include surface soil, subsurface soil, alluvial groundwater, bedrock groundwater, indoor air, and ambient air. For each exposure medium, the direct exposure pathways are considered (e.g., direct exposure with soil and groundwater would include ingestion and dermal contact). In addition, indirect exposures such as inhalation of volatilized COIs from soil or groundwater are considered for the indoor and ambient air exposure media. A determination is made regarding whether the potential exposure pathways are reasonably likely to be complete. The following discussion also identifies how it is anticipated that the medium will be brought into compliance, or currently complies, with VRP criteria protective of human health and the environment. The discussion of compliance is conceptual at this time and the final form of compliance, including UECs and any controls, will be determined following implementation of remediation and confirmation of post-remedy conditions.

Incidental ingestion and dermal contact with surface soil (i.e., the upper 2 feet of soil) are considered potentially complete pathways for receptors in areas where COIs are present in surface soil. For locations where surface soil has been excavated and backfilled with soil imported from off-site borrow sources (i.e., no COIs present), the exposure pathway would be considered incomplete, because no source/COIs remain. For excavated areas that use backfill with COIs present below applicable risk-based standards, the pathway is considered potentially complete but risk is within the acceptable range.

The potential receptors under future land use scenarios are identified below for parcels where COIs are present in surface soil, along with the conceptual plan for surface soil compliance with VRP criteria for the long term (future) property condition.

Potential receptors for surface soil at the AGLC and MUDA properties may include commercial/industrial workers and construction/utility workers. In addition, if mixed use is applicable, additional potential receptors will be identified as appropriate. Remaining COIs on the MUDA property (post-remedy) currently meet non-residential risk-based standards, and may be evaluated for additional uses as feasible. The remedial action for the AGLC parcel, as currently proposed, will result in removal of COIs from the surface soil interval or reduction to below non-residential risk-based standards. The post-remediation conditions will be evaluated for additional uses as feasible.

Potential receptors for surface soil at the City of Macon-Terminal Avenue and the Mulberry and 6th Street parcels may include construction/utility workers on a non-routine basis. Road surface cover on the property, as well as vehicular traffic, limits routine exposure for any visitors to the property. The remedial actions for these parcels, as currently proposed, will result in removal of COIs from a utility corridor, including the surface soil interval. No COIs have been identified in soil (surface or subsurface) on the City of Macon- 7th and Walnut parcel, and no potential exposure to COIs is therefore identified.

Due to active railroad activities on the Norfolk Southern property, potential receptors are authorized railroad personnel who perform track maintenance and inspection activities. Reported COI concentrations in the surface soil currently meet non-residential risk-based standards, and Norfolk Southern has indicated the intention to apply covenants to limit disturbance of the soil (including surface and subsurface) to protect integrity/safety of the rail line and limit interruption of rail service.

For the properties included in the VRP application, UECs will be applied as warranted to support compliance with the VRP criteria for surface soil.

3.6.5.2 *Subsurface Soil*

If excavation is performed, incidental ingestion and dermal contact with subsurface soil (i.e., soil deeper than 2 feet below ground surface) provide potentially complete pathways for receptors in areas where COIs are present in subsurface soil. For locations where subsurface soil has been excavated and backfilled with soil imported from off-site borrow sources (i.e., no COIs present), the exposure pathway would be considered incomplete, because no source/COIs remain. For excavated areas that use backfill with COIs present below applicable risk-based standards, the pathway is considered potentially complete but risk is within the acceptable range.

The potential receptors under future land use scenarios are identified below for parcels where COIs are present in subsurface soil, along with the conceptual plan for subsurface soil compliance with VRP criteria for the long term (future) property condition.

Potential receptors for contact with subsurface soil at the AGLC and MUDA properties may include construction/utility workers. Remaining COIs in unsaturated zone subsurface soil on the MUDA property (post-remedy) currently meet non-residential risk-based standards, and may be evaluated for additional uses as feasible. Impacted soils below the water table on MUDA property were stabilized through ISS (engineering control). The remedial action for the AGLC parcel, as currently proposed, will result in removal of COIs from the subsurface soil interval or reduction to below non-residential risk-based standards, and the post-remediation conditions will be evaluated for additional uses as feasible. Excavation is the proposed remedial action for impacted subsurface soils above the water table. For subsurface impacts below the water table (including source material or BPLM), ISS is the proposed remedy. In addition, land use covenants are proposed (e.g., UECs) to address future use of the properties and any limitations to excavation. For example, UECs are expected to limit excavation into the ISS mass in the saturated zone (alluvial groundwater zone) on both properties.

Potential receptors for contact with subsurface soil at the City of Macon-Terminal Avenue and City of Macon- Mulberry and 6th Street parcels may include construction/utility workers on a non-routine basis. The remedial actions for these parcels, as currently proposed, will result in removal of COIs from a utility corridor and implementation of ISS for subsurface impacts below the water table, including source material or BPLM. Following remediation, UECs are expected

to limit excavation into the ISS mass in the saturated zone (alluvial groundwater zone) on City of Macon properties.

As described for surface soil on the Norfolk Southern property, potential receptors for contact with subsurface soil are limited to authorized railroad personnel who perform track maintenance, and Norfolk Southern has indicated the intention to apply covenants to limit disturbance of the soil on the property (and provisions for an appropriate HASP for any necessary disturbance).

For the properties included in the VRP application, UECs will be applied as warranted to support compliance with the VRP criteria for subsurface soil.

3.6.5.3 *Groundwater*

Site-related COIs have been identified in shallow alluvial groundwater at the properties included in the VRP application with the exception of the City of Macon- 7th and Walnut parcel. Bedrock groundwater is affected beneath multiple properties (AGLC, MUDA, railroad properties, and City of Macon rights of ways) in the VRP application. Additional investigations and monitoring events are planned to evaluate additional qualifying properties (See Sections 4.1 and 4.2). As discussed in Section 3.6.3.2, there are no consumption wells completed in the affected ground water area, and therefore no receptors are identified for groundwater contact. Groundwater use in the future on the VRP parcels will be controlled by covenant, therefore, exposure to COIs in groundwater is an incomplete pathway under current and future land use.

Exposure to COIs in alluvial zone groundwater through incidental contact by construction workers is hypothetically possible. For areas where saturated soils have been or will be stabilized, COI-impacted groundwater beneath the Site is not expected to accumulate in excavations due to the low hydraulic conductivity of the stabilized soils (on the order of 10^{-6} cm/sec or lower). Groundwater located outside of areas of proposed stabilization and containing low level COIs may provide a complete direct exposure pathway if excavation to sufficient depth is performed. This potential scenario is anticipated to be non-routine and likely very limited in frequency and duration, if it occurs. It is anticipated that controls (e.g., provisions for use of an appropriate HASP during intrusive activities) will be implemented, if necessary, for the areas/parcels where residual groundwater COI concentrations are identified following implementation of active remedy components.

Vapor intrusion (VI) is a constituent transport process that can occur when vapors from subsurface sources form and migrate upwards toward overlying buildings. There are no buildings present on the parcels included in the VRP application at this time, and therefore the pathway is not an issue for current land use. The discussion herein is included considering potential future uses of the subject properties and potential for building construction on certain parcels such as MUDA and AGLC. Based on extensive studies of sites where VI has been identified, the following conditions must exist in order for the VI pathway to be complete (USEPA, 2012):

- 1) A subsurface source of vapor-forming contaminants must be present with sufficient source concentrations to allow volatilization into the gas phase.
- 2) The unsaturated zone must be sufficiently permeable, with interconnected pore spaces, to allow vapors to migrate upward through the soil column.
- 3) Entry routes and driving forces must be present for vapors to enter a building (e.g., pores or cracks in the slab, pressure differentials). In general, modern construction practices provide significant barriers to vapor intrusion into overlying buildings (e.g., subgrade footers, solid concrete slab-on-grade building construction).

AGLC and GPC's experience with MGP sites indicates VI is not typically a pathway of concern. Based on existing site knowledge and information obtained through prior investigations, VI at the Macon MGP site has not been identified and is not expected to be a complete or significant pathway in the future, as supported by the following information:

- 1) MGP by-products (now referred to as contaminants) in general have low-volatility.
- 2) The few volatile contaminants that are present in the subsurface are petroleum hydrocarbons, which, in most cases, do not result in VI due to their high biodegradation potential.
- 3) The depth to the subsurface volatile contaminants relative to surface structures (or potential structures) should allow for sufficient attenuation/degradation to reduce vapor concentrations to an extent that the VI pathway is incomplete (i.e., sufficient vertical separation distance per EPA guidance).

- 4) Source-like material, or high concentration material, has (or will be) excavated and removed where it exists in the unsaturated zone (soil).
- 5) Source-like material in the saturated zone (i.e., alluvial groundwater) has been (or will be) stabilized within a concrete-like ISS mass that has little available pore-space to permit the volatilization of the entrained contaminants.
- 6) The low permeability of the ISS mass is expected to limit or eliminate vapor movement within the mass.

Based on these site-specific factors, the Macon MGP site is identified to have a low potential for VI. It is recognized that EPD requires consideration of the VI pathway for VRP sites. Consequently, a technical evaluation of the VI pathway may be warranted and will be considered following completion of the remediation activities proposed in this VIRP. Alternatively, control methods (engineering and institutional) may be utilized to mitigate the potential for vapors to enter indoor air in existing buildings or during future construction.

3.6.5.5 *Ambient Air*

Many of the factors discussed above for the VI pathway are also relevant to the potential for volatile constituent migration to ambient air. Specifically, conditions required for a subsurface-to-ambient air pathway for COIs include a substantive source of vapor-forming contaminants and subsurface conditions conducive to vapor movement. The site-specific features noted above indicate the Macon MGP site has a low potential for vapor migration to the breathing zone of potential receptors, indoors or outdoors. The remediation completed to date, and the proposed remediation activities, further reduce the potential for vapor migration and release to air. Further, because the inhalation pathway is quantitatively included in the risk-based standards developed for direct contact with soil, the soils that meet (and are remediated to meet) the risk-based standards previously developed for the site are protective of the ambient air pathway.

Following completion of the proposed remediation activities, such as surface and subsurface soil removal, backfilling, and ISS, the residual concentrations of volatile organic constituents will be reviewed to confirm no further technical evaluation of the vapor migration pathway is warranted.

4.0 PLANNED INVESTIGATIONS

The following Sections describe planned investigations to fulfill VRP requirements.

4.1 DNAPL NATURE AND EXTENT

DNAPL was observed during the drilling and installation of monitoring well MW-305D in 2013. As a result, additional DNAPL investigation activities are being planned to refine understanding of the DNAPL presence and extent. The proposed DNAPL Investigation Work Plan is provided in [Appendix G](#). Access to one of the parcels has not been obtained due to complex property ownership issues related to historical railroad properties. Five primary investigatory borings and four additional/contingency borings are planned. Sumps wells are proposed for installation at locations where potential DNAPL is encountered. Key steps to completing this work include the following:

- Ascertain property ownership
- Negotiate site access
- Complete investigatory borings
- Install sump wells, if warranted
- Monitor accumulation of DNAPL in sump wells and recover DNAPL during VEFR events, as necessary

Results of the DNAPL investigation will be provided in status reports as discussed in Section 6.0 below.

4.2 BEDROCK WELL INSTALLATIONS

Several parcels may or may not be affected by dissolved phase bedrock groundwater contamination in and around the intersection of 7th Street and Walnut Street. As noted above, complex property ownership issues (and legal boundaries) exist. AGL intends to resolve ownership issues prior to contacting potentially affected property owners. Key steps to completing this work include the following:

- Ascertain property ownership
- Negotiate site access

- Drill and install bedrock groundwater monitoring wells
- Collect groundwater samples from new wells
- Update CSM based on laboratory analytical results

The proposed Bedrock Investigation Work Plan is provided in [Appendix H](#). Exact well locations will be provided once property ownership has been ascertained. A total of four newly installed bedrock wells are anticipated at this time, for the intended purpose of including or excluding properties into the VRP as qualifying properties.

4.3 VAPOR INTRUSION

Following implementation of proposed remediation, if warranted based upon COI concentrations and site conditions, current and applicable vapor intrusion guidance will be used to determine whether the vapor intrusion pathway may be complete at the Macon MGP site and whether reported concentrations are likely to pose unacceptable risk for existing buildings or future construction. General vapor intrusion guidance documents that may be consulted include OSWER's 2002 Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils, EPA's 2013 Evaluation of Empirical Data to Support Soil Vapor Intrusion Screening Criteria for Petroleum Hydrocarbon Compounds¹, and ITRC's 2007 Vapor Intrusion Pathway: A Practical Guideline. Alternatively, control methods (e.g., barriers or specific construction design) may be utilized to mitigate the potential for vapors to enter indoor air in existing buildings or during future construction.

¹ EPA has issued draft guidance documents for the vapor intrusion pathway, including guidance specific to petroleum hydrocarbons, with final versions forthcoming. These documents include the following: (a) EPA, 2013. OSWER Final Guidance for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Sources to Indoor Air (External Review Draft), and (b) EPA, 2013. Guidance for Addressing Petroleum Vapor Intrusion at Leaking Underground Storage Tank Sites. (External Review Draft, EPA 510-R-13-xxx).

5.0

PLANNED REMEDIAL ACTIVITIES

All the remediation activities described in this plan will achieve compliance with the VRP cleanup criteria. Activities proposed include the use of ISS (source material control), excavation (impacted media removal), Covenants (exposure pathway control), or other means that are technically acceptable, and specifically allowed under the regulatory framework of the VRP.

5.1

SOIL EXCAVATION AND ISS FOR THE WESTERN PORTION MGP

Excavation and off-site management of source material is a commonly utilized remedy for unsaturated zone impacted soils at MGP sites. Excavation has been selected as the remedy for soils exceeding the Type 4 RRS and source material in the unsaturated zone. The use of the RRS in the soil remediation activities is selected as a basis for a Target Remediation Goal. Final exposure and compliance certification will be established on the basis of “representative exposure concentrations”. Excavation of unsaturated zone soils is also consistent with the methods for the ISS remedy in areas where ISS is planned.

ISS has been proposed and accepted by EPD as part of the corrective action in the 2011 FFS (ECM, 2011) for saturated source material in the Western Portion MGP. As a result, a confirmation treatability testing effort was conducted to validate the previous mix design for the proposed ISS actions. ISS performance criteria have been previously identified in historical corrective action documents for the Mulberry Street MGP. The same criteria apply for the Western Portion MGP, as follows:

- The ISS mixture will exhibit a coefficient of hydraulic conductivity (K) less than 10^{-6} cm/sec;
- The ISS mixture will exhibit an unconfined compressive strength (UCS) greater than 50 pounds per square inch (psi);
- There will be no free liquids in the extruded UCS specimens of the ISS mixture; and
- The ISS mixture will exhibit wet/dry durability of less than 10 percent mass loss when subjected to 12 wetting/drying cycles.

Sections 2.0 and 3.0 present the history of DNAPL investigations, actions associated with DNAPL recovery, and the potential fate and transport of DNAPL at the Site. Section 4.1 presents the proposed DNAPL investigation activities associated with the Site. Based on the limited extent of known DNAPL (see Section 2.3.2) at this time and its limited recoverability (<0.05 lbs./month, see Section 3.3.2 and [Figure 3-6](#)) intermittent DNAPL recovery has been selected to continue. Vacuum Enhanced Fluid Recovery (VEFR) will be conducted at wells where DNAPL accumulates beyond 0.5 feet in thickness. Monitoring of DNAPL accumulation will be conducted during the planned bedrock well groundwater monitoring events (see Section 6.3).

Currently, MW-111D has been the only well at the Site that has exhibited the accumulation of DNAPL. Once accumulated DNAPL has been identified in wells at the Site a VEFR vehicle will be mobilized to the Site. The VEFR will be capable of operating for six hours, with a potential applied vacuum of 18" Hg, and be capable of collecting recovered fluids of 2,500 gallons. The total amount of liquids and hydrocarbons removed from the effort will be documented and provided in future reports.

On-going bedrock groundwater monitoring will be conducted to allow for: Remedial Action Performance Verification and VRPA Act Compliance (i.e., Point of Demonstration wells). A Bedrock Groundwater Monitoring Plan is provided in [Appendix I](#) which addresses the applicable requirements for monitoring.

The remedial action performance verification will be conducted for the express purpose of evaluating the impact of proposed actions (ISS activities and DNAPL recovery activities) to the dissolved phase groundwater plume. The Western Portion and MW-101 Area Groundwater CAP-A ([Appendix C](#)) provides the proposed performance monitoring for the ISS stabilization efforts that are being planned in the alluvial groundwater. Subsequent to performance verification groundwater monitoring events impacts to the dissolved phase plume, changes to the CSM, and changes in the residual risk profile will be evaluated. After four post remediation semiannual bedrock and alluvial groundwater sampling events, the need and/or value of continued performance verification monitoring

will be assessed for VRP regulatory compliance. The analytical schedule and frequency will be adjusted, as needed to continue compliance demonstrations.

5.3.1 *Point of Demonstration Wells*

Point of demonstration wells will be utilized to validate the effectiveness of the implemented remedies at the Site and compliance with the VRPA. Proposed Point of Demonstration wells (alluvium and bedrock) are provided in [Figure 5-1](#). In the event the presence of COIs is identified in the Point of Demonstration Wells, and confirmed with a second sampling event, additional actions will be considered. Subsequent to bedrock groundwater monitoring events; impacts to the dissolved phase plume, changes to the CSM, and changes in the residual risk profile will be evaluated for VRP compliance.

5.4 *PLUME STABILITY EVALUATIONS*

ERM will conduct a plume stability evaluation using historical dissolved phase COI concentrations and the Mann-Kendall statistical test. The Mann-Kendall test is a non-parametric test that can be used to assess whether concentrations exhibit increasing or decreasing trends over time to a specified level of confidence.

Four temporal data points are required for the Mann-Kendall test. As such, statistical trends can only be calculated at locations where COIs were detected on four separate occasions. Monitoring locations without sufficient data to perform the Mann-Kendall will be identified and excluded from the evaluation. Laboratory results reported below the detect limit will be excluded from the statistical dataset. The Mann-Kendall test will be performed using the statistical software package included in the commercially available database software, Environmental Quality Information System (EQuIS). The calculation steps performed in EQuIS will be presented as reference.

Subsequent to groundwater plume stability evaluations; changes to the CSM and changes in the residual risk profile will be evaluated for VRP compliance.

The VIRP Projected Milestone Schedule is presented in [Figure 6-1](#) and outlines all of the proposed activities. The project schedule will be refined after acceptance into the VRP and after receiving input from the selected remedial contractor on the implementation schedule. Upon acceptance into the VRP, AGLC will implement the investigation and planned corrective action(s).

Groundwater monitoring and reporting will continue as described in Section 5.0 and [Appendix I](#) (Bedrock Groundwater Monitoring Plan) on a semiannual basis. Future reporting will be conducted to comply with the VRPA. Semiannual Status Reports will be submitted to the GA EPD.

The design of the planned corrective action is in progress and will be finalized after acceptance into the VRP by EPD. AGLC is estimating that implementation of the additional investigation and proposed ISS will be approximately \$8 million. This cost will be refined upon completion of the investigation and design and together with input from the selected remediation contractor.

It is expected that the CSR for the Site will be submitted within 60 months of VRP acceptance.

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Tables

Project No. 0176740
Atlanta Gas Light Company

Environmental Resources Management
3200 Windy Hill Road SE, Suite 1500W
Atlanta, Georgia 30339
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Table 2-1
Site-Specific Constituents of Interest and Monitored Natural Attenuation
Parameters
Atlanta Gas Light Company
Former Manufactured Gas Plant Site
Macon, Georgia

Volatile Organic Compounds	Semivolatile Organic Compounds	Inorganic Compounds	Monitored Natural Attenuation Parameters
<u>EPA-8260B</u> Benzene Ethylbenzene Toluene Total Xylenes Carbon Disulfide	<u>EPA-8270C</u> Acenaphthene Acenaphthylene Anthracene Benzo[a]anthracene Benzo[a]pyrene Benzo[b]fluoranthene Benzo[g,h,i]perylene Benzo[k]fluoranthene Chrysene Dibenz(a,h)anthracene 2,4-Dimethylphenol Fluoranthene Fluorene Indeno[1,2,3-cd]pyrene 2-Methylphenol 3 & 4 Methylphenol Naphthalene Phenanthrene Phenol Pyrene	<u>EPA-6010B</u> Antimony Arsenic Barium Beryllium Cadmium Chromium Copper Lead Nickel Zinc <u>EPA-9012A</u> Cyanide (Total) <u>EPA-7470A</u> Mercury	<u>RSK-175</u> Dissolved Gases (O ₂ , N ₂ , CO, CO ₂ , Methane) <u>SM-3500</u> Ferrous Iron <u>EPA-353.2</u> Nitrate <u>EPA 375.4</u> Sulfate <u>EPA 376.1</u> Sulfide <u>EPA-6010B</u> Iron

Table 3-1
Delineation Standards in Soil
Atlanta Gas Light Company
Former Manufactured Gas Plant Site
Macon, Georgia

Chemical	Background Soil Concentrations				Type 1 RRS *	Type 2 RRS	Type 4 RRS Construction Workers	
	Surface Soil 0-2 ft.	Subsurface Soil (deposited) >2	Subsurface Soil (fill) >2 ft.	Saprolite Soil	Surface and Subsurface Soil	Surface and Subsurface Soil	Surface Soil 0-2 ft.	Subsurface Soil >2 ft.
Volatile Organic Compounds								
Benzene	ND	ND	ND	ND	0.5	5.0	5.0	5.0
Ethylbenzene	ND	ND	ND	ND	70	1,600	1,600	1,600
Toluene	ND	ND	ND	ND	100	680	680	680
Total Xylenes	ND	ND	ND	ND	1,000	160,000	1,600	850,000
Carbon Disulfide	ND	ND	ND	ND	400	400	400	400
Semivolatile Organic Compounds								
2,4-Dimethylphenol	ND	ND	ND	ND	70	1,600	1,600	1,600
2-Methylphenol	ND	ND	ND	ND	3.8	3,900	3,900	3,900
4-Methylphenol	ND	ND	ND	ND	3.8	390	390	390
Acenaphthene	ND	ND	ND	ND	300	4,700	4,700	4,700
Acenaphthylene	ND	ND	ND	ND	130	2,300	2,300	2,300
Anthracene	ND	ND	ND	ND	500	23,000	23,000	23,000
Benzo(a)anthracene	ND	ND	ND	ND	5	12	12	12
Benzo(a)pyrene	ND	ND	ND	ND	1.64	1.6	7.8	82
Benzo(b)fluoranthene	ND	ND	ND	ND	5	12	78	820
Benzo(g,h,i)perylene	ND	ND	ND	ND	500	2,300	2,300	2,300
Benzo(k)fluoranthene	ND	ND	ND	ND	5	120	780	8,200
Chrysene	ND	ND	ND	ND	5	1,200	7,840	82,000
Dibenzo(a,h)anthracene	ND	ND	ND	ND	2	12	78	820
Fluoranthene	ND	ND	ND	ND	500	3,100	82,000	17,000
Fluorene	ND	ND	ND	ND	360	3,100	82,000	17,000
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	5	12	78	820
Naphthalene	ND	ND	ND	ND	100	100	100	100
Phenanthrene	ND	ND	ND	ND	110	2,300	61,000	13,000
Phenol	ND	ND	ND	ND	400	47,000	47,000	47,000
Pyrene	ND	ND	ND	ND	500	2,300	61,000	13,000
Inorganic Compounds								
Antimony	ND	ND	ND	ND	4	31	31	31
Arsenic	25	2.5	2.9	ND	25 / 20 #	25 / 61 #	38	41
Barium	190	49	220	460	1,000	5,400	5,400	5,400
Beryllium	1.5	2.6	0.77	4.8	2 / 2.6 #**	160	160	160
Cadmium	2.4	2.2	2.4	27	2.4	39	39	39
Chromium	37	43	63	80	100	230	1,200	1,200
Copper	170	37	27	71	170	3,100	3,100	3,100
Cyanide, Total	4.8	1.3	1.5	ND	20	1,600	1,600	1,600
Lead	280	19	59	7.8	280 / 75 #	400	1,100	1,100
Mercury	0.28	0.057	0.38	0.028	0.5	24	24	24
Nickel	10	5.5	9.6	28	50	1,600	1,600	1,600
Zinc	330	30	45	140	330 / 100 #	23,000	23,000	23,000

Notes:

Values listed in milligrams/kilogram (mg/Kg)

Values rounded to two significant digits

The RRS was reported as values for two soil depths; 0-2 ft. and >2 ft.

* Soil Delineation Standard

** Background calculation is higher than RRS

Table 3-2
Delineation Standards in Groundwater
Atlanta Gas Light Company
Former Manufactured Gas Plant Site
Macon, Georgia

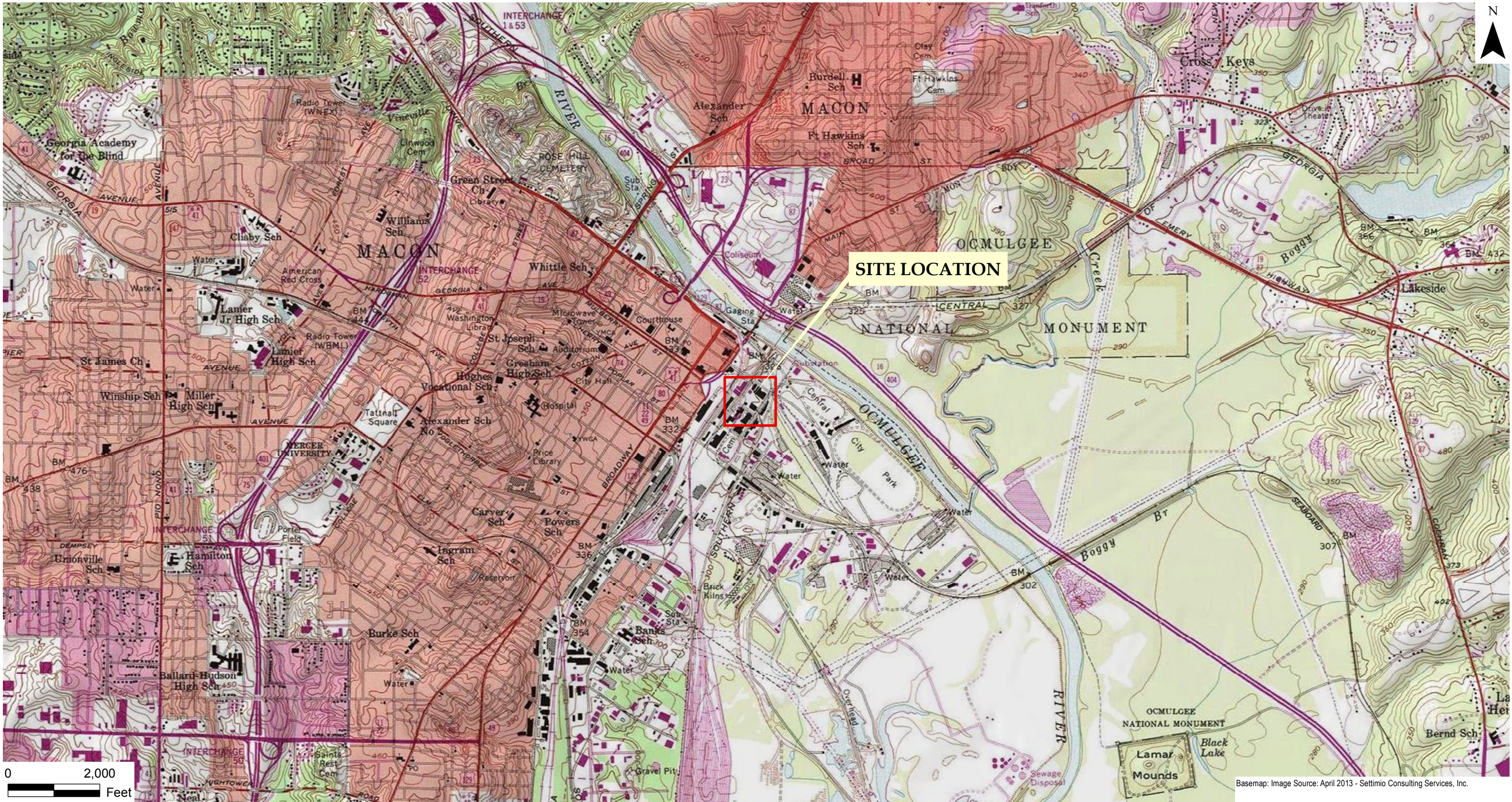
Parameter	Units	Type 1 RRS*	Residential RRS	Non-Residential RRS
Organic Constituents				
Volatile Organic Compounds				
Benzene	µg/L	5	5	9
Carbon Disulfide	µg/L	4000	4,000	4,000
Ethylbenzene	µg/L	700	700	2,300
Toluene	µg/L	1000	1000	1,100
Total Xylenes	µg/L	10000	31,000	200,000
BTEX	µg/L	--	--	--
Semivolatile Organic Compounds				
Acenaphthene	µg/L	2000	2,000	6,100
Acenaphthylene	µg/L	--	470	3,100
Anthracene	µg/L	--	4,700	31,000
Benzo[a]anthracene	µg/L	0.1	1.17	3.92
Benzo[a]pyrene	µg/L	0.2	0.20	0.39
Benzo[b]fluoranthene	µg/L	0.2	1.17	3.92
Benzo[g,h,i]perylene	µg/L	--	10	10
Benzo[k]fluoranthene	µg/L	--	11.7	39.2
Chrysene	µg/L	0.2	117	392
Dibenz(a,h)anthracene	µg/L	0.3	0.30	0.39
2,4-Dimethylphenol	µg/L	700	700	700
Fluoranthene	µg/L	1000	1,000	4,100
Fluorene	µg/L	1000	1,000	4,100
Indeno[1,2,3-cd]pyrene	µg/L	0.4	1.17	3.92
2-Methylphenol	µg/L	--	780	5,100
3 & 4 Methylphenol	µg/L	--	78	510
Naphthalene	µg/L	20	20	20
Phenanthrene	µg/L	--	470	3,100
Phenol	µg/L	4000	9,390	61,000
Pyrene	µg/L	1000	1,000	3,100
Inorganic Constituents				
Antimony	mg/L	0.006	0.0063	0.4
Arsenic	mg/L	0.01	0.05	0.05
Barium	mg/L	2	2	7.2
Beryllium	mg/L	0.004	0.031	0.2
Cadmium	mg/L	0.005	0.0078	0.051
Chromium	mg/L	0.1	0.1	0.31
Copper	mg/L	1.3	0.63	4.1
Lead	mg/L	0.015	0.015	0.015
Nickel	mg/L	0.1	0.1	2
Zinc	mg/L	2	4.7	31
Mercury	mg/L	0.002	0.002	0.002
Total Cyanide	mg/L	0.2	0.31	2

* Type 1 RRS = groundwater delineation standard

Figures

Project No. 0176740
Atlanta Gas Light Company

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Basemap: Image Source: April 2013 - Settimio Consulting Services, Inc.



Environmental Resources Management

DESIGN:	H Sartain	DRAWN:	S Vizuite	CHKD.:	N Vrey
DATE:	10/13/2014	SCALE:	AS SHOWN	REVISION:	0
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CONTOUR INTERVAL 10 FEET
DOTTED LINES REPRESENT 5-FOOT CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929

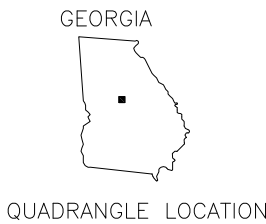
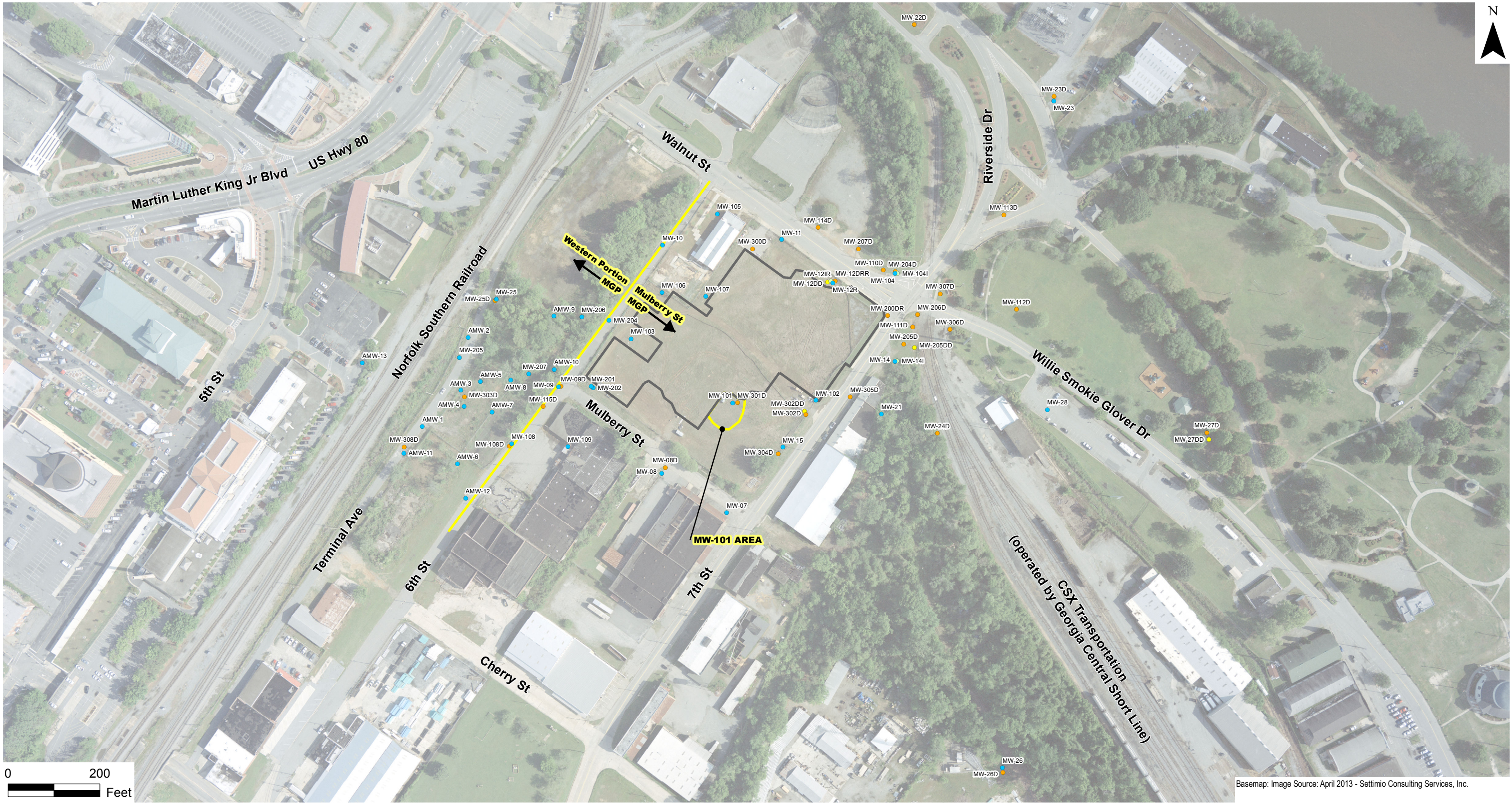
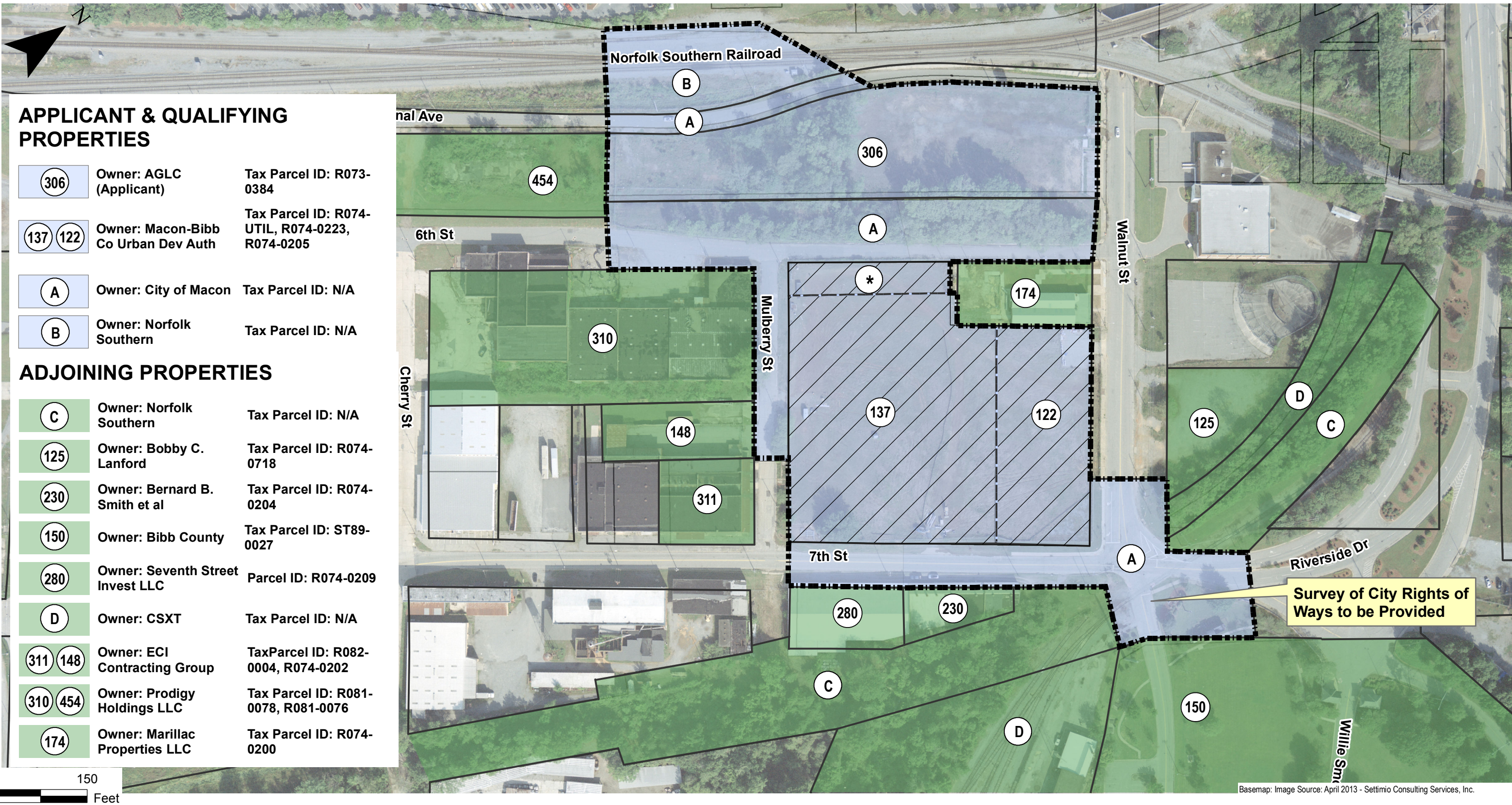


FIGURE 1-1 - TOPOGRAPHIC SITE LOCATION MAP

Atlanta Gas Light Company
Former Manufactured Gas Plant
Macon, Bibb County, Georgia





APPLICANT & QUALIFYING PROPERTIES		
306	Owner: AGLC (Applicant)	Tax Parcel ID: R073-0384
137 122	Owner: Macon-Bibb Co Urban Dev Auth	Tax Parcel ID: R074-UTIL, R074-0223, R074-0205
A	Owner: City of Macon	Tax Parcel ID: N/A
B	Owner: Norfolk Southern	Tax Parcel ID: N/A
ADJOINING PROPERTIES		
C	Owner: Norfolk Southern	Tax Parcel ID: N/A
125	Owner: Bobby C. Lanford	Tax Parcel ID: R074-0718
230	Owner: Bernard B. Smith et al	Tax Parcel ID: R074-0204
150	Owner: Bibb County	Tax Parcel ID: ST89-0027
280	Owner: Seventh Street Invest LLC	Parcel ID: R074-0209
D	Owner: CSXT	Tax Parcel ID: N/A
311 148	Owner: ECI Contracting Group	TaxParcel ID: R082-0004, R074-0202
310 454	Owner: Prodigy Holdings LLC	Tax Parcel ID: R081-0078, R081-0076
174	Owner: Marillac Properties LLC	Tax Parcel ID: R074-0200



Environmental Resources Management

DESIGN:	H Sartain	DRAWN:	S Vizuite	CHKD.:	N Vrey
DATE:	10/8/2014	SCALE:	AS SHOWN	REVISION:	0
FILE: S:\AGL\AGL_Macon\MXD\09 2014 VIRP\AGLMcn_F1-3_ParcelIDMap.mxd					

- Macon-Bibb County Urban Development Authority Property (Agreement Pending)
- Unnumbered Parcel (per Macon-Bibb County Tax Assessors GIS)
- Address Number (per Macon-Bibb County Tax Assessors GIS)
- VRP Applicant & Qualifying Properties Boundary
- Property Line

FIGURE 1-3 - PROPERTY OWNERSHIP MAP

Atlanta Gas Light Company
Former Manufactured Gas Plant
Macon, Bibb County, Georgia



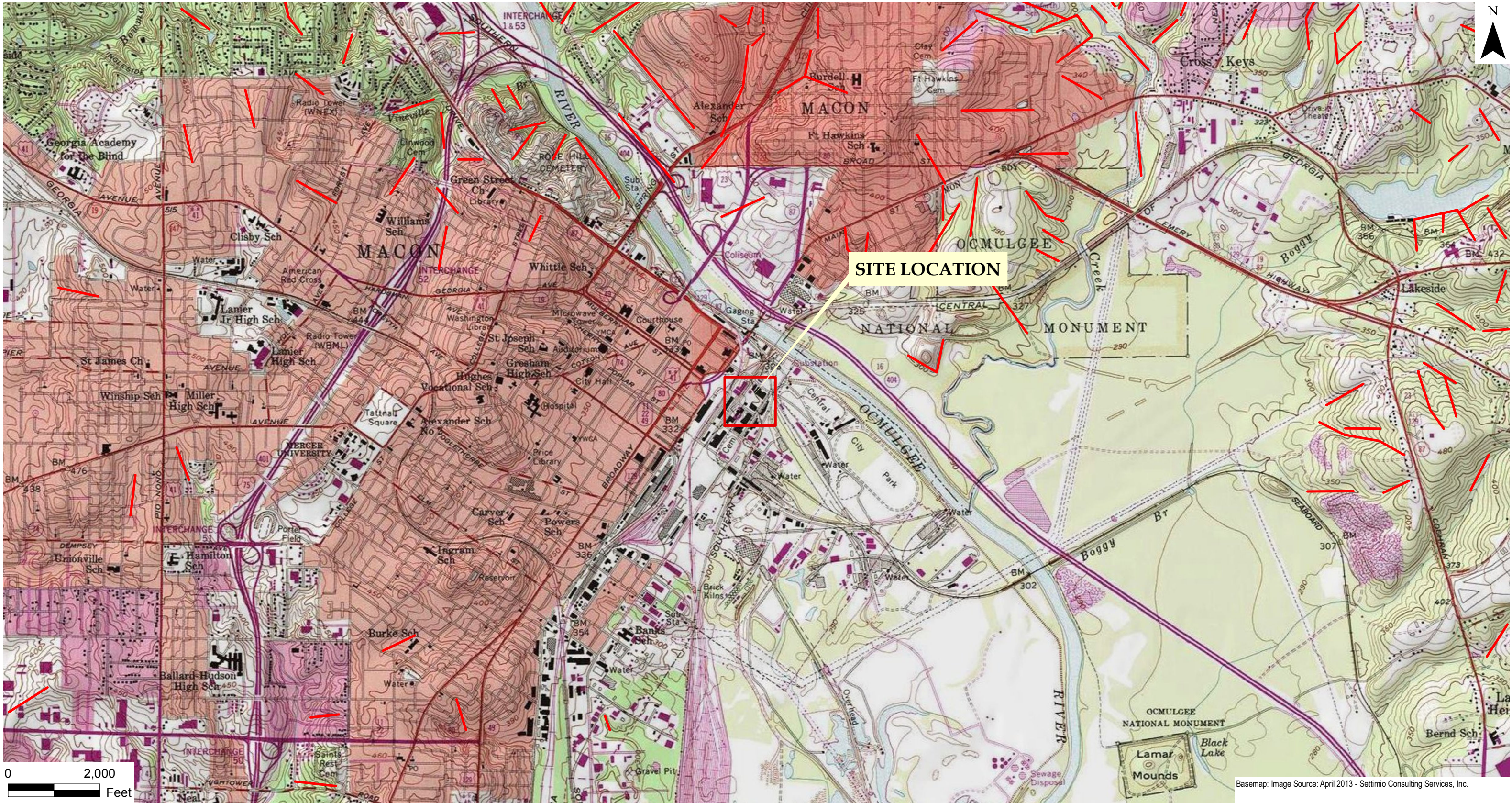
Environmental Resources Management

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FILE: S:\AGL_Macon\MXD\09 2014 VIRP APPX JAGLMcn_F2-1_HSRACertrev.mxd					

- Property Line
- ① Type 1 RRS
- ② Type 2 RRS
- ③ Type 3 RRS
- ④ Type 4 RRS
- ⑤ Type 5 RRS
- Soil Impact Not Associated with MGP Impacts

FIGURE 2-1 - 2004 CSR
PARCEL SOIL CERTIFICATIONS

Atlanta Gas Light Company
Former Manufactured Gas Plant
Macon, Bibb County, Georgia



Basemap: Image Source: April 2013 - Settimio Consulting Services, Inc.



Environmental Resources Management

DESIGN:	H Sartain	DRAWN:	S Vizuite	CHKD.:	N Vrey
DATE:	10/8/2014	SCALE:	AS SHOWN	REVISION:	0
FILE: S:\AGL\AGL_Macon\MXD\09 2014 VIRP\AGLMcn_F3-1_Lineaments.mxd					

— Interpreted Lineaments

CONTOUR INTERVAL 10 FEET
DOTTED LINES REPRESENT 5-FOOT CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929

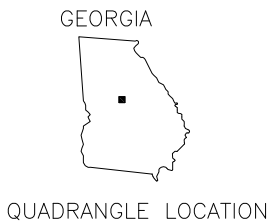
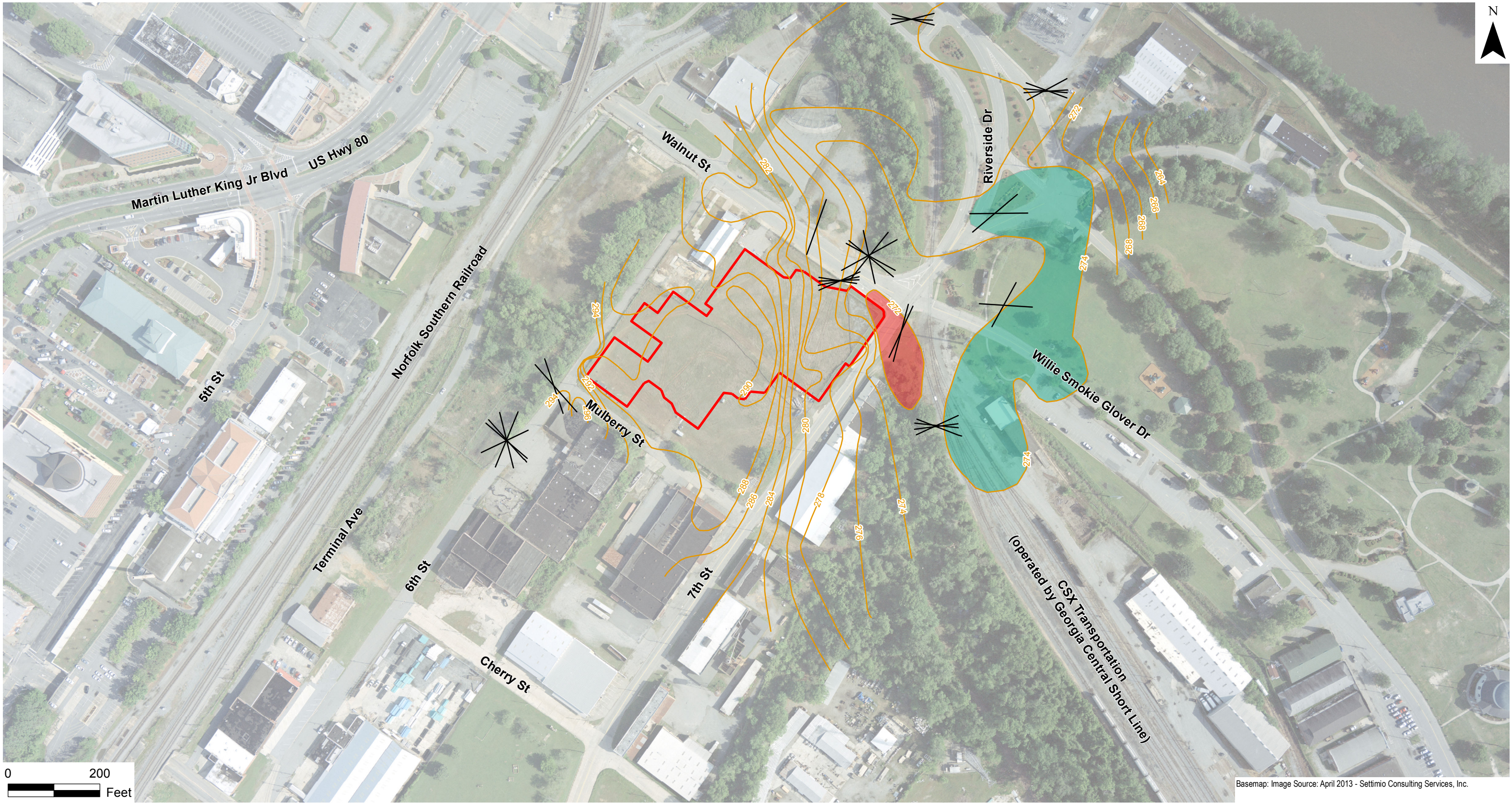


FIGURE 3-1
INTERPRETED LINEAMENTS

Atlanta Gas Light Company
Former Manufactured Gas Plant
Macon, Bibb County, Georgia



Environmental Resources Management

DESIGN:	H Sartain	DRAWN:	S Vizuite	CHKD.:	N Vrey
DATE:	10/9/2014	SCALE:	AS SHOWN	REVISION:	0
FILE: S:\AGL\AGL_Macon\IMXD\09 2014 VIRP\AGLMcn_F3-2_SapSrfcAppxFracOrient.mxd					

- Bedrock Fracture Orientation
- Saprolite Surface Contour
- Existing ISS Area
- Bedrock High
- Bedrock Low

FIGURE 3-2 - SAPROLITE SURFACE
CONTOURS & APPROXIMATE
FRACTURE ORIENTATIONS

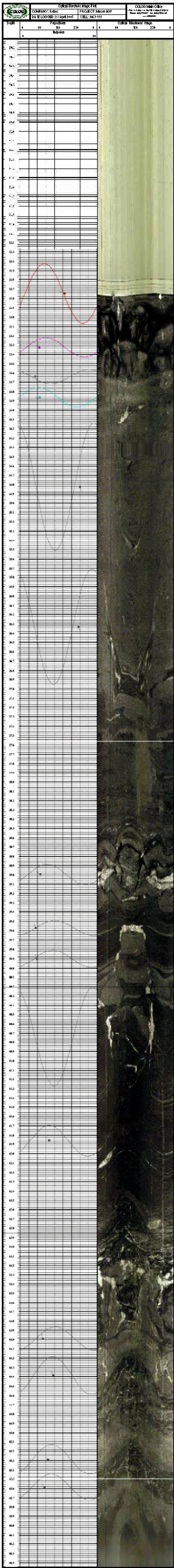
Atlanta Gas Light Company

Former Manufactured Gas Plant

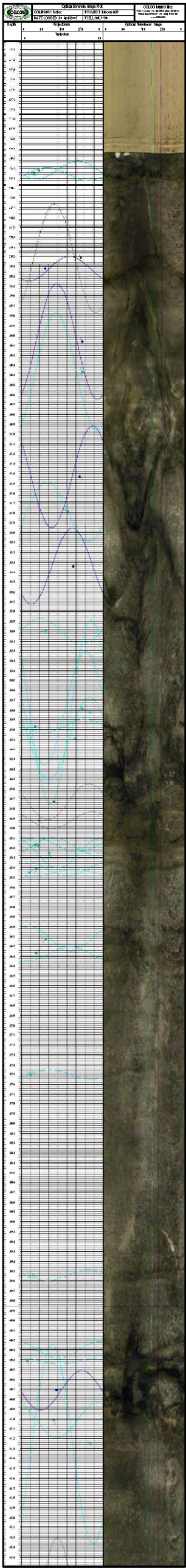
Macon, Bibb County, Georgia



MW-111D

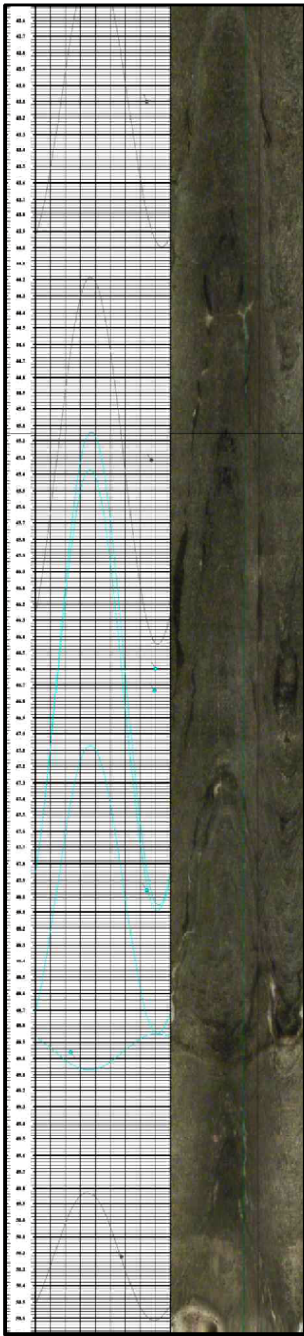


MW-110(D)



Continued

MW-110(D)
Continued

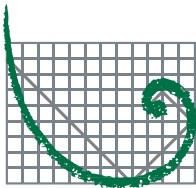


Environmental Resources Management

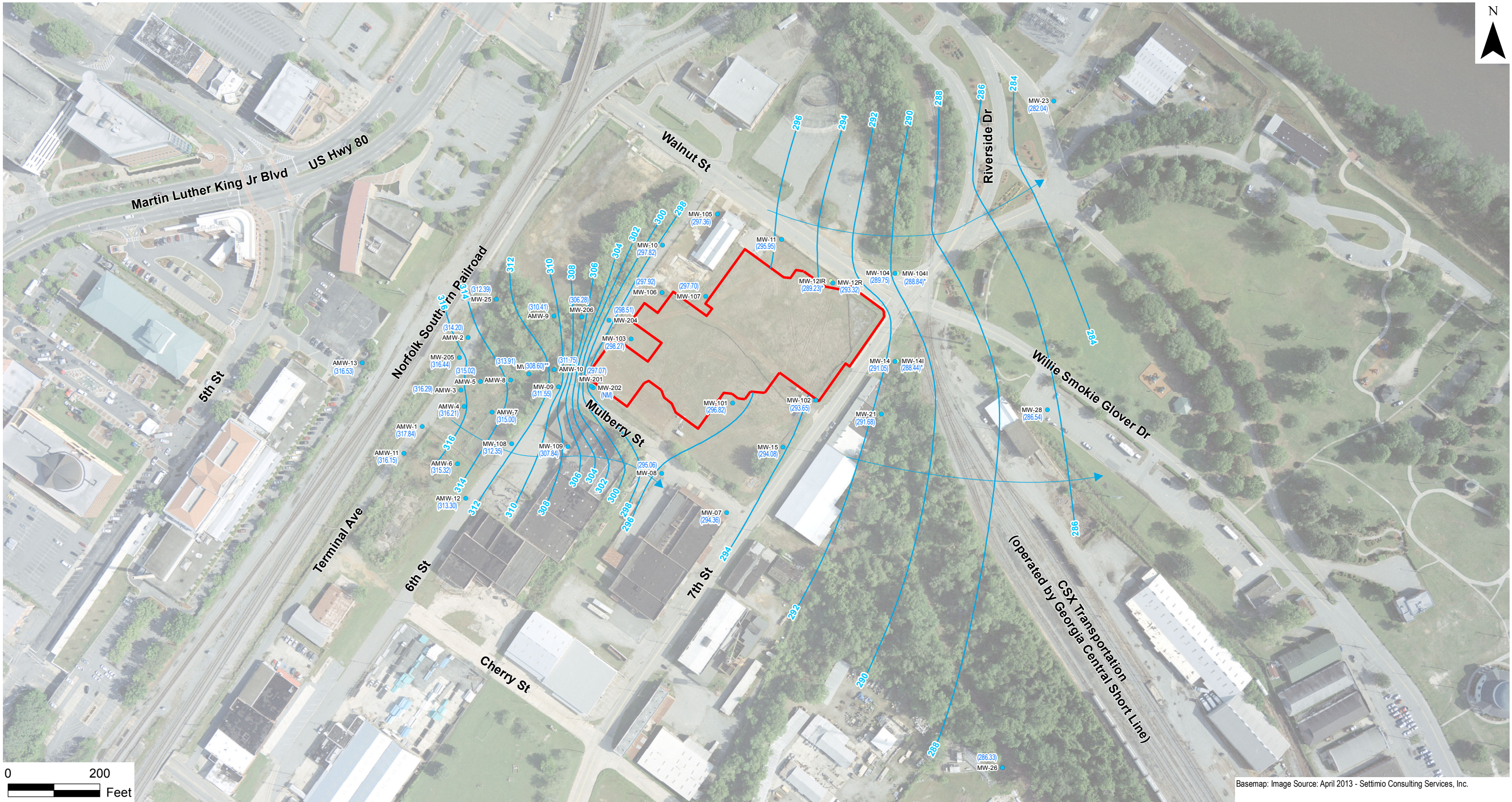
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DATE:	10/13/2014	SCALE:		REVISION:	0
FILE:	S:\AGL_Macon\MXD\09 2014 VIRP\AGLMcn_F3-3_OpTelevwBoreholeImg.mxd				

FIGURE 3-3 - OPTICAL TELEVIEWER BOREHOLE
IMAGES FOR WELLS MW-110(D) & MW-111D

Atlanta Gas Light Company
Former Manufactured Gas Plant
Macon, Bibb County, Georgia



ERM



Basemap: Image Source: April 2013 - Settimio Consulting Services, Inc.

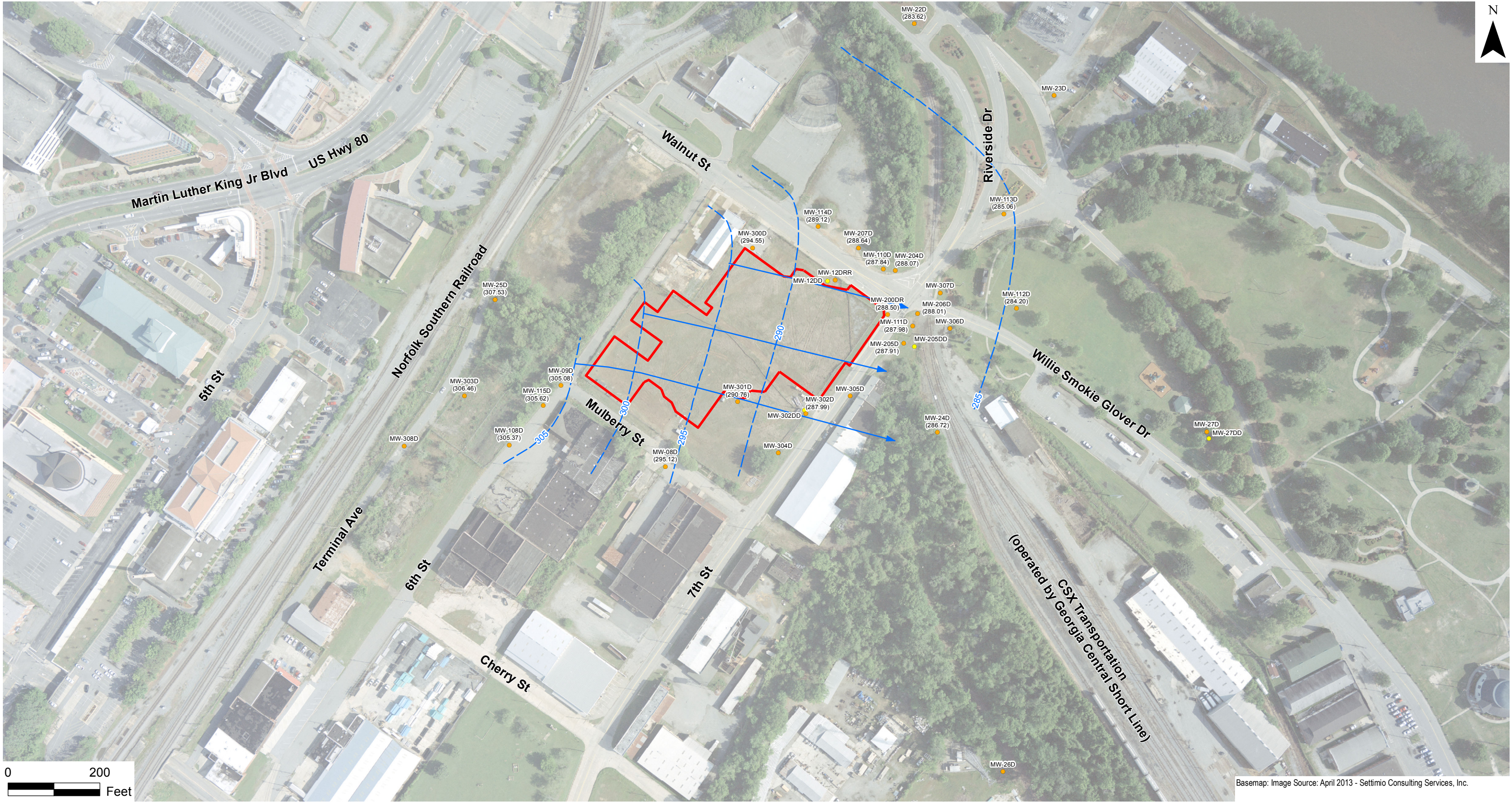


Environmental Resources Management

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FILE: S:\AGL\AGL_Macon\IMXD\09 2014 VIRP\AGLMcn_F3-4 AlluvGW082013.mxd					

- Shallow Well
- Intermediate Well
- Potentiometric Surface Contour
- ➡ Direction of Groundwater Flow
- Existing ISS Area
- (286.54) Groundwater Elevation 8/5/13 (Feet AMSL)
- (NM) Not Measured
- * Intermediate Wells Not Used for Contouring
- ** MW-207 Not Used for Contouring

FIGURE 3-4 - ALLUVIUM
GROUNDWATER ELEVATION MAP
AUGUST 2013
Atlanta Gas Light Company
Former Manufactured Gas Plant
Macon, Bibb County, Georgia



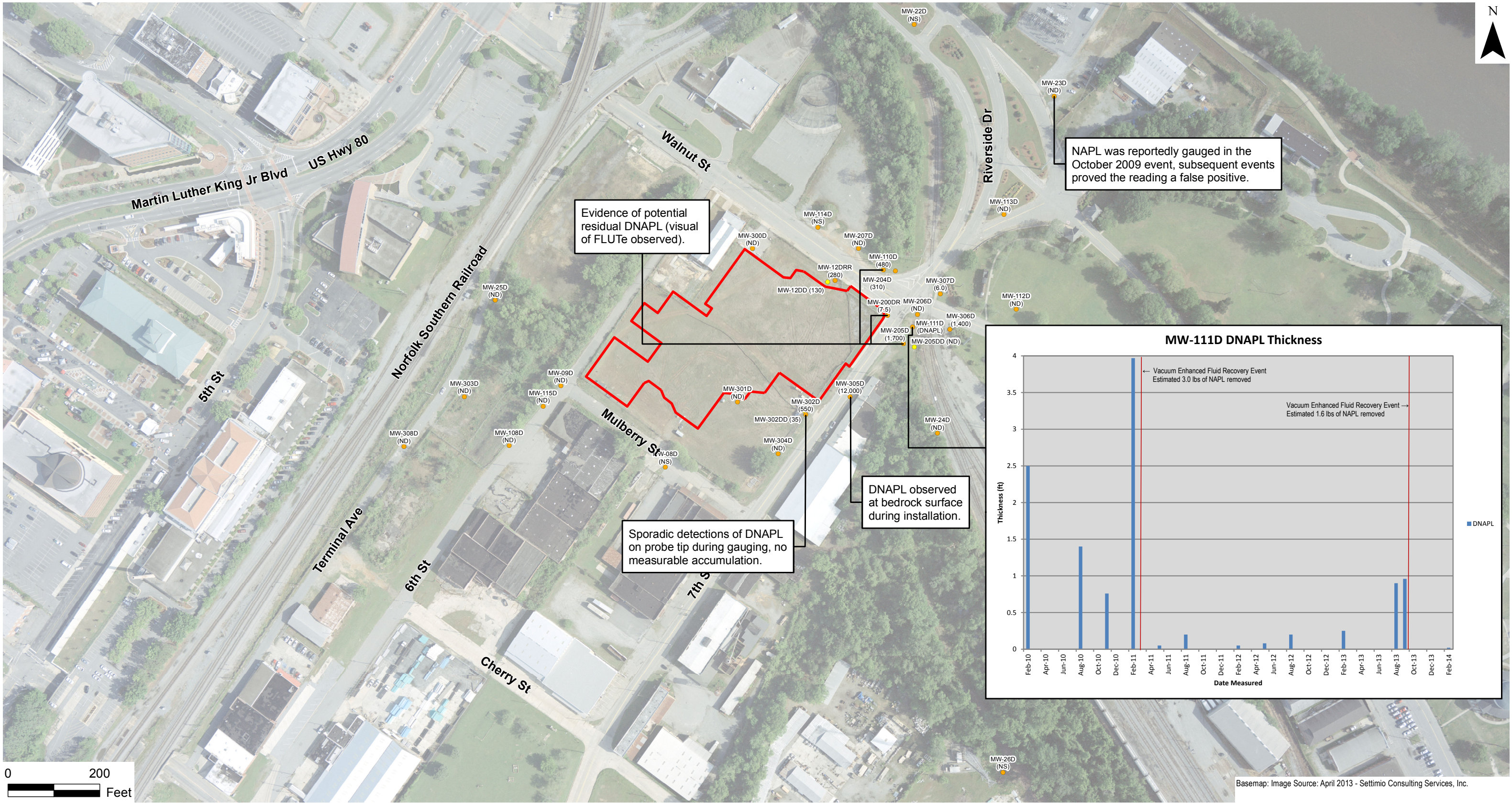
Environmental Resources Management

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FILE: S:\AGL\AGL_Macon\MXD\09 2014 VIRP\AGLMcn_F3-5_AvgGWElevBdrk.mxd					

- Shallow Bedrock Well
- Deep Bedrock Well
- Groundwater Elevation Contours (ft AMSL)
- Groundwater Flow Direction
- Existing ISS Area

NOTE:
Ocmulgee River Elevation: ~280 ft AMSL

FIGURE 3-5 - AVERAGE
GROUNDWATER ELEVATION
CONTOURS & FLOW LINES FOR
BEDROCK WELLS
(MAY 2010 - AUGUST 2013)
Atlanta Gas Light Company
Former Manufactured Gas Plant
Macon, Bibb County, Georgia



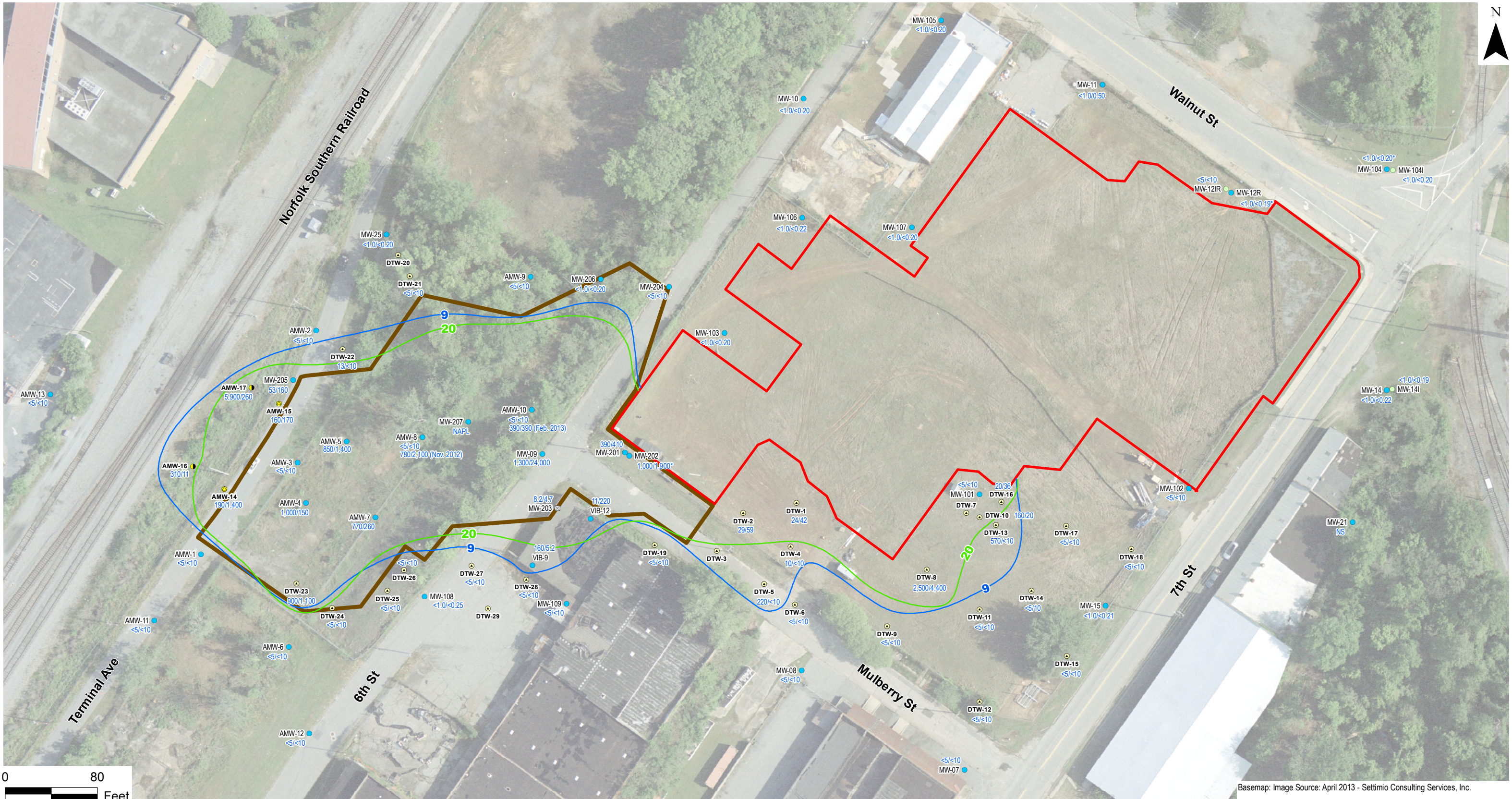
Environmental Resources Management

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DATE:	10/13/2014	SCALE:	AS SHOWN	REVISION:	0
FILE: S:\AGL_Macon\MXD\09 2014 VIRP\AGLMcn_F3-6_DNAPLSiteWells.mxd					

- Shallow Bedrock Well
- Deep Bedrock Well
- Existing ISS Area
- () Benzene Concentration (ug/L)

NOTE:
Benzene data shown is February 2014
NS = Not Sampled
ND = Not Detected
DNAPL = Dense Non-Aqueous Phase Liquid

FIGURE 3-6 - DNAPL OBSERVATIONS IN SITE WELLS
Atlanta Gas Light Company
Former Manufactured Gas Plant
Macon, Bibb County, Georgia



Basemap: Image Source: April 2013 - Settimio Consulting Services, Inc.



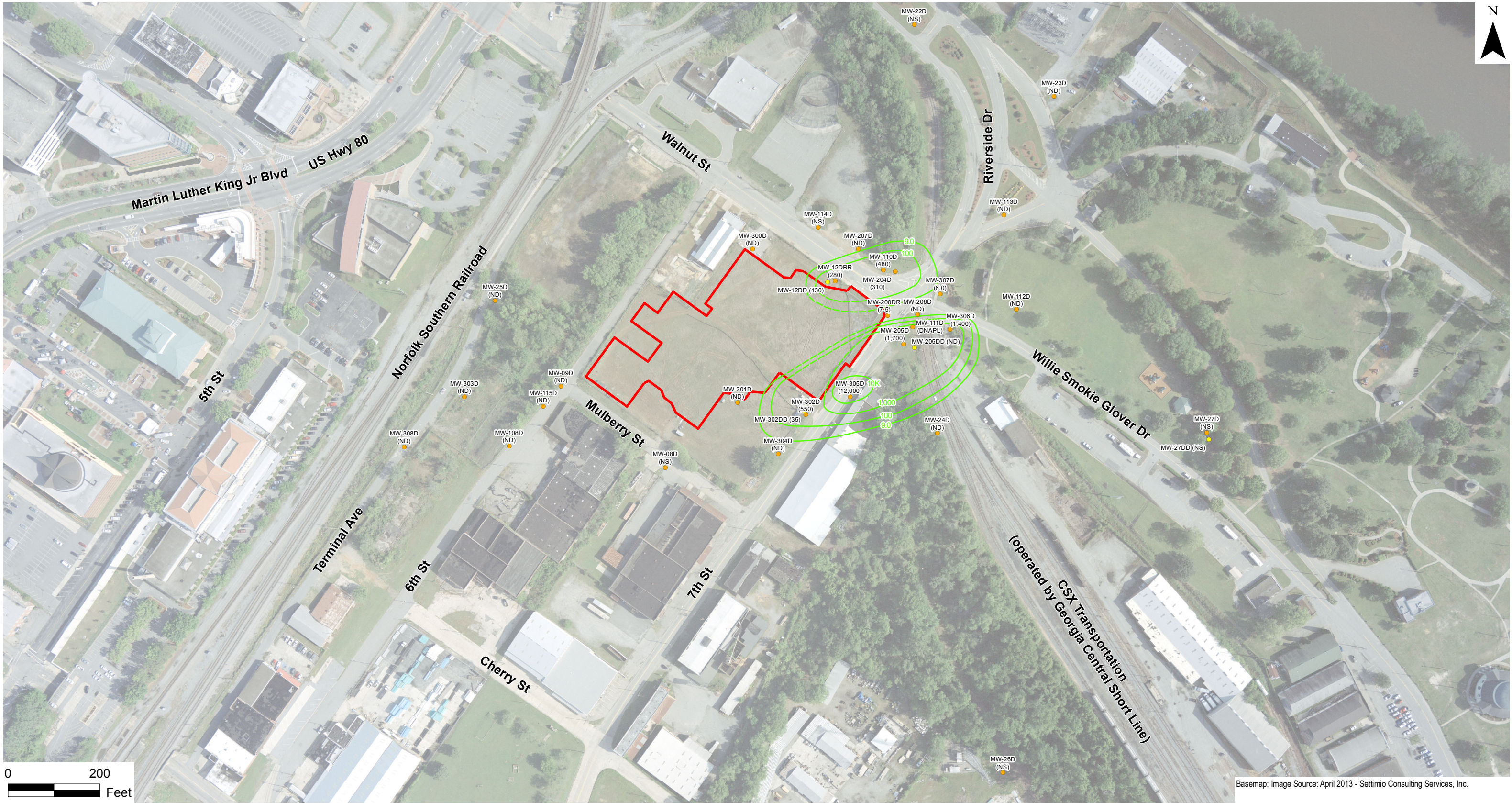
Environmental Resources Management

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- Proposed Monitor Well Location
- Proposed Contingency Well Location
- Shallow Well
- Intermediate Well
- Destroyed Well
- Delineation Temporary Well
- Naphthalene Contour (ug/L)
- Benzene Contour (ug/L)
- Existing ISS Area
- Corrective Action Limits

29/59 Benzene/Naphthalene Concentration (ug/L)
ND None Detected
NS Not Sampled
Notes:
Monitoring well data collected - August 2013
* Data collected - February 2013
DTW data collected - September 2013
VIB data collected - May 2013

FIGURE 3-7
BENZENE/NAPHTHALENE IN
ALLUVIUM GROUNDWATER - 2013
Atlanta Gas Light Company
Former Manufactured Gas Plant
Macon, Bibb County, Georgia



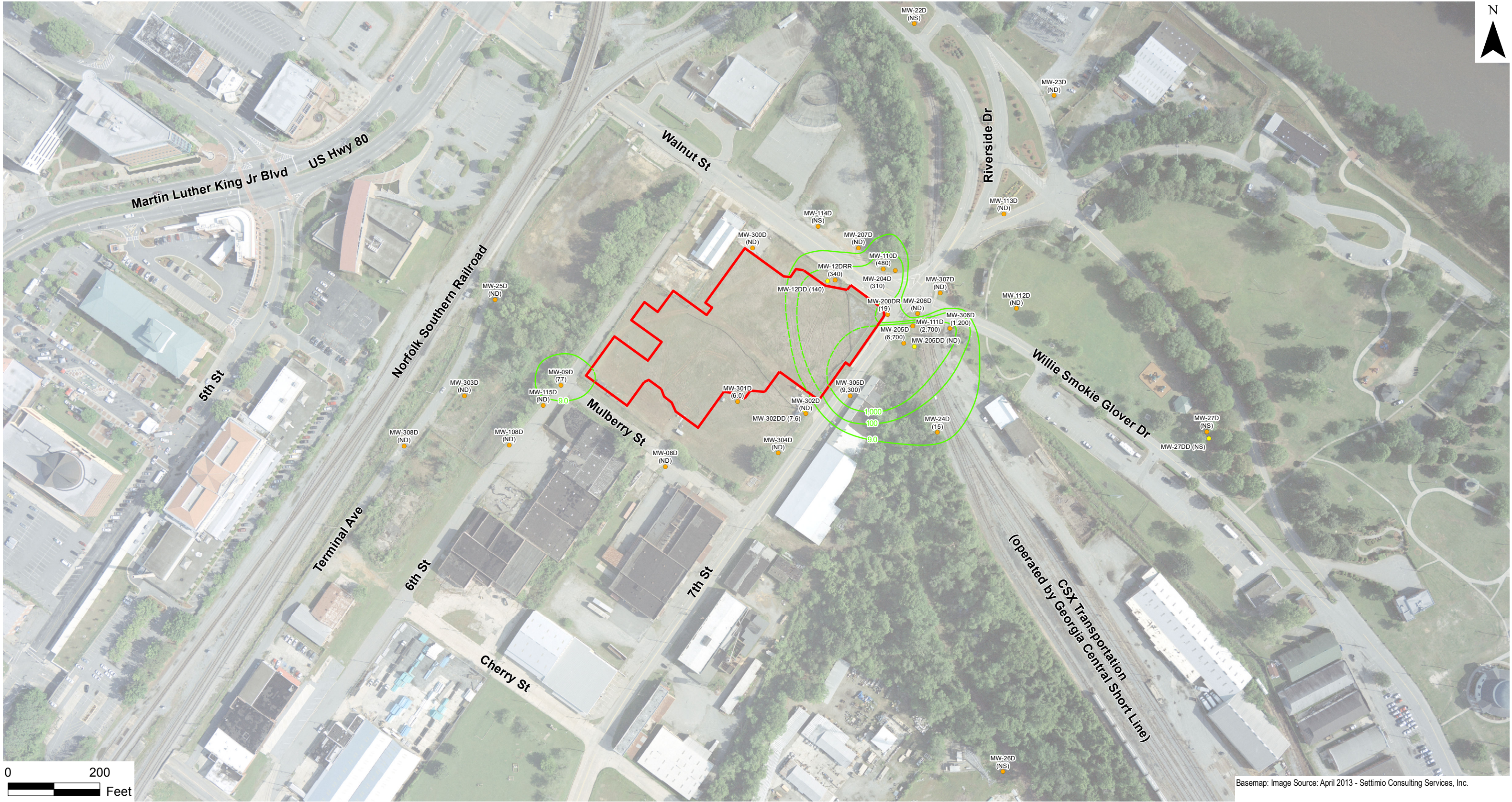
Environmental Resources Management

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DATE:	10/9/2014	SCALE:	AS SHOWN	REVISION:	0
FILE: S:\AGL\AGL Macon\MXD\09 2014 VIRPI\AGL Mch F3-8 Benz022014.mxd					

- Shallow Bedrock Well
- Deep Bedrock Well
- Benzene Isoconcentration Contour (Dashed where inferred - Under the ISS mass)
- Existing ISS Area
- () Benzene Concentration (ug/L)

NOTE:
Deep bedrock wells not included in contouring.
NS = Not Sampled
ND = Not Detected

FIGURE 3-8 - BENZENE IN BEDROCK GROUNDWATER
FEBRUARY 2014
Atlanta Gas Light Company
Former Manufactured Gas Plant
Macon, Bibb County, Georgia



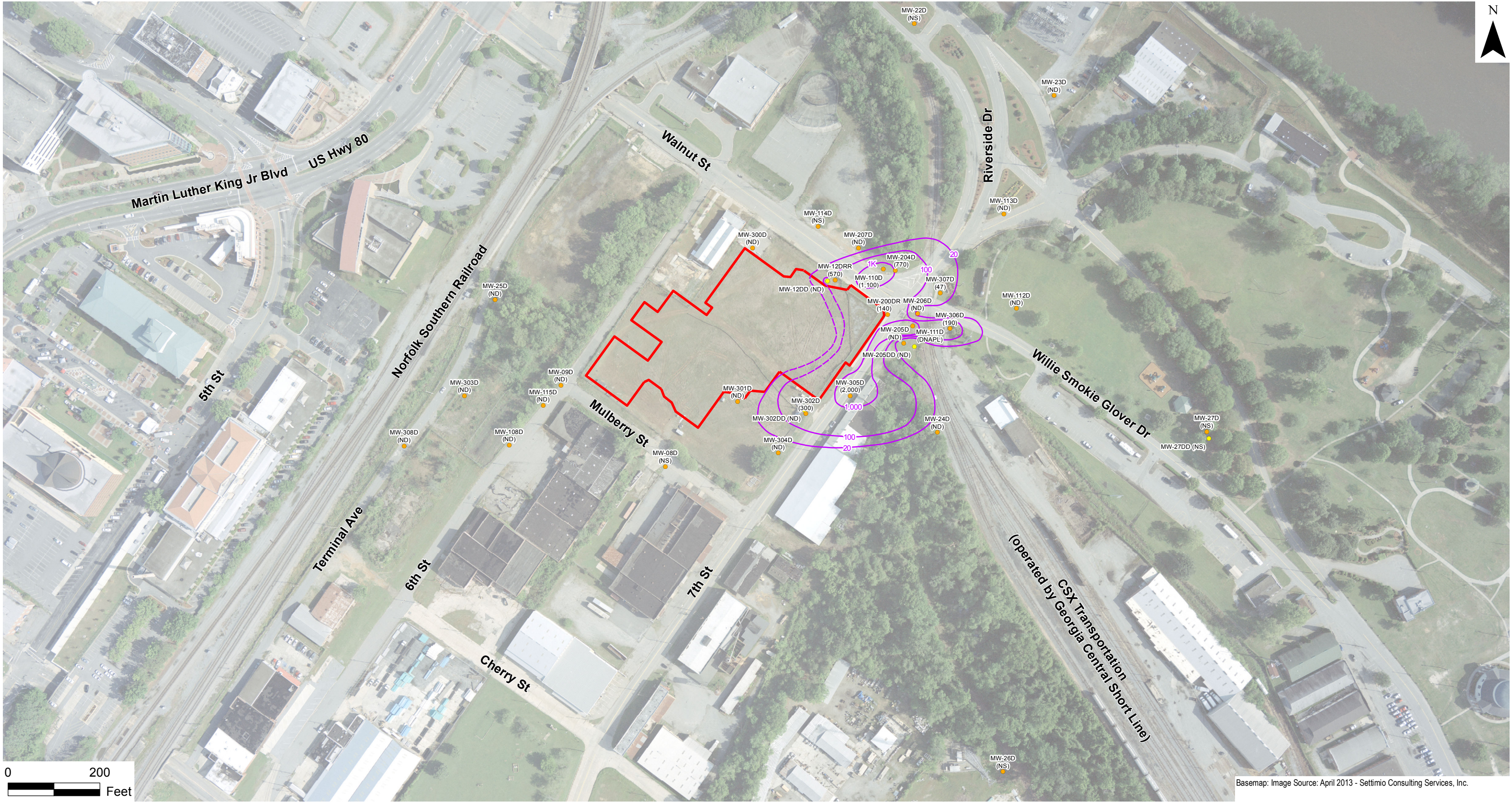
Environmental Resources Management

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DATE:	10/9/2014	SCALE:	AS SHOWN	REVISION:	0
FILE: S:\AGL\AGL_Macon\IMXD\09 2014 VIRP\AGLMcn_F3-9_Benz082014.mxd					

- Shallow Bedrock Well
- Deep Bedrock Well
- Benzene Isoconcentration Contour (Dashed where inferred - Under the ISS mass)
- Existing ISS Area
- () Benzene Concentration (ug/L)

NOTE:
Deep bedrock wells not included in contouring.
NS = Not Sampled
ND = Not Detected

FIGURE 3-9 - BENZENE IN
BEDROCK GROUNDWATER
AUGUST 2014
Atlanta Gas Light Company
Former Manufactured Gas Plant
Macon, Bibb County, Georgia



Environmental Resources Management

DESIGN:	H Sartain	DRAWN:	S Vizuite	CHKD.:	N Vrey
DATE:	10/9/2014	SCALE:	AS SHOWN	REVISION:	0
FILE: S:\AGL\AGL_Macon\MXD\09 2014 VIRP\AGLMcn_F3-10_Naph022014.mxd					

- Shallow Bedrock Well
- Deep Bedrock Well
- Naphthalene Isoconcentration Contour (ug/L) (Dashed where inferred - Under the ISS mass)
- Existing ISS Area
- () Naphthalene Concentration (ug/L)

Note:
Deep bedrock wells not included in contouring.

NS = Not Sampled

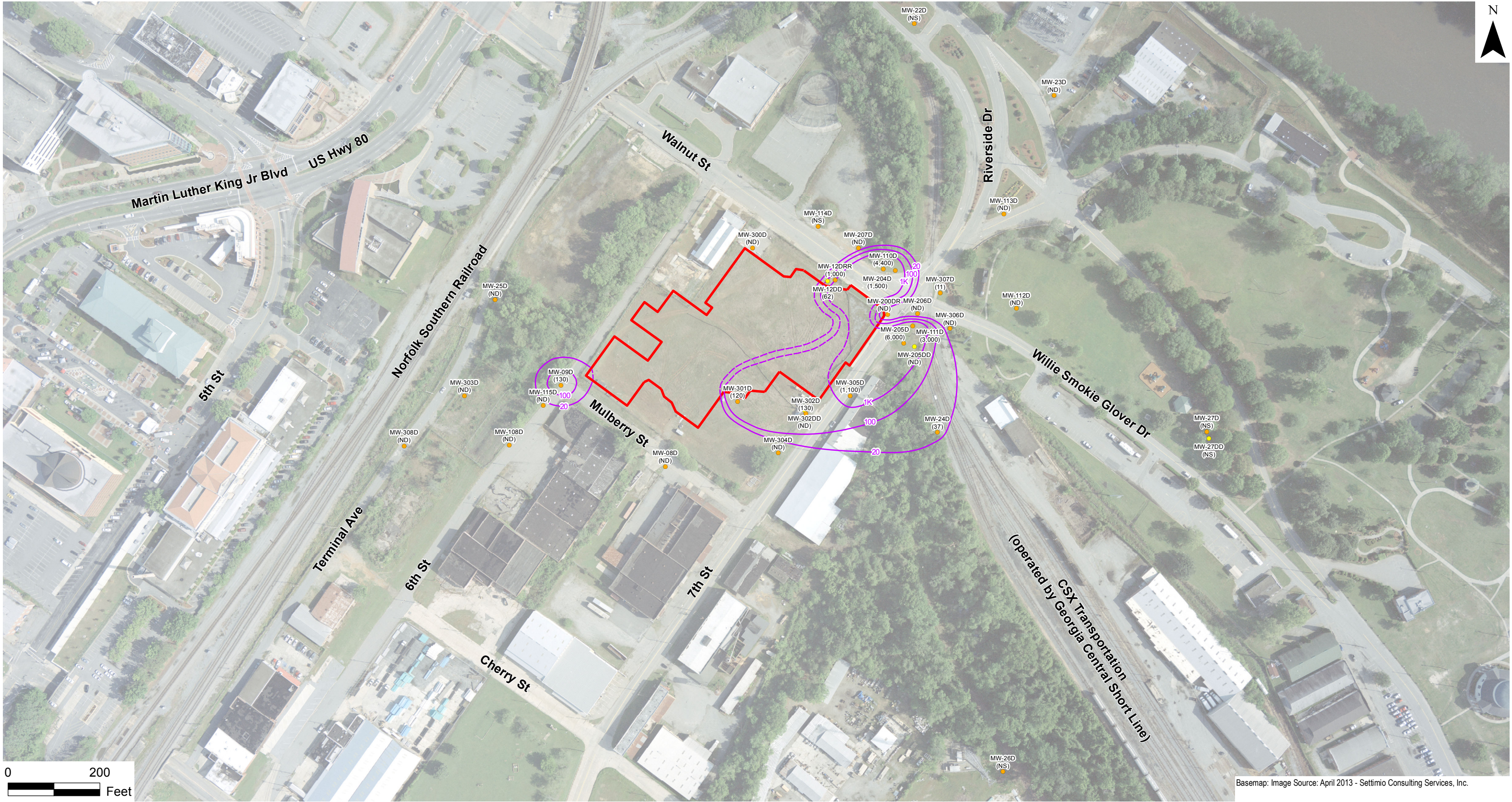
ND = Not Detected

FIGURE 3-10 - NAPHTHALENE IN BEDROCK GROUNDWATER
FEBRUARY 2014

Atlanta Gas Light Company

Former Manufactured Gas Plant

Macon, Bibb County, Georgia



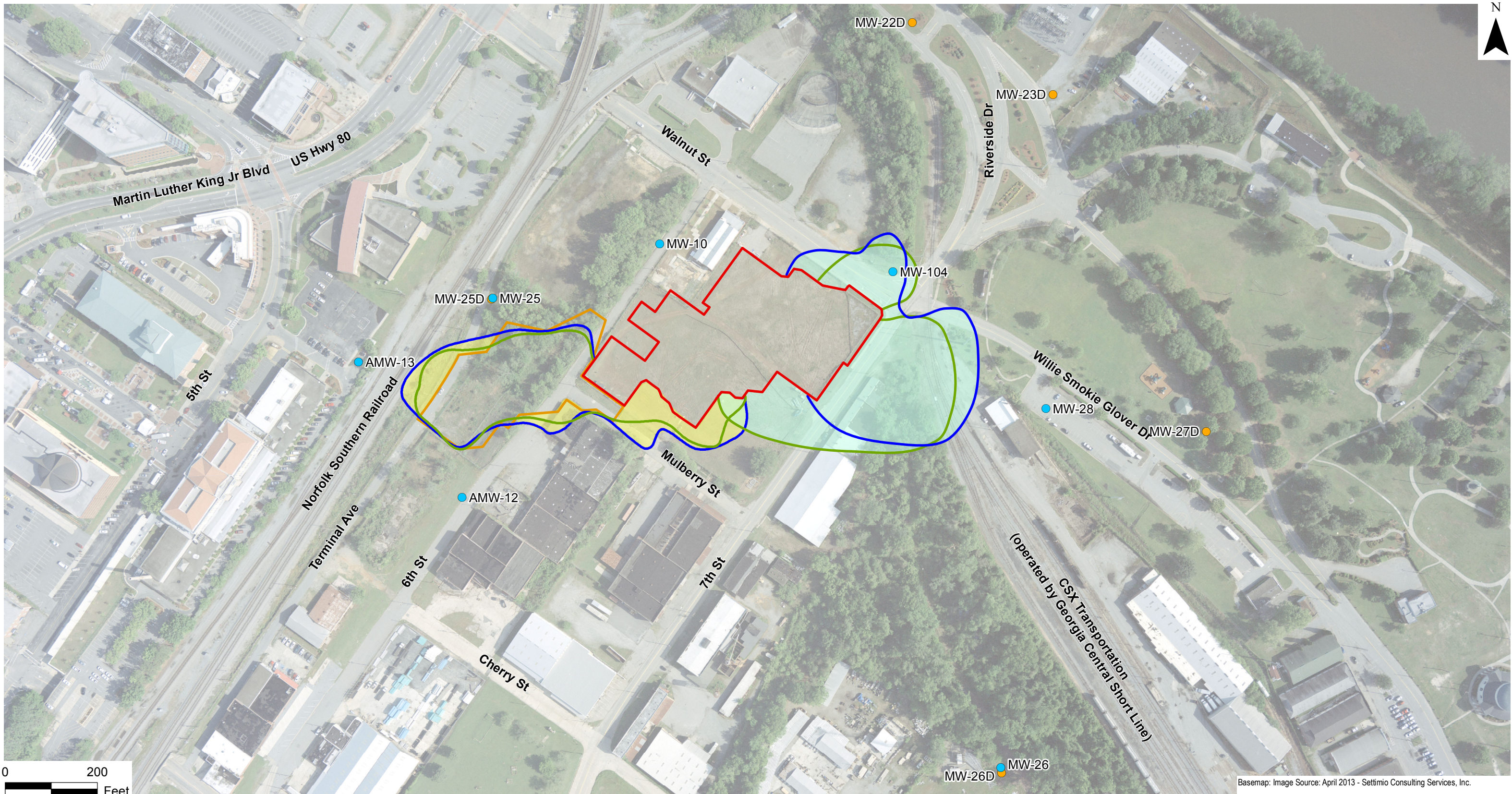
Environmental Resources Management

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DATE:	10/9/2014	SCALE:	AS SHOWN	REVISION:	0
FILE: S:\AGL\AGL_Macon\MXD\09 2014 VIRP\AGLMcn_F3-11_Naph082014.mxd					

- Shallow Bedrock Well
- Deep Bedrock Well
- Naphthalene Isoconcentration Contour (ug/L) (Dashed where inferred - Under the ISS mass)
- Existing ISS Area
- () Naphthalene Concentration (ug/L)

Note:
Deep bedrock wells not included in contouring.
NS = Not Sampled
ND = Not Detected

FIGURE 3-11 - NAPHTHALENE IN BEDROCK GROUNDWATER AUGUST 2014
Atlanta Gas Light Company
Former Manufactured Gas Plant
Macon, Bibb County, Georgia



Environmental Resources Management

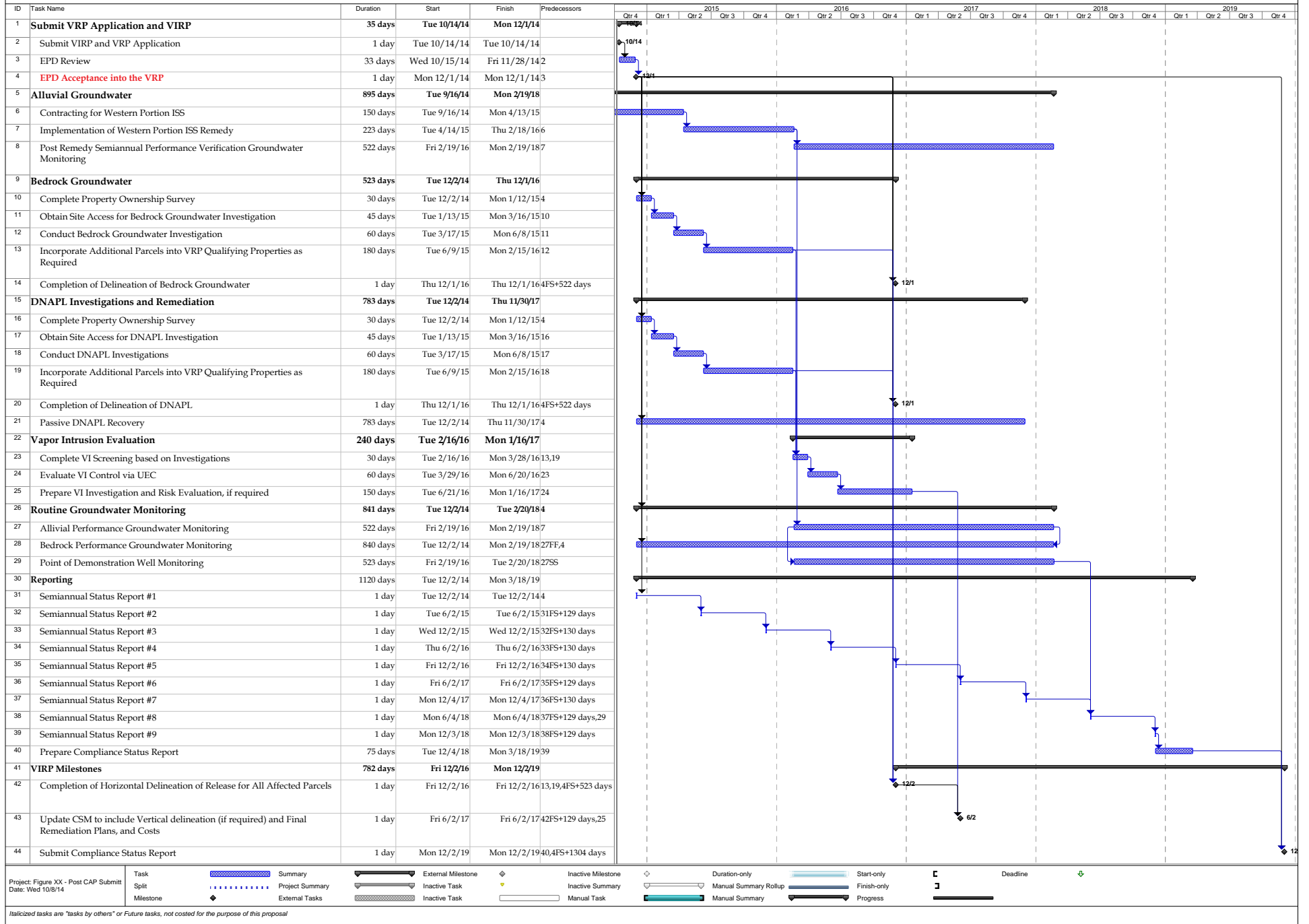


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- Shallow Point of Demonstration Well
- Bedrock Point of Demonstration Well
- Existing ISS Area
- Proposed ISS Area
- Extent of Bedrock Dissolved Phase Impacts
- Extent of Alluvial Dissolved Phase Impacts
- Naphthalene Impact (>20 µg/L)
- Benzene Impact (>5 µg/L)

FIGURE 5-1
POINT OF
DEMONSTRATION WELLS
Atlanta Gas Light Company
Former Manufactured Gas Plant
Macon, Bibb County, Georgia

Figure 6-1 Voluntary Investigation and Remediation Plan
Projected Milestone Schedule
AGLC - HSI Site #10511
Macon, GA




VRP Application and Checklist
Appendix A

Project No. 0176740
Atlanta Gas Light Company

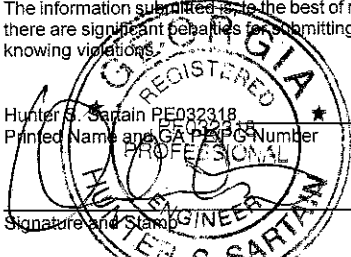
Environmental Resources Management
3200 Windy Hill Road SE, Suite 1500W
Atlanta, Georgia 30339
(678) 486-2700

Voluntary Investigation and Remediation Plan Application Form and Checklist

VRP APPLICANT (#1) INFORMATION					
COMPANY NAME	Atlanta Gas Light Company (AGLC)				
CONTACT PERSON/TITLE	Mr. Greg Corbett				
ADDRESS	Ten Peachtree Place, Atlanta, GA 30309				
PHONE	404 584 3719	FAX	404 584 3499	E-MAIL	gcorbett@aglresources.com
GEORGIA CERTIFIED PROFESSIONAL GEOLOGIST OR PROFESSIONAL ENGINEER OVERSEEING CLEANUP					
NAME	Hunter S. Sartain		GA PE/PG NUMBER	PE 032318	
COMPANY	Environmental Resources Management				
ADDRESS	3200 Windy Hill Road SE, Suite 1500W, Atlanta, GA 30339				
PHONE	678-486-2700	FAX	404-745-0103	E-MAIL	hunter.sartain@erm.com
APPLICANT'S CERTIFICATION					
<p>In order to be considered a qualifying property for the VRP:</p> <p>(1) The property must have a release of regulated substances into the environment;</p> <p>(2) The property shall not be:</p> <p style="margin-left: 20px;">(A) Listed on the federal National Priorities List pursuant to the federal Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. Section 9601.</p> <p style="margin-left: 20px;">(B) Currently undergoing response activities required by an order of the regional administrator of the federal Environmental Protection Agency; or</p> <p style="margin-left: 20px;">(C) A facility required to have a permit under Code Section 12-8-66.</p> <p>(3) Qualifying the property under this part would not violate the terms and conditions under which the division operates and administers remedial programs by delegation or similar authorization from the United States Environmental Protection Agency.</p> <p>(4) Any lien filed under subsection (e) of Code Section 12-8-96 or subsection (b) of Code Section 12-13-12 against the property shall be satisfied or settled and released by the director pursuant to Code Section 12-8-94 or Code Section 12-13-6.</p> <p>In order to be considered a participant under the VRP:</p> <p style="margin-left: 20px;">(1) The participant must be the property owner of the voluntary remediation property or have express permission to enter another's property to perform corrective action.</p> <p style="margin-left: 20px;">(2) The participant must not be in violation of any order, judgment, statute, rule, or regulation subject to the enforcement authority of the director.</p> <p>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</p> <p>I also certify that this property is eligible for the Voluntary Remediation Program (VRP) as defined in Code Section 12-8-105 and I am eligible as a participant as defined in Code Section 12-8-106.</p>					
APPLICANT'S SIGNATURE					
APPLICANT'S NAME/TITLE (PRINT)	Greg Corbett/Managing Director			DATE	10/8/14

QUALIFYING PROPERTY INFORMATION (For additional qualifying properties, please refer to the last page of application form)			
HAZARDOUS SITE INVENTORY INFORMATION (if applicable)			
HSI Number	10511	Date HSI Site listed	7/24/1998
HSI Facility Name	Macon MGP Site	NAICS CODE	NA
PROPERTY INFORMATION			
TAX PARCEL ID	R073-0384	PROPERTY SIZE (ACRES)	2.52 Ac
PROPERTY ADDRESS	306 Terminal Ave St.		
CITY	Macon	COUNTY	Bibb
STATE	GA	ZIPCODE	31201
LATITUDE (decimal format)	32.83 Degrees North	LONGITUDE (decimal format)	83.62 Degrees West
PROPERTY OWNER INFORMATION			
PROPERTY OWNER(S)	Atlanta Gas Light Company	PHONE #	404 584 3719
MAILING ADDRESS	Ten Peachtree Place		
CITY	Atlanta	STATE/ZIPCODE	GA 30309
ITEM #	DESCRIPTION OF REQUIREMENT	Location in VRP (i.e. pg., Table #, Figure #, etc.)	For EPD Comment Only (Leave Blank)
1.	\$5,000 APPLICATION FEE IN THE FORM OF A CHECK PAYABLE TO THE GEORGIA DEPARTMENT OF NATURAL RESOURCES. (PLEASE LIST CHECK DATE AND CHECK NUMBER IN COLUMN TITLED "LOCATION IN VRP." PLEASE DO NOT INCLUDE A SCANNED COPY OF CHECK IN ELECTRONIC COPY OF APPLICATION.)	Date: Oct 9, 2014 Check #: 0067459	
2.	WARRANTY DEED(S) FOR QUALIFYING PROPERTY.	See Appendix B	
3.	TAX PLAT OR OTHER FIGURE INCLUDING QUALIFYING PROPERTY BOUNDARIES, ABUTTING PROPERTIES, AND TAX PARCEL IDENTIFICATION NUMBER(S).	See Figure 1-3 of the VIRP.	
4.	ONE (1) PAPER COPY AND TWO (2) COMPACT DISC (CD) COPIES OF THE VOLUNTARY REMEDIATION PLAN IN A SEARCHABLE PORTABLE DOCUMENT FORMAT (PDF).	This VRP Application is Appendix A to the VIRP. In addition, the "Western Portion and MW-101 Area Corrective Action Plan Addendum, Feb 2014" is provided as Appendix C.	

5.	<p>The VRP participant's initial plan and application must include, using all reasonably available current information to the extent known at the time of application, a graphic three-dimensional preliminary conceptual site model (CSM) including a preliminary remediation plan with a table of delineation standards, brief supporting text, charts, and figures (no more than 10 pages, total) that illustrates the site's surface and subsurface setting, the known or suspected source(s) of contamination, how contamination might move within the environment, the potential human health and ecological receptors, and the complete or incomplete exposure pathways that may exist at the site; the preliminary CSM must be updated as the investigation and remediation progresses and an up-to-date CSM must be included in each semi-annual status report submitted to the director by the participant; a PROJECTED MILESTONE SCHEDULE for investigation and remediation of the site, and after enrollment as a participant, must update the schedule in each semi-annual status report to the director describing implementation of the plan during the preceding period. A Gantt chart format is preferred for the milestone schedule.</p> <p>The following four (4) generic milestones are required in all initial plans with the results reported in the participant's next applicable semi-annual reports to the director. The director may extend the time for or waive these or other milestones in the participant's plan where the director determines, based on a showing by the participant, that a longer time period is reasonably necessary:</p>	<p>The VIRP, of which this is appended, includes the requisite information. The Project Milestone Schedule is provided as Figure 6-1.</p>	
5.a.	<p>Within the first 12 months after enrollment, the participant must complete horizontal delineation of the release and associated constituents of concern on property where access is available at the time of enrollment;</p>	<p>Provided in Figure 6-1.</p>	
5.b.	<p>Within the first 24 months after enrollment, the participant must complete horizontal delineation of the release and associated constituents of concern extending onto property for which access was not available at the time of enrollment;</p>	<p>Provided in Figure 6-1.</p>	
5.c.	<p>Within 30 months after enrollment, the participant must update the site CSM to include vertical delineation, finalize the remediation plan and provide a preliminary cost estimate for implementation of remediation and associated continuing actions; and</p>	<p>Provided in Figure 6-1. Subsequent revisions based on Investigations will be provided during Semi Annual Progress Reports.</p>	
5.d.	<p>Within 60 months after enrollment, the participant must submit the compliance status report required under the VRP, including the requisite certifications.</p>	<p>To be provided upon completion of activities described in the VIRP and subsequent Semi-Annual Progress Reports.</p>	

<p>6.</p>	<p>SIGNED AND SEALED PE/PG CERTIFICATION AND SUPPORTING DOCUMENTATION:</p> <p>"I certify under penalty of law that this report and all attachments were prepared by me or under my direct supervision in accordance with the Voluntary Remediation Program Act (O.C.G.A. Section 12-8-101, <u>et seq.</u>). I am a professional engineer/professional geologist who is registered with the Georgia State Board of Registration for Professional Engineers and Land Surveyors/Georgia State Board of Registration for Professional Geologists and I have the necessary experience and am in charge of the investigation and remediation of this release of regulated substances.</p> <p>Furthermore, to document my direct oversight of the Voluntary Remediation Plan development, implementation of corrective action, and long term monitoring, I have attached a monthly summary of hours invoiced and description of services provided by me to the Voluntary Remediation Program participant since the previous submittal to the Georgia Environmental Protection Division.</p> <p>The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</p> <div style="display: flex; justify-content: space-between; align-items: flex-end;"> <div style="text-align: center;">  <p>Hunter S. Sartain PE032318 Printed Name and GA PE/PG Number</p> <p>_____ Signature and Stamp</p> </div> <div style="text-align: center;"> <p>_____ Date</p> <p>October 13, 2014</p> </div> </div>		
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ADDITIONAL QUALIFYING PROPERTIES

PROPERTY INFORMATION			
TAX PARCEL ID	R074-0223 / R074-0225 / R074-UTIL	PROPERTY SIZE (ACRES)	4.34 (3.14 Ac / 1.2 Ac)
PROPERTY ADDRESS	137 Mulberry St / 122 Walnut St		
CITY	Macon	COUNTY	Bibb
STATE	GA	ZIPCODE	31201
LATITUDE (decimal format)	32.83 Degrees North	LONGITUDE (decimal format)	83.62 Degrees West
PROPERTY OWNER INFORMATION			
PROPERTY OWNER(S)	Macon Bibb County Urban Development Authority (MUDA)	PHONE #	
MAILING ADDRESS	815 Riverside Dr		
CITY	Macon	STATE/ZIPCODE	GA 31201-2629

PROPERTY INFORMATION			
TAX PARCEL ID	NA (See Figure 1-3 in VIRP)	PROPERTY SIZE (ACRES)	3.5 Acres (estimated) Final parcel segregation to provide definitive metes and bounds
PROPERTY ADDRESS	Terminal Avenue, 6 th Street, Mulberry Street, Walnut Street, and 7 th Street Rights of Ways		
CITY	Macon	COUNTY	Bibb
STATE	GA	ZIPCODE	31201
LATITUDE (decimal format)	32.83 Degrees North	LONGITUDE (decimal format)	83.62 Degrees West
PROPERTY OWNER INFORMATION			
PROPERTY OWNER(S)	Macon-Bibb County, Office of Mayor	PHONE #	(478) 751-7170
MAILING ADDRESS	700 Poplar Street Macon		
CITY	Macon	STATE/ZIPCODE	GA 31201

PROPERTY INFORMATION			
TAX PARCEL ID	NA (See Figure 1-3 in VIRP)	PROPERTY SIZE (ACRES)	1.0 Acres (estimated) Final parcel segregation to provide definitive metes and bounds
PROPERTY ADDRESS	Railroad ROW along Terminal Avenue		
CITY	Macon	COUNTY	Bibb
STATE	GA	ZIPCODE	31201
LATITUDE (decimal format)	32.83 Degrees North	LONGITUDE (decimal format)	83.62 Degrees West
PROPERTY OWNER INFORMATION			
PROPERTY OWNER(S)	Norfolk Southern	PHONE #	404-529-1000
MAILING ADDRESS	1200 Peachtree Street NE Box 13		
CITY	Atlanta	STATE/ZIPCODE	GA 30309

Warranty Deeds and Right of Entry
Appendix B

Project No. 0176740
Atlanta Gas Light Company

Environmental Resources Management
3200 Windy Hill Road SE, Suite 1500W
Atlanta, Georgia 30339
(678) 486-2700



Doc ID: 010584800010 Type: GLR
Filed: 08/05/2013 at 09:10:00 AM
Fee Amt: \$152.00 Page 1 of 10
Transfer Tax: \$126.00
Bibb County Superior Court
Erica Woodford Clerk

BK **9068** PG **23-32**

Space Above This Line for Recorder's Use

This instrument prepared by and
after recording return to:
Spielman & Hicks, LLC
6400 Powers Ferry Road
Suite 200
Atlanta, Georgia 30339
Attn: W. Daniel Hicks, Jr.

STATE OF GEORGIA

COUNTY OF BIBB

LIMITED WARRANTY DEED WITH ENVIRONMENTAL COVENANTS

THIS LIMITED WARRANTY DEED WITH ENVIRONMENTAL COVENANTS (this "**Deed**") is made as of the 31 day of July, 2013, by **HARMONY GROUP PROPERTIES, LLC**, a Georgia limited liability company (hereinafter called "**Grantor**"), in favor of **ATLANTA GAS LIGHT COMPANY**, a Georgia corporation (hereinafter called "**Grantee**"). The words "Grantor" and "Grantee" include the neuter, masculine and feminine genders, and the singular and the plural, as the context requires or permits.

W I T N E S S E T H:

FOR AND IN CONSIDERATION of the sum of Ten Dollars (\$10.00) and other good and valuable consideration, in hand paid at and before the sealing and delivery of these presents, the receipt and sufficiency whereof are hereby acknowledged, Grantor has granted, bargained, sold, aliened, conveyed and confirmed, and by these presents does grant, bargain, sell, alien, convey and confirm, unto Grantee and the successors, legal representatives and assigns of Grantee, all that tract or parcel of land lying and being in Macon, Bibb County, Georgia that is more particularly described on **Exhibit "A"** attached hereto and by this reference made a part hereof (hereinafter called the "**Property**"); *provided that*, without expanding by implication the

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scope of the limited warranty set forth hereinbelow, the Property is conveyed subject to all matters described on **Exhibit "B"** attached hereto and by this reference made a part hereof and the further provisions of this Deed (collectively, the "**Permitted Exceptions**").

TO HAVE AND TO HOLD the Property, together with any and all of the rights, members and appurtenances thereof to the same being, belonging or in anywise appertaining, to the only proper use, benefit and behoof of Grantee forever, in fee simple, but subject to the Permitted Exceptions; and

GRANTOR SHALL WARRANT and forever defend the right and title to the Property unto Grantee, and the successors, legal representatives and assigns of Grantee, against the claims of all persons whomsoever, claiming by, through or under Grantor, but not otherwise; provided, however, that the warranties of title made by Grantor herein shall not extend to any claims arising under any of the Permitted Exceptions.

GRANTEE AGREES, by its acceptance of this Deed to the Property and by its execution below, with Grantor as follows:

(a) Grantee hereby acknowledges that portions of the Property (or adjacent or neighboring lands) were or may have been used by present or prior owners or operators for the generation, manufacture, refining, transportation, treatment, storage, handling or disposal of Regulated Substances (as hereinafter defined) or materials of known or unknown type, nature and origin, some of which may have been Released (as hereinafter defined) or caused or contributed to or resulted in Environmental Conditions at, in, on, under or emanating onto or from the Property, including (but not limited to) any improvements as well as the soil, surface water, sediment and ground water in the area of the Property and on and under some or all of the Property.

(b) Notwithstanding anything to the contrary in this Deed, as between the Grantee and Grantor, Grantee, at its sole cost and expense, shall be responsible for, and covenants and agrees to undertake or pay, any activities required to bring the Property into compliance with the Nonresidential Risk Reduction Standards (as defined below), whether with regard to Environmental Conditions or Regulated Substances present before or after the date hereof. Grantee acknowledges and agrees that Grantee does and will assume all risk that physical, environmental or other conditions of the Property, including (but not limited to) Environmental Conditions and Regulated Substances existing, contingent or potential, may not have been disclosed by Grantee's review, examination, inspection and investigation of the Property. Grantee waives and releases any and all contractual, statutory, common law and/or other claims or causes of action presently existing or which may come into being at any time in the future which Grantee may otherwise be entitled to assert against Grantor, its present, prior or subsequent shareholders, members, affiliates, direct and ultimate parents and subsidiaries, transferees, lessees, partners and joint venturers, assigns and the past, present and future officers, directors, shareholders, members, employees, representatives and agents of it or any of them ("**Grantor et al.**") arising in whole or in part out of, or relating in any way to, the past or present condition or liabilities, including (but not limited to) the Environmental Condition or associated liabilities and any Costs (as hereafter defined), of the Property or Regulated Substances on, in,

under, at or emanating from the Property (the "**Claims**") and discharges and covenants not to sue Grantor et al. respecting any of same. Grantee agrees that Grantee shall never commence or prosecute against Grantor et al. any action or other proceeding, whether for contribution or otherwise, based upon any claims, demands, causes of actions, obligations, damages or liabilities related in any way to Environmental Conditions, including, but not limited to, all Costs and Claims. Grantee further expressly waives any rights or benefits available or which may be or become available to it under any law or rule of law (whether statutory, common law or otherwise) which provide or may provide that a general release does not extend to claims or matters unknown or not suspected by the releasor at the time of executing the release, even if such claims or matters, had they been known, might have influenced the actions of the releasor, it being the intention of Grantee that the foregoing release and covenant not to sue by Grantee is and shall be a general release and covenant not to sue respecting all Environmental Conditions in, at, from or relating to the Property, whether known, unknown, foreseen, unforeseen, relating to existing or future laws or otherwise. Grantee further acknowledges and agrees that the foregoing release and covenant not to sue is intended to release and bar any claims of any sort otherwise available to Grantee for or with respect to property damage, personal injury or death, including without limitation, loss of rental income or lost profits due to business interruption, costs and expenses comprising the incremental increase in the cost of construction of improvements (if any) on or about the Property, and any loss of marketability or impairment of the value of the Property resulting from a Release, whether past, present or future, of Regulated Substances affecting the Property.

(c) Further as consideration for Grantor's conveyance of the Property, and as a material inducement to Grantor for same, Grantee assumes for the benefit of Grantor any and all liability and/or obligation for, and agrees to indemnify, protect, defend and hold Grantor et al. harmless from, (i) all Claims relating to Regulated Substances that are related to or arise from any and all acts or omissions by Grantee or Grantee's agents, employees, contractors, subcontractors, Grantees, tenants, licensees, invitees, or other third parties who are present on the Property after the date hereof; provided however, that the claim is for Regulated Substances that exceed the Nonresidential Risk Reduction Standards, (ii) all Claims relating to MGP Impacts that result from injury to person or property or loss of life sustained in or about the Property, whether due to the presence of, or exposure to MGP Impacts, (iii) all claims, actions, administrative proceedings (including informal proceedings), judgments, damages, penalties, fines, costs, liabilities (including sums paid in settlement of any Claim), including reasonable attorneys' fees and expenses), reasonable consultant fees, and reasonable expert fees arising from or relating to MGP Impacts (together with Remedial Costs hereafter defined, the "**Costs**") (including without limitation, operating and maintenance costs) incurred in connection with any investigation or monitoring of site conditions, (iv) any costs related to cleanup, containment, remedial, removal, restoration work or other response costs (the "**Remedial Work**") relating to MGP Impacts (the "**Remedial Costs**") and (v) any costs and expenses incurred by Grantor in enforcing the provisions of this Deed.

(d) In connection with any indemnity by Grantee, Grantee shall have the right to assume and take over the defense of any claim against Grantee and engage attorneys to represent both parties in connection therewith, at Grantee's sole cost and expense. Grantor shall endeavor in good faith to notify Grantee of any claims required to be indemnified by Grantee

hereunder within five (5) days after Grantor receives notice of any such claims, and Grantor shall cooperate with Grantee in connection with the defense of any such claims; provided, however, if Grantor fails to notify Grantee within a reasonable time period, at Grantee's election, such failure to notify Grantee shall release Grantee's obligation to indemnify Grantor hereunder as to such claim.

(e) As to claims or actions brought by or on behalf of employees of Grantee, Grantee hereby expressly waives as to the parties indemnified hereunder, for the purpose of the indemnification contained herein, any immunity to which Grantee may otherwise be entitled under any industrial or worker's compensation laws.

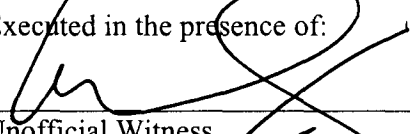
(f) For the purposes hereof, (i) "**Release**" or "**Released**" shall mean releasing, spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, disposing or dumping, regardless of whether the result of an intentional or unintentional act or omission, (ii) "**Regulated Substances**" shall mean, without limitation, any pollutant, dangerous substance, toxic substance, hazardous or non hazardous waste, hazardous material, hazardous substance or contaminant as defined in or regulated pursuant to any Environmental Law, (iii) "**Environmental Law**" shall mean any and all laws, statutes, ordinances, rules, regulations, orders, or determinations of any governmental or other agency in effect or which hereinafter become effective pertaining to health and safety or the environment, including (without limitation) the Clean Air Act, the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the Water Pollution Control Act, the Safe Drinking Water Act, the Occupational Safety and Health Act, the Toxic Substances Control Act (TSCA), all as amended, and any and all state and local counterparts or similar legislation, (iv) "**Environmental Condition**" or "**Environmental Conditions**" shall mean any condition with respect to the ground, subsurface soil, ambient air, surface waters, groundwaters, leachate, run on or run off, stream or other sediments and similar environmental medium on or off the Property, which condition requires investigation and/or remedial or corrective action and/or compliance with any Environmental Law or permit requirements, standards, rules, regulations, ordinances and consent orders, (v) "**MGP Impacts**" shall mean the presence of Regulated Substances, including metals and PAHs on, in, under or above the Property associated with the operation of the former manufactured gas plant that meet Nonresidential Risk Reduction Standards, (vi) "**Nonresidential Risk Reduction Standards**" shall mean Type 3, Type 4 or Type 5 Risk Reduction Standards applicable to nonresidential property as established in the Rules of the Georgia Department of Natural Resources, Environmental Protection Division Chapter 391-3-19 in effect as of the date of this Deed.

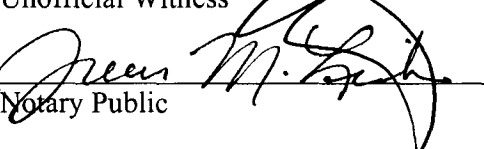
THIS DEED may be executed in multiple counterparts, each of which shall be deemed an original and all of which collectively shall constitute one instrument.

[Signatures Begin on Following Page]

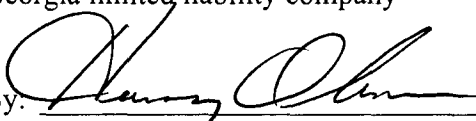
IN WITNESS WHEREOF, Grantor and Grantee have caused this Deed to be executed by their respective duly authorized representatives as of the day, month and year first written above.

GRANTOR:

Executed in the presence of:


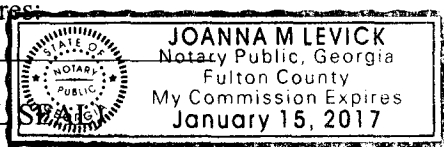
Unofficial Witness


Notary Public

HARMONY GROUP PROPERTIES, LLC, a
Georgia limited liability company
By: 

Name: Henry Oliner
Title: Managing Member

My Commission Expires:

(NOTARIAL SEAL) 

GRANTEE:

Executed in the presence of:

Unofficial Witness

Notary Public

My Commission Expires:

(NOTARIAL SEAL)

ATLANTA GAS LIGHT COMPANY, a
Georgia corporation
By: _____
Name:
Title:

IN WITNESS WHEREOF, Grantor and Grantee have caused this Deed to be executed by their respective duly authorized representatives as of the day, month and year first written above.

GRANTOR:

Executed in the presence of:

HARMONY GROUP PROPERTIES, LLC, a
Georgia limited liability company

Unofficial Witness

By: _____
Name: Henry Oliner
Title: Managing Member

Notary Public

My Commission Expires:

(NOTARIAL SEAL)

GRANTEE:

ATLANTA GAS LIGHT COMPANY, a
Georgia corporation

Executed in the presence of:

By: _____
Name: Jeffrey P. Brown
Title: SUP & Deputy GC

Unofficial Witness

Notary Public

My Commission Expires:

(NOTARIAL SEAL)

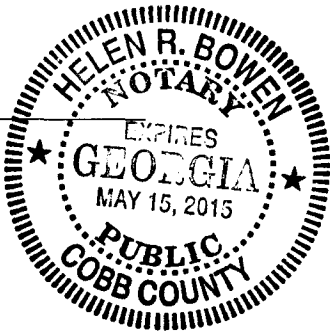


EXHIBIT "A"

LEGAL DESCRIPTION

PARCEL ONE:

All of that tract or parcel of land situate, lying and being in the City of Macon, County of Bibb, State of Georgia, and being more particularly described as follows, to wit:

COMMENCING at the intersection of the easterly right of way line of Terminal Avenue with the southerly right of way line of Walnut Street and go South 55° 09' East, along the southerly right of way line of Walnut Street for a distance of 155.8 feet; thence, South 34° 51' West, for a distance of 779.6 feet, more or less, to the center line of a wall; thence, North 55° 12' West, along the center line of said wall, 96.8 feet to a point in the easterly right of way line of Terminal Avenue; thence, the following courses and distances:

North 36° 56' East, a distance of 50 feet; thence, North 33° 44' East, a distance of 50 feet; thence, North 34° 04' East, a distance of 25 feet; thence, North 29° 43' East, a distance of 25 feet; thence, North 25° 25' East, a distance of 50 feet; thence, North 20° 08' East, a distance of 50 feet; thence, North 17° 35' East, a distance of 50 feet; thence, North 14° 15' East, a distance of 42.8 feet; thence, North 17° 14' East, a distance of 7.2 feet; thence, North 23° 33' East, a distance of 50 feet; thence, North 28° 33' East, a distance of 50 feet; thence, North 31° 27' East, a distance of 50 feet; thence, North 33° 16' East, a distance of 52.4 feet; thence, North 35° 53' East, a distance of 47.6 feet; thence, North 38° 31' East, a distance of 50 feet; thence, North 39° 50' East 50'; thence; thence, North 39° 18' East, a distance of 50 feet; thence, North 39° 19' East, a distance of 39.3 feet, more or less, TO THE POINT OR PLACE OF BEGINNING; said piece or parcel of land containing 2.52 acres, more or less, and being substantially shown in red outline as Parcel "B" on print of drawing prepared by S.J. Goslin, Co., Inc., dated June 21, 1976.

PARCEL TWO:

Without any warranty whatsoever, all right, title and interest, if any, of Grantor in and to the following described parcel of land situate, lying and being in the City of Macon, County of Bibb, State of Georgia, and being more particularly described as follows, to wit:

BEGINNING at the intersection of the southerly right of way line of Walnut Street with the easterly right of way line of Terminal Avenue; thence, along the easterly line of Terminal Avenue, the following courses and distances:

South 39° 19' West, a distance of 39.3 feet; thence, South 39° 18' West, a distance of 50.0 feet; thence, South 39° 50' West, a distance of 50.0 feet; thence, South 38° 31' West, a distance of 50.0 feet; thence, South 35° 53' West, a distance of 47.6 feet; thence, South 33° 16' West, a distance of 52.4 feet; thence, South 31° 27' West, a distance of 50.0 feet; thence, South 28° 33' West, a distance of 50.0 feet; thence, South 23° 33' West, a distance of 50.0 feet; thence, South 17° 14' West, a distance of 7.2 feet; thence, South 14° 15' West, a distance of 42.8 feet; thence, South 17° 35' West, a distance of 50.0 feet; thence, South 20° 08' West, a distance of 50.0 feet;

thence, South 25° 25' West, a distance of 50.0 feet; thence, South 29° 43' West, a distance of 25.0 feet; thence, South 34° 04' West, a distance of 25.0 feet; thence, South 33° 44' West, a distance of 50.0 feet; thence, South 36° 56' West, a distance of 50.0 feet; thence, North 55° 12' West, crossing Terminal Avenue, a distance of 20.0 feet; thence, along the westerly line of Terminal Avenue, the following courses and distances: North 36° 56' East, a distance of 50.0 feet; thence, North 33° 44' East, a distance of 50.0 feet; thence, North 34° 04' East, a distance of 24.3 feet; thence, North 29° 43' East, a distance of 23.5 feet; thence, North 25° 25' East, a distance of 48.3 feet; thence, North 20° 08' East, a distance of 48.6 feet; thence, North 17° 35' East, a distance of 49.0 feet; thence, North 14° 15' East, a distance of 42.8 feet; thence, North 17° 14' East, a distance of 8.8 feet; thence, North 23° 33' East, a distance of 52.0 feet; thence, North 28° 33' East, a distance of 51.4 feet; thence, North 31° 27' East, a distance of 50.8 feet; thence, North 33° 16' East, a distance of 53.3 feet; thence, North 35° 53' East, a distance of 48.4 feet; thence, North 38° 31' East, a distance of 50.7 feet; thence, North 39° 50' East, a distance of 50.0 feet; thence, North 39° 18' East, a distance of 50.0 feet; thence, North 39° 19' East, a distance of 37.8 feet; more or less, to the southerly right of way line of Walnut Street; thence, South 55° 09' East, a distance of 20.0 feet, more or less, TO THE POINT OR PLACE OF BEGINNING; containing 0.36 of an acre, more or less, and being substantially as shown as Terminal Avenue in green outline on print of drawing prepared by S.J. Goslin Co., Inc., dated June 21, 1976.

EXHIBIT "B"

PERMITTED EXCEPTIONS

1. Taxes and assessments for 2013 and subsequent years.
2. Matters shown on Plat recorded at Plat Book 1278, Page 619, Records of Bibb County, Georgia.
3. All matters shown on ALTA/ACSM Survey prepared by Phoenix Solutions, Inc., for Atlanta Gas Light and Chicago Title Insurance Company dated April 28, 2013, and bearing the seal of Zachary R. Garrett, Georgia Registered Land Surveyor No. 3169.
4. No representations or warranties are made with regard to title to Parcel Two of the Property described in **Exhibit "A"**, and title to the Property is subject to any claims made by the City of Macon or any other governmental authority or the public with respect to any portion of the Property located to the West of the fence on the Property running more or less parallel and closest to the pavement of Terminal Avenue.
5. Without limiting Item 4 foregoing, the rights of others in and to any portion of the Property contained within the right-of-way of Terminal Avenue.
6. Covenants, restrictions and other terms and provisions set forth in the Deed to which this **Exhibit "B"** is attached.

SECTION A - SELLER'S INFORMATION (Do not use agent's information)				SECTION C - TAX COMPUTATION	
SELLER'S BUSINESS / ORGANIZATION / OTHER NAME Harmony Group Properties, LLC				Exempt Code If no exempt code enter NONE	NONE
MAILING ADDRESS (STREET & NUMBER) 4131 Broadway				1. Actual Value of consideration received by seller Complete Line 1A if actual value unknown	\$126,000.00
CITY, STATE / PROVINCE / REGION, ZIP CODE, COUNTRY Macon, GA 31206 USA		DATE OF SALE 7/31/2013		1A. Estimated fair market value of Real and Personal property	\$0.00
SECTION B - BUYER'S INFORMATION (Do not use agent's information)				2. Fair market value of Personal Property only	\$0.00
BUYERS'S BUSINESS / ORGANIZATION / OTHER NAME Atlanta Gas Light Company				3. Amount of liens and encumbrances not removed by transfer	\$0.00
MAILING ADDRESS (Must use buyer's address for tax billing & notice purposes) c/o AGL Resources Inc. Ten Peachtree Plaza				4. Net Taxable Value (Line 1 or 1A less Lines 2 and 3)	\$126,000.00
CITY, STATE / PROVINCE / REGION, ZIP CODE, COUNTRY Atlanta, GA 30309 USA		Check Buyers Intended Use () Residential () Commercial () Agricultural () Industrial		5. TAX DUE at .10 per \$100 or fraction thereof (Minimum \$1.00)	\$126.00
SECTION D - PROPERTY INFORMATION (Location of Property (Street, Route, Hwy, etc))					
HOUSE NUMBER & EXTENSION (ex 265A)		PRE-DIRECTION, STREET NAME AND TYPE, POST DIRECTION			SUITE NUMBER
COUNTY BIBB		CITY (IF APPLICABLE) Macon		MAP & PARCEL NUMBER R073-0384	ACCOUNT NUMBER
TAX DISTRICT	GMD	LAND DISTRICT	ACRES	LAND LOT	SUB LOT & BLOCK
SECTION E - RECORDING INFORMATION (Official Use Only)					
DATE 8/5/13	DEED BOOK 9668	DEED PAGE 23		PLAT BOOK	PLAT PAGE

ADDITIONAL BUYERS

None

9/10 M



Doc ID: 010584810006 Type: GLR
Filed: 08/05/2013 at 09:10:00 AM
Fee Amt: \$18.00 Page 1 of 6
Bibb County Superior Court
Erica Woodford Clerk

BK **9068** PG **33-38**

Space Above This Line for Recorder's Use

This instrument prepared by, and
after recording return to:
Spielman & Hicks, LLC
6400 Powers Ferry Road
Suite 300
Atlanta, Georgia 30339
Attn: W. Daniel Hicks, Jr.

STATE OF GEORGIA

COUNTY OF BIBB

QUITCLAIM DEED

THIS QUITCLAIM DEED (this "**Deed**") is made as of the 31 day of July, 2013, by **HARMONY GROUP PROPERTIES, LLC**, a Georgia limited liability company (hereinafter called "**Grantor**"), in favor of **ATLANTA GAS LIGHT COMPANY**, a Georgia corporation (hereinafter called "**Grantee**"). The words "Grantor" and "Grantee" include the neuter, masculine and feminine genders, and the singular and the plural, as the context requires or permits.

FOR AND IN CONSIDERATION of the sum of Ten Dollars (\$10.00) in hand paid to Grantor by Grantee at and before the execution, sealing and delivery hereof, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Grantor has, except for and subject to the express limitation hereinafter set forth, remised, released, conveyed and forever quitclaimed, and by these presents does remise, release, convey and forever quitclaim, unto Grantee and the successors, legal representatives and assigns of Grantee, all right, title, interest, claim or demand Grantor has or may have in and to all that tract or parcel of land lying and being in Macon, Bibb County, Georgia, that is more particularly described on **Exhibit "A"** attached hereto and by this reference made a part hereof (hereinafter called the "**Property**").

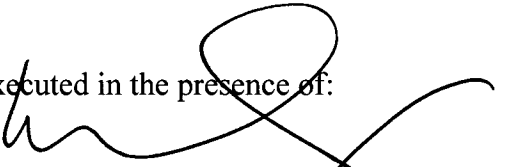
TO HAVE AND TO HOLD the Property in order that neither Grantor nor any person claiming by, through or under Grantor shall at any time by any means or ways have, claim or

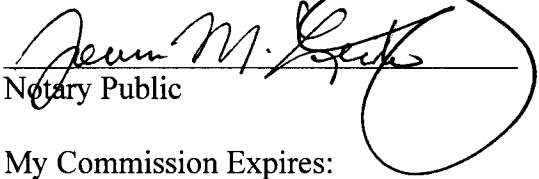
demand any title or interest in or to the Property or any of the rights, members and appurtenances thereof, subject to and except as set forth in the following paragraph.

NOTWITHSTANDING THE FOREGOING or any contrary provision of this Deed, Grantor has not, does not and shall not in any way release, waive, modify, terminate or otherwise convey, transfer, limit or impair any rights or benefits created and established by and/or reserved in that certain Limited Warranty Deed with Environmental Covenants (the "**Limited Warranty Deed**") from Grantor to Grantee of even date herewith, as executed by Grantee and to be recorded with this Deed on or about the date hereof, which run in favor of Grantor and Grantor, et. al., as defined in such Limited Warranty Deed, all of which are hereby expressly reserved and retained by Grantor.

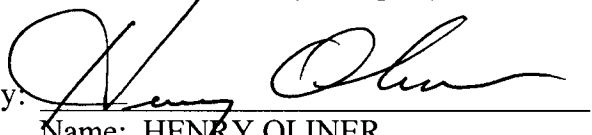
THE PURPOSE of this Deed is to quitclaim to Grantee all right, title and interest of Grantor in and to the Property (being generally the same property conveyed by the Limited Warranty Deed) using a legal description drawn from Grantee's current survey of the Property, so as to divest Grantor of any right, title or interest in or to any strips or gores or other discrepancies established or revealed by such survey (but expressly subject to the reservation of the foregoing paragraph).

IN WITNESS WHEREOF, Grantor has caused this Deed to be executed by its duly authorized representative on the day, month and year first written above.

Executed in the presence of:


Unofficial Witness


Notary Public
My Commission Expires: _____

GRANTOR:
HARMONY GROUP PROPERTIES, LLC, a
Georgia limited liability company
By: 

Name: HENRY OLINER
Title: Managing Member

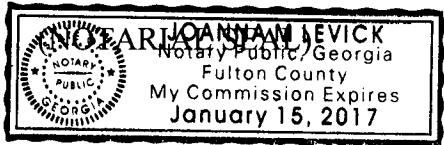


EXHIBIT A

LEGAL DESCRIPTION

TRACT 1:

All that tract of land lying and being in the City of Macon, Bibb County, in the State of Georgia, being all of Lots 1 and 8 of the Old City Square 16 and a portion of Lots 2, 7, and an original 20 foot wide alley running north to south within Old City Square 16, also being a portion of the original 180 foot wide right-of-way of Mulberry Street running north to south, and a portion of Lot 8 of Old City Square 25 as shown on an ALTA/ACSM survey for Atlanta Gas Light & Chicago Title Insurance Company prepared by Phoenix Solutions, Inc., dated June 28, 2013 and stamped by Zachary R. Garrett, RLS 3169, and being more particularly described as follows:

Commencing at a ½ inch rebar found at the intersection of the southwestern right-of-way of Willie Smoker Glover Drive and the northern right-of-way of Walnut Street, being 120 feet wide at this point; thence South 35°17'40" West a distance of 60.12 feet to the theoretical centerline of Walnut Street; thence along said theoretical centerline North 54°42'20" West a distance of 655.98 feet to a point; thence leaving said theoretical centerline South 35°17'40" West a distance of 60.00 feet to an iron pin set at the intersection of the southerly right of way margin of Walnut Street and the eastern right of way margin of a road named Terminal Ave, said point being the **POINT OF BEGINNING**;

Thence along said southerly right of way margin of Walnut Street South 54°42'20" East a distance of 155.86 feet to a P-K nail found at the intersection of the southern right of way margin of Walnut Street (being 120 feet wide at this point) and the western right of way margin of Sixth Street (being 120 feet wide at this point); thence leaving right of way of Walnut Street and running along said right of way of Sixth Street South 35°10'45" West a distance of 779.20 feet to a ½" rebar with cap found; thence leaving said right of way of Sixth Street North 55°13'40" West a distance of 96.84 feet to a ½" rebar with cap found on the easterly right of way of Terminal Avenue; thence running along said easterly right of way of Terminal Avenue the following courses and distances;

North 37°15'45" East, 50.12 feet;
Thence North 34°03'45" East, 50.00 feet;
Thence North 34°23'45" East, 25.00 feet;
Thence North 30°02'45" East, 25.00 feet;
Thence North 25°44'45" East, 50.00 feet;
Thence North 20°27'45" East, 50.00 feet;
Thence North 17°54'45" East, 50.00 feet;
Thence North 14°34'45" East, 42.80 feet;
Thence North 17°33'45" East, 7.20 feet;
Thence North 23°52'45" East, 50.00 feet;
Thence North 28°52'45" East, 50.00 feet;
Thence North 31°46'45" East, 50.00 feet;
Thence North 33°35'45" East, 52.40 feet;

Thence North 36°12'45" East, 47.60 feet;
Thence North 38°50'45" East, 50.00 feet;
Thence North 40°09'45" East, 50.00 feet;
Thence North 39°37'45" East, 50.00 feet;
Thence North 39°38'45" East, 39.82 feet to the **POINT OF BEGINNING**.

TRACT 2:

All that tract of land lying and being in the City of Macon, Bibb County, in the State of Georgia, being a portion of Lots 2, 7, and an original 20 foot wide alley running north to south within Old City Square 16, also being a portion of the original 180 foot wide right-of-way of Mulberry Street running north to south, and a portion of Lots 7 and 8 of Old City Square 25 as shown on an ALTA/ACSM survey for Atlanta Gas Light & Chicago Title Insurance Company prepared by Phoenix Solutions, Inc., and being more particularly described as follows:

Commencing at a ½ inch rebar found at the intersection of the southwestern right-of-way of Willie Smoker Glover Drive and the northern right-of-way of Walnut Street, being 120 feet wide at this point; thence South 35 °17'40" West a distance of 60.12 feet to the theoretical centerline of Walnut Street; thence along said theoretical centerline North 54° 42'20" West a distance of 655.98 feet to a point; thence leaving said theoretical centerline South 35°17'40" West a distance of 60.00 feet to an iron pin set at the intersection of the southern right of way margin of Walnut street and the eastern right of way margin of Terminal Ave, said point being the **POINT OF BEGINNING**;

Thence leaving said right of way margin of Walnut Street and running along said easterly right of way of Terminal Avenue the following courses and distances;

South 39°38'45" West, 39.82 feet;
Thence South 39°37'45" West, 50.00 feet;
Thence South 40°09'45" West, 50.00 feet;
Thence South 38°50'45" West, 50.00 feet;
Thence South 36°12'45" West, 47.60 feet;
Thence South 33°35'45" West, 52.40 feet;
Thence South 31°46'45" West, 50.00 feet;
Thence South 28°52'45" West, 50.00 feet;
Thence South 23°52'45" West, 50.00 feet;
Thence South 17°33'45" West, 7.20 feet;
Thence South 14°34'45" West, 42.80 feet;
Thence South 17°54'45" West, 50.00 feet;
Thence South 20°27'45" West, 50.00 feet;
Thence South 25°44'45" West, 50.00 feet;
Thence South 30°02'45" West, 25.00 feet;
Thence South 34°23'45" West, 25.00 feet;
Thence South 34°03'45" West, 50.00 feet;
Thence South 37°15'45" West, 50.12 feet;

Thence leaving said easterly right of way of Terminal Avenue North 55°13'40" West, a distance of 19.84 feet to an iron pin set on the westerly right of way of Terminal Ave; Thence running along the westerly right of way margin of Terminal Avenue the following courses and distances;

- North 37°15'45" East, 49.86;
- Thence North 34°03'45" East, 50.00;
- Thence North 34°23'45" East, 24.30;
- Thence North 30°02'45" East, 23.50;
- Thence North 25°44'45" East, 48.30;
- Thence North 20°27'45" East, 48.60;
- Thence North 17°54'45" East, 49.00;
- Thence North 14°34'45" East, 42.80;
- Thence North 17°33'45" East, 8.80;
- Thence North 23°52'45" East, 52.00;
- Thence North 28°52'45" East, 51.40;
- Thence North 31°46'45" East, 50.80;
- Thence North 33°35'45" East, 53.30;
- Thence North 36°12'45" East, 48.40;
- Thence North 38°50'45" East, 50.70;
- Thence North 40°09'45" East, 50.00;
- Thence North 39°37'45" East, 50.00;
- Thence North 39°38'45" East, 38.36;

Thence leaving said westerly right of way of Terminal Avenue South 54°42'20" East, a distance of 19.93 feet to the **POINT OF BEGINNING.**

SECTION A – SELLER'S INFORMATION (Do not use agent's information)				SECTION C – TAX COMPUTATION	
SELLER'S BUSINESS / ORGANIZATION / OTHER NAME Harmony Group Properties, LLC				Exempt Code If no exempt code enter NONE	Deed Confirming Title Already Vested
MAILING ADDRESS (STREET & NUMBER) 4131 Broadway				1. Actual Value of consideration received by seller Complete Line 1A if actual value unknown	\$126,000.00
CITY, STATE / PROVINCE / REGION, ZIP CODE, COUNTRY Macon, GA 31206 USA		DATE OF SALE 7/31/2013		1A. Estimated fair market value of Real and Personal property	\$0.00
SECTION B – BUYER'S INFORMATION (Do not use agent's information)				2. Fair market value of Personal Property only	\$0.00
BUYER'S BUSINESS / ORGANIZATION / OTHER NAME Atlanta Gas Light Company				3. Amount of liens and encumbrances not removed by transfer	\$0.00
MAILING ADDRESS (Must use buyer's address for tax billing & notice purposes) c/o AGL Resources Inc. Ten Peachtree Place				4. Net Taxable Value (Line 1 or 1A less Lines 2 and 3)	\$0.00
CITY, STATE / PROVINCE / REGION, ZIP CODE, COUNTRY Atlanta, GA 30309 USA		Check Buyers Intended Use () Residential () Commercial () Agricultural () Industrial		5. TAX DUE at .10 per \$100 or fraction thereof (Minimum \$1.00)	\$0.00
SECTION D – PROPERTY INFORMATION (Location of Property (Street, Route, Hwy, etc))					
HOUSE NUMBER & EXTENSION (ex 265A)		PRE-DIRECTION, STREET NAME AND TYPE, POST DIRECTION			SUITE NUMBER
COUNTY BIBB		CITY (IF APPLICABLE) Macon		MAP & PARCEL NUMBER R-073-0384	ACCOUNT NUMBER
TAX DISTRICT	GMD	LAND DISTRICT	ACRES	LAND LOT	SUB LOT & BLOCK
SECTION E – RECORDING INFORMATION (Official Use Only)					
DATE 8/5/13	DEED BOOK 9068		DEED PAGE 33		PLAT BOOK PLAT PAGE

ADDITIONAL BUYERS
None


5/6
NT

Return recorded document to:

Ed S. Sell, III
Sell & Melton, LLP
P. O. Box 229
Macon, Georgia 32102-0229

STATE OF GEORGIA

COUNTY OF BIBB


Doc ID: 004894170007 Type: GLR
Filed: 01/02/2007 at 12:10:00 PM
Fee Amt: \$20.00 Page 1 of 7
Bibb County Superior Court
Dianne Brannen Clerk
BK **7344** PG **49-55**

LIMITED WARRANTY DEED

THIS INDENTURE, made as of the 18th day of November, 2006, between

ATLANTA GAS LIGHT COMPANY, a corporation organized and existing under the laws of
the State of Georgia,

as party of the first part (hereinafter referred to as "Grantor"), and

MACON-BIBB COUNTY URBAN DEVELOPMENT AUTHORITY, a public body
corporate and politic of the State of Georgia

as party of the second part (hereinafter referred to as "Grantee"); the words "Grantor" and
"Grantee" include their respective heirs, successors, and assigns where the context requires or
permits.

WITNESSETH:

THAT, Grantor, for and in consideration of the sum of Ten and No/100 Dollars (\$10.00),
and other good and valuable considerations, in hand paid at and before the sealing and delivery
of these presents, the receipt and sufficiency whereof are hereby acknowledged, has granted,
bargained, sold, aliened, conveyed and confirmed, and by these presents does hereby grant,
bargain, sell, alien, convey and confirm unto Grantee all those certain tracts or parcels of real
property lying and being in the City of Macon, Bibb County, Georgia, consisting of Lot No. 1,
part of Lot No. 2, Lot No. 3, and Lot No. 4 in Square 15, according to the plan of the City of

ATLANTA:4849041.2

6.11

Macon, Georgia, being more particularly described on Exhibit "A" attached hereto and made a part hereof, together with all improvements thereon and appurtenances thereto.

This conveyance is made subject to those certain matters described on Exhibit "B" attached hereto and made a part hereof (the "Permitted Exceptions").

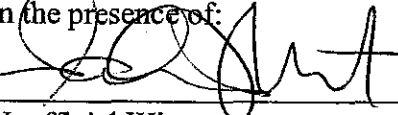
RESERVING, HOWEVER, to Grantor the easements, rights and privileges described in Exhibit "C" attached hereto and incorporated herein by reference (hereinafter collectively referred to as the "Reserved Easements").


TO HAVE AND TO HOLD said tract or parcel of real property, with all and singular the rights, members and appurtenances thereof, to the same being, belonging, or in any manner appertaining, to the only proper use, benefit and behoof of Grantee, forever in FEE SIMPLE.

AND GRANTOR will warrant and forever defend the right and title to the above described property, subject to the Permitted Exceptions and the Reserved Easements, unto Grantee against the claims of all persons claiming by, through or under Grantor, but not otherwise.

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

Signed, sealed and delivered
in the presence of:



Unofficial Witness


Notary Public

My Commission Expires:

GRANTOR:

ATLANTA GAS LIGHT COMPANY, a
corporation organized and existing under the
laws of the State of Georgia

By: 
Name: Brett Stovern
Title: Vice President and Treasurer

[NOTARY SEAL]

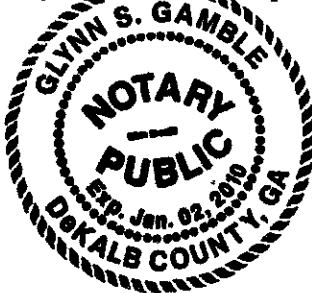


EXHIBIT "A"

LEGAL DESCRIPTION

PARCEL 1: All that tract or parcel of land lying and being in the City of Macon, Bibb County, Georgia, and known and distinguished in the plan of said City as Lot No. 1 and part of Lot No. 2 in Square fifteen (15) on the corner of Mulberry and Seventh Streets, and more particularly described as follows:

Commencing at the southern corner of the intersection of Seventh and Mulberry Streets and extending along Seventh Street in a northeasterly direction 258 feet and 6 inches; thence at right angles in a northwesterly direction along a 20 foot alley 130 feet, more or less, to the property of Macon Gas Company; thence at right angles in a southwesterly direction 87 feet and 8 inches; thence at right angles in a northwesterly direction 63 feet; thence at right angles in a southwesterly direction 172 feet and 4 inches to Mulberry Street; thence at right angles along Mulberry Street in a southeasterly direction to the POINT OF BEGINNING.

The above dimensions include a 25 foot encroachment into Seventh Street and a 50 foot encroachment into Mulberry Street. The land embraced in said encroachment was granted in fee simple by the City of Macon under legislative authority to Mrs. Jimmie S. Harris, a predecessor in title to the Macon Gas Company by deed dated August 11, 1892, recorded in Deed Book 65, Page 454, Clerk's Office, Bibb Superior Court.

PARCEL 2: All that certain lot, piece or parcel of land, with the buildings and improvements thereon, erected, lying and being in the City of Macon, Bibb County, State of Georgia, consisting of Lots 3 and 4 and a part of Lot 2 in Square 15, City of Macon, together with a 50 foot encroachment into and along Mulberry Street and a 10 foot alley between Lots 2 and 3 closed by an Act of the Legislature of the State of Georgia, and described as follows, to-wit:

Beginning at a point in line with the original lot line of Sixth Street and extended 50 feet into Mulberry Street (being a 50 foot encroachment into Mulberry Street) and running thence along the lot line on Sixth Street a distance of 258 feet and 6 inches to an alley; thence at right angles (right) along the line of the alley a distance of 318 feet and 6 inches; thence at right angles (right) a distance of 87 feet and 6 inches; thence at right angles (right) 62 feet and 6 inches; thence at right angles (left) a distance of 171 feet to a point 50 feet into Mulberry Street; thence at right angles (right) along the line of the 50 foot encroachment into Mulberry Street 256 feet to the Point of Beginning.

The land embraced in the above described encroachment was granted in fee simple by the City of Macon under legislative authority in two deeds: one deed was made to Giles G. Hardeman on May 24, 1907 and recorded in Deed Book 136, Page 651, and the other to the Macon Gas Company, dated January 6, 1927 and recorded in Deed Book 318, Page 634, Clerk's Office, Bibb Superior Court.

EXHIBIT "B"

PERMITTED EXCEPTIONS

1. All current and subsequent years taxes, assessments, special assessments, water charges and sewer rents and any other impositions, accrued or unaccrued, fixed or not fixed, upon or charged against all or any part of the Property (collectively "Taxes") which are liens not yet due and payable.
2. Such state of facts, encumbrances and title objections that would be disclosed or shown by a competent civil engineer's true and accurate ALTA/ACSM Urban Survey and inspection of the Property.
3. Title to that portion of the property within the bounds of any public right-of-way, including but not limited to the rights of the public to any part of the property within public roads.
4. Rights of upper, lower and adjacent riparian owners in and to the waters of any creeks, streams, branches and the natural flow thereof.
5. Any underground lines, feeders, laterals, wires, cables, conduits, mains and pipes.
6. Present and future building restrictions, zoning laws, ordinances, resolutions, orders, and regulations, and all ordinances, laws, regulations and orders of all federal, state, county, and municipal governments, agencies, boards, bureaus, commissions, authorities and bodies of any other governmental or quasi-governmental authority having or acquiring jurisdiction with respect to the Property.
7. Declaration of Restrictive Covenants and Notice, dated as of March 1, 2001, by Atlanta Gas Light Company, filed for record March 2, 2001 at 12:58 p.m., and recorded in Deed Book 4863, Page 260, Real Property Records of Bibb County, Georgia.
8. Declaration of Restrictive Covenants and Notice, dated as of the same date herewith, by Atlanta Gas Light Company, filed for record in the Real Property Records of Bibb County, Georgia.
9. Any and all matters on record.

EXHIBIT "C"

RESERVED EASEMENTS

Grantor, for itself and its successors, successors-in-title and assigns, hereby reserves, the non-exclusive right and easement on, over, across, under and through that tract of land (the "Easement Area") described on Exhibit "A" attached hereto and made a part hereof, for purposes of (i) installing, testing, operating, inspecting, sampling, maintaining, repairing, replacing, altering, relocating, removing, and abandoning in place one or more monitoring wells and related equipment, appurtenances and facilities necessary and appropriate for the use and maintenance of said monitoring wells (hereinafter collectively referred to as the "Monitoring Wells"); (ii) installing, testing, operating, inspecting, sampling, maintaining, repairing, replacing, altering, relocating, removing, and abandoning in place one or more monitoring and injection wells and related equipment, appurtenances and facilities necessary and appropriate for the treatment of groundwater (hereinafter collectively referred to as the "Remediation Systems"); (iii) ingress and egress from the nearest public road to the Monitoring Wells and Remediation Systems on the Easement Area in order to provide Grantee convenient access to said Monitoring Wells and Remediation Systems at any time and from time to time, for the uses and purposes set forth in subparts (i) and (ii) above; and (iv) such other rights as may be necessary for the enjoyment of the rights and privileges provided by this Monitoring Well Easement (herein sometimes referred to as the "Agreement"). The term of this Agreement shall commence on the date hereof and shall expire on the date which is one hundred twenty (120) days following the date Grantee receives written notice from the Georgia Environmental Protection Division with respect to the Easement Area, so as to eliminate the need for any Monitoring Wells and Remediation Systems on the Easement Area.

In the event of a destruction of one or more Monitoring Wells or Remediation Systems, or related equipment, Grantee shall be permitted, at Grantor's cost, to replace such well and equipment in locations in close proximity to each such well or equipment which was destroyed. Grantee agrees to use commercially reasonable efforts to place any new Monitoring Wells or Remediation Systems or equipment in locations consistent with Grantor's development plans, provided, however, that all such locations shall meet all requirements of the Georgia Environmental Protection Department and all applicable environmental laws, rules, regulations, codes, ordinances, orders, directives or requests of any governmental authority.

Grantor covenants and agrees to use the Easement Area for purposes compatible with the rights as granted to Grantee in or permitted by this Agreement and shall not interfere with or permit any other person to interfere with Grantee's use of easements, rights and privileges granted under this Agreement.

Grantee will notify (either in writing or verbally) Grantor at least five (5) days prior to any entry onto the Easement Area for the purposes of installing, maintaining, repairing, replacing, altering, relocating or removing any Monitoring Wells or Remediation Systems; provided, however, no notice shall be required for any entry for the purposes of performing ordinary sampling or inspection or for emergencies of the Monitoring Wells or Remediation Systems.

No delay or interruption by Grantee in the use or enjoyment of any right or easement hereby granted shall result in the loss, limitation or abandonment of any of the right, title, interest, easement or estate granted hereby.

The easements set forth in this Agreement shall be for the use, benefit and enjoyment of Grantee, and its successors and assigns, and their respective agents, employees, servants, contractors and subcontractors. This Agreement, each and all of its terms, conditions and provisions, and the easements, rights, and privileges created hereby shall be binding upon and inure to the benefit of Grantee and Grantor and their respective successors, successors-in-title, grantees, assignees, and their respective tenants, subtenants, licensees, permittees and lenders. The interpretation, construction and performance of this Agreement shall be governed by the laws of the State of Georgia.

TO HAVE AND TO HOLD said easements, rights and privileges, together with all and singular the privileges and appurtenances thereto in anywise belonging unto Grantee, and its successors and assigns for the term set forth herein. Grantor does hereby bind itself, and its successors, successors-in-title and assigns to warrant and forever defend Grantor's title to the Easement Area, possession thereof and all and singular the easements, rights and privileges granted hereunder unto Grantee, and its successors, successors-in-title and assigns, against the lawful claims and demands of all persons claiming by, through or under Grantor, but not otherwise.

SECTION A - SELLER'S INFORMATION (Do not use agent's information)				SECTION C - TAX COMPUTATION	
SELLER'S BUSINESS / ORGANIZATION / OTHER NAME Atlanta Gas Light Company				Exempt Code If no exempt code enter NONE	Govt/NonProfit Public Corp
MAILING ADDRESS (STREET & NUMBER) Ten Peachtree Place, NE				1. Actual Value of consideration received by seller Complete Line 1A if actual value unknown	\$70,740.00
CITY, STATE / PROVINCE / REGION, ZIP CODE, COUNTRY Atlanta, GA 30309 USA		DATE OF SALE 11/18/2006		1A. Estimated fair market value of Real and Personal property	\$0.00
SECTION B - BUYER'S INFORMATION (Do not use agent's information)				2. Fair market value of Personal Property only	\$0.00
BUYER'S BUSINESS / ORGANIZATION / OTHER NAME Macon-Bibb County Urban Development Authority				3. Amount of liens and encumbrances not removed by transfer	\$0.00
MAILING ADDRESS (Must use buyer's address for tax billing & notice purposes) P. O. Box 169				4. Net Taxable Value (Line 1 or 1A less Lines 2 and 3)	\$0.00
CITY, STATE / PROVINCE / REGION, ZIP CODE, COUNTRY Macon, GA 31202-0169 USA		Check Buyers Intended Use () Residential (X) Commercial () Agricultural () Industrial		5. TAX DUE at .10 per \$100 or fraction thereof (Minimum \$1.00)	\$0.00
SECTION D - PROPERTY INFORMATION (Location of Property (Street, Route, Hwy, etc))					
HOUSE NUMBER & EXTENSION (ex 265A)		PRE-DIRECTION, STREET NAME AND TYPE, POST DIRECTION Seventh Street			SUITE NUMBER
COUNTY BIBB		CITY (IF APPLICABLE) Macon		MAP & PARCEL NUMBER R7-4-OC15-1A&4A	ACCOUNT NUMBER None
TAX DISTRICT	GMD	LAND DISTRICT	ACRES 0.18	LAND LOT	SUB LOT & BLOCK
SECTION E - RECORDING INFORMATION (Official Use Only)					
DATE 01-02-07	DEED BOOK 7344	DEED PAGE 49	PLAT BOOK	PLAT PAGE	

ADDITIONAL BUYERS


None

Return recorded document to:

Ed S. Sell, III
Sell & Melton, LLP
P. O. Box 229
Macon, Georgia 32102-0229

STATE OF GEORGIA

COUNTY OF BIBB


Doc ID: 004894240007 Type: GLR
Filed: 01/02/2007 at 12:10:00 PM
Fee Amt: \$20.00 Page 1 of 7
Bibb County Superior Court
Dianne Brannen Clerk
BK **7344** PG **62-68**

LIMITED WARRANTY DEED

THIS INDENTURE, made as of the 18th day of November, 2006, between

AGL MACON HOLDINGS, INC., a corporation organized and existing under the laws of the
State of Georgia,

as party of the first part (hereinafter referred to as "Grantor"), and

MACON-BIBB COUNTY URBAN DEVELOPMENT AUTHORITY, a public body
corporate and politic of the State of Georgia

as party of the second part (hereinafter referred to as "Grantee"); the words "Grantor" and
"Grantee" include their respective heirs, successors, and assigns where the context requires or
permits.

WITNESSETH:

THAT, Grantor, for and in consideration of the sum of Ten and No/100 Dollars (\$10.00),
and other good and valuable considerations, in hand paid at and before the sealing and delivery
of these presents, the receipt and sufficiency whereof are hereby acknowledged, has granted,
bargained, sold, aliened, conveyed and confirmed, and by these presents does hereby grant,
bargain, sell, alien, convey and confirm unto Grantee all those certain tracts or parcels of real
property lying and being in the City of Macon, Bibb County, Georgia, consisting of parts of Lot
No. 6, Lot No. 7 and Lot No. 8 in Square 15, according to the plan of the City of Macon,

ATLANTA:4838230.2

[Handwritten signature]

Georgia, being more particularly described on Exhibit "A" attached hereto and made a part hereof, together with all improvements thereon and appurtenances thereto.

This conveyance is made subject to those certain matters described on Exhibit "B" attached hereto and made a part hereof (the "Permitted Exceptions").

RESERVING, HOWEVER, to Grantor the easements, rights and privileges described in Exhibit "C" attached hereto and incorporated herein by reference (hereinafter collectively referred to as the "Reserved Easements").

TO HAVE AND TO HOLD said tract or parcel of real property, with all and singular the rights, members and appurtenances thereof, to the same being, belonging, or in any manner appertaining, to the only proper use, benefit and behoof of Grantee, forever in FEE SIMPLE.

AND GRANTOR will warrant and forever defend the right and title to the above described property, subject to the Permitted Exceptions and the Reserved Easements, unto Grantee against the claims of all persons claiming by, through or under Grantor, but not otherwise.

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

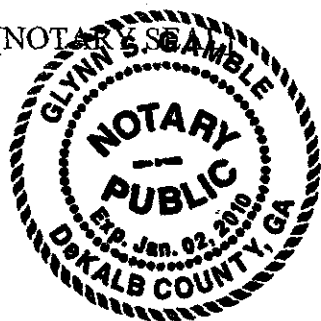
Signed, sealed and delivered
in the presence of:

Unofficial Witness

Notary Public

My Commission Expires:

[NOTARY SEAL]



GRANTOR:

AGL MACON HOLDINGS, INC., a
corporation organized and existing under the
laws of the State of Georgia

By:

Name:

Title: Vice President and Treasurer

EXHIBIT "A"

LEGAL DESCRIPTION

ALL THAT TRACT OR PARCEL of land lying and being in the City of Macon, Bibb County, Georgia, consisting of parts of Lots 6, 7 and 8, in Square 15, according to the plan of the City of Macon, together with a part of a 25-foot encroachment into and along Seventh Street, and a part of a 10-foot alley between Lots 6 and 7 closed by an Act of the Legislature of the State of Georgia and described as follows:

BEGINNING at a point on Walnut Street where the line between Lots 5 and 6 intersects the original lot line of Square 15, and running thence in a southeasterly direction along Walnut Street a distance of 347.75 feet to a point 25 feet into Seventh Street; thence at right angles (right) and in a southwesterly direction along the line of the 25-foot encroachment into Seventh Street a distance of 150 feet; thence at right angles (right) and in a northwesterly direction a distance of 347.75 feet to the line of Lot 5 in said Square 15; thence at right angles (right) in a northeasterly direction and along the line of said Lot 5, a distance of 150 feet to the beginning point on Walnut Street, being improved property, more particularly shown on plat of survey made by Joe Thomas, Surveyor, dated January 8, 1965. This is the same property as described in Deed Book 2154, Page 340 and 341, Clerk's Office, Bibb Superior Court.

EXHIBIT "B"

PERMITTED EXCEPTIONS

1. All current and subsequent years taxes, assessments, special assessments, water charges and sewer rents and any other impositions, accrued or unaccrued, fixed or not fixed, upon or charged against all or any part of the Property (collectively "Taxes") which are liens not yet due and payable.
2. Such state of facts, encumbrances and title objections that would be disclosed or shown by a competent civil engineer's true and accurate ALTA/ACSM Urban Survey and inspection of the Property.
3. Title to that portion of the property within the bounds of any public right-of-way, including but not limited to the rights of the public to any part of the property within public roads.
4. Rights of upper, lower and adjacent riparian owners in and to the waters of any creeks, streams, branches and the natural flow thereof.
5. Any underground lines, feeders, laterals, wires, cables, conduits, mains and pipes.
6. Present and future building restrictions, zoning laws, ordinances, resolutions, orders, and regulations, and all ordinances, laws, regulations and orders of all federal, state, county, and municipal governments, agencies, boards, bureaus, commissions, authorities and bodies of any other governmental or quasi-governmental authority having or acquiring jurisdiction with respect to the Property.
7. Declaration of Restrictive Covenants and Notice, dated as of March 1, 2001, by AGL Macon Holdings, Inc., filed for record March 2, 2001 at 12:58 p.m., and recorded in Deed Book 4863, Page 265, Real Property Records of Bibb County, Georgia.
8. Any and all matters on record.

EXHIBIT "C"

RESERVED EASEMENTS

Grantor, for itself and its successors, successors-in-title and assigns, hereby reserves, the non-exclusive right and easement on, over, across, under and through that tract of land (the "Easement Area") described on Exhibit "A" attached hereto and made a part hereof, for purposes of (i) installing, testing, operating, inspecting, sampling, maintaining, repairing, replacing, altering, relocating, removing, and abandoning in place one or more monitoring wells and related equipment, appurtenances and facilities necessary and appropriate for the use and maintenance of said monitoring wells (hereinafter collectively referred to as the "Monitoring Wells"); (ii) installing, testing, operating, inspecting, sampling, maintaining, repairing, replacing, altering, relocating, removing, and abandoning in place one or more monitoring and injection wells and related equipment, appurtenances and facilities necessary and appropriate for the treatment of groundwater (hereinafter collectively referred to as the "Remediation Systems"); (iii) ingress and egress from the nearest public road to the Monitoring Wells and Remediation Systems on the Easement Area in order to provide Grantee convenient access to said Monitoring Wells and Remediation Systems at any time and from time to time, for the uses and purposes set forth in subparts (i) and (ii) above; and (iv) such other rights as may be necessary for the enjoyment of the rights and privileges provided by this Monitoring Well Easement (herein sometimes referred to as the "Agreement"). The term of this Agreement shall commence on the date hereof and shall expire on the date which is one hundred twenty (120) days following the date Grantee receives written notice from the Georgia Environmental Protection Division with respect to the Easement Area, so as to eliminate the need for any Monitoring Wells and Remediation Systems on the Easement Area.

In the event of a destruction of one or more Monitoring Wells or Remediation Systems, or related equipment, Grantee shall be permitted, at Grantor's cost, to replace such well and equipment in locations in close proximity to each such well or equipment which was destroyed. Grantee agrees to use commercially reasonable efforts to place any new Monitoring Wells or Remediation Systems or equipment in locations consistent with Grantor's development plans, provided, however, that all such locations shall meet all requirements of the Georgia Environmental Protection Department and all applicable environmental laws, rules, regulations, codes, ordinances, orders, directives or requests of any governmental authority.

Grantor covenants and agrees to use the Easement Area for purposes compatible with the rights as granted to Grantee in or permitted by this Agreement and shall not interfere with or permit any other person to interfere with Grantee's use of easements, rights and privileges granted under this Agreement.

Grantee will notify (either in writing or verbally) Grantor at least five (5) days prior to any entry onto the Easement Area for the purposes of installing, maintaining, repairing, replacing, altering, relocating or removing any Monitoring Wells or Remediation Systems; provided, however, no notice shall be required for any entry for the purposes of performing ordinary sampling or inspection or for emergencies of the Monitoring Wells or Remediation Systems.

No delay or interruption by Grantee in the use or enjoyment of any right or easement hereby granted shall result in the loss, limitation or abandonment of any of the right, title, interest, easement or estate granted hereby.

The easements set forth in this Agreement shall be for the use, benefit and enjoyment of Grantee, and its successors and assigns, and their respective agents, employees, servants, contractors and subcontractors. This Agreement, each and all of its terms, conditions and provisions, and the easements, rights, and privileges created hereby shall be binding upon and inure to the benefit of Grantee and Grantor and their respective successors, successors-in-title, grantees, assignees, and their respective tenants, subtenants, licensees, permittees and lenders. The interpretation, construction and performance of this Agreement shall be governed by the laws of the State of Georgia.

TO HAVE AND TO HOLD said easements, rights and privileges, together with all and singular the privileges and appurtenances thereto in anywise belonging unto Grantee, and its successors and assigns for the term set forth herein. Grantor does hereby bind itself, and its successors, successors-in-title and assigns to warrant and forever defend Grantor's title to the Easement Area, possession thereof and all and singular the easements, rights and privileges granted hereunder unto Grantee, and its successors, successors-in-title and assigns, against the lawful claims and demands of all persons claiming by, through or under Grantor, but not otherwise.

SECTION A - SELLER'S INFORMATION (Do not use agent's information)				SECTION C - TAX COMPUTATION	
SELLER'S BUSINESS / ORGANIZATION / OTHER NAME AGL Macon Holdings, Inc.				Exempt Code If no exempt code enter NONE	Govt/NonProfit Public Corp
MAILING ADDRESS (STREET & NUMBER) Ten Peachtree Place, NE				1. Actual Value of consideration received by seller Complete Line 1A if actual value unknown	\$41,760.00
CITY, STATE / PROVINCE / REGION, ZIP CODE, COUNTRY Atlanta, GA 30309 USA		DATE OF SALE 11/18/2006		1A. Estimated fair market value of Real and Personal property	\$0.00
SECTION B - BUYER'S INFORMATION (Do not use agent's information)				2. Fair market value of Personal Property only	\$0.00
BUYER'S BUSINESS / ORGANIZATION / OTHER NAME Macon-Bibb County Urban Development Authority				3. Amount of liens and encumbrances not removed by transfer	\$0.00
MAILING ADDRESS (Must use buyer's address for tax billing & notice purposes) P. O. Box 169				4. Net Taxable Value (Line 1 or 1A less Lines 2 and 3)	\$0.00
CITY, STATE / PROVINCE / REGION, ZIP CODE, COUNTRY Macon, GA 31202-0169 USA		Check Buyers Intended Use () Residential (X) Commercial () Agricultural () Industrial		5. TAX DUE at .10 per \$100 or fraction thereof (Minimum \$1.00)	\$0.00
SECTION D - PROPERTY INFORMATION (Location of Property (Street, Route, Hwy, etc))					
HOUSE NUMBER & EXTENSION (ex 265A)		PRE-DIRECTION, STREET NAME AND TYPE, POST DIRECTION Seventh Street			SUITE NUMBER
COUNTY BIBB		CITY (IF APPLICABLE) Macon		MAP & PARCEL NUMBER R7-4-OC15-6A	ACCOUNT NUMBER X00139-001
TAX DISTRICT	GMD	LAND DISTRICT	ACRES 1.1	LAND LOT	SUB LOT & BLOCK
SECTION E - RECORDING INFORMATION (Official Use Only)					
DATE 01-02-07	DEED BOOK 7344	DEED PAGE 60	PLAT BOOK	PLAT PAGE	

ADDITIONAL BUYERS

None

005217

FILED
CLERK'S OFFICE
01 MAR -2 PM 12:58
SUPERIOR COURT OF
BIBB COUNTY, GEORGIA

AFTER RECORDING RETURN TO:

Carol Geiger
Kilpatrick Stockton LLP
1100 Peachtree Street, Suite 2800
Atlanta, Georgia 30309-4530

Record and return to:
Jill Shipley Thompson
Martin, Snow, Grant & Napier
P. O. Box 1606
Macon, GA 31202-1606

DECLARATION OF RESTRICTIVE COVENANTS AND NOTICE

THIS DECLARATION is made this 1st day of March, 2001, by
ATLANTA GAS LIGHT COMPANY a Georgia Corporation (hereinafter referred to as
"Declarant").

WITNESSETH:

WHEREAS, Declarant owns the property described on Exhibit "A" hereto attached
and made a part hereof (the "Property"); and

WHEREAS, the Property contains "hazardous substances" as defined under the
Georgia Hazardous Site Response Act, O.C.G.A. §12-8-90, *et seq.*, and, accordingly,
Declarant desires to restrict the use of the Property as provided herein.

NOW, THEREFORE, Declarant does hereby subject the Property to the covenants,
restrictions, easements and rights hereinafter stated:

1. **Definitions.** For purposes of this Declaration, the following terms shall have
the following meanings, unless the context requires otherwise:

"AGLC" shall mean Atlanta Gas Light Company, a Georgia corporation, its successors and assigns.

"Director" shall mean the Director of EPD, as hereinafter defined.

"EPD" shall mean the Georgia Department of Natural Resources, Environmental Protection Division, as well as any successor state agency with responsibility for and jurisdiction over environmental matters.

"Hazardous Substances" shall have the same meaning as under HSRA, as hereinafter defined.

"HSRA" shall mean the Hazardous Site Response Act, O.C.G.A. § 12-8-90, *et seq.*

2. Restrictive Covenants. Declarant hereby:

a. prohibits the use of groundwater beneath the Property as a source of drinking water or for any other purpose that could result in human ingestion as defined in the Rules for HSRA, Rule 391-3-19-.02(2)(i), incorporated herein by reference, in effect at the time of this Declaration;

b. restricts the use of the Property to non-residential uses as defined in the Rules for HSRA in effect at the time of this Declaration;

c. prohibits the disturbance of any material stabilized in accordance with the Corrective Action Plan submitted on October 2, 2000 (revised December 1, 2000) and all modifications submitted thereafter, without prior notice to and approval from EPD; and

d. agrees to install and maintain permanent markers on each side of the Property that delineate the restricted area and prohibits the disturbance or removal of such markers.

This Declaration is made in accordance with Ga. Comp. R. & Regs. 391-3-19-.08(7), which expressly authorizes the use of restrictive covenants to prohibit activities on the Property that may substantially interfere with a remedial action, operation and maintenance, long-term monitoring, or other measures to ensure the integrity of any remedial action. The foregoing are hereinafter collectively referred to as the "Restrictive Covenants".

3. Improvements. Any and all improvements located in whole or in part on all or any portion of the Property, and the construction, operation, use and maintenance of the Property and such improvements, shall be subject to and shall comply with the Restrictive Covenants.

4. Covenants running with the land. Declarant acknowledges and agrees that the Restrictive Covenants are appurtenant to and run with the land, and shall be binding and enforceable against all future owners of the Property including Declarant, its successors and assigns, and any trustee appointed to manage the Property. Should a transfer or sale of the Property occur before such time as the Restrictive Covenants have been amended or revoked then said Restrictive Covenants shall be binding on the transferee(s) or purchaser(s).

The Restrictive Covenants shall inure to the benefit of EPD, AGLC and their respective successors and assigns and shall be enforceable by the Director or his agents or assigns and AGLC or its successors and assigns in a court of competent jurisdiction. The Restrictive Covenants shall remain in full force and effect in accordance with O.C.G.A. § 44-5-60(c), unless and until the Director determines that the Property meets Type 1 or 2 Risk Reduction Standards, as defined in the Rules for Hazardous Site Response Chapter 391-3-19-.07.

5. Severability. In the event that any of the provisions contained in this Declaration shall for any reason be held to be invalid, illegal or unenforceable in any respect in a final ruling or judgment of a court of competent jurisdiction from which no appeal has been or can be taken, the remainder of the Restrictive Covenants shall not be affected thereby and each term, covenant, condition and provision hereof shall remain valid and enforceable to the fullest extent permitted by law.

6. Statutory Notice. This property has been listed on the state's hazardous site inventory and has been designated as needing corrective action due to the presence of hazardous wastes, hazardous constituents, or hazardous substances regulated under state law. Contact the property owner or the Georgia Environmental Protection Division for further information concerning this property. This notice is provided in compliance with the Georgia Hazardous Site Response Act. This Declaration is a condition of approval for the Corrective Action Plan submitted to EPD on October 2, 2000 (revised December 1, 2000) and all modifications submitted thereafter for the Property and is a requirement under Consent Order EPD-HSR-227 entered into by AGLC on July 11, 2000.

7. General Provisions.

(a) Headings. The use of headings, captions and numbers in this Declaration is solely for the convenience of identifying and indexing the various provisions in this Declaration and shall in no event be considered otherwise in construing or interpreting any provision in this Declaration.

(b) Non-Waiver. Failure by any party to complain of any action, non-action or breach of any other party shall not constitute a waiver of any aggrieved party's rights hereunder. Waiver by any party of any right arising from any breach of any other party shall not constitute a waiver of any other right arising from a subsequent breach of the same obligation or for any other default, past, present or future.

(c) Time of Essence. Time is of the essence of this Declaration.

(d) Applicable Law. This Declaration shall be governed by, construed under and interpreted and enforced in accordance with the laws of the State of Georgia.

IN WITNESS WHEREOF, Declarant has signed and sealed this Declaration, all the day, month, and year first above written.

Signed, sealed and delivered
in the presence of:

Carl G. Grier
Unofficial Witness
Ginnie C. Harris
Notary Public

(NOTARY SEAL)
My Commission Expires:
Notary Public, Rockdale County, Georgia
My Commission Expires March 17, 2002

DECLARANT:
ATLANTA GAS LIGHT COMPANY,
a Georgia Corporation

By: Paul R. Shlanta

Name: Paul Shlanta

Title: Senior Vice President

(CORPORATE SEAL)

GEORGIA, Bibb County, Clerk's Office Superior Court
Filed for Record MAR - 2 2001 at 12:58 PM
Recorded MAR - 5 2001
Dep. Clerk

EXHIBIT A

PARCEL 1: All that tract or parcel of land lying and being in the City of Macon, Bibb County, Georgia, and known and distinguished in the plan of said City as Lot No. 1 and part of Lot No. 2 in Square fifteen (15) on the corner of Mulberry and Seventh Streets, and more particularly described as follows:

Commencing at the southern corner of the intersection of Seventh and Mulberry Streets and extending along Seventh Street in a northeasterly direction 258 feet and 6 inches; thence at right angles in a northwesterly direction along a 20 foot alley 130 feet, more or less, to the property of Macon Gas Company; thence at right angles in a southwesterly direction 87 feet and 8 inches; thence at right angles in a northwesterly direction 63 feet; thence at right angles in a southwesterly direction 172 feet and 4 inches to Mulberry street; thence at right angles along Mulberry Street in a southeasterly direction to the POINT OF BEGINNING.

The above dimensions include a 25 foot encroachment into Seventh Street and a 50 foot encroachment into mulberry Street. The land embraced in said encroachment was granted in fee simple by the City of Macon under legislative authority to Mrs. Jimmie S. Harris, a predecessor in title to the Macon Gas company by deed dated August 11, 1892, recorded in Deed Book 65, Page 454, Clerk's Office, Bibb Superior Court.

PARCEL 2: All that certain lot, piece or parcel of land, with the buildings and improvements thereon, erected, lying and being in the City of Macon, Bibb County, State of Georgia, consisting of Lots 3 and 4 and a part of Lot 2 in Square 15, City of Macon, together with a 50 foot encroachment into and along Mulberry Street and a 10 foot alley between Lots 2 and 3 closed by an Act of the Legislature of the State of Georgia, and described as follows, to-wit:

Beginning at a point in line with the original lot line on Sixth Street and extended 50 feet into Mulberry Street (being a 50 foot encroachment into Mulberry Street) and running thence along the lot line on Sixth Street a distance of 258 feet and 6 inches to an alley; thence at right angles (right) along the line of the alley a distance of 318 feet and 6 inches; thence at right angles (right) a distance of 87 feet and 6 inches; thence at right angles (right) 62 feet and 6 inches; thence at right angles (left) a distance of 171 feet to a point 50 feet into Mulberry Street; thence at right angles (right) along the line of the 50 foot encroachment into Mulberry Street 256 feet to the Point of Beginning.

The land embraced in the above described encroachment was granted in fee simple by the City of Macon under legislative authority in two deeds: one deed was made to Giles G. Hardeman on May 24, 1907 and recorded in Deed Book 136, Page 651, and the other to the Macon Gas Company, dated January 6, 1927 and recorded in Deed Book 3187, page 634, Clerk's Office, Bibb Superior Court.

GEORGIA, Bibb County, Clerk's Office Superior Court

Filed for Record MAR - 2 2001 12:51P

Recorded MAR - 5 2001

Dep. Clerk

BOOK 4863 PAGE 260

Doc ID: 004823280004 Type: GLR
Filed: 11/01/2006 at 10:33:00 AM
Fee Amt: \$16.00 Page 1 of 4
Bibb County Superior Court
Dianne Brannen Clerk
BK 7273 PG 52-55

After Recording Return To:
MCKENNA LONG & ALDRIDGE LLP
303 PEACHTREE STREET, SUITE
ATLANTA, GEORGIA 30308
ATTN: Brian T. Holmes, Esq.

CROSS REFERENCE:
Deed Book 4863, page 260

Records of Bibb County, Georgia

FIRST AMENDMENT TO DECLARATION OF RESTRICTIVE COVENANTS AND NOTICE

This **FIRST AMENDMENT TO DECLARATION OF RESTRICTIVE COVENANTS AND NOTICE** (this "Amendment"), is made as of the 31st day of October, 2006, by **Atlanta Gas Light Company**, a Georgia corporation (hereinafter referred to as "Declarant").

WITNESSETH:

WHEREAS, the Declarant entered into that certain Declaration of Restrictive Covenants and Notice, dated March 1, 2001 ("Declaration") and recorded in Deed Book 4860, Page 260 of the Bibb County, Georgia records;

WHEREAS, the City of Macon conveyed certain real property to the Declarant described in that certain Quitclaim Deed dated October 6, 2004, recorded in Deed Book 6381, Page 223, Bibb County, Georgia records (the "Additional Property").

WHEREAS, Declarant desires to amend the Declaration in order to add the Additional Property to the Declaration;

NOW, THEREFORE, Declarant does hereby modify and amend the aforementioned Declaration as follows:

1. **Recitals.** The above recitals are true and correct and are hereby incorporated herein by this reference.

2. **Amendment to Declaration.** The Declaration is hereby amended such that the term "Property" in the Declaration shall include the Additional Property as more particularly described in Exhibit "A" attached hereto and made a part hereof by this reference. The Additional Property shall be subject to all the same covenants, restrictions, easements and rights provided for in the Declaration.

ATLANTA:4850867.1

3. **Miscellaneous**. It is agreed by the Declarant that all of the other terms and conditions of the Declaration shall remain in full force and effect, other than as modified herein.

[SIGNATURES BEGIN ON THE FOLLOWING PAGE]

IN WITNESS WHEREOF, the parties have executed this Amendment effective as of the date first above written.

DECLARANT:

Signed, sealed and delivered
in the presence of:

[Signature]
Witness

Glynn S. Gamble

Notary Public

[NOTARIAL SEAL]



Atlanta Gas Light Company,
a Georgia corporation

By: [Signature] (Seal)
Name: Brett Stovern
Its: Vice Pres. and Treasurer *was*

EXHIBIT "A"**LEGAL DESCRIPTION OF "ADDITIONAL PROPERTY"**

All that tract or parcel of land lying and being in Square 15, Old City, Macon, Bibb County, Georgia and being a portion of a 20 foot alley running from Sixth Street to Seventh Street through said Square 15, and being more particularly described as follows:

Beginning at the point marking the intersection of the northwest line of Seventh Street with the south line of said 20 foot alley, said point also marking the east corner of Original Lot 1 of Square 15 as extended by a 25 foot encroachment granted August 11, 1892 and described in Deed Book 65, Page 454, Clerk's Office, Bibb Superior Court, running thence in a northwesterly direction along the south line of said 20 foot alley a distance of 452 feet more or less, to the point marking the intersection of said line with the southeast line of Sixth Street, said point also marking the north corner of Original Lot 4 of Square 15, running thence at right angle in a northeasterly direction a distance of 10 feet to a point lying on the centerline of said 20 foot alley, running thence at right angle in a southeasterly direction a distance of 104.25 feet more or less, to a point, running thence at a right angle in a northeasterly direction a distance of 10 feet to a point, said point marking the south corner of Original Lot 5 of Square 15, running thence at right angle in a southeasterly direction along the north line of said 20 foot alley a distance of 347.75 feet more or less, to a point marking the intersection of said line with the northwest line of Seventh Street said point also marking the south corner of Original Lot 8 of Square 15 as extended by the 25 foot encroachment described above, running thence at right angle in a southwesterly direction a distance of 20 feet to the Point of Beginning.

Tract described herein constitutes all of the 20 foot alley running through Square 15, from Sixth Street to Seventh Street except for $\frac{1}{2}$ of the 20 foot alley adjacent to Original Lot 5, being a parcel of land 10 feet by 104.25 feet. The tract described herein with the exception above contains 7,997.5 square feet or 0.18 acre.



Safety & Environmental Department

Central of Georgia Railroad Company
1200 Peachtree Street, NE - Box 13
Atlanta, GA 30309
Phone (404) 582-5185
Fax (678) 512-5508
steven.aufdenkampe@nscorp.com

October 7, 2014

Department of Natural Resources
Environmental Protection Division
Jeff Cown, Branch Chief, Land Protection Division
2 Martin Luther King Drive
Suite 1054, East Floyd Tower
Atlanta, Georgia 30334

**Subject: Atlanta Gas Company – Former Macon MGP Site
HSI #10511**

Dear Mr. Cown:

This letter is to inform the Georgia Environmental Protection Division (EPD) that Central of Georgia (COG) authorizes Atlanta Gas Light Company (AGLC) to enroll COG's property, particularly described on the enclosed attachment, into the Georgia Voluntary Remediation Program.

Consistent with my letter dated February 25, 2014, to Greg Corbett of AGLC (copy attached), COG is willing to grant AGLC continued access to the property for investigation and monitoring activities and will negotiate the implementation of any institutional controls on the COG property that may be required by EPD.

Sincerely,

Steven Aufdenkampe
Engineer, Environmental Remediation

Enclosure

cc: Matt Gernand, Norfolk Southern
Greg Corbett, Atlanta Gas Light Company
Carol Geiger, Kazmarek Mowrey Cloud Laseter LLP
Tim Earl, Georgia Power Company
Erik Rolle, Georgia Power Company
Holly Hill, Troutman Sanders LLP



Safety & Environmental Department

Central of Georgia Railroad Company
1200 Peachtree Street, NE - Box 13
Atlanta, GA 30309
Phone (404) 582-5185
Fax (678) 512-5508
steven.aufdenkampe@nscorp.com

February 25, 2014

Mr. Greg Corbett, P. E.
AGL Resources
Ten Peachtree Place, NE
Atlanta, GA 30309

Subject: Central of Georgia Property Access in Macon, Georgia

Dear Mr. Corbett:

This letter is in response to the request by Atlanta Gas Light Company ("AGLC") and Georgia Power Company ("GPC") for access to Central of Georgia's ("COG") right of way for remediation activities associated with a former Macon MGP site located on what is now Terminal Avenue in Macon, Georgia. During a meeting on January 7, 2014, you summarized the results of investigations that took place on a COG's property under a mutually agreed upon scope of work and access agreement. The former Macon MGP site is listed on the Georgia HSI #10511 and the cleanup of the impacts from the former operations are being supervised by the Georgia Department of Environmental Division (EPD). Based on your presentation of the data, we understand that MGP residuals extend northward beyond Terminal Avenue and onto the COG property. We understand the MGP impacts are largely limited to dissolved phase contaminants.

During the meeting, you presented corrective action options including the excavation of saturated zone MGP impacts on railroad property or traditional vertical in situ solidification/stabilization approaches, as well as removal of additional non-impacted soils to access impacted media. Based on the local topography, any proposed work on COG property would entail removal and/or solidification of media present at up to 35 feet below ground surface. COG also understands that AGLC and GPC intend to conduct this type of remediation work on Terminal Avenue which is adjacent to the COG property and within 65 feet of our nearest track.

The COG right of way in this area consists of a double main line, which is a critical transportation pathway for COG's rail network. Any disruption to this double main line for a significant period of time would have a substantial negative impact to our rail system and its customers. As a result, any remedial actions that could cause interference with the operations of this line are not acceptable. This includes potential track settlement, interference with railroad communication lines, switches, or signals, and ground surface disturbances that could cause structural impact to the railroad bedding materials. The options discussed during the meeting, including the excavation of saturated zone impacts under the rail and surrounding areas or traditional vertical in-situ solidification/stabilization, are not viable options, as they may require a lengthy shutdown of all or portions of the double main line and present a risk of jeopardizing the geotechnical integrity of the track, bedding material, and/or underlying soils.

Due to these factors, COG cannot grant AGL and GPC access that permits such intrusive cleanup activities on the COG owned right of way. Additionally, COG urges that the remedial activities on non-COG-owned properties proceed with appropriate protections in place to prevent any geotechnical or other issues that could potentially interrupt track operations.

COG is willing, for a fee, to provide continued access to the property for investigation and monitoring activities, and to implement necessary institutional controls on the COG property that may be required by EPD. COG appreciates your understanding that it is our obligation to provide safe and efficient service to our customers. As always, we expect and appreciate your routine communications regarding your progress and the information collected.

Sincerely,

A handwritten signature in black ink, appearing to read 'SA', followed by a series of loops and a horizontal line.

Steven Aufdenkampe
Engineer, Environmental Remediation

cc: Matt Gernand
Robert W. Mitchell
Erik Rolle

ROBERT A.B. REICHERT
Mayor

Telephone: (478) 751-7170
Facsimile: (478) 751-7931



MACON-BIBB COUNTY
GOVERNMENT CENTER
700 POPLAR STREET
MACON, GEORGIA 31202

Mailing Address:
P.O. BOX 247
MACON, GEORGIA 31202-0247

**MACON-BIBB COUNTY
OFFICE OF THE MAYOR**

September 4, 2014

Department of Natural Resources
Environmental Protection Division
ATTN: Jeff Cown, Branch Chief, Land Protection Division
2 Martin Luther King Drive
Suite 1054, East Floyd Tower
Atlanta, GA 30334

RE: Atlanta Gas Light Company – Former Macon MGP Site

Dear Mr. Cown:

This letter is to inform the Georgia Environmental Protection Division (hereinafter “EPD”) that Macon-Bibb County authorizes Atlanta Gas Light Company to enter several County owned streets and properties (hereinafter collectively referred to as “County Property”), with said County Property more particularly described on the enclosed attachment, into the Georgia Voluntary Remediation Program.

Furthermore, Macon-Bibb County consents to and authorizes Atlanta Gas Light Company to perform all corrective actions on the County Property, including In-situ Solidification, as described in the Voluntary Investigation and Remediation Plan, to which this letter is included. Macon-Bibb County further agrees to execute a covenant restricting the use of groundwater underneath the County Property in conformance with Chapter 16 of Title 44, “Uniform Environmental Covenants Act.”

If you have any additional questions or concerns, please feel free to contact my office.

Sincerely,

Robert A.B. Reichert
Mayor, Macon Bibb-County

cc: Mr. Greg Corbett, Atlanta Gas Light Company
Ms. Carol Geiger, Kazmarek Mowrey Cloud Laseter LLP

Western Portion and MW-101 Area Groundwater CAP Addendum
Appendix C

Project No. 0176740
Atlanta Gas Light Company

Environmental Resources Management
3200 Windy Hill Road SE, Suite 1500W
Atlanta, Georgia 30339
(678) 486-2700

Boring Logs and Well Construction Diagrams
Appendix D

Project No. 0176740
Atlanta Gas Light Company

Environmental Resources Management
3200 Windy Hill Road SE, Suite 1500W
Atlanta, Georgia 30339
(678) 486-2700



Borehole / Corehole I.D. MW-12DRR
Sheet 1 of 1

Drilling Methods		Sampling Methods		Comments
DPT - Direct Push Technology	HA - Hand Auger	DPT - Direct Push Technology	Chip - Rock Chips	0-5' Hand Auger
DC - Direct Rotary	Mud - Mud Rotary	SS - Split Spoon	Sonic - Sonic Core	5' - 37' bgs - 10" ID hollow stem auger
HSA - Hollow Stem Auger	Air - Air Rotary	SH - Shelby Tube	Core - Rock Core	37' - 52' bgs - Rock Core
CT - Cable Tool	Core - Rock Coring	HSA - Auger Cuttings	OT - Other _____	

[illegible]



ENVIRONMENTAL RESOURCES MANAGEMENT
3200 Windy Hill Road SE
Suite 1500W
Atlanta, GA 30339
www.erm.com
Phone: (678) 486-2700 Fax: (404) 745-0103

Project Name: AGLC Macon, GA
Project No.: 176740

DRILLING DATA SHEET

Borehole / Corehole I.D. MW-205DD
Sheet 1 of 1

Date	Material Drilled		Drilling			Cutting bit / head (plus subs)			Casing			Personnel	
	(check one)		Method	Rig		Type	o.d. (in.)	Length (ft.)	type	i.d. (in.)	Depth (ft. bgs)	Geologist	Drilling Company
	Soil	Rock	(see key)	Make	Model								
3/27/2013	X		HSA	CME	75	HSA	10.25	5.00	PVC	6"	32.00	VL	EEI
4/23/2013		X	Core	CME	75	Diamond Bit	5.88	5.00	PVC	4"	90.00	VL	EEI

Drilling Methods	
DPT - Direct Push Technology	HA - Hand Auger
DC - Direct Rotary	Mud - Mud Rotary
HSA - Hollow Stem Auger	Air - Air Rotary
CT - Cable Tool	Core - Rock Coring

Sampling Methods	
DPT - Direct Push Technology	Chip - Rock Chips
SS - Split Spoon	Sonic - Sonic Core
SH - Shelby Tube	Core - Rock Core
HSA - Auger Cuttings	OT - Other _____

Comments
0-5' Hand Auger
5' - 37' bgs - 10" ID hollow stem auger
37' - 52' bgs - Rock Core

Date	Drilling start		Drilling stop		Sample/Run No. or Blow Counts	Sample/Core Recovery (ft)	RQD (%)	Sample Description and Remarks
	depth	time	depth	time				
	(ft. bgs)	(hh:mm)	(ft. bgs)	(hh:mm)				
03/27/13								Bedrock @ 30'. Air Rotary to 32'
04/23/14	32.00	14:35	35.00	15:05	Run 1	3.00		Gneiss: diagonal fracture 34 - 35'
04/23/14	35.00	15:10	41.00	15:35	Run 2	5.00		very low grade metamorphism Gneiss & Granite: water bearing fractures @ 37', 37.2', 37.3', 37.8', 39.1', & diagonal from 40' - 41'
04/24/14	41.00	8:35	46.00	8:45	Run 3	5.00		less Gneiss & more Granite: big fracture @ 42.5', smaller fractures 44 - 45' & 46'
04/24/14	46.00	9:00	56.00	9:35	Run 4	10.00		Gneiss: fractures @ 48.7', 50.3', 50.4', & 54.7'
04/24/14	56.00	10:45	66.00	11:00	Run 5	10.00		Gneiss: big diagonal fracture @ 59.6 - 60.5', small fractures @ 57.5', 57.8', 58.6', 59.5', & 61.7'
04/24/14	66.00	11:05	76.00	11:30	Run 6	10.00		Gneiss: big diagonal fracture @ 69 - 69.3', small fractures @ 66.7', 69.8', 71.1', 72.4', 74.8' & 76'. Rock was harder to core 70' and below
04/24/14	76.00	13:30	86.00	14:20	Run 7	10.00		Gneiss: fractures @ 82.3', 83.7', 85.6', & 86'
04/29/14	86.00	14:30	92.00	17:25	Run 8	5.80		Gneiss: large fractures @ 89.9' & 90.1', small fractures @ 90.4' & 91'
04/30/14	92.00	8:35	100.00	10:15	Run 9	8.00		Gneiss: fractures @ 93.6', 93.7', 94.4', 97.4', 97.5', & 98.5'
								Total depth of well 100'. Outer 6" casing set at 32'. Inner 4" casing set @ 90'. Open borehole 90 - 100'



Borehole / Corehole I.D. MW-302DD
Sheet 1 of 1

Drilling Methods		Sampling Methods		Comments
DPT - Direct Push Technology	HA - Hand Auger	DPT - Direct Push Technology	Chip - Rock Chips	0-5' Hand Auger
DC - Direct Rotary	Mud - Mud Rotary	SS - Split Spoon	Sonic - Sonic Core	5' - 37' bgs - 10" ID hollow stem auger
HSA - Hollow Stem Auger	Air - Air Rotary	SH - Shelby Tube	Core - Rock Core	37' - 52' bgs - Rock Core
CT - Cable Tool	Core - Rock Coring	HSA - Auger Cuttings	OT - Other _____	

[illegible]



DRILLING DATA SHEET

[illegible]

Drilling Methods	
DPT - Direct Push Technology	HA - Hand Auger
DC - Direct Rotary	Mud - Mud Rotary
HSA - Hollow Stem Auger	Air - Air Rotary
CT - Cable Tool	Core - Rock Coring

Sampling Methods	
DPT - Direct Push Technology	Chip - Rock Chips
SS - Split Spoon	Sonic - Sonic Core
SH - Shelby Tube	Core - Rock Core
HSA - Auger Cuttings	OT - Other _____

Comments
0-5' Hand Auger
5' - 34' bgs - 10" ID hollow stem auger
34' -39' bgs air hammer
39' - 612" Rock Core

[illegible]



Borehole / Corehole I.D. MW-305D

Sheet 1 of 1

Drilling Methods		Sampling Methods		Comments
DPT - Direct Push Technology	HA - Hand Auger	DPT - Direct Push Technology	Chip - Rock Chips	0-5' Hand Auger
DC - Direct Rotary	Mud - Mud Rotary	SS - Split Spoon	Sonic - Sonic Core	5' - 29' bgs - 10" ID hollow stem auger
HSA - Hollow Stem Auger	Air - Air Rotary	SH - Shelby Tube	Core - Rock Core	29-34' bgs air hammer
CT - Cable Tool	Core - Rock Coring	HSA - Auger Cuttings	OT - Other _____	34'-41.5' Rock Core

[illegible]



Borehole / Corehole I.D. MW-306D

Sheet 1 of 1

Drilling Methods		Sampling Methods		Comments
DPT - Direct Push Technology	HA - Hand Auger	DPT - Direct Push Technology	Chip - Rock Chips	0-5' Hand Auger
DC - Direct Rotary	Mud - Mud Rotary	SS - Split Spoon	Sonic - Sonic Core	5' - 26' bgs - 10" ID hollow stem auger
HSA - Hollow Stem Auger	Air - Air Rotary	SH - Shelby Tube	Core - Rock Core	26' - 31' bgs air hammer
CT - Cable Tool	Core - Rock Coring	HSA - Auger Cuttings	OT - Other _____	31' - 507" Rock Core

[illegible]



Borehole / Corehole I.D. MW-307D

Sheet 1 of 1

[illegible]



Borehole / Corehole I.D. MW-308D

Sheet 1 of 1

Drilling Methods		Sampling Methods		Comments
DPT - Direct Push Technology	HA - Hand Auger	DPT - Direct Push Technology	Chip - Rock Chips	0-5' Hand Auger
DC - Direct Rotary	Mud - Mud Rotary	SS - Split Spoon	Sonic - Sonic Core	5' - 67' bgs - 10" ID hollow stem auger
HSA - Hollow Stem Auger	Air - Air Rotary	SH - Shelby Tube	Core - Rock Core	67-72' bgs air hammer
CT - Cable Tool	Core - Rock Coring	HSA - Auger Cuttings	OT - Other _____	72-110' Rock Core

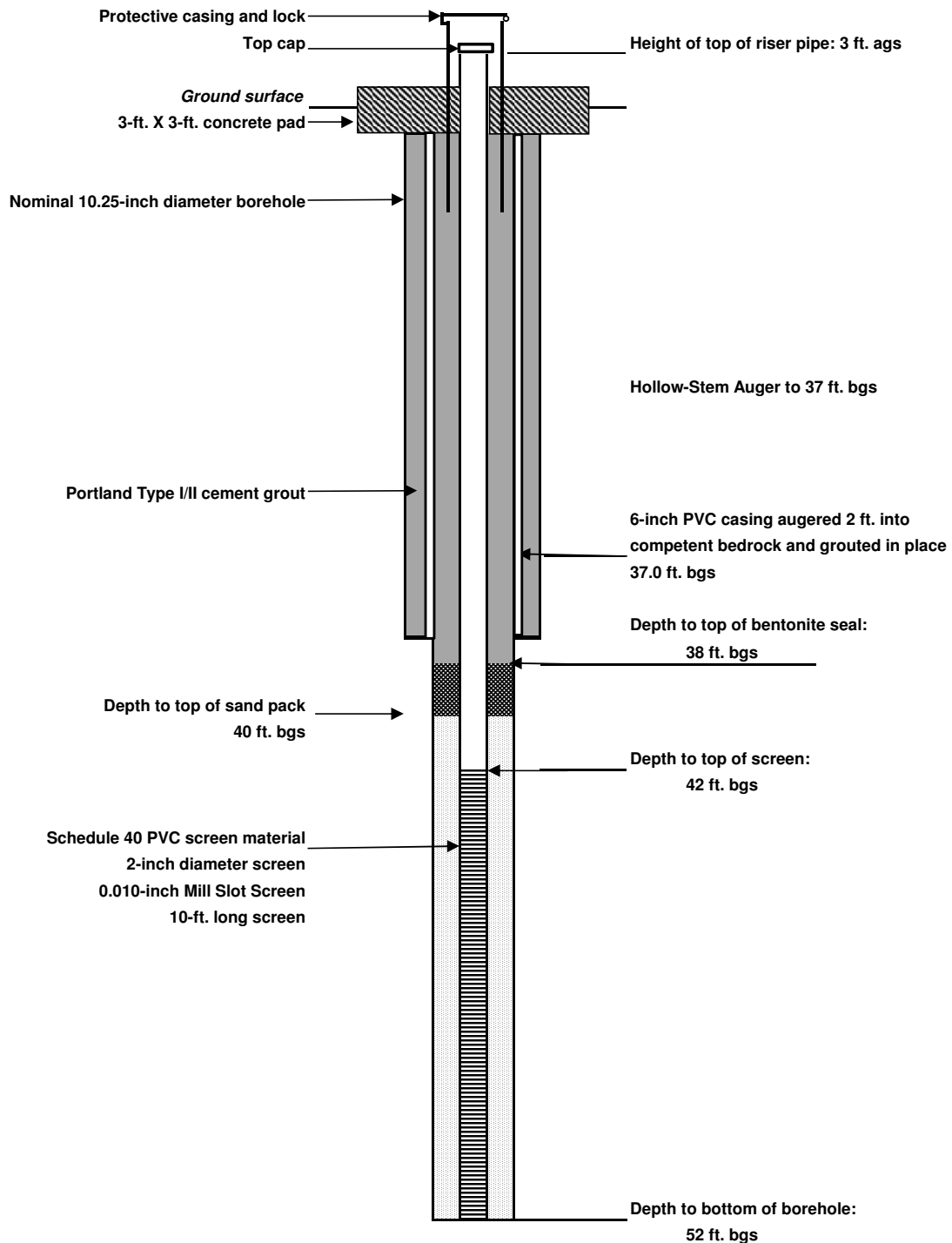
[illegible]

MONITORING WELL MW-12DRR CONSTRUCTION

Drilling Method: HSA/Rock Core

Completion Depth: 52 ft. bgs

Installation Date: 11/5/13



NOT TO SCALE



ENVIRONMENTAL RESOURCES MANAGEMENT

3200 Windy Hill Road SE
Suite 1500W
Atlanta, GA 30339

www.erm.com

Phone: (678) 486-2700 Fax: (404) 745-0103

Geologist: JIM

Log Created by: JIM

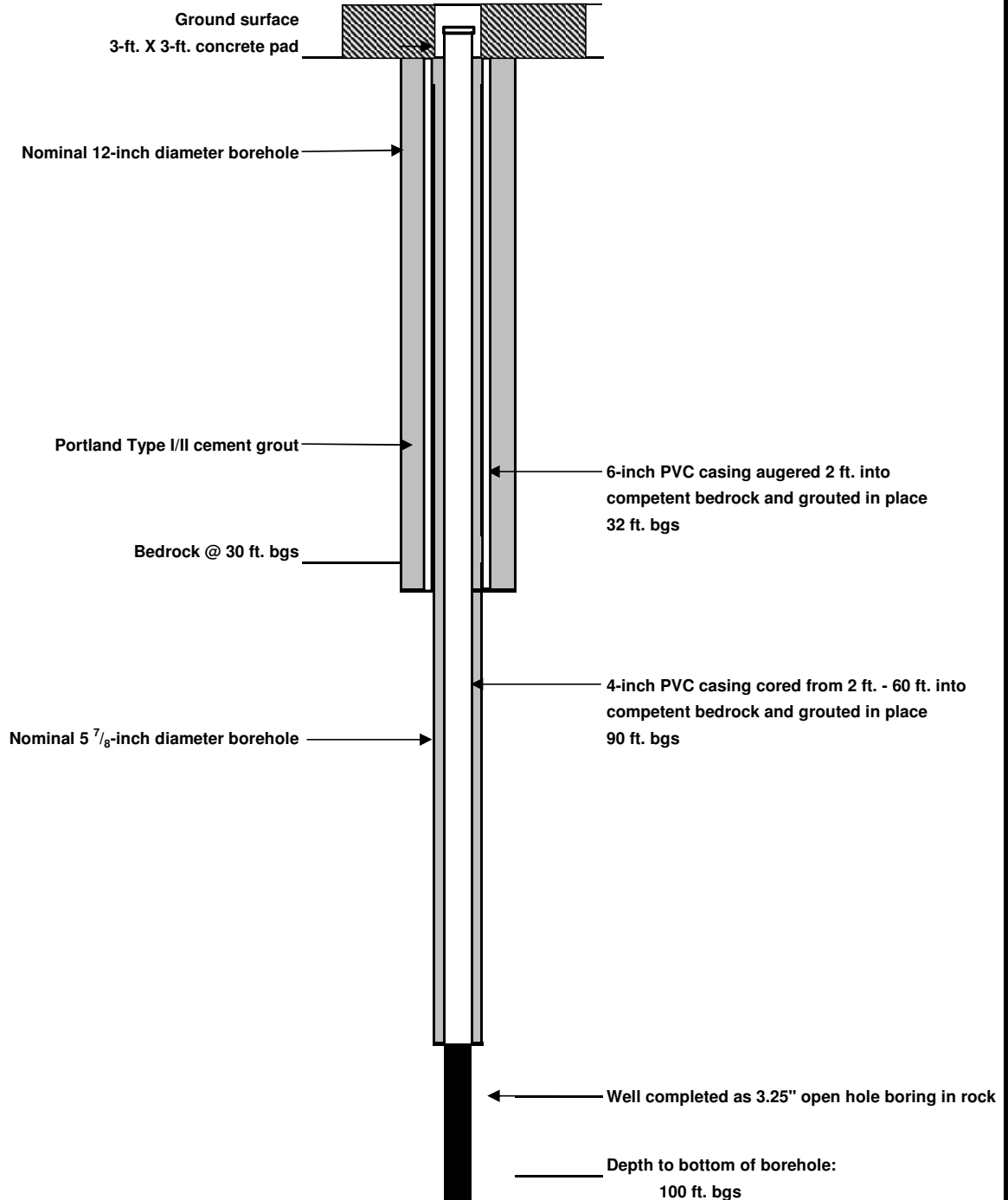
Checked by: AK

MONITORING WELL MW-205DD CONSTRUCTION

Drilling Method: HSA/Rock Core

Completion Depth: 100 ft. bgs

Installation Date: 4/23/14 - 4/30/14



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Phone: (678) 486-2700 Fax: (404) 745-0103

Open Borehole Screen: 90-100

6" casing 0-32

4" casing 0-90

Geologist: JIM

Log Created by: JIM

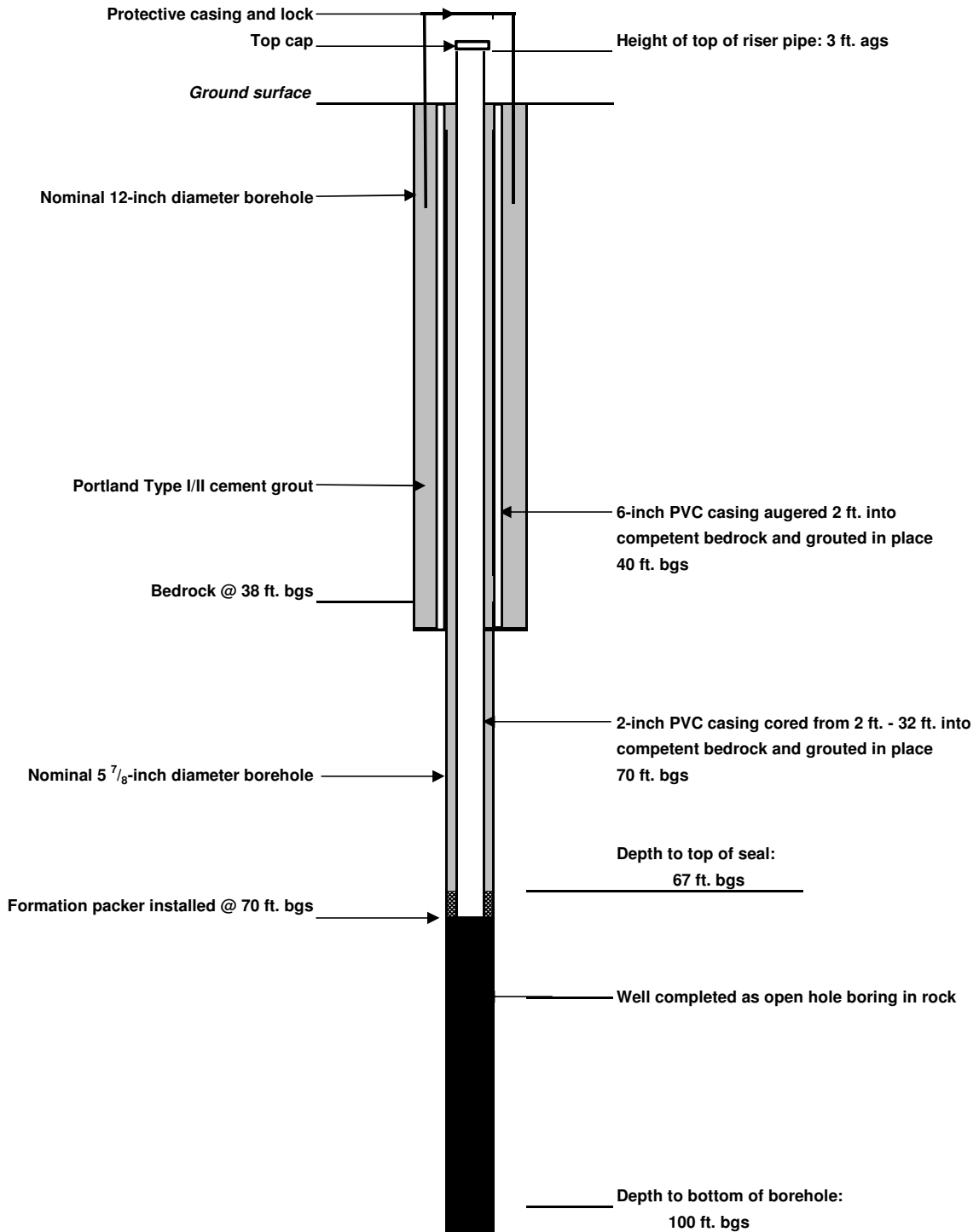
Checked by: AK

MONITORING WELL MW-302DD CONSTRUCTION

Drilling Method: HSA/Rock Core

Completion Depth: 100 ft. bgs

Installation Date: 4/16/13 - 4/18/13



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Atlanta, GA 30339

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Phone: (678) 486-2700 Fax: (404) 745-0103

Open Borehole Screen: 70-100

6" casing 0-40

2" casing 0-70

Geologist: JIM

Log Created by: JIM

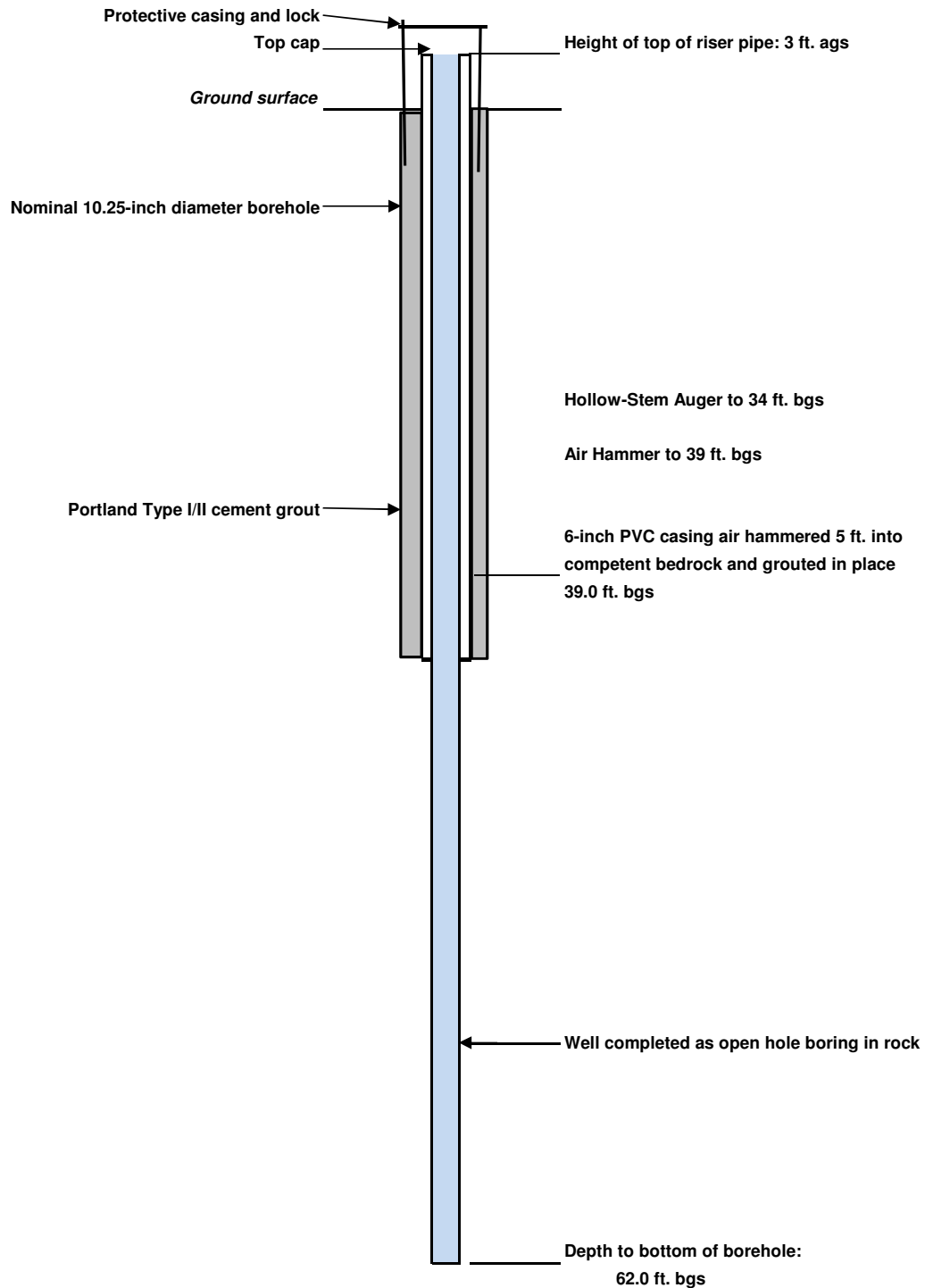
Checked by: AK

MONITORING WELL MW-304D CONSTRUCTION

Drilling Method: HSA/Air Hammer/Rock Core

Completion Depth: 62 ft. bgs

Installation Date: 11/5/13



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**ENVIRONMENTAL RESOURCES
MANAGEMENT**

3200 Windy Hill Road SE
Suite 1500W
Atlanta, GA 30339

www.erm.com

Phone: (678) 486-2700 Fax: (404) 745-0103

Geologist: JIM

Log Created by: JIM

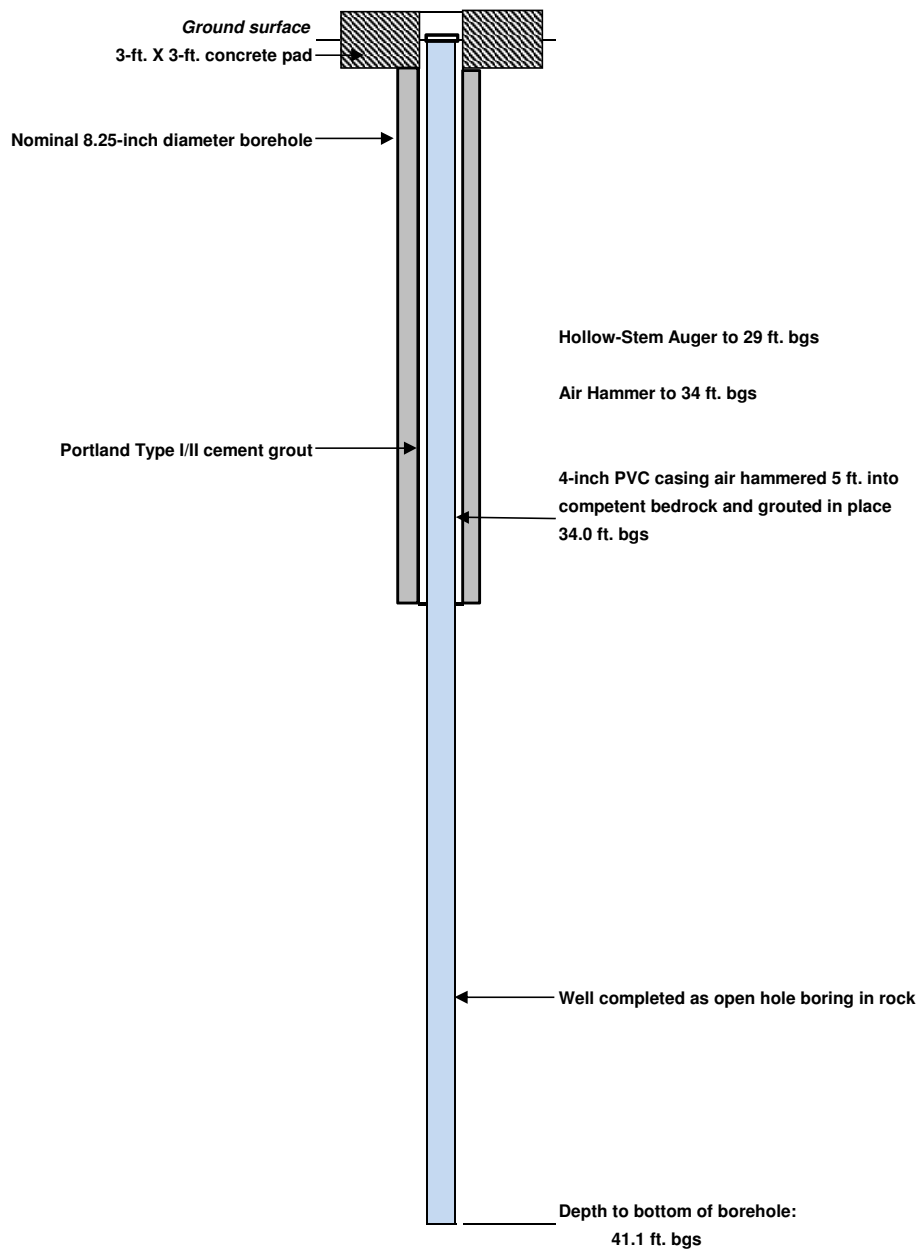
Checked by: AK

MONITORING WELL MW-305D CONSTRUCTION

Drilling Method: HSA/Air Hammer/Rock Core

Completion Depth: 41.1 ft. bgs

Installation Date: 11/18/13



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ENVIRONMENTAL RESOURCES MANAGEMENT

3200 Windy Hill Road SE
Suite 1500W
Atlanta, GA 30339

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Phone: (678) 486-2700 Fax: (404) 745-0103

Geologist: JIM

Log Created by: JIM

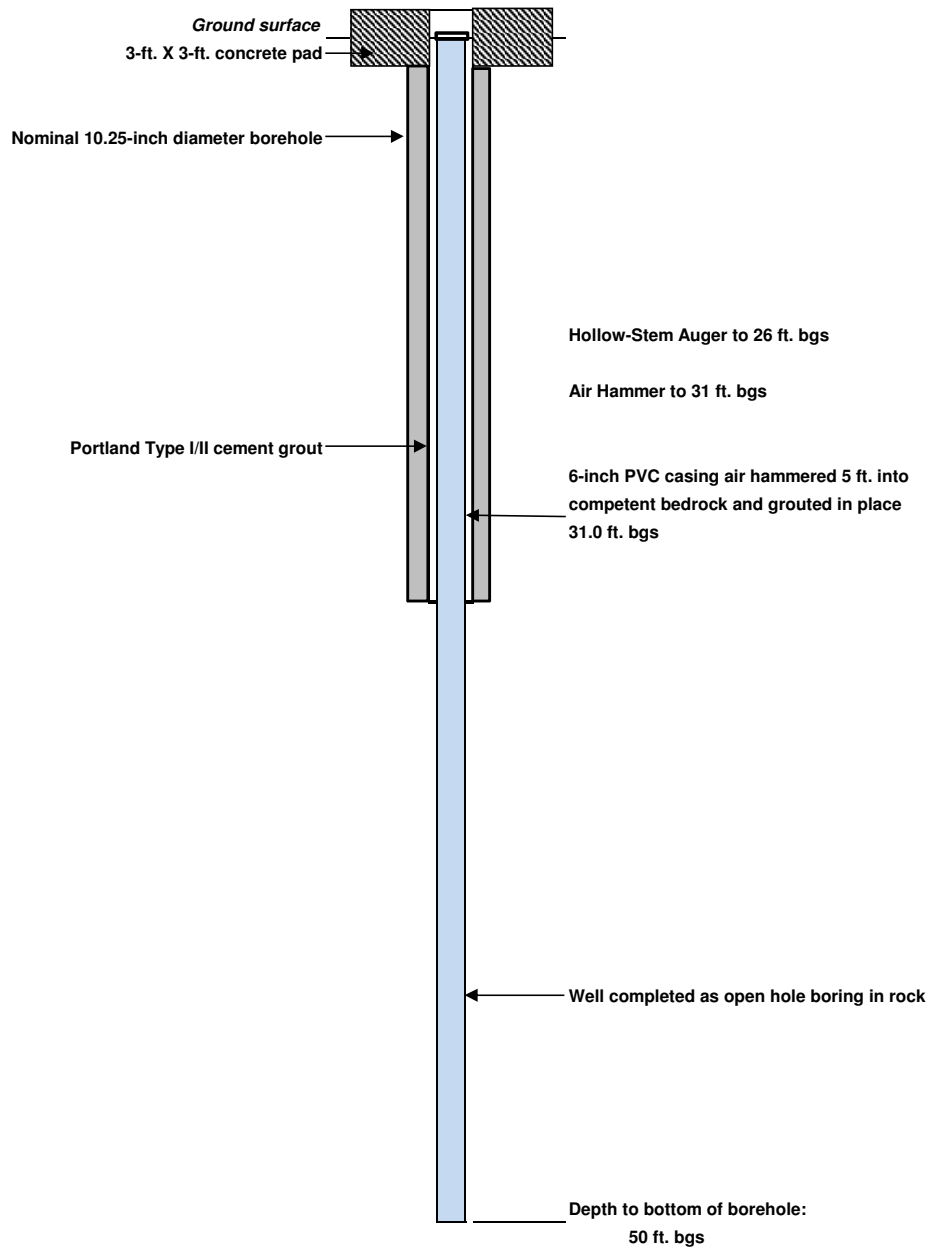
Checked by: AK

MONITORING WELL MW-306D CONSTRUCTION

Drilling Method: HSA/Air Hammer/Rock Core

Completion Depth: 50 ft. bgs

Installation Date: 11/7/13



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ENVIRONMENTAL RESOURCES MANAGEMENT

3200 Windy Hill Road SE
Suite 1500W
Atlanta, GA 30339

www.erm.com

Phone: (678) 486-2700 Fax: (404) 745-0103

Geologist: JIM

Log Created by: JIM

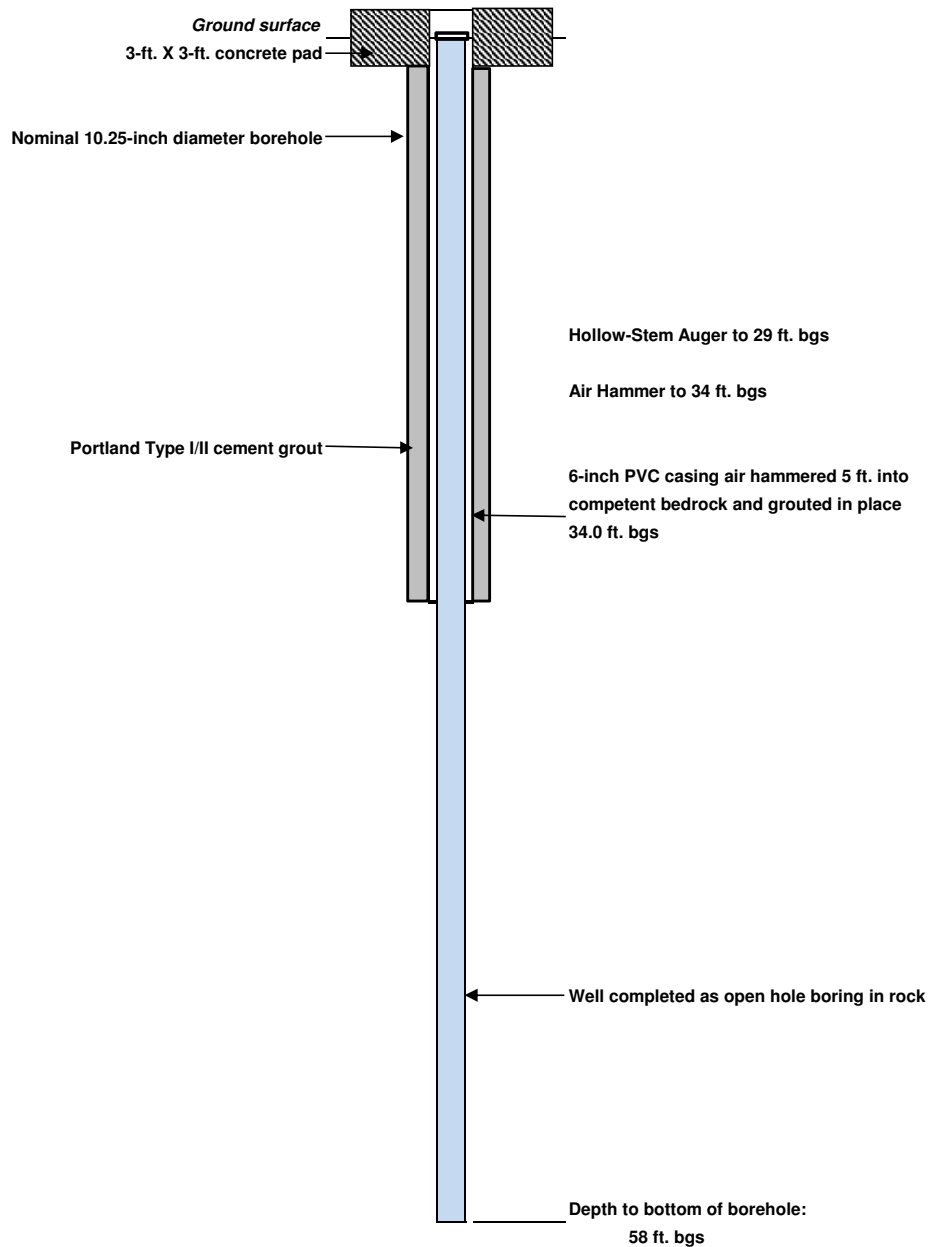
Checked by: AK

MONITORING WELL MW-307D CONSTRUCTION

Drilling Method: HSA/Air Hammer/Rock Core

Completion Depth: 58 ft. bgs

Installation Date: 11/12/13



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ENVIRONMENTAL RESOURCES MANAGEMENT

3200 Windy Hill Road SE
Suite 1500W
Atlanta, GA 30339

www.erm.com

Phone: (678) 486-2700 Fax: (404) 745-0103

Geologist: JIM

Log Created by: JIM

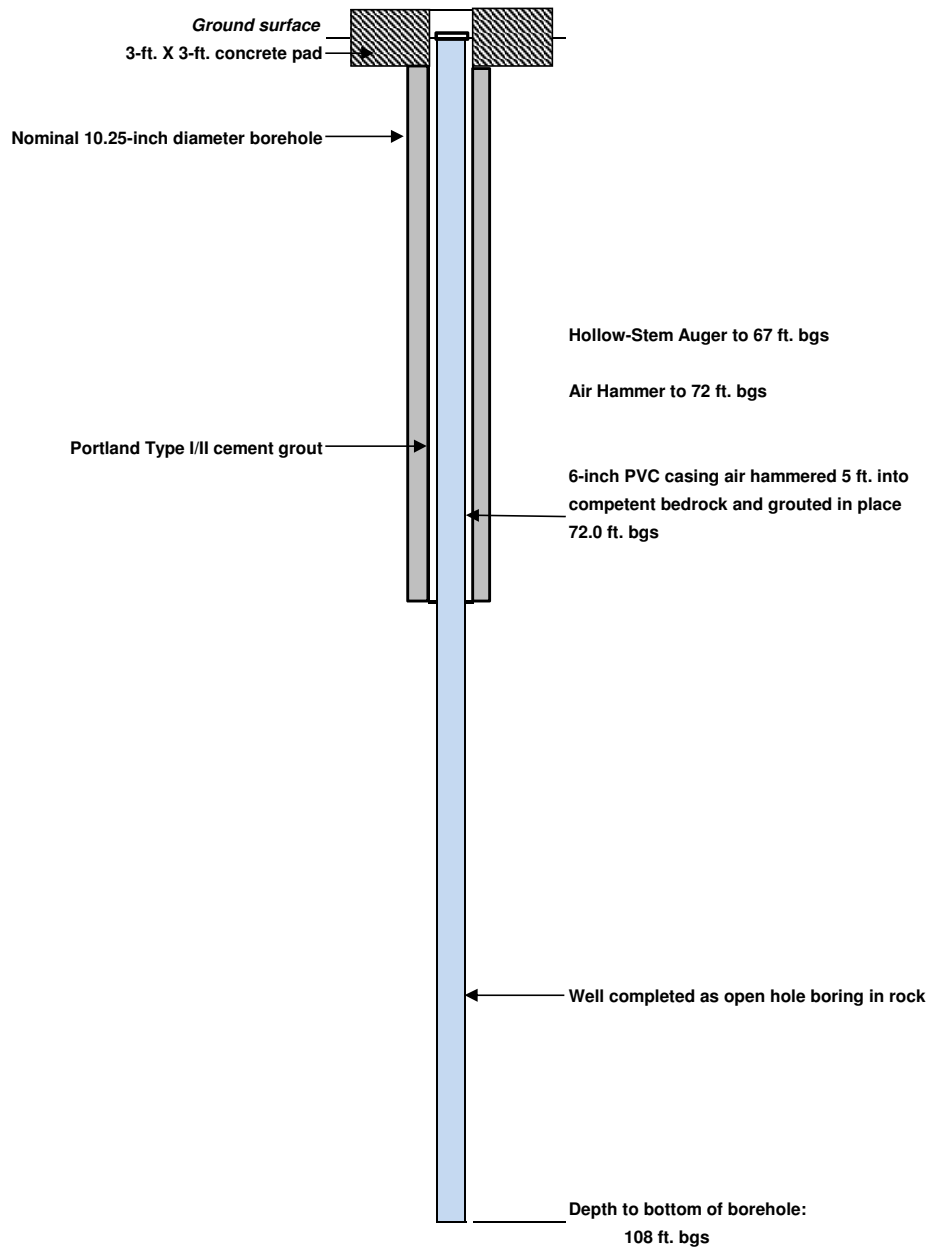
Checked by: AK

MONITORING WELL MW-308D CONSTRUCTION

Drilling Method: HSA/Air Hammer/Rock Core

Completion Depth: 108 ft. bgs

Installation Date: 11/6/13



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ENVIRONMENTAL RESOURCES MANAGEMENT

3200 Windy Hill Road SE
Suite 1500W
Atlanta, GA 30339

www.erm.com

Phone: (678) 486-2700 Fax: (404) 745-0103

Geologist: JIM

Log Created by: JIM

Checked by: AK

VEFR Event Reports
Appendix E

Project No. 0176740
Atlanta Gas Light Company

Environmental Resources Management
3200 Windy Hill Road SE, Suite 1500W
Atlanta, Georgia 30339
(678) 486-2700

ECOVAC SERVICES

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Treatability Studies / Research & Development*

March 7, 2011

Mr. Jim Morrison
Environmental Resources Management, Inc.
3350 Peachtree Road, Suite 1120
Atlanta, Georgia 30326

**Subject: Enhanced Fluid Recovery (EFR[®]) Results
Event No. 1 and 2
Former AGL MGP Site
137 Mulberry Street
Macon, Georgia**

Dear Mr. Morrison:

Please find attached the data summary for the two initial EFR[®] events conducted at the subject site on February 16 and 17, 2011. The following summarizes the results of these initial events.

SUMMARY OF RESULTS

Event No. 1 (February 16, 2011)

Dense non-aqueous phase liquids (DNAPL) were detected in the gauged monitor well (MW-111D – 0.75 feet) prior to conducting this EFR[®] event. This EFR[®] event was performed for a duration of 6.75 hours at one extraction point, consisting of monitor well MW-111D. DNAPL was not detected in the extraction well upon completion of this event.

An estimated total of 40.2 equivalent gallons of oil-like materials (OLM) was removed during this event, including approximately 40 gallons of DNAPL measured in the vacuum truck and approximately 0.2 equivalent gallon of OLM (a calculated 2 pounds of hydrocarbons) contained in the offgas vapor. Hydrocarbon removal rates fluctuated in the range from 0.3 to 0.8 pound per hour.

Offgas concentrations ranged from 220 to 800 parts per million (PPM_v) during this EFR[®] event. Flow rates ranged from 37 to 74 cubic feet per minute (CFM). In-well vacuums recorded at the extraction well are detailed in the EFR[®] Field Data Sheet and summarized below:

<u>Extraction Well</u>	<u>Vacuum Reading</u>
MW-111D	11 inches of mercury

The client collected drawdown measurements during the extraction process. Approximately 1,395 gallons of liquid, including 40 gallons of DNAPL, were removed during this event and transported to Aquaterra (Oxford, Georgia) for disposal.

105 Weatherstone Drive, Suite 610 – Woodstock, Georgia 30188
(770) 592-1001 - Fax (770) 592-1801
www.ecovacservices.com

Mr. Jim Morrison
March 7, 2011
Page 2

Event No. 2 (February 17, 2011)

DNAPL was not detected in the gauged monitor well prior to, or upon completion of, conducting this EFR[®] event. This EFR[®] event was performed for a duration of 7.25 hours at one extraction point, consisting of monitor well MW-101. DNAPL was not detected in the extraction well upon completion of this event.

A calculated total of 1.1 pound of hydrocarbons (approximately 0.1 equivalent gallon of OLM) were removed during this EFR[®] event. Hydrocarbon removal rates fluctuated in the range from 0.13 to 0.17 pound per hour.

Offgas concentrations ranged from 120 to 150 PPM_v during this EFR[®] event. Flow rates ranged from 37 to 39 CFM. In-well vacuums recorded at the extraction well are detailed in the EFR[®] Field Data Sheet and summarized below:

<u>Extraction Well</u>	<u>Vacuum Reading</u>
MW-101	19 inches of mercury

The client collected drawdown measurements during the extraction process. Approximately 675 gallons of liquid were removed during this event and transported to Environmental Remedies (Atlanta, Georgia) for disposal. DNAPL was not detected in the vacuum truck tank upon completion of this event.

Thank you for the opportunity to team with ERM in serving the environmental needs of your clients. We look forward to working with you again in the future to provide innovative and cost effective environmental solutions at this and other sites.


Sincerely,

EcoVac Services




David M. Goodrich, P.G.
President

EFR[®] FIELD DATA SHEET

Client: ERM			Facility Name: Former AGL MGP Site				Event #: 1							
Facility Address: 137 Mullberry Street, Macon, GA			Technician: Hanson				Date: 2/16/11							
Extraction Well(s)	Time hh:mm	Extraction Well-head Vacuum (in. Hg)								Vacuum Truck Exhaust				
		Inlet	MW-111D							Concentration PPM	Offgas Velocity FT/MIN	Flow Rate CFM	Removal Rate LBS/HR	Interval Removal LBS
Start Time:	7:15													
MW-111D	7:30	26	11							380	1,500	74	0.8	0.2
"	7:45	26	11							380	1,500	74	0.8	0.2
"	8:00	26	11							380	1,500	74	0.8	0.2
"	8:15	26	11							380	1,500	74	0.8	0.2
"	8:30	26	11							240	1,000	49	0.3	0.1
"	9:00	26	11							220	1,000	49	0.3	0.2
"	9:30	26	11							800	750	37	0.8	0.4
"	10:00	26	11							600	750	37	0.6	0.3
"	10:30	26	11							450	750	37	0.5	0.2
"	11:00	26	11							400	750	37	0.4	0.2
"	12:00	26	11							400	800	39	0.4	0.4
"	13:00	26	11							380	750	37	0.4	0.4
"	14:00	26	11							340	750	37	0.4	0.4
Well Gauging Data:			Before EFR* Event			After EFR* Event			Corr. DTW Change (ft)					
Well No.	Diam.	TD (ft)	DTN (ft)	DTW (ft)	NAPL (ft)	DTN (ft)	DTW (ft)	NAPL (ft)						
MW-111D	6"	46.3	45.55	6.84	0.75	0.00	30.80	0.00	-23.96					
Vacuum Truck Information			Well ID	Breather Port	Stinger Depth**	Recovery/Disposal Information								
Subcontractor: AllVac			MW-111D	0 (closed)	47 feet	Hydrocarbons Removed (vapor): 3 pounds								
Truck Operator: Hanson						Hydrocarbons Removed (liquid): 40 gallons								
Truck No.: 149						Total Hydrocarbons Removed: 40.4 equiv. gal.								
Vacuum Pumps: Becker						Molecular Weight Utilized: 180 g/mole								
Pump Type: Twin LC-44s						Disposal Facility: Aquaterra								
Tank Capacity (gal.): 2,894						Manifest Number: 021611								
Stack I.D. (inches) 3.0						Total Liquids Removed: 1,395 gallons								
 www.ecovacservices.com 888-4ECOVAC			Time: 7:15 to 14:00		**08:20 - added 5 ft of stinger; 08:45 - added another 5 ft of stinger;									
			# Pumps: 2		09:30 - added an additional 5 ft of stingers									
			RPMs: 1,000											
			Time:											
			# Pumps:		Removed DP caps so client could gauge wells every half hour - client took DP and									
			RPMs:		drawdown readings									
			Time:											
			# Pumps:											
			RPMs:											

EFR[®] FIELD DATA SHEET

Client: ERM			Facility Name: Former AGL MGP Site					Event #: 2							
Facility Address: 137 Mulberry Street, Macon, GA			Technician: Hanson					Date: 2/17/11							
Extraction Well(s)	Time hh:mm	Extraction Well-head Vacuum (in. Hg)								Vacuum Truck Exhaust					
		Inlet	MW-101								Concentration PPM	Offgas Velocity FT/MIN	Flow Rate CFM	Removal Rate LBS/HR	Interval Removal LBS
Start Time:	6:45														
MW-101	7:00	26	19							150	800	39	0.17	0.04	
"	7:15	26	19							140	800	39	0.16	0.04	
"	7:30	26	19							140	800	39	0.16	0.04	
"	7:45	26	19							150	800	39	0.17	0.04	
"	8:00	26	19							140	800	39	0.16	0.04	
"	8:15	26	19							140	800	39	0.16	0.04	
"	8:30	29	19							140	800	39	0.16	0.04	
"	9:00	29	19							120	800	39	0.13	0.07	
"	9:30	29	19							140	800	39	0.16	0.08	
"	10:00	29	19							120	800	39	0.13	0.07	
"	10:30	29	19							120	800	39	0.13	0.07	
"	11:00	29	19							140	800	39	0.16	0.08	
"	12:00	29	19							140	750	37	0.15	0.15	
"	13:00	29	19							140	750	37	0.15	0.15	
"	14:00	29	19							120	750	37	0.13	0.13	
Well Gauging Data:			Before EFR [®] Event			After EFR [®] Event			Corr. DTW Change (ft)						
Well No.	Diam.	TD (ft)	DTN (ft)	DTW (ft)	NAPL (ft)	DTN (ft)	DTW (ft)	NAPL (ft)							
MW-101	2"	19.4	-	11.36	0.00	-	15.12	0.00	-3.76						
Vacuum Truck Information			Well ID	Breather Port	Stinger Depth	Recovery/Disposal Information									
Subcontractor: AllVac			MW-101	0 (closed)	12 feet	Hydrocarbons Removed (vapor): 1.1 pounds									
Truck Operator: Hanson						Hydrocarbons Removed (liquid): 0 gallons									
Truck No.: 149						Total Hydrocarbons Removed: 0.1 equiv. gal.									
Vacuum Pumps: Becker						Molecular Weight Utilized: 180 g/mole									
Pump Type: Twin LC-44s						Disposal Facility: ERL									
Tank Capacity (gal.): 2,894						Manifest Number: 021711									
Stack I.D. (inches) 3.0						Total Liquids Removed: 675 gallons									
 www.ecovacservices.com 888-4ECOVAC			Time: 6:45 to 14:00		Removed DP caps so client could guage wells every half hour - client took DP and drawdown readings										
			# Pumps: 2												
			RPMs: 1,000												
			Time:												
			# Pumps:												
			RPMs:												
Time:															
# Pumps:															
RPMs:															

GENERATOR	NON-HAZARDOUS WASTE MANIFEST		1. Generator ID Number		2. Page 1 of 1		3. Emergency Response Phone		4. Waste Tracking Number 021611		
	5. Generator's Name and Mailing Address AG LLC 137 Mulberry St, Macon, GA							Generator's Site Address (if different than mailing address)			
	Generator's Phone:							U.S. EPA ID Number			
	6. Transporter 1 Company Name Allvac Services							U.S. EPA ID Number			
	7. Transporter 2 Company Name							U.S. EPA ID Number			
	8. Designated Facility Name and Site Address Aqua-Terra 1600 More St Oxford, GA							U.S. EPA ID Number			
	Facility's Phone: 770-823-2382										
	9. Waste Shipping Name and Description		10. Containers		11. Total Quantity	12. Unit Wt./Vol.					
			No.	Type							
	1. Non-Haz Non-Regulated Ground Water		-1-	TT	1395	G					
2.											
3.											
4.											
13. Special Handling Instructions and Additional Information											
14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.											
Generator's/Officer's Printed/Typed Name Joe Tan							Signature <i>Joe Tan</i>		Month Day Year 02 16 2011		
15. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date Issued U.S.: _____											
TRANSPORTER	16. Transporter Acknowledgment of Receipt of Materials										
	Transporter 1 Printed/Typed Name Joe Hanson							Signature <i>Joe Hanson</i>		Month Day Year 2 16 11	
	Transporter 2 Printed/Typed Name							Signature		Month Day Year	
DESIGNATED FACILITY	17. Discrepancy										
	17a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection										
	Manifest Reference Number:							U.S. EPA ID Number			
	17b. Alternate Facility (or Generator)							Facility's Phone:			
	17c. Signature of Alternate Facility (or Generator)							Month Day Year			
18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in item 17a											
Printed/Typed Name JAMES NEAL							Signature <i>James Neal</i>		Month Day Year 02 16 11		

UW0156974

NON-HAZARDOUS WASTE MANIFEST		1. Generator ID Number		2. Page 1 of		3. Emergency Response Phone		4. Waste Tracking Number 021711	
5. Generator's Name and Mailing Address Former AGI 137 Mulberry St Macon, GA						Generator's Site Address (if different than mailing address)			
Generator's Phone:									
6. Transporter 1 Company Name ALLVAL Service						U.S. EPA ID Number			
7. Transporter 2 Company Name						U.S. EPA ID Number			
8. Designated Facility Name and Site Address Erl 460 Sawtell Ave Atlanta, GA Facility's Phone: 1-800-399-2783						U.S. EPA ID Number			
9. Waste Shipping Name and Description		10. Containers		11. Total Quantity	12. Unit Yd./Vol.				
		No.	Type						
1. Non-Hazardous Non-Regulated Foundations		50# 5301-20002/20006		-1-	TT	675	GAL	*	
2.									
3.									
4.									
13. Special Handling Instructions and Additional Information									
14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.									
Generator's/Owner's Printed/Typed Name Joe Tam						Signature <i>Joe Tam</i>			
						Month Day Year 12 17 2011			
15. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____									
16. Transporter Acknowledgment of Receipt of Materials									
Transporter 1 Printed/Typed Name Joe Hanson						Signature <i>Joe Hanson</i>			
						Month Day Year 02 17 11			
Transporter 2 Printed/Typed Name						Signature			
						Month Day Year			
17. Discrepancy									
17a. Discrepancy Indication Space <input checked="" type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection									
1000 Gallons Required									
Manifest Reference Number									
17b. Alternate Facility (or Generator)						U.S. EPA ID Number			
Facility's Phone									
17c. Signature of Alternate Facility (or Generator)						Month Day Year			
18. Designated Facility Owner or Operator: Certification of receipt of materials covered by this manifest except as noted in item 17a									
Printed/Typed Name ER						Signature <i>Nicole Cornelius</i>			
						Month Day Year 2 17 11			

ECOVAC SERVICES

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Treatability Studies / Research & Development*

October 3, 2013

Mr. Jim Morrison
Environmental Resources Management, Inc.
3350 Peachtree Road, Suite 1120
Atlanta, Georgia 30326

**Subject: Enhanced Fluid Recovery (EFR[®]) Results
Events No. 3 and 4
Former AGL MGP Site
137 Mulberry Street
Macon, Georgia**

Dear Mr. Morrison:

Please find attached the data summary for the two EFR[®] events conducted at the subject site on September 23, 2013 (Event No. 3) and September 24, 2013 (Event No. 4). Two previous EFR[®] events have been conducted at the subject site on February 16 and 17, 2011. The following summarizes the results of these EFR[®] events.

SUMMARY OF RESULTS

Event No. 3 (September 22, 2013)

Dense non-aqueous phase liquids (DNAPL) were detected in one of the gauged monitor wells (MW-111D – 0.96 feet) prior to conducting this EFR[®] event. This EFR[®] event was conducted for 5.5 hours at one extraction point, consisting of monitor well MW-111D. DNAPL was not detected in the extraction well upon completion of this event.

An estimated total of 1.6 pounds of hydrocarbons was removed during this event, including approximately 0.2 equivalent gallon of oil-like materials (OLM). Hydrocarbon removal rates ranged from 0.2 to 0.4 pound per hour.

Offgas concentrations ranged from 200 to 400 parts per million (PPM_v) during this EFR[®] event. Flow rates ranged from 29 to 34 cubic feet per minute (CFM). In-well vacuums recorded at the extraction well are detailed in the EFR[®] Field Data Sheet and summarized below:

Extraction Well
MW-111D

In-Well Vacuum
1 to 2 inches of mercury

The client collected drawdown measurements during the extraction process. Approximately 899 gallons of liquid were removed during this event and transported to Environmental Remedies (Atlanta, Georgia) for disposal. DNAPL was not detected in the vacuum truck tank upon completion of this event.

*105 Weatherstone Drive, Suite 610 – Woodstock, Georgia 30188
(770) 592-1001 - Fax (770) 592-1801
www.ecovacservices.com*

Mr. Jim Morrison
October 3, 2013
Page 2

Event No. 4 (September 24, 2013)

DNAPL were not detected in MW-302D prior to, or upon completion of, conducting this EFR[®] event. This EFR[®] event was conducted for seven hours at one extraction point, consisting of monitor well MW-302D.

An estimated total of 0.7 pound of hydrocarbons was removed during this event, including approximately 0.1 equivalent gallon of OLM. Hydrocarbon removal rates ranged from 0.2 to 0.4 pound per hour.

Offgas concentrations ranged from 40 to 100 PPM_v during this EFR[®] event. Flow rates remained at 59 CFM. In-well vacuums recorded at the extraction well are detailed in the EFR[®] Field Data Sheet and summarized below:

Extraction Well
MW-302D

In-Well Vacuum
18 inches of mercury

The client collected drawdown measurements during the extraction process. Approximately 55 gallons of liquid were removed during this event and transported to Environmental Remedies (Atlanta, Georgia) for disposal. DNAPL was not detected in the vacuum truck tank upon completion of this event.

Thank you for the opportunity to team with ERM in serving the environmental needs of your clients. We look forward to working with you again in the future to provide innovative and cost effective environmental solutions at this and other sites.

Sincerely,

EcoVac Services

A handwritten signature in black ink, reading "David M. Goodrich". The signature is written in a cursive, flowing style.


David M. Goodrich, P.G.
President

EFR[®] FIELD DATA SHEET


Client: ERM			Facility Name: Former AGL MGP Site					Event #: 3						
Facility Address: 137 Mulberry Street, Macon, GA			Technician: Vitovic					Date: 9/23/13						
Extraction Well(s)	Time hh:mm	Extraction Well-head Vacuum (in. Hg)								Vacuum Truck Exhaust				
		Inlet	MW-111D							Concentration PPM	Offgas Velocity FT/MIN	Flow Rate CFM	Removal Rate LBS/HR	Interval Removal LBS
Start Time:	10:30													
MW-111D	10:45	27	1							300	600	29	0.3	0.1
"	11:00	27	1							260	600	29	0.2	0.1
"	11:15	27	1							260	600	29	0.2	0.1
"	11:30	27	1							240	600	29	0.2	0.1
"	12:00	27	2							300	700	34	0.3	0.1
"	12:30	27	2							380	700	34	0.4	0.2
"	13:00	27	2							400	700	34	0.4	0.2
"	13:30	27	2							360	700	34	0.4	0.2
"	14:30	27	2							320	700	34	0.3	0.3
"	15:30	27	2							240	700	34	0.2	0.2
"	16:00	27	2							200	700	34	0.2	0.1

Well Gauging Data:			Before EFR [®] Event			After EFR [®] Event			Corr. DTW Change (ft)
Well No.	Diam.	TD (ft)	DTN (ft)	DTW (ft)	NAPL (ft)	DTN (ft)	DTW (ft)	NAPL (ft)	
MW-14	2"		-	4.62	-	-	-	0.00	-
MW-14I	2"		-	6.74	-	-	-	0.00	-
MW-205D	4"		-	6.84	-	-	-	0.00	-
MW-111D	6"	46.3	45.34	7.04	0.96	-	27.15	0.00	-20.11
MW-206D	4"		-	6.86	-	-	-	0.00	-
MW-200DE	2"		-	5.90	-	-	-	0.00	-

Vacuum Truck Information		Well ID	Breather Port	Stinger Depth	Recovery/Disposal Information	
Subcontractor:	AllVac	MW-111D	0 (closed)	47 feet	Hydrocarbons Removed (vapor):	1.6 pounds
Truck Operator:	Vitovic				Hydrocarbons Removed (liquid):	0 gallons
Truck No.:	152				Total Hydrocarbons Removed:	0.2 equiv. gal.
Vacuum Pumps:	Becker				Molecular Weight Utilized:	180 g/mole
Pump Type:	Twin LC-44s				Disposal Facility:	ERL
Tank Capacity (gal.):	2,894				Manifest Number:	156525
Stack I.D. (inches)	3.0				Total Liquids Removed:	899 gallons

 www.ecovacservices.com 888-4ECOVAC	Time:	10:30 to 16:00	
	# Pumps:	2	
	RPMs:	900	Client took groundwater drawdown readings throughout the event.
	Time:		
	# Pumps:		
	RPMs:		Terminated event after 5.5 hours in order to arrive at ERL by 17:30.
	Time:		
	# Pumps:		

EFR[®] FIELD DATA SHEET

Client: ERM			Facility Name: Former AGL MGP Site				Event #: 4							
Facility Address: 137 Mulberry Street, Macon, GA			Technician: Vitovic				Date: 9/24/13							
Extraction Well(s)	Time hh:mm	Extraction Well-head Vacuum (in. Hg)								Vacuum Truck Exhaust				
		Inlet	MW-302D							Concentration PPM	Offgas Velocity FT/MIN	Flow Rate CFM	Removal Rate LBS/HR	Interval Removal LBS
Start Time:	8:00													
MW-302D	8:15	26	18							100	1,200	59	0.2	0.04
"	8:30	26	18							100	1,200	59	0.2	0.04
"	8:45	26	18							80	1,200	59	0.1	0.03
"	9:00	26	18							80	1,200	59	0.1	0.03
"	9:30	26	18							80	1,200	59	0.1	0.1
"	10:00	26	18							60	1,200	59	0.1	0.1
"	10:30	26	18							60	1,200	59	0.1	0.1
"	11:00	26	18							60	1,200	59	0.1	0.1
"	12:00	26	18							60	1,200	59	0.1	0.1
"	13:00	26	18							40	1,200	59	0.1	0.1
"	14:00	26	18							40	1,200	59	0.1	0.1
"	15:00	26	18							60	1,200	59	0.1	0.1
Well Gauging Data:			Before EFR [®] Event			After EFR [®] Event			Corr. DTW Change (ft)					
Well No.	Diam.	TD (ft)	DTN (ft)	DTW (ft)	NAPL (ft)	DTN (ft)	DTW (ft)	NAPL (ft)						
MW-302D	6"	47.35	-	13.39	0.00	-	46.50	0.00						
Vacuum Truck Information			Well ID	Breather Port	Stinger Depth	Recovery/Disposal Information								
Subcontractor: AllVac			MW-302D	0 (closed)	47 feet	Hydrocarbons Removed (vapor): 0.7 pounds								
Truck Operator: Vitovic						Hydrocarbons Removed (liquid): 0 gallons								
Truck No.: 152						Total Hydrocarbons Removed: 0.1 equiv. gal.								
Vacuum Pumps: Becker						Molecular Weight Utilized: 180 g/mole								
Pump Type: Twin LC-44s						Disposal Facility: ERL								
Tank Capacity (gal.): 2,894						Manifest Number: 156526								
Stack I.D. (inches) 3.0						Total Liquids Removed: 55 gallons								
 www.ecovacservices.com 888-4ECOVAC			Time: 8:00 to 15:00		Notes: Client took groundwater drawdown readings throughout the event. Terminated event after 7 hours in order to assist client.									
			# Pumps: 2											
			RPMs: 900											
			Time:											
			# Pumps:											
			RPMs:											
Time:														
# Pumps:														
RPMs:														

156526



NON-HAZARDOUS WASTE MANIFEST / CERTIFICATE OF DISPOSAL

Work Order # WW176489

GENERATOR INFORMATION:

Name Former AGL MGP Contact _____
 Address 137 Mulberry ST. Contact Phone _____
 City, State MACON, GA. Zip _____ County _____

TRANSPORTER INFORMATION:

Transporter Elevac Services
 Address 105 Weatherstone Drive
 City, State Woodstock, GA 30180
 Contact Name Nick Athens
 Contact Phone 770-592-1001

DESIGNATED FACILITY:

Facility Name Environmental Remedies, LLC
 Address 460 Sawtell Avenue, SE
 City, State Atlanta, GA Zip 30315
 Emergency Contact Paul Powers
 Emergency Phone 800-399-2783 x 304

1st Trip Departure _____ 2nd Trip Departure _____
 Arrival _____ Arrival _____
 Start _____ Start _____
 Departure _____ Departure _____
 Arrival _____ Arrival _____

Comments (Driver / Customer):

DO NOT WRITE IN THIS SECTION

Date : 09/24/13 17:08
 Ticket : 53462

Gross	33900	lb
Tare	33440	lb
Net	460	lb

Waste Description / DOT Shipping Name /	Profile Number	Quantity	Units
NON-HAZ Petroleum Impacted Groundwater		55	Gallons *
	S. J. # 5301		
8.34 w/gal			

Discrepancy Section:

* 1000 Gallon Minimum

Generators Certification: This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

GENERATOR (Print or Type)

Charlie Brooks

Signature

Charlie Brooks

Date

9-24-13

Transporter Certification: I hereby acknowledge the receipt of the above listed waste(s) and agree to transport to the designated facility unless directed to do so by the generator.

TRANSPORTER (Print or Type)

Elevac Services

Signature

[Signature]

Date

24 Sept 13

Receiving Facility Certification: The above waste (s) were received by this facility, and will be processed, disposed of, or recycled in accordance with applicable regulations.

FACILITY (Print or Type)

Environmental Remedies, LLC

Signature

[Signature]

Date

9-24-13

156525



NON-HAZARDOUS WASTE MANIFEST / CERTIFICATE OF DISPOSAL

Work Order #

WW176466

GENERATOR INFORMATION:

Name Fraser AGC MGP
 Address 137 Mulberry ST.
 City, State MACON, GA. Zip _____ County _____

Contact _____

Contact Phone _____

TRANSPORTER INFORMATION:

Transporter Ecovac Services
 Address 105 Weatherstone Drive
 City, State Woodstock, GA 30180
 Contact Name Nick Athens
 Contact Phone 770-592-1001

DESIGNATED FACILITY:

Facility Name Environmental Remedies, LLC
 Address 460 Sawtell Avenue, SE
 City, State Atlanta, GA Zip 30315
 Emergency Contact Paul Powers
 Emergency Phone 800-399-2783 x 304

1st Trip Departure _____

2nd Trip Departure _____

Arrival _____

Arrival _____

Start _____

Start _____

Departure _____

Departure _____

Arrival _____

Arrival _____

Comments (Driver / Customer):

DO NOT WRITE IN THIS SECTION

Date : 09/23/13 16:37
 Ticket : 53444

Gross wt 40740 1b
 Tare 33240 1b
 Net 7500 1b

Waste Description / DOT Shipping Name / Profile Number	Quantity	Units
NON-HAZ Petroleum Impacted Groundwater	899	Gals. *
S.O. # 5301		
\$38 #/g.		

Discrepancy Section:

* GALLONS BY WEIGHT 895 * * 1000 GALLON MINIMUM

Generators Certification: This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

GENERATOR (Print or Type)

Charlie Brooks

Signature

Date

23-9-13

Transporter Certification: I hereby acknowledge the receipt of the above listed waste(s) and agree to transport to the designated facility unless directed to do so by the generator.

TRANSPORTER (Print or Type)

Ecovac Services

Signature

Date

23 Sept 13

Receiving Facility Certification: The above waste (s) were received by this facility, and will be processed, disposed of, or recycled in accordance with applicable regulations.

FACILITY (Print or Type)

Environmental Remedies, LLC

Signature

Date

9/23/13

Laboratory Analytical Reports
Appendix F
(CD ONLY)

Project No. 0176740
Atlanta Gas Light Company

Environmental Resources Management
3200 Windy Hill Road SE, Suite 1500W
Atlanta, Georgia 30339
(678) 486-2700



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

February 25, 2014

Jim Morrison
ERM-Southeast
3200 Windy Hill Rd
Atlanta GA 30339

TEL: (678) 486-2700
FAX: (404) 745-0103

RE: AGLC Macon

Dear Jim Morrison:

Order No: 1402C76

Analytical Environmental Services, Inc. received 5 samples on 2/18/2014 12:00:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.

AES' certifications are as follows:

- NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/13-06/30/14.
- AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) effective until 09/01/15.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Mirzeta Kararic
Project Manager



ANALYTICAL ENVIRONMENTAL SERVICES, INC

3080 Presidential Drive, Atlanta GA 30340-3704

TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order:

1402670

Date: 2-18-14 Page 1 of 1

COMPANY: ERM		ADDRESS: 3200 Winway Hall Rd SE 541600 Atlanta GA 30339		FAX: _____		SIGNED BY: Don Downing / Ryan McTilton		SIGNATURE: <i>[Signature]</i>										
#	SAMPLE ID	SAMPLED		Grab	Composite	Matrix (See codes)	ANALYSIS REQUESTED										REMARKS	No # of Containers
		DATE	TIME				82608-TLLVOLS	82700-TLLSEM/12	60100-TOL# Hg	70100-Cyanide	60100-TOX# Hg	ION SCOR	Sulfate	Hexavalent Chromium				
1	TB-01-20140217-01	2-17-14	1330	X		W	X	X	X	X	X	X	X	X	2			
2	MW-113D-20140217-01	2-17-14	1330	X		GW	X	X	X	X	X	X	X	X	11			
3	MW-113DMS-20140217-01	2-17-14	1330	X		GW	X	X	X	X	X	X	X	X	11			
4	MW-113DMSD-20140217-01	2-17-14	1330	X		GW	X	X	X	X	X	X	X	X	11			
5	MW-112D-20140217-01	2-17-14	1440	X		GW	X	X	X	X	X	X	X	X	11			
6	MW-25D-20140217-01	2-17-14	1525	X		GW	X	X	X	X	X	X	X	X	11			
7	MW-25DMS-20140217-01	2-17-14	1525	X		GW	X	X	X	X	X	X	X	X	11			
8	MW-25MSD-20140217-01	2-17-14	1525	X		GW	X	X	X	X	X	X	X	X	11			
9	MW-108D-20140217-01	2-17-14	1630	X		GW	X	X	X	X	X	X	X	X	11			
10																		
11																		
12																		
13																		
14																		

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
<i>[Signature]</i>	2/18/14 10:11	<i>[Signature]</i>	2/18/14 10:14
<i>[Signature]</i>	2/18/14 12:00	<i>[Signature]</i>	2/18/14 10:00

SPECIAL INSTRUCTIONS/COMMENTS:	SHIPMENT METHOD			
	OUT	IN	CLIENT	OTHER
ag 17 Microseps from 200C amber from primary samples. We same flapping concentration	/	/	/	FOUNDER

PROJECT NAME:	PROJECT #:	SITE ADDRESS:	SEND REPORT TO:	INVOICE TO:	QUOTE #:
AGCL Macon	0230715	137 Mulberry Street, Macon, GA	Jim Morrison	(IF DIFFERENT FROM ABOVE)	

PROJECT INFORMATION	RECEIPT
Turnaround Time Request Standard 5 Business Days 2 Business Day Rush Next Business Day Rush Same Day Rush (auth req.) Other	Total # of Containers: 90

STATE PROGRAM (if any):	E-mail? Y/N:	Fax? Y/N	DATA PACKAGE: I II III IV

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water

PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

Client: ERM-Southeast
Project: AGLC Macon
Lab ID: 1402C76

Case Narrative

Sample Receiving Nonconformance:

Hexavalent Chromium was listed on the COC. Samples were analyzed for Ferrous Iron per project history and Nic Vrey was notified via phone on 2/18/14.

Analytical Environmental Services, Inc
Date: 26-Feb-14

Client:	ERM-Southeast	Client Sample ID:	TB-01-20140217-01
Project Name:	AGLC Macon	Collection Date:	2/17/2014
Lab ID:	1402C76-001	Matrix:	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	187242	1	02/19/2014 16:33	NP
Carbon disulfide	BRL	5.0		ug/L	187242	1	02/19/2014 16:33	NP
Ethylbenzene	BRL	5.0		ug/L	187242	1	02/19/2014 16:33	NP
Toluene	BRL	5.0		ug/L	187242	1	02/19/2014 16:33	NP
Xylenes, Total	BRL	5.0		ug/L	187242	1	02/19/2014 16:33	NP
Surr: 4-Bromofluorobenzene	81.3	66.2-120		%REC	187242	1	02/19/2014 16:33	NP
Surr: Dibromofluoromethane	84.6	79.5-121		%REC	187242	1	02/19/2014 16:33	NP
Surr: Toluene-d8	78.4	77-117		%REC	187242	1	02/19/2014 16:33	NP

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 26-Feb-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1402C76-002

Client Sample ID: MW-113D-20140217-01
Collection Date: 2/17/2014 1:30:00 PM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	187242	1	02/19/2014 12:45	NP
Carbon disulfide	BRL	5.0		ug/L	187242	1	02/19/2014 12:45	NP
Ethylbenzene	BRL	5.0		ug/L	187242	1	02/19/2014 12:45	NP
Toluene	BRL	5.0		ug/L	187242	1	02/19/2014 12:45	NP
Xylenes, Total	BRL	5.0		ug/L	187242	1	02/19/2014 12:45	NP
Surr: 4-Bromofluorobenzene	97.6	66.2-120		%REC	187242	1	02/19/2014 12:45	NP
Surr: Dibromofluoromethane	88.2	79.5-121		%REC	187242	1	02/19/2014 12:45	NP
Surr: Toluene-d8	79	77-117		%REC	187242	1	02/19/2014 12:45	NP
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R261632	1	02/20/2014 08:40	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	187215	1	02/19/2014 18:22	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	187215	1	02/19/2014 18:22	YH
Benzo(a)pyrene	BRL	0.050		ug/L	187215	1	02/19/2014 18:22	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	187215	1	02/19/2014 18:22	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	187215	1	02/19/2014 18:22	YH
Surr: 4-Terphenyl-d14	111	53.2-145		%REC	187215	1	02/19/2014 18:22	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187164	1	02/19/2014 15:34	YH
2-Methylphenol	BRL	10		ug/L	187164	1	02/19/2014 15:34	YH
3,4-Methylphenol	BRL	10		ug/L	187164	1	02/19/2014 15:34	YH
Acenaphthene	BRL	10		ug/L	187164	1	02/19/2014 15:34	YH
Acenaphthylene	BRL	10		ug/L	187164	1	02/19/2014 15:34	YH
Anthracene	BRL	10		ug/L	187164	1	02/19/2014 15:34	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187164	1	02/19/2014 15:34	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187164	1	02/19/2014 15:34	YH
Chrysene	BRL	10		ug/L	187164	1	02/19/2014 15:34	YH
Fluoranthene	BRL	10		ug/L	187164	1	02/19/2014 15:34	YH
Fluorene	BRL	10		ug/L	187164	1	02/19/2014 15:34	YH
Naphthalene	BRL	10		ug/L	187164	1	02/19/2014 15:34	YH
Phenanthrene	BRL	10		ug/L	187164	1	02/19/2014 15:34	YH
Phenol	BRL	10		ug/L	187164	1	02/19/2014 15:34	YH
Pyrene	BRL	10		ug/L	187164	1	02/19/2014 15:34	YH
Surr: 2,4,6-Tribromophenol	164	51.5-124	S	%REC	187164	1	02/19/2014 15:34	YH
Surr: 2-Fluorobiphenyl	151	51.7-118	S	%REC	187164	1	02/19/2014 15:34	YH
Surr: 2-Fluorophenol	97.8	26-120		%REC	187164	1	02/19/2014 15:34	YH
Surr: 4-Terphenyl-d14	163	45.2-137	S	%REC	187164	1	02/19/2014 15:34	YH
Surr: Nitrobenzene-d5	145	42-120	S	%REC	187164	1	02/19/2014 15:34	YH

Qualifiers: * Value exceeds maximum contaminant level
 BRL Below reporting limit
 H Holding times for preparation or analysis exceeded
 N Analyte not NELAC certified
 B Analyte detected in the associated method blank
 > Greater than Result value

E Estimated (value above quantitation range)
 S Spike Recovery outside limits due to matrix
 Narr See case narrative
 NC Not confirmed
 < Less than Result value
 J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 26-Feb-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402C76-002

Client Sample ID: MW-113D-20140217-01
 Collection Date: 2/17/2014 1:30:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D					(SW3510C)			
Surr: Phenol-d5	75.9	12.3-120		%REC	187164	1	02/19/2014 15:34	YH
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	187225	1	02/19/2014 13:28	CG
ION SCAN SW9056A								
Nitrate	BRL	0.25		mg/L	R261580	1	02/18/2014 13:30	GR
Sulfate	46	5.0		mg/L	R261580	5	02/18/2014 13:52	GR
GC Analysis of Gaseous Samples SOP-RSK 175					(RSK175)			
Methane	25	4		ug/L	187283	1	02/20/2014 12:35	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	BRL	0.100		mg/L	R261802	1	02/18/2014 13:20	AB
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	187216	1	02/18/2014 11:35	EH
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	187273	1	02/20/2014 18:53	JL
Arsenic	BRL	0.0500		mg/L	187273	1	02/20/2014 18:53	JL
Barium	0.0727	0.0200		mg/L	187273	1	02/20/2014 18:53	JL
Beryllium	BRL	0.0100		mg/L	187273	1	02/20/2014 18:53	JL
Cadmium	BRL	0.0050		mg/L	187273	1	02/20/2014 18:53	JL
Chromium	BRL	0.0100		mg/L	187273	1	02/20/2014 18:53	JL
Copper	BRL	0.0100		mg/L	187273	1	02/20/2014 18:53	JL
Iron	BRL	0.100		mg/L	187273	1	02/20/2014 18:53	JL
Lead	BRL	0.0100		mg/L	187273	1	02/20/2014 18:53	JL
Nickel	BRL	0.0200		mg/L	187273	1	02/20/2014 18:53	JL
Zinc	BRL	0.0200		mg/L	187273	1	02/20/2014 18:53	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 26-Feb-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1402C76-003

Client Sample ID: 112D-20140217-01
Collection Date: 2/17/2014 2:40:00 PM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	187242	1	02/19/2014 17:01	NP
Carbon disulfide	BRL	5.0		ug/L	187242	1	02/19/2014 17:01	NP
Ethylbenzene	BRL	5.0		ug/L	187242	1	02/19/2014 17:01	NP
Toluene	BRL	5.0		ug/L	187242	1	02/19/2014 17:01	NP
Xylenes, Total	BRL	5.0		ug/L	187242	1	02/19/2014 17:01	NP
Surr: 4-Bromofluorobenzene	81.3	66.2-120		%REC	187242	1	02/19/2014 17:01	NP
Surr: Dibromofluoromethane	86.3	79.5-121		%REC	187242	1	02/19/2014 17:01	NP
Surr: Toluene-d8	78.6	77-117		%REC	187242	1	02/19/2014 17:01	NP
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R261632	1	02/20/2014 08:40	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	187215	1	02/19/2014 18:49	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	187215	1	02/19/2014 18:49	YH
Benzo(a)pyrene	BRL	0.050		ug/L	187215	1	02/19/2014 18:49	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	187215	1	02/19/2014 18:49	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	187215	1	02/19/2014 18:49	YH
Surr: 4-Terphenyl-d14	112	53.2-145		%REC	187215	1	02/19/2014 18:49	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187164	1	02/19/2014 16:00	YH
2-Methylphenol	BRL	10		ug/L	187164	1	02/19/2014 16:00	YH
3,4-Methylphenol	BRL	10		ug/L	187164	1	02/19/2014 16:00	YH
Acenaphthene	BRL	10		ug/L	187164	1	02/19/2014 16:00	YH
Acenaphthylene	BRL	10		ug/L	187164	1	02/19/2014 16:00	YH
Anthracene	BRL	10		ug/L	187164	1	02/19/2014 16:00	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187164	1	02/19/2014 16:00	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187164	1	02/19/2014 16:00	YH
Chrysene	BRL	10		ug/L	187164	1	02/19/2014 16:00	YH
Fluoranthene	BRL	10		ug/L	187164	1	02/19/2014 16:00	YH
Fluorene	BRL	10		ug/L	187164	1	02/19/2014 16:00	YH
Naphthalene	BRL	10		ug/L	187164	1	02/19/2014 16:00	YH
Phenanthrene	BRL	10		ug/L	187164	1	02/19/2014 16:00	YH
Phenol	BRL	10		ug/L	187164	1	02/19/2014 16:00	YH
Pyrene	BRL	10		ug/L	187164	1	02/19/2014 16:00	YH
Surr: 2,4,6-Tribromophenol	87.9	51.5-124		%REC	187164	1	02/19/2014 16:00	YH
Surr: 2-Fluorobiphenyl	79.8	51.7-118		%REC	187164	1	02/19/2014 16:00	YH
Surr: 2-Fluorophenol	57.2	26-120		%REC	187164	1	02/19/2014 16:00	YH
Surr: 4-Terphenyl-d14	89.4	45.2-137		%REC	187164	1	02/19/2014 16:00	YH
Surr: Nitrobenzene-d5	71.1	42-120		%REC	187164	1	02/19/2014 16:00	YH

Qualifiers: * Value exceeds maximum contaminant level
 BRL Below reporting limit
 H Holding times for preparation or analysis exceeded
 N Analyte not NELAC certified
 B Analyte detected in the associated method blank
 > Greater than Result value

E Estimated (value above quantitation range)
 S Spike Recovery outside limits due to matrix
 Narr See case narrative
 NC Not confirmed
 < Less than Result value
 J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 26-Feb-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402C76-003

Client Sample ID: 112D-20140217-01
 Collection Date: 2/17/2014 2:40:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D					(SW3510C)			
Surr: Phenol-d5	49.9	12.3-120		%REC	187164	1	02/19/2014 16:00	YH
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	187225	1	02/19/2014 13:42	CG
ION SCAN SW9056A								
Nitrate	BRL	0.25		mg/L	R261580	1	02/18/2014 14:37	GR
Sulfate	3.1	1.0		mg/L	R261580	1	02/18/2014 14:37	GR
GC Analysis of Gaseous Samples SOP-RSK 175					(RSK175)			
Methane	5	4		ug/L	187283	1	02/20/2014 12:52	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	BRL	0.100		mg/L	R261802	1	02/18/2014 13:20	AB
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	187216	1	02/18/2014 11:35	EH
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	187273	1	02/20/2014 19:30	JL
Arsenic	BRL	0.0500		mg/L	187273	1	02/20/2014 19:30	JL
Barium	0.152	0.0200		mg/L	187273	1	02/20/2014 19:30	JL
Beryllium	BRL	0.0100		mg/L	187273	1	02/20/2014 19:30	JL
Cadmium	BRL	0.0050		mg/L	187273	1	02/20/2014 19:30	JL
Chromium	BRL	0.0100		mg/L	187273	1	02/20/2014 19:30	JL
Copper	BRL	0.0100		mg/L	187273	1	02/20/2014 19:30	JL
Iron	BRL	0.100		mg/L	187273	1	02/20/2014 19:30	JL
Lead	BRL	0.0100		mg/L	187273	1	02/20/2014 19:30	JL
Nickel	BRL	0.0200		mg/L	187273	1	02/20/2014 19:30	JL
Zinc	BRL	0.0200		mg/L	187273	1	02/20/2014 19:30	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 26-Feb-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402C76-004

Client Sample ID: MW-25D-20140217-01
 Collection Date: 2/17/2014 3:25:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	187242	1	02/19/2014 13:13	NP
Carbon disulfide	BRL	5.0		ug/L	187242	1	02/19/2014 13:13	NP
Ethylbenzene	BRL	5.0		ug/L	187242	1	02/19/2014 13:13	NP
Toluene	BRL	5.0		ug/L	187242	1	02/19/2014 13:13	NP
Xylenes, Total	BRL	5.0		ug/L	187242	1	02/19/2014 13:13	NP
Surr: 4-Bromofluorobenzene	94.4	66.2-120		%REC	187242	1	02/19/2014 13:13	NP
Surr: Dibromofluoromethane	87.4	79.5-121		%REC	187242	1	02/19/2014 13:13	NP
Surr: Toluene-d8	78.3	77-117		%REC	187242	1	02/19/2014 13:13	NP
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R261632	1	02/20/2014 08:40	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	187215	1	02/19/2014 19:17	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	187215	1	02/19/2014 19:17	YH
Benzo(a)pyrene	BRL	0.050		ug/L	187215	1	02/19/2014 19:17	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	187215	1	02/19/2014 19:17	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	187215	1	02/19/2014 19:17	YH
Surr: 4-Terphenyl-d14	108	53.2-145		%REC	187215	1	02/19/2014 19:17	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187164	1	02/19/2014 16:25	YH
2-Methylphenol	BRL	10		ug/L	187164	1	02/19/2014 16:25	YH
3,4-Methylphenol	BRL	10		ug/L	187164	1	02/19/2014 16:25	YH
Acenaphthene	BRL	10		ug/L	187164	1	02/19/2014 16:25	YH
Acenaphthylene	BRL	10		ug/L	187164	1	02/19/2014 16:25	YH
Anthracene	BRL	10		ug/L	187164	1	02/19/2014 16:25	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187164	1	02/19/2014 16:25	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187164	1	02/19/2014 16:25	YH
Chrysene	BRL	10		ug/L	187164	1	02/19/2014 16:25	YH
Fluoranthene	BRL	10		ug/L	187164	1	02/19/2014 16:25	YH
Fluorene	BRL	10		ug/L	187164	1	02/19/2014 16:25	YH
Naphthalene	BRL	10		ug/L	187164	1	02/19/2014 16:25	YH
Phenanthrene	BRL	10		ug/L	187164	1	02/19/2014 16:25	YH
Phenol	BRL	10		ug/L	187164	1	02/19/2014 16:25	YH
Pyrene	BRL	10		ug/L	187164	1	02/19/2014 16:25	YH
Surr: 2,4,6-Tribromophenol	90.6	51.5-124		%REC	187164	1	02/19/2014 16:25	YH
Surr: 2-Fluorobiphenyl	87.8	51.7-118		%REC	187164	1	02/19/2014 16:25	YH
Surr: 2-Fluorophenol	54.7	26-120		%REC	187164	1	02/19/2014 16:25	YH
Surr: 4-Terphenyl-d14	92.2	45.2-137		%REC	187164	1	02/19/2014 16:25	YH
Surr: Nitrobenzene-d5	81.8	42-120		%REC	187164	1	02/19/2014 16:25	YH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 26-Feb-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402C76-004

Client Sample ID: MW-25D-20140217-01
 Collection Date: 2/17/2014 3:25:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D					(SW3510C)			
Surr: Phenol-d5	37.1	12.3-120		%REC	187164	1	02/19/2014 16:25	YH
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	187225	1	02/19/2014 13:44	CG
ION SCAN SW9056A								
Nitrate	3.9	0.25		mg/L	R261580	1	02/18/2014 14:52	GR
Sulfate	BRL	1.0		mg/L	R261580	1	02/18/2014 14:52	GR
GC Analysis of Gaseous Samples SOP-RSK 175					(RSK175)			
Methane	BRL	4		ug/L	187286	1	02/20/2014 15:49	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	BRL	0.100		mg/L	R261802	1	02/18/2014 13:20	AB
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	187216	1	02/18/2014 11:35	EH
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	187273	1	02/20/2014 19:18	JL
Arsenic	BRL	0.0500		mg/L	187273	1	02/20/2014 19:18	JL
Barium	3.70	0.0200		mg/L	187273	1	02/20/2014 19:18	JL
Beryllium	BRL	0.0100		mg/L	187273	1	02/20/2014 19:18	JL
Cadmium	BRL	0.0050		mg/L	187273	1	02/20/2014 19:18	JL
Chromium	BRL	0.0100		mg/L	187273	1	02/20/2014 19:18	JL
Copper	BRL	0.0100		mg/L	187273	1	02/20/2014 19:18	JL
Iron	BRL	0.100		mg/L	187273	1	02/20/2014 19:18	JL
Lead	BRL	0.0100		mg/L	187273	1	02/20/2014 19:18	JL
Nickel	BRL	0.0200		mg/L	187273	1	02/20/2014 19:18	JL
Zinc	0.0293	0.0200		mg/L	187273	1	02/20/2014 19:18	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 26-Feb-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402C76-005

Client Sample ID: MW-108D-20140217-01
 Collection Date: 2/17/2014 4:30:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	187242	1	02/19/2014 17:30	NP
Carbon disulfide	BRL	5.0		ug/L	187242	1	02/19/2014 17:30	NP
Ethylbenzene	BRL	5.0		ug/L	187242	1	02/19/2014 17:30	NP
Toluene	BRL	5.0		ug/L	187242	1	02/19/2014 17:30	NP
Xylenes, Total	BRL	5.0		ug/L	187242	1	02/19/2014 17:30	NP
Surr: 4-Bromofluorobenzene	78.7	66.2-120		%REC	187242	1	02/19/2014 17:30	NP
Surr: Dibromofluoromethane	86.8	79.5-121		%REC	187242	1	02/19/2014 17:30	NP
Surr: Toluene-d8	79.9	77-117		%REC	187242	1	02/19/2014 17:30	NP
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R261632	1	02/20/2014 08:40	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	187215	1	02/19/2014 19:45	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	187215	1	02/19/2014 19:45	YH
Benzo(a)pyrene	BRL	0.050		ug/L	187215	1	02/19/2014 19:45	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	187215	1	02/19/2014 19:45	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	187215	1	02/19/2014 19:45	YH
Surr: 4-Terphenyl-d14	110	53.2-145		%REC	187215	1	02/19/2014 19:45	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187164	1	02/19/2014 16:51	YH
2-Methylphenol	BRL	10		ug/L	187164	1	02/19/2014 16:51	YH
3,4-Methylphenol	BRL	10		ug/L	187164	1	02/19/2014 16:51	YH
Acenaphthene	BRL	10		ug/L	187164	1	02/19/2014 16:51	YH
Acenaphthylene	BRL	10		ug/L	187164	1	02/19/2014 16:51	YH
Anthracene	BRL	10		ug/L	187164	1	02/19/2014 16:51	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187164	1	02/19/2014 16:51	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187164	1	02/19/2014 16:51	YH
Chrysene	BRL	10		ug/L	187164	1	02/19/2014 16:51	YH
Fluoranthene	BRL	10		ug/L	187164	1	02/19/2014 16:51	YH
Fluorene	BRL	10		ug/L	187164	1	02/19/2014 16:51	YH
Naphthalene	BRL	10		ug/L	187164	1	02/19/2014 16:51	YH
Phenanthrene	BRL	10		ug/L	187164	1	02/19/2014 16:51	YH
Phenol	BRL	10		ug/L	187164	1	02/19/2014 16:51	YH
Pyrene	BRL	10		ug/L	187164	1	02/19/2014 16:51	YH
Surr: 2,4,6-Tribromophenol	92.4	51.5-124		%REC	187164	1	02/19/2014 16:51	YH
Surr: 2-Fluorobiphenyl	86.3	51.7-118		%REC	187164	1	02/19/2014 16:51	YH
Surr: 2-Fluorophenol	67.4	26-120		%REC	187164	1	02/19/2014 16:51	YH
Surr: 4-Terphenyl-d14	98.2	45.2-137		%REC	187164	1	02/19/2014 16:51	YH
Surr: Nitrobenzene-d5	80.6	42-120		%REC	187164	1	02/19/2014 16:51	YH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 26-Feb-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402C76-005

Client Sample ID: MW-108D-20140217-01
 Collection Date: 2/17/2014 4:30:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D					(SW3510C)			
Surr: Phenol-d5	57.8	12.3-120		%REC	187164	1	02/19/2014 16:51	YH
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	187225	1	02/19/2014 13:51	CG
ION SCAN SW9056A								
Nitrate	0.43	0.25		mg/L	R261580	1	02/18/2014 15:07	GR
Sulfate	2.6	1.0		mg/L	R261580	1	02/18/2014 15:07	GR
GC Analysis of Gaseous Samples SOP-RSK 175					(RSK175)			
Methane	BRL	4		ug/L	187283	1	02/20/2014 13:01	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	BRL	0.100		mg/L	R261802	1	02/18/2014 13:20	AB
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	187216	1	02/18/2014 11:35	EH
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	187273	1	02/20/2014 19:34	JL
Arsenic	BRL	0.0500		mg/L	187273	1	02/20/2014 19:34	JL
Barium	0.465	0.0200		mg/L	187273	1	02/20/2014 19:34	JL
Beryllium	BRL	0.0100		mg/L	187273	1	02/20/2014 19:34	JL
Cadmium	0.0093	0.0050		mg/L	187273	1	02/20/2014 19:34	JL
Chromium	BRL	0.0100		mg/L	187273	1	02/20/2014 19:34	JL
Copper	BRL	0.0100		mg/L	187273	1	02/20/2014 19:34	JL
Iron	0.139	0.100		mg/L	187273	1	02/20/2014 19:34	JL
Lead	BRL	0.0100		mg/L	187273	1	02/20/2014 19:34	JL
Nickel	BRL	0.0200		mg/L	187273	1	02/20/2014 19:34	JL
Zinc	0.113	0.0200		mg/L	187273	1	02/20/2014 19:34	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit



Microseeps/Pace Analytical Energy Services, LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

March 3, 2014

Mirzeta Kararic
Analytical Environmental Services, Inc.
3785 Presidential Parkway
Suite 111
Atlanta, GA 30340

RE: **1402C76**

Microseeps Workorder: 11452

Dear Mirzeta Kararic:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, February 21, 2014. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

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

Sincerely,

Robbin Robl 03/03/2014
rrobl@microseeps.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email info@microseeps.com.

Total Number of Pages 17

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LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories		
Accreditation ID:	02-00538		
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste		
Accreditor:	NELAP: State of Florida, Department of Health, Bureau of Laboratories		
Accreditation ID:	E87832		
Scope:	Clean Water Act (CWA)	Resource Conservation and Recovery Act (RCRA)	
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification		
Accreditation ID:	89009003		
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)		
Accreditor:	NELAP: State of Louisiana, Department of Environmental Quality		
Accreditation ID:	04104		
Scope:	Solid and Chemical Materials; Non-Potable Water		
Accreditor:	NELAP: New Jersey, Department of Environmental Protection		
Accreditation ID:	PA026		
Scope:	Non-Potable Water; Solid and Chemical Materials		
Accreditor:	NELAP: New York, Department of Health Wadsworth Center		
Accreditation ID:	11815		
Scope:	Non-Potable Water; Solid and Hazardous Waste		
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health		
Accreditation ID:	PH-0263		
Scope:	Clean Water Act (CWA)	Resource Conservation and Recovery Act (RCRA)	
Accreditor:	NELAP: Texas, Commission on Environmental Quality		
Accreditation ID:	T104704453-09-TX		
Scope:	Non-Potable Water		
Accreditor:	State of New Hampshire		
Accreditation ID:	299409		
Scope:	Non-potable water		
Accreditor:	State of Georgia		
Accreditation ID:	Chapter 391-3-26		
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, Microseeps is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).		



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SAMPLE SUMMARY

Workorder: 11452 1402C76

Lab ID	Sample ID	Matrix	Date Collected	Date Received
114520001	MW-113D-20140217-01	Water	2/17/2014 13:30	2/21/2014 15:47
114520002	MW-113D-20140217-01 MS	Water	2/17/2014 13:30	2/21/2014 15:47
114520003	MW-113D-20140217-01 MSD	Water	2/17/2014 13:30	2/21/2014 15:47
114520004	MW-112D-20140217-01	Water	2/17/2014 14:40	2/21/2014 15:47
114520005	MW-25D-20140217-01	Water	2/17/2014 15:25	2/21/2014 15:47
114520006	MW-25D-20140217-01 MS	Water	2/17/2014 15:25	2/21/2014 15:47
114520007	MW-25D-20140217-01 MSD	Water	2/17/2014 15:25	2/21/2014 15:47
114520008	MW-108D-20140217-01	Water	2/17/2014 16:30	2/21/2014 15:47



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ANALYTICAL RESULTS

Workorder: 11452 1402C76

Lab ID: 114520001 Date Received: 2/21/2014 15:47 Matrix: Water
Sample ID: MW-113D-20140217-01 Date Collected: 2/17/2014 13:30

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Carbon Dioxide	110	mg/l	5.0	0.23	1			2/26/2014 12:00	GT	
Oxygen	10	mg/l	0.50	0.082	1			2/26/2014 12:00	GT	
Nitrogen	19	mg/l	2.0	1.8	1			2/26/2014 12:00	GT	
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			2/26/2014 12:00	GT	

Report ID: 11452 - 493228

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ANALYTICAL RESULTS

Workorder: 11452 1402C76

Lab ID: **114520002** Date Received: 2/21/2014 15:47 Matrix: Water
Sample ID: **MW-113D-20140217-01 MS** Date Collected: 2/17/2014 13:30

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Carbon Dioxide	260	mg/l	5.0	0.23	1			2/26/2014 12:12	GT	
Oxygen	20	mg/l	0.50	0.082	1			2/26/2014 12:12	GT	
Nitrogen	140	mg/l	2.0	1.8	1			2/26/2014 12:12	GT	
Carbon Monoxide	2.1	mg/l	1.0	0.14	1			2/26/2014 12:12	GT	

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ANALYTICAL RESULTS

Workorder: 11452 1402C76

Lab ID: 114520003 Date Received: 2/21/2014 15:47 Matrix: Water
Sample ID: MW-113D-20140217-01 MSD Date Collected: 2/17/2014 13:30

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
------------	---------	-------	-----	-----	----	----------	----	----------	----	------

RISK - MICR

Analysis Desc: AM20GAX

Analytical Method: AM20GAX

Carbon Dioxide	250	mg/l	5.0	0.23	1			2/26/2014 12:24	GT	
Oxygen	20	mg/l	0.50	0.082	1			2/26/2014 12:24	GT	
Nitrogen	140	mg/l	2.0	1.8	1			2/26/2014 12:24	GT	
Carbon Monoxide	2.2	mg/l	1.0	0.14	1			2/26/2014 12:24	GT	

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ANALYTICAL RESULTS

Workorder: 11452 1402C76

Lab ID: 114520004 Date Received: 2/21/2014 15:47 Matrix: Water
Sample ID: MW-112D-20140217-01 Date Collected: 2/17/2014 14:40

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Carbon Dioxide	<5.0	mg/l	5.0	0.23	1			2/26/2014 12:36	GT	
Oxygen	9.6	mg/l	0.50	0.082	1			2/26/2014 12:36	GT	
Nitrogen	18	mg/l	2.0	1.8	1			2/26/2014 12:36	GT	
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			2/26/2014 12:36	GT	



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ANALYTICAL RESULTS

Workorder: 11452 1402C76

Lab ID: 114520005

Date Received: 2/21/2014 15:47 Matrix: Water

Sample ID: MW-25D-20140217-01

Date Collected: 2/17/2014 15:25

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
------------	---------	-------	-----	-----	----	----------	----	----------	----	------

RISK - MICR

Analysis Desc: AM20GAX

Analytical Method: AM20GAX

Carbon Dioxide	91	mg/l	5.0	0.23	1			2/26/2014 12:48	GT
Oxygen	6.6	mg/l	0.50	0.082	1			2/26/2014 12:48	GT
Nitrogen	20	mg/l	2.0	1.8	1			2/26/2014 12:48	GT
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			2/26/2014 12:48	GT

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ANALYTICAL RESULTS

Workorder: 11452 1402C76

Lab ID: 114520006

Date Received: 2/21/2014 15:47 Matrix: Water

Sample ID: MW-25D-20140217-01 MS

Date Collected: 2/17/2014 15:25

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
------------	---------	-------	-----	-----	----	----------	----	----------	----	------

RISK - MICR

Analysis Desc: AM20GAX

Analytical Method: AM20GAX

Carbon Dioxide	240	mg/l	5.0	0.23	1			2/26/2014 13:01	GT
Oxygen	16	mg/l	0.50	0.082	1			2/26/2014 13:01	GT
Nitrogen	150	mg/l	2.0	1.8	1			2/26/2014 13:01	GT
Carbon Monoxide	2.2	mg/l	1.0	0.14	1			2/26/2014 13:01	GT

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ANALYTICAL RESULTS

Workorder: 11452 1402C76

Lab ID: 114520007 Date Received: 2/21/2014 15:47 Matrix: Water
Sample ID: MW-25D-20140217-01 MSD Date Collected: 2/17/2014 15:25

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Carbon Dioxide	230	mg/l	5.0	0.23	1			2/26/2014 13:13	GT	
Oxygen	17	mg/l	0.50	0.082	1			2/26/2014 13:13	GT	
Nitrogen	150	mg/l	2.0	1.8	1			2/26/2014 13:13	GT	
Carbon Monoxide	2.1	mg/l	1.0	0.14	1			2/26/2014 13:13	GT	



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ANALYTICAL RESULTS

Workorder: 11452 1402C76

Lab ID: 114520008 Date Received: 2/21/2014 15:47 Matrix: Water
Sample ID: MW-108D-20140217-01 Date Collected: 2/17/2014 16:30

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Carbon Dioxide	<5.0	mg/l	5.0	0.23	1			2/26/2014 13:26	GT	
Oxygen	12	mg/l	0.50	0.082	1			2/26/2014 13:26	GT	
Nitrogen	22	mg/l	2.0	1.8	1			2/26/2014 13:26	GT	
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			2/26/2014 13:26	GT	

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ANALYTICAL RESULTS QUALIFIERS

Workorder: 11452 1402C76

DEFINITIONS/QUALIFIERS

Disclaimer : The Pennsylvania Department of Environmental Protection (PADEP) has decided to no longer recognize analyses that do not produce data for primary compliance, for NELAP accreditation. The methods affected by this decision are AM20GAX, AM21G, SW846 7199 and AM4.02. The laboratory shall continue to administer the NELAP/TNI standard requirements in the performance of these methods.

MDL Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.

PQL Practical Quantitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.

ND Not detected at or above reporting limit.

DF Dilution Factor.

S Surrogate.

RPD Relative Percent Difference.

% Rec Percent Recovery.

U Indicates the compound was analyzed for, but not detected at or above the noted concentration.

J Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).



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QUALITY CONTROL DATA

Workorder: 11452 1402C76

QC Batch: DISG/3602 Analysis Method: AM20GAX
QC Batch Method: AM20GAX
Associated Lab Samples: 114520001, 114520002, 114520003, 114520004, 114520005, 114520006, 114520007, 114520008

METHOD BLANK: 26058

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Carbon Dioxide	mg/l	<5.0	5.0	
Oxygen	mg/l	<0.50	0.50	
Nitrogen	mg/l	<2.0	2.0	
Carbon Monoxide	mg/l	<1.0	1.0	

LABORATORY CONTROL SAMPLE & LCSD: 26060 26062

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Carbon Dioxide	mg/l	120	140	130	116	114	80-120	1.7	20	
Oxygen	mg/l	11	11	11	98	99	80-120	1	20	
Nitrogen	mg/l	140	140	140	97	99	80-120	2	20	
Carbon Monoxide	mg/l	2	2.2	2.2	114	112	80-120	1.8	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 26080 26081 Original: 114520001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK											
Carbon Dioxide	mg/l	110	120	260	250	121	118	70-130	2.5	20	
Oxygen	mg/l	10	11	20	20	87	89	70-130	2.3	20	
Nitrogen	mg/l	19	140	140	140	89	90	70-130	1.1	20	
Carbon Monoxide	mg/l	0	2	2.1	2.2	107	111	70-130	3.7	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 26145 26146 Original: 114530005

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK											
Carbon Dioxide	mg/l	85	120	240	230	130	126	70-130	3.1	20	
Oxygen	mg/l	2.6	11	16	17	122	128	70-130	4.8	20	
Nitrogen	mg/l	20	140	150	150	91	91	70-130	0	20	

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QUALITY CONTROL DATA

Workorder: 11452 1402C76

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 26145 26146 Original: 114530005

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	Max RPD	Qualifiers
Carbon Monoxide	mg/l	0	2	2.2	2.1	110	106	70-130	3.7	20

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 11452 1402C76

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
114520001	MW-113D-20140217-01			AM20GAX	DISG/3602
114520002	MW-113D-20140217-01 MS			AM20GAX	DISG/3602
114520003	MW-113D-20140217-01 MSD			AM20GAX	DISG/3602
114520004	MW-112D-20140217-01			AM20GAX	DISG/3602
114520005	MW-25D-20140217-01			AM20GAX	DISG/3602
114520006	MW-25D-20140217-01 MS			AM20GAX	DISG/3602
114520007	MW-25D-20140217-01 MSD			AM20GAX	DISG/3602
114520008	MW-108D-20140217-01			AM20GAX	DISG/3602



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CHAIN OF CUSTODY

Work Order:

[illegible]

Cooler Receipt Form

Client Name: AES Project: 1402C76 Lab Work Order: 11452

A. Shipping/Container Information (circle appropriate response)

Courier: FedEx UPS USPS Client Other: _____ Air bill Present: Yes No

Tracking Number: 5613 2701 4187

Custody Seal on Cooler/Box Present: Yes No Seals Intact: Yes No

Cooler/Box Packing Material: Bubble Wrap Absorbent Foam Other: _____

Type of Ice: Wet Blue None Ice Intact: Yes Melted

Cooler Temperature: 1°C Radiation Screened: Yes No Chain of Custody Present: Yes No

Comments: _____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC		✓		
Containers intact	✓			
Were samples in separate bags		✓		
Sample container labels match COC	✓			
Sample name/date and time collected	✓			
Sufficient volume provided	✓			
Microseeps containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments: _____

Cooler contents examined/received by: LY Date: 2.21.14

Project Manager Review: PR Date: 2/21/14

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client ERM

Work Order Number 1402076

Checklist completed by [Signature] 2/18/14
Signature Date

Carrier name: FedEx ☐ UPS ☐ Courier ☒ Client ☐ US Mail ☐ Other ☐

Shipping container/cooler in good condition? Yes ☒ No ☐ Not Present ☐

Custody seals intact on shipping container/cooler? Yes ☐ No ☐ Not Present ☒

Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒

Container/Temp Blank temperature in compliance? ($4^{\circ}\text{C} \pm 2$)* Yes ☒ No ☐

Cooler #1 3.0 Cooler #2 3.1 Cooler #3 2.9 Cooler #4 ☐ Cooler#5 ☐ Cooler #6 ☐

Chain of custody present? Yes ☒ No ☐

Chain of custody signed when relinquished and received? Yes ☒ No ☐

Chain of custody agrees with sample labels? Yes ☒ No ☐

Samples in proper container/bottle? Yes ☒ No ☐

Sample containers intact? Yes ☒ No ☐

Sufficient sample volume for indicated test? Yes ☒ No ☐

All samples received within holding time? Yes ☒ No ☐

Was TAT marked on the COC? Yes ☒ No ☐

Proceed with Standard TAT as per project history? Yes ☐ No ☐ Not Applicable ☒

Water - VOA vials have zero headspace? No VOA vials submitted ☐ Yes ☒ No ☐

Water - pH acceptable upon receipt? Yes ☒ No ☐ Not Applicable ☐

Adjusted? ☐ Checked by [Signature]

Sample Condition: Good ☒ Other(Explain) ☐

(For diffusive samples or AIHA lead) Is a known blank included? Yes ☐ No ☒

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\\Quality Assurance\Checklists Procedures Sign-Off Templates\Checklists\Sample Receipt Checklists\Sample_Cooler_Receipt_Checklist

Client: ERM-Southeast
 Project: AGLC Macon
 Lab Order: 1402C76

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1402C76-001A	TB-01-20140217-01	2/17/2014 12:00:00AM	Aqueous	Volatile Organic Compounds by GC/MS		02/19/2014	02/19/2014
1402C76-002A	MW-113D-20140217-01	2/17/2014 1:30:00PM	Groundwater	Volatile Organic Compounds by GC/MS		02/19/2014	02/19/2014
1402C76-002B	MW-113D-20140217-01	2/17/2014 1:30:00PM	Groundwater	GC Analysis of Gaseous Samples		02/20/2014	02/20/2014
1402C76-002C	MW-113D-20140217-01	2/17/2014 1:30:00PM	Groundwater	TOTAL METALS BY ICP		02/20/2014	02/20/2014
1402C76-002C	MW-113D-20140217-01	2/17/2014 1:30:00PM	Groundwater	TOTAL MERCURY		02/19/2014	02/19/2014
1402C76-002D	MW-113D-20140217-01	2/17/2014 1:30:00PM	Groundwater	ION SCAN			02/18/2014
1402C76-002E	MW-113D-20140217-01	2/17/2014 1:30:00PM	Groundwater	Ferrous Iron			02/18/2014
1402C76-002F	MW-113D-20140217-01	2/17/2014 1:30:00PM	Groundwater	Cyanide		02/18/2014	02/18/2014
1402C76-002G	MW-113D-20140217-01	2/17/2014 1:30:00PM	Groundwater	Sulfide			02/20/2014
1402C76-002H	MW-113D-20140217-01	2/17/2014 1:30:00PM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/19/2014	02/19/2014
1402C76-002H	MW-113D-20140217-01	2/17/2014 1:30:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/19/2014	02/19/2014
1402C76-003A	112D-20140217-01	2/17/2014 2:40:00PM	Groundwater	Volatile Organic Compounds by GC/MS		02/19/2014	02/19/2014
1402C76-003B	112D-20140217-01	2/17/2014 2:40:00PM	Groundwater	GC Analysis of Gaseous Samples		02/20/2014	02/20/2014
1402C76-003C	112D-20140217-01	2/17/2014 2:40:00PM	Groundwater	TOTAL METALS BY ICP		02/20/2014	02/20/2014
1402C76-003C	112D-20140217-01	2/17/2014 2:40:00PM	Groundwater	TOTAL MERCURY		02/19/2014	02/19/2014
1402C76-003D	112D-20140217-01	2/17/2014 2:40:00PM	Groundwater	ION SCAN			02/18/2014
1402C76-003E	112D-20140217-01	2/17/2014 2:40:00PM	Groundwater	Ferrous Iron			02/18/2014
1402C76-003F	112D-20140217-01	2/17/2014 2:40:00PM	Groundwater	Cyanide		02/18/2014	02/18/2014
1402C76-003G	112D-20140217-01	2/17/2014 2:40:00PM	Groundwater	Sulfide			02/20/2014
1402C76-003H	112D-20140217-01	2/17/2014 2:40:00PM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/19/2014	02/19/2014
1402C76-003H	112D-20140217-01	2/17/2014 2:40:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/19/2014	02/19/2014
1402C76-004A	MW-25D-20140217-01	2/17/2014 3:25:00PM	Groundwater	Volatile Organic Compounds by GC/MS		02/19/2014	02/19/2014
1402C76-004B	MW-25D-20140217-01	2/17/2014 3:25:00PM	Groundwater	GC Analysis of Gaseous Samples		02/20/2014	02/20/2014
1402C76-004C	MW-25D-20140217-01	2/17/2014 3:25:00PM	Groundwater	TOTAL METALS BY ICP		02/20/2014	02/20/2014
1402C76-004C	MW-25D-20140217-01	2/17/2014 3:25:00PM	Groundwater	TOTAL MERCURY		02/19/2014	02/19/2014
1402C76-004D	MW-25D-20140217-01	2/17/2014 3:25:00PM	Groundwater	ION SCAN			02/18/2014
1402C76-004E	MW-25D-20140217-01	2/17/2014 3:25:00PM	Groundwater	Ferrous Iron			02/18/2014
1402C76-004F	MW-25D-20140217-01	2/17/2014 3:25:00PM	Groundwater	Cyanide		02/18/2014	02/18/2014
1402C76-004G	MW-25D-20140217-01	2/17/2014 3:25:00PM	Groundwater	Sulfide			02/20/2014

Client: ERM-Southeast
 Project: AGLC Macon
 Lab Order: 1402C76

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1402C76-004H	MW-25D-20140217-01	2/17/2014 3:25:00PM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/19/2014	02/19/2014
1402C76-004H	MW-25D-20140217-01	2/17/2014 3:25:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/19/2014	02/19/2014
1402C76-005A	MW-108D-20140217-01	2/17/2014 4:30:00PM	Groundwater	Volatile Organic Compounds by GC/MS		02/19/2014	02/19/2014
1402C76-005B	MW-108D-20140217-01	2/17/2014 4:30:00PM	Groundwater	GC Analysis of Gaseous Samples		02/20/2014	02/20/2014
1402C76-005C	MW-108D-20140217-01	2/17/2014 4:30:00PM	Groundwater	TOTAL METALS BY ICP		02/20/2014	02/20/2014
1402C76-005C	MW-108D-20140217-01	2/17/2014 4:30:00PM	Groundwater	TOTAL MERCURY		02/19/2014	02/19/2014
1402C76-005D	MW-108D-20140217-01	2/17/2014 4:30:00PM	Groundwater	ION SCAN			02/18/2014
1402C76-005E	MW-108D-20140217-01	2/17/2014 4:30:00PM	Groundwater	Ferrous Iron			02/18/2014
1402C76-005F	MW-108D-20140217-01	2/17/2014 4:30:00PM	Groundwater	Cyanide		02/18/2014	02/18/2014
1402C76-005G	MW-108D-20140217-01	2/17/2014 4:30:00PM	Groundwater	Sulfide			02/20/2014
1402C76-005H	MW-108D-20140217-01	2/17/2014 4:30:00PM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/19/2014	02/19/2014
1402C76-005H	MW-108D-20140217-01	2/17/2014 4:30:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/19/2014	02/19/2014

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402C76

ANALYTICAL QC SUMMARY REPORT

BatchID: 187164

Sample ID: MB-187164	Client ID:				Units: ug/L	Prep Date: 02/18/2014	Run No: 261598				
SampleType: MBLK	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 187164	Analysis Date: 02/19/2014	Seq No: 5499538				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

2,4-Dimethylphenol	BRL	10									
2-Methylphenol	BRL	10									
3,4-Methylphenol	BRL	10									
Acenaphthene	BRL	10									
Acenaphthylene	BRL	10									
Anthracene	BRL	10									
Benzo(g,h,i)perylene	BRL	10									
Benzo(k)fluoranthene	BRL	10									
Chrysene	BRL	10									
Fluoranthene	BRL	10									
Fluorene	BRL	10									
Naphthalene	BRL	10									
Phenanthrene	BRL	10									
Phenol	BRL	10									
Pyrene	BRL	10									
Surr: 2,4,6-Tribromophenol	77.13	0	100.0		77.1	51.5	124				
Surr: 2-Fluorobiphenyl	38.19	0	50.00		76.4	51.7	118				
Surr: 2-Fluorophenol	52.20	0	100.0		52.2	26	120				
Surr: 4-Terphenyl-d14	41.00	0	50.00		82.0	45.2	137				
Surr: Nitrobenzene-d5	35.25	0	50.00		70.5	42	120				
Surr: Phenol-d5	37.44	0	100.0		37.4	12.3	120				

Sample ID: LCS-187164	Client ID:				Units: ug/L	Prep Date: 02/18/2014	Run No: 261598				
SampleType: LCS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 187164	Analysis Date: 02/19/2014	Seq No: 5499540				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	87.64	10	100.0		87.6	67.7	122				
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Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402C76

ANALYTICAL QC SUMMARY REPORT**BatchID: 187164**

Sample ID: LCS-187164	Client ID:					Units: ug/L	Prep Date: 02/18/2014	Run No: 261598			
SampleType: LCS	TestCode: Semivolatile Org. Comp. by GC/MS	SW8270D				BatchID: 187164	Analysis Date: 02/19/2014	Seq No: 5499540			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Phenol	43.37	10	100.0		43.4	24.6	120				
Pyrene	93.64	10	100.0		93.6	68.3	123				
Surr: 2,4,6-Tribromophenol	107.5	0	100.0		107	51.5	124				
Surr: 2-Fluorobiphenyl	48.38	0	50.00		96.8	51.7	118				
Surr: 2-Fluorophenol	63.79	0	100.0		63.8	26	120				
Surr: 4-Terphenyl-d14	53.51	0	50.00		107	45.2	137				
Surr: Nitrobenzene-d5	43.06	0	50.00		86.1	42	120				
Surr: Phenol-d5	49.56	0	100.0		49.6	12.3	120				

Sample ID: 1402C76-002HMS	Client ID: MW-113D-20140217-01	Units: ug/L	Prep Date: 02/19/2014	Run No: 261598							
SampleType: MS	TestCode: Semivolatle Org. Comp. by GC/MS SW8270D	BatchID: 187164	Analysis Date: 02/19/2014	Seq No: 5500508							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	70.47	10	100.0		70.5	51.9	120				
Phenol	48.39	10	100.0		48.4	30.5	120				
Pyrene	75.88	10	100.0		75.9	50.6	120				
Surr: 2,4,6-Tribromophenol	86.40	0	100.0		86.4	51.5	124				
Surr: 2-Fluorobiphenyl	38.89	0	50.00		77.8	51.7	118				
Surr: 2-Fluorophenol	61.68	0	100.0		61.7	26	120				
Surr: 4-Terphenyl-d14	44.53	0	50.00		89.1	45.2	137				
Surr: Nitrobenzene-d5	35.89	0	50.00		71.8	42	120				
Surr: Phenol-d5	56.86	0	100.0		56.9	12.3	120				

Sample ID: 1402C76-004HMS	Client ID: MW-25D-20140217-01	Units: ug/L	Prep Date: 02/19/2014	Run No: 261598							
SampleType: MS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D	BatchID: 187164	Analysis Date: 02/19/2014	Seq No: 5500511							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	84.67	10	100.0		84.7	51.9	120				
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Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402C76

ANALYTICAL QC SUMMARY REPORT

BatchID: 187164

Sample ID: 1402C76-004HMS	Client ID: MW-25D-20140217-01	Units: ug/L	Prep Date: 02/19/2014	Run No: 261598							
SampleType: MS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D	BatchID: 187164	Analysis Date: 02/19/2014	Seq No: 5500511							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Phenol	55.18	10	100.0		55.2	30.5	120				
Pyrene	88.36	10	100.0		88.4	50.6	120				
Surr: 2,4,6-Tribromophenol	99.37	0	100.0		99.4	51.5	124				
Surr: 2-Fluorobiphenyl	46.98	0	50.00		94.0	51.7	118				
Surr: 2-Fluorophenol	70.65	0	100.0		70.6	26	120				
Surr: 4-Terphenyl-d14	50.61	0	50.00		101	45.2	137				
Surr: Nitrobenzene-d5	43.54	0	50.00		87.1	42	120				
Surr: Phenol-d5	62.22	0	100.0		62.2	12.3	120				

Sample ID: 1402C76-002HMSD	Client ID: MW-113D-20140217-01	Units: ug/L			Prep Date: 02/19/2014	Run No: 261598					
SampleType: MSD	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D	BatchID: 187164			Analysis Date: 02/19/2014	Seq No: 5500510					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	78.19	10	100.0		78.2	51.9	120	70.47	10.4	24.9	
Phenol	49.19	10	100.0		49.2	30.5	120	48.39	1.64	34.4	
Pyrene	84.46	10	100.0		84.5	50.6	120	75.88	10.7	26.7	
Surr: 2,4,6-Tribromophenol	87.89	0	100.0		87.9	51.5	124	86.40	0	0	
Surr: 2-Fluorobiphenyl	40.10	0	50.00		80.2	51.7	118	38.89	0	0	
Surr: 2-Fluorophenol	57.48	0	100.0		57.5	26	120	61.68	0	0	
Surr: 4-Terphenyl-d14	45.19	0	50.00		90.4	45.2	137	44.53	0	0	
Surr: Nitrobenzene-d5	36.27	0	50.00		72.5	42	120	35.89	0	0	
Surr: Phenol-d5	50.81	0	100.0		50.8	12.3	120	56.86	0	0	

Sample ID: 1402C76-004HMSD	Client ID: MW-25D-20140217-01	Units: ug/L			Prep Date: 02/19/2014	Run No: 261598					
SampleType: MSD	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D	BatchID: 187164			Analysis Date: 02/19/2014	Seq No: 5500513					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	79.69	10	100.0		79.7	51.9	120	84.67	6.06	24.9	
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Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402C76

ANALYTICAL QC SUMMARY REPORT

BatchID: 187164

Sample ID: 1402C76-004HMSD	Client ID: MW-25D-20140217-01	Units: ug/L	Prep Date: 02/19/2014	Run No: 261598							
SampleType: MSD	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D	BatchID: 187164	Analysis Date: 02/19/2014	Seq No: 5500513							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Phenol	52.31	10	100.0		52.3	30.5	120	55.18	5.34	34.4	
Pyrene	82.69	10	100.0		82.7	50.6	120	88.36	6.63	26.7	
Surr: 2,4,6-Tribromophenol	92.46	0	100.0		92.5	51.5	124	99.37	0	0	
Surr: 2-Fluorobiphenyl	43.67	0	50.00		87.3	51.7	118	46.98	0	0	
Surr: 2-Fluorophenol	67.01	0	100.0		67.0	26	120	70.65	0	0	
Surr: 4-Terphenyl-d14	47.15	0	50.00		94.3	45.2	137	50.61	0	0	
Surr: Nitrobenzene-d5	41.03	0	50.00		82.1	42	120	43.54	0	0	
Surr: Phenol-d5	58.82	0	100.0		58.8	12.3	120	62.22	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402C76

ANALYTICAL QC SUMMARY REPORT**BatchID: 187215**

Sample ID: MB-187215	Client ID:					Units: ug/L	Prep Date: 02/19/2014	Run No: 261629			
SampleType: MBLK	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D					BatchID: 187215	Analysis Date: 02/19/2014	Seq No: 5500373			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	BRL	0.050									
Benzo(a)pyrene	BRL	0.050									
Benzo(b)fluoranthene	BRL	0.10									
Dibenz(a,h)anthracene	BRL	0.10									
Indeno(1,2,3-cd)pyrene	BRL	0.050									
Surr: 4-Terphenyl-d14	2.152	0	2.000		108	53.2	145				

Sample ID: LCS-187215	Client ID:					Units: ug/L	Prep Date: 02/19/2014	Run No: 261629			
SampleType: LCS	TestCode: SIM Polynuclear Aromatic Hydrocarbons	SW8270D				BatchID: 187215	Analysis Date: 02/19/2014	Seq No: 5500375			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	1.916	0.050	2.000		95.8	62.8	132				
Benzo(a)pyrene	1.958	0.050	2.000		97.9	56.4	123				
Benzo(b)fluoranthene	1.680	0.10	2.000		84.0	69.2	132				
Dibenz(a,h)anthracene	1.730	0.10	2.000		86.5	49.3	134				
Indeno(1,2,3-cd)pyrene	1.807	0.050	2.000		90.3	48.3	137				
Surr: 4-Terphenyl-d14	2.043	0	2.000		102	53.2	145				

Sample ID: 1402C76-002HMS	Client ID: MW-113D-20140217-01	Units: ug/L			Prep Date: 02/19/2014	Run No: 261730					
SampleType: MS	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D	BatchID: 187215			Analysis Date: 02/20/2014	Seq No: 5502360					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	2.165	0.050	2.000	0.04159	106	51.4	142				
Benzo(a)pyrene	2.034	0.050	2.000	0.04673	99.4	48.3	126				
Benzo(b)fluoranthene	1.673	0.10	2.000	0.04651	81.3	49.9	134				
Dibenz(a,h)anthracene	1.747	0.10	2.000	0.04684	85.0	41.8	121				
Indeno(1,2,3-cd)pyrene	1.834	0.050	2.000	0.03488	90.0	42	129				
Surr: 4-Terphenyl-d14	2.309	0	2.000		115	53.2	145				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402C76

ANALYTICAL QC SUMMARY REPORT

BatchID: 187215

Sample ID: 1402C76-004HMS	Client ID: MW-25D-20140217-01	Units: ug/L			Prep Date: 02/19/2014	Run No: 261730					
SampleType: MS	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D	BatchID: 187215			Analysis Date: 02/20/2014	Seq No: 5502367					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	2.200	0.050	2.000		110	51.4	142				
Benzo(a)pyrene	2.131	0.050	2.000		107	48.3	126				
Benzo(b)fluoranthene	1.753	0.10	2.000		87.7	49.9	134				
Dibenz(a,h)anthracene	1.783	0.10	2.000		89.2	41.8	121				
Indeno(1,2,3-cd)pyrene	1.862	0.050	2.000		93.1	42	129				
Surr: 4-Terphenyl-d14	2.335	0	2.000		117	53.2	145				

Sample ID: 1402C76-002HMSD	Client ID: MW-113D-20140217-01	Units: ug/L			Prep Date: 02/19/2014	Run No: 261730					
SampleType: MSD	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D	BatchID: 187215			Analysis Date: 02/20/2014	Seq No: 5502363					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	2.165	0.050	2.000	0.04159	106	51.4	142	2.165	0.006	48.1	
Benzo(a)pyrene	2.079	0.050	2.000	0.04673	102	48.3	126	2.034	2.18	53.5	
Benzo(b)fluoranthene	1.707	0.10	2.000	0.04651	83.0	49.9	134	1.673	2.01	51.1	
Dibenz(a,h)anthracene	1.753	0.10	2.000	0.04684	85.3	41.8	121	1.747	0.366	54.2	
Indeno(1,2,3-cd)pyrene	1.838	0.050	2.000	0.03488	90.1	42	129	1.834	0.186	44.6	
Surr: 4-Terphenyl-d14	2.123	0	2.000		106	53.2	145	2.309	0	0	

Sample ID: 1402C76-004HMSD	Client ID: MW-25D-20140217-01				Units: ug/L	Prep Date: 02/19/2014	Run No: 261730				
SampleType: MSD	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D				BatchID: 187215	Analysis Date: 02/20/2014	Seq No: 5502369				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	1.996	0.050	2.000		99.8	51.4	142	2.200	9.75	48.1	
Benzo(a)pyrene	1.134	0.050	2.000		56.7	48.3	126	2.131	61.0	53.5	R
Benzo(b)fluoranthene	1.640	0.10	2.000		82.0	49.9	134	1.753	6.65	51.1	
Dibenz(a,h)anthracene	1.702	0.10	2.000		85.1	41.8	121	1.783	4.68	54.2	
Indeno(1,2,3-cd)pyrene	1.775	0.050	2.000		88.8	42	129	1.862	4.78	44.6	
Surr: 4-Terphenyl-d14	2.224	0	2.000		111	53.2	145	2.335	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402C76

ANALYTICAL QC SUMMARY REPORT

BatchID: 187216

Sample ID: MB-187216	Client ID:	Units: mg/L	Prep Date: 02/18/2014	Run No: 261605							
SampleType: MBLK	TestCode: Cyanide SW9014	BatchID: 187216	Analysis Date: 02/18/2014	Seq No: 5499743							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total BRL 0.010

Sample ID: LCS-187216	Client ID:	Units: mg/L	Prep Date: 02/18/2014	Run No: 261605							
SampleType: LCS	TestCode: Cyanide SW9014	BatchID: 187216	Analysis Date: 02/18/2014	Seq No: 5499744							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.2469 0.010 0.2500 98.8 85 115

Sample ID: 1402C76-002FMS	Client ID: MW-113D-20140217-01	Units: mg/L	Prep Date: 02/18/2014	Run No: 261605							
SampleType: MS	TestCode: Cyanide SW9014	BatchID: 187216	Analysis Date: 02/18/2014	Seq No: 5499758							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.2417 0.010 0.2500 0.002900 95.5 70 130

Sample ID: 1402C76-004FMS	Client ID: MW-25D-20140217-01	Units: mg/L	Prep Date: 02/18/2014	Run No: 261605							
SampleType: MS	TestCode: Cyanide SW9014	BatchID: 187216	Analysis Date: 02/18/2014	Seq No: 5499776							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.2499 0.010 0.2500 100.0 70 130

Sample ID: 1402C76-002FMSD	Client ID: MW-113D-20140217-01	Units: mg/L	Prep Date: 02/18/2014	Run No: 261605							
SampleType: MSD	TestCode: Cyanide SW9014	BatchID: 187216	Analysis Date: 02/18/2014	Seq No: 5499763							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.2374 0.010 0.2500 0.002900 93.8 70 130 0.2417 1.80 20

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402C76

ANALYTICAL QC SUMMARY REPORT

BatchID: 187216

Sample ID: 1402C76-004FMSD	Client ID: MW-25D-20140217-01	Units: mg/L	Prep Date: 02/18/2014	Run No: 261605							
SampleType: MSD	TestCode: Cyanide SW9014	BatchID: 187216	Analysis Date: 02/18/2014	Seq No: 5499780							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total	0.2423	0.010	0.2500		96.9	70	130	0.2499	3.09	20	
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Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402C76

ANALYTICAL QC SUMMARY REPORT

BatchID: 187225

Sample ID: MB-187225	Client ID:				Units: mg/L	Prep Date: 02/19/2014	Run No: 261550				
SampleType: MBLK	TestCode: Mercury, Total	SW7470A			BatchID: 187225	Analysis Date: 02/19/2014	Seq No: 5499297				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury BRL 0.00020

Sample ID: LCS-187225	Client ID:				Units: mg/L	Prep Date: 02/19/2014	Run No: 261550				
SampleType: LCS	TestCode: Mercury, Total	SW7470A			BatchID: 187225	Analysis Date: 02/19/2014	Seq No: 5499301				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.004800 0.00020 0.0050 96.0 85 115

Sample ID: 1402C76-002CMS	Client ID: MW-113D-20140217-01	Units: mg/L	Prep Date: 02/19/2014	Run No: 261550							
SampleType: MS	TestCode: Mercury, Total SW7470A	BatchID: 187225	Analysis Date: 02/19/2014	Seq No: 5499307							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.003618 0.00020 0.0050 72.4 70 130

Sample ID: 1402C76-004CMS	Client ID: MW-25D-20140217-01	Units: mg/L	Prep Date: 02/19/2014	Run No: 261550							
SampleType: MS	TestCode: Mercury, Total SW7470A	BatchID: 187225	Analysis Date: 02/19/2014	Seq No: 5499323							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.005170 0.00020 0.0050 103 70 130

Sample ID: 1402C76-002CMSD	Client ID: MW-113D-20140217-01	Units: mg/L	Prep Date: 02/19/2014	Run No: 261550							
SampleType: MSD	TestCode: Mercury, Total SW7470A	BatchID: 187225	Analysis Date: 02/19/2014	Seq No: 5499310							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.003631 0.00020 0.0050 72.6 70 130 0.003618 0.374 20

Qualifiers:	> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
BRL	Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S Spike Recovery outside limits due to matrix	

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402C76

ANALYTICAL QC SUMMARY REPORT

BatchID: 187225

Sample ID: 1402C76-004CMSD		Client ID: MW-25D-20140217-01				Units: mg/L		Prep Date: 02/19/2014		Run No: 261550	
SampleType: MSD		TestCode: Mercury, Total SW7470A				BatchID: 187225		Analysis Date: 02/19/2014		Seq No: 5499324	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.005168	0.00020	0.0050		103	70	130	0.005170	0.046	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402C76

ANALYTICAL QC SUMMARY REPORT

BatchID: 187242

Sample ID: MB-187242	Client ID:					Units: ug/L	Prep Date: 02/19/2014	Run No: 261559			
SampleType: MBLK	TestCode: Volatile Organic Compounds by GC/MS SW8260B					BatchID: 187242	Analysis Date: 02/19/2014	Seq No: 5498782			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	BRL	5.0									
Carbon disulfide	BRL	5.0									
Ethylbenzene	BRL	5.0									
Toluene	BRL	5.0									
Xylenes, Total	BRL	5.0									
Surr: 4-Bromofluorobenzene	40.42	0	50.00		80.8	66.2	120				
Surr: Dibromofluoromethane	42.62	0	50.00		85.2	79.5	121				
Surr: Toluene-d8	39.37	0	50.00		78.7	77	117				

Sample ID: LCS-187242	Client ID:					Units: ug/L	Prep Date: 02/19/2014	Run No: 261559			
SampleType: LCS	TestCode: Volatile Organic Compounds by GC/MS SW8260B					BatchID: 187242	Analysis Date: 02/19/2014	Seq No: 5498861			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	43.82	5.0	50.00		87.6	74.2	129				
Toluene	43.77	5.0	50.00		87.5	74.2	129				
Surr: 4-Bromofluorobenzene	43.23	0	50.00		86.5	66.2	120				
Surr: Dibromofluoromethane	43.84	0	50.00		87.7	79.5	121				
Surr: Toluene-d8	43.29	0	50.00		86.6	77	117				

Sample ID: 1402C76-002AMS	Client ID: MW-113D-20140217-01	Units: ug/L	Prep Date: 02/19/2014	Run No: 261559							
SampleType: MS	TestCode: Volatile Organic Compounds by GC/MS SW8260B	BatchID: 187242	Analysis Date: 02/19/2014	Seq No: 5499401							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	48.42	5.0	50.00		96.8	70.2	138				
Toluene	48.17	5.0	50.00		96.3	70	139				
Surr: 4-Bromofluorobenzene	45.97	0	50.00		91.9	66.2	120				
Surr: Dibromofluoromethane	44.63	0	50.00		89.3	79.5	121				
Surr: Toluene-d8	44.14	0	50.00		88.3	77	117				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402C76

ANALYTICAL QC SUMMARY REPORT

BatchID: 187242

Sample ID: 1402C76-004AMS	Client ID: MW-25D-20140217-01	Units: ug/L	Prep Date: 02/19/2014	Run No: 261559							
SampleType: MS	TestCode: Volatile Organic Compounds by GC/MS SW8260B	BatchID: 187242	Analysis Date: 02/19/2014	Seq No: 5499912							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	44.21	5.0	50.00		88.4	70.2	138				
Toluene	43.86	5.0	50.00		87.7	70	139				
Surr: 4-Bromofluorobenzene	44.03	0	50.00		88.1	66.2	120				
Surr: Dibromofluoromethane	43.96	0	50.00		87.9	79.5	121				
Surr: Toluene-d8	43.32	0	50.00		86.6	77	117				

Sample ID: 1402C76-002AMSD	Client ID: MW-113D-20140217-01	Units: ug/L	Prep Date: 02/19/2014	Run No: 261559							
SampleType: MSD	TestCode: Volatile Organic Compounds by GC/MS SW8260B	BatchID: 187242	Analysis Date: 02/19/2014	Seq No: 5499408							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	48.84	5.0	50.00		97.7	70.2	138	48.42	0.864	20	
Toluene	48.93	5.0	50.00		97.9	70	139	48.17	1.57	20	
Surr: 4-Bromofluorobenzene	45.46	0	50.00		90.9	66.2	120	45.97	0	0	
Surr: Dibromofluoromethane	44.00	0	50.00		88.0	79.5	121	44.63	0	0	
Surr: Toluene-d8	43.73	0	50.00		87.5	77	117	44.14	0	0	

Sample ID: 1402C76-004AMSD	Client ID: MW-25D-20140217-01	Units: ug/L		Prep Date: 02/19/2014	Run No: 261559						
SampleType: MSD	TestCode: Volatile Organic Compounds by GC/MS SW8260B	BatchID: 187242		Analysis Date: 02/19/2014	Seq No: 5499913						
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	46.45	5.0	50.00		92.9	70.2	138	44.21	4.94	20	
Toluene	45.73	5.0	50.00		91.5	70	139	43.86	4.17	20	
Surr: 4-Bromofluorobenzene	42.97	0	50.00		85.9	66.2	120	44.03	0	0	
Surr: Dibromofluoromethane	43.63	0	50.00		87.3	79.5	121	43.96	0	0	
Surr: Toluene-d8	42.28	0	50.00		84.6	77	117	43.32	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402C76

ANALYTICAL QC SUMMARY REPORT

BatchID: 187273

Sample ID: MB-187273	Client ID:					Units: mg/L	Prep Date: 02/20/2014	Run No: 261723			
SampleType: MBLK	TestCode: METALS, TOTAL	SW6010C				BatchID: 187273	Analysis Date: 02/20/2014	Seq No: 5502224			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	BRL	0.0200									
Arsenic	BRL	0.0500									
Barium	BRL	0.0200									
Beryllium	BRL	0.0100									
Cadmium	BRL	0.0050									
Chromium	BRL	0.0100									
Copper	BRL	0.0100									
Iron	BRL	0.100									
Lead	BRL	0.0100									
Nickel	BRL	0.0200									
Zinc	BRL	0.0200									

Sample ID: LCS-187273	Client ID:					Units: mg/L	Prep Date: 02/20/2014	Run No: 261723			
SampleType: LCS	TestCode: METALS, TOTAL	SW6010C				BatchID: 187273	Analysis Date: 02/20/2014	Seq No: 5502223			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	1.022	0.0200	1.000		102	80	120				
Arsenic	1.008	0.0500	1.000		101	80	120				
Barium	1.013	0.0200	1.000		101	80	120				
Beryllium	1.004	0.0100	1.000		100	80	120				
Cadmium	1.007	0.0050	1.000		101	80	120				
Chromium	1.002	0.0100	1.000		100	80	120				
Copper	0.9953	0.0100	1.000		99.5	80	120				
Iron	9.937	0.100	10.00		99.4	80	120				
Lead	1.002	0.0100	1.000		100	80	120				
Nickel	1.006	0.0200	1.000		101	80	120				
Zinc	1.002	0.0200	1.000	0.004498	99.8	80	120				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402C76

ANALYTICAL QC SUMMARY REPORT

BatchID: 187273

Sample ID: 1402C76-002CMS	Client ID: MW-113D-20140217-01	Units: mg/L	Prep Date: 02/20/2014	Run No: 261723							
SampleType: MS	TestCode: METALS, TOTAL SW6010C	BatchID: 187273	Analysis Date: 02/20/2014	Seq No: 5502226							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	0.9824	0.0200	1.000		98.2	75	125				
Arsenic	0.9761	0.0500	1.000		97.6	75	125				
Barium	1.038	0.0200	1.000	0.07274	96.5	75	125				
Beryllium	0.9698	0.0100	1.000		97.0	75	125				
Cadmium	0.9722	0.0050	1.000		97.2	75	125				
Chromium	0.9614	0.0100	1.000		96.1	75	125				
Copper	0.9597	0.0100	1.000	0.006366	95.3	75	125				
Iron	9.560	0.100	10.00	0.06224	95.0	75	125				
Lead	0.9515	0.0100	1.000	0.001317	95.0	75	125				
Nickel	0.9709	0.0200	1.000	0.01975	95.1	75	125				
Zinc	0.9699	0.0200	1.000	0.01789	95.2	75	125				

Sample ID: 1402C76-004CMS	Client ID: MW-25D-20140217-01	Units: mg/L	Prep Date: 02/20/2014	Run No: 261723							
SampleType: MS	TestCode: METALS, TOTAL SW6010C	BatchID: 187273	Analysis Date: 02/21/2014	Seq No: 5504309							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	0.9878	0.0200	1.000		98.8	75	125				
Arsenic	0.9825	0.0500	1.000		98.3	75	125				
Barium	4.588	0.0200	1.000	3.699	88.9	75	125				
Beryllium	0.9555	0.0100	1.000	0.003300	95.2	75	125				
Cadmium	0.9756	0.0050	1.000		97.6	75	125				
Chromium	0.9828	0.0100	1.000		98.3	75	125				
Copper	0.9477	0.0100	1.000	0.003805	94.4	75	125				
Iron	9.331	0.100	10.00	0.03462	93.0	75	125				
Lead	0.9526	0.0100	1.000		95.3	75	125				
Nickel	0.9240	0.0200	1.000	0.007993	91.6	75	125				
Zinc	0.9762	0.0200	1.000	0.02926	94.7	75	125				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402C76

ANALYTICAL QC SUMMARY REPORT

BatchID: 187273

Sample ID: 1402C76-002CMSD	Client ID: MW-113D-20140217-01	Units: mg/L	Prep Date: 02/20/2014	Run No: 261723							
SampleType: MSD	TestCode: METALS, TOTAL SW6010C	BatchID: 187273	Analysis Date: 02/20/2014	Seq No: 5502229							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	1.028	0.0200	1.000		103	75	125	0.9824	4.54	20	
Arsenic	1.012	0.0500	1.000		101	75	125	0.9761	3.66	20	
Barium	1.072	0.0200	1.000	0.07274	99.9	75	125	1.038	3.23	20	
Beryllium	0.9851	0.0100	1.000		98.5	75	125	0.9698	1.57	20	
Cadmium	1.002	0.0050	1.000		100	75	125	0.9722	2.97	20	
Chromium	0.9944	0.0100	1.000		99.4	75	125	0.9614	3.37	20	
Copper	1.002	0.0100	1.000	0.006366	99.6	75	125	0.9597	4.31	20	
Iron	9.843	0.100	10.00	0.06224	97.8	75	125	9.560	2.92	20	
Lead	0.9832	0.0100	1.000	0.001317	98.2	75	125	0.9515	3.27	20	
Nickel	1.004	0.0200	1.000	0.01975	98.4	75	125	0.9709	3.31	20	
Zinc	1.001	0.0200	1.000	0.01789	98.3	75	125	0.9699	3.15	20	

Sample ID: 1402C76-004CMSD	Client ID: MW-25D-20140217-01	Units: mg/L	Prep Date: 02/20/2014	Run No: 261723							
SampleType: MSD	TestCode: METALS, TOTAL SW6010C	BatchID: 187273	Analysis Date: 02/21/2014	Seq No: 5504310							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	0.9930	0.0200	1.000		99.3	75	125	0.9878	0.526	20	
Arsenic	0.9860	0.0500	1.000		98.6	75	125	0.9825	0.350	20	
Barium	4.635	0.0200	1.000	3.699	93.6	75	125	4.588	1.02	20	
Beryllium	0.9604	0.0100	1.000	0.003300	95.7	75	125	0.9555	0.513	20	
Cadmium	0.9764	0.0050	1.000		97.6	75	125	0.9756	0.083	20	
Chromium	0.9878	0.0100	1.000		98.8	75	125	0.9828	0.505	20	
Copper	0.9550	0.0100	1.000	0.003805	95.1	75	125	0.9477	0.767	20	
Iron	9.401	0.100	10.00	0.03462	93.7	75	125	9.331	0.755	20	
Lead	0.9532	0.0100	1.000		95.3	75	125	0.9526	0.067	20	
Nickel	0.9245	0.0200	1.000	0.007993	91.7	75	125	0.9240	0.053	20	
Zinc	0.9777	0.0200	1.000	0.02926	94.8	75	125	0.9762	0.154	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402C76

ANALYTICAL QC SUMMARY REPORT

BatchID: 187283

Sample ID: MB-187283	Client ID:				Units: ug/L	Prep Date: 02/20/2014	Run No: 261637				
SampleType: MBLK	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175			BatchID: 187283	Analysis Date: 02/20/2014	Seq No: 5500697				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

BRL

4

Sample ID: LCS-187283	Client ID:					Units: ug/L	Prep Date: 02/20/2014	Run No: 261637			
SampleType: LCS	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175				BatchID: 187283	Analysis Date: 02/20/2014	Seq No: 5500753			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

129.0

4

200.0

64.5

45.2

115

Sample ID: LCSD-187283	Client ID:					Units: ug/L	Prep Date: 02/20/2014	Run No: 261637			
SampleType: LCSD	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175				BatchID: 187283	Analysis Date: 02/20/2014	Seq No: 5500755			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

126.8

4

200.0

63.4

45.2

115

129.0

1.77

20

Sample ID: 1402C76-002BMS	Client ID: MW-113D-20140217-01	Units: ug/L	Prep Date: 02/20/2014	Run No: 261637							
SampleType: MS	TestCode: GC Analysis of Gaseous Samples SOP-RSK 175	BatchID: 187283	Analysis Date: 02/20/2014	Seq No: 5500902							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

122.2

4

200.0

5.730

58.2

41.1

115

Sample ID: 1402C76-002BMSD	Client ID: MW-113D-20140217-01	Units: ug/L	Prep Date: 02/20/2014	Run No: 261637							
SampleType: MSD	TestCode: GC Analysis of Gaseous Samples SOP-RSK 175	BatchID: 187283	Analysis Date: 02/20/2014	Seq No: 5500906							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

122.8

4

200.0

5.730

58.5

41.1

115

122.2

0.524

20

Qualifiers:

> Greater than Result value

BRL Below reporting limit

J Estimated value detected below Reporting Limit

Rpt Lim Reporting Limit

< Less than Result value

E Estimated (value above quantitation range)

N Analyte not NELAC certified

S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank

H Holding times for preparation or analysis exceeded

R RPD outside limits due to matrix

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402C76

ANALYTICAL QC SUMMARY REPORT

BatchID: 187286

Sample ID: MB-187286	Client ID:					Units: ug/L	Prep Date: 02/20/2014	Run No: 261637			
SampleType: MBLK	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175				BatchID: 187286	Analysis Date: 02/20/2014	Seq No: 5502016			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

BRL

4

Sample ID: LCS-187286	Client ID:					Units: ug/L	Prep Date: 02/20/2014	Run No: 261637			
SampleType: LCS	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175				BatchID: 187286	Analysis Date: 02/20/2014	Seq No: 5502018			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

131.2

4

200.0

65.6

45.2

115

Sample ID: LCSD-187286	Client ID:					Units: ug/L	Prep Date: 02/20/2014	Run No: 261637			
SampleType: LCSD	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175				BatchID: 187286	Analysis Date: 02/20/2014	Seq No: 5502020			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

132.6

4

200.0

66.3

45.2

115

131.2

1.08

20

Sample ID: 1402C76-004BMS	Client ID: MW-25D-20140217-01	Units: ug/L	Prep Date: 02/20/2014	Run No: 261637							
SampleType: MS	TestCode: GC Analysis of Gaseous Samples SOP-RSK 175	BatchID: 187286	Analysis Date: 02/20/2014	Seq No: 5502030							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

134.9

4

200.0

67.5

41.1

115

Sample ID: 1402C76-004BMSD	Client ID: MW-25D-20140217-01	Units: ug/L	Prep Date: 02/20/2014	Run No: 261637							
SampleType: MSD	TestCode: GC Analysis of Gaseous Samples SOP-RSK 175	BatchID: 187286	Analysis Date: 02/20/2014	Seq No: 5502035							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

141.2

4

200.0

70.6

41.1

115

134.9

4.54

20

Qualifiers:

> Greater than Result value

BRL Below reporting limit

J Estimated value detected below Reporting Limit

Rpt Lim Reporting Limit

< Less than Result value

E Estimated (value above quantitation range)

N Analyte not NELAC certified

S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank

H Holding times for preparation or analysis exceeded

R RPD outside limits due to matrix

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402C76

ANALYTICAL QC SUMMARY REPORT

BatchID: R261580

Sample ID: MB-R261580	Client ID:					Units: mg/L	Prep Date:	Run No: 261580			
SampleType: MBLK	TestCode: ION SCAN SW9056A					BatchID: R261580	Analysis Date: 02/18/2014	Seq No: 5499050			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate BRL 0.25
 Sulfate BRL 1.0

Sample ID: LCS-R261580	Client ID:				Units: mg/L	Prep Date:			Run No: 261580		
SampleType: LCS	TestCode: ION SCAN SW9056A				BatchID: R261580	Analysis Date: 02/18/2014			Seq No: 5499045		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 5.027 0.25 5.000 101 90 110
 Sulfate 23.85 1.0 25.00 95.4 90 110

Sample ID: 1402C76-002DMS	Client ID: MW-113D-20140217-01	Units: mg/L	Prep Date:	Run No: 261580							
SampleType: MS	TestCode: ION SCAN SW9056A	BatchID: R261580	Analysis Date: 02/18/2014	Seq No: 5499060							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 25.56 1.2 25.00 102 90 110
 Sulfate 173.3 5.0 125.0 45.52 102 90 110

Sample ID: 1402C76-004DMS	Client ID: MW-25D-20140217-01	Units: mg/L	Prep Date:	Run No: 261580							
SampleType: MS	TestCode: ION SCAN SW9056A	BatchID: R261580	Analysis Date: 02/18/2014	Seq No: 5499072							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 54.65 2.5 50.00 3.854 102 90 110
 Sulfate 238.4 10 250.0 0.6882 95.1 90 110

Sample ID: 1402C76-002DMSD	Client ID: MW-113D-20140217-01	Units: mg/L	Prep Date:	Run No: 261580							
SampleType: MSD	TestCode: ION SCAN SW9056A	BatchID: R261580	Analysis Date: 02/18/2014	Seq No: 5499063							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 25.61 1.2 25.00 102 90 110 25.56 0.182 20

Qualifiers:

> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
BRL Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
J Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
Rpt Lim Reporting Limit	S Spike Recovery outside limits due to matrix	

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402C76

ANALYTICAL QC SUMMARY REPORT

BatchID: R261580

Sample ID: 1402C76-002DMSD	Client ID: MW-113D-20140217-01	Units: mg/L	Prep Date:	Run No: 261580							
SampleType: MSD	TestCode: ION SCAN SW9056A	BatchID: R261580	Analysis Date: 02/18/2014	Seq No: 5499063							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfate	173.5	5.0	125.0	45.52	102	90	110	173.3	0.115	20	
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Sample ID: 1402C76-004DMSD		Client ID: MW-25D-20140217-01			Units: mg/L		Prep Date:		Run No: 261580		
SampleType: MSD		TestCode: ION SCAN SW9056A			BatchID: R261580		Analysis Date: 02/18/2014		Seq No: 5499075		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate	54.68	2.5	50.00	3.854	102	90	110	54.65	0.047	20	
Sulfate	238.3	10	250.0	0.6882	95.0	90	110	238.4	0.046	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402C76

ANALYTICAL QC SUMMARY REPORT

BatchID: R261632

Sample ID: MB-R261632	Client ID:	Units: mg/L				Prep Date:			Run No: 261632		
SampleType: MBLK	TestCode: Sulfide (E376.1/SM4500 S2 F)	BatchID: R261632				Analysis Date: 02/20/2014			Seq No: 5500450		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide BRL 1.0

Sample ID: LCS-R261632	Client ID:					Units: mg/L	Prep Date:		Run No: 261632		
SampleType: LCS	TestCode: Sulfide (E376.1/SM4500 S2 F)					BatchID: R261632	Analysis Date: 02/20/2014		Seq No: 5500451		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide 291.2 1.0 291.2 100 90 110

Sample ID: 1402C76-002GMS	Client ID: MW-113D-20140217-01	Units: mg/L	Prep Date:	Run No: 261632							
SampleType: MS	TestCode: Sulfide (E376.1/SM4500 S2 F)	BatchID: R261632	Analysis Date: 02/20/2014	Seq No: 5500453							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide 12.96 1.0 14.56 89.0 80 120

Sample ID: 1402C76-004GMS	Client ID: MW-25D-20140217-01	Units: mg/L	Prep Date:	Run No: 261632							
SampleType: MS	TestCode: Sulfide (E376.1/SM4500 S2 F)	BatchID: R261632	Analysis Date: 02/20/2014	Seq No: 5500459							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide 14.56 1.0 14.56 100 80 120

Sample ID: 1402C76-002GMSD	Client ID: MW-113D-20140217-01	Units: mg/L	Prep Date:	Run No: 261632							
SampleType: MSD	TestCode: Sulfide (E376.1/SM4500 S2 F)	BatchID: R261632	Analysis Date: 02/20/2014	Seq No: 5500455							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide 13.36 1.0 14.56 91.8 80 120 12.96 3.04 20

Qualifiers:	> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
BRL	Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S Spike Recovery outside limits due to matrix	

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402C76

ANALYTICAL QC SUMMARY REPORT

BatchID: R261632

Sample ID: 1402C76-004GMSD	Client ID: MW-25D-20140217-01	Units: mg/L	Prep Date:	Run No: 261632							
SampleType: MSD	TestCode: Sulfide (E376.1/SM4500 S2 F)	BatchID: R261632	Analysis Date: 02/20/2014	Seq No: 5500460							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide	14.96	1.0	14.56		103	80	120	14.56	2.71	20	
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Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402C76

ANALYTICAL QC SUMMARY REPORT

BatchID: R261802

Sample ID: MB-R261802	Client ID:					Units: mg/L	Prep Date:			Run No: 261802	
SampleType: MBLK	TestCode: Ferrous Iron	SM3500-Fe-B				BatchID: R261802	Analysis Date: 02/18/2014			Seq No: 5503665	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Iron, as Ferrous (Fe+2)

BRL

0.100

Sample ID: LCS-R261802	Client ID:					Units: mg/L	Prep Date:	Run No: 261802			
SampleType: LCS	TestCode: Ferrous Iron	SM3500-Fe-B				BatchID: R261802	Analysis Date: 02/18/2014	Seq No: 5503666			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Iron, as Ferrous (Fe+2)

0.4745

0.100

0.5000

94.9

85

115

Sample ID: 1402C76-002EMS	Client ID: MW-113D-20140217-01	Units: mg/L	Prep Date:	Run No: 261802							
SampleType: MS	TestCode: Ferrous Iron SM3500-Fe-B	BatchID: R261802	Analysis Date: 02/18/2014	Seq No: 5503671							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Iron, as Ferrous (Fe+2)

0.4860

0.100

0.5000

97.2

80

120

Sample ID: 1402C76-004EMS	Client ID: MW-25D-20140217-01	Units: mg/L	Prep Date:	Run No: 261802							
SampleType: MS	TestCode: Ferrous Iron SM3500-Fe-B	BatchID: R261802	Analysis Date: 02/18/2014	Seq No: 5503673							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Iron, as Ferrous (Fe+2)

0.4860

0.100

0.5000

97.2

80

120

Sample ID: 1402C76-002EMSD	Client ID: MW-113D-20140217-01	Units: mg/L	Prep Date:	Run No: 261802							
SampleType: MSD	TestCode: Ferrous Iron SM3500-Fe-B	BatchID: R261802	Analysis Date: 02/18/2014	Seq No: 5503672							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Iron, as Ferrous (Fe+2)

0.4918

0.100

0.5000

98.4

80

120

0.4860

1.19

30

Qualifiers:

> Greater than Result value

BRL Below reporting limit

J Estimated value detected below Reporting Limit

Rpt Lim Reporting Limit

< Less than Result value

E Estimated (value above quantitation range)

N Analyte not NELAC certified

S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank

H Holding times for preparation or analysis exceeded

R RPD outside limits due to matrix

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402C76

ANALYTICAL QC SUMMARY REPORT

BatchID: R261802

Sample ID: 1402C76-004EMSD	Client ID: MW-25D-20140217-01	Units: mg/L	Prep Date:	Run No: 261802							
SampleType: MSD	TestCode: Ferrous Iron SM3500-Fe-B	BatchID: R261802	Analysis Date: 02/18/2014	Seq No: 5503676							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Iron, as Ferrous (Fe+2)	0.4947	0.100	0.5000		98.9	80	120	0.4860	1.77	30	
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Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

February 25, 2014

Jim Morrison
ERM-Southeast
3200 Windy Hill Rd
Atlanta GA 30339

TEL: (678) 486-2700
FAX: (404) 745-0103

RE: AGLC Macon

Dear Jim Morrison:

Order No: 1402D63

Analytical Environmental Services, Inc. received 7 samples on 2/18/2014 6:15:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.

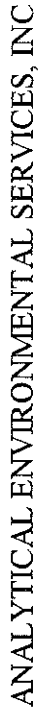
AES' certifications are as follows:

- NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/13-06/30/14.
- AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) effective until 09/01/15.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Mirzeta Kararic
Project Manager



3080 Presidential Drive, Atlanta GA 30340-3704

TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order:

1402063

TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

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Date: 8-18-44 Page 1 of 1

[illegible]

Client: ERM-Southeast
Project: AGLC Macon
Lab ID: 1402D63

Case Narrative

Sample Receiving Nonconformance:

Hexavalent Chromium was listed on the COC. Samples were analyzed for Ferrous Iron per project history and Nic Vrey was notified via phone on 2/18/14.

Ferrous Iron by Method SM3500-Fe-B:

Sample ID "DUP-01-20140218-01" is reporting with an H-Flag since there is no collection time on the COC.

PAH Analysis by Method 8270D SIM:

Percent recovery for the internal standard compound Acenaphthene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12 on sample 1402D63-002H was outside control limits biased low due to suspected matrix interference. All other internal standard recoveries were within control limits.

Percent recovery for the internal standard compound Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12 on sample 1402D63-002H was outside control limits biased low due to suspected matrix interference. All other internal standard recoveries were within control limits.

Analytical Environmental Services, Inc

Date: 26-Feb-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402D63-001

Client Sample ID: TB-02-20140218-01
 Collection Date: 2/18/2014
 Matrix: Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	187242	1	02/19/2014 17:32	GK
Carbon disulfide	BRL	5.0		ug/L	187242	1	02/19/2014 17:32	GK
Ethylbenzene	BRL	5.0		ug/L	187242	1	02/19/2014 17:32	GK
Toluene	BRL	5.0		ug/L	187242	1	02/19/2014 17:32	GK
Xylenes, Total	BRL	5.0		ug/L	187242	1	02/19/2014 17:32	GK
Surr: 4-Bromofluorobenzene	92.3	66.2-120		%REC	187242	1	02/19/2014 17:32	GK
Surr: Dibromofluoromethane	98.1	79.5-121		%REC	187242	1	02/19/2014 17:32	GK
Surr: Toluene-d8	101	77-117		%REC	187242	1	02/19/2014 17:32	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 26-Feb-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402D63-002

Client Sample ID: DUP-01-20140218-01
 Collection Date: 2/18/2014
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	290	50		ug/L	187242	10	02/20/2014 12:53	GK
Carbon disulfide	BRL	5.0		ug/L	187242	1	02/19/2014 19:48	GK
Ethylbenzene	130	5.0		ug/L	187242	1	02/19/2014 19:48	GK
Toluene	7.0	5.0		ug/L	187242	1	02/19/2014 19:48	GK
Xylenes, Total	98	5.0		ug/L	187242	1	02/19/2014 19:48	GK
Surr: 4-Bromofluorobenzene	96.1	66.2-120		%REC	187242	10	02/20/2014 12:53	GK
Surr: 4-Bromofluorobenzene	99.4	66.2-120		%REC	187242	1	02/19/2014 19:48	GK
Surr: Dibromofluoromethane	97.3	79.5-121		%REC	187242	1	02/19/2014 19:48	GK
Surr: Dibromofluoromethane	99.3	79.5-121		%REC	187242	10	02/20/2014 12:53	GK
Surr: Toluene-d8	99.5	77-117		%REC	187242	1	02/19/2014 19:48	GK
Surr: Toluene-d8	100	77-117		%REC	187242	10	02/20/2014 12:53	GK
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R261632	1	02/20/2014 08:40	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	0.27	0.050		ug/L	187215	1	02/20/2014 15:12	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	187215	1	02/20/2014 15:12	YH
Benzo(a)pyrene	BRL	0.050		ug/L	187215	1	02/20/2014 15:12	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	187215	1	02/20/2014 15:12	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	187215	1	02/20/2014 15:12	YH
Surr: 4-Terphenyl-d14	97.7	53.2-145		%REC	187215	1	02/20/2014 15:12	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187279	1	02/21/2014 15:54	YH
2-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 15:54	YH
3,4-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 15:54	YH
Acenaphthene	35	10		ug/L	187279	1	02/21/2014 15:54	YH
Acenaphthylene	12	10		ug/L	187279	1	02/21/2014 15:54	YH
Anthracene	BRL	10		ug/L	187279	1	02/21/2014 15:54	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187279	1	02/21/2014 15:54	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 15:54	YH
Chrysene	BRL	10		ug/L	187279	1	02/21/2014 15:54	YH
Fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 15:54	YH
Fluorene	41	10		ug/L	187279	1	02/21/2014 15:54	YH
Naphthalene	570	100		ug/L	187279	10	02/21/2014 23:15	YH
Phenanthrene	17	10		ug/L	187279	1	02/21/2014 15:54	YH
Phenol	BRL	10		ug/L	187279	1	02/21/2014 15:54	YH
Pyrene	BRL	10		ug/L	187279	1	02/21/2014 15:54	YH
Surr: 2,4,6-Tribromophenol	87.9	51.5-124		%REC	187279	1	02/21/2014 15:54	YH
Surr: 2-Fluorobiphenyl	82.8	51.7-118		%REC	187279	1	02/21/2014 15:54	YH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 26-Feb-14

Client:	ERM-Southeast	Client Sample ID:	DUP-01-20140218-01
Project Name:	AGLC Macon	Collection Date:	2/18/2014
Lab ID:	1402D63-002	Matrix:	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D (SW3510C)								
Surr: 2-Fluorophenol	57.4	26-120		%REC	187279	1	02/21/2014 15:54	YH
Surr: 4-Terphenyl-d14	90.5	45.2-137		%REC	187279	1	02/21/2014 15:54	YH
Surr: Nitrobenzene-d5	72	42-120		%REC	187279	1	02/21/2014 15:54	YH
Surr: Phenol-d5	49.5	12.3-120		%REC	187279	1	02/21/2014 15:54	YH
Mercury, Total SW7470A (SW7470A)								
Mercury	BRL	0.00020		mg/L	187225	1	02/19/2014 13:57	CG
ION SCAN SW9056A								
Nitrate	BRL	0.25		mg/L	R261670	1	02/19/2014 12:38	GR
Sulfate	BRL	1.0		mg/L	R261670	1	02/19/2014 12:38	GR
GC Analysis of Gaseous Samples SOP-RSK 175 (RSK175)								
Methane	780	40		ug/L	187283	10	02/20/2014 13:27	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	1.92	1.00	H	mg/L	R261803	10	02/19/2014 08:30	AB
Cyanide SW9014 (SW9010C)								
Cyanide, Total	0.020	0.010		mg/L	187411	1	02/24/2014 09:00	EH
METALS, TOTAL SW6010C (SW3010A)								
Antimony	BRL	0.0200		mg/L	187273	1	02/20/2014 19:38	JL
Arsenic	BRL	0.0500		mg/L	187273	1	02/20/2014 19:38	JL
Barium	1.43	0.0200		mg/L	187273	1	02/20/2014 19:38	JL
Beryllium	BRL	0.0100		mg/L	187273	1	02/20/2014 19:38	JL
Cadmium	BRL	0.0050		mg/L	187273	1	02/20/2014 19:38	JL
Chromium	BRL	0.0100		mg/L	187273	1	02/20/2014 19:38	JL
Copper	BRL	0.0100		mg/L	187273	1	02/20/2014 19:38	JL
Iron	5.61	0.100		mg/L	187273	1	02/20/2014 19:38	JL
Lead	BRL	0.0100		mg/L	187273	1	02/20/2014 19:38	JL
Nickel	BRL	0.0200		mg/L	187273	1	02/20/2014 19:38	JL
Zinc	BRL	0.0200		mg/L	187273	1	02/20/2014 19:38	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 26-Feb-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1402D63-003

Client Sample ID: MW-24D-20140218-01
Collection Date: 2/18/2014 10:30:00 AM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	187242	1	02/19/2014 20:16	GK
Carbon disulfide	BRL	5.0		ug/L	187242	1	02/19/2014 20:16	GK
Ethylbenzene	BRL	5.0		ug/L	187242	1	02/19/2014 20:16	GK
Toluene	BRL	5.0		ug/L	187242	1	02/19/2014 20:16	GK
Xylenes, Total	BRL	5.0		ug/L	187242	1	02/19/2014 20:16	GK
Surr: 4-Bromofluorobenzene	94.1	66.2-120		%REC	187242	1	02/19/2014 20:16	GK
Surr: Dibromofluoromethane	99.2	79.5-121		%REC	187242	1	02/19/2014 20:16	GK
Surr: Toluene-d8	99	77-117		%REC	187242	1	02/19/2014 20:16	GK
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R261632	1	02/20/2014 08:40	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	187215	1	02/20/2014 15:40	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	187215	1	02/20/2014 15:40	YH
Benzo(a)pyrene	BRL	0.050		ug/L	187215	1	02/20/2014 15:40	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	187215	1	02/20/2014 15:40	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	187215	1	02/20/2014 15:40	YH
Surr: 4-Terphenyl-d14	98.8	53.2-145		%REC	187215	1	02/20/2014 15:40	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187279	1	02/21/2014 16:20	YH
2-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 16:20	YH
3,4-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 16:20	YH
Acenaphthene	BRL	10		ug/L	187279	1	02/21/2014 16:20	YH
Acenaphthylene	BRL	10		ug/L	187279	1	02/21/2014 16:20	YH
Anthracene	BRL	10		ug/L	187279	1	02/21/2014 16:20	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187279	1	02/21/2014 16:20	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 16:20	YH
Chrysene	BRL	10		ug/L	187279	1	02/21/2014 16:20	YH
Fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 16:20	YH
Fluorene	BRL	10		ug/L	187279	1	02/21/2014 16:20	YH
Naphthalene	BRL	10		ug/L	187279	1	02/21/2014 16:20	YH
Phenanthrene	BRL	10		ug/L	187279	1	02/21/2014 16:20	YH
Phenol	BRL	10		ug/L	187279	1	02/21/2014 16:20	YH
Pyrene	BRL	10		ug/L	187279	1	02/21/2014 16:20	YH
Surr: 2,4,6-Tribromophenol	89.4	51.5-124		%REC	187279	1	02/21/2014 16:20	YH
Surr: 2-Fluorobiphenyl	87.1	51.7-118		%REC	187279	1	02/21/2014 16:20	YH
Surr: 2-Fluorophenol	65.7	26-120		%REC	187279	1	02/21/2014 16:20	YH
Surr: 4-Terphenyl-d14	95.2	45.2-137		%REC	187279	1	02/21/2014 16:20	YH
Surr: Nitrobenzene-d5	79.9	42-120		%REC	187279	1	02/21/2014 16:20	YH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 26-Feb-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402D63-003

Client Sample ID: MW-24D-20140218-01
 Collection Date: 2/18/2014 10:30:00 AM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D					(SW3510C)			
Surr: Phenol-d5	54.1	12.3-120		%REC	187279	1	02/21/2014 16:20	YH
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	187225	1	02/19/2014 14:03	CG
ION SCAN SW9056A								
Nitrate	BRL	0.25		mg/L	R261670	1	02/19/2014 13:08	GR
Sulfate	BRL	1.0		mg/L	R261670	1	02/19/2014 13:08	GR
GC Analysis of Gaseous Samples SOP-RSK 175					(RSK175)			
Methane	BRL	4		ug/L	187283	1	02/20/2014 13:15	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	BRL	0.100		mg/L	R261803	1	02/19/2014 08:30	AB
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	187411	1	02/24/2014 09:00	EH
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	187273	1	02/20/2014 19:42	JL
Arsenic	BRL	0.0500		mg/L	187273	1	02/20/2014 19:42	JL
Barium	0.149	0.0200		mg/L	187273	1	02/20/2014 19:42	JL
Beryllium	BRL	0.0100		mg/L	187273	1	02/20/2014 19:42	JL
Cadmium	BRL	0.0050		mg/L	187273	1	02/20/2014 19:42	JL
Chromium	BRL	0.0100		mg/L	187273	1	02/20/2014 19:42	JL
Copper	BRL	0.0100		mg/L	187273	1	02/20/2014 19:42	JL
Iron	0.791	0.100		mg/L	187273	1	02/20/2014 19:42	JL
Lead	BRL	0.0100		mg/L	187273	1	02/20/2014 19:42	JL
Nickel	BRL	0.0200		mg/L	187273	1	02/20/2014 19:42	JL
Zinc	0.0272	0.0200		mg/L	187273	1	02/20/2014 19:42	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 26-Feb-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402D63-004

Client Sample ID: MW-300D-20140218-01
 Collection Date: 2/18/2014 11:40:00 AM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	187242	1	02/19/2014 20:43	GK
Carbon disulfide	BRL	5.0		ug/L	187242	1	02/19/2014 20:43	GK
Ethylbenzene	BRL	5.0		ug/L	187242	1	02/19/2014 20:43	GK
Toluene	BRL	5.0		ug/L	187242	1	02/19/2014 20:43	GK
Xylenes, Total	BRL	5.0		ug/L	187242	1	02/19/2014 20:43	GK
Surr: 4-Bromofluorobenzene	93.7	66.2-120		%REC	187242	1	02/19/2014 20:43	GK
Surr: Dibromofluoromethane	98.6	79.5-121		%REC	187242	1	02/19/2014 20:43	GK
Surr: Toluene-d8	101	77-117		%REC	187242	1	02/19/2014 20:43	GK
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R261632	1	02/20/2014 08:40	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	187215	1	02/20/2014 16:07	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	187215	1	02/20/2014 16:07	YH
Benzo(a)pyrene	BRL	0.050		ug/L	187215	1	02/20/2014 16:07	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	187215	1	02/20/2014 16:07	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	187215	1	02/20/2014 16:07	YH
Surr: 4-Terphenyl-d14	57.4	53.2-145		%REC	187215	1	02/20/2014 16:07	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187279	1	02/21/2014 16:46	YH
2-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 16:46	YH
3,4-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 16:46	YH
Acenaphthene	BRL	10		ug/L	187279	1	02/21/2014 16:46	YH
Acenaphthylene	BRL	10		ug/L	187279	1	02/21/2014 16:46	YH
Anthracene	BRL	10		ug/L	187279	1	02/21/2014 16:46	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187279	1	02/21/2014 16:46	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 16:46	YH
Chrysene	BRL	10		ug/L	187279	1	02/21/2014 16:46	YH
Fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 16:46	YH
Fluorene	BRL	10		ug/L	187279	1	02/21/2014 16:46	YH
Naphthalene	BRL	10		ug/L	187279	1	02/21/2014 16:46	YH
Phenanthrene	BRL	10		ug/L	187279	1	02/21/2014 16:46	YH
Phenol	BRL	10		ug/L	187279	1	02/21/2014 16:46	YH
Pyrene	BRL	10		ug/L	187279	1	02/21/2014 16:46	YH
Surr: 2,4,6-Tribromophenol	87.4	51.5-124		%REC	187279	1	02/21/2014 16:46	YH
Surr: 2-Fluorobiphenyl	83.2	51.7-118		%REC	187279	1	02/21/2014 16:46	YH
Surr: 2-Fluorophenol	58.1	26-120		%REC	187279	1	02/21/2014 16:46	YH
Surr: 4-Terphenyl-d14	87.2	45.2-137		%REC	187279	1	02/21/2014 16:46	YH
Surr: Nitrobenzene-d5	74	42-120		%REC	187279	1	02/21/2014 16:46	YH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 26-Feb-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402D63-004

Client Sample ID: MW-300D-20140218-01
 Collection Date: 2/18/2014 11:40:00 AM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D					(SW3510C)			
Surr: Phenol-d5	45.8	12.3-120		%REC	187279	1	02/21/2014 16:46	YH
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	187225	1	02/19/2014 14:05	CG
ION SCAN SW9056A								
Nitrate	BRL	0.25		mg/L	R261670	1	02/19/2014 11:52	GR
Sulfate	2.0	1.0		mg/L	R261670	1	02/19/2014 11:52	GR
GC Analysis of Gaseous Samples SOP-RSK 175					(RSK175)			
Methane	5	4		ug/L	187283	1	02/20/2014 13:21	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	BRL	0.100		mg/L	R261803	1	02/19/2014 08:30	AB
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	187411	1	02/24/2014 09:00	EH
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	187273	1	02/20/2014 19:52	JL
Arsenic	BRL	0.0500		mg/L	187273	1	02/20/2014 19:52	JL
Barium	0.619	0.0200		mg/L	187273	1	02/20/2014 19:52	JL
Beryllium	BRL	0.0100		mg/L	187273	1	02/20/2014 19:52	JL
Cadmium	0.0203	0.0050		mg/L	187273	1	02/20/2014 19:52	JL
Chromium	BRL	0.0100		mg/L	187273	1	02/20/2014 19:52	JL
Copper	BRL	0.0100		mg/L	187273	1	02/20/2014 19:52	JL
Iron	0.425	0.100		mg/L	187273	1	02/20/2014 19:52	JL
Lead	BRL	0.0100		mg/L	187273	1	02/20/2014 19:52	JL
Nickel	BRL	0.0200		mg/L	187273	1	02/20/2014 19:52	JL
Zinc	0.391	0.0200		mg/L	187273	1	02/20/2014 19:52	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 26-Feb-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1402D63-005

Client Sample ID: MW-23D-20140218-01
Collection Date: 2/18/2014 12:15:00 PM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	187242	1	02/19/2014 17:59	GK
Carbon disulfide	BRL	5.0		ug/L	187242	1	02/19/2014 17:59	GK
Ethylbenzene	BRL	5.0		ug/L	187242	1	02/19/2014 17:59	GK
Toluene	BRL	5.0		ug/L	187242	1	02/19/2014 17:59	GK
Xylenes, Total	BRL	5.0		ug/L	187242	1	02/19/2014 17:59	GK
Surr: 4-Bromofluorobenzene	92.7	66.2-120		%REC	187242	1	02/19/2014 17:59	GK
Surr: Dibromofluoromethane	96.7	79.5-121		%REC	187242	1	02/19/2014 17:59	GK
Surr: Toluene-d8	99.8	77-117		%REC	187242	1	02/19/2014 17:59	GK
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R261632	1	02/20/2014 08:40	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	187215	1	02/20/2014 16:34	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	187215	1	02/20/2014 16:34	YH
Benzo(a)pyrene	BRL	0.050		ug/L	187215	1	02/20/2014 16:34	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	187215	1	02/20/2014 16:34	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	187215	1	02/20/2014 16:34	YH
Surr: 4-Terphenyl-d14	112	53.2-145		%REC	187215	1	02/20/2014 16:34	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187279	1	02/21/2014 17:12	YH
2-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 17:12	YH
3,4-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 17:12	YH
Acenaphthene	BRL	10		ug/L	187279	1	02/21/2014 17:12	YH
Acenaphthylene	BRL	10		ug/L	187279	1	02/21/2014 17:12	YH
Anthracene	BRL	10		ug/L	187279	1	02/21/2014 17:12	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187279	1	02/21/2014 17:12	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 17:12	YH
Chrysene	BRL	10		ug/L	187279	1	02/21/2014 17:12	YH
Fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 17:12	YH
Fluorene	BRL	10		ug/L	187279	1	02/21/2014 17:12	YH
Naphthalene	BRL	10		ug/L	187279	1	02/21/2014 17:12	YH
Phenanthrene	BRL	10		ug/L	187279	1	02/21/2014 17:12	YH
Phenol	BRL	10		ug/L	187279	1	02/21/2014 17:12	YH
Pyrene	BRL	10		ug/L	187279	1	02/21/2014 17:12	YH
Surr: 2,4,6-Tribromophenol	83.5	51.5-124		%REC	187279	1	02/21/2014 17:12	YH
Surr: 2-Fluorobiphenyl	74.7	51.7-118		%REC	187279	1	02/21/2014 17:12	YH
Surr: 2-Fluorophenol	53.6	26-120		%REC	187279	1	02/21/2014 17:12	YH
Surr: 4-Terphenyl-d14	89.2	45.2-137		%REC	187279	1	02/21/2014 17:12	YH
Surr: Nitrobenzene-d5	63.8	42-120		%REC	187279	1	02/21/2014 17:12	YH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 26-Feb-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402D63-005

Client Sample ID: MW-23D-20140218-01
 Collection Date: 2/18/2014 12:15:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D					(SW3510C)			
Surr: Phenol-d5	45.8	12.3-120		%REC	187279	1	02/21/2014 17:12	YH
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	187225	1	02/19/2014 14:07	CG
ION SCAN SW9056A								
Nitrate	BRL	0.25		mg/L	R261670	1	02/19/2014 12:07	GR
Sulfate	49	5.0		mg/L	R261670	5	02/19/2014 13:23	GR
GC Analysis of Gaseous Samples SOP-RSK 175					(RSK175)			
Methane	17	4		ug/L	187283	1	02/20/2014 13:33	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	BRL	0.100		mg/L	R261803	1	02/19/2014 08:30	AB
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	187411	1	02/24/2014 09:00	EH
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	187273	1	02/20/2014 19:56	JL
Arsenic	BRL	0.0500		mg/L	187273	1	02/20/2014 19:56	JL
Barium	0.0522	0.0200		mg/L	187273	1	02/20/2014 19:56	JL
Beryllium	BRL	0.0100		mg/L	187273	1	02/20/2014 19:56	JL
Cadmium	BRL	0.0050		mg/L	187273	1	02/20/2014 19:56	JL
Chromium	BRL	0.0100		mg/L	187273	1	02/20/2014 19:56	JL
Copper	BRL	0.0100		mg/L	187273	1	02/20/2014 19:56	JL
Iron	BRL	0.100		mg/L	187273	1	02/20/2014 19:56	JL
Lead	BRL	0.0100		mg/L	187273	1	02/20/2014 19:56	JL
Nickel	BRL	0.0200		mg/L	187273	1	02/20/2014 19:56	JL
Zinc	BRL	0.0200		mg/L	187273	1	02/20/2014 19:56	JL

Qualifiers:

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- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 26-Feb-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402D63-006

Client Sample ID: MW-12DRR-20140218-01
 Collection Date: 2/18/2014 12:50:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	280	50		ug/L	187242	10	02/19/2014 18:54	GK
Carbon disulfide	BRL	5.0		ug/L	187242	1	02/19/2014 18:26	GK
Ethylbenzene	120	5.0		ug/L	187242	1	02/19/2014 18:26	GK
Toluene	6.9	5.0		ug/L	187242	1	02/19/2014 18:26	GK
Xylenes, Total	94	5.0		ug/L	187242	1	02/19/2014 18:26	GK
Surr: 4-Bromofluorobenzene	94.2	66.2-120		%REC	187242	10	02/19/2014 18:54	GK
Surr: 4-Bromofluorobenzene	97	66.2-120		%REC	187242	1	02/19/2014 18:26	GK
Surr: Dibromofluoromethane	96.4	79.5-121		%REC	187242	1	02/19/2014 18:26	GK
Surr: Dibromofluoromethane	98.5	79.5-121		%REC	187242	10	02/19/2014 18:54	GK
Surr: Toluene-d8	97.8	77-117		%REC	187242	1	02/19/2014 18:26	GK
Surr: Toluene-d8	99.2	77-117		%REC	187242	10	02/19/2014 18:54	GK
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R261632	1	02/20/2014 08:40	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	0.29	0.050		ug/L	187215	1	02/20/2014 17:01	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	187215	1	02/20/2014 17:01	YH
Benzo(a)pyrene	0.087	0.050		ug/L	187215	1	02/20/2014 17:01	YH
Indeno(1,2,3-cd)pyrene	0.087	0.050		ug/L	187215	1	02/20/2014 17:01	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	187215	1	02/20/2014 17:01	YH
Surr: 4-Terphenyl-d14	88.4	53.2-145		%REC	187215	1	02/20/2014 17:01	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187279	1	02/21/2014 17:38	YH
2-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 17:38	YH
3,4-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 17:38	YH
Acenaphthene	35	10		ug/L	187279	1	02/21/2014 17:38	YH
Acenaphthylene	12	10		ug/L	187279	1	02/21/2014 17:38	YH
Anthracene	BRL	10		ug/L	187279	1	02/21/2014 17:38	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187279	1	02/21/2014 17:38	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 17:38	YH
Chrysene	BRL	10		ug/L	187279	1	02/21/2014 17:38	YH
Fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 17:38	YH
Fluorene	40	10		ug/L	187279	1	02/21/2014 17:38	YH
Naphthalene	530	100		ug/L	187279	10	02/21/2014 23:42	YH
Phenanthrene	14	10		ug/L	187279	1	02/21/2014 17:38	YH
Phenol	BRL	10		ug/L	187279	1	02/21/2014 17:38	YH
Pyrene	BRL	10		ug/L	187279	1	02/21/2014 17:38	YH
Surr: 2,4,6-Tribromophenol	95.9	51.5-124		%REC	187279	1	02/21/2014 17:38	YH
Surr: 2-Fluorobiphenyl	87.6	51.7-118		%REC	187279	1	02/21/2014 17:38	YH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 26-Feb-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402D63-006

Client Sample ID: MW-12DRR-20140218-01
 Collection Date: 2/18/2014 12:50:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D (SW3510C)								
Surr: 2-Fluorophenol	62.5	26-120		%REC	187279	1	02/21/2014 17:38	YH
Surr: 4-Terphenyl-d14	97.6	45.2-137		%REC	187279	1	02/21/2014 17:38	YH
Surr: Nitrobenzene-d5	75.8	42-120		%REC	187279	1	02/21/2014 17:38	YH
Surr: Phenol-d5	55.8	12.3-120		%REC	187279	1	02/21/2014 17:38	YH
Mercury, Total SW7470A (SW7470A)								
Mercury	BRL	0.00020		mg/L	187225	1	02/19/2014 14:09	CG
ION SCAN SW9056A								
Nitrate	BRL	0.25		mg/L	R261670	1	02/19/2014 12:22	GR
Sulfate	1.1	1.0		mg/L	R261670	1	02/19/2014 12:22	GR
GC Analysis of Gaseous Samples SOP-RSK 175 (RSK175)								
Methane	840	40		ug/L	187283	10	02/20/2014 13:49	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	2.10	1.00		mg/L	R261803	10	02/19/2014 08:30	AB
Cyanide SW9014 (SW9010C)								
Cyanide, Total	0.026	0.010		mg/L	187411	1	02/24/2014 09:00	EH
METALS, TOTAL SW6010C (SW3010A)								
Antimony	BRL	0.0200		mg/L	187273	1	02/20/2014 20:00	JL
Arsenic	BRL	0.0500		mg/L	187273	1	02/20/2014 20:00	JL
Barium	1.42	0.0200		mg/L	187273	1	02/20/2014 20:00	JL
Beryllium	BRL	0.0100		mg/L	187273	1	02/20/2014 20:00	JL
Cadmium	BRL	0.0050		mg/L	187273	1	02/20/2014 20:00	JL
Chromium	BRL	0.0100		mg/L	187273	1	02/20/2014 20:00	JL
Copper	BRL	0.0100		mg/L	187273	1	02/20/2014 20:00	JL
Iron	5.53	0.100		mg/L	187273	1	02/20/2014 20:00	JL
Lead	BRL	0.0100		mg/L	187273	1	02/20/2014 20:00	JL
Nickel	BRL	0.0200		mg/L	187273	1	02/20/2014 20:00	JL
Zinc	BRL	0.0200		mg/L	187273	1	02/20/2014 20:00	JL

Qualifiers:

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- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 26-Feb-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1402D63-007

Client Sample ID: MW-206D-20140218-01
Collection Date: 2/18/2014 2:20:00 PM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	187242	1	02/19/2014 19:21	GK
Carbon disulfide	BRL	5.0		ug/L	187242	1	02/19/2014 19:21	GK
Ethylbenzene	BRL	5.0		ug/L	187242	1	02/19/2014 19:21	GK
Toluene	BRL	5.0		ug/L	187242	1	02/19/2014 19:21	GK
Xylenes, Total	BRL	5.0		ug/L	187242	1	02/19/2014 19:21	GK
Surr: 4-Bromofluorobenzene	94.1	66.2-120		%REC	187242	1	02/19/2014 19:21	GK
Surr: Dibromofluoromethane	101	79.5-121		%REC	187242	1	02/19/2014 19:21	GK
Surr: Toluene-d8	101	77-117		%REC	187242	1	02/19/2014 19:21	GK
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R261632	1	02/20/2014 08:40	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	0.13	0.050		ug/L	187215	1	02/20/2014 17:27	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	187215	1	02/20/2014 17:27	YH
Benzo(a)pyrene	BRL	0.050		ug/L	187215	1	02/20/2014 17:27	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	187215	1	02/20/2014 17:27	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	187215	1	02/20/2014 17:27	YH
Surr: 4-Terphenyl-d14	91.9	53.2-145		%REC	187215	1	02/20/2014 17:27	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187279	1	02/21/2014 18:03	YH
2-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 18:03	YH
3,4-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 18:03	YH
Acenaphthene	BRL	10		ug/L	187279	1	02/21/2014 18:03	YH
Acenaphthylene	BRL	10		ug/L	187279	1	02/21/2014 18:03	YH
Anthracene	BRL	10		ug/L	187279	1	02/21/2014 18:03	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187279	1	02/21/2014 18:03	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 18:03	YH
Chrysene	BRL	10		ug/L	187279	1	02/21/2014 18:03	YH
Fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 18:03	YH
Fluorene	BRL	10		ug/L	187279	1	02/21/2014 18:03	YH
Naphthalene	BRL	10		ug/L	187279	1	02/21/2014 18:03	YH
Phenanthrene	BRL	10		ug/L	187279	1	02/21/2014 18:03	YH
Phenol	BRL	10		ug/L	187279	1	02/21/2014 18:03	YH
Pyrene	BRL	10		ug/L	187279	1	02/21/2014 18:03	YH
Surr: 2,4,6-Tribromophenol	90.2	51.5-124		%REC	187279	1	02/21/2014 18:03	YH
Surr: 2-Fluorobiphenyl	80.8	51.7-118		%REC	187279	1	02/21/2014 18:03	YH
Surr: 2-Fluorophenol	59.3	26-120		%REC	187279	1	02/21/2014 18:03	YH
Surr: 4-Terphenyl-d14	93.8	45.2-137		%REC	187279	1	02/21/2014 18:03	YH
Surr: Nitrobenzene-d5	69.9	42-120		%REC	187279	1	02/21/2014 18:03	YH

Qualifiers:

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- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 26-Feb-14

Client: ERM-Southeast	Client Sample ID: MW-206D-20140218-01
Project Name: AGLC Macon	Collection Date: 2/18/2014 2:20:00 PM
Lab ID: 1402D63-007	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D					(SW3510C)			
Surr: Phenol-d5	52.7	12.3-120		%REC	187279	1	02/21/2014 18:03	YH
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	187225	1	02/19/2014 14:11	CG
ION SCAN SW9056A								
Nitrate	BRL	0.25		mg/L	R261670	1	02/19/2014 12:53	GR
Sulfate	110	5.0		mg/L	R261670	5	02/19/2014 13:38	GR
GC Analysis of Gaseous Samples SOP-RSK 175					(RSK175)			
Methane	54	4		ug/L	187283	1	02/20/2014 13:43	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	4.00	1.00		mg/L	R261803	10	02/19/2014 08:30	AB
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	187411	1	02/24/2014 09:00	EH
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	187273	1	02/20/2014 20:04	JL
Arsenic	BRL	0.0500		mg/L	187273	1	02/20/2014 20:04	JL
Barium	0.0618	0.0200		mg/L	187273	1	02/20/2014 20:04	JL
Beryllium	BRL	0.0100		mg/L	187273	1	02/20/2014 20:04	JL
Cadmium	BRL	0.0050		mg/L	187273	1	02/20/2014 20:04	JL
Chromium	BRL	0.0100		mg/L	187273	1	02/20/2014 20:04	JL
Copper	BRL	0.0100		mg/L	187273	1	02/20/2014 20:04	JL
Iron	12.8	0.100		mg/L	187273	1	02/20/2014 20:04	JL
Lead	BRL	0.0100		mg/L	187273	1	02/20/2014 20:04	JL
Nickel	BRL	0.0200		mg/L	187273	1	02/20/2014 20:04	JL
Zinc	BRL	0.0200		mg/L	187273	1	02/20/2014 20:04	JL

Qualifiers:

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- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit



Microseeps/Pace Analytical Energy Services, LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

March 3, 2014

Mirzeta Kararic
Analytical Environmental Services, Inc.
3785 Presidential Parkway
Suite 111
Atlanta, GA 30340

RE: **1402D63**

Microseeps Workorder: 11453

Dear Mirzeta Kararic:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, February 21, 2014. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

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

Sincerely,

Robbin Robl 03/03/2014
rrobl@microseeps.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email info@microseeps.com.

Total Number of Pages 15

Report ID: 11453 - 493247

Page 1 of 13



CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
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Microseeps/Pace Analytical Energy Services, LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories		
Accreditation ID:	02-00538		
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste		
Accreditor:	NELAP: State of Florida, Department of Health, Bureau of Laboratories		
Accreditation ID:	E87832		
Scope:	Clean Water Act (CWA)	Resource Conservation and Recovery Act (RCRA)	
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification		
Accreditation ID:	89009003		
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)		
Accreditor:	NELAP: State of Louisiana, Department of Environmental Quality		
Accreditation ID:	04104		
Scope:	Solid and Chemical Materials; Non-Potable Water		
Accreditor:	NELAP: New Jersey, Department of Environmental Protection		
Accreditation ID:	PA026		
Scope:	Non-Potable Water; Solid and Chemical Materials		
Accreditor:	NELAP: New York, Department of Health Wadsworth Center		
Accreditation ID:	11815		
Scope:	Non-Potable Water; Solid and Hazardous Waste		
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health		
Accreditation ID:	PH-0263		
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)		
Accreditor:	NELAP: Texas, Commission on Environmental Quality		
Accreditation ID:	T104704453-09-TX		
Scope:	Non-Potable Water		
Accreditor:	State of New Hampshire		
Accreditation ID:	299409		
Scope:	Non-potable water		
Accreditor:	State of Georgia		
Accreditation ID:	Chapter 391-3-26		
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, Microseeps is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).		



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SAMPLE SUMMARY

Workorder: 11453 1402D63

Lab ID	Sample ID	Matrix	Date Collected	Date Received
114530001	DUP-01-20140218-01	Water	2/18/2014 00:00	2/21/2014 12:30
114530002	MW-24D-20140218-01	Water	2/18/2014 10:30	2/21/2014 12:30
114530003	MW-300D-20140218-01	Water	2/18/2014 11:40	2/21/2014 12:30
114530004	MW-23D-20140218-01	Water	2/18/2014 12:15	2/21/2014 12:30
114530005	MW-12DRR-20140218-01	Water	2/18/2014 12:50	2/21/2014 12:30
114530006	MW-206D-20140218-01	Water	2/18/2014 14:20	2/21/2014 12:30



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ANALYTICAL RESULTS

Workorder: 11453 1402D63

Lab ID: 114530001
Sample ID: DUP-01-20140218-01

Date Received: 2/21/2014 12:30 Matrix: Water
Date Collected: 2/18/2014 00:00

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
------------	---------	-------	-----	-----	----	----------	----	----------	----	------

RISK - MICR

Analysis Desc: AM20GAX

Analytical Method: AM20GAX

Carbon Dioxide	84	mg/l	5.0	0.23	1			2/26/2014 10:08	GT
Oxygen	2.0	mg/l	0.50	0.082	1			2/26/2014 10:08	GT
Nitrogen	19	mg/l	2.0	1.8	1			2/26/2014 10:08	GT
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			2/26/2014 10:08	GT

Report ID: 11453 - 493247

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ANALYTICAL RESULTS

Workorder: 11453 1402D63

Lab ID: 114530002

Date Received: 2/21/2014 12:30 Matrix: Water

Sample ID: MW-24D-20140218-01

Date Collected: 2/18/2014 10:30

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Carbon Dioxide	5.2	mg/l	5.0	0.23	1			2/26/2014 10:20	GT	
Oxygen	9.0	mg/l	0.50	0.082	1			2/26/2014 10:20	GT	
Nitrogen	17	mg/l	2.0	1.8	1			2/26/2014 10:20	GT	
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			2/26/2014 10:20	GT	

Report ID: 11453 - 493247

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ANALYTICAL RESULTS

Workorder: 11453 1402D63

Lab ID: 114530003

Date Received: 2/21/2014 12:30 Matrix: Water

Sample ID: MW-300D-20140218-01

Date Collected: 2/18/2014 11:40

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
------------	---------	-------	-----	-----	----	----------	----	----------	----	------

RISK - MICR

Analysis Desc: AM20GAX

Analytical Method: AM20GAX

Carbon Dioxide	<5.0	mg/l	5.0	0.23	1			2/26/2014 10:32		GT
Oxygen	9.5	mg/l	0.50	0.082	1			2/26/2014 10:32		GT
Nitrogen	19	mg/l	2.0	1.8	1			2/26/2014 10:32		GT
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			2/26/2014 10:32		GT

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ANALYTICAL RESULTS

Workorder: 11453 1402D63

Lab ID: 114530004

Date Received: 2/21/2014 12:30 Matrix: Water

Sample ID: MW-23D-20140218-01

Date Collected: 2/18/2014 12:15

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Carbon Dioxide	78	mg/l	5.0	0.23	1			2/26/2014 10:45	GT	
Oxygen	5.3	mg/l	0.50	0.082	1			2/26/2014 10:45	GT	
Nitrogen	16	mg/l	2.0	1.8	1			2/26/2014 10:45	GT	
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			2/26/2014 10:45	GT	

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ANALYTICAL RESULTS

Workorder: 11453 1402D63

Lab ID: **114530005**

Date Received: 2/21/2014 12:30 Matrix: Water

Sample ID: **MW-12DRR-20140218-01**

Date Collected: 2/18/2014 12:50

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
------------	---------	-------	-----	-----	----	----------	----	----------	----	------

RISK - MICR

Analysis Desc: AM20GAX

Analytical Method: AM20GAX

Carbon Dioxide	85	mg/l	5.0	0.23	1			2/26/2014 10:57		GT
Oxygen	2.6	mg/l	0.50	0.082	1			2/26/2014 10:57		GT
Nitrogen	20	mg/l	2.0	1.8	1			2/26/2014 10:57		GT
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			2/26/2014 10:57		GT

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ANALYTICAL RESULTS

Workorder: 11453 1402D63

Lab ID: 114530006

Date Received: 2/21/2014 12:30 Matrix: Water

Sample ID: MW-206D-20140218-01

Date Collected: 2/18/2014 14:20

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
------------	---------	-------	-----	-----	----	----------	----	----------	----	------

RISK - MICR

Analysis Desc: AM20GAX

Analytical Method: AM20GAX

Carbon Dioxide	110	mg/l	5.0	0.23	1			2/26/2014 11:47	GT
Oxygen	4.4	mg/l	0.50	0.082	1			2/26/2014 11:47	GT
Nitrogen	20	mg/l	2.0	1.8	1			2/26/2014 11:47	GT
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			2/26/2014 11:47	GT

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ANALYTICAL RESULTS QUALIFIERS

Workorder: 11453 1402D63

DEFINITIONS/QUALIFIERS

Disclaimer : The Pennsylvania Department of Environmental Protection (PADEP) has decided to no longer recognize analyses that do not produce data for primary compliance, for NELAP accreditation. The methods affected by this decision are AM20GAx, AM21G, SW846 7199 and AM4.02. The laboratory shall continue to administer the NELAP/TNI standard requirements in the performance of these methods.

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quantitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).



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QUALITY CONTROL DATA

Workorder: 11453 1402D63

QC Batch: DISG/3602 Analysis Method: AM20GAX
QC Batch Method: AM20GAX
Associated Lab Samples: 114530001, 114530002, 114530003, 114530004, 114530005, 114530006

METHOD BLANK: 26058

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Carbon Dioxide	mg/l	<5.0	5.0	
Oxygen	mg/l	<0.50	0.50	
Nitrogen	mg/l	<2.0	2.0	
Carbon Monoxide	mg/l	<1.0	1.0	

LABORATORY CONTROL SAMPLE & LCSD: 26060 26062

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Carbon Dioxide	mg/l	120	140	130	116	114	80-120	1.7	20	
Oxygen	mg/l	11	11	11	98	99	80-120	1	20	
Nitrogen	mg/l	140	140	140	97	99	80-120	2	20	
Carbon Monoxide	mg/l	2	2.2	2.2	114	112	80-120	1.8	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 26080 26081 Original: 114520001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK											
Carbon Dioxide	mg/l	110	120	260	250	121	118	70-130	2.5	20	
Oxygen	mg/l	10	11	20	20	87	89	70-130	2.3	20	
Nitrogen	mg/l	19	140	140	140	89	90	70-130	1.1	20	
Carbon Monoxide	mg/l	0	2	2.1	2.2	107	111	70-130	3.7	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 26145 26146 Original: 114530005

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK											
Carbon Dioxide	mg/l	85	120	240	230	130	126	70-130	3.1	20	
Oxygen	mg/l	2.6	11	16	17	122	128	70-130	4.8	20	
Nitrogen	mg/l	20	140	150	150	91	91	70-130	0	20	

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QUALITY CONTROL DATA

Workorder: 11453 1402D63

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 26145 26146 Original: 114530005

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	Max RPD	Qualifiers
Carbon Monoxide	mg/l	0	2	2.2	2.1	110	106	70-130	3.7	20



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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 11453 1402D63

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
114530001	DUP-01-20140218-01			AM20GAX	DISG/3602
114530002	MW-24D-20140218-01			AM20GAX	DISG/3602
114530003	MW-300D-20140218-01			AM20GAX	DISG/3602
114530004	MW-23D-20140218-01			AM20GAX	DISG/3602
114530005	MW-12DRR-20140218-01			AM20GAX	DISG/3602
114530006	MW-206D-20140218-01			AM20GAX	DISG/3602



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ANALYTICAL ENVIRONMENTAL SERVICES, INC
3080 Presidential Drive, Atlanta GA 30340-3704
TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: _____

11453

Date: _____ Page _____ of _____

COMPANY: AES		ADDRESS: Same as above		ANALYSIS REQUESTED		REMARKS		No # of Containers	
PHONE:		FAX:		SIGNATURE:		PRESERVATION (See codes)		Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.	
#	SAMPLE ID	SAMPLED		Grab	Composite	Matrix (See codes)	DATE	TIME	REMARKS
		DATE	TIME						
1	DUP-01-20140218-01	2-18-14		X		GW			
2	MW-24D-20140218-01	2-18-14	10:30	X		GW			
3	MW-300D-20140218-01	2-18-14	11:40	X		GW			
4	MW-23D-20140218-01	2-18-14	12:15	X		GW			
5	MW-12 DER-20140218-01	2-18-14	12:50	X		GW			
6	MW-206D-20140218-01	2-18-14	14:20	X		GW			
7									
8									
9									
10									
11									
12									
13									
14									
RELINQUISHED BY		DATE/TIME		RECEIVED BY		DATE/TIME		PROJECT INFORMATION	
1: WJ 2/20/14		2/21/14		KDD		2/21/14		PROJECT NAME: 1402063	
2: J		2/20/14				2/20/14		PROJECT #: 1402063	
3:								SITE ADDRESS:	
SPECIAL INSTRUCTIONS/COMMENTS:		SHIPMENT METHOD		OUT / / VIA:		IN / / VIA:		SEND REPORT TO: mkaras@aesatlanta.com	
		CLIENT FedEx UPS MAIL COURIER		GREYHOUND OTHER				INVOICE TO: (IF DIFFERENT FROM ABOVE)	
								STATE PROGRAM (if any):	
								E-mail? Y / N; Fax? Y / N	
								DATA PACKAGE: I II III IV	
								QUOTE #:	
								PO#:	
								TURNAROUND TIME REQUEST	
								Standard 5 Business Days	
								2 Business Day Rush	
								Next Business Day Rush	
								Same Day Rush (auth req.)	
								Other	
								Total # of Containers	
								RECEIPT	
								Turnaround Time Request	
								Standard 5 Business Days	
								2 Business Day Rush	
								Next Business Day Rush	
								Same Day Rush (auth req.)	
								Other	
								000000	

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water

PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

Cooler Receipt Form

Client Name: AES Project: 1402 D63 Lab Work Order: 11453

A. Shipping/Container Information (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other: _____ Air bill Present: (Yes) No

Tracking Number: 5613 2701 4187

Custody Seal on Cooler/Box Present: Yes (No) Seals Intact: Yes No

Cooler/Box Packing Material: Bubble Wrap Absorbent Foam Other: _____

Type of Ice: (Wet) Blue None Ice Intact: (Yes) Melted

Cooler Temperature: 1°C Radiation Screened: Yes (No) Chain of Custody Present: (Yes) No

Comments: _____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC		✓		
Containers intact	✓			
Were samples in separate bags		✓		
Sample container labels match COC	✓			
Sample name/date and time collected	✓			
Sufficient volume provided	✓			
Microseeps containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments: _____

Cooler contents examined/received by: LY Date: 2-21-14

Project Manager Review: PR Date: 2/24/14

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client EAM

Work Order Number 1402063

Checklist completed by [Signature] Date 2/19/14

Carrier name: FedEx ☐ UPS ☐ Courier ☐ Client ☒ US Mail ☐ Other ☐

Shipping container/cooler in good condition? Yes ☒ No ☐ Not Present ☐

Custody seals intact on shipping container/cooler? Yes ☐ No ☐ Not Present ☒

Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒

Container/Temp Blank temperature in compliance? (4°C±2)* Yes ☒ No ☐

Cooler #1 3.1 Cooler #2 3.3 Cooler #3 3.9 Cooler #4 ☒ Cooler #5 ☐ Cooler #6 ☐

Chain of custody present? Yes ☐ No ☐

Chain of custody signed when relinquished and received? Yes ☒ No ☐

Chain of custody agrees with sample labels? Yes ☒ No ☐

Samples in proper container/bottle? Yes ☒ No ☐

Sample containers intact? Yes ☒ No ☐

Sufficient sample volume for indicated test? Yes ☒ No ☐

All samples received within holding time? Yes ☒ No ☐

Was TAT marked on the COC? Yes ☒ No ☐

Proceed with Standard TAT as per project history? Yes ☐ No ☐ Not Applicable ☒

Water - VOA vials have zero headspace? No VOA vials submitted ☐ Yes ☒ No ☐

Water - pH acceptable upon receipt? Yes ☒ No ☐ Not Applicable ☐

Adjusted? ☐ Checked by [Signature]

Sample Condition: Good ☒ Other(Explain) ☐

(For diffusive samples or AIHA lead) Is a known blank included? Yes ☐ No ☒

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\\AQuality Assurance\\Checklists Procedures Sign-Off Templates\\Checklists\\Sample Receipt Checklists\\Sample_Cooler_Receipt_Checklist

Client: ERM-Southeast
 Project: AGLC Macon
 Lab Order: 1402D63

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1402D63-001A	TB-02-20140218-01	2/18/2014 12:00:00AM	Aqueous	Volatile Organic Compounds by GC/MS		02/19/2014	02/19/2014
1402D63-002A	DUP-01-20140218-01	2/18/2014 12:00:00AM	Groundwater	Volatile Organic Compounds by GC/MS		02/19/2014	02/19/2014
1402D63-002A	DUP-01-20140218-01	2/18/2014 12:00:00AM	Groundwater	Volatile Organic Compounds by GC/MS		02/19/2014	02/20/2014
1402D63-002B	DUP-01-20140218-01	2/18/2014 12:00:00AM	Groundwater	GC Analysis of Gaseous Samples		02/20/2014	02/20/2014
1402D63-002C	DUP-01-20140218-01	2/18/2014 12:00:00AM	Groundwater	TOTAL METALS BY ICP		02/20/2014	02/20/2014
1402D63-002C	DUP-01-20140218-01	2/18/2014 12:00:00AM	Groundwater	TOTAL MERCURY		02/19/2014	02/19/2014
1402D63-002D	DUP-01-20140218-01	2/18/2014 12:00:00AM	Groundwater	ION SCAN			02/19/2014
1402D63-002E	DUP-01-20140218-01	2/18/2014 12:00:00AM	Groundwater	Ferrous Iron			02/19/2014
1402D63-002F	DUP-01-20140218-01	2/18/2014 12:00:00AM	Groundwater	Cyanide		02/24/2014	02/24/2014
1402D63-002G	DUP-01-20140218-01	2/18/2014 12:00:00AM	Groundwater	Sulfide			02/20/2014
1402D63-002H	DUP-01-20140218-01	2/18/2014 12:00:00AM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/20/2014	02/20/2014
1402D63-002H	DUP-01-20140218-01	2/18/2014 12:00:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/21/2014	02/21/2014
1402D63-003A	MW-24D-20140218-01	2/18/2014 10:30:00AM	Groundwater	Volatile Organic Compounds by GC/MS		02/19/2014	02/19/2014
1402D63-003B	MW-24D-20140218-01	2/18/2014 10:30:00AM	Groundwater	GC Analysis of Gaseous Samples		02/20/2014	02/20/2014
1402D63-003C	MW-24D-20140218-01	2/18/2014 10:30:00AM	Groundwater	TOTAL METALS BY ICP		02/20/2014	02/20/2014
1402D63-003C	MW-24D-20140218-01	2/18/2014 10:30:00AM	Groundwater	TOTAL MERCURY		02/19/2014	02/19/2014
1402D63-003D	MW-24D-20140218-01	2/18/2014 10:30:00AM	Groundwater	ION SCAN			02/19/2014
1402D63-003E	MW-24D-20140218-01	2/18/2014 10:30:00AM	Groundwater	Ferrous Iron			02/19/2014
1402D63-003F	MW-24D-20140218-01	2/18/2014 10:30:00AM	Groundwater	Cyanide		02/24/2014	02/24/2014
1402D63-003G	MW-24D-20140218-01	2/18/2014 10:30:00AM	Groundwater	Sulfide			02/20/2014
1402D63-003H	MW-24D-20140218-01	2/18/2014 10:30:00AM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/20/2014	02/20/2014
1402D63-003H	MW-24D-20140218-01	2/18/2014 10:30:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/21/2014	02/21/2014
1402D63-004A	MW-300D-20140218-01	2/18/2014 11:40:00AM	Groundwater	Volatile Organic Compounds by GC/MS		02/19/2014	02/19/2014
1402D63-004B	MW-300D-20140218-01	2/18/2014 11:40:00AM	Groundwater	GC Analysis of Gaseous Samples		02/20/2014	02/20/2014
1402D63-004C	MW-300D-20140218-01	2/18/2014 11:40:00AM	Groundwater	TOTAL METALS BY ICP		02/20/2014	02/20/2014
1402D63-004C	MW-300D-20140218-01	2/18/2014 11:40:00AM	Groundwater	TOTAL MERCURY		02/19/2014	02/19/2014
1402D63-004D	MW-300D-20140218-01	2/18/2014 11:40:00AM	Groundwater	ION SCAN			02/19/2014
1402D63-004E	MW-300D-20140218-01	2/18/2014 11:40:00AM	Groundwater	Ferrous Iron			02/19/2014
1402D63-004F	MW-300D-20140218-01	2/18/2014 11:40:00AM	Groundwater	Cyanide		02/24/2014	02/24/2014

Client: ERM-Southeast
 Project: AGLC Macon
 Lab Order: 1402D63

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1402D63-004G	MW-300D-20140218-01	2/18/2014 11:40:00AM	Groundwater	Sulfide			02/20/2014
1402D63-004H	MW-300D-20140218-01	2/18/2014 11:40:00AM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/20/2014	02/20/2014
1402D63-004H	MW-300D-20140218-01	2/18/2014 11:40:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/21/2014	02/21/2014
1402D63-005A	MW-23D-20140218-01	2/18/2014 12:15:00PM	Groundwater	Volatile Organic Compounds by GC/MS		02/19/2014	02/19/2014
1402D63-005B	MW-23D-20140218-01	2/18/2014 12:15:00PM	Groundwater	GC Analysis of Gaseous Samples		02/20/2014	02/20/2014
1402D63-005C	MW-23D-20140218-01	2/18/2014 12:15:00PM	Groundwater	TOTAL METALS BY ICP		02/20/2014	02/20/2014
1402D63-005C	MW-23D-20140218-01	2/18/2014 12:15:00PM	Groundwater	TOTAL MERCURY		02/19/2014	02/19/2014
1402D63-005D	MW-23D-20140218-01	2/18/2014 12:15:00PM	Groundwater	ION SCAN			02/19/2014
1402D63-005E	MW-23D-20140218-01	2/18/2014 12:15:00PM	Groundwater	Ferrous Iron			02/19/2014
1402D63-005F	MW-23D-20140218-01	2/18/2014 12:15:00PM	Groundwater	Cyanide		02/24/2014	02/24/2014
1402D63-005G	MW-23D-20140218-01	2/18/2014 12:15:00PM	Groundwater	Sulfide			02/20/2014
1402D63-005H	MW-23D-20140218-01	2/18/2014 12:15:00PM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/20/2014	02/20/2014
1402D63-005H	MW-23D-20140218-01	2/18/2014 12:15:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/21/2014	02/21/2014
1402D63-006A	MW-12DRR-20140218-01	2/18/2014 12:50:00PM	Groundwater	Volatile Organic Compounds by GC/MS		02/19/2014	02/19/2014
1402D63-006B	MW-12DRR-20140218-01	2/18/2014 12:50:00PM	Groundwater	GC Analysis of Gaseous Samples		02/20/2014	02/20/2014
1402D63-006C	MW-12DRR-20140218-01	2/18/2014 12:50:00PM	Groundwater	TOTAL METALS BY ICP		02/20/2014	02/20/2014
1402D63-006C	MW-12DRR-20140218-01	2/18/2014 12:50:00PM	Groundwater	TOTAL MERCURY		02/19/2014	02/19/2014
1402D63-006D	MW-12DRR-20140218-01	2/18/2014 12:50:00PM	Groundwater	ION SCAN			02/19/2014
1402D63-006E	MW-12DRR-20140218-01	2/18/2014 12:50:00PM	Groundwater	Ferrous Iron			02/19/2014
1402D63-006F	MW-12DRR-20140218-01	2/18/2014 12:50:00PM	Groundwater	Cyanide		02/24/2014	02/24/2014
1402D63-006G	MW-12DRR-20140218-01	2/18/2014 12:50:00PM	Groundwater	Sulfide			02/20/2014
1402D63-006H	MW-12DRR-20140218-01	2/18/2014 12:50:00PM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/20/2014	02/20/2014
1402D63-006H	MW-12DRR-20140218-01	2/18/2014 12:50:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/21/2014	02/21/2014
1402D63-007A	MW-206D-20140218-01	2/18/2014 2:20:00PM	Groundwater	Volatile Organic Compounds by GC/MS		02/19/2014	02/19/2014
1402D63-007B	MW-206D-20140218-01	2/18/2014 2:20:00PM	Groundwater	GC Analysis of Gaseous Samples		02/20/2014	02/20/2014
1402D63-007C	MW-206D-20140218-01	2/18/2014 2:20:00PM	Groundwater	TOTAL METALS BY ICP		02/20/2014	02/20/2014
1402D63-007C	MW-206D-20140218-01	2/18/2014 2:20:00PM	Groundwater	TOTAL MERCURY		02/19/2014	02/19/2014
1402D63-007D	MW-206D-20140218-01	2/18/2014 2:20:00PM	Groundwater	ION SCAN			02/19/2014
1402D63-007E	MW-206D-20140218-01	2/18/2014 2:20:00PM	Groundwater	Ferrous Iron			02/19/2014

Client: ERM-Southeast
Project: AGLC Macon
Lab Order: 1402D63

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1402D63-007F	MW-206D-20140218-01	2/18/2014 2:20:00PM	Groundwater	Cyanide		02/24/2014	02/24/2014
1402D63-007G	MW-206D-20140218-01	2/18/2014 2:20:00PM	Groundwater	Sulfide			02/20/2014
1402D63-007H	MW-206D-20140218-01	2/18/2014 2:20:00PM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/20/2014	02/20/2014
1402D63-007H	MW-206D-20140218-01	2/18/2014 2:20:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/21/2014	02/21/2014

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402D63

ANALYTICAL QC SUMMARY REPORT

BatchID: 187215

Sample ID: MB-187215	Client ID:					Units: ug/L	Prep Date: 02/19/2014	Run No: 261629			
SampleType: MBLK	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D					BatchID: 187215	Analysis Date: 02/19/2014	Seq No: 5500373			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	BRL	0.050									
Benzo(a)pyrene	BRL	0.050									
Benzo(b)fluoranthene	BRL	0.10									
Dibenz(a,h)anthracene	BRL	0.10									
Indeno(1,2,3-cd)pyrene	BRL	0.050									
Surr: 4-Terphenyl-d14	2.152	0	2.000		108	53.2	145				

Sample ID: LCS-187215	Client ID:					Units: ug/L	Prep Date: 02/19/2014	Run No: 261629			
SampleType: LCS	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D					BatchID: 187215	Analysis Date: 02/19/2014	Seq No: 5500375			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	1.916	0.050	2.000		95.8	62.8	132				
Benzo(a)pyrene	1.958	0.050	2.000		97.9	56.4	123				
Benzo(b)fluoranthene	1.680	0.10	2.000		84.0	69.2	132				
Dibenz(a,h)anthracene	1.730	0.10	2.000		86.5	49.3	134				
Indeno(1,2,3-cd)pyrene	1.807	0.050	2.000		90.3	48.3	137				
Surr: 4-Terphenyl-d14	2.043	0	2.000		102	53.2	145				

Sample ID: 1402C76-002HMS	Client ID:				Units: ug/L			Prep Date: 02/19/2014	Run No: 261730		
SampleType: MS	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D				BatchID: 187215			Analysis Date: 02/20/2014	Seq No: 5502360		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	2.165	0.050	2.000	0.04159	106	51.4	142				
Benzo(a)pyrene	2.034	0.050	2.000	0.04673	99.4	48.3	126				
Benzo(b)fluoranthene	1.673	0.10	2.000	0.04651	81.3	49.9	134				
Dibenz(a,h)anthracene	1.747	0.10	2.000	0.04684	85.0	41.8	121				
Indeno(1,2,3-cd)pyrene	1.834	0.050	2.000	0.03488	90.0	42	129				
Surr: 4-Terphenyl-d14	2.309	0	2.000		115	53.2	145				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402D63

ANALYTICAL QC SUMMARY REPORT

BatchID: 187215

Sample ID: 1402C76-004HMS	Client ID:				Units: ug/L			Prep Date: 02/19/2014	Run No: 261730		
SampleType: MS	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D				BatchID: 187215			Analysis Date: 02/20/2014	Seq No: 5502367		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	2.200	0.050	2.000		110	51.4	142				
Benzo(a)pyrene	2.131	0.050	2.000		107	48.3	126				
Benzo(b)fluoranthene	1.753	0.10	2.000		87.7	49.9	134				
Dibenz(a,h)anthracene	1.783	0.10	2.000		89.2	41.8	121				
Indeno(1,2,3-cd)pyrene	1.862	0.050	2.000		93.1	42	129				
Surr: 4-Terphenyl-d14	2.335	0	2.000		117	53.2	145				

Sample ID: 1402C76-002HMSD	Client ID:					Units: ug/L	Prep Date: 02/19/2014	Run No: 261730			
SampleType: MSD	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D					BatchID: 187215	Analysis Date: 02/20/2014	Seq No: 5502363			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	2.165	0.050	2.000	0.04159	106	51.4	142	2.165	0.006	48.1	
Benzo(a)pyrene	2.079	0.050	2.000	0.04673	102	48.3	126	2.034	2.18	53.5	
Benzo(b)fluoranthene	1.707	0.10	2.000	0.04651	83.0	49.9	134	1.673	2.01	51.1	
Dibenz(a,h)anthracene	1.753	0.10	2.000	0.04684	85.3	41.8	121	1.747	0.366	54.2	
Indeno(1,2,3-cd)pyrene	1.838	0.050	2.000	0.03488	90.1	42	129	1.834	0.186	44.6	
Surr: 4-Terphenyl-d14	2.123	0	2.000		106	53.2	145	2.309	0	0	

Sample ID: 1402C76-004HMSD	Client ID:					Units: ug/L	Prep Date: 02/19/2014	Run No: 261730			
SampleType: MSD	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D					BatchID: 187215	Analysis Date: 02/20/2014	Seq No: 5502369			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	1.996	0.050	2.000		99.8	51.4	142	2.200	9.75	48.1	
Benzo(a)pyrene	1.134	0.050	2.000		56.7	48.3	126	2.131	61.0	53.5	R
Benzo(b)fluoranthene	1.640	0.10	2.000		82.0	49.9	134	1.753	6.65	51.1	
Dibenz(a,h)anthracene	1.702	0.10	2.000		85.1	41.8	121	1.783	4.68	54.2	
Indeno(1,2,3-cd)pyrene	1.775	0.050	2.000		88.8	42	129	1.862	4.78	44.6	
Surr: 4-Terphenyl-d14	2.224	0	2.000		111	53.2	145	2.335	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402D63

ANALYTICAL QC SUMMARY REPORT

BatchID: 187225

Sample ID: MB-187225	Client ID:				Units: mg/L	Prep Date: 02/19/2014	Run No: 261550				
SampleType: MBLK	TestCode: Mercury, Total	SW7470A			BatchID: 187225	Analysis Date: 02/19/2014	Seq No: 5499297				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury BRL 0.00020

Sample ID: LCS-187225	Client ID:				Units: mg/L	Prep Date: 02/19/2014	Run No: 261550				
SampleType: LCS	TestCode: Mercury, Total	SW7470A			BatchID: 187225	Analysis Date: 02/19/2014	Seq No: 5499301				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.004800 0.00020 0.0050 96.0 85 115

Sample ID: 1402C76-002CMS	Client ID:				Units: mg/L	Prep Date: 02/19/2014	Run No: 261550				
SampleType: MS	TestCode: Mercury, Total	SW7470A			BatchID: 187225	Analysis Date: 02/19/2014	Seq No: 5499307				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.003618 0.00020 0.0050 72.4 70 130

Sample ID: 1402C76-004CMS	Client ID:				Units: mg/L	Prep Date: 02/19/2014	Run No: 261550				
SampleType: MS	TestCode: Mercury, Total SW7470A				BatchID: 187225	Analysis Date: 02/19/2014	Seq No: 5499323				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.005170 0.00020 0.0050 103 70 130

Sample ID: 1402C76-002CMSD	Client ID:	Units: mg/L	Prep Date: 02/19/2014	Run No: 261550							
SampleType: MSD	TestCode: Mercury, Total SW7470A	BatchID: 187225	Analysis Date: 02/19/2014	Seq No: 5499310							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.003631 0.00020 0.0050 72.6 70 130 0.003618 0.374 20

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402D63

ANALYTICAL QC SUMMARY REPORT

BatchID: 187225

Sample ID: 1402C76-004CMSD		Client ID:			Units: mg/L		Prep Date: 02/19/2014		Run No: 261550		
SampleType: MSD		TestCode: Mercury, Total SW7470A			BatchID: 187225		Analysis Date: 02/19/2014		Seq No: 5499324		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.005168	0.00020	0.0050		103	70	130	0.005170	0.046	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402D63

ANALYTICAL QC SUMMARY REPORT

BatchID: 187242

Sample ID: MB-187242	Client ID:					Units: ug/L	Prep Date: 02/19/2014	Run No: 261559			
SampleType: MBLK	TestCode: Volatile Organic Compounds by GC/MS SW8260B					BatchID: 187242	Analysis Date: 02/19/2014	Seq No: 5498782			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	BRL	5.0									
Carbon disulfide	BRL	5.0									
Ethylbenzene	BRL	5.0									
Toluene	BRL	5.0									
Xylenes, Total	BRL	5.0									
Surr: 4-Bromofluorobenzene	40.42	0	50.00		80.8	66.2	120				
Surr: Dibromofluoromethane	42.62	0	50.00		85.2	79.5	121				
Surr: Toluene-d8	39.37	0	50.00		78.7	77	117				

Sample ID: LCS-187242	Client ID:					Units: ug/L	Prep Date: 02/19/2014	Run No: 261559			
SampleType: LCS	TestCode: Volatile Organic Compounds by GC/MS SW8260B					BatchID: 187242	Analysis Date: 02/19/2014	Seq No: 5498861			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	43.82	5.0	50.00		87.6	74.2	129				
Toluene	43.77	5.0	50.00		87.5	74.2	129				
Surr: 4-Bromofluorobenzene	43.23	0	50.00		86.5	66.2	120				
Surr: Dibromofluoromethane	43.84	0	50.00		87.7	79.5	121				
Surr: Toluene-d8	43.29	0	50.00		86.6	77	117				

Sample ID: 1402C76-002AMS	Client ID:					Units: ug/L	Prep Date: 02/19/2014	Run No: 261559			
SampleType: MS	TestCode: Volatile Organic Compounds by GC/MS SW8260B					BatchID: 187242	Analysis Date: 02/19/2014	Seq No: 5499401			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	48.42	5.0	50.00		96.8	70.2	138				
Toluene	48.17	5.0	50.00		96.3	70	139				
Surr: 4-Bromofluorobenzene	45.97	0	50.00		91.9	66.2	120				
Surr: Dibromofluoromethane	44.63	0	50.00		89.3	79.5	121				
Surr: Toluene-d8	44.14	0	50.00		88.3	77	117				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402D63

ANALYTICAL QC SUMMARY REPORT

BatchID: 187242

Sample ID: 1402C76-004AMS	Client ID:					Units: ug/L	Prep Date: 02/19/2014	Run No: 261559			
SampleType: MS	TestCode: Volatile Organic Compounds by GC/MS SW8260B					BatchID: 187242	Analysis Date: 02/19/2014	Seq No: 5499912			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	44.21	5.0	50.00		88.4	70.2	138				
Toluene	43.86	5.0	50.00		87.7	70	139				
Surr: 4-Bromofluorobenzene	44.03	0	50.00		88.1	66.2	120				
Surr: Dibromofluoromethane	43.96	0	50.00		87.9	79.5	121				
Surr: Toluene-d8	43.32	0	50.00		86.6	77	117				

Sample ID: 1402C76-002AMSD	Client ID:					Units: ug/L	Prep Date: 02/19/2014	Run No: 261559			
SampleType: MSD	TestCode: Volatile Organic Compounds by GC/MS SW8260B					BatchID: 187242	Analysis Date: 02/19/2014	Seq No: 5499408			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	48.84	5.0	50.00		97.7	70.2	138	48.42	0.864	20	
Toluene	48.93	5.0	50.00		97.9	70	139	48.17	1.57	20	
Surr: 4-Bromofluorobenzene	45.46	0	50.00		90.9	66.2	120	45.97	0	0	
Surr: Dibromofluoromethane	44.00	0	50.00		88.0	79.5	121	44.63	0	0	
Surr: Toluene-d8	43.73	0	50.00		87.5	77	117	44.14	0	0	

Sample ID: 1402C76-004AMSD	Client ID:					Units: ug/L	Prep Date: 02/19/2014	Run No: 261559			
SampleType: MSD	TestCode: Volatile Organic Compounds by GC/MS SW8260B					BatchID: 187242	Analysis Date: 02/19/2014	Seq No: 5499913			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	46.45	5.0	50.00		92.9	70.2	138	44.21	4.94	20	
Toluene	45.73	5.0	50.00		91.5	70	139	43.86	4.17	20	
Surr: 4-Bromofluorobenzene	42.97	0	50.00		85.9	66.2	120	44.03	0	0	
Surr: Dibromofluoromethane	43.63	0	50.00		87.3	79.5	121	43.96	0	0	
Surr: Toluene-d8	42.28	0	50.00		84.6	77	117	43.32	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402D63

ANALYTICAL QC SUMMARY REPORT

BatchID: 187273

Sample ID: MB-187273	Client ID:					Units: mg/L	Prep Date: 02/20/2014	Run No: 261723			
SampleType: MBLK	TestCode: METALS, TOTAL	SW6010C	BatchID: 187273				Analysis Date: 02/20/2014	Seq No: 5502224			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony BRL 0.0200
Arsenic BRL 0.0500
Barium BRL 0.0200
Beryllium BRL 0.0100
Cadmium BRL 0.0050
Chromium BRL 0.0100
Copper BRL 0.0100
Iron BRL 0.100
Lead BRL 0.0100
Nickel BRL 0.0200
Zinc BRL 0.0200

Sample ID: LCS-187273	Client ID:					Units: mg/L	Prep Date: 02/20/2014	Run No: 261723			
SampleType: LCS	TestCode: METALS, TOTAL	SW6010C				BatchID: 187273	Analysis Date: 02/20/2014	Seq No: 5502223			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony 1.022 0.0200 1.000 102 80 120
Arsenic 1.008 0.0500 1.000 101 80 120
Barium 1.013 0.0200 1.000 101 80 120
Beryllium 1.004 0.0100 1.000 100 80 120
Cadmium 1.007 0.0050 1.000 101 80 120
Chromium 1.002 0.0100 1.000 100 80 120
Copper 0.9953 0.0100 1.000 99.5 80 120
Iron 9.937 0.100 10.00 99.4 80 120
Lead 1.002 0.0100 1.000 100 80 120
Nickel 1.006 0.0200 1.000 101 80 120
Zinc 1.002 0.0200 1.000 0.004498 99.8 80 120

Qualifiers:	> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
	BRL Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
	J Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
	Rpt Lim Reporting Limit	S Spike Recovery outside limits due to matrix	

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402D63

ANALYTICAL QC SUMMARY REPORT

BatchID: 187273

Sample ID: 1402C76-002CMS	Client ID:					Units: mg/L	Prep Date: 02/20/2014	Run No: 261723			
SampleType: MS	TestCode: METALS, TOTAL	SW6010C	BatchID: 187273				Analysis Date: 02/20/2014	Seq No: 5502226			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	0.9824	0.0200	1.000		98.2	75	125				
Arsenic	0.9761	0.0500	1.000		97.6	75	125				
Barium	1.038	0.0200	1.000	0.07274	96.5	75	125				
Beryllium	0.9698	0.0100	1.000		97.0	75	125				
Cadmium	0.9722	0.0050	1.000		97.2	75	125				
Chromium	0.9614	0.0100	1.000		96.1	75	125				
Copper	0.9597	0.0100	1.000	0.006366	95.3	75	125				
Iron	9.560	0.100	10.00	0.06224	95.0	75	125				
Lead	0.9515	0.0100	1.000	0.001317	95.0	75	125				
Nickel	0.9709	0.0200	1.000	0.01975	95.1	75	125				
Zinc	0.9699	0.0200	1.000	0.01789	95.2	75	125				

Sample ID: 1402C76-004CMS	Client ID:					Units: mg/L	Prep Date: 02/20/2014	Run No: 261723			
SampleType: MS	TestCode: METALS, TOTAL	SW6010C	BatchID: 187273				Analysis Date: 02/21/2014	Seq No: 5504309			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	0.9878	0.0200	1.000		98.8	75	125				
Arsenic	0.9825	0.0500	1.000		98.3	75	125				
Barium	4.588	0.0200	1.000	3.699	88.9	75	125				
Beryllium	0.9555	0.0100	1.000	0.003300	95.2	75	125				
Cadmium	0.9756	0.0050	1.000		97.6	75	125				
Chromium	0.9828	0.0100	1.000		98.3	75	125				
Copper	0.9477	0.0100	1.000	0.003805	94.4	75	125				
Iron	9.331	0.100	10.00	0.03462	93.0	75	125				
Lead	0.9526	0.0100	1.000		95.3	75	125				
Nickel	0.9240	0.0200	1.000	0.007993	91.6	75	125				
Zinc	0.9762	0.0200	1.000	0.02926	94.7	75	125				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402D63

ANALYTICAL QC SUMMARY REPORT

BatchID: 187273

Sample ID: 1402C76-002CMSD	Client ID:					Units: mg/L	Prep Date: 02/20/2014	Run No: 261723			
SampleType: MSD	TestCode: METALS, TOTAL	SW6010C				BatchID: 187273	Analysis Date: 02/20/2014	Seq No: 5502229			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	1.028	0.0200	1.000		103	75	125	0.9824	4.54	20	
Arsenic	1.012	0.0500	1.000		101	75	125	0.9761	3.66	20	
Barium	1.072	0.0200	1.000	0.07274	99.9	75	125	1.038	3.23	20	
Beryllium	0.9851	0.0100	1.000		98.5	75	125	0.9698	1.57	20	
Cadmium	1.002	0.0050	1.000		100	75	125	0.9722	2.97	20	
Chromium	0.9944	0.0100	1.000		99.4	75	125	0.9614	3.37	20	
Copper	1.002	0.0100	1.000	0.006366	99.6	75	125	0.9597	4.31	20	
Iron	9.843	0.100	10.00	0.06224	97.8	75	125	9.560	2.92	20	
Lead	0.9832	0.0100	1.000	0.001317	98.2	75	125	0.9515	3.27	20	
Nickel	1.004	0.0200	1.000	0.01975	98.4	75	125	0.9709	3.31	20	
Zinc	1.001	0.0200	1.000	0.01789	98.3	75	125	0.9699	3.15	20	

Sample ID: 1402C76-004CMSD	Client ID:					Units: mg/L	Prep Date: 02/20/2014	Run No: 261723			
SampleType: MSD	TestCode: METALS, TOTAL	SW6010C				BatchID: 187273	Analysis Date: 02/21/2014	Seq No: 5504310			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	0.9930	0.0200	1.000		99.3	75	125	0.9878	0.526	20	
Arsenic	0.9860	0.0500	1.000		98.6	75	125	0.9825	0.350	20	
Barium	4.635	0.0200	1.000	3.699	93.6	75	125	4.588	1.02	20	
Beryllium	0.9604	0.0100	1.000	0.003300	95.7	75	125	0.9555	0.513	20	
Cadmium	0.9764	0.0050	1.000		97.6	75	125	0.9756	0.083	20	
Chromium	0.9878	0.0100	1.000		98.8	75	125	0.9828	0.505	20	
Copper	0.9550	0.0100	1.000	0.003805	95.1	75	125	0.9477	0.767	20	
Iron	9.401	0.100	10.00	0.03462	93.7	75	125	9.331	0.755	20	
Lead	0.9532	0.0100	1.000		95.3	75	125	0.9526	0.067	20	
Nickel	0.9245	0.0200	1.000	0.007993	91.7	75	125	0.9240	0.053	20	
Zinc	0.9777	0.0200	1.000	0.02926	94.8	75	125	0.9762	0.154	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402D63

ANALYTICAL QC SUMMARY REPORT

BatchID: 187279

Sample ID: MB-187279	Client ID:					Units: ug/L	Prep Date: 02/20/2014	Run No: 261713			
SampleType: MBLK	TestCode: Semivolatile Org. Comp. by GC/MS	SW8270D				BatchID: 187279	Analysis Date: 02/20/2014	Seq No: 5502069			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

2,4-Dimethylphenol	BRL	10									
2-Methylphenol	BRL	10									
3,4-Methylphenol	BRL	10									
Acenaphthene	BRL	10									
Acenaphthylene	BRL	10									
Anthracene	BRL	10									
Benzo(g,h,i)perylene	BRL	10									
Benzo(k)fluoranthene	BRL	10									
Chrysene	BRL	10									
Fluoranthene	BRL	10									
Fluorene	BRL	10									
Naphthalene	BRL	10									
Phenanthrene	BRL	10									
Phenol	BRL	10									
Pyrene	BRL	10									
Surr: 2,4,6-Tribromophenol	93.12	0	100.0		93.1	51.5	124				
Surr: 2-Fluorobiphenyl	47.25	0	50.00		94.5	51.7	118				
Surr: 2-Fluorophenol	62.02	0	100.0		62.0	26	120				
Surr: 4-Terphenyl-d14	50.92	0	50.00		102	45.2	137				
Surr: Nitrobenzene-d5	43.38	0	50.00		86.8	42	120				
Surr: Phenol-d5	43.96	0	100.0		44.0	12.3	120				

Sample ID: LCS-187279	Client ID:					Units: ug/L	Prep Date: 02/20/2014	Run No: 261713			
SampleType: LCS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D					BatchID: 187279	Analysis Date: 02/20/2014	Seq No: 5502080			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	94.12	10	100.0		94.1	67.7	122				
Phenol	42.55	10	100.0		42.6	24.6	120				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402D63

ANALYTICAL QC SUMMARY REPORT**BatchID: 187279**

Sample ID: LCS-187279	Client ID:					Units: ug/L	Prep Date: 02/20/2014	Run No: 261713			
SampleType: LCS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D					BatchID: 187279	Analysis Date: 02/20/2014	Seq No: 5502080			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Pyrene	97.89	10	100.0		97.9	68.3	123				
Surr: 2,4,6-Tribromophenol	110.1	0	100.0		110	51.5	124				
Surr: 2-Fluorobiphenyl	53.40	0	50.00		107	51.7	118				
Surr: 2-Fluorophenol	65.41	0	100.0		65.4	26	120				
Surr: 4-Terphenyl-d14	56.80	0	50.00		114	45.2	137				
Surr: Nitrobenzene-d5	48.68	0	50.00		97.4	42	120				
Surr: Phenol-d5	48.89	0	100.0		48.9	12.3	120				

Sample ID: 1402C64-002GMS	Client ID:				Units: ug/L	Prep Date: 02/20/2014	Run No: 261713				
SampleType: MS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 187279	Analysis Date: 02/20/2014	Seq No: 5502077				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	90.11	10	100.0		90.1	51.9	120				
Phenol	60.41	10	100.0		60.4	30.5	120				
Pyrene	91.41	10	100.0		91.4	50.6	120				
Surr: 2,4,6-Tribromophenol	108.1	0	100.0		108	51.5	124				
Surr: 2-Fluorobiphenyl	51.23	0	50.00		102	51.7	118				
Surr: 2-Fluorophenol	78.41	0	100.0		78.4	26	120				
Surr: 4-Terphenyl-d14	52.61	0	50.00		105	45.2	137				
Surr: Nitrobenzene-d5	48.32	0	50.00		96.6	42	120				
Surr: Phenol-d5	69.97	0	100.0		70.0	12.3	120				

Sample ID: 1402C64-002GMSD	Client ID:				Units: ug/L	Prep Date: 02/20/2014	Run No: 261713				
SampleType: MSD	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 187279	Analysis Date: 02/20/2014	Seq No: 5502079				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	87.92	10	100.0		87.9	51.9	120	90.11	2.46	24.9	
Phenol	58.05	10	100.0		58.0	30.5	120	60.41	3.98	34.4	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402D63

ANALYTICAL QC SUMMARY REPORT

BatchID: 187279

Sample ID: 1402C64-002GMSD		Client ID:				Units: ug/L		Prep Date: 02/20/2014		Run No: 261713	
SampleType: MSD		TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 187279		Analysis Date: 02/20/2014		Seq No: 5502079	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Pyrene	90.06	10	100.0		90.1	50.6	120	91.41	1.49	26.7	
Surr: 2,4,6-Tribromophenol	100.6	0	100.0		101	51.5	124	108.1	0	0	
Surr: 2-Fluorobiphenyl	48.25	0	50.00		96.5	51.7	118	51.23	0	0	
Surr: 2-Fluorophenol	71.62	0	100.0		71.6	26	120	78.41	0	0	
Surr: 4-Terphenyl-d14	49.30	0	50.00		98.6	45.2	137	52.61	0	0	
Surr: Nitrobenzene-d5	43.84	0	50.00		87.7	42	120	48.32	0	0	
Surr: Phenol-d5	64.47	0	100.0		64.5	12.3	120	69.97	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402D63

ANALYTICAL QC SUMMARY REPORT

BatchID: 187283

Sample ID: MB-187283	Client ID:				Units: ug/L	Prep Date: 02/20/2014	Run No: 261637				
SampleType: MBLK	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175			BatchID: 187283	Analysis Date: 02/20/2014	Seq No: 5500697				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

BRL

4

Sample ID: LCS-187283	Client ID:					Units: ug/L	Prep Date: 02/20/2014	Run No: 261637			
SampleType: LCS	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175				BatchID: 187283	Analysis Date: 02/20/2014	Seq No: 5500753			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

129.0

4

200.0

64.5

45.2

115

Sample ID: LCSD-187283	Client ID:					Units: ug/L	Prep Date: 02/20/2014	Run No: 261637			
SampleType: LCSD	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175				BatchID: 187283	Analysis Date: 02/20/2014	Seq No: 5500755			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

126.8

4

200.0

63.4

45.2

115

129.0

1.77

20

Sample ID: 1402C76-002BMS	Client ID:					Units: ug/L	Prep Date: 02/20/2014	Run No: 261637			
SampleType: MS	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175				BatchID: 187283	Analysis Date: 02/20/2014	Seq No: 5500902			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

122.2

4

200.0

5.730

58.2

41.1

115

Sample ID: 1402C76-002BMSD	Client ID:					Units: ug/L	Prep Date: 02/20/2014	Run No: 261637			
SampleType: MSD	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175				BatchID: 187283	Analysis Date: 02/20/2014	Seq No: 5500906			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

122.8

4

200.0

5.730

58.5

41.1

115

122.2

0.524

20

Qualifiers:

> Greater than Result value

BRL Below reporting limit

J Estimated value detected below Reporting Limit

Rpt Lim Reporting Limit

< Less than Result value

E Estimated (value above quantitation range)

N Analyte not NELAC certified

S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank

H Holding times for preparation or analysis exceeded

R RPD outside limits due to matrix

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402D63

ANALYTICAL QC SUMMARY REPORT

BatchID: 187411

Sample ID: MB-187411	Client ID:				Units: mg/L	Prep Date: 02/24/2014	Run No: 261807				
SampleType: MBLK	TestCode: Cyanide SW9014				BatchID: 187411	Analysis Date: 02/24/2014	Seq No: 5503753				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total BRL 0.010

Sample ID: LCS-187411		Client ID:			Units: mg/L		Prep Date: 02/24/2014		Run No: 261807		
SampleType: LCS		TestCode: Cyanide SW9014			BatchID: 187411		Analysis Date: 02/24/2014		Seq No: 5503754		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.2337 0.010 0.2500 93.5 85 115

Sample ID: 1402D63-004FMS	Client ID: MW-300D-20140218-01	Units: mg/L	Prep Date: 02/24/2014	Run No: 261807							
SampleType: MS	TestCode: Cyanide SW9014	BatchID: 187411	Analysis Date: 02/24/2014	Seq No: 5503756							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.2374 0.010 0.2500 95.0 70 130

Sample ID: 1402D63-004FMSD		Client ID: MW-300D-20140218-01				Units: mg/L		Prep Date: 02/24/2014		Run No: 261807	
SampleType: MSD		TestCode: Cyanide SW9014				BatchID: 187411		Analysis Date: 02/24/2014		Seq No: 5503757	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.2352 0.010 0.2500 94.1 70 130 0.2374 0.931 20

Qualifiers:	> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
	BRL Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
	J Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
	Rpt Lim Reporting Limit	S Spike Recovery outside limits due to matrix	

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402D63

ANALYTICAL QC SUMMARY REPORT

BatchID: R261632

Sample ID: MB-R261632	Client ID:				Units: mg/L	Prep Date:			Run No: 261632		
SampleType: MBLK	TestCode: Sulfide (E376.1/SM4500 S2 F)				BatchID: R261632	Analysis Date: 02/20/2014			Seq No: 5500450		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide BRL 1.0

Sample ID: LCS-R261632	Client ID:				Units: mg/L	Prep Date:			Run No: 261632		
SampleType: LCS	TestCode: Sulfide (E376.1/SM4500 S2 F)				BatchID: R261632	Analysis Date: 02/20/2014			Seq No: 5500451		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide 291.2 1.0 291.2 100 90 110

Sample ID: 1402C76-002GMS	Client ID:				Units: mg/L	Prep Date:			Run No: 261632		
SampleType: MS	TestCode: Sulfide (E376.1/SM4500 S2 F)				BatchID: R261632	Analysis Date: 02/20/2014			Seq No: 5500453		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide 12.96 1.0 14.56 89.0 80 120

Sample ID: 1402C76-004GMS	Client ID:				Units: mg/L	Prep Date:			Run No: 261632		
SampleType: MS	TestCode: Sulfide (E376.1/SM4500 S2 F)				BatchID: R261632	Analysis Date: 02/20/2014			Seq No: 5500459		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide 14.56 1.0 14.56 100 80 120

Sample ID: 1402C76-002GMSD	Client ID:				Units: mg/L	Prep Date:			Run No: 261632		
SampleType: MSD	TestCode: Sulfide (E376.1/SM4500 S2 F)				BatchID: R261632	Analysis Date: 02/20/2014			Seq No: 5500455		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide 13.36 1.0 14.56 91.8 80 120 12.96 3.04 20

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402D63

ANALYTICAL QC SUMMARY REPORT

BatchID: R261632

Sample ID: 1402C76-004GMSD		Client ID:			Units: mg/L		Prep Date:		Run No: 261632		
SampleType: MSD		TestCode: Sulfide (E376.1/SM4500 S2 F)			BatchID: R261632		Analysis Date: 02/20/2014		Seq No: 5500460		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide	14.96	1.0	14.56		103	80	120	14.56	2.71	20	
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Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402D63

ANALYTICAL QC SUMMARY REPORT

BatchID: R261670

Sample ID: MB-R261670	Client ID:					Units: mg/L	Prep Date:	Run No: 261670			
SampleType: MBLK	TestCode: ION SCAN SW9056A					BatchID: R261670	Analysis Date: 02/19/2014	Seq No: 5501319			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate BRL 0.25
 Sulfate BRL 1.0

Sample ID: LCS-R261670	Client ID:					Units: mg/L	Prep Date:	Run No: 261670			
SampleType: LCS	TestCode: ION SCAN SW9056A					BatchID: R261670	Analysis Date: 02/19/2014	Seq No: 5501316			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 5.338 0.25 5.000 107 90 110
 Sulfate 24.54 1.0 25.00 98.2 90 110

Sample ID: 1402D63-005DMS		Client ID: MW-23D-20140218-01			Units: mg/L		Prep Date:		Run No: 261670		
SampleType: MS		TestCode: ION SCAN SW9056A			BatchID: R261670		Analysis Date: 02/19/2014		Seq No: 5501336		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 25.72 1.2 25.00 103 90 110
 Sulfate 176.2 5.0 125.0 48.76 102 90 110

Sample ID: 1402D77-004AMS	Client ID:				Units: mg/L	Prep Date:			Run No: 261670		
SampleType: MS	TestCode: ION SCAN SW9056A				BatchID: R261670	Analysis Date: 02/19/2014			Seq No: 5501347		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 5.190 0.25 5.000 104 90 110
 Sulfate 27.59 1.0 25.00 3.300 97.2 90 110

Sample ID: 1402D63-005DMSD		Client ID: MW-23D-20140218-01			Units: mg/L		Prep Date:		Run No: 261670		
SampleType: MSD		TestCode: ION SCAN SW9056A			BatchID: R261670		Analysis Date: 02/19/2014		Seq No: 5501337		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 25.69 1.2 25.00 103 90 110 25.72 0.118 20

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402D63

ANALYTICAL QC SUMMARY REPORT

BatchID: R261670

Sample ID: 1402D63-005DMSD		Client ID: MW-23D-20140218-01				Units: mg/L		Prep Date:		Run No: 261670	
SampleType: MSD		TestCode: ION SCAN SW9056A				BatchID: R261670		Analysis Date: 02/19/2014		Seq No: 5501337	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sulfate	175.5	5.0	125.0	48.76	101	90	110	176.2	0.369	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402D63

ANALYTICAL QC SUMMARY REPORT

BatchID: R261803

Sample ID: MB-R261803	Client ID:					Units: mg/L	Prep Date:		Run No: 261803		
SampleType: MBLK	TestCode: Ferrous Iron	SM3500-Fe-B				BatchID: R261803	Analysis Date: 02/19/2014		Seq No: 5503708		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Iron, as Ferrous (Fe+2) BRL 0.100

Sample ID: LCS-R261803	Client ID:					Units: mg/L	Prep Date:			Run No: 261803	
SampleType: LCS	TestCode: Ferrous Iron	SM3500-Fe-B				BatchID: R261803	Analysis Date: 02/19/2014			Seq No: 5503709	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Iron, as Ferrous (Fe+2) 0.4745 0.100 0.5000 94.9 85 115

Sample ID: 1402D63-005EMS		Client ID: MW-23D-20140218-01				Units: mg/L		Prep Date:		Run No: 261803	
SampleType: MS		TestCode: Ferrous Iron SM3500-Fe-B				BatchID: R261803		Analysis Date: 02/19/2014		Seq No: 5503718	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Iron, as Ferrous (Fe+2) 0.4832 0.100 0.5000 96.6 80 120

Sample ID: 1402D63-005EMSD		Client ID: MW-23D-20140218-01				Units: mg/L		Prep Date:		Run No: 261803	
SampleType: MSD		TestCode: Ferrous Iron SM3500-Fe-B				BatchID: R261803		Analysis Date: 02/19/2014		Seq No: 5503719	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Iron, as Ferrous (Fe+2) 0.4717 0.100 0.5000 94.3 80 120 0.4832 2.41 30

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

February 26, 2014

Jim Morrison
ERM-Southeast
3200 Windy Hill Rd
Atlanta GA 30339

TEL: (678) 486-2700
FAX: (404) 745-0103

RE: AGLC Macon

Dear Jim Morrison:

Order No: 1402F04

Analytical Environmental Services, Inc. received 8 samples on 2/19/2014 5:05:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.

AES' certifications are as follows:

- NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/13-06/30/14.
- AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) effective until 09/01/15.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Mirzeta Kararic
Project Manager



ANALYTICAL ENVIRONMENTAL SERVICES, INC

3080 Presidential Drive, Atlanta GA 30340-3704

TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1402404

Date: 2-19-14 Page 1 of 1

COMPANY:		ADDRESS:		ANALYSIS REQUESTED		REMARKS		No # of Containers	
ERM		3200 Wm. Byrd Blvd SE Atlanta, GA 30331		PRESERVATION (See codes)		Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.			
PHONE:		SIGNATURE:		Matrix					
		D. Dowling / R. McIlton		Composite					
		SAMPLED		Grab					
		DATE		TIME					
1	TRB-03-20140219-01	2-19-14	1	1315	W				2
2	RINSE-1-20140219-01				GW				13
3	DUP-02-20140219-01								13
4	DUP-03-20140219-01								13
5	MW-302DD-20140219-01			1030					13
6	MW-304D-20140219-01			0930					13
7	MW-205DD-20140219-01			1110					13
8	MW-205D-20140219-01			1325					13
9									
10									
11									
12									
13									
14									

RELINQUISHED BY		RECEIVED BY		DATE/TIME		PROJECT INFORMATION		RECEIPT	
1. Donald Dowling		1. U. Tuttle		2/19/14 4:30		PROJECT NAME: AGLC-Macon		Total # of Containers: 93	
2. U. Tuttle		2. M. J.		2/19/14		PROJECT #: 0230715ph052		Turnaround Time Request: Standard 5 Business Days	
3.		3.		5:05		SITE ADDRESS: 137 Mulberry Street + Macon GA		2 Business Day Rush	
						SEND REPORT TO: JIM MORRISON		Next Business Day Rush	
						INVOICE TO: (IF DIFFERENT FROM ABOVE)		Same Day Rush (auth req.)	
						QUOTE #:		Other	
						STATE PROGRAM (if any):		E-mail? Y/N; Fax? Y/N	
						DATA PACKAGE: I II III IV			

SPECIAL INSTRUCTIONS/COMMENTS:		SHIPMENT METHOD	
1. file hereunder Cr		OUT / / VIA:	
2. Fe 2+ Short hold		IN / / VIA:	
		CLIENT FedEx UPS MAIL COURIER	
		GREYHOUND OTHER	

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water

PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

Client: ERM-Southeast
Project: AGLC Macon
Lab ID: 1402F04

Case Narrative**Sample Receiving Nonconformance:**

Hexavalent Chromium was listed on the COC. Samples were analyzed for Ferrous Iron per project history and Nic Vrey was notified via phone on 2/18/14.

Ferrous Iron by Method SM3500-Fe-B:

Sample ID's "DUP-02-20140219-01 and DUP-03-20140219-01 " reporting with an H-Flag since there is no collection time on the COC.

Ion Chromatography Analysis by Method 9056A:

Due to sample matrix, sample 1402F04-006D required a dilution during preparation and/or analysis resulting in elevated reporting limits.

PAH Analysis by Method 8270D SIM:

Matrix spike and matrix spike duplicate analyses were not performed with Batch 186622 due to insufficient sample volume.

Analytical Environmental Services, Inc

Date: 28-Feb-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402F04-001

Client Sample ID: TB-03-20140219-01
 Collection Date: 2/19/2014
 Matrix: Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	187299	1	02/21/2014 11:23	NP
Carbon disulfide	BRL	5.0		ug/L	187299	1	02/21/2014 11:23	NP
Ethylbenzene	BRL	5.0		ug/L	187299	1	02/21/2014 11:23	NP
Toluene	BRL	5.0		ug/L	187299	1	02/21/2014 11:23	NP
Xylenes, Total	BRL	5.0		ug/L	187299	1	02/21/2014 11:23	NP
Surr: 4-Bromofluorobenzene	74.2	66.2-120		%REC	187299	1	02/21/2014 11:23	NP
Surr: Dibromofluoromethane	89.7	79.5-121		%REC	187299	1	02/21/2014 11:23	NP
Surr: Toluene-d8	80.8	77-117		%REC	187299	1	02/21/2014 11:23	NP

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 28-Feb-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402F04-002

Client Sample ID: RINSE-1-20140219-01
 Collection Date: 2/19/2014 1:15:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	187299	1	02/21/2014 15:10	NP
Carbon disulfide	BRL	5.0		ug/L	187299	1	02/21/2014 15:10	NP
Ethylbenzene	BRL	5.0		ug/L	187299	1	02/21/2014 15:10	NP
Toluene	BRL	5.0		ug/L	187299	1	02/21/2014 15:10	NP
Xylenes, Total	BRL	5.0		ug/L	187299	1	02/21/2014 15:10	NP
Surr: 4-Bromofluorobenzene	75.8	66.2-120		%REC	187299	1	02/21/2014 15:10	NP
Surr: Dibromofluoromethane	86.9	79.5-121		%REC	187299	1	02/21/2014 15:10	NP
Surr: Toluene-d8	80.5	77-117		%REC	187299	1	02/21/2014 15:10	NP
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R261858	1	02/21/2014 16:50	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	186622	1	02/24/2014 18:41	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	186622	1	02/24/2014 18:41	YH
Benzo(a)pyrene	BRL	0.050		ug/L	186622	1	02/24/2014 18:41	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	186622	1	02/24/2014 18:41	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	186622	1	02/24/2014 18:41	YH
Surr: 4-Terphenyl-d14	112	53.2-145		%REC	186622	1	02/24/2014 18:41	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187279	1	02/21/2014 20:09	YH
2-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 20:09	YH
3,4-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 20:09	YH
Acenaphthene	BRL	10		ug/L	187279	1	02/21/2014 20:09	YH
Acenaphthylene	BRL	10		ug/L	187279	1	02/21/2014 20:09	YH
Anthracene	BRL	10		ug/L	187279	1	02/21/2014 20:09	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187279	1	02/21/2014 20:09	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 20:09	YH
Chrysene	BRL	10		ug/L	187279	1	02/21/2014 20:09	YH
Fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 20:09	YH
Fluorene	BRL	10		ug/L	187279	1	02/21/2014 20:09	YH
Naphthalene	BRL	10		ug/L	187279	1	02/21/2014 20:09	YH
Phenanthrene	BRL	10		ug/L	187279	1	02/21/2014 20:09	YH
Phenol	BRL	10		ug/L	187279	1	02/21/2014 20:09	YH
Pyrene	BRL	10		ug/L	187279	1	02/21/2014 20:09	YH
Surr: 2,4,6-Tribromophenol	82.2	51.5-124		%REC	187279	1	02/21/2014 20:09	YH
Surr: 2-Fluorobiphenyl	80.8	51.7-118		%REC	187279	1	02/21/2014 20:09	YH
Surr: 2-Fluorophenol	62.8	26-120		%REC	187279	1	02/21/2014 20:09	YH
Surr: 4-Terphenyl-d14	86.6	45.2-137		%REC	187279	1	02/21/2014 20:09	YH
Surr: Nitrobenzene-d5	72.5	42-120		%REC	187279	1	02/21/2014 20:09	YH

Qualifiers:

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- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 28-Feb-14

Client: ERM-Southeast	Client Sample ID: RINSE-1-20140219-01
Project Name: AGLC Macon	Collection Date: 2/19/2014 1:15:00 PM
Lab ID: 1402F04-002	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D					(SW3510C)			
Surr: Phenol-d5	51.4	12.3-120		%REC	187279	1	02/21/2014 20:09	YH
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	187318	1	02/21/2014 13:17	CG
ION SCAN SW9056A								
Nitrate	BRL	0.25		mg/L	R261862	1	02/20/2014 09:15	GR
Sulfate	BRL	1.0		mg/L	R261862	1	02/20/2014 09:15	GR
GC Analysis of Gaseous Samples SOP-RSK 175					(RSK175)			
Methane	BRL	4		ug/L	187283	1	02/20/2014 15:07	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	BRL	0.100		mg/L	R261911	1	02/20/2014 08:30	AB
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	187411	1	02/24/2014 09:00	EH
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	187404	1	02/24/2014 19:16	JL
Arsenic	BRL	0.0500		mg/L	187404	1	02/24/2014 19:16	JL
Barium	BRL	0.0200		mg/L	187404	1	02/24/2014 19:16	JL
Beryllium	BRL	0.0100		mg/L	187404	1	02/24/2014 19:16	JL
Cadmium	BRL	0.0050		mg/L	187404	1	02/24/2014 19:16	JL
Chromium	BRL	0.0100		mg/L	187404	1	02/24/2014 19:16	JL
Copper	BRL	0.0100		mg/L	187404	1	02/24/2014 19:16	JL
Iron	0.415	0.100		mg/L	187404	1	02/24/2014 19:16	JL
Lead	BRL	0.0100		mg/L	187404	1	02/24/2014 19:16	JL
Nickel	BRL	0.0200		mg/L	187404	1	02/24/2014 19:16	JL
Zinc	BRL	0.0200		mg/L	187404	1	02/24/2014 19:16	JL

Qualifiers:

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- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 28-Feb-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1402F04-003

Client Sample ID: DUP-02-20140219-01
Collection Date: 2/19/2014
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	35	5.0		ug/L	187299	1	02/21/2014 18:28	NP
Carbon disulfide	BRL	5.0		ug/L	187299	1	02/21/2014 18:28	NP
Ethylbenzene	14	5.0		ug/L	187299	1	02/21/2014 18:28	NP
Toluene	BRL	5.0		ug/L	187299	1	02/21/2014 18:28	NP
Xylenes, Total	16	5.0		ug/L	187299	1	02/21/2014 18:28	NP
Surr: 4-Bromofluorobenzene	81.9	66.2-120		%REC	187299	1	02/21/2014 18:28	NP
Surr: Dibromofluoromethane	85.5	79.5-121		%REC	187299	1	02/21/2014 18:28	NP
Surr: Toluene-d8	78.4	77-117		%REC	187299	1	02/21/2014 18:28	NP
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R261858	1	02/21/2014 16:50	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	186622	1	02/25/2014 11:28	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	186622	1	02/25/2014 11:28	YH
Benzo(a)pyrene	BRL	0.050		ug/L	186622	1	02/25/2014 11:28	YH
Indeno(1,2,3-cd)pyrene	0.072	0.050		ug/L	186622	1	02/25/2014 11:28	YH
Dibenz(a,h)anthracene	0.13	0.10		ug/L	186622	1	02/25/2014 11:28	YH
Surr: 4-Terphenyl-d14	86.8	53.2-145		%REC	186622	1	02/25/2014 11:28	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187279	1	02/21/2014 20:36	YH
2-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 20:36	YH
3,4-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 20:36	YH
Acenaphthene	BRL	10		ug/L	187279	1	02/21/2014 20:36	YH
Acenaphthylene	BRL	10		ug/L	187279	1	02/21/2014 20:36	YH
Anthracene	BRL	10		ug/L	187279	1	02/21/2014 20:36	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187279	1	02/21/2014 20:36	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 20:36	YH
Chrysene	BRL	10		ug/L	187279	1	02/21/2014 20:36	YH
Fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 20:36	YH
Fluorene	BRL	10		ug/L	187279	1	02/21/2014 20:36	YH
Naphthalene	BRL	10		ug/L	187279	1	02/21/2014 20:36	YH
Phenanthrene	BRL	10		ug/L	187279	1	02/21/2014 20:36	YH
Phenol	BRL	10		ug/L	187279	1	02/21/2014 20:36	YH
Pyrene	BRL	10		ug/L	187279	1	02/21/2014 20:36	YH
Surr: 2,4,6-Tribromophenol	99	51.5-124		%REC	187279	1	02/21/2014 20:36	YH
Surr: 2-Fluorobiphenyl	92.4	51.7-118		%REC	187279	1	02/21/2014 20:36	YH
Surr: 2-Fluorophenol	43	26-120		%REC	187279	1	02/21/2014 20:36	YH
Surr: 4-Terphenyl-d14	95.7	45.2-137		%REC	187279	1	02/21/2014 20:36	YH
Surr: Nitrobenzene-d5	83.5	42-120		%REC	187279	1	02/21/2014 20:36	YH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 28-Feb-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402F04-003

Client Sample ID: DUP-02-20140219-01
 Collection Date: 2/19/2014
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D					(SW3510C)			
Surr: Phenol-d5	66.1	12.3-120		%REC	187279	1	02/21/2014 20:36	YH
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	187318	1	02/21/2014 13:18	CG
ION SCAN SW9056A								
Nitrate	BRL	0.25		mg/L	R261862	1	02/20/2014 09:30	GR
Sulfate	27	1.0		mg/L	R261862	1	02/20/2014 09:30	GR
GC Analysis of Gaseous Samples SOP-RSK 175					(RSK175)			
Methane	98	4		ug/L	187283	1	02/20/2014 15:13	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	0.112	0.100	H	mg/L	R261911	1	02/20/2014 08:30	AB
Cyanide SW9014					(SW9010C)			
Cyanide, Total	0.039	0.010		mg/L	187411	1	02/24/2014 09:00	EH
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	187404	1	02/24/2014 19:40	JL
Arsenic	BRL	0.0500		mg/L	187404	1	02/24/2014 19:40	JL
Barium	0.554	0.0200		mg/L	187404	1	02/24/2014 19:40	JL
Beryllium	BRL	0.0100		mg/L	187404	1	02/24/2014 19:40	JL
Cadmium	BRL	0.0050		mg/L	187404	1	02/24/2014 19:40	JL
Chromium	BRL	0.0100		mg/L	187404	1	02/24/2014 19:40	JL
Copper	BRL	0.0100		mg/L	187404	1	02/24/2014 19:40	JL
Iron	1.27	0.100		mg/L	187404	1	02/24/2014 19:40	JL
Lead	BRL	0.0100		mg/L	187404	1	02/24/2014 19:40	JL
Nickel	BRL	0.0200		mg/L	187404	1	02/24/2014 19:40	JL
Zinc	BRL	0.0200		mg/L	187404	1	02/24/2014 19:40	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 28-Feb-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402F04-004

Client Sample ID: DUP-03-20140219-01
 Collection Date: 2/19/2014
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	1600	50		ug/L	187299	10	02/24/2014 18:51	NP
Carbon disulfide	BRL	5.0		ug/L	187299	1	02/24/2014 16:59	NP
Ethylbenzene	320	50		ug/L	187299	10	02/24/2014 18:51	NP
Toluene	BRL	5.0		ug/L	187299	1	02/24/2014 16:59	NP
Xylenes, Total	290	5.0		ug/L	187299	1	02/24/2014 16:59	NP
Surr: 4-Bromofluorobenzene	86.7	66.2-120		%REC	187299	10	02/24/2014 18:51	NP
Surr: 4-Bromofluorobenzene	89.1	66.2-120		%REC	187299	1	02/24/2014 16:59	NP
Surr: Dibromofluoromethane	80.1	79.5-121		%REC	187299	1	02/24/2014 16:59	NP
Surr: Dibromofluoromethane	82.4	79.5-121		%REC	187299	10	02/24/2014 18:51	NP
Surr: Toluene-d8	77.5	77-117		%REC	187299	10	02/24/2014 18:51	NP
Surr: Toluene-d8	78.3	77-117		%REC	187299	1	02/24/2014 16:59	NP
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R261858	1	02/21/2014 16:50	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	186622	1	02/25/2014 11:02	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	186622	1	02/25/2014 11:02	YH
Benzo(a)pyrene	BRL	0.050		ug/L	186622	1	02/25/2014 11:02	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	186622	1	02/25/2014 11:02	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	186622	1	02/25/2014 11:02	YH
Surr: 4-Terphenyl-d14	87.4	53.2-145		%REC	186622	1	02/25/2014 11:02	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187279	1	02/21/2014 21:02	YH
2-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 21:02	YH
3,4-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 21:02	YH
Acenaphthene	57	10		ug/L	187279	1	02/21/2014 21:02	YH
Acenaphthylene	BRL	10		ug/L	187279	1	02/21/2014 21:02	YH
Anthracene	BRL	10		ug/L	187279	1	02/21/2014 21:02	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187279	1	02/21/2014 21:02	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 21:02	YH
Chrysene	BRL	10		ug/L	187279	1	02/21/2014 21:02	YH
Fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 21:02	YH
Fluorene	13	10		ug/L	187279	1	02/21/2014 21:02	YH
Naphthalene	BRL	10		ug/L	187279	1	02/21/2014 21:02	YH
Phenanthrene	11	10		ug/L	187279	1	02/21/2014 21:02	YH
Phenol	23	10		ug/L	187279	1	02/21/2014 21:02	YH
Pyrene	BRL	10		ug/L	187279	1	02/21/2014 21:02	YH
Surr: 2,4,6-Tribromophenol	86	51.5-124		%REC	187279	1	02/21/2014 21:02	YH
Surr: 2-Fluorobiphenyl	78.2	51.7-118		%REC	187279	1	02/21/2014 21:02	YH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 28-Feb-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402F04-004

Client Sample ID: DUP-03-20140219-01
 Collection Date: 2/19/2014
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D (SW3510C)								
Surr: 2-Fluorophenol	52.8	26-120		%REC	187279	1	02/21/2014 21:02	YH
Surr: 4-Terphenyl-d14	82.2	45.2-137		%REC	187279	1	02/21/2014 21:02	YH
Surr: Nitrobenzene-d5	70.5	42-120		%REC	187279	1	02/21/2014 21:02	YH
Surr: Phenol-d5	47.6	12.3-120		%REC	187279	1	02/21/2014 21:02	YH
Mercury, Total SW7470A (SW7470A)								
Mercury	BRL	0.00020		mg/L	187318	1	02/21/2014 13:20	CG
ION SCAN SW9056A								
Nitrate	BRL	0.25		mg/L	R261862	1	02/20/2014 09:45	GR
Sulfate	BRL	1.0		mg/L	R261862	1	02/20/2014 09:45	GR
GC Analysis of Gaseous Samples SOP-RSK 175 (RSK175)								
Methane	2000	80		ug/L	187283	20	02/20/2014 15:26	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	BRL	0.100	H	mg/L	R261911	1	02/20/2014 08:30	AB
Cyanide SW9014 (SW9010C)								
Cyanide, Total	BRL	0.010		mg/L	187411	1	02/24/2014 09:00	EH
METALS, TOTAL SW6010C (SW3010A)								
Antimony	BRL	0.0200		mg/L	187404	1	02/24/2014 19:43	JL
Arsenic	BRL	0.0500		mg/L	187404	1	02/24/2014 19:43	JL
Barium	2.15	0.0200		mg/L	187404	1	02/24/2014 19:43	JL
Beryllium	BRL	0.0100		mg/L	187404	1	02/24/2014 19:43	JL
Cadmium	BRL	0.0050		mg/L	187404	1	02/24/2014 19:43	JL
Chromium	BRL	0.0100		mg/L	187404	1	02/24/2014 19:43	JL
Copper	BRL	0.0100		mg/L	187404	1	02/24/2014 19:43	JL
Iron	3.25	0.100		mg/L	187404	1	02/24/2014 19:43	JL
Lead	BRL	0.0100		mg/L	187404	1	02/24/2014 19:43	JL
Nickel	BRL	0.0200		mg/L	187404	1	02/24/2014 19:43	JL
Zinc	BRL	0.0200		mg/L	187404	1	02/24/2014 19:43	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 28-Feb-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1402F04-005

Client Sample ID: MW-302DD-20140219-01
Collection Date: 2/19/2014 10:30:00 AM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	35	5.0		ug/L	187299	1	02/21/2014 14:42	NP
Carbon disulfide	BRL	5.0		ug/L	187299	1	02/21/2014 14:42	NP
Ethylbenzene	15	5.0		ug/L	187299	1	02/21/2014 14:42	NP
Toluene	BRL	5.0		ug/L	187299	1	02/21/2014 14:42	NP
Xylenes, Total	17	5.0		ug/L	187299	1	02/21/2014 14:42	NP
Surr: 4-Bromofluorobenzene	82.6	66.2-120		%REC	187299	1	02/21/2014 14:42	NP
Surr: Dibromofluoromethane	84.5	79.5-121		%REC	187299	1	02/21/2014 14:42	NP
Surr: Toluene-d8	78.9	77-117		%REC	187299	1	02/21/2014 14:42	NP
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R261858	1	02/21/2014 16:50	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	186622	1	02/25/2014 12:23	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	186622	1	02/25/2014 12:23	YH
Benzo(a)pyrene	BRL	0.050		ug/L	186622	1	02/25/2014 12:23	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	186622	1	02/25/2014 12:23	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	186622	1	02/25/2014 12:23	YH
Surr: 4-Terphenyl-d14	82.7	53.2-145		%REC	186622	1	02/25/2014 12:23	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187279	1	02/21/2014 21:28	YH
2-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 21:28	YH
3,4-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 21:28	YH
Acenaphthene	BRL	10		ug/L	187279	1	02/21/2014 21:28	YH
Acenaphthylene	BRL	10		ug/L	187279	1	02/21/2014 21:28	YH
Anthracene	BRL	10		ug/L	187279	1	02/21/2014 21:28	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187279	1	02/21/2014 21:28	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 21:28	YH
Chrysene	BRL	10		ug/L	187279	1	02/21/2014 21:28	YH
Fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 21:28	YH
Fluorene	BRL	10		ug/L	187279	1	02/21/2014 21:28	YH
Naphthalene	BRL	10		ug/L	187279	1	02/21/2014 21:28	YH
Phenanthrene	BRL	10		ug/L	187279	1	02/21/2014 21:28	YH
Phenol	BRL	10		ug/L	187279	1	02/21/2014 21:28	YH
Pyrene	BRL	10		ug/L	187279	1	02/21/2014 21:28	YH
Surr: 2,4,6-Tribromophenol	107	51.5-124		%REC	187279	1	02/21/2014 21:28	YH
Surr: 2-Fluorobiphenyl	101	51.7-118		%REC	187279	1	02/21/2014 21:28	YH
Surr: 2-Fluorophenol	62.3	26-120		%REC	187279	1	02/21/2014 21:28	YH
Surr: 4-Terphenyl-d14	101	45.2-137		%REC	187279	1	02/21/2014 21:28	YH
Surr: Nitrobenzene-d5	92.1	42-120		%REC	187279	1	02/21/2014 21:28	YH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 28-Feb-14

Client: ERM-Southeast	Client Sample ID: MW-302DD-20140219-01
Project Name: AGLC Macon	Collection Date: 2/19/2014 10:30:00 AM
Lab ID: 1402F04-005	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D (SW3510C)								
Surr: Phenol-d5	67.9	12.3-120		%REC	187279	1	02/21/2014 21:28	YH
Mercury, Total SW7470A (SW7470A)								
Mercury	BRL	0.00020		mg/L	187318	1	02/21/2014 13:22	CG
ION SCAN SW9056A								
Nitrate	BRL	0.25		mg/L	R261862	1	02/20/2014 09:59	GR
Sulfate	28	1.0		mg/L	R261862	1	02/24/2014 15:30	GR
GC Analysis of Gaseous Samples SOP-RSK 175 (RSK175)								
Methane	100	4		ug/L	187286	1	02/20/2014 16:20	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	0.112	0.100		mg/L	R261911	1	02/20/2014 08:30	AB
Cyanide SW9014 (SW9010C)								
Cyanide, Total	0.038	0.010		mg/L	187411	1	02/24/2014 09:00	EH
METALS, TOTAL SW6010C (SW3010A)								
Antimony	BRL	0.0200		mg/L	187404	1	02/24/2014 19:47	JL
Arsenic	BRL	0.0500		mg/L	187404	1	02/24/2014 19:47	JL
Barium	0.546	0.0200		mg/L	187404	1	02/24/2014 19:47	JL
Beryllium	BRL	0.0100		mg/L	187404	1	02/24/2014 19:47	JL
Cadmium	BRL	0.0050		mg/L	187404	1	02/24/2014 19:47	JL
Chromium	BRL	0.0100		mg/L	187404	1	02/24/2014 19:47	JL
Copper	BRL	0.0100		mg/L	187404	1	02/24/2014 19:47	JL
Iron	1.25	0.100		mg/L	187404	1	02/24/2014 19:47	JL
Lead	BRL	0.0100		mg/L	187404	1	02/24/2014 19:47	JL
Nickel	BRL	0.0200		mg/L	187404	1	02/24/2014 19:47	JL
Zinc	BRL	0.0200		mg/L	187404	1	02/24/2014 19:47	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 28-Feb-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1402F04-006

Client Sample ID: MW-304D-20140219-01
Collection Date: 2/19/2014 9:30:00 AM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	187299	1	02/21/2014 15:38	NP
Carbon disulfide	BRL	5.0		ug/L	187299	1	02/21/2014 15:38	NP
Ethylbenzene	BRL	5.0		ug/L	187299	1	02/21/2014 15:38	NP
Toluene	BRL	5.0		ug/L	187299	1	02/21/2014 15:38	NP
Xylenes, Total	BRL	5.0		ug/L	187299	1	02/21/2014 15:38	NP
Surr: 4-Bromofluorobenzene	72.9	66.2-120		%REC	187299	1	02/21/2014 15:38	NP
Surr: Dibromofluoromethane	87.2	79.5-121		%REC	187299	1	02/21/2014 15:38	NP
Surr: Toluene-d8	80.9	77-117		%REC	187299	1	02/21/2014 15:38	NP
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R261858	1	02/21/2014 16:50	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	186622	1	02/25/2014 12:49	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	186622	1	02/25/2014 12:49	YH
Benzo(a)pyrene	BRL	0.050		ug/L	186622	1	02/25/2014 12:49	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	186622	1	02/25/2014 12:49	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	186622	1	02/25/2014 12:49	YH
Surr: 4-Terphenyl-d14	98.9	53.2-145		%REC	186622	1	02/25/2014 12:49	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187279	1	02/21/2014 21:55	YH
2-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 21:55	YH
3,4-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 21:55	YH
Acenaphthene	BRL	10		ug/L	187279	1	02/21/2014 21:55	YH
Acenaphthylene	BRL	10		ug/L	187279	1	02/21/2014 21:55	YH
Anthracene	BRL	10		ug/L	187279	1	02/21/2014 21:55	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187279	1	02/21/2014 21:55	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 21:55	YH
Chrysene	BRL	10		ug/L	187279	1	02/21/2014 21:55	YH
Fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 21:55	YH
Fluorene	BRL	10		ug/L	187279	1	02/21/2014 21:55	YH
Naphthalene	BRL	10		ug/L	187279	1	02/21/2014 21:55	YH
Phenanthrene	BRL	10		ug/L	187279	1	02/21/2014 21:55	YH
Phenol	BRL	10		ug/L	187279	1	02/21/2014 21:55	YH
Pyrene	BRL	10		ug/L	187279	1	02/21/2014 21:55	YH
Surr: 2,4,6-Tribromophenol	92.1	51.5-124		%REC	187279	1	02/21/2014 21:55	YH
Surr: 2-Fluorobiphenyl	81.6	51.7-118		%REC	187279	1	02/21/2014 21:55	YH
Surr: 2-Fluorophenol	59	26-120		%REC	187279	1	02/21/2014 21:55	YH
Surr: 4-Terphenyl-d14	89.2	45.2-137		%REC	187279	1	02/21/2014 21:55	YH
Surr: Nitrobenzene-d5	70.4	42-120		%REC	187279	1	02/21/2014 21:55	YH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 28-Feb-14

Client:	ERM-Southeast	Client Sample ID:	MW-304D-20140219-01
Project Name:	AGLC Macon	Collection Date:	2/19/2014 9:30:00 AM
Lab ID:	1402F04-006	Matrix:	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D					(SW3510C)			
Surr: Phenol-d5	50.8	12.3-120		%REC	187279	1	02/21/2014 21:55	YH
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	187318	1	02/21/2014 13:24	CG
ION SCAN SW9056A								
Nitrate	BRL	2.5		mg/L	R261862	10	02/20/2014 10:14	GR
Sulfate	BRL	10		mg/L	R261862	10	02/20/2014 10:14	GR
GC Analysis of Gaseous Samples SOP-RSK 175					(RSK175)			
Methane	160	4		ug/L	187286	1	02/20/2014 16:24	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	BRL	0.100		mg/L	R261911	1	02/20/2014 08:30	AB
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	187411	1	02/24/2014 09:00	EH
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	187404	1	02/24/2014 19:51	JL
Arsenic	BRL	0.0500		mg/L	187404	1	02/24/2014 19:51	JL
Barium	3.35	0.0200		mg/L	187404	1	02/24/2014 19:51	JL
Beryllium	BRL	0.0100		mg/L	187404	1	02/24/2014 19:51	JL
Cadmium	BRL	0.0050		mg/L	187404	1	02/24/2014 19:51	JL
Chromium	BRL	0.0100		mg/L	187404	1	02/24/2014 19:51	JL
Copper	BRL	0.0100		mg/L	187404	1	02/24/2014 19:51	JL
Iron	0.256	0.100		mg/L	187404	1	02/24/2014 19:51	JL
Lead	BRL	0.0100		mg/L	187404	1	02/24/2014 19:51	JL
Nickel	BRL	0.0200		mg/L	187404	1	02/24/2014 19:51	JL
Zinc	BRL	0.0200		mg/L	187404	1	02/24/2014 19:51	JL

Qualifiers:

- * Value exceeds maximum contaminant level
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- H Holding times for preparation or analysis exceeded
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- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 28-Feb-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1402F04-007

Client Sample ID: MW-205DD-20140219-01
Collection Date: 2/19/2014 11:10:00 AM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	187299	1	02/21/2014 16:07	NP
Carbon disulfide	BRL	5.0		ug/L	187299	1	02/21/2014 16:07	NP
Ethylbenzene	BRL	5.0		ug/L	187299	1	02/21/2014 16:07	NP
Toluene	BRL	5.0		ug/L	187299	1	02/21/2014 16:07	NP
Xylenes, Total	BRL	5.0		ug/L	187299	1	02/21/2014 16:07	NP
Surr: 4-Bromofluorobenzene	76	66.2-120		%REC	187299	1	02/21/2014 16:07	NP
Surr: Dibromofluoromethane	92	79.5-121		%REC	187299	1	02/21/2014 16:07	NP
Surr: Toluene-d8	82	77-117		%REC	187299	1	02/21/2014 16:07	NP
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R261858	1	02/21/2014 16:50	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	186622	1	02/25/2014 13:14	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	186622	1	02/25/2014 13:14	YH
Benzo(a)pyrene	BRL	0.050		ug/L	186622	1	02/25/2014 13:14	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	186622	1	02/25/2014 13:14	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	186622	1	02/25/2014 13:14	YH
Surr: 4-Terphenyl-d14	83.5	53.2-145		%REC	186622	1	02/25/2014 13:14	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187279	1	02/21/2014 22:22	YH
2-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 22:22	YH
3,4-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 22:22	YH
Acenaphthene	BRL	10		ug/L	187279	1	02/21/2014 22:22	YH
Acenaphthylene	BRL	10		ug/L	187279	1	02/21/2014 22:22	YH
Anthracene	BRL	10		ug/L	187279	1	02/21/2014 22:22	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187279	1	02/21/2014 22:22	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 22:22	YH
Chrysene	BRL	10		ug/L	187279	1	02/21/2014 22:22	YH
Fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 22:22	YH
Fluorene	BRL	10		ug/L	187279	1	02/21/2014 22:22	YH
Naphthalene	BRL	10		ug/L	187279	1	02/21/2014 22:22	YH
Phenanthrene	BRL	10		ug/L	187279	1	02/21/2014 22:22	YH
Phenol	BRL	10		ug/L	187279	1	02/21/2014 22:22	YH
Pyrene	BRL	10		ug/L	187279	1	02/21/2014 22:22	YH
Surr: 2,4,6-Tribromophenol	86.4	51.5-124		%REC	187279	1	02/21/2014 22:22	YH
Surr: 2-Fluorobiphenyl	79	51.7-118		%REC	187279	1	02/21/2014 22:22	YH
Surr: 2-Fluorophenol	54.5	26-120		%REC	187279	1	02/21/2014 22:22	YH
Surr: 4-Terphenyl-d14	89	45.2-137		%REC	187279	1	02/21/2014 22:22	YH
Surr: Nitrobenzene-d5	70.1	42-120		%REC	187279	1	02/21/2014 22:22	YH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
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- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 28-Feb-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402F04-007

Client Sample ID: MW-205DD-20140219-01
 Collection Date: 2/19/2014 11:10:00 AM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D					(SW3510C)			
Surr: Phenol-d5	50.1	12.3-120		%REC	187279	1	02/21/2014 22:22	YH
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	187318	1	02/21/2014 13:30	CG
ION SCAN SW9056A								
Nitrate	0.28	0.25		mg/L	R261862	1	02/20/2014 10:29	GR
Sulfate	9.3	1.0		mg/L	R261862	1	02/20/2014 10:29	GR
GC Analysis of Gaseous Samples SOP-RSK 175					(RSK175)			
Methane	BRL	4		ug/L	187286	1	02/20/2014 16:29	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	BRL	0.100		mg/L	R261911	1	02/20/2014 08:30	AB
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	187411	1	02/24/2014 09:00	EH
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	187404	1	02/24/2014 19:55	JL
Arsenic	BRL	0.0500		mg/L	187404	1	02/24/2014 19:55	JL
Barium	BRL	0.0200		mg/L	187404	1	02/24/2014 19:55	JL
Beryllium	BRL	0.0100		mg/L	187404	1	02/24/2014 19:55	JL
Cadmium	BRL	0.0050		mg/L	187404	1	02/24/2014 19:55	JL
Chromium	BRL	0.0100		mg/L	187404	1	02/24/2014 19:55	JL
Copper	0.0124	0.0100		mg/L	187404	1	02/24/2014 19:55	JL
Iron	0.289	0.100		mg/L	187404	1	02/24/2014 19:55	JL
Lead	BRL	0.0100		mg/L	187404	1	02/24/2014 19:55	JL
Nickel	BRL	0.0200		mg/L	187404	1	02/24/2014 19:55	JL
Zinc	0.0781	0.0200		mg/L	187404	1	02/24/2014 19:55	JL

Qualifiers:

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- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 28-Feb-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1402F04-008

Client Sample ID: MW-205D-20140219-01
Collection Date: 2/19/2014 1:25:00 PM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	1700	50		ug/L	187299	10	02/24/2014 19:20	NP
Carbon disulfide	BRL	5.0		ug/L	187299	1	02/24/2014 17:27	NP
Ethylbenzene	330	50		ug/L	187299	10	02/24/2014 19:20	NP
Toluene	BRL	5.0		ug/L	187299	1	02/24/2014 17:27	NP
Xylenes, Total	300	5.0		ug/L	187299	1	02/24/2014 17:27	NP
Surr: 4-Bromofluorobenzene	83.4	66.2-120		%REC	187299	10	02/24/2014 19:20	NP
Surr: 4-Bromofluorobenzene	88.6	66.2-120		%REC	187299	1	02/24/2014 17:27	NP
Surr: Dibromofluoromethane	80	79.5-121		%REC	187299	1	02/24/2014 17:27	NP
Surr: Dibromofluoromethane	84.4	79.5-121		%REC	187299	10	02/24/2014 19:20	NP
Surr: Toluene-d8	78.2	77-117		%REC	187299	1	02/24/2014 17:27	NP
Surr: Toluene-d8	78.3	77-117		%REC	187299	10	02/24/2014 19:20	NP
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R261858	1	02/21/2014 16:50	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	186622	1	02/25/2014 13:40	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	186622	1	02/25/2014 13:40	YH
Benzo(a)pyrene	BRL	0.050		ug/L	186622	1	02/25/2014 13:40	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	186622	1	02/25/2014 13:40	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	186622	1	02/25/2014 13:40	YH
Surr: 4-Terphenyl-d14	107	53.2-145		%REC	186622	1	02/25/2014 13:40	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187279	1	02/21/2014 22:48	YH
2-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 22:48	YH
3,4-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 22:48	YH
Acenaphthene	54	10		ug/L	187279	1	02/21/2014 22:48	YH
Acenaphthylene	BRL	10		ug/L	187279	1	02/21/2014 22:48	YH
Anthracene	BRL	10		ug/L	187279	1	02/21/2014 22:48	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187279	1	02/21/2014 22:48	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 22:48	YH
Chrysene	BRL	10		ug/L	187279	1	02/21/2014 22:48	YH
Fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 22:48	YH
Fluorene	13	10		ug/L	187279	1	02/21/2014 22:48	YH
Naphthalene	BRL	10		ug/L	187279	1	02/21/2014 22:48	YH
Phenanthrene	11	10		ug/L	187279	1	02/21/2014 22:48	YH
Phenol	26	10		ug/L	187279	1	02/21/2014 22:48	YH
Pyrene	BRL	10		ug/L	187279	1	02/21/2014 22:48	YH
Surr: 2,4,6-Tribromophenol	88.5	51.5-124		%REC	187279	1	02/21/2014 22:48	YH
Surr: 2-Fluorobiphenyl	80	51.7-118		%REC	187279	1	02/21/2014 22:48	YH

Qualifiers:

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- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 28-Feb-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402F04-008

Client Sample ID: MW-205D-20140219-01
 Collection Date: 2/19/2014 1:25:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D (SW3510C)								
Surr: 2-Fluorophenol	58.5	26-120		%REC	187279	1	02/21/2014 22:48	YH
Surr: 4-Terphenyl-d14	83.4	45.2-137		%REC	187279	1	02/21/2014 22:48	YH
Surr: Nitrobenzene-d5	73.1	42-120		%REC	187279	1	02/21/2014 22:48	YH
Surr: Phenol-d5	53.1	12.3-120		%REC	187279	1	02/21/2014 22:48	YH
Mercury, Total SW7470A (SW7470A)								
Mercury	BRL	0.00020		mg/L	187318	1	02/21/2014 13:32	CG
ION SCAN SW9056A								
Nitrate	BRL	0.25		mg/L	R261862	1	02/20/2014 10:43	GR
Sulfate	BRL	1.0		mg/L	R261862	1	02/20/2014 10:43	GR
GC Analysis of Gaseous Samples SOP-RSK 175 (RSK175)								
Methane	1700	80		ug/L	187286	20	02/20/2014 16:56	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	BRL	0.100		mg/L	R261911	1	02/20/2014 08:30	AB
Cyanide SW9014 (SW9010C)								
Cyanide, Total	BRL	0.010		mg/L	187411	1	02/24/2014 09:00	EH
METALS, TOTAL SW6010C (SW3010A)								
Antimony	BRL	0.0200		mg/L	187404	1	02/24/2014 19:59	JL
Arsenic	BRL	0.0500		mg/L	187404	1	02/24/2014 19:59	JL
Barium	2.13	0.0200		mg/L	187404	1	02/24/2014 19:59	JL
Beryllium	BRL	0.0100		mg/L	187404	1	02/24/2014 19:59	JL
Cadmium	BRL	0.0050		mg/L	187404	1	02/24/2014 19:59	JL
Chromium	BRL	0.0100		mg/L	187404	1	02/24/2014 19:59	JL
Copper	BRL	0.0100		mg/L	187404	1	02/24/2014 19:59	JL
Iron	3.23	0.100		mg/L	187404	1	02/24/2014 19:59	JL
Lead	BRL	0.0100		mg/L	187404	1	02/24/2014 19:59	JL
Nickel	BRL	0.0200		mg/L	187404	1	02/24/2014 19:59	JL
Zinc	BRL	0.0200		mg/L	187404	1	02/24/2014 19:59	JL

Qualifiers:

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- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit



Microseeps/Pace Analytical Energy Services, LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

March 4, 2014

Mirzeta Kararic
Analytical Environmental Services, Inc.
3785 Presidential Parkway
Suite 111
Atlanta, GA 30340

RE: **1402F04**

Microseeps Workorder: 11454

Dear Mirzeta Kararic:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, February 21, 2014. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

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

Sincerely,

Robbin Robl 03/04/2014
rrobl@microseeps.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email info@microseeps.com.

Total Number of Pages 16

Report ID: 11454 - 493560

Page 1 of 14



CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Microseeps/Pace Analytical Energy Services, LLC.

**LABORATORY ACCREDITATIONS & CERTIFICATIONS**

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories		
Accreditation ID:	02-00538		
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste		
Accreditor:	NELAP: State of Florida, Department of Health, Bureau of Laboratories		
Accreditation ID:	E87832		
Scope:	Clean Water Act (CWA)	Resource Conservation and Recovery Act (RCRA)	
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification		
Accreditation ID:	89009003		
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)		
Accreditor:	NELAP: State of Louisiana, Department of Environmental Quality		
Accreditation ID:	04104		
Scope:	Solid and Chemical Materials; Non-Potable Water		
Accreditor:	NELAP: New Jersey, Department of Environmental Protection		
Accreditation ID:	PA026		
Scope:	Non-Potable Water; Solid and Chemical Materials		
Accreditor:	NELAP: New York, Department of Health Wadsworth Center		
Accreditation ID:	11815		
Scope:	Non-Potable Water; Solid and Hazardous Waste		
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health		
Accreditation ID:	PH-0263		
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)		
Accreditor:	NELAP: Texas, Commission on Environmental Quality		
Accreditation ID:	T104704453-09-TX		
Scope:	Non-Potable Water		
Accreditor:	State of New Hampshire		
Accreditation ID:	299409		
Scope:	Non-potable water		
Accreditor:	State of Georgia		
Accreditation ID:	Chapter 391-3-26		
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, Microseeps is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).		

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Microseeps/Pace Analytical Energy Services, LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 11454 1402F04

Lab ID	Sample ID	Matrix	Date Collected	Date Received
114540001	RINSE-1-20140219-01	Water	2/19/2014 13:15	2/21/2014 12:30
114540002	DUP-02-20140219-01	Water	2/19/2014 00:00	2/21/2014 12:30
114540003	DUP-03-20140219-01	Water	2/19/2014 00:00	2/21/2014 12:30
114540004	MW-302DD-20140219-01	Water	2/19/2014 10:30	2/21/2014 12:30
114540005	MW-304D-20140219-01	Water	2/19/2014 09:30	2/21/2014 12:30
114540006	MW-205DD-20140219-01	Water	2/19/2014 11:10	2/21/2014 12:30
114540007	MW-205D-20140219-01	Water	2/19/2014 13:25	2/21/2014 12:30



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PROJECT SUMMARY

Workorder: 11454 1402F04

Batch Comments

Batch: DISG/3605 - AM20GAX Water QC

The percent recovery for the opening calibration verification analysis was above laboratory control limits. Analytes Acetylene. Results associated to the analytes in samples may be bias high.



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**ANALYTICAL RESULTS**

Workorder: 11454 1402F04

Lab ID: 114540001

Date Received: 2/21/2014 12:30 Matrix: Water

Sample ID: RINSE-1-20140219-01

Date Collected: 2/19/2014 13:15

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Carbon Dioxide	<5.0	mg/l	5.0	0.23	1			2/27/2014 12:53	SL	
Oxygen	8.3	mg/l	0.50	0.082	1			2/27/2014 12:53	SL	
Nitrogen	13	mg/l	2.0	1.8	1			2/27/2014 12:53	SL	
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			2/27/2014 12:53	SL	

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ANALYTICAL RESULTS

Workorder: 11454 1402F04

Lab ID: 114540002
Sample ID: DUP-02-20140219-01

Date Received: 2/21/2014 12:30 Matrix: Water
Date Collected: 2/19/2014 00:00

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Carbon Dioxide	5.6	mg/l	5.0	0.23	1			2/27/2014 13:06	SL	
Oxygen	2.9	mg/l	0.50	0.082	1			2/27/2014 13:06	SL	
Nitrogen	17	mg/l	2.0	1.8	1			2/27/2014 13:06	SL	
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			2/27/2014 13:06	SL	



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ANALYTICAL RESULTS

Workorder: 11454 1402F04

Lab ID: 114540003
Sample ID: DUP-03-20140219-01

Date Received: 2/21/2014 12:30 Matrix: Water
Date Collected: 2/19/2014 00:00

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Carbon Dioxide	48	mg/l	5.0	0.23	1			2/27/2014 13:19	SL	
Oxygen	3.9	mg/l	0.50	0.082	1			2/27/2014 13:19	SL	
Nitrogen	16	mg/l	2.0	1.8	1			2/27/2014 13:19	SL	
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			2/27/2014 13:19	SL	



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ANALYTICAL RESULTS

Workorder: 11454 1402F04

Lab ID: 114540004

Date Received: 2/21/2014 12:30 Matrix: Water

Sample ID: MW-302DD-20140219-01

Date Collected: 2/19/2014 10:30

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Carbon Dioxide	6.4	mg/l	5.0	0.23	1			2/27/2014 14:16	SL	
Oxygen	2.2	mg/l	0.50	0.082	1			2/27/2014 14:16	SL	
Nitrogen	16	mg/l	2.0	1.8	1			2/27/2014 14:16	SL	
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			2/27/2014 14:16	SL	

Report ID: 11454 - 493560

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ANALYTICAL RESULTS

Workorder: 11454 1402F04

Lab ID: 114540005
Sample ID: MW-304D-20140219-01

Date Received: 2/21/2014 12:30 Matrix: Water
Date Collected: 2/19/2014 09:30

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Carbon Dioxide	<5.0	mg/l	5.0	0.23	1			2/27/2014 14:29	SL	
Oxygen	5.4	mg/l	0.50	0.082	1			2/27/2014 14:29	SL	
Nitrogen	17	mg/l	2.0	1.8	1			2/27/2014 14:29	SL	
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			2/27/2014 14:29	SL	



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ANALYTICAL RESULTS

Workorder: 11454 1402F04

Lab ID: 114540006

Date Received: 2/21/2014 12:30 Matrix: Water

Sample ID: MW-205DD-20140219-01

Date Collected: 2/19/2014 11:10

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Carbon Dioxide	<5.0	mg/l	5.0	0.23	1			2/27/2014 14:41	SL	
Oxygen	7.9	mg/l	0.50	0.082	1			2/27/2014 14:41	SL	
Nitrogen	17	mg/l	2.0	1.8	1			2/27/2014 14:41	SL	
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			2/27/2014 14:41	SL	

Report ID: 11454 - 493560

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ANALYTICAL RESULTS

Workorder: 11454 1402F04

Lab ID: 114540007
Sample ID: MW-205D-20140219-01

Date Received: 2/21/2014 12:30 Matrix: Water
Date Collected: 2/19/2014 13:25

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Carbon Dioxide	49	mg/l	5.0	0.23	1			2/27/2014 14:54	SL	
Oxygen	3.9	mg/l	0.50	0.082	1			2/27/2014 14:54	SL	
Nitrogen	15	mg/l	2.0	1.8	1			2/27/2014 14:54	SL	
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			2/27/2014 14:54	SL	



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ANALYTICAL RESULTS QUALIFIERS

Workorder: 11454 1402F04

DEFINITIONS/QUALIFIERS

Disclaimer : The Pennsylvania Department of Environmental Protection (PADEP) has decided to no longer recognize analyses that do not produce data for primary compliance, for NELAP accreditation. The methods affected by this decision are AM20Gax, AM21G, SW846 7199 and AM4.02. The laboratory shall continue to administer the NELAP/TNI standard requirements in the performance of these methods.

MDL Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.

PQL Practical Quantitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.

ND Not detected at or above reporting limit.

DF Dilution Factor.

S Surrogate.

RPD Relative Percent Difference.

% Rec Percent Recovery.

U Indicates the compound was analyzed for, but not detected at or above the noted concentration.

J Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).



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QUALITY CONTROL DATA

Workorder: 11454 1402F04

QC Batch: DISG/3605 Analysis Method: AM20GAX
QC Batch Method: AM20GAX
Associated Lab Samples: 114540001, 114540002, 114540003, 114540004, 114540005, 114540006, 114540007

METHOD BLANK: 26099

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Carbon Dioxide	mg/l	<5.0	5.0	
Oxygen	mg/l	<0.50	0.50	
Nitrogen	mg/l	<2.0	2.0	
Carbon Monoxide	mg/l	<1.0	1.0	

LABORATORY CONTROL SAMPLE & LCSD: 26101 26103

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Carbon Dioxide	mg/l	120	110	110	98	96	80-120	2.1	20	
Oxygen	mg/l	11	11	11	95	98	80-120	3.1	20	
Nitrogen	mg/l	140	120	130	91	92	80-120	1.1	20	
Carbon Monoxide	mg/l	2	2.2	2.2	111	110	80-120	0.9	20	



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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 11454 1402F04

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
114540001	RINSE-1-20140219-01			AM20GAX	DISG/3605
114540002	DUP-02-20140219-01			AM20GAX	DISG/3605
114540003	DUP-03-20140219-01			AM20GAX	DISG/3605
114540004	MW-302DD-20140219-01			AM20GAX	DISG/3605
114540005	MW-304D-20140219-01			AM20GAX	DISG/3605
114540006	MW-205DD-20140219-01			AM20GAX	DISG/3605
114540007	MW-205D-20140219-01			AM20GAX	DISG/3605



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ANALYTICAL ENVIRONMENTAL SERVICES, INC

3080 Presidential Drive, Atlanta GA 30340-3704

TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order:

Date: Page of

COMPANY: AES		ADDRESS: Same as above		ANALYSIS REQUESTED		Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.		No # of Containers
PHONE:		FAX:		PRESERVATION (See codes)		REMARKS		
SAMPLED BY:		SIGNATURE:						
#	SAMPLE ID	DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)		
1	2116E-1-20140219-01	2-19-14	13:15	X		GW	X	
2	Dup-02-20140219-01		-				X	
3	Dup-03-20140219-01		-				X	
4	MW-30200-20140219-01		10:30				X	
5	MW-3040-20140219-01		09:30				X	
6	MW-20500-20140219-01		11:10				X	
7	MW-2050-20140219-01		13:25				X	
8								
9								
10								
11								
12								
13								
14								
RELINQUISHED BY		DATE/TIME	RECEIVED BY	DATE/TIME	PROJECT INFORMATION		RECEIPT	
1: [Signature]		2/20/14	[Signature]	2-26-14	PROJECT NAME: 1402FE04		Total # of Containers	
2:					PROJECT #:		Turnaround Time Request	
3:					SITE ADDRESS:		Standard 5 Business Days	
					SEND REPORT TO: mlariv@aesatlanta.com		2 Business Day Rush	
SPECIAL INSTRUCTIONS/COMMENTS:		SHIPMENT METHOD		INVOICE TO:		Next Business Day Rush		Same Day Rush (auth req.)
		OUT / / VIA:		(IF DIFFERENT FROM ABOVE)		Other		
		IN / / VIA:		QUOTE #:		STATE PROGRAM (if any):		
		CLIENT FedEx UPS MAIL COURIER		PO#:		E-mail? Y / N; Fax? Y / N		
		GREYHOUND OTHER				DATA PACKAGE: I II III IV		

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.

SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) O = Other (specify) WW = Waste Water
PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

Cooler Receipt Form

Client Name: AES Project: 1402F04 Lab Work Order: 11454

A. Shipping/Container Information (circle appropriate response)

Courier: FedEx UPS USPS Client Other: _____ Air bill Present: Yes No

Tracking Number: 561327014187

Custody Seal on Cooler/Box Present: Yes No Seals Intact: Yes No

Cooler/Box Packing Material: Bubble Wrap Absorbent Foam Other: _____

Type of Ice: Wet Blue None Ice Intact: Yes Melted

Cooler Temperature: 10C Radiation Screened: Yes No Chain of Custody Present: Yes No

Comments: _____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC		✓		
Containers intact	✓			
Were samples in separate bags		✓		
Sample container labels match COC	✓			
Sample name/date and time collected	✓			
Sufficient volume provided	✓			
Microseeps containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments: _____

Cooler contents examined/received by: LY Date: 2.21.14

Project Manager Review: PR Date: 2/24/14

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Edm Work Order Number 1402604

Checklist completed by [Signature] Date 2/19/19
Signature Date

Carrier name: FedEx ☐ UPS ☐ Courier ☒ Client ☐ US Mail ☐ Other ☐

Shipping container/cooler in good condition? Yes ☒ No ☐ Not Present ☐

Custody seals intact on shipping container/cooler? Yes ☐ No ☐ Not Present ☒

Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒

Container/Temp Blank temperature in compliance? (4°C±2)* Yes ☒ No ☐

Cooler #1 2.1 Cooler #2 ☐ Cooler #3 ☐ Cooler #4 ☐ Cooler #5 ☐ Cooler #6 ☐

Chain of custody present? Yes ☒ No ☐

Chain of custody signed when relinquished and received? Yes ☒ No ☐

Chain of custody agrees with sample labels? Yes ☒ No ☐

Samples in proper container/bottle? Yes ☒ No ☐

Sample containers intact? Yes ☒ No ☐

Sufficient sample volume for indicated test? Yes ☒ No ☐

All samples received within holding time? Yes ☒ No ☐

Was TAT marked on the COC? Yes ☒ No ☐

Proceed with Standard TAT as per project history? Yes ☐ No ☐ Not Applicable ☒

Water - VOA vials have zero headspace? No VOA vials submitted ☐ Yes ☒ No ☐

Water - pH acceptable upon receipt? Yes ☒ No ☐ Not Applicable ☐

Adjusted? ☐ Checked by [Signature]

Sample Condition: Good ☒ Other(Explain) ☐

(For diffusive samples or AIHA lead) Is a known blank included? Yes ☐ No ☒

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

Client: ERM-Southeast
 Project: AGLC Macon
 Lab Order: 1402F04

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1402F04-001A	TB-03-20140219-01	2/19/2014 12:00:00AM	Aqueous	Volatile Organic Compounds by GC/MS		02/21/2014	02/21/2014
1402F04-002A	RINSE-1-20140219-01	2/19/2014 1:15:00PM	Groundwater	Volatile Organic Compounds by GC/MS		02/21/2014	02/21/2014
1402F04-002B	RINSE-1-20140219-01	2/19/2014 1:15:00PM	Groundwater	GC Analysis of Gaseous Samples		02/20/2014	02/20/2014
1402F04-002C	RINSE-1-20140219-01	2/19/2014 1:15:00PM	Groundwater	TOTAL METALS BY ICP		02/24/2014	02/24/2014
1402F04-002C	RINSE-1-20140219-01	2/19/2014 1:15:00PM	Groundwater	TOTAL MERCURY		02/21/2014	02/21/2014
1402F04-002D	RINSE-1-20140219-01	2/19/2014 1:15:00PM	Groundwater	ION SCAN			02/20/2014
1402F04-002E	RINSE-1-20140219-01	2/19/2014 1:15:00PM	Groundwater	Ferrous Iron			02/20/2014
1402F04-002F	RINSE-1-20140219-01	2/19/2014 1:15:00PM	Groundwater	Cyanide		02/24/2014	02/24/2014
1402F04-002G	RINSE-1-20140219-01	2/19/2014 1:15:00PM	Groundwater	Sulfide			02/21/2014
1402F04-002H	RINSE-1-20140219-01	2/19/2014 1:15:00PM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/21/2014	02/24/2014
1402F04-002H	RINSE-1-20140219-01	2/19/2014 1:15:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/21/2014	02/21/2014
1402F04-003A	DUP-02-20140219-01	2/19/2014 12:00:00AM	Groundwater	Volatile Organic Compounds by GC/MS		02/21/2014	02/21/2014
1402F04-003B	DUP-02-20140219-01	2/19/2014 12:00:00AM	Groundwater	GC Analysis of Gaseous Samples		02/20/2014	02/20/2014
1402F04-003C	DUP-02-20140219-01	2/19/2014 12:00:00AM	Groundwater	TOTAL METALS BY ICP		02/24/2014	02/24/2014
1402F04-003C	DUP-02-20140219-01	2/19/2014 12:00:00AM	Groundwater	TOTAL MERCURY		02/21/2014	02/21/2014
1402F04-003D	DUP-02-20140219-01	2/19/2014 12:00:00AM	Groundwater	ION SCAN			02/20/2014
1402F04-003E	DUP-02-20140219-01	2/19/2014 12:00:00AM	Groundwater	Ferrous Iron			02/20/2014
1402F04-003F	DUP-02-20140219-01	2/19/2014 12:00:00AM	Groundwater	Cyanide		02/24/2014	02/24/2014
1402F04-003G	DUP-02-20140219-01	2/19/2014 12:00:00AM	Groundwater	Sulfide			02/21/2014
1402F04-003H	DUP-02-20140219-01	2/19/2014 12:00:00AM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/21/2014	02/25/2014
1402F04-003H	DUP-02-20140219-01	2/19/2014 12:00:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/21/2014	02/21/2014
1402F04-004A	DUP-03-20140219-01	2/19/2014 12:00:00AM	Groundwater	Volatile Organic Compounds by GC/MS		02/21/2014	02/24/2014
1402F04-004B	DUP-03-20140219-01	2/19/2014 12:00:00AM	Groundwater	GC Analysis of Gaseous Samples		02/20/2014	02/20/2014
1402F04-004C	DUP-03-20140219-01	2/19/2014 12:00:00AM	Groundwater	TOTAL METALS BY ICP		02/24/2014	02/24/2014
1402F04-004C	DUP-03-20140219-01	2/19/2014 12:00:00AM	Groundwater	TOTAL MERCURY		02/21/2014	02/21/2014
1402F04-004D	DUP-03-20140219-01	2/19/2014 12:00:00AM	Groundwater	ION SCAN			02/20/2014
1402F04-004E	DUP-03-20140219-01	2/19/2014 12:00:00AM	Groundwater	Ferrous Iron			02/20/2014
1402F04-004F	DUP-03-20140219-01	2/19/2014 12:00:00AM	Groundwater	Cyanide		02/24/2014	02/24/2014
1402F04-004G	DUP-03-20140219-01	2/19/2014 12:00:00AM	Groundwater	Sulfide			02/21/2014

Client: ERM-Southeast
 Project: AGLC Macon
 Lab Order: 1402F04

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1402F04-004H	DUP-03-20140219-01	2/19/2014 12:00:00AM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/21/2014	02/25/2014
1402F04-004H	DUP-03-20140219-01	2/19/2014 12:00:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/21/2014	02/21/2014
1402F04-005A	MW-302DD-20140219-01	2/19/2014 10:30:00AM	Groundwater	Volatile Organic Compounds by GC/MS		02/21/2014	02/21/2014
1402F04-005B	MW-302DD-20140219-01	2/19/2014 10:30:00AM	Groundwater	GC Analysis of Gaseous Samples		02/20/2014	02/20/2014
1402F04-005C	MW-302DD-20140219-01	2/19/2014 10:30:00AM	Groundwater	TOTAL METALS BY ICP		02/24/2014	02/24/2014
1402F04-005C	MW-302DD-20140219-01	2/19/2014 10:30:00AM	Groundwater	TOTAL MERCURY		02/21/2014	02/21/2014
1402F04-005D	MW-302DD-20140219-01	2/19/2014 10:30:00AM	Groundwater	ION SCAN			02/20/2014
1402F04-005D	MW-302DD-20140219-01	2/19/2014 10:30:00AM	Groundwater	ION SCAN			02/24/2014
1402F04-005E	MW-302DD-20140219-01	2/19/2014 10:30:00AM	Groundwater	Ferrous Iron			02/20/2014
1402F04-005F	MW-302DD-20140219-01	2/19/2014 10:30:00AM	Groundwater	Cyanide		02/24/2014	02/24/2014
1402F04-005G	MW-302DD-20140219-01	2/19/2014 10:30:00AM	Groundwater	Sulfide			02/21/2014
1402F04-005H	MW-302DD-20140219-01	2/19/2014 10:30:00AM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/21/2014	02/25/2014
1402F04-005H	MW-302DD-20140219-01	2/19/2014 10:30:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/21/2014	02/21/2014
1402F04-006A	MW-304D-20140219-01	2/19/2014 9:30:00AM	Groundwater	Volatile Organic Compounds by GC/MS		02/21/2014	02/21/2014
1402F04-006B	MW-304D-20140219-01	2/19/2014 9:30:00AM	Groundwater	GC Analysis of Gaseous Samples		02/20/2014	02/20/2014
1402F04-006C	MW-304D-20140219-01	2/19/2014 9:30:00AM	Groundwater	TOTAL METALS BY ICP		02/24/2014	02/24/2014
1402F04-006C	MW-304D-20140219-01	2/19/2014 9:30:00AM	Groundwater	TOTAL MERCURY		02/21/2014	02/21/2014
1402F04-006D	MW-304D-20140219-01	2/19/2014 9:30:00AM	Groundwater	ION SCAN			02/20/2014
1402F04-006E	MW-304D-20140219-01	2/19/2014 9:30:00AM	Groundwater	Ferrous Iron			02/20/2014
1402F04-006F	MW-304D-20140219-01	2/19/2014 9:30:00AM	Groundwater	Cyanide		02/24/2014	02/24/2014
1402F04-006G	MW-304D-20140219-01	2/19/2014 9:30:00AM	Groundwater	Sulfide			02/21/2014
1402F04-006H	MW-304D-20140219-01	2/19/2014 9:30:00AM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/21/2014	02/25/2014
1402F04-006H	MW-304D-20140219-01	2/19/2014 9:30:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/21/2014	02/21/2014
1402F04-007A	MW-205DD-20140219-01	2/19/2014 11:10:00AM	Groundwater	Volatile Organic Compounds by GC/MS		02/21/2014	02/21/2014
1402F04-007B	MW-205DD-20140219-01	2/19/2014 11:10:00AM	Groundwater	GC Analysis of Gaseous Samples		02/20/2014	02/20/2014
1402F04-007C	MW-205DD-20140219-01	2/19/2014 11:10:00AM	Groundwater	TOTAL METALS BY ICP		02/24/2014	02/24/2014
1402F04-007C	MW-205DD-20140219-01	2/19/2014 11:10:00AM	Groundwater	TOTAL MERCURY		02/21/2014	02/21/2014
1402F04-007D	MW-205DD-20140219-01	2/19/2014 11:10:00AM	Groundwater	ION SCAN			02/20/2014
1402F04-007E	MW-205DD-20140219-01	2/19/2014 11:10:00AM	Groundwater	Ferrous Iron			02/20/2014

Client: ERM-Southeast
 Project: AGLC Macon
 Lab Order: 1402F04

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1402F04-007F	MW-205DD-20140219-01	2/19/2014 11:10:00AM	Groundwater	Cyanide		02/24/2014	02/24/2014
1402F04-007G	MW-205DD-20140219-01	2/19/2014 11:10:00AM	Groundwater	Sulfide			02/21/2014
1402F04-007H	MW-205DD-20140219-01	2/19/2014 11:10:00AM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/21/2014	02/25/2014
1402F04-007H	MW-205DD-20140219-01	2/19/2014 11:10:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/21/2014	02/21/2014
1402F04-008A	MW-205D-20140219-01	2/19/2014 1:25:00PM	Groundwater	Volatile Organic Compounds by GC/MS		02/21/2014	02/24/2014
1402F04-008B	MW-205D-20140219-01	2/19/2014 1:25:00PM	Groundwater	GC Analysis of Gaseous Samples		02/20/2014	02/20/2014
1402F04-008C	MW-205D-20140219-01	2/19/2014 1:25:00PM	Groundwater	TOTAL METALS BY ICP		02/24/2014	02/24/2014
1402F04-008C	MW-205D-20140219-01	2/19/2014 1:25:00PM	Groundwater	TOTAL MERCURY		02/21/2014	02/21/2014
1402F04-008D	MW-205D-20140219-01	2/19/2014 1:25:00PM	Groundwater	ION SCAN			02/20/2014
1402F04-008E	MW-205D-20140219-01	2/19/2014 1:25:00PM	Groundwater	Ferrous Iron			02/20/2014
1402F04-008F	MW-205D-20140219-01	2/19/2014 1:25:00PM	Groundwater	Cyanide		02/24/2014	02/24/2014
1402F04-008G	MW-205D-20140219-01	2/19/2014 1:25:00PM	Groundwater	Sulfide			02/21/2014
1402F04-008H	MW-205D-20140219-01	2/19/2014 1:25:00PM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/21/2014	02/25/2014
1402F04-008H	MW-205D-20140219-01	2/19/2014 1:25:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/21/2014	02/21/2014

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402F04

ANALYTICAL QC SUMMARY REPORT

BatchID: 186622

Sample ID: MB-186622	Client ID:				Units: ug/L			Prep Date: 02/21/2014	Run No: 261875		
SampleType: MBLK	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D				BatchID: 186622			Analysis Date: 02/24/2014	Seq No: 5505349		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	BRL	0.050									
Benzo(a)pyrene	BRL	0.050									
Benzo(b)fluoranthene	BRL	0.10									
Dibenz(a,h)anthracene	BRL	0.10									
Indeno(1,2,3-cd)pyrene	BRL	0.050									
Surr: 4-Terphenyl-d14	2.372	0	2.000		119	53.2	145				

Sample ID: LCS-186622	Client ID:				Units: ug/L	Prep Date: 02/21/2014	Run No: 261875				
SampleType: LCS	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D				BatchID: 186622	Analysis Date: 02/24/2014	Seq No: 5505856				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	1.703	0.050	2.000		85.2	62.8	132				
Benzo(a)pyrene	1.976	0.050	2.000		98.8	56.4	123				
Benzo(b)fluoranthene	1.610	0.10	2.000		80.5	69.2	132				
Dibenz(a,h)anthracene	1.809	0.10	2.000		90.5	49.3	134				
Indeno(1,2,3-cd)pyrene	1.832	0.050	2.000		91.6	48.3	137				
Surr: 4-Terphenyl-d14	2.153	0	2.000		108	53.2	145				

Sample ID: LCSD-186622	Client ID:				Units: ug/L	Prep Date: 02/21/2014	Run No: 261875				
SampleType: LCSD	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D				BatchID: 186622	Analysis Date: 02/24/2014	Seq No: 5505860				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	1.428	0.050	2.000		71.4	62.8	132	1.703	17.6	29.6	
Benzo(a)pyrene	1.887	0.050	2.000		94.3	56.4	123	1.976	4.60	29	
Benzo(b)fluoranthene	1.496	0.10	2.000		74.8	69.2	132	1.610	7.34	22	
Dibenz(a,h)anthracene	1.735	0.10	2.000		86.7	49.3	134	1.809	4.23	30	
Indeno(1,2,3-cd)pyrene	1.770	0.050	2.000		88.5	48.3	137	1.832	3.43	35.8	
Surr: 4-Terphenyl-d14	2.054	0	2.000		103	53.2	145	2.153	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402F04

ANALYTICAL QC SUMMARY REPORT

BatchID: 187279

Sample ID: MB-187279	Client ID:				Units: ug/L	Prep Date: 02/20/2014	Run No: 261713				
SampleType: MBLK	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 187279	Analysis Date: 02/20/2014	Seq No: 5502069				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

2,4-Dimethylphenol	BRL	10									
2-Methylphenol	BRL	10									
3,4-Methylphenol	BRL	10									
Acenaphthene	BRL	10									
Acenaphthylene	BRL	10									
Anthracene	BRL	10									
Benzo(g,h,i)perylene	BRL	10									
Benzo(k)fluoranthene	BRL	10									
Chrysene	BRL	10									
Fluoranthene	BRL	10									
Fluorene	BRL	10									
Naphthalene	BRL	10									
Phenanthrene	BRL	10									
Phenol	BRL	10									
Pyrene	BRL	10									
Surr: 2,4,6-Tribromophenol	93.12	0	100.0		93.1	51.5	124				
Surr: 2-Fluorobiphenyl	47.25	0	50.00		94.5	51.7	118				
Surr: 2-Fluorophenol	62.02	0	100.0		62.0	26	120				
Surr: 4-Terphenyl-d14	50.92	0	50.00		102	45.2	137				
Surr: Nitrobenzene-d5	43.38	0	50.00		86.8	42	120				
Surr: Phenol-d5	43.96	0	100.0		44.0	12.3	120				

Sample ID: LCS-187279	Client ID:					Units: ug/L	Prep Date: 02/20/2014	Run No: 261713			
SampleType: LCS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D					BatchID: 187279	Analysis Date: 02/20/2014	Seq No: 5502080			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	94.12	10	100.0		94.1	67.7	122				
Phenol	42.55	10	100.0		42.6	24.6	120				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402F04

ANALYTICAL QC SUMMARY REPORT

BatchID: 187279

Sample ID: LCS-187279	Client ID:					Units: ug/L	Prep Date: 02/20/2014	Run No: 261713			
SampleType: LCS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D					BatchID: 187279	Analysis Date: 02/20/2014	Seq No: 5502080			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Pyrene	97.89	10	100.0		97.9	68.3	123				
Surr: 2,4,6-Tribromophenol	110.1	0	100.0		110	51.5	124				
Surr: 2-Fluorobiphenyl	53.40	0	50.00		107	51.7	118				
Surr: 2-Fluorophenol	65.41	0	100.0		65.4	26	120				
Surr: 4-Terphenyl-d14	56.80	0	50.00		114	45.2	137				
Surr: Nitrobenzene-d5	48.68	0	50.00		97.4	42	120				
Surr: Phenol-d5	48.89	0	100.0		48.9	12.3	120				

Sample ID: 1402C64-002GMS	Client ID:				Units: ug/L	Prep Date: 02/20/2014	Run No: 261713				
SampleType: MS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 187279	Analysis Date: 02/20/2014	Seq No: 5502077				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	90.11	10	100.0		90.1	51.9	120				
Phenol	60.41	10	100.0		60.4	30.5	120				
Pyrene	91.41	10	100.0		91.4	50.6	120				
Surr: 2,4,6-Tribromophenol	108.1	0	100.0		108	51.5	124				
Surr: 2-Fluorobiphenyl	51.23	0	50.00		102	51.7	118				
Surr: 2-Fluorophenol	78.41	0	100.0		78.4	26	120				
Surr: 4-Terphenyl-d14	52.61	0	50.00		105	45.2	137				
Surr: Nitrobenzene-d5	48.32	0	50.00		96.6	42	120				
Surr: Phenol-d5	69.97	0	100.0		70.0	12.3	120				

Sample ID: 1402C64-002GMSD	Client ID:				Units: ug/L	Prep Date: 02/20/2014	Run No: 261713				
SampleType: MSD	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 187279	Analysis Date: 02/20/2014	Seq No: 5502079				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	87.92	10	100.0		87.9	51.9	120	90.11	2.46	24.9	
Phenol	58.05	10	100.0		58.0	30.5	120	60.41	3.98	34.4	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402F04

ANALYTICAL QC SUMMARY REPORT

BatchID: 187279

Sample ID: 1402C64-002GMSD	Client ID:				Units: ug/L	Prep Date: 02/20/2014	Run No: 261713				
SampleType: MSD	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 187279	Analysis Date: 02/20/2014	Seq No: 5502079				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Pyrene	90.06	10	100.0		90.1	50.6	120	91.41	1.49	26.7	
Surr: 2,4,6-Tribromophenol	100.6	0	100.0		101	51.5	124	108.1	0	0	
Surr: 2-Fluorobiphenyl	48.25	0	50.00		96.5	51.7	118	51.23	0	0	
Surr: 2-Fluorophenol	71.62	0	100.0		71.6	26	120	78.41	0	0	
Surr: 4-Terphenyl-d14	49.30	0	50.00		98.6	45.2	137	52.61	0	0	
Surr: Nitrobenzene-d5	43.84	0	50.00		87.7	42	120	48.32	0	0	
Surr: Phenol-d5	64.47	0	100.0		64.5	12.3	120	69.97	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402F04

ANALYTICAL QC SUMMARY REPORT

BatchID: 187283

Sample ID: MB-187283	Client ID:				Units: ug/L	Prep Date: 02/20/2014	Run No: 261637				
SampleType: MBLK	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175			BatchID: 187283	Analysis Date: 02/20/2014	Seq No: 5500697				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

BRL

4

Sample ID: LCS-187283	Client ID:					Units: ug/L	Prep Date: 02/20/2014	Run No: 261637			
SampleType: LCS	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175				BatchID: 187283	Analysis Date: 02/20/2014	Seq No: 5500753			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

129.0

4

200.0

64.5

45.2

115

Sample ID: LCSD-187283	Client ID:				Units: ug/L	Prep Date: 02/20/2014	Run No: 261637				
SampleType: LCSD	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175			BatchID: 187283	Analysis Date: 02/20/2014	Seq No: 5500755				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

126.8

4

200.0

63.4

45.2

115

129.0

1.77

20

Sample ID: 1402C76-002BMS	Client ID:					Units: ug/L	Prep Date: 02/20/2014	Run No: 261637			
SampleType: MS	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175				BatchID: 187283	Analysis Date: 02/20/2014	Seq No: 5500902			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

122.2

4

200.0

5.730

58.2

41.1

115

Sample ID: 1402C76-002BMSD	Client ID:				Units: ug/L	Prep Date: 02/20/2014	Run No: 261637				
SampleType: MSD	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175			BatchID: 187283	Analysis Date: 02/20/2014	Seq No: 5500906				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

122.8

4

200.0

5.730

58.5

41.1

115

122.2

0.524

20

Qualifiers:

> Greater than Result value

BRL Below reporting limit

J Estimated value detected below Reporting Limit

Rpt Lim Reporting Limit

< Less than Result value

E Estimated (value above quantitation range)

N Analyte not NELAC certified

S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank

H Holding times for preparation or analysis exceeded

R RPD outside limits due to matrix

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402F04

ANALYTICAL QC SUMMARY REPORT

BatchID: 187286

Sample ID: MB-187286	Client ID:				Units: ug/L	Prep Date: 02/20/2014	Run No: 261637				
SampleType: MBLK	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175			BatchID: 187286	Analysis Date: 02/20/2014	Seq No: 5502016				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

BRL

4

Sample ID: LCS-187286	Client ID:				Units: ug/L	Prep Date: 02/20/2014	Run No: 261637				
SampleType: LCS	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175			BatchID: 187286	Analysis Date: 02/20/2014	Seq No: 5502018				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

131.2

4

200.0

65.6

45.2

115

Sample ID: LCSD-187286	Client ID:				Units: ug/L	Prep Date: 02/20/2014	Run No: 261637				
SampleType: LCSD	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175			BatchID: 187286	Analysis Date: 02/20/2014	Seq No: 5502020				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

132.6

4

200.0

66.3

45.2

115

131.2

1.08

20

Sample ID: 1402C76-004BMS	Client ID:				Units: ug/L	Prep Date: 02/20/2014	Run No: 261637				
SampleType: MS	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175			BatchID: 187286	Analysis Date: 02/20/2014	Seq No: 5502030				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

134.9

4

200.0

67.5

41.1

115

Sample ID: 1402C76-004BMSD	Client ID:				Units: ug/L	Prep Date: 02/20/2014	Run No: 261637				
SampleType: MSD	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175			BatchID: 187286	Analysis Date: 02/20/2014	Seq No: 5502035				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

141.2

4

200.0

70.6

41.1

115

134.9

4.54

20

Qualifiers:

> Greater than Result value

BRL Below reporting limit

J Estimated value detected below Reporting Limit

Rpt Lim Reporting Limit

< Less than Result value

E Estimated (value above quantitation range)

N Analyte not NELAC certified

S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank

H Holding times for preparation or analysis exceeded

R RPD outside limits due to matrix

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402F04

ANALYTICAL QC SUMMARY REPORT

BatchID: 187299

Sample ID: MB-187299	Client ID:					Units: ug/L	Prep Date: 02/21/2014	Run No: 261715			
SampleType: MBLK	TestCode: Volatile Organic Compounds by GC/MS SW8260B					BatchID: 187299	Analysis Date: 02/21/2014	Seq No: 5502691			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	BRL	5.0									
Carbon disulfide	BRL	5.0									
Ethylbenzene	BRL	5.0									
Toluene	BRL	5.0									
Xylenes, Total	BRL	5.0									
Surr: 4-Bromofluorobenzene	38.10	0	50.00		76.2	66.2	120				
Surr: Dibromofluoromethane	44.27	0	50.00		88.5	79.5	121				
Surr: Toluene-d8	40.21	0	50.00		80.4	77	117				

Sample ID: LCS-187299	Client ID:					Units: ug/L	Prep Date: 02/21/2014	Run No: 261715			
SampleType: LCS	TestCode: Volatile Organic Compounds by GC/MS SW8260B					BatchID: 187299	Analysis Date: 02/21/2014	Seq No: 5502689			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	49.30	5.0	50.00		98.6	74.2	129				
Toluene	48.80	5.0	50.00		97.6	74.2	129				
Surr: 4-Bromofluorobenzene	45.43	0	50.00		90.9	66.2	120				
Surr: Dibromofluoromethane	45.41	0	50.00		90.8	79.5	121				
Surr: Toluene-d8	45.05	0	50.00		90.1	77	117				

Sample ID: 1402F04-008AMS	Client ID: MW-205D-20140219-01	Units: ug/L	Prep Date: 02/21/2014	Run No: 261715							
SampleType: MS	TestCode: Volatile Organic Compounds by GC/MS SW8260B	BatchID: 187299	Analysis Date: 02/21/2014	Seq No: 5502696							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	4310	250	2500	1728	103	70.2	138				
Toluene	2432	250	2500		97.3	70	139				
Surr: 4-Bromofluorobenzene	2274	0	2500		90.9	66.2	120				
Surr: Dibromofluoromethane	2249	0	2500		90.0	79.5	121				
Surr: Toluene-d8	2298	0	2500		91.9	77	117				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402F04

ANALYTICAL QC SUMMARY REPORT

BatchID: 187299

Sample ID: 1402F04-008AMSD	Client ID: MW-205D-20140219-01	Units: ug/L	Prep Date: 02/21/2014	Run No: 261715							
SampleType: MSD	TestCode: Volatile Organic Compounds by GC/MS SW8260B	BatchID: 187299	Analysis Date: 02/21/2014	Seq No: 5502697							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	4328	250	2500	1728	104	70.2	138	4310	0.440	20	
Toluene	2412	250	2500		96.5	70	139	2432	0.826	20	
Surr: 4-Bromofluorobenzene	2266	0	2500		90.6	66.2	120	2274	0	0	
Surr: Dibromofluoromethane	2243	0	2500		89.7	79.5	121	2249	0	0	
Surr: Toluene-d8	2230	0	2500		89.2	77	117	2298	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402F04

ANALYTICAL QC SUMMARY REPORT

BatchID: 187318

Sample ID: MB-187318	Client ID:				Units: mg/L	Prep Date: 02/21/2014	Run No: 261703				
SampleType: MBLK	TestCode: Mercury, Total	SW7470A			BatchID: 187318	Analysis Date: 02/21/2014	Seq No: 5502570				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury BRL 0.00020

Sample ID: LCS-187318	Client ID:				Units: mg/L	Prep Date: 02/21/2014	Run No: 261703				
SampleType: LCS	TestCode: Mercury, Total	SW7470A			BatchID: 187318	Analysis Date: 02/21/2014	Seq No: 5502573				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.005483 0.00020 0.0050 110 85 115

Sample ID: 1402C64-002BMS	Client ID:	Units: mg/L	Prep Date: 02/21/2014	Run No: 261703							
SampleType: MS	TestCode: Mercury, Total SW7470A	BatchID: 187318	Analysis Date: 02/21/2014	Seq No: 5502578							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.002403 0.00020 0.0050 48.1 70 130 S

Sample ID: 1402C64-002BMSD	Client ID:				Units: mg/L	Prep Date: 02/21/2014	Run No: 261703				
SampleType: MSD	TestCode: Mercury, Total	SW7470A			BatchID: 187318	Analysis Date: 02/21/2014	Seq No: 5502582				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.002362 0.00020 0.0050 47.2 70 130 0.002403 1.70 20 S

Qualifiers:	> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
	BRL Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
	J Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
	Rpt Lim Reporting Limit	S Spike Recovery outside limits due to matrix	

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402F04

ANALYTICAL QC SUMMARY REPORT

BatchID: 187404

Sample ID: MB-187404	Client ID:					Units: mg/L	Prep Date: 02/24/2014	Run No: 261918			
SampleType: MBLK	TestCode: METALS, TOTAL	SW6010C				BatchID: 187404	Analysis Date: 02/24/2014	Seq No: 5506185			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	BRL	0.0200
Arsenic	BRL	0.0500
Barium	BRL	0.0200
Beryllium	BRL	0.0100
Cadmium	BRL	0.0050
Chromium	BRL	0.0100
Copper	BRL	0.0100
Iron	BRL	0.100
Lead	BRL	0.0100
Nickel	BRL	0.0200
Zinc	BRL	0.0200

Sample ID: LCS-187404	Client ID:					Units: mg/L	Prep Date: 02/24/2014	Run No: 261918			
SampleType: LCS	TestCode: METALS, TOTAL	SW6010C				BatchID: 187404	Analysis Date: 02/24/2014	Seq No: 5506183			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	1.078	0.0200	1.000		108	80	120
Arsenic	1.065	0.0500	1.000		107	80	120
Barium	1.054	0.0200	1.000		105	80	120
Beryllium	1.046	0.0100	1.000		105	80	120
Cadmium	1.057	0.0050	1.000		106	80	120
Chromium	1.062	0.0100	1.000		106	80	120
Copper	1.072	0.0100	1.000	0.0007889	107	80	120
Iron	10.17	0.100	10.00		102	80	120
Lead	1.059	0.0100	1.000		106	80	120
Nickel	1.057	0.0200	1.000		106	80	120
Zinc	1.019	0.0200	1.000		102	80	120

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402F04

ANALYTICAL QC SUMMARY REPORT

BatchID: 187404

Sample ID: 1402F04-002CMS	Client ID: RINSE-1-20140219-01	Units: mg/L	Prep Date: 02/24/2014	Run No: 261918							
SampleType: MS	TestCode: METALS, TOTAL SW6010C	BatchID: 187404	Analysis Date: 02/24/2014	Seq No: 5506188							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	1.101	0.0200	1.000		110	75	125				
Arsenic	1.083	0.0500	1.000		108	75	125				
Barium	1.073	0.0200	1.000		107	75	125				
Beryllium	1.053	0.0100	1.000		105	75	125				
Cadmium	1.076	0.0050	1.000		108	75	125				
Chromium	1.086	0.0100	1.000		109	75	125				
Copper	1.080	0.0100	1.000	0.003017	108	75	125				
Iron	10.36	0.100	10.00	0.4148	99.5	75	125				
Lead	1.082	0.0100	1.000		108	75	125				
Nickel	1.078	0.0200	1.000		108	75	125				
Zinc	1.038	0.0200	1.000		104	75	125				

Sample ID: 1402F04-002CMSD	Client ID: RINSE-1-20140219-01	Units: mg/L	Prep Date: 02/24/2014	Run No: 261918							
SampleType: MSD	TestCode: METALS, TOTAL SW6010C	BatchID: 187404	Analysis Date: 02/24/2014	Seq No: 5506189							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	1.071	0.0200	1.000		107	75	125	1.101	2.69	20	
Arsenic	1.058	0.0500	1.000		106	75	125	1.083	2.33	20	
Barium	1.055	0.0200	1.000		106	75	125	1.073	1.65	20	
Beryllium	1.014	0.0100	1.000		101	75	125	1.053	3.76	20	
Cadmium	1.051	0.0050	1.000		105	75	125	1.076	2.37	20	
Chromium	1.059	0.0100	1.000		106	75	125	1.086	2.46	20	
Copper	1.050	0.0100	1.000	0.003017	105	75	125	1.080	2.81	20	
Iron	10.07	0.100	10.00	0.4148	96.6	75	125	10.36	2.84	20	
Lead	1.057	0.0100	1.000		106	75	125	1.082	2.34	20	
Nickel	1.054	0.0200	1.000		105	75	125	1.078	2.24	20	
Zinc	1.017	0.0200	1.000		102	75	125	1.038	2.07	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402F04

ANALYTICAL QC SUMMARY REPORT

BatchID: 187411

Sample ID: MB-187411	Client ID:				Units: mg/L	Prep Date: 02/24/2014	Run No: 261807				
SampleType: MBLK	TestCode: Cyanide SW9014				BatchID: 187411	Analysis Date: 02/24/2014	Seq No: 5503753				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total BRL 0.010

Sample ID: LCS-187411		Client ID:			Units: mg/L		Prep Date: 02/24/2014		Run No: 261807		
SampleType: LCS		TestCode: Cyanide SW9014			BatchID: 187411		Analysis Date: 02/24/2014		Seq No: 5503754		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.2337 0.010 0.2500 93.5 85 115

Sample ID: 1402D63-004FMS	Client ID:				Units: mg/L	Prep Date: 02/24/2014	Run No: 261807				
SampleType: MS	TestCode: Cyanide SW9014				BatchID: 187411	Analysis Date: 02/24/2014	Seq No: 5503756				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.2374 0.010 0.2500 95.0 70 130

Sample ID: 1402D63-004FMSD		Client ID:			Units: mg/L			Prep Date: 02/24/2014		Run No: 261807	
SampleType: MSD		TestCode: Cyanide SW9014			BatchID: 187411			Analysis Date: 02/24/2014		Seq No: 5503757	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.2352 0.010 0.2500 94.1 70 130 0.2374 0.931 20

Qualifiers:	> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
	BRL Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
	J Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
	Rpt Lim Reporting Limit	S Spike Recovery outside limits due to matrix	

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402F04

ANALYTICAL QC SUMMARY REPORT

BatchID: R261858

Sample ID: MB-R261858	Client ID:					Units: mg/L	Prep Date:		Run No: 261858		
SampleType: MBLK	TestCode: Sulfide (E376.1/SM4500 S2 F)					BatchID: R261858	Analysis Date: 02/21/2014		Seq No: 5504985		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide BRL 1.0

Sample ID: LCS-R261858	Client ID:					Units: mg/L	Prep Date:		Run No: 261858		
SampleType: LCS	TestCode: Sulfide (E376.1/SM4500 S2 F)					BatchID: R261858	Analysis Date: 02/21/2014		Seq No: 5504986		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide 280.8 1.0 280.8 100 90 110

Sample ID: 1402F04-002GMS	Client ID: RINSE-1-20140219-01					Units: mg/L		Prep Date:		Run No: 261858	
SampleType: MS	TestCode: Sulfide (E376.1/SM4500 S2 F)					BatchID: R261858		Analysis Date: 02/21/2014		Seq No: 5504988	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide 11.44 1.0 14.04 81.5 80 120

Sample ID: 1402F04-002GMSD		Client ID: RINSE-1-20140219-01				Units: mg/L		Prep Date:		Run No: 261858		
SampleType: MSD		TestCode: Sulfide (E376.1/SM4500 S2 F)				BatchID: R261858		Analysis Date: 02/21/2014		Seq No: 5504990		
Analyte		Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide 11.64 1.0 14.04 82.9 80 120 11.44 1.73 20

Qualifiers:	> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
	BRL Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
	J Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
	Rpt Lim Reporting Limit	S Spike Recovery outside limits due to matrix	

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402F04

ANALYTICAL QC SUMMARY REPORT

BatchID: R261862

Sample ID: MB-R261862	Client ID:				Units: mg/L	Prep Date:			Run No: 261862		
SampleType: MBLK	TestCode: ION SCAN	SW9056A			BatchID: R261862	Analysis Date: 02/20/2014			Seq No: 5505071		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate BRL 0.25
 Sulfate BRL 1.0

Sample ID: LCS-R261862		Client ID:			Units: mg/L		Prep Date:		Run No: 261862		
SampleType: LCS		TestCode: ION SCAN SW9056A			BatchID: R261862		Analysis Date: 02/20/2014		Seq No: 5505073		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 4.752 0.25 5.000 95.0 90 110
 Sulfate 25.38 1.0 25.00 102 90 110

Sample ID: 1402F04-008DMS		Client ID: MW-205D-20140219-01			Units: mg/L		Prep Date:		Run No: 261862		
SampleType: MS		TestCode: ION SCAN SW9056A			BatchID: R261862		Analysis Date: 02/20/2014		Seq No: 5505101		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 4.852 0.25 5.000 97.0 90 110
 Sulfate 25.86 1.0 25.00 0.4009 102 90 110

Sample ID: 1402F35-001AMS	Client ID:				Units: mg/L		Prep Date:		Run No: 261862		
SampleType: MS	TestCode: ION SCAN SW9056A				BatchID: R261862		Analysis Date: 02/20/2014		Seq No: 5505108		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 8.299 0.25 5.000 3.216 102 90 110
 Sulfate 28.82 1.0 25.00 3.711 100 90 110

Sample ID: 1402F04-008DMSD	Client ID: MW-205D-20140219-01	Units: mg/L	Prep Date:	Run No: 261862							
SampleType: MSD	TestCode: ION SCAN SW9056A	BatchID: R261862	Analysis Date: 02/20/2014	Seq No: 5505104							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 4.774 0.25 5.000 95.5 90 110 4.852 1.63 20

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402F04

ANALYTICAL QC SUMMARY REPORT

BatchID: R261862

Sample ID: 1402F04-008DMSD	Client ID: MW-205D-20140219-01	Units: mg/L	Prep Date:	Run No: 261862							
SampleType: MSD	TestCode: ION SCAN SW9056A	BatchID: R261862	Analysis Date: 02/20/2014	Seq No: 5505104							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfate	25.57	1.0	25.00	0.4009	101	90	110	25.86	1.13	20	
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Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402F04

ANALYTICAL QC SUMMARY REPORT

BatchID: R261911

Sample ID: MB-R261911		Client ID:			Units: mg/L		Prep Date:		Run No: 261911		
SampleType: MBLK		TestCode: Ferrous Iron			BatchID: R261911		Analysis Date: 02/20/2014		Seq No: 5506006		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Iron, as Ferrous (Fe+2) BRL 0.100

Sample ID: LCS-R261911	Client ID:					Units: mg/L	Prep Date:		Run No: 261911		
SampleType: LCS	TestCode: Ferrous Iron	SM3500-Fe-B				BatchID: R261911	Analysis Date: 02/20/2014		Seq No: 5506007		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Iron, as Ferrous (Fe+2) 0.5263 0.100 0.5000 105 85 115

Sample ID: 1402F04-002EMS	Client ID: RINSE-1-20140219-01	Units: mg/L	Prep Date:	Run No: 261911							
SampleType: MS	TestCode: Ferrous Iron SM3500-Fe-B	BatchID: R261911	Analysis Date: 02/20/2014	Seq No: 5506026							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Iron, as Ferrous (Fe+2) 0.5177 0.100 0.5000 0.03710 96.1 80 120

Sample ID: 1402F04-002EMSD	Client ID: RINSE-1-20140219-01	Units: mg/L	Prep Date:	Run No: 261911							
SampleType: MSD	TestCode: Ferrous Iron SM3500-Fe-B	BatchID: R261911	Analysis Date: 02/20/2014	Seq No: 5506029							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Iron, as Ferrous (Fe+2) 0.5465 0.100 0.5000 0.03710 102 80 120 0.5177 5.41 30

Qualifiers:	> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
	BRL Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
	J Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
	Rpt Lim Reporting Limit	S Spike Recovery outside limits due to matrix	



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

March 04, 2014

Jim Morrison
ERM-Southeast
3200 Windy Hill Rd
Atlanta GA 30339

TEL: (678) 486-2700
FAX: (404) 745-0103

RE: AGLC Macon

Dear Jim Morrison:

Order No: 1402F86

Analytical Environmental Services, Inc. received 9 samples on February 20, 2014 1:49 pm for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.

AES' certifications are as follows:

- NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/13-06/30/14.
- AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) effective until 09/01/15.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Mirzeta Kararic
Project Manager



ANALYTICAL ENVIRONMENTAL SERVICES, INC
3080 Presidential Drive, Atlanta GA 30340-3704
TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1402186

Date: 2/20/14 Page 1 of 1

COMPANY:		ADDRESS:		PHONE:		FAX:		SIGNED BY:		SIGNATURE:												
AES		3000 Windy Hill Rd SE, Suite 100 Atlanta, GA 30334						D. Parley R. McMillon		<i>[Signature]</i>												
#	SAMPLE ID	SAMPLED		Grab	Composite	Matrix (See codes)	ANALYSIS REQUESTED														REMARKS	No # of Containers
		DATE	TIME				8266B	8270C	Fe 2+ / Hg	Fe 2+ / Hg	Fe 2+ / Hg	Fe 2+ / Hg	Fe 2+ / Hg	Fe 2+ / Hg	Fe 2+ / Hg	Fe 2+ / Hg	Fe 2+ / Hg	Fe 2+ / Hg	Fe 2+ / Hg	Fe 2+ / Hg		
1	TB-04-20140219-01	2-19-14	1500	X		W	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2	
2	MW-1200-20140219-01	2-19-14	1500	X		GW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	12	
3	MW-3020-20140219-01	2-19-14	1530	X		GW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	13	
4	MW-0910-20140219-01	2-19-14	1705	X		GW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	13	
5	MW-3080-20140219-01	2-19-14	1745	X		GW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	13	
6	MW-3010-20140220-01	2-20-14	0830	X		GW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	13	
7	MW-2070-20140220-01	2-20-14	1000	X		GW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	13	
8	MW-3030-20140220-01	2-20-14	1135	X		GW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	13	
9	MW-1100-20140220-01	2-20-14	1140	X		GW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	13	
10																						
11																						
12																						
13																						
14																						

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
D. Parley	2/20/14 1210	<i>[Signature]</i>	2/20/14 1210
<i>[Signature]</i>	2/20/14 1440	<i>[Signature]</i>	2/20/14 1449

SPECIAL INSTRUCTIONS/COMMENTS:	SHIPMENT METHOD			
	OUT	IN	CLIENT	OTHER
Fe 2+ / Hg. cr / substrate short hold				

PROJECT INFORMATION		RECEIPT	
PROJECT NAME:	Ag-C-Macon	Total # of Containers	105
PROJECT #:	0230715 phase 2	Turnaround Time Request	Standard 5 Business Days
SITE ADDRESS:	137 Mulberry Street, Macon, GA	2 Business Day Rush	Next Business Day Rush
SEND REPORT TO:	Tom Morrison	Same Day Rush (auth req.)	Other
INVOICE TO:	(IF DIFFERENT FROM ABOVE)	STATE PROGRAM (if any):	E-mail? Y / N; Fax? Y / N
QUOTE #:		DATA PACKAGE:	I II III IV

White Copy - Original; Yellow Copy - Client

Client: ERM-Southeast
Project: AGLC Macon
Lab ID: 1402F86

Case Narrative

Sample Receiving Nonconformance:

Hexavalent Chromium was listed on the COC. Samples were analyzed for Ferrous Iron per project history and Nic Vrey was notified via phone on 2/18/14.

Ion Chromatography Analysis by Method 9056A:

Due to sample matrix, sample 1402F86-003D and -005D required a dilution during preparation and/or analysis resulting in elevated reporting limits.

PAH Analysis by Method 8270D SIM:

Matrix spike and matrix spike duplicate analyses were not performed with Batch 186622 due to insufficient sample volume.

Analytical Environmental Services, Inc
Date: 3-Mar-14

Client:	ERM-Southeast	Client Sample ID:	TB-04-20140219-01
Project Name:	AGLC Macon	Collection Date:	2/19/2014
Lab ID:	1402F86-001	Matrix:	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	187306	1	02/20/2014 19:07	GK
Carbon disulfide	BRL	5.0		ug/L	187306	1	02/20/2014 19:07	GK
Ethylbenzene	BRL	5.0		ug/L	187306	1	02/20/2014 19:07	GK
Toluene	BRL	5.0		ug/L	187306	1	02/20/2014 19:07	GK
Xylenes, Total	BRL	5.0		ug/L	187306	1	02/20/2014 19:07	GK
Surr: 4-Bromofluorobenzene	93.8	66.2-120		%REC	187306	1	02/20/2014 19:07	GK
Surr: Dibromofluoromethane	100	79.5-121		%REC	187306	1	02/20/2014 19:07	GK
Surr: Toluene-d8	99	77-117		%REC	187306	1	02/20/2014 19:07	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 3-Mar-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1402F86-002

Client Sample ID: MW-12DD-20140219-01
Collection Date: 2/19/2014 3:00:00 PM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	130	5.0		ug/L	187306	1	02/20/2014 19:34	GK
Carbon disulfide	BRL	5.0		ug/L	187306	1	02/20/2014 19:34	GK
Ethylbenzene	19	5.0		ug/L	187306	1	02/20/2014 19:34	GK
Toluene	5.8	5.0		ug/L	187306	1	02/20/2014 19:34	GK
Xylenes, Total	13	5.0		ug/L	187306	1	02/20/2014 19:34	GK
Surr: 4-Bromofluorobenzene	97.5	66.2-120		%REC	187306	1	02/20/2014 19:34	GK
Surr: Dibromofluoromethane	100	79.5-121		%REC	187306	1	02/20/2014 19:34	GK
Surr: Toluene-d8	99.4	77-117		%REC	187306	1	02/20/2014 19:34	GK
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	1.6	1.0		mg/L	R261725	1	02/21/2014 10:45	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	186622	1	02/25/2014 14:05	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	186622	1	02/25/2014 14:05	YH
Benzo(a)pyrene	BRL	0.050		ug/L	186622	1	02/25/2014 14:05	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	186622	1	02/25/2014 14:05	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	186622	1	02/25/2014 14:05	YH
Surr: 4-Terphenyl-d14	72.4	53.2-145		%REC	186622	1	02/25/2014 14:05	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187279	1	02/21/2014 18:28	YH
2-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 18:28	YH
3,4-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 18:28	YH
Acenaphthene	BRL	10		ug/L	187279	1	02/21/2014 18:28	YH
Acenaphthylene	BRL	10		ug/L	187279	1	02/21/2014 18:28	YH
Anthracene	BRL	10		ug/L	187279	1	02/21/2014 18:28	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187279	1	02/21/2014 18:28	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 18:28	YH
Chrysene	BRL	10		ug/L	187279	1	02/21/2014 18:28	YH
Fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 18:28	YH
Fluorene	BRL	10		ug/L	187279	1	02/21/2014 18:28	YH
Naphthalene	BRL	10		ug/L	187279	1	02/21/2014 18:28	YH
Phenanthrene	BRL	10		ug/L	187279	1	02/21/2014 18:28	YH
Phenol	BRL	10		ug/L	187279	1	02/21/2014 18:28	YH
Pyrene	BRL	10		ug/L	187279	1	02/21/2014 18:28	YH
Surr: 2,4,6-Tribromophenol	101	51.5-124		%REC	187279	1	02/21/2014 18:28	YH
Surr: 2-Fluorobiphenyl	96.7	51.7-118		%REC	187279	1	02/21/2014 18:28	YH
Surr: 2-Fluorophenol	74.3	26-120		%REC	187279	1	02/21/2014 18:28	YH
Surr: 4-Terphenyl-d14	99.5	45.2-137		%REC	187279	1	02/21/2014 18:28	YH
Surr: Nitrobenzene-d5	90.2	42-120		%REC	187279	1	02/21/2014 18:28	YH

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- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 3-Mar-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402F86-002

Client Sample ID: MW-12DD-20140219-01
 Collection Date: 2/19/2014 3:00:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D					(SW3510C)			
Surr: Phenol-d5	70.6	12.3-120		%REC	187279	1	02/21/2014 18:28	YH
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	187370	1	02/24/2014 13:20	CG
ION SCAN SW9056A								
Nitrate	BRL	0.25		mg/L	R261862	1	02/20/2014 15:16	GR
Sulfate	6.3	1.0		mg/L	R261862	1	02/20/2014 15:16	GR
GC Analysis of Gaseous Samples SOP-RSK 175					(RSK175)			
Methane	260	8		ug/L	187481	2	02/25/2014 14:21	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	0.258	0.200		mg/L	R261911	2	02/20/2014 14:15	AB
Cyanide SW9014					(SW9010C)			
Cyanide, Total	0.012	0.010		mg/L	187411	1	02/24/2014 09:00	EH
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	187404	1	02/24/2014 20:23	JL
Arsenic	BRL	0.0500		mg/L	187404	1	02/24/2014 20:23	JL
Barium	0.0844	0.0200		mg/L	187404	1	02/24/2014 20:23	JL
Beryllium	BRL	0.0100		mg/L	187404	1	02/24/2014 20:23	JL
Cadmium	BRL	0.0050		mg/L	187404	1	02/24/2014 20:23	JL
Chromium	BRL	0.0100		mg/L	187404	1	02/24/2014 20:23	JL
Copper	BRL	0.0100		mg/L	187404	1	02/24/2014 20:23	JL
Iron	0.161	0.100		mg/L	187404	1	02/24/2014 20:23	JL
Lead	BRL	0.0100		mg/L	187404	1	02/24/2014 20:23	JL
Nickel	BRL	0.0200		mg/L	187404	1	02/24/2014 20:23	JL
Zinc	0.0878	0.0200		mg/L	187404	1	02/24/2014 20:23	JL

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Analytical Environmental Services, Inc
Date: 3-Mar-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1402F86-003

Client Sample ID: MW-302D-20140219-01
Collection Date: 2/19/2014 3:30:00 PM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	550	50		ug/L	187306	10	02/21/2014 13:10	GK
Carbon disulfide	BRL	5.0		ug/L	187306	1	02/20/2014 20:01	GK
Ethylbenzene	31	5.0		ug/L	187306	1	02/20/2014 20:01	GK
Toluene	610	50		ug/L	187306	10	02/21/2014 13:10	GK
Xylenes, Total	170	5.0		ug/L	187306	1	02/20/2014 20:01	GK
Surr: 4-Bromofluorobenzene	96.5	66.2-120		%REC	187306	10	02/21/2014 13:10	GK
Surr: 4-Bromofluorobenzene	98.1	66.2-120		%REC	187306	1	02/20/2014 20:01	GK
Surr: Dibromofluoromethane	96.9	79.5-121		%REC	187306	10	02/21/2014 13:10	GK
Surr: Dibromofluoromethane	98.3	79.5-121		%REC	187306	1	02/20/2014 20:01	GK
Surr: Toluene-d8	99.4	77-117		%REC	187306	10	02/21/2014 13:10	GK
Surr: Toluene-d8	102	77-117		%REC	187306	1	02/20/2014 20:01	GK
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R261725	1	02/21/2014 10:45	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	0.18	0.050		ug/L	186622	1	02/25/2014 14:31	YH
Benzo(b)fluoranthene	0.17	0.10		ug/L	186622	1	02/25/2014 14:31	YH
Benzo(a)pyrene	0.19	0.050		ug/L	186622	1	02/25/2014 14:31	YH
Indeno(1,2,3-cd)pyrene	0.080	0.050		ug/L	186622	1	02/25/2014 14:31	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	186622	1	02/25/2014 14:31	YH
Surr: 4-Terphenyl-d14	90.3	53.2-145		%REC	186622	1	02/25/2014 14:31	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187279	1	02/21/2014 18:53	YH
2-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 18:53	YH
3,4-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 18:53	YH
Acenaphthene	BRL	10		ug/L	187279	1	02/21/2014 18:53	YH
Acenaphthylene	BRL	10		ug/L	187279	1	02/21/2014 18:53	YH
Anthracene	BRL	10		ug/L	187279	1	02/21/2014 18:53	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187279	1	02/21/2014 18:53	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 18:53	YH
Chrysene	BRL	10		ug/L	187279	1	02/21/2014 18:53	YH
Fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 18:53	YH
Fluorene	BRL	10		ug/L	187279	1	02/21/2014 18:53	YH
Naphthalene	300	100		ug/L	187279	10	02/24/2014 14:36	YH
Phenanthrene	17	10		ug/L	187279	1	02/21/2014 18:53	YH
Phenol	BRL	10		ug/L	187279	1	02/21/2014 18:53	YH
Pyrene	BRL	10		ug/L	187279	1	02/21/2014 18:53	YH
Surr: 2,4,6-Tribromophenol	93.9	51.5-124		%REC	187279	1	02/21/2014 18:53	YH
Surr: 2-Fluorobiphenyl	88.7	51.7-118		%REC	187279	1	02/21/2014 18:53	YH

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- NC Not confirmed
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Analytical Environmental Services, Inc
Date: 3-Mar-14

Client: ERM-Southeast	Client Sample ID: MW-302D-20140219-01
Project Name: AGLC Macon	Collection Date: 2/19/2014 3:30:00 PM
Lab ID: 1402F86-003	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D (SW3510C)								
Surr: 2-Fluorophenol	65.9	26-120		%REC	187279	1	02/21/2014 18:53	YH
Surr: 4-Terphenyl-d14	91.5	45.2-137		%REC	187279	1	02/21/2014 18:53	YH
Surr: Nitrobenzene-d5	78.6	42-120		%REC	187279	1	02/21/2014 18:53	YH
Surr: Phenol-d5	31.1	12.3-120		%REC	187279	1	02/21/2014 18:53	YH
Mercury, Total SW7470A (SW7470A)								
Mercury	BRL	0.00020		mg/L	187370	1	02/24/2014 13:22	CG
ION SCAN SW9056A								
Nitrate	BRL	2.5		mg/L	R261862	10	02/20/2014 18:15	GR
Sulfate	470	10		mg/L	R261862	10	02/20/2014 18:15	GR
GC Analysis of Gaseous Samples SOP-RSK 175 (RSK175)								
Methane	35	4		ug/L	187481	1	02/25/2014 14:12	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	6.04	2.50		mg/L	R261911	25	02/20/2014 14:15	AB
Cyanide SW9014 (SW9010C)								
Cyanide, Total	0.425	0.010		mg/L	187411	1	02/24/2014 09:00	EH
METALS, TOTAL SW6010C (SW3010A)								
Antimony	BRL	0.0200		mg/L	187404	1	02/24/2014 20:27	JL
Arsenic	BRL	0.0500		mg/L	187404	1	02/24/2014 20:27	JL
Barium	0.0480	0.0200		mg/L	187404	1	02/24/2014 20:27	JL
Beryllium	BRL	0.0100		mg/L	187404	1	02/24/2014 20:27	JL
Cadmium	BRL	0.0050		mg/L	187404	1	02/24/2014 20:27	JL
Chromium	BRL	0.0100		mg/L	187404	1	02/24/2014 20:27	JL
Copper	BRL	0.0100		mg/L	187404	1	02/24/2014 20:27	JL
Iron	6.84	0.100		mg/L	187404	1	02/24/2014 20:27	JL
Lead	BRL	0.0100		mg/L	187404	1	02/24/2014 20:27	JL
Nickel	BRL	0.0200		mg/L	187404	1	02/24/2014 20:27	JL
Zinc	0.0312	0.0200		mg/L	187404	1	02/24/2014 20:27	JL

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- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 3-Mar-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402F86-004

Client Sample ID: MW-09D-20140219-01
 Collection Date: 2/19/2014 5:05:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	187306	1	02/20/2014 22:18	GK
Carbon disulfide	BRL	5.0		ug/L	187306	1	02/20/2014 22:18	GK
Ethylbenzene	BRL	5.0		ug/L	187306	1	02/20/2014 22:18	GK
Toluene	BRL	5.0		ug/L	187306	1	02/20/2014 22:18	GK
Xylenes, Total	BRL	5.0		ug/L	187306	1	02/20/2014 22:18	GK
Surr: 4-Bromofluorobenzene	95.9	66.2-120		%REC	187306	1	02/20/2014 22:18	GK
Surr: Dibromofluoromethane	102	79.5-121		%REC	187306	1	02/20/2014 22:18	GK
Surr: Toluene-d8	104	77-117		%REC	187306	1	02/20/2014 22:18	GK
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R261725	1	02/21/2014 10:45	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	186622	1	02/25/2014 14:56	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	186622	1	02/25/2014 14:56	YH
Benzo(a)pyrene	BRL	0.050		ug/L	186622	1	02/25/2014 14:56	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	186622	1	02/25/2014 14:56	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	186622	1	02/25/2014 14:56	YH
Surr: 4-Terphenyl-d14	106	53.2-145		%REC	186622	1	02/25/2014 14:56	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187279	1	02/21/2014 19:18	YH
2-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 19:18	YH
3,4-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 19:18	YH
Acenaphthene	BRL	10		ug/L	187279	1	02/21/2014 19:18	YH
Acenaphthylene	BRL	10		ug/L	187279	1	02/21/2014 19:18	YH
Anthracene	BRL	10		ug/L	187279	1	02/21/2014 19:18	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187279	1	02/21/2014 19:18	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 19:18	YH
Chrysene	BRL	10		ug/L	187279	1	02/21/2014 19:18	YH
Fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 19:18	YH
Fluorene	BRL	10		ug/L	187279	1	02/21/2014 19:18	YH
Naphthalene	BRL	10		ug/L	187279	1	02/21/2014 19:18	YH
Phenanthrene	BRL	10		ug/L	187279	1	02/21/2014 19:18	YH
Phenol	BRL	10		ug/L	187279	1	02/21/2014 19:18	YH
Pyrene	BRL	10		ug/L	187279	1	02/21/2014 19:18	YH
Surr: 2,4,6-Tribromophenol	85	51.5-124		%REC	187279	1	02/21/2014 19:18	YH
Surr: 2-Fluorobiphenyl	74.5	51.7-118		%REC	187279	1	02/21/2014 19:18	YH
Surr: 2-Fluorophenol	55.4	26-120		%REC	187279	1	02/21/2014 19:18	YH
Surr: 4-Terphenyl-d14	87.7	45.2-137		%REC	187279	1	02/21/2014 19:18	YH
Surr: Nitrobenzene-d5	65.9	42-120		%REC	187279	1	02/21/2014 19:18	YH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 3-Mar-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402F86-004

Client Sample ID: MW-09D-20140219-01
 Collection Date: 2/19/2014 5:05:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D					(SW3510C)			
Surr: Phenol-d5	45	12.3-120		%REC	187279	1	02/21/2014 19:18	YH
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	187370	1	02/24/2014 13:24	CG
ION SCAN SW9056A								
Nitrate	BRL	0.25		mg/L	R261862	1	02/20/2014 18:00	GR
Sulfate	2.1	1.0		mg/L	R261862	1	02/20/2014 18:00	GR
GC Analysis of Gaseous Samples SOP-RSK 175					(RSK175)			
Methane	15	4		ug/L	187481	1	02/25/2014 14:17	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	BRL	0.100		mg/L	R261911	1	02/20/2014 14:15	AB
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	187411	1	02/24/2014 09:00	EH
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	187404	1	02/24/2014 20:31	JL
Arsenic	BRL	0.0500		mg/L	187404	1	02/24/2014 20:31	JL
Barium	2.29	0.0200		mg/L	187404	1	02/24/2014 20:31	JL
Beryllium	BRL	0.0100		mg/L	187404	1	02/24/2014 20:31	JL
Cadmium	BRL	0.0050		mg/L	187404	1	02/24/2014 20:31	JL
Chromium	BRL	0.0100		mg/L	187404	1	02/24/2014 20:31	JL
Copper	BRL	0.0100		mg/L	187404	1	02/24/2014 20:31	JL
Iron	0.211	0.100		mg/L	187404	1	02/24/2014 20:31	JL
Lead	BRL	0.0100		mg/L	187404	1	02/24/2014 20:31	JL
Nickel	BRL	0.0200		mg/L	187404	1	02/24/2014 20:31	JL
Zinc	BRL	0.0200		mg/L	187404	1	02/24/2014 20:31	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 3-Mar-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1402F86-005

Client Sample ID: MW-308D-20140219-01
Collection Date: 2/19/2014 5:45:00 PM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	6.8	5.0		ug/L	187306	1	02/20/2014 20:29	GK
Carbon disulfide	BRL	5.0		ug/L	187306	1	02/20/2014 20:29	GK
Ethylbenzene	5.8	5.0		ug/L	187306	1	02/20/2014 20:29	GK
Toluene	BRL	5.0		ug/L	187306	1	02/20/2014 20:29	GK
Xylenes, Total	5.4	5.0		ug/L	187306	1	02/20/2014 20:29	GK
Surr: 4-Bromofluorobenzene	98.8	66.2-120		%REC	187306	1	02/20/2014 20:29	GK
Surr: Dibromofluoromethane	100	79.5-121		%REC	187306	1	02/20/2014 20:29	GK
Surr: Toluene-d8	100	77-117		%REC	187306	1	02/20/2014 20:29	GK
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R261725	1	02/21/2014 10:45	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	186622	1	02/25/2014 15:22	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	186622	1	02/25/2014 15:22	YH
Benzo(a)pyrene	BRL	0.050		ug/L	186622	1	02/25/2014 15:22	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	186622	1	02/25/2014 15:22	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	186622	1	02/25/2014 15:22	YH
Surr: 4-Terphenyl-d14	93.2	53.2-145		%REC	186622	1	02/25/2014 15:22	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	25	10		ug/L	187279	1	02/21/2014 19:44	YH
2-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 19:44	YH
3,4-Methylphenol	BRL	10		ug/L	187279	1	02/21/2014 19:44	YH
Acenaphthene	BRL	10		ug/L	187279	1	02/21/2014 19:44	YH
Acenaphthylene	BRL	10		ug/L	187279	1	02/21/2014 19:44	YH
Anthracene	BRL	10		ug/L	187279	1	02/21/2014 19:44	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187279	1	02/21/2014 19:44	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 19:44	YH
Chrysene	BRL	10		ug/L	187279	1	02/21/2014 19:44	YH
Fluoranthene	BRL	10		ug/L	187279	1	02/21/2014 19:44	YH
Fluorene	BRL	10		ug/L	187279	1	02/21/2014 19:44	YH
Naphthalene	BRL	10		ug/L	187279	1	02/21/2014 19:44	YH
Phenanthrene	BRL	10		ug/L	187279	1	02/21/2014 19:44	YH
Phenol	BRL	10		ug/L	187279	1	02/21/2014 19:44	YH
Pyrene	BRL	10		ug/L	187279	1	02/21/2014 19:44	YH
Surr: 2,4,6-Tribromophenol	103	51.5-124		%REC	187279	1	02/21/2014 19:44	YH
Surr: 2-Fluorobiphenyl	91.1	51.7-118		%REC	187279	1	02/21/2014 19:44	YH
Surr: 2-Fluorophenol	67	26-120		%REC	187279	1	02/21/2014 19:44	YH
Surr: 4-Terphenyl-d14	97.5	45.2-137		%REC	187279	1	02/21/2014 19:44	YH
Surr: Nitrobenzene-d5	77.9	42-120		%REC	187279	1	02/21/2014 19:44	YH

Qualifiers: * Value exceeds maximum contaminant level
 BRL Below reporting limit
 H Holding times for preparation or analysis exceeded
 N Analyte not NELAC certified
 B Analyte detected in the associated method blank
 > Greater than Result value

E Estimated (value above quantitation range)
 S Spike Recovery outside limits due to matrix
 Narr See case narrative
 NC Not confirmed
 < Less than Result value
 J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 3-Mar-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402F86-005

Client Sample ID: MW-308D-20140219-01
 Collection Date: 2/19/2014 5:45:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D					(SW3510C)			
Surr: Phenol-d5	57.2	12.3-120		%REC	187279	1	02/21/2014 19:44	YH
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	187370	1	02/24/2014 13:25	CG
ION SCAN SW9056A								
Nitrate	BRL	2.5		mg/L	R261862	10	02/20/2014 16:00	GR
Sulfate	12	10		mg/L	R261862	10	02/20/2014 16:00	GR
GC Analysis of Gaseous Samples SOP-RSK 175					(RSK175)			
Methane	140	4		ug/L	187481	1	02/25/2014 14:26	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	BRL	0.100		mg/L	R261911	1	02/20/2014 14:15	AB
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	187412	1	02/24/2014 10:00	EH
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	187404	1	02/24/2014 20:35	JL
Arsenic	BRL	0.0500		mg/L	187404	1	02/24/2014 20:35	JL
Barium	0.106	0.0200		mg/L	187404	1	02/24/2014 20:35	JL
Beryllium	BRL	0.0100		mg/L	187404	1	02/24/2014 20:35	JL
Cadmium	BRL	0.0050		mg/L	187404	1	02/24/2014 20:35	JL
Chromium	0.0257	0.0100		mg/L	187404	1	02/24/2014 20:35	JL
Copper	BRL	0.0100		mg/L	187404	1	02/24/2014 20:35	JL
Iron	1.65	0.100		mg/L	187404	1	02/24/2014 20:35	JL
Lead	BRL	0.0100		mg/L	187404	1	02/24/2014 20:35	JL
Nickel	BRL	0.0200		mg/L	187404	1	02/24/2014 20:35	JL
Zinc	BRL	0.0200		mg/L	187404	1	02/24/2014 20:35	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 3-Mar-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402F86-006

Client Sample ID: MW-301D-20140220-01
 Collection Date: 2/20/2014 9:30:00 AM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	187306	1	02/20/2014 20:56	GK
Carbon disulfide	BRL	5.0		ug/L	187306	1	02/20/2014 20:56	GK
Ethylbenzene	BRL	5.0		ug/L	187306	1	02/20/2014 20:56	GK
Toluene	BRL	5.0		ug/L	187306	1	02/20/2014 20:56	GK
Xylenes, Total	BRL	5.0		ug/L	187306	1	02/20/2014 20:56	GK
Surr: 4-Bromofluorobenzene	97.1	66.2-120		%REC	187306	1	02/20/2014 20:56	GK
Surr: Dibromofluoromethane	100	79.5-121		%REC	187306	1	02/20/2014 20:56	GK
Surr: Toluene-d8	100	77-117		%REC	187306	1	02/20/2014 20:56	GK
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	2.6	1.0		mg/L	R261725	1	02/21/2014 10:45	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	186622	1	02/25/2014 15:48	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	186622	1	02/25/2014 15:48	YH
Benzo(a)pyrene	BRL	0.050		ug/L	186622	1	02/25/2014 15:48	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	186622	1	02/25/2014 15:48	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	186622	1	02/25/2014 15:48	YH
Surr: 4-Terphenyl-d14	97	53.2-145		%REC	186622	1	02/25/2014 15:48	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187343	1	02/25/2014 13:38	YH
2-Methylphenol	BRL	10		ug/L	187343	1	02/25/2014 13:38	YH
3,4-Methylphenol	BRL	10		ug/L	187343	1	02/25/2014 13:38	YH
Acenaphthene	BRL	10		ug/L	187343	1	02/25/2014 13:38	YH
Acenaphthylene	BRL	10		ug/L	187343	1	02/25/2014 13:38	YH
Anthracene	BRL	10		ug/L	187343	1	02/25/2014 13:38	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187343	1	02/25/2014 13:38	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187343	1	02/25/2014 13:38	YH
Chrysene	BRL	10		ug/L	187343	1	02/25/2014 13:38	YH
Fluoranthene	BRL	10		ug/L	187343	1	02/25/2014 13:38	YH
Fluorene	BRL	10		ug/L	187343	1	02/25/2014 13:38	YH
Naphthalene	BRL	10		ug/L	187343	1	02/25/2014 13:38	YH
Phenanthrene	BRL	10		ug/L	187343	1	02/25/2014 13:38	YH
Phenol	BRL	10		ug/L	187343	1	02/25/2014 13:38	YH
Pyrene	BRL	10		ug/L	187343	1	02/25/2014 13:38	YH
Surr: 2,4,6-Tribromophenol	100	51.5-124		%REC	187343	1	02/25/2014 13:38	YH
Surr: 2-Fluorobiphenyl	89.5	51.7-118		%REC	187343	1	02/25/2014 13:38	YH
Surr: 2-Fluorophenol	75.2	26-120		%REC	187343	1	02/25/2014 13:38	YH
Surr: 4-Terphenyl-d14	96.3	45.2-137		%REC	187343	1	02/25/2014 13:38	YH
Surr: Nitrobenzene-d5	87.1	42-120		%REC	187343	1	02/25/2014 13:38	YH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 3-Mar-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402F86-006

Client Sample ID: MW-301D-20140220-01
 Collection Date: 2/20/2014 9:30:00 AM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D					(SW3510C)			
Surr: Phenol-d5	67.9	12.3-120		%REC	187343	1	02/25/2014 13:38	YH
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	187370	1	02/24/2014 13:27	CG
ION SCAN SW9056A								
Nitrate	BRL	0.25		mg/L	R261862	1	02/20/2014 17:16	GR
Sulfate	18	1.0		mg/L	R261862	1	02/20/2014 17:16	GR
GC Analysis of Gaseous Samples SOP-RSK 175					(RSK175)			
Methane	43	4		ug/L	187481	1	02/25/2014 14:31	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	4.31	1.00		mg/L	R261911	10	02/20/2014 14:15	AB
Cyanide SW9014					(SW9010C)			
Cyanide, Total	0.062	0.010		mg/L	187412	1	02/24/2014 10:00	EH
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	187404	1	02/24/2014 20:39	JL
Arsenic	BRL	0.0500		mg/L	187404	1	02/24/2014 20:39	JL
Barium	1.87	0.0200		mg/L	187404	1	02/24/2014 20:39	JL
Beryllium	BRL	0.0100		mg/L	187404	1	02/24/2014 20:39	JL
Cadmium	BRL	0.0050		mg/L	187404	1	02/24/2014 20:39	JL
Chromium	BRL	0.0100		mg/L	187404	1	02/24/2014 20:39	JL
Copper	BRL	0.0100		mg/L	187404	1	02/24/2014 20:39	JL
Iron	5.20	0.100		mg/L	187404	1	02/24/2014 20:39	JL
Lead	BRL	0.0100		mg/L	187404	1	02/24/2014 20:39	JL
Nickel	BRL	0.0200		mg/L	187404	1	02/24/2014 20:39	JL
Zinc	BRL	0.0200		mg/L	187404	1	02/24/2014 20:39	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 3-Mar-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1402F86-007

Client Sample ID: MW-207D-20140220-01
Collection Date: 2/20/2014 10:00:00 AM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	187306	1	02/20/2014 21:24	GK
Carbon disulfide	BRL	5.0		ug/L	187306	1	02/20/2014 21:24	GK
Ethylbenzene	BRL	5.0		ug/L	187306	1	02/20/2014 21:24	GK
Toluene	BRL	5.0		ug/L	187306	1	02/20/2014 21:24	GK
Xylenes, Total	BRL	5.0		ug/L	187306	1	02/20/2014 21:24	GK
Surr: 4-Bromofluorobenzene	95.7	66.2-120		%REC	187306	1	02/20/2014 21:24	GK
Surr: Dibromofluoromethane	99	79.5-121		%REC	187306	1	02/20/2014 21:24	GK
Surr: Toluene-d8	100	77-117		%REC	187306	1	02/20/2014 21:24	GK
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R261725	1	02/21/2014 10:45	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	186622	1	02/25/2014 16:14	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	186622	1	02/25/2014 16:14	YH
Benzo(a)pyrene	BRL	0.050		ug/L	186622	1	02/25/2014 16:14	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	186622	1	02/25/2014 16:14	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	186622	1	02/25/2014 16:14	YH
Surr: 4-Terphenyl-d14	91.9	53.2-145		%REC	186622	1	02/25/2014 16:14	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187343	1	02/25/2014 14:04	YH
2-Methylphenol	BRL	10		ug/L	187343	1	02/25/2014 14:04	YH
3,4-Methylphenol	BRL	10		ug/L	187343	1	02/25/2014 14:04	YH
Acenaphthene	BRL	10		ug/L	187343	1	02/25/2014 14:04	YH
Acenaphthylene	BRL	10		ug/L	187343	1	02/25/2014 14:04	YH
Anthracene	BRL	10		ug/L	187343	1	02/25/2014 14:04	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187343	1	02/25/2014 14:04	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187343	1	02/25/2014 14:04	YH
Chrysene	BRL	10		ug/L	187343	1	02/25/2014 14:04	YH
Fluoranthene	BRL	10		ug/L	187343	1	02/25/2014 14:04	YH
Fluorene	BRL	10		ug/L	187343	1	02/25/2014 14:04	YH
Naphthalene	BRL	10		ug/L	187343	1	02/25/2014 14:04	YH
Phenanthrene	BRL	10		ug/L	187343	1	02/25/2014 14:04	YH
Phenol	BRL	10		ug/L	187343	1	02/25/2014 14:04	YH
Pyrene	BRL	10		ug/L	187343	1	02/25/2014 14:04	YH
Surr: 2,4,6-Tribromophenol	84.4	51.5-124		%REC	187343	1	02/25/2014 14:04	YH
Surr: 2-Fluorobiphenyl	76.7	51.7-118		%REC	187343	1	02/25/2014 14:04	YH
Surr: 2-Fluorophenol	62.4	26-120		%REC	187343	1	02/25/2014 14:04	YH
Surr: 4-Terphenyl-d14	82.9	45.2-137		%REC	187343	1	02/25/2014 14:04	YH
Surr: Nitrobenzene-d5	71.7	42-120		%REC	187343	1	02/25/2014 14:04	YH

Qualifiers: * Value exceeds maximum contaminant level
 BRL Below reporting limit
 H Holding times for preparation or analysis exceeded
 N Analyte not NELAC certified
 B Analyte detected in the associated method blank
 > Greater than Result value

E Estimated (value above quantitation range)
 S Spike Recovery outside limits due to matrix
 Narr See case narrative
 NC Not confirmed
 < Less than Result value
 J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 3-Mar-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402F86-007

Client Sample ID: MW-207D-20140220-01
 Collection Date: 2/20/2014 10:00:00 AM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D					(SW3510C)			
Surr: Phenol-d5	56.8	12.3-120		%REC	187343	1	02/25/2014 14:04	YH
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	187370	1	02/24/2014 13:29	CG
ION SCAN SW9056A								
Nitrate	BRL	0.25		mg/L	R261862	1	02/20/2014 17:31	GR
Sulfate	4.4	1.0		mg/L	R261862	1	02/20/2014 17:31	GR
GC Analysis of Gaseous Samples SOP-RSK 175					(RSK175)			
Methane	48	4		ug/L	187481	1	02/25/2014 14:41	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	BRL	0.100		mg/L	R261911	1	02/20/2014 14:15	AB
Cyanide SW9014					(SW9010C)			
Cyanide, Total	0.020	0.010		mg/L	187412	1	02/24/2014 10:00	EH
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	187404	1	02/24/2014 20:43	JL
Arsenic	BRL	0.0500		mg/L	187404	1	02/24/2014 20:43	JL
Barium	1.98	0.0200		mg/L	187404	1	02/24/2014 20:43	JL
Beryllium	BRL	0.0100		mg/L	187404	1	02/24/2014 20:43	JL
Cadmium	BRL	0.0050		mg/L	187404	1	02/24/2014 20:43	JL
Chromium	BRL	0.0100		mg/L	187404	1	02/24/2014 20:43	JL
Copper	BRL	0.0100		mg/L	187404	1	02/24/2014 20:43	JL
Iron	0.687	0.100		mg/L	187404	1	02/24/2014 20:43	JL
Lead	BRL	0.0100		mg/L	187404	1	02/24/2014 20:43	JL
Nickel	BRL	0.0200		mg/L	187404	1	02/24/2014 20:43	JL
Zinc	BRL	0.0200		mg/L	187404	1	02/24/2014 20:43	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
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- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 3-Mar-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402F86-008

Client Sample ID: MW-303D-20140220-01
 Collection Date: 2/20/2014 11:35:00 AM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	187306	1	02/20/2014 21:51	GK
Carbon disulfide	BRL	5.0		ug/L	187306	1	02/20/2014 21:51	GK
Ethylbenzene	BRL	5.0		ug/L	187306	1	02/20/2014 21:51	GK
Toluene	BRL	5.0		ug/L	187306	1	02/20/2014 21:51	GK
Xylenes, Total	BRL	5.0		ug/L	187306	1	02/20/2014 21:51	GK
Surr: 4-Bromofluorobenzene	94.8	66.2-120		%REC	187306	1	02/20/2014 21:51	GK
Surr: Dibromofluoromethane	99.7	79.5-121		%REC	187306	1	02/20/2014 21:51	GK
Surr: Toluene-d8	101	77-117		%REC	187306	1	02/20/2014 21:51	GK
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R261725	1	02/21/2014 10:45	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	186622	1	02/25/2014 16:40	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	186622	1	02/25/2014 16:40	YH
Benzo(a)pyrene	BRL	0.050		ug/L	186622	1	02/25/2014 16:40	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	186622	1	02/25/2014 16:40	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	186622	1	02/25/2014 16:40	YH
Surr: 4-Terphenyl-d14	99.5	53.2-145		%REC	186622	1	02/25/2014 16:40	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187343	1	02/25/2014 14:30	YH
2-Methylphenol	BRL	10		ug/L	187343	1	02/25/2014 14:30	YH
3,4-Methylphenol	BRL	10		ug/L	187343	1	02/25/2014 14:30	YH
Acenaphthene	BRL	10		ug/L	187343	1	02/25/2014 14:30	YH
Acenaphthylene	BRL	10		ug/L	187343	1	02/25/2014 14:30	YH
Anthracene	BRL	10		ug/L	187343	1	02/25/2014 14:30	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187343	1	02/25/2014 14:30	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187343	1	02/25/2014 14:30	YH
Chrysene	BRL	10		ug/L	187343	1	02/25/2014 14:30	YH
Fluoranthene	BRL	10		ug/L	187343	1	02/25/2014 14:30	YH
Fluorene	BRL	10		ug/L	187343	1	02/25/2014 14:30	YH
Naphthalene	BRL	10		ug/L	187343	1	02/25/2014 14:30	YH
Phenanthrene	BRL	10		ug/L	187343	1	02/25/2014 14:30	YH
Phenol	BRL	10		ug/L	187343	1	02/25/2014 14:30	YH
Pyrene	BRL	10		ug/L	187343	1	02/25/2014 14:30	YH
Surr: 2,4,6-Tribromophenol	91.4	51.5-124		%REC	187343	1	02/25/2014 14:30	YH
Surr: 2-Fluorobiphenyl	83.5	51.7-118		%REC	187343	1	02/25/2014 14:30	YH
Surr: 2-Fluorophenol	68.8	26-120		%REC	187343	1	02/25/2014 14:30	YH
Surr: 4-Terphenyl-d14	90.4	45.2-137		%REC	187343	1	02/25/2014 14:30	YH
Surr: Nitrobenzene-d5	78.6	42-120		%REC	187343	1	02/25/2014 14:30	YH

Qualifiers:

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- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 3-Mar-14

Client: ERM-Southeast	Client Sample ID: MW-303D-20140220-01
Project Name: AGLC Macon	Collection Date: 2/20/2014 11:35:00 AM
Lab ID: 1402F86-008	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D (SW3510C)								
Surr: Phenol-d5	62	12.3-120		%REC	187343	1	02/25/2014 14:30	YH
Mercury, Total SW7470A (SW7470A)								
Mercury	BRL	0.00020		mg/L	187370	1	02/24/2014 13:35	CG
ION SCAN SW9056A								
Nitrate	BRL	0.25		mg/L	R261862	1	02/21/2014 09:29	GR
Sulfate	7.7	1.0		mg/L	R261862	1	02/21/2014 09:29	GR
GC Analysis of Gaseous Samples SOP-RSK 175 (RSK175)								
Methane	610	40		ug/L	187481	10	02/25/2014 15:06	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	1.35	0.100		mg/L	R261911	1	02/20/2014 14:15	AB
Cyanide SW9014 (SW9010C)								
Cyanide, Total	BRL	0.010		mg/L	187412	1	02/24/2014 10:00	EH
METALS, TOTAL SW6010C (SW3010A)								
Antimony	BRL	0.0200		mg/L	187404	1	02/24/2014 20:47	JL
Arsenic	BRL	0.0500		mg/L	187404	1	02/24/2014 20:47	JL
Barium	0.703	0.0200		mg/L	187404	1	02/24/2014 20:47	JL
Beryllium	BRL	0.0100		mg/L	187404	1	02/24/2014 20:47	JL
Cadmium	BRL	0.0050		mg/L	187404	1	02/24/2014 20:47	JL
Chromium	BRL	0.0100		mg/L	187404	1	02/24/2014 20:47	JL
Copper	BRL	0.0100		mg/L	187404	1	02/24/2014 20:47	JL
Iron	1.83	0.100		mg/L	187404	1	02/24/2014 20:47	JL
Lead	BRL	0.0100		mg/L	187404	1	02/24/2014 20:47	JL
Nickel	BRL	0.0200		mg/L	187404	1	02/24/2014 20:47	JL
Zinc	0.0234	0.0200		mg/L	187404	1	02/24/2014 20:47	JL

Qualifiers:

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- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 3-Mar-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1402F86-009

Client Sample ID: MW-110D-20140220-01
Collection Date: 2/20/2014 11:40:00 AM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	480	50		ug/L	187306	10	02/21/2014 12:42	GK
Carbon disulfide	BRL	5.0		ug/L	187306	1	02/20/2014 22:46	GK
Ethylbenzene	540	50		ug/L	187306	10	02/21/2014 12:42	GK
Toluene	5.1	5.0		ug/L	187306	1	02/20/2014 22:46	GK
Xylenes, Total	48	5.0		ug/L	187306	1	02/20/2014 22:46	GK
Surr: 4-Bromofluorobenzene	99.8	66.2-120		%REC	187306	10	02/21/2014 12:42	GK
Surr: 4-Bromofluorobenzene	100	66.2-120		%REC	187306	1	02/20/2014 22:46	GK
Surr: Dibromofluoromethane	96.7	79.5-121		%REC	187306	1	02/20/2014 22:46	GK
Surr: Dibromofluoromethane	96.1	79.5-121		%REC	187306	10	02/21/2014 12:42	GK
Surr: Toluene-d8	99.8	77-117		%REC	187306	10	02/21/2014 12:42	GK
Surr: Toluene-d8	101	77-117		%REC	187306	1	02/20/2014 22:46	GK
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R261725	1	02/21/2014 10:45	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	0.18	0.050		ug/L	186622	1	02/25/2014 17:06	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	186622	1	02/25/2014 17:06	YH
Benzo(a)pyrene	BRL	0.050		ug/L	186622	1	02/25/2014 17:06	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	186622	1	02/25/2014 17:06	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	186622	1	02/25/2014 17:06	YH
Surr: 4-Terphenyl-d14	96	53.2-145		%REC	186622	1	02/25/2014 17:06	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187632	1	02/27/2014 22:54	YH
2-Methylphenol	BRL	10		ug/L	187632	1	02/27/2014 22:54	YH
3,4-Methylphenol	BRL	10		ug/L	187632	1	02/27/2014 22:54	YH
Acenaphthene	81	10		ug/L	187632	1	02/27/2014 22:54	YH
Acenaphthylene	BRL	10		ug/L	187632	1	02/27/2014 22:54	YH
Anthracene	BRL	10		ug/L	187632	1	02/27/2014 22:54	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187632	1	02/27/2014 22:54	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187632	1	02/27/2014 22:54	YH
Chrysene	BRL	10		ug/L	187632	1	02/27/2014 22:54	YH
Fluoranthene	BRL	10		ug/L	187632	1	02/27/2014 22:54	YH
Fluorene	25	10		ug/L	187632	1	02/27/2014 22:54	YH
Naphthalene	1100	100		ug/L	187632	10	02/28/2014 15:06	YH
Phenanthrene	40	10		ug/L	187632	1	02/27/2014 22:54	YH
Phenol	BRL	10		ug/L	187632	1	02/27/2014 22:54	YH
Pyrene	BRL	10		ug/L	187632	1	02/27/2014 22:54	YH
Surr: 2,4,6-Tribromophenol	94.6	51.5-124		%REC	187632	1	02/27/2014 22:54	YH
Surr: 2-Fluorobiphenyl	88.7	51.7-118		%REC	187632	1	02/27/2014 22:54	YH

Qualifiers: * Value exceeds maximum contaminant level
 BRL Below reporting limit
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 N Analyte not NELAC certified
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 > Greater than Result value

E Estimated (value above quantitation range)
 S Spike Recovery outside limits due to matrix
 Narr See case narrative
 NC Not confirmed
 < Less than Result value
 J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 3-Mar-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402F86-009

Client Sample ID: MW-110D-20140220-01
 Collection Date: 2/20/2014 11:40:00 AM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D (SW3510C)								
Surr: 2-Fluorophenol	68.7	26-120		%REC	187632	1	02/27/2014 22:54	YH
Surr: 4-Terphenyl-d14	86.9	45.2-137		%REC	187632	1	02/27/2014 22:54	YH
Surr: Nitrobenzene-d5	92.4	42-120		%REC	187632	1	02/27/2014 22:54	YH
Surr: Phenol-d5	61.6	12.3-120		%REC	187632	1	02/27/2014 22:54	YH
Mercury, Total SW7470A (SW7470A)								
Mercury	BRL	0.00020		mg/L	187370	1	02/24/2014 13:37	CG
ION SCAN SW9056A								
Nitrate	BRL	0.25		mg/L	R261829	1	02/20/2014 15:32	GR
Sulfate	BRL	1.0		mg/L	R261829	1	02/20/2014 15:32	GR
GC Analysis of Gaseous Samples SOP-RSK 175 (RSK175)								
Methane	770	40		ug/L	187481	10	02/25/2014 15:17	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	5.00	1.00		mg/L	R261911	10	02/20/2014 14:15	AB
Cyanide SW9014 (SW9010C)								
Cyanide, Total	0.021	0.010		mg/L	187412	1	02/24/2014 10:00	EH
METALS, TOTAL SW6010C (SW3010A)								
Antimony	BRL	0.0200		mg/L	187404	1	02/24/2014 20:50	JL
Arsenic	BRL	0.0500		mg/L	187404	1	02/24/2014 20:50	JL
Barium	4.77	0.0200		mg/L	187404	1	02/24/2014 20:50	JL
Beryllium	BRL	0.0100		mg/L	187404	1	02/24/2014 20:50	JL
Cadmium	BRL	0.0050		mg/L	187404	1	02/24/2014 20:50	JL
Chromium	BRL	0.0100		mg/L	187404	1	02/24/2014 20:50	JL
Copper	BRL	0.0100		mg/L	187404	1	02/24/2014 20:50	JL
Iron	5.89	0.100		mg/L	187404	1	02/24/2014 20:50	JL
Lead	BRL	0.0100		mg/L	187404	1	02/24/2014 20:50	JL
Nickel	0.125	0.0200		mg/L	187404	1	02/24/2014 20:50	JL
Zinc	BRL	0.0200		mg/L	187404	1	02/24/2014 20:50	JL

Qualifiers:

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- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit



Microseeps/Pace Analytical Energy Services, LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

March 5, 2014

Mirzeta Kararic
Analytical Environmental Services, Inc.
3785 Presidential Parkway
Suite 111
Atlanta, GA 30340

RE: **1402F86**

Microseeps Workorder: 11471

Dear Mirzeta Kararic:

Enclosed are the analytical results for sample(s) received by the laboratory on Monday, February 24, 2014. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

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

Sincerely,

Robbin Robl CT 3/6/14

Robbin Robl 03/05/2014
rrobl@microseeps.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.

Please email info@microseeps.com.

Total Number of Pages 19

Report ID: 11471 - 493965

Page 1 of 15



CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Microseeps/Pace Analytical Energy Services, LLC.



LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories		
Accreditation ID:	02-00538		
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste		
Accreditor:	NELAP: State of Florida, Department of Health, Bureau of Laboratories		
Accreditation ID:	E87832		
Scope:	Clean Water Act (CWA)	Resource Conservation and Recovery Act (RCRA)	
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification		
Accreditation ID:	89009003		
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)		
Accreditor:	NELAP: State of Louisiana, Department of Environmental Quality		
Accreditation ID:	04104		
Scope:	Solid and Chemical Materials; Non-Potable Water		
Accreditor:	NELAP: New Jersey, Department of Environmental Protection		
Accreditation ID:	PA026		
Scope:	Non-Potable Water; Solid and Chemical Materials		
Accreditor:	NELAP: New York, Department of Health Wadsworth Center		
Accreditation ID:	11815		
Scope:	Non-Potable Water; Solid and Hazardous Waste		
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health		
Accreditation ID:	PH-0263		
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)		
Accreditor:	NELAP: Texas, Commission on Environmental Quality		
Accreditation ID:	T104704453-09-TX		
Scope:	Non-Potable Water		
Accreditor:	State of New Hampshire		
Accreditation ID:	299409		
Scope:	Non-potable water		
Accreditor:	State of Georgia		
Accreditation ID:	Chapter 391-3-26		
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, Microseeps is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).		



CERTIFICATE OF ANALYSIS

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Microseeps/Pace Analytical Energy Services, LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 11471 1402F86

Lab ID	Sample ID	Matrix	Date Collected	Date Received
114710001	MW-12DD-20140219-01	Water	2/19/2014 15:00	2/24/2014 15:49
114710002	MW-302D-20140219-01	Water	2/19/2014 15:30	2/24/2014 15:49
114710003	MW-09D-20140219-01	Water	2/19/2014 17:05	2/24/2014 15:49
114710004	MW-308D-20140219-01	Water	2/19/2014 17:45	2/24/2014 15:49
114710005	MW-301D-20140220-01	Water	2/20/2014 09:30	2/24/2014 15:49
114710006	MW-207D-20140220-01	Water	2/20/2014 10:00	2/24/2014 15:49
114710007	MW-303D-20140220-01	Water	2/20/2014 11:35	2/24/2014 15:49
114710008	MW-110D-20140220-01	Water	2/20/2014 11:40	2/24/2014 15:49



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220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

PROJECT SUMMARY

Workorder: 11471 1402F86

Batch Comments

Batch: DISG/3610 - AM20GAX Water QC

The percent recovery for the laboratory control sample was above laboratory control limits. Analytes Ethane and Ethene. Results associated to the analytes in samples may be bias high.



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ANALYTICAL RESULTS

Workorder: 11471 1402F86

Lab ID: 114710001

Date Received: 2/24/2014 15:49 Matrix: Water

Sample ID: MW-12DD-20140219-01

Date Collected: 2/19/2014 15:00

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
------------	---------	-------	-----	-----	----	----------	----	----------	----	------

RISK - MICR

Analysis Desc: AM20GAX

Analytical Method: AM20GAX

Carbon Dioxide	<5.0	mg/l	5.0	0.23	1			3/3/2014 11:53	GT
Oxygen	1.4	mg/l	0.50	0.082	1			3/3/2014 11:53	GT
Nitrogen	14	mg/l	2.0	1.8	1			3/3/2014 11:53	GT
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			3/3/2014 11:53	GT

Report ID: 11471 - 493965

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Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 11471 1402F86

Lab ID: 114710002

Date Received: 2/24/2014 15:49 Matrix: Water

Sample ID: MW-302D-20140219-01

Date Collected: 2/19/2014 15:30

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Carbon Dioxide	190	mg/l	5.0	0.23	1			3/3/2014 12:05	GT	
Oxygen	2.4	mg/l	0.50	0.082	1			3/3/2014 12:05	GT	
Nitrogen	24	mg/l	2.0	1.8	1			3/3/2014 12:05	GT	
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			3/3/2014 12:05	GT	

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ANALYTICAL RESULTS

Workorder: 11471 1402F86

Lab ID: 114710003
Sample ID: MW-09D-20140219-01

Date Received: 2/24/2014 15:49 Matrix: Water
Date Collected: 2/19/2014 17:05

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Carbon Dioxide	45	mg/l	5.0	0.23	1			3/3/2014 12:17	GT	
Oxygen	4.7	mg/l	0.50	0.082	1			3/3/2014 12:17	GT	
Nitrogen	19	mg/l	2.0	1.8	1			3/3/2014 12:17	GT	
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			3/3/2014 12:17	GT	



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ANALYTICAL RESULTS

Workorder: 11471 1402F86

Lab ID: 114710004

Date Received: 2/24/2014 15:49 Matrix: Water

Sample ID: MW-308D-20140219-01

Date Collected: 2/19/2014 17:45

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
------------	---------	-------	-----	-----	----	----------	----	----------	----	------

RISK - MICR

Analysis Desc: AM20GAX

Analytical Method: AM20GAX

Carbon Dioxide	<5.0	mg/l	5.0	0.23	1			3/3/2014 12:30	GT	
Oxygen	4.1	mg/l	0.50	0.082	1			3/3/2014 12:30	GT	
Nitrogen	18	mg/l	2.0	1.8	1			3/3/2014 12:30	GT	
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			3/3/2014 12:30	GT	

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ANALYTICAL RESULTS

Workorder: 11471 1402F86

Lab ID: 114710005

Date Received: 2/24/2014 15:49 Matrix: Water

Sample ID: MW-301D-20140220-01

Date Collected: 2/20/2014 09:30

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Carbon Dioxide	91	mg/l	5.0	0.23	1			3/3/2014 12:42	GT	
Oxygen	2.0	mg/l	0.50	0.082	1			3/3/2014 12:42	GT	
Nitrogen	20	mg/l	2.0	1.8	1			3/3/2014 12:42	GT	
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			3/3/2014 12:42	GT	

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ANALYTICAL RESULTS

Workorder: 11471 1402F86

Lab ID: 114710006

Date Received: 2/24/2014 15:49 Matrix: Water

Sample ID: MW-207D-20140220-01

Date Collected: 2/20/2014 10:00

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Carbon Dioxide	22	mg/l	5.0	0.23	1			3/3/2014 12:54	GT	
Oxygen	5.4	mg/l	0.50	0.082	1			3/3/2014 12:54	GT	
Nitrogen	19	mg/l	2.0	1.8	1			3/3/2014 12:54	GT	
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			3/3/2014 12:54	GT	



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ANALYTICAL RESULTS

Workorder: 11471 1402F86

Lab ID: 114710007

Date Received: 2/24/2014 15:49 Matrix: Water

Sample ID: MW-303D-20140220-01

Date Collected: 2/20/2014 11:35

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Carbon Dioxide	18	mg/l	5.0	0.23	1			3/3/2014 13:06	GT	
Oxygen	2.5	mg/l	0.50	0.082	1			3/3/2014 13:06	GT	
Nitrogen	19	mg/l	2.0	1.8	1			3/3/2014 13:06	GT	
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			3/3/2014 13:06	GT	

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ANALYTICAL RESULTS

Workorder: 11471 1402F86

Lab ID: 114710008

Date Received: 2/24/2014 15:49 Matrix: Water

Sample ID: MW-110D-20140220-01

Date Collected: 2/20/2014 11:40

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Carbon Dioxide	140	mg/l	5.0	0.23	1			3/3/2014 13:19	GT	
Oxygen	3.0	mg/l	0.50	0.082	1			3/3/2014 13:19	GT	
Nitrogen	17	mg/l	2.0	1.8	1			3/3/2014 13:19	GT	
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			3/3/2014 13:19	GT	



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ANALYTICAL RESULTS QUALIFIERS

Workorder: 11471 1402F86

DEFINITIONS/QUALIFIERS

Disclaimer : The Pennsylvania Department of Environmental Protection (PADEP) has decided to no longer recognize analyses that do not produce data for primary compliance, for NELAP accreditation. The methods affected by this decision are AM20GAX, AM21G, SW846 7199 and AM4.02. The laboratory shall continue to administer the NELAP/TNI standard requirements in the performance of these methods.

MDL Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.

PQL Practical Quantitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.

ND Not detected at or above reporting limit.

DF Dilution Factor.

S Surrogate.

RPD Relative Percent Difference.

% Rec Percent Recovery.

U Indicates the compound was analyzed for, but not detected at or above the noted concentration.

J Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).



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QUALITY CONTROL DATA

Workorder: 11471 1402F86

QC Batch: DISG/3610 Analysis Method: AM20GAX
QC Batch Method: AM20GAX
Associated Lab Samples: 114710001, 114710002, 114710003, 114710004, 114710005, 114710006, 114710007, 114710008

METHOD BLANK: 26154

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Carbon Dioxide	mg/l	<5.0	5.0	
Oxygen	mg/l	<0.50	0.50	
Nitrogen	mg/l	<2.0	2.0	
Carbon Monoxide	mg/l	<1.0	1.0	

LABORATORY CONTROL SAMPLE & LCSD: 26156 26158

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Carbon Dioxide	mg/l	120	130	140	115	118	80-120	2.6	20	
Oxygen	mg/l	11	12	12	107	109	80-120	1.9	20	
Nitrogen	mg/l	140	140	140	98	99	80-120	1	20	
Carbon Monoxide	mg/l	2	2.2	2.3	112	117	80-120	4.4	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 26177 26178 Original: 114580006

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK											
Carbon Dioxide	mg/l	24	120	150	150	112	111	70-130	0.9	20	
Oxygen	mg/l	7.2	11	18	17	97	84	70-130	14	20	
Nitrogen	mg/l	23	140	150	150	93	93	70-130	0	20	
Carbon Monoxide	mg/l	0	2	2.3	2.4	117	119	70-130	1.7	20	



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Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 11471 1402F86

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
114710001	MW-12DD-20140219-01			AM20GAX	DISG/3610
114710002	MW-302D-20140219-01			AM20GAX	DISG/3610
114710003	MW-09D-20140219-01			AM20GAX	DISG/3610
114710004	MW-308D-20140219-01			AM20GAX	DISG/3610
114710005	MW-301D-20140220-01			AM20GAX	DISG/3610
114710006	MW-207D-20140220-01			AM20GAX	DISG/3610
114710007	MW-303D-20140220-01			AM20GAX	DISG/3610
114710008	MW-110D-20140220-01			AM20GAX	DISG/3610



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ANALYTICAL ENVIRONMENTAL SERVICES, INC
3080 Presidential Drive, Atlanta GA 30340-3704
TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: _____

Date: _____ Page _____ of _____

COMPANY:

ADDRESS:

AES

Same as above

PHONE:

FAX:

SAMPLED BY:

SIGNATURE:

SAMPLE ID

SAMPLED

DATE

TIME

Grab

Composite

Matrix
(See codes)

ANALYSIS REQUESTED

CO₂, N₂, CO, CO₂

PRESERVATION (See codes)

REMARKS

No # of Containers

Visit our website
www.aesatlanta.com
to check on the status of
your results, place bottle
orders, etc.

RELINQUISHED BY

DATE/TIME

RECEIVED BY

DATE/TIME

PROJECT INFORMATION

RECEIPT

1. DATE/TIME

2. DATE/TIME

2.24.14 1030

PROJECT NAME:

1402 F86

Total # of Containers

2. PROJECT #:

1402 F86

SITE ADDRESS:

1402 F86

Turnaround Time Request

3. SPECIAL INSTRUCTIONS/COMMENTS:

OUT / / VIA:

SEND REPORT TO:

1402 F86

Standard 5 Business Days

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.

IN / / VIA:

INVOICE TO:

1402 F86

2 Business Day Rush

SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

CLIENT FedEx UPS MAIL COURIER

QUOTE #:

1402 F86

Next Business Day Rush

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water

GREYHOUND OTHER

PO#:

1402 F86

Same Day Rush (auth req.)

PRESERVATIVE CODES: H+1 = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

STATE PROGRAM (if any): _____
E-mail? Y / N: _____ Fax? Y / N: _____
DATA PACKAGE: I II III IV

NON-CONFORMANCE FORM

Microseeps Project Number: 11471

Date: 2-24-14 Time of Receipt: 10:30 Receiver: LG

Client: AES

REASON FOR NON-CONFORMANCE:

CDC was not relinquished by Client.

ACTION TAKEN:

Client name: AES

Date: 2/25/14 Time: e-mail

Client was made aware via e-mail.

O.K. to Proceed.

Customer Service Initials: CA

Date: 2/25/14

Chris Thomas

From: Chris Thomas
Sent: Tuesday, February 25, 2014 3:08 PM
To: 'mkararic@aesatlanta.com'
Subject: PG SAMPLES
Attachments: AES ATLANTA COC_20140225152113.pdf; AES ATLANTA COC 11470_20140225152206.pdf

Hello,

We received PG samples from your lab for two projects. I have attached a copy of the COC's and log-in information. The COC was not relinquished. With your permission we will proceed with the analysis.

Thanks,
Chris

Christopher Thomas
Microseeps, a Division of Pace Analytical Energy Services, LLC
220 William Pitt Way
Pittsburgh, PA 15238

Office: 412-826-5245
Direct: 412-826-4481

Disclaimer: This message contains confidential information and is intended only for the individual(s) named. If you are not the named addressee, you should permanently delete this e-mail from your system and should not disseminate, distribute or copy this e-mail. E-mail transmission cannot be guaranteed to be secure or error-free as information delivered over the internet could be corrupted, lost, destroyed, delayed, or contain viruses

Cooler Receipt Form

Client Name: AES Project: 1402F86 Lab Work Order: 11471

A. Shipping/Container Information (circle appropriate response)

Courier: FedEx UPS USPS Client Other: _____ Air bill Present: Yes No

Tracking Number: 561327614522

Custody Seal on Cooler/Box Present: Yes No Seals Intact: Yes No

Cooler/Box Packing Material: Bubble Wrap Absorbent Foam Other: _____

Type of Ice: Wet Blue None Ice Intact: Yes Melted

Cooler Temperature: 10C Radiation Screened: Yes No Chain of Custody Present: Yes No

Comments: _____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out		<input checked="" type="checkbox"/>		
Chain of Custody relinquished		<input checked="" type="checkbox"/>		
Sampler Name & Signature on COC		<input checked="" type="checkbox"/>		
Containers intact	<input checked="" type="checkbox"/>			
Were samples in separate bags	<input checked="" type="checkbox"/>			
Sample container labels match COC	<input checked="" type="checkbox"/>			
Sample name/date and time collected	<input checked="" type="checkbox"/>			
Sufficient volume provided	<input checked="" type="checkbox"/>			
Microseeps containers used	<input checked="" type="checkbox"/>			
Are containers properly preserved for the requested testing? (as labeled)	<input checked="" type="checkbox"/>			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			<input checked="" type="checkbox"/>	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			<input checked="" type="checkbox"/>	

Comments: _____

Cooler contents examined/received by: LS Date: 2.28.14

Project Manager Review: CA Date: 2/25/14

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client ERM Work Order Number 1402806

Checklist completed by [Signature] Date 2/20/14
Signature Date

Carrier name: FedEx ☐ UPS ☐ Courier ☒ Client ☐ US Mail ☐ Other ☐

Shipping container/cooler in good condition? Yes ☒ No ☐ Not Present ☐

Custody seals intact on shipping container/cooler? Yes ☐ No ☐ Not Present ☒

Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒

Container/Temp Blank temperature in compliance? (4°C±2)* Yes ☒ No ☐

Cooler #1 21 Cooler #2 33 Cooler #3 ☐ Cooler #4 ☐ Cooler #5 ☐ Cooler #6 ☐

Chain of custody present? Yes ☒ No ☐

Chain of custody signed when relinquished and received? Yes ☒ No ☐

Chain of custody agrees with sample labels? Yes ☒ No ☐

Samples in proper container/bottle? Yes ☒ No ☐

Sample containers intact? Yes ☒ No ☐

Sufficient sample volume for indicated test? Yes ☒ No ☐

All samples received within holding time? Yes ☒ No ☐

Was TAT marked on the COC? Yes ☒ No ☐

Proceed with Standard TAT as per project history? Yes ☐ No ☐ Not Applicable ☒

Water - VOA vials have zero headspace? No VOA vials submitted ☐ Yes ☒ No ☐

Water - pH acceptable upon receipt? Yes ☒ No ☐ Not Applicable ☐

Adjusted? ☐ Checked by MS

Sample Condition: Good ☒ Other(Explain) ☐

(For diffusive samples or AIHA lead) Is a known blank included? Yes ☐ No ☒

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\\Quality Assurance\Checklists Procedures Sign-Off Templates\Checklists\Sample Receipt Checklists\Sample_Cooler_Receipt_Checklist

Client: ERM-Southeast
 Project: AGLC Macon
 Lab Order: 1402F86

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1402F86-001A	TB-04-20140219-01	2/19/2014 12:00:00AM	Aqueous	Volatile Organic Compounds by GC/MS		02/20/2014	02/20/2014
1402F86-002A	MW-12DD-20140219-01	2/19/2014 3:00:00PM	Groundwater	Volatile Organic Compounds by GC/MS		02/20/2014	02/20/2014
1402F86-002B	MW-12DD-20140219-01	2/19/2014 3:00:00PM	Groundwater	GC Analysis of Gaseous Samples		02/25/2014	02/25/2014
1402F86-002C	MW-12DD-20140219-01	2/19/2014 3:00:00PM	Groundwater	TOTAL METALS BY ICP		02/24/2014	02/24/2014
1402F86-002C	MW-12DD-20140219-01	2/19/2014 3:00:00PM	Groundwater	TOTAL MERCURY		02/24/2014	02/24/2014
1402F86-002D	MW-12DD-20140219-01	2/19/2014 3:00:00PM	Groundwater	ION SCAN			02/20/2014
1402F86-002E	MW-12DD-20140219-01	2/19/2014 3:00:00PM	Groundwater	Ferrous Iron			02/20/2014
1402F86-002F	MW-12DD-20140219-01	2/19/2014 3:00:00PM	Groundwater	Cyanide		02/24/2014	02/24/2014
1402F86-002G	MW-12DD-20140219-01	2/19/2014 3:00:00PM	Groundwater	Sulfide			02/21/2014
1402F86-002H	MW-12DD-20140219-01	2/19/2014 3:00:00PM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/21/2014	02/25/2014
1402F86-002H	MW-12DD-20140219-01	2/19/2014 3:00:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/21/2014	02/21/2014
1402F86-003A	MW-302D-20140219-01	2/19/2014 3:30:00PM	Groundwater	Volatile Organic Compounds by GC/MS		02/20/2014	02/20/2014
1402F86-003A	MW-302D-20140219-01	2/19/2014 3:30:00PM	Groundwater	Volatile Organic Compounds by GC/MS		02/20/2014	02/21/2014
1402F86-003B	MW-302D-20140219-01	2/19/2014 3:30:00PM	Groundwater	GC Analysis of Gaseous Samples		02/25/2014	02/25/2014
1402F86-003C	MW-302D-20140219-01	2/19/2014 3:30:00PM	Groundwater	TOTAL METALS BY ICP		02/24/2014	02/24/2014
1402F86-003C	MW-302D-20140219-01	2/19/2014 3:30:00PM	Groundwater	TOTAL MERCURY		02/24/2014	02/24/2014
1402F86-003D	MW-302D-20140219-01	2/19/2014 3:30:00PM	Groundwater	ION SCAN			02/20/2014
1402F86-003E	MW-302D-20140219-01	2/19/2014 3:30:00PM	Groundwater	Ferrous Iron			02/20/2014
1402F86-003F	MW-302D-20140219-01	2/19/2014 3:30:00PM	Groundwater	Cyanide		02/24/2014	02/24/2014
1402F86-003G	MW-302D-20140219-01	2/19/2014 3:30:00PM	Groundwater	Sulfide			02/21/2014
1402F86-003H	MW-302D-20140219-01	2/19/2014 3:30:00PM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/21/2014	02/25/2014
1402F86-003H	MW-302D-20140219-01	2/19/2014 3:30:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/21/2014	02/21/2014
1402F86-003H	MW-302D-20140219-01	2/19/2014 3:30:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/21/2014	02/24/2014
1402F86-004A	MW-09D-20140219-01	2/19/2014 5:05:00PM	Groundwater	Volatile Organic Compounds by GC/MS		02/20/2014	02/20/2014
1402F86-004B	MW-09D-20140219-01	2/19/2014 5:05:00PM	Groundwater	GC Analysis of Gaseous Samples		02/25/2014	02/25/2014
1402F86-004C	MW-09D-20140219-01	2/19/2014 5:05:00PM	Groundwater	TOTAL METALS BY ICP		02/24/2014	02/24/2014
1402F86-004C	MW-09D-20140219-01	2/19/2014 5:05:00PM	Groundwater	TOTAL MERCURY		02/24/2014	02/24/2014
1402F86-004D	MW-09D-20140219-01	2/19/2014 5:05:00PM	Groundwater	ION SCAN			02/20/2014
1402F86-004E	MW-09D-20140219-01	2/19/2014 5:05:00PM	Groundwater	Ferrous Iron			02/20/2014

Client: ERM-Southeast
 Project: AGLC Macon
 Lab Order: 1402F86

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1402F86-004F	MW-09D-20140219-01	2/19/2014 5:05:00PM	Groundwater	Cyanide		02/24/2014	02/24/2014
1402F86-004G	MW-09D-20140219-01	2/19/2014 5:05:00PM	Groundwater	Sulfide			02/21/2014
1402F86-004H	MW-09D-20140219-01	2/19/2014 5:05:00PM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/21/2014	02/25/2014
1402F86-004H	MW-09D-20140219-01	2/19/2014 5:05:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/21/2014	02/21/2014
1402F86-005A	MW-308D-20140219-01	2/19/2014 5:45:00PM	Groundwater	Volatile Organic Compounds by GC/MS		02/20/2014	02/20/2014
1402F86-005B	MW-308D-20140219-01	2/19/2014 5:45:00PM	Groundwater	GC Analysis of Gaseous Samples		02/25/2014	02/25/2014
1402F86-005C	MW-308D-20140219-01	2/19/2014 5:45:00PM	Groundwater	TOTAL METALS BY ICP		02/24/2014	02/24/2014
1402F86-005C	MW-308D-20140219-01	2/19/2014 5:45:00PM	Groundwater	TOTAL MERCURY		02/24/2014	02/24/2014
1402F86-005D	MW-308D-20140219-01	2/19/2014 5:45:00PM	Groundwater	ION SCAN			02/20/2014
1402F86-005E	MW-308D-20140219-01	2/19/2014 5:45:00PM	Groundwater	Ferrous Iron			02/20/2014
1402F86-005F	MW-308D-20140219-01	2/19/2014 5:45:00PM	Groundwater	Cyanide		02/24/2014	02/24/2014
1402F86-005G	MW-308D-20140219-01	2/19/2014 5:45:00PM	Groundwater	Sulfide			02/21/2014
1402F86-005H	MW-308D-20140219-01	2/19/2014 5:45:00PM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/21/2014	02/25/2014
1402F86-005H	MW-308D-20140219-01	2/19/2014 5:45:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/21/2014	02/21/2014
1402F86-006A	MW-301D-20140220-01	2/20/2014 9:30:00AM	Groundwater	Volatile Organic Compounds by GC/MS		02/20/2014	02/20/2014
1402F86-006B	MW-301D-20140220-01	2/20/2014 9:30:00AM	Groundwater	GC Analysis of Gaseous Samples		02/25/2014	02/25/2014
1402F86-006C	MW-301D-20140220-01	2/20/2014 9:30:00AM	Groundwater	TOTAL METALS BY ICP		02/24/2014	02/24/2014
1402F86-006C	MW-301D-20140220-01	2/20/2014 9:30:00AM	Groundwater	TOTAL MERCURY		02/24/2014	02/24/2014
1402F86-006D	MW-301D-20140220-01	2/20/2014 9:30:00AM	Groundwater	ION SCAN			02/20/2014
1402F86-006E	MW-301D-20140220-01	2/20/2014 9:30:00AM	Groundwater	Ferrous Iron			02/20/2014
1402F86-006F	MW-301D-20140220-01	2/20/2014 9:30:00AM	Groundwater	Cyanide		02/24/2014	02/24/2014
1402F86-006G	MW-301D-20140220-01	2/20/2014 9:30:00AM	Groundwater	Sulfide			02/21/2014
1402F86-006H	MW-301D-20140220-01	2/20/2014 9:30:00AM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/21/2014	02/25/2014
1402F86-006H	MW-301D-20140220-01	2/20/2014 9:30:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/24/2014	02/25/2014
1402F86-007A	MW-207D-20140220-01	2/20/2014 10:00:00AM	Groundwater	Volatile Organic Compounds by GC/MS		02/20/2014	02/20/2014
1402F86-007B	MW-207D-20140220-01	2/20/2014 10:00:00AM	Groundwater	GC Analysis of Gaseous Samples		02/25/2014	02/25/2014
1402F86-007C	MW-207D-20140220-01	2/20/2014 10:00:00AM	Groundwater	TOTAL METALS BY ICP		02/24/2014	02/24/2014
1402F86-007C	MW-207D-20140220-01	2/20/2014 10:00:00AM	Groundwater	TOTAL MERCURY		02/24/2014	02/24/2014
1402F86-007D	MW-207D-20140220-01	2/20/2014 10:00:00AM	Groundwater	ION SCAN			02/20/2014

Client: ERM-Southeast
 Project: AGLC Macon
 Lab Order: 1402F86

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1402F86-007E	MW-207D-20140220-01	2/20/2014 10:00:00AM	Groundwater	Ferrous Iron			02/20/2014
1402F86-007F	MW-207D-20140220-01	2/20/2014 10:00:00AM	Groundwater	Cyanide		02/24/2014	02/24/2014
1402F86-007G	MW-207D-20140220-01	2/20/2014 10:00:00AM	Groundwater	Sulfide			02/21/2014
1402F86-007H	MW-207D-20140220-01	2/20/2014 10:00:00AM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/21/2014	02/25/2014
1402F86-007H	MW-207D-20140220-01	2/20/2014 10:00:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/24/2014	02/25/2014
1402F86-008A	MW-303D-20140220-01	2/20/2014 11:35:00AM	Groundwater	Volatile Organic Compounds by GC/MS		02/20/2014	02/20/2014
1402F86-008B	MW-303D-20140220-01	2/20/2014 11:35:00AM	Groundwater	GC Analysis of Gaseous Samples		02/25/2014	02/25/2014
1402F86-008C	MW-303D-20140220-01	2/20/2014 11:35:00AM	Groundwater	TOTAL METALS BY ICP		02/24/2014	02/24/2014
1402F86-008C	MW-303D-20140220-01	2/20/2014 11:35:00AM	Groundwater	TOTAL MERCURY		02/24/2014	02/24/2014
1402F86-008D	MW-303D-20140220-01	2/20/2014 11:35:00AM	Groundwater	ION SCAN			02/21/2014
1402F86-008E	MW-303D-20140220-01	2/20/2014 11:35:00AM	Groundwater	Ferrous Iron			02/20/2014
1402F86-008F	MW-303D-20140220-01	2/20/2014 11:35:00AM	Groundwater	Cyanide		02/24/2014	02/24/2014
1402F86-008G	MW-303D-20140220-01	2/20/2014 11:35:00AM	Groundwater	Sulfide			02/21/2014
1402F86-008H	MW-303D-20140220-01	2/20/2014 11:35:00AM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/21/2014	02/25/2014
1402F86-008H	MW-303D-20140220-01	2/20/2014 11:35:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/24/2014	02/25/2014
1402F86-009A	MW-110D-20140220-01	2/20/2014 11:40:00AM	Groundwater	Volatile Organic Compounds by GC/MS		02/20/2014	02/20/2014
1402F86-009A	MW-110D-20140220-01	2/20/2014 11:40:00AM	Groundwater	Volatile Organic Compounds by GC/MS		02/20/2014	02/21/2014
1402F86-009B	MW-110D-20140220-01	2/20/2014 11:40:00AM	Groundwater	GC Analysis of Gaseous Samples		02/25/2014	02/25/2014
1402F86-009C	MW-110D-20140220-01	2/20/2014 11:40:00AM	Groundwater	TOTAL METALS BY ICP		02/24/2014	02/24/2014
1402F86-009C	MW-110D-20140220-01	2/20/2014 11:40:00AM	Groundwater	TOTAL MERCURY		02/24/2014	02/24/2014
1402F86-009D	MW-110D-20140220-01	2/20/2014 11:40:00AM	Groundwater	ION SCAN			02/20/2014
1402F86-009E	MW-110D-20140220-01	2/20/2014 11:40:00AM	Groundwater	Ferrous Iron			02/20/2014
1402F86-009F	MW-110D-20140220-01	2/20/2014 11:40:00AM	Groundwater	Cyanide		02/24/2014	02/24/2014
1402F86-009G	MW-110D-20140220-01	2/20/2014 11:40:00AM	Groundwater	Sulfide			02/21/2014
1402F86-009H	MW-110D-20140220-01	2/20/2014 11:40:00AM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/21/2014	02/25/2014
1402F86-009H	MW-110D-20140220-01	2/20/2014 11:40:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/27/2014	02/27/2014
1402F86-009H	MW-110D-20140220-01	2/20/2014 11:40:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/27/2014	02/28/2014

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402F86

ANALYTICAL QC SUMMARY REPORT

BatchID: 186622

Sample ID: MB-186622	Client ID:					Units: ug/L	Prep Date: 02/21/2014	Run No: 261875			
SampleType: MBLK	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D					BatchID: 186622	Analysis Date: 02/24/2014	Seq No: 5505349			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	BRL	0.050									
Benzo(a)pyrene	BRL	0.050									
Benzo(b)fluoranthene	BRL	0.10									
Dibenz(a,h)anthracene	BRL	0.10									
Indeno(1,2,3-cd)pyrene	BRL	0.050									
Surr: 4-Terphenyl-d14	2.372	0	2.000		119	53.2	145				

Sample ID: LCS-186622	Client ID:					Units: ug/L	Prep Date: 02/21/2014	Run No: 261875			
SampleType: LCS	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D					BatchID: 186622	Analysis Date: 02/24/2014	Seq No: 5505856			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	1.703	0.050	2.000		85.2	62.8	132				
Benzo(a)pyrene	1.976	0.050	2.000		98.8	56.4	123				
Benzo(b)fluoranthene	1.610	0.10	2.000		80.5	69.2	132				
Dibenz(a,h)anthracene	1.809	0.10	2.000		90.5	49.3	134				
Indeno(1,2,3-cd)pyrene	1.832	0.050	2.000		91.6	48.3	137				
Surr: 4-Terphenyl-d14	2.153	0	2.000		108	53.2	145				

Sample ID: LCSD-186622	Client ID:					Units: ug/L	Prep Date: 02/21/2014	Run No: 261875			
SampleType: LCSD	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D					BatchID: 186622	Analysis Date: 02/24/2014	Seq No: 5505860			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	1.428	0.050	2.000		71.4	62.8	132	1.703	17.6	29.6	
Benzo(a)pyrene	1.887	0.050	2.000		94.3	56.4	123	1.976	4.60	29	
Benzo(b)fluoranthene	1.496	0.10	2.000		74.8	69.2	132	1.610	7.34	22	
Dibenz(a,h)anthracene	1.735	0.10	2.000		86.7	49.3	134	1.809	4.23	30	
Indeno(1,2,3-cd)pyrene	1.770	0.050	2.000		88.5	48.3	137	1.832	3.43	35.8	
Surr: 4-Terphenyl-d14	2.054	0	2.000		103	53.2	145	2.153	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402F86

ANALYTICAL QC SUMMARY REPORT

BatchID: 187279

Sample ID: MB-187279	Client ID:					Units: ug/L	Prep Date: 02/20/2014	Run No: 261713			
SampleType: MBLK	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D					BatchID: 187279	Analysis Date: 02/20/2014	Seq No: 5502069			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

2,4-Dimethylphenol	BRL	10									
2-Methylphenol	BRL	10									
3,4-Methylphenol	BRL	10									
Acenaphthene	BRL	10									
Acenaphthylene	BRL	10									
Anthracene	BRL	10									
Benzo(g,h,i)perylene	BRL	10									
Benzo(k)fluoranthene	BRL	10									
Chrysene	BRL	10									
Fluoranthene	BRL	10									
Fluorene	BRL	10									
Naphthalene	BRL	10									
Phenanthrene	BRL	10									
Phenol	BRL	10									
Pyrene	BRL	10									
Surr: 2,4,6-Tribromophenol	93.12	0	100.0		93.1	51.5	124				
Surr: 2-Fluorobiphenyl	47.25	0	50.00		94.5	51.7	118				
Surr: 2-Fluorophenol	62.02	0	100.0		62.0	26	120				
Surr: 4-Terphenyl-d14	50.92	0	50.00		102	45.2	137				
Surr: Nitrobenzene-d5	43.38	0	50.00		86.8	42	120				
Surr: Phenol-d5	43.96	0	100.0		44.0	12.3	120				

Sample ID: LCS-187279	Client ID:					Units: ug/L	Prep Date: 02/20/2014	Run No: 261713			
SampleType: LCS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D					BatchID: 187279	Analysis Date: 02/20/2014	Seq No: 5502080			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	94.12	10	100.0		94.1	67.7	122				
Phenol	42.55	10	100.0		42.6	24.6	120				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402F86

ANALYTICAL QC SUMMARY REPORT**BatchID: 187279**

Sample ID: LCS-187279	Client ID:					Units: ug/L	Prep Date: 02/20/2014	Run No: 261713			
SampleType: LCS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D					BatchID: 187279	Analysis Date: 02/20/2014	Seq No: 5502080			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Pyrene	97.89	10	100.0		97.9	68.3	123				
Surr: 2,4,6-Tribromophenol	110.1	0	100.0		110	51.5	124				
Surr: 2-Fluorobiphenyl	53.40	0	50.00		107	51.7	118				
Surr: 2-Fluorophenol	65.41	0	100.0		65.4	26	120				
Surr: 4-Terphenyl-d14	56.80	0	50.00		114	45.2	137				
Surr: Nitrobenzene-d5	48.68	0	50.00		97.4	42	120				
Surr: Phenol-d5	48.89	0	100.0		48.9	12.3	120				

Sample ID: 1402C64-002GMS	Client ID:				Units: ug/L	Prep Date: 02/20/2014	Run No: 261713				
SampleType: MS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 187279	Analysis Date: 02/20/2014	Seq No: 5502077				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	90.11	10	100.0		90.1	51.9	120				
Phenol	60.41	10	100.0		60.4	30.5	120				
Pyrene	91.41	10	100.0		91.4	50.6	120				
Surr: 2,4,6-Tribromophenol	108.1	0	100.0		108	51.5	124				
Surr: 2-Fluorobiphenyl	51.23	0	50.00		102	51.7	118				
Surr: 2-Fluorophenol	78.41	0	100.0		78.4	26	120				
Surr: 4-Terphenyl-d14	52.61	0	50.00		105	45.2	137				
Surr: Nitrobenzene-d5	48.32	0	50.00		96.6	42	120				
Surr: Phenol-d5	69.97	0	100.0		70.0	12.3	120				

Sample ID: 1402C64-002GMSD	Client ID:				Units: ug/L	Prep Date: 02/20/2014	Run No: 261713				
SampleType: MSD	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 187279	Analysis Date: 02/20/2014	Seq No: 5502079				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	87.92	10	100.0		87.9	51.9	120	90.11	2.46	24.9	
Phenol	58.05	10	100.0		58.0	30.5	120	60.41	3.98	34.4	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402F86

ANALYTICAL QC SUMMARY REPORT

BatchID: 187279

Sample ID: 1402C64-002GMSD	Client ID:				Units: ug/L	Prep Date: 02/20/2014	Run No: 261713				
SampleType: MSD	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 187279	Analysis Date: 02/20/2014	Seq No: 5502079				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Pyrene	90.06	10	100.0		90.1	50.6	120	91.41	1.49	26.7	
Surr: 2,4,6-Tribromophenol	100.6	0	100.0		101	51.5	124	108.1	0	0	
Surr: 2-Fluorobiphenyl	48.25	0	50.00		96.5	51.7	118	51.23	0	0	
Surr: 2-Fluorophenol	71.62	0	100.0		71.6	26	120	78.41	0	0	
Surr: 4-Terphenyl-d14	49.30	0	50.00		98.6	45.2	137	52.61	0	0	
Surr: Nitrobenzene-d5	43.84	0	50.00		87.7	42	120	48.32	0	0	
Surr: Phenol-d5	64.47	0	100.0		64.5	12.3	120	69.97	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402F86

ANALYTICAL QC SUMMARY REPORT

BatchID: 187306

Sample ID: MB-187306	Client ID:	Units: ug/L				Prep Date: 02/20/2014	Run No: 261634				
SampleType: MBLK	TestCode: Volatile Organic Compounds by GC/MS SW8260B	BatchID: 187306				Analysis Date: 02/20/2014	Seq No: 5500896				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	BRL	5.0									
Carbon disulfide	BRL	5.0									
Ethylbenzene	BRL	5.0									
Toluene	BRL	5.0									
Xylenes, Total	BRL	5.0									
Surr: 4-Bromofluorobenzene	46.92	0	50.00		93.8	66.2	120				
Surr: Dibromofluoromethane	49.94	0	50.00		99.9	79.5	121				
Surr: Toluene-d8	49.02	0	50.00		98.0	77	117				

Sample ID: LCS-187306	Client ID:					Units: ug/L	Prep Date: 02/20/2014	Run No: 261634			
SampleType: LCS	TestCode: Volatile Organic Compounds by GC/MS SW8260B					BatchID: 187306	Analysis Date: 02/20/2014	Seq No: 5500895			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	49.99	5.0	50.00		100.0	74.2	129				
Toluene	49.48	5.0	50.00		99.0	74.2	129				
Surr: 4-Bromofluorobenzene	48.41	0	50.00		96.8	66.2	120				
Surr: Dibromofluoromethane	50.65	0	50.00		101	79.5	121				
Surr: Toluene-d8	50.08	0	50.00		100	77	117				

Sample ID: 1402E86-001AMS	Client ID:					Units: ug/L	Prep Date: 02/20/2014	Run No: 261634			
SampleType: MS	TestCode: Volatile Organic Compounds by GC/MS SW8260B					BatchID: 187306	Analysis Date: 02/20/2014	Seq No: 5501312			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	54.15	5.0	50.00		108	70.2	138				
Toluene	53.60	5.0	50.00		107	70	139				
Surr: 4-Bromofluorobenzene	50.47	0	50.00		101	66.2	120				
Surr: Dibromofluoromethane	51.04	0	50.00		102	79.5	121				
Surr: Toluene-d8	51.18	0	50.00		102	77	117				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402F86

ANALYTICAL QC SUMMARY REPORT

BatchID: 187306

Sample ID: 1402E86-001AMSD	Client ID:	Units: ug/L				Prep Date: 02/20/2014	Run No: 261634				
SampleType: MSD	TestCode: Volatile Organic Compounds by GC/MS SW8260B	BatchID: 187306				Analysis Date: 02/20/2014	Seq No: 5501355				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	53.60	5.0	50.00		107	70.2	138	54.15	1.02	20	
Toluene	52.89	5.0	50.00		106	70	139	53.60	1.33	20	
Surr: 4-Bromofluorobenzene	49.28	0	50.00		98.6	66.2	120	50.47	0	0	
Surr: Dibromofluoromethane	51.54	0	50.00		103	79.5	121	51.04	0	0	
Surr: Toluene-d8	50.34	0	50.00		101	77	117	51.18	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402F86

ANALYTICAL QC SUMMARY REPORT

BatchID: 187343

Sample ID: MB-187343	Client ID:				Units: ug/L	Prep Date: 02/24/2014	Run No: 261956				
SampleType: MBLK	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 187343	Analysis Date: 02/25/2014	Seq No: 5507106				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

2,4-Dimethylphenol	BRL	10									
2-Methylphenol	BRL	10									
3,4-Methylphenol	BRL	10									
Acenaphthene	BRL	10									
Acenaphthylene	BRL	10									
Anthracene	BRL	10									
Benzo(g,h,i)perylene	BRL	10									
Benzo(k)fluoranthene	BRL	10									
Chrysene	BRL	10									
Fluoranthene	BRL	10									
Fluorene	BRL	10									
Naphthalene	BRL	10									
Phenanthrene	BRL	10									
Phenol	BRL	10									
Pyrene	BRL	10									
Surr: 2,4,6-Tribromophenol	95.76	0	100.0		95.8	51.5	124				
Surr: 2-Fluorobiphenyl	45.00	0	50.00		90.0	51.7	118				
Surr: 2-Fluorophenol	59.74	0	100.0		59.7	26	120				
Surr: 4-Terphenyl-d14	45.38	0	50.00		90.8	45.2	137				
Surr: Nitrobenzene-d5	43.61	0	50.00		87.2	42	120				
Surr: Phenol-d5	41.40	0	100.0		41.4	12.3	120				

Sample ID: LCS-187343	Client ID:					Units: ug/L	Prep Date: 02/24/2014	Run No: 261956			
SampleType: LCS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D					BatchID: 187343	Analysis Date: 02/25/2014	Seq No: 5507114			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	100.2	10	100.0		100	67.7	122				
Phenol	48.47	10	100.0		48.5	24.6	120				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402F86

ANALYTICAL QC SUMMARY REPORT**BatchID: 187343**

Sample ID: LCS-187343	Client ID:				Units: ug/L	Prep Date: 02/24/2014	Run No: 261956				
SampleType: LCS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 187343	Analysis Date: 02/25/2014	Seq No: 5507114				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Pyrene	102.3	10	100.0		102	68.3	123				
Surr: 2,4,6-Tribromophenol	120.1	0	100.0		120	51.5	124				
Surr: 2-Fluorobiphenyl	55.02	0	50.00		110	51.7	118				
Surr: 2-Fluorophenol	74.55	0	100.0		74.6	26	120				
Surr: 4-Terphenyl-d14	57.48	0	50.00		115	45.2	137				
Surr: Nitrobenzene-d5	52.53	0	50.00		105	42	120				
Surr: Phenol-d5	54.38	0	100.0		54.4	12.3	120				

Sample ID: 1402G31-003BMS	Client ID:				Units: ug/L	Prep Date: 02/24/2014	Run No: 261956				
SampleType: MS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 187343	Analysis Date: 02/25/2014	Seq No: 5508303				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	78.53	10	100.0		78.5	51.9	120				
Phenol	50.83	10	100.0		50.8	30.5	120				
Pyrene	81.33	10	100.0		81.3	50.6	120				
Surr: 2,4,6-Tribromophenol	97.55	0	100.0		97.6	51.5	124				
Surr: 2-Fluorobiphenyl	43.58	0	50.00		87.2	51.7	118				
Surr: 2-Fluorophenol	64.47	0	100.0		64.5	26	120				
Surr: 4-Terphenyl-d14	44.88	0	50.00		89.8	45.2	137				
Surr: Nitrobenzene-d5	39.60	0	50.00		79.2	42	120				
Surr: Phenol-d5	60.02	0	100.0		60.0	12.3	120				

Sample ID: 1402G31-003BMSD	Client ID:				Units: ug/L	Prep Date: 02/24/2014	Run No: 262027				
SampleType: MSD	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 187343	Analysis Date: 02/26/2014	Seq No: 5509639				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	81.50	10	100.0		81.5	51.9	120	78.53	3.71	24.9	
Phenol	52.53	10	100.0		52.5	30.5	120	50.83	3.29	34.4	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402F86

ANALYTICAL QC SUMMARY REPORT

BatchID: 187343

Sample ID: 1402G31-003BMSD	Client ID:				Units: ug/L	Prep Date: 02/24/2014	Run No: 262027				
SampleType: MSD	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 187343	Analysis Date: 02/26/2014	Seq No: 5509639				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Pyrene	82.96	10	100.0		83.0	50.6	120	81.33	1.98	26.7	
Surr: 2,4,6-Tribromophenol	94.63	0	100.0		94.6	51.5	124	97.55	0	0	
Surr: 2-Fluorobiphenyl	46.42	0	50.00		92.8	51.7	118	43.58	0	0	
Surr: 2-Fluorophenol	70.14	0	100.0		70.1	26	120	64.47	0	0	
Surr: 4-Terphenyl-d14	44.18	0	50.00		88.4	45.2	137	44.88	0	0	
Surr: Nitrobenzene-d5	43.53	0	50.00		87.1	42	120	39.60	0	0	
Surr: Phenol-d5	61.41	0	100.0		61.4	12.3	120	60.02	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402F86

ANALYTICAL QC SUMMARY REPORT

BatchID: 187370

Sample ID: MB-187370	Client ID:					Units: mg/L	Prep Date: 02/24/2014	Run No: 261798			
SampleType: MBLK	TestCode: Mercury, Total	SW7470A	BatchID: 187370				Analysis Date: 02/24/2014	Seq No: 5503891			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury BRL 0.00020

Sample ID: LCS-187370	Client ID:	Units: mg/L	Prep Date: 02/24/2014	Run No: 261798							
SampleType: LCS	TestCode: Mercury, Total SW7470A	BatchID: 187370	Analysis Date: 02/24/2014	Seq No: 5503892							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.004722 0.00020 0.0050 94.4 85 115

Sample ID: 1402E54-004AMS	Client ID:					Units: mg/L	Prep Date: 02/24/2014	Run No: 261798			
SampleType: MS	TestCode: Mercury, Total	SW7470A	BatchID: 187370				Analysis Date: 02/24/2014	Seq No: 5504302			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.005066 0.00020 0.0050 101 70 130

Sample ID: 1402E54-004AMSD		Client ID:			Units: mg/L		Prep Date: 02/24/2014		Run No: 261798			
SampleType: MSD		TestCode: Mercury, Total SW7470A			BatchID: 187370		Analysis Date: 02/24/2014		Seq No: 5504305			
Analyte		Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.004845 0.00020 0.0050 96.9 70 130 0.005066 4.44 20

Qualifiers:	> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
	BRL Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
	J Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
	Rpt Lim Reporting Limit	S Spike Recovery outside limits due to matrix	

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402F86

ANALYTICAL QC SUMMARY REPORT

BatchID: 187404

Sample ID: MB-187404	Client ID:					Units: mg/L	Prep Date: 02/24/2014	Run No: 261918			
SampleType: MBLK	TestCode: METALS, TOTAL	SW6010C				BatchID: 187404	Analysis Date: 02/24/2014	Seq No: 5506185			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	BRL	0.0200
Arsenic	BRL	0.0500
Barium	BRL	0.0200
Beryllium	BRL	0.0100
Cadmium	BRL	0.0050
Chromium	BRL	0.0100
Copper	BRL	0.0100
Iron	BRL	0.100
Lead	BRL	0.0100
Nickel	BRL	0.0200
Zinc	BRL	0.0200

Sample ID: LCS-187404	Client ID:					Units: mg/L	Prep Date: 02/24/2014	Run No: 261918			
SampleType: LCS	TestCode: METALS, TOTAL	SW6010C				BatchID: 187404	Analysis Date: 02/24/2014	Seq No: 5506183			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	1.078	0.0200	1.000		108	80	120
Arsenic	1.065	0.0500	1.000		107	80	120
Barium	1.054	0.0200	1.000		105	80	120
Beryllium	1.046	0.0100	1.000		105	80	120
Cadmium	1.057	0.0050	1.000		106	80	120
Chromium	1.062	0.0100	1.000		106	80	120
Copper	1.072	0.0100	1.000	0.0007889	107	80	120
Iron	10.17	0.100	10.00		102	80	120
Lead	1.059	0.0100	1.000		106	80	120
Nickel	1.057	0.0200	1.000		106	80	120
Zinc	1.019	0.0200	1.000		102	80	120

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402F86

ANALYTICAL QC SUMMARY REPORT

BatchID: 187404

Sample ID: 1402F04-002CMS	Client ID:					Units: mg/L	Prep Date: 02/24/2014	Run No: 261918			
SampleType: MS	TestCode: METALS, TOTAL	SW6010C	BatchID: 187404				Analysis Date: 02/24/2014	Seq No: 5506188			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	1.101	0.0200	1.000		110	75	125				
Arsenic	1.083	0.0500	1.000		108	75	125				
Barium	1.073	0.0200	1.000		107	75	125				
Beryllium	1.053	0.0100	1.000		105	75	125				
Cadmium	1.076	0.0050	1.000		108	75	125				
Chromium	1.086	0.0100	1.000		109	75	125				
Copper	1.080	0.0100	1.000	0.003017	108	75	125				
Iron	10.36	0.100	10.00	0.4148	99.5	75	125				
Lead	1.082	0.0100	1.000		108	75	125				
Nickel	1.078	0.0200	1.000		108	75	125				
Zinc	1.038	0.0200	1.000		104	75	125				

Sample ID: 1402F04-002CMSD	Client ID:					Units: mg/L	Prep Date: 02/24/2014	Run No: 261918			
SampleType: MSD	TestCode: METALS, TOTAL	SW6010C				BatchID: 187404	Analysis Date: 02/24/2014	Seq No: 5506189			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	1.071	0.0200	1.000		107	75	125	1.101	2.69	20	
Arsenic	1.058	0.0500	1.000		106	75	125	1.083	2.33	20	
Barium	1.055	0.0200	1.000		106	75	125	1.073	1.65	20	
Beryllium	1.014	0.0100	1.000		101	75	125	1.053	3.76	20	
Cadmium	1.051	0.0050	1.000		105	75	125	1.076	2.37	20	
Chromium	1.059	0.0100	1.000		106	75	125	1.086	2.46	20	
Copper	1.050	0.0100	1.000	0.003017	105	75	125	1.080	2.81	20	
Iron	10.07	0.100	10.00	0.4148	96.6	75	125	10.36	2.84	20	
Lead	1.057	0.0100	1.000		106	75	125	1.082	2.34	20	
Nickel	1.054	0.0200	1.000		105	75	125	1.078	2.24	20	
Zinc	1.017	0.0200	1.000		102	75	125	1.038	2.07	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402F86

ANALYTICAL QC SUMMARY REPORT

BatchID: 187411

Sample ID: MB-187411	Client ID:	Units: mg/L	Prep Date: 02/24/2014	Run No: 261807							
SampleType: MBLK	TestCode: Cyanide SW9014	BatchID: 187411	Analysis Date: 02/24/2014	Seq No: 5503753							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total BRL 0.010

Sample ID: LCS-187411	Client ID:				Units: mg/L	Prep Date: 02/24/2014	Run No: 261807				
SampleType: LCS	TestCode: Cyanide	SW9014	BatchID: 187411			Analysis Date: 02/24/2014	Seq No: 5503754				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.2337 0.010 0.2500 93.5 85 115

Sample ID: 1402D63-004FMS	Client ID:				Units: mg/L	Prep Date: 02/24/2014	Run No: 261807				
SampleType: MS	TestCode: Cyanide	SW9014	BatchID: 187411			Analysis Date: 02/24/2014	Seq No: 5503756				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.2374 0.010 0.2500 95.0 70 130

Sample ID: 1402D63-004FMSD		Client ID:			Units: mg/L		Prep Date: 02/24/2014		Run No: 261807			
SampleType: MSD		TestCode: Cyanide SW9014			BatchID: 187411		Analysis Date: 02/24/2014		Seq No: 5503757			
Analyte		Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.2352 0.010 0.2500 94.1 70 130 0.2374 0.931 20

Qualifiers:	> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
	BRL Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
	J Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
	Rpt Lim Reporting Limit	S Spike Recovery outside limits due to matrix	

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402F86

ANALYTICAL QC SUMMARY REPORT

BatchID: 187412

Sample ID: MB-187412	Client ID:				Units: mg/L	Prep Date: 02/24/2014	Run No: 262074				
SampleType: MBLK	TestCode: Cyanide	SW9014			BatchID: 187412	Analysis Date: 02/24/2014	Seq No: 5510013				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total BRL 0.010

Sample ID: LCS-187412		Client ID:		Units: mg/L		Prep Date: 02/24/2014		Run No: 262074			
SampleType: LCS		TestCode: Cyanide SW9014		BatchID: 187412		Analysis Date: 02/24/2014		Seq No: 5510014			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.2625 0.010 0.2500 105 85 115

Sample ID: 1402F86-005FMS	Client ID: MW-308D-20140219-01	Units: mg/L	Prep Date: 02/24/2014	Run No: 262074							
SampleType: MS	TestCode: Cyanide SW9014	BatchID: 187412	Analysis Date: 02/24/2014	Seq No: 5510026							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.2499 0.010 0.2500 100.0 70 130

Sample ID: 1402F86-005FMSD	Client ID: MW-308D-20140219-01	Units: mg/L	Prep Date: 02/24/2014	Run No: 262074							
SampleType: MSD	TestCode: Cyanide SW9014	BatchID: 187412	Analysis Date: 02/24/2014	Seq No: 5510027							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.2533 0.010 0.2500 101 70 130 0.2499 1.35 20

Qualifiers:	> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
	BRL Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
	J Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
	Rpt Lim Reporting Limit	S Spike Recovery outside limits due to matrix	

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402F86

ANALYTICAL QC SUMMARY REPORT

BatchID: 187481

Sample ID: MB-187481	Client ID:				Units: ug/L	Prep Date: 02/25/2014	Run No: 261932				
SampleType: MBLK	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175			BatchID: 187481	Analysis Date: 02/25/2014	Seq No: 5506490				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

BRL

4

Sample ID: LCS-187481	Client ID:				Units: ug/L	Prep Date: 02/25/2014	Run No: 261932				
SampleType: LCS	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175			BatchID: 187481	Analysis Date: 02/25/2014	Seq No: 5506484				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

109.2

4

200.0

54.6

45.2

115

Sample ID: LCSD-187481	Client ID:					Units: ug/L	Prep Date: 02/25/2014	Run No: 261932			
SampleType: LCSD	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175				BatchID: 187481	Analysis Date: 02/25/2014	Seq No: 5506487			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

112.1

4

200.0

56.1

45.2

115

109.2

2.67

20

Sample ID: 1402F97-003BMS	Client ID:					Units: ug/L	Prep Date: 02/25/2014	Run No: 261932			
SampleType: MS	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175				BatchID: 187481	Analysis Date: 02/25/2014	Seq No: 5507865			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

124.0

4

200.0

62.0

41.1

115

Sample ID: 1402F97-003BMSD	Client ID:				Units: ug/L	Prep Date: 02/25/2014	Run No: 261932				
SampleType: MSD	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175			BatchID: 187481	Analysis Date: 02/25/2014	Seq No: 5507866				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

122.0

4

200.0

61.0

41.1

115

124.0

1.59

20

Qualifiers:

> Greater than Result value

BRL Below reporting limit

J Estimated value detected below Reporting Limit

Rpt Lim Reporting Limit

< Less than Result value

E Estimated (value above quantitation range)

N Analyte not NELAC certified

S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank

H Holding times for preparation or analysis exceeded

R RPD outside limits due to matrix

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402F86

ANALYTICAL QC SUMMARY REPORT

BatchID: 187632

Sample ID: MB-187632	Client ID:					Units: ug/L	Prep Date: 02/27/2014	Run No: 262232			
SampleType: MBLK	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D					BatchID: 187632	Analysis Date: 02/28/2014	Seq No: 5515781			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

2,4-Dimethylphenol	BRL	10									
2-Methylphenol	BRL	10									
3,4-Methylphenol	BRL	10									
Acenaphthene	BRL	10									
Acenaphthylene	BRL	10									
Anthracene	BRL	10									
Benzo(g,h,i)perylene	BRL	10									
Benzo(k)fluoranthene	BRL	10									
Chrysene	BRL	10									
Fluoranthene	BRL	10									
Fluorene	BRL	10									
Naphthalene	BRL	10									
Phenanthrene	BRL	10									
Phenol	BRL	10									
Pyrene	BRL	10									
Surr: 2,4,6-Tribromophenol	75.11	0	100.0		75.1	51.5	124				
Surr: 2-Fluorobiphenyl	38.69	0	50.00		77.4	51.7	118				
Surr: 2-Fluorophenol	34.98	0	100.0		35.0	26	120				
Surr: 4-Terphenyl-d14	45.14	0	50.00		90.3	45.2	137				
Surr: Nitrobenzene-d5	40.93	0	50.00		81.9	42	120				
Surr: Phenol-d5	58.58	0	100.0		58.6	12.3	120				

Sample ID: LCS-187632	Client ID:					Units: ug/L	Prep Date: 02/27/2014	Run No: 262232			
SampleType: LCS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D					BatchID: 187632	Analysis Date: 02/28/2014	Seq No: 5515782			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	83.40	10	100.0		83.4	67.7	122				
Phenol	44.77	10	100.0		44.8	24.6	120				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402F86

ANALYTICAL QC SUMMARY REPORT**BatchID: 187632**

Sample ID: LCS-187632	Client ID:					Units: ug/L	Prep Date: 02/27/2014	Run No: 262232			
SampleType: LCS	TestCode: Semivolatile Org. Comp. by GC/MS	SW8270D				BatchID: 187632	Analysis Date: 02/28/2014	Seq No: 5515782			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Pyrene	88.43	10	100.0		88.4	68.3	123				
Surr: 2,4,6-Tribromophenol	102.1	0	100.0		102	51.5	124				
Surr: 2-Fluorobiphenyl	46.11	0	50.00		92.2	51.7	118				
Surr: 2-Fluorophenol	68.24	0	100.0		68.2	26	120				
Surr: 4-Terphenyl-d14	50.50	0	50.00		101	45.2	137				
Surr: Nitrobenzene-d5	48.65	0	50.00		97.3	42	120				
Surr: Phenol-d5	50.78	0	100.0		50.8	12.3	120				

Sample ID: 1402M37-001BMS	Client ID:				Units: ug/L	Prep Date: 02/28/2014	Run No: 262232				
SampleType: MS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 187632	Analysis Date: 02/28/2014	Seq No: 5515784				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	66.75	50	100.0		66.8	51.9	120				
Phenol	BRL	50	100.0		45.2	30.5	120				
Pyrene	65.95	50	100.0		66.0	50.6	120				
Surr: 2,4,6-Tribromophenol	71.50	0	100.0		71.5	51.5	124				
Surr: 2-Fluorobiphenyl	35.85	0	50.00		71.7	51.7	118				
Surr: 2-Fluorophenol	58.60	0	100.0		58.6	26	120				
Surr: 4-Terphenyl-d14	38.10	0	50.00		76.2	45.2	137				
Surr: Nitrobenzene-d5	33.45	0	50.00		66.9	42	120				
Surr: Phenol-d5	51.75	0	100.0		51.8	12.3	120				

Sample ID: 1402M37-001BMSD	Client ID:				Units: ug/L	Prep Date: 02/28/2014	Run No: 262232				
SampleType: MSD	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 187632	Analysis Date: 02/28/2014	Seq No: 5515785				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	55.00	50	100.0		55.0	51.9	120	66.75	19.3	24.9	
Phenol	BRL	50	100.0		40.4	30.5	120	45.20	0	34.4	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402F86

ANALYTICAL QC SUMMARY REPORT

BatchID: 187632

Sample ID: 1402M37-001BMSD	Client ID:				Units: ug/L	Prep Date: 02/28/2014	Run No: 262232				
SampleType: MSD	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 187632	Analysis Date: 02/28/2014	Seq No: 5515785				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Pyrene	54.00	50	100.0		54.0	50.6	120	65.95	19.9	26.7	
Surr: 2,4,6-Tribromophenol	55.05	0	100.0		55.0	51.5	124	71.50	0	0	
Surr: 2-Fluorobiphenyl	29.20	0	50.00		58.4	51.7	118	35.85	0	0	
Surr: 2-Fluorophenol	48.90	0	100.0		48.9	26	120	58.60	0	0	
Surr: 4-Terphenyl-d14	29.80	0	50.00		59.6	45.2	137	38.10	0	0	
Surr: Nitrobenzene-d5	29.30	0	50.00		58.6	42	120	33.45	0	0	
Surr: Phenol-d5	46.20	0	100.0		46.2	12.3	120	51.75	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402F86

ANALYTICAL QC SUMMARY REPORT

BatchID: R261725

Sample ID: MB-R261725	Client ID:					Units: mg/L	Prep Date:			Run No: 261725	
SampleType: MBLK	TestCode: Sulfide (E376.1/SM4500 S2 F)					BatchID: R261725	Analysis Date: 02/21/2014			Seq No: 5502267	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide BRL 1.0

Sample ID: LCS-R261725	Client ID:				Units: mg/L	Prep Date:			Run No: 261725		
SampleType: LCS	TestCode: Sulfide (E376.1/SM4500 S2 F)				BatchID: R261725	Analysis Date: 02/21/2014			Seq No: 5502268		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide 264.8 1.0 264.8 100 90 110

Sample ID: 1402F86-003GMS	Client ID: MW-302D-20140219-01	Units: mg/L	Prep Date:	Run No: 261725							
SampleType: MS	TestCode: Sulfide (E376.1/SM4500 S2 F)	BatchID: R261725	Analysis Date: 02/21/2014	Seq No: 5502270							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide 11.24 1.0 13.24 84.9 80 120

Sample ID: 1402F86-003GMSD		Client ID: MW-302D-20140219-01			Units: mg/L		Prep Date:		Run No: 261725		
SampleType: MSD		TestCode: Sulfide (E376.1/SM4500 S2 F)			BatchID: R261725		Analysis Date: 02/21/2014		Seq No: 5502271		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide 11.44 1.0 13.24 86.4 80 120 11.24 1.76 20

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402F86

ANALYTICAL QC SUMMARY REPORT

BatchID: R261829

Sample ID: MB-R261829	Client ID:					Units: mg/L	Prep Date:	Run No: 261829			
SampleType: MBLK	TestCode: ION SCAN SW9056A					BatchID: R261829	Analysis Date: 02/20/2014	Seq No: 5504367			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate BRL 0.25
 Sulfate BRL 1.0

Sample ID: LCS-R261829	Client ID:				Units: mg/L	Prep Date:			Run No: 261829		
SampleType: LCS	TestCode: ION SCAN SW9056A				BatchID: R261829	Analysis Date: 02/20/2014			Seq No: 5504366		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 5.428 0.25 5.000 109 90 110
 Sulfate 25.53 1.0 25.00 102 90 110

Sample ID: 1402E93-001BMS	Client ID:				Units: mg/L	Prep Date:			Run No: 261829		
SampleType: MS	TestCode: ION SCAN SW9056A				BatchID: R261829	Analysis Date: 02/20/2014			Seq No: 5504372		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 6.308 0.25 5.000 1.117 104 90 110
 Sulfate 36.28 1.0 25.00 10.77 102 90 110

Sample ID: 1402E98-001BMS	Client ID:				Units: mg/L	Prep Date:			Run No: 261829		
SampleType: MS	TestCode: ION SCAN SW9056A				BatchID: R261829	Analysis Date: 02/20/2014			Seq No: 5504403		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 6.176 0.25 5.000 1.084 102 90 110
 Sulfate 43.22 1.0 25.00 17.26 104 90 110

Sample ID: 1402E93-001BMSD	Client ID:				Units: mg/L	Prep Date:			Run No: 261829		
SampleType: MSD	TestCode: ION SCAN SW9056A				BatchID: R261829	Analysis Date: 02/20/2014			Seq No: 5504375		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 6.310 0.25 5.000 1.117 104 90 110 6.308 0.026 20

Qualifiers:

> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
BRL Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
J Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
Rpt Lim Reporting Limit	S Spike Recovery outside limits due to matrix	

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402F86

ANALYTICAL QC SUMMARY REPORT

BatchID: R261829

Sample ID: 1402E93-001BMSD	Client ID:					Units: mg/L	Prep Date:		Run No: 261829		
SampleType: MSD	TestCode: ION SCAN SW9056A					BatchID: R261829	Analysis Date: 02/20/2014		Seq No: 5504375		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sulfate	36.41	1.0	25.00	10.77	103	90	110	36.28	0.368	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402F86

ANALYTICAL QC SUMMARY REPORT**BatchID: R261862**

Sample ID: MB-R261862	Client ID:				Units: mg/L	Prep Date:			Run No: 261862		
SampleType: MBLK	TestCode: ION SCAN SW9056A				BatchID: R261862	Analysis Date: 02/20/2014			Seq No: 5505071		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate BRL 0.25
 Sulfate BRL 1.0

Sample ID: LCS-R261862		Client ID:			Units: mg/L		Prep Date:		Run No: 261862		
SampleType: LCS		TestCode: ION SCAN SW9056A			BatchID: R261862		Analysis Date: 02/20/2014		Seq No: 5505073		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 4.752 0.25 5.000 95.0 90 110
 Sulfate 25.38 1.0 25.00 102 90 110

Sample ID: 1402F04-008DMS	Client ID:				Units: mg/L	Prep Date:			Run No: 261862		
SampleType: MS	TestCode: ION SCAN SW9056A				BatchID: R261862	Analysis Date: 02/20/2014			Seq No: 5505101		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 4.852 0.25 5.000 97.0 90 110
 Sulfate 25.86 1.0 25.00 0.4009 102 90 110

Sample ID: 1402F35-001AMS	Client ID:				Units: mg/L		Prep Date:		Run No: 261862		
SampleType: MS	TestCode: ION SCAN SW9056A				BatchID: R261862		Analysis Date: 02/20/2014		Seq No: 5505108		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 8.299 0.25 5.000 3.216 102 90 110
 Sulfate 28.82 1.0 25.00 3.711 100 90 110

Sample ID: 1402F04-008DMSD		Client ID:			Units: mg/L		Prep Date:		Run No: 261862		
SampleType: MSD		TestCode: ION SCAN SW9056A			BatchID: R261862		Analysis Date: 02/20/2014		Seq No: 5505104		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 4.774 0.25 5.000 95.5 90 110 4.852 1.63 20

Qualifiers:

> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
BRL Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
J Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
Rpt Lim Reporting Limit	S Spike Recovery outside limits due to matrix	

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402F86

ANALYTICAL QC SUMMARY REPORT

BatchID: R261862

Sample ID: 1402F04-008DMSD		Client ID:			Units: mg/L		Prep Date:		Run No: 261862		
SampleType: MSD		TestCode: ION SCAN SW9056A			BatchID: R261862		Analysis Date: 02/20/2014		Seq No: 5505104		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sulfate	25.57	1.0	25.00	0.4009	101	90	110	25.86	1.13	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402F86

ANALYTICAL QC SUMMARY REPORT

BatchID: R261911

Sample ID: MB-R261911	Client ID:					Units: mg/L	Prep Date:			Run No: 261911	
SampleType: MBLK	TestCode: Ferrous Iron	SM3500-Fe-B				BatchID: R261911	Analysis Date: 02/20/2014			Seq No: 5506006	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Iron, as Ferrous (Fe+2) BRL 0.100

Sample ID: LCS-R261911	Client ID:					Units: mg/L	Prep Date:	Run No: 261911			
SampleType: LCS	TestCode: Ferrous Iron	SM3500-Fe-B				BatchID: R261911	Analysis Date: 02/20/2014	Seq No: 5506007			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Iron, as Ferrous (Fe+2) 0.5263 0.100 0.5000 105 85 115

Sample ID: 1402F04-002EMS	Client ID:					Units: mg/L	Prep Date:		Run No: 261911		
SampleType: MS	TestCode: Ferrous Iron	SM3500-Fe-B				BatchID: R261911	Analysis Date: 02/20/2014		Seq No: 5506026		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Iron, as Ferrous (Fe+2) 0.5177 0.100 0.5000 0.03710 96.1 80 120

Sample ID: 1402F04-002EMSD	Client ID:					Units: mg/L	Prep Date:		Run No: 261911		
SampleType: MSD	TestCode: Ferrous Iron	SM3500-Fe-B				BatchID: R261911	Analysis Date: 02/20/2014		Seq No: 5506029		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Iron, as Ferrous (Fe+2) 0.5465 0.100 0.5000 0.03710 102 80 120 0.5177 5.41 30

Qualifiers:	> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
	BRL Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
	J Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
	Rpt Lim Reporting Limit	S Spike Recovery outside limits due to matrix	



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

March 04, 2014

Jim Morrison
ERM-Southeast
3200 Windy Hill Rd
Atlanta GA 30339

TEL: (678) 486-2700
FAX: (404) 745-0103

RE: AGLC Macon

Dear Jim Morrison:

Order No: 1402G60

Analytical Environmental Services, Inc. received 7 samples on February 21, 2014 9:57 am for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.

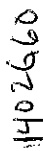
AES' certifications are as follows:

- NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/13-06/30/14.
- AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) effective until 09/01/15.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Mirzeta Kararic
Project Manager

[illegible]

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water

PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

Client: ERM-Southeast
Project: AGLC Macon
Lab ID: 1402G60

Case Narrative**Sample Receiving Nonconformance:**

Hexavalent Chromium was listed on the COC. Samples were analyzed for Ferrous Iron per project history and Nic Vrey was notified via phone on 2/18/14.

Volatiles Organic Compounds Analysis by Method 8260B:

Due to sample matrix, sample 1402G60-002A required dilution during preparation and/or analysis resulting in elevated reporting limits.

Sample 1402G60-007A as received did not meet method specified preservation requirements of pH <2.

Ion Chromatography Analysis by Method 9056A:

Due to sample matrix, samples 1402G60-002G, -003G, and -006G required a dilution during preparation and/or analysis resulting in elevated reporting limits

Analytical Environmental Services, Inc

Date: 4-Mar-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402G60-001

Client Sample ID: TB-05-20140220-01
 Collection Date: 2/20/2014
 Matrix: Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	187424	1	02/24/2014 16:16	NP
Carbon disulfide	BRL	5.0		ug/L	187424	1	02/24/2014 16:16	NP
Ethylbenzene	BRL	5.0		ug/L	187424	1	02/24/2014 16:16	NP
Toluene	BRL	5.0		ug/L	187424	1	02/24/2014 16:16	NP
Xylenes, Total	BRL	5.0		ug/L	187424	1	02/24/2014 16:16	NP
Surr: 4-Bromofluorobenzene	89.5	66.2-120		%REC	187424	1	02/24/2014 16:16	NP
Surr: Dibromofluoromethane	106	79.5-121		%REC	187424	1	02/24/2014 16:16	NP
Surr: Toluene-d8	101	77-117		%REC	187424	1	02/24/2014 16:16	NP

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 4-Mar-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1402G60-002

Client Sample ID: MW-305D-20140220-01
Collection Date: 2/20/2014 2:00:00 PM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	12000	500		ug/L	187424	100	02/24/2014 16:44	NP
Carbon disulfide	BRL	500		ug/L	187424	100	02/24/2014 16:44	NP
Ethylbenzene	BRL	500		ug/L	187424	100	02/24/2014 16:44	NP
Toluene	5600	500		ug/L	187424	100	02/24/2014 16:44	NP
Xylenes, Total	810	500		ug/L	187424	100	02/24/2014 16:44	NP
Surr: 4-Bromofluorobenzene	98.4	66.2-120		%REC	187424	100	02/24/2014 16:44	NP
Surr: Dibromofluoromethane	99.9	79.5-121		%REC	187424	100	02/24/2014 16:44	NP
Surr: Toluene-d8	98.5	77-117		%REC	187424	100	02/24/2014 16:44	NP
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R262006	1	02/26/2014 10:10	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	0.45	0.050		ug/L	187484	1	02/27/2014 18:35	YH
Benzo(b)fluoranthene	0.18	0.10		ug/L	187484	1	02/27/2014 18:35	YH
Benzo(a)pyrene	0.16	0.050		ug/L	187484	1	02/27/2014 18:35	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	187484	1	02/27/2014 18:35	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	187484	1	02/27/2014 18:35	YH
Surr: 4-Terphenyl-d14	146	53.2-145	S	%REC	187484	1	02/27/2014 18:35	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187343	1	02/25/2014 15:20	YH
2-Methylphenol	BRL	10		ug/L	187343	1	02/25/2014 15:20	YH
3,4-Methylphenol	BRL	10		ug/L	187343	1	02/25/2014 15:20	YH
Acenaphthene	BRL	10		ug/L	187343	1	02/25/2014 15:20	YH
Acenaphthylene	78	10		ug/L	187343	1	02/25/2014 15:20	YH
Anthracene	BRL	10		ug/L	187343	1	02/25/2014 15:20	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187343	1	02/25/2014 15:20	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187343	1	02/25/2014 15:20	YH
Chrysene	BRL	10		ug/L	187343	1	02/25/2014 15:20	YH
Fluoranthene	BRL	10		ug/L	187343	1	02/25/2014 15:20	YH
Fluorene	22	10		ug/L	187343	1	02/25/2014 15:20	YH
Naphthalene	2000	200		ug/L	187343	20	02/28/2014 12:04	YH
Phenanthrene	37	10		ug/L	187343	1	02/25/2014 15:20	YH
Phenol	BRL	10		ug/L	187343	1	02/25/2014 15:20	YH
Pyrene	BRL	10		ug/L	187343	1	02/25/2014 15:20	YH
Surr: 2,4,6-Tribromophenol	85.6	51.5-124		%REC	187343	1	02/25/2014 15:20	YH
Surr: 2-Fluorobiphenyl	76.3	51.7-118		%REC	187343	1	02/25/2014 15:20	YH
Surr: 2-Fluorophenol	55.6	26-120		%REC	187343	1	02/25/2014 15:20	YH
Surr: 4-Terphenyl-d14	82.5	45.2-137		%REC	187343	1	02/25/2014 15:20	YH
Surr: Nitrobenzene-d5	72.6	42-120		%REC	187343	1	02/25/2014 15:20	YH

Qualifiers: * Value exceeds maximum contaminant level
 BRL Below reporting limit
 H Holding times for preparation or analysis exceeded
 N Analyte not NELAC certified
 B Analyte detected in the associated method blank
 > Greater than Result value

E Estimated (value above quantitation range)
 S Spike Recovery outside limits due to matrix
 Narr See case narrative
 NC Not confirmed
 < Less than Result value
 J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 4-Mar-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402G60-002

Client Sample ID: MW-305D-20140220-01
 Collection Date: 2/20/2014 2:00:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D					(SW3510C)			
Surr: Phenol-d5	52.1	12.3-120		%REC	187343	1	02/25/2014 15:20	YH
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	187503	1	02/26/2014 13:48	CG
ION SCAN SW9056A								
Nitrate	BRL	2.5		mg/L	R261921	10	02/21/2014 13:11	GR
Sulfate	BRL	10		mg/L	R261921	10	02/21/2014 13:11	GR
GC Analysis of Gaseous Samples SOP-RSK 175					(RSK175)			
Methane	13	4		ug/L	187547	1	02/26/2014 11:50	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	BRL	0.100		mg/L	R261914	1	02/21/2014 13:30	AB
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	187412	1	02/24/2014 10:00	EH
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	187419	1	02/25/2014 22:43	JL
Arsenic	BRL	0.0500		mg/L	187419	1	02/25/2014 22:43	JL
Barium	0.130	0.0200		mg/L	187419	1	02/25/2014 22:43	JL
Beryllium	BRL	0.0100		mg/L	187419	1	02/25/2014 22:43	JL
Cadmium	BRL	0.0050		mg/L	187419	1	02/25/2014 22:43	JL
Chromium	0.0245	0.0100		mg/L	187419	1	02/25/2014 22:43	JL
Copper	BRL	0.0100		mg/L	187419	1	02/25/2014 22:43	JL
Iron	BRL	0.100		mg/L	187419	1	02/25/2014 22:43	JL
Lead	BRL	0.0100		mg/L	187419	1	02/25/2014 22:43	JL
Nickel	BRL	0.0200		mg/L	187419	1	02/25/2014 22:43	JL
Zinc	BRL	0.0200		mg/L	187419	1	02/25/2014 22:43	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 4-Mar-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1402G60-003

Client Sample ID: MW-307D-20140220-01
Collection Date: 2/20/2014 4:05:00 PM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	6.0	5.0		ug/L	187424	1	02/24/2014 17:12	NP
Carbon disulfide	BRL	5.0		ug/L	187424	1	02/24/2014 17:12	NP
Ethylbenzene	14	5.0		ug/L	187424	1	02/24/2014 17:12	NP
Toluene	15	5.0		ug/L	187424	1	02/24/2014 17:12	NP
Xylenes, Total	16	5.0		ug/L	187424	1	02/24/2014 17:12	NP
Surr: 4-Bromofluorobenzene	96.6	66.2-120		%REC	187424	1	02/24/2014 17:12	NP
Surr: Dibromofluoromethane	104	79.5-121		%REC	187424	1	02/24/2014 17:12	NP
Surr: Toluene-d8	102	77-117		%REC	187424	1	02/24/2014 17:12	NP
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R262006	1	02/26/2014 10:10	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	0.27	0.050		ug/L	187484	1	02/27/2014 19:01	YH
Benzo(b)fluoranthene	0.16	0.10		ug/L	187484	1	02/27/2014 19:01	YH
Benzo(a)pyrene	0.30	0.050		ug/L	187484	1	02/27/2014 19:01	YH
Indeno(1,2,3-cd)pyrene	0.32	0.050		ug/L	187484	1	02/27/2014 19:01	YH
Dibenz(a,h)anthracene	0.58	0.10		ug/L	187484	1	02/27/2014 19:01	YH
Surr: 4-Terphenyl-d14	113	53.2-145		%REC	187484	1	02/27/2014 19:01	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187343	1	02/25/2014 15:46	YH
2-Methylphenol	BRL	10		ug/L	187343	1	02/25/2014 15:46	YH
3,4-Methylphenol	BRL	10		ug/L	187343	1	02/25/2014 15:46	YH
Acenaphthene	BRL	10		ug/L	187343	1	02/25/2014 15:46	YH
Acenaphthylene	BRL	10		ug/L	187343	1	02/25/2014 15:46	YH
Anthracene	BRL	10		ug/L	187343	1	02/25/2014 15:46	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187343	1	02/25/2014 15:46	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187343	1	02/25/2014 15:46	YH
Chrysene	BRL	10		ug/L	187343	1	02/25/2014 15:46	YH
Fluoranthene	BRL	10		ug/L	187343	1	02/25/2014 15:46	YH
Fluorene	BRL	10		ug/L	187343	1	02/25/2014 15:46	YH
Naphthalene	47	10		ug/L	187343	1	02/25/2014 15:46	YH
Phenanthrene	BRL	10		ug/L	187343	1	02/25/2014 15:46	YH
Phenol	BRL	10		ug/L	187343	1	02/25/2014 15:46	YH
Pyrene	BRL	10		ug/L	187343	1	02/25/2014 15:46	YH
Surr: 2,4,6-Tribromophenol	83.3	51.5-124		%REC	187343	1	02/25/2014 15:46	YH
Surr: 2-Fluorobiphenyl	73.4	51.7-118		%REC	187343	1	02/25/2014 15:46	YH
Surr: 2-Fluorophenol	55.5	26-120		%REC	187343	1	02/25/2014 15:46	YH
Surr: 4-Terphenyl-d14	83.4	45.2-137		%REC	187343	1	02/25/2014 15:46	YH
Surr: Nitrobenzene-d5	64.5	42-120		%REC	187343	1	02/25/2014 15:46	YH

Qualifiers: * Value exceeds maximum contaminant level
 BRL Below reporting limit
 H Holding times for preparation or analysis exceeded
 N Analyte not NELAC certified
 B Analyte detected in the associated method blank
 > Greater than Result value

E Estimated (value above quantitation range)
 S Spike Recovery outside limits due to matrix
 Narr See case narrative
 NC Not confirmed
 < Less than Result value
 J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 4-Mar-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402G60-003

Client Sample ID: MW-307D-20140220-01
 Collection Date: 2/20/2014 4:05:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D					(SW3510C)			
Surr: Phenol-d5	51.5	12.3-120		%REC	187343	1	02/25/2014 15:46	YH
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	187503	1	02/26/2014 13:56	CG
ION SCAN SW9056A								
Nitrate	BRL	12		mg/L	R261921	50	02/21/2014 13:26	GR
Sulfate	BRL	50		mg/L	R261921	50	02/21/2014 13:26	GR
GC Analysis of Gaseous Samples SOP-RSK 175					(RSK175)			
Methane	21	4		ug/L	187547	1	02/26/2014 11:54	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	BRL	0.100		mg/L	R261914	1	02/21/2014 13:30	AB
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	187412	1	02/24/2014 10:00	EH
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	187419	1	02/25/2014 22:46	JL
Arsenic	BRL	0.0500		mg/L	187419	1	02/25/2014 22:46	JL
Barium	1.58	0.0200		mg/L	187419	1	02/25/2014 22:46	JL
Beryllium	BRL	0.0100		mg/L	187419	1	02/25/2014 22:46	JL
Cadmium	BRL	0.0050		mg/L	187419	1	02/25/2014 22:46	JL
Chromium	0.0688	0.0100		mg/L	187419	1	02/25/2014 22:46	JL
Copper	BRL	0.0100		mg/L	187419	1	02/25/2014 22:46	JL
Iron	BRL	0.100		mg/L	187419	1	02/25/2014 22:46	JL
Lead	BRL	0.0100		mg/L	187419	1	02/25/2014 22:46	JL
Nickel	BRL	0.0200		mg/L	187419	1	02/25/2014 22:46	JL
Zinc	BRL	0.0200		mg/L	187419	1	02/25/2014 22:46	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 4-Mar-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402G60-004

Client Sample ID: MW-204D-20140220-01
 Collection Date: 2/20/2014 4:40:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	310	50		ug/L	187424	10	02/25/2014 15:14	NP
Carbon disulfide	BRL	5.0		ug/L	187424	1	02/24/2014 17:41	NP
Ethylbenzene	210	50		ug/L	187424	10	02/25/2014 15:14	NP
Toluene	BRL	5.0		ug/L	187424	1	02/24/2014 17:41	NP
Xylenes, Total	36	5.0		ug/L	187424	1	02/24/2014 17:41	NP
Surr: 4-Bromofluorobenzene	97.9	66.2-120		%REC	187424	10	02/25/2014 15:14	NP
Surr: 4-Bromofluorobenzene	109	66.2-120		%REC	187424	1	02/24/2014 17:41	NP
Surr: Dibromofluoromethane	97.6	79.5-121		%REC	187424	1	02/24/2014 17:41	NP
Surr: Dibromofluoromethane	101	79.5-121		%REC	187424	10	02/25/2014 15:14	NP
Surr: Toluene-d8	97.2	77-117		%REC	187424	1	02/24/2014 17:41	NP
Surr: Toluene-d8	99.6	77-117		%REC	187424	10	02/25/2014 15:14	NP
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R262006	1	02/26/2014 10:10	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	0.11	0.050		ug/L	187484	1	02/27/2014 19:27	YH
Benzo(b)fluoranthene	0.11	0.10		ug/L	187484	1	02/27/2014 19:27	YH
Benzo(a)pyrene	BRL	0.050		ug/L	187484	1	02/27/2014 19:27	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	187484	1	02/27/2014 19:27	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	187484	1	02/27/2014 19:27	YH
Surr: 4-Terphenyl-d14	110	53.2-145		%REC	187484	1	02/27/2014 19:27	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187343	1	02/25/2014 17:03	YH
2-Methylphenol	BRL	10		ug/L	187343	1	02/25/2014 17:03	YH
3,4-Methylphenol	BRL	10		ug/L	187343	1	02/25/2014 17:03	YH
Acenaphthene	28	10		ug/L	187343	1	02/25/2014 17:03	YH
Acenaphthylene	BRL	10		ug/L	187343	1	02/25/2014 17:03	YH
Anthracene	BRL	10		ug/L	187343	1	02/25/2014 17:03	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187343	1	02/25/2014 17:03	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187343	1	02/25/2014 17:03	YH
Chrysene	BRL	10		ug/L	187343	1	02/25/2014 17:03	YH
Fluoranthene	BRL	10		ug/L	187343	1	02/25/2014 17:03	YH
Fluorene	12	10		ug/L	187343	1	02/25/2014 17:03	YH
Naphthalene	770	100		ug/L	187343	10	02/28/2014 12:30	YH
Phenanthrene	BRL	10		ug/L	187343	1	02/25/2014 17:03	YH
Phenol	BRL	10		ug/L	187343	1	02/25/2014 17:03	YH
Pyrene	BRL	10		ug/L	187343	1	02/25/2014 17:03	YH
Surr: 2,4,6-Tribromophenol	77.2	51.5-124		%REC	187343	1	02/25/2014 17:03	YH
Surr: 2-Fluorobiphenyl	68.4	51.7-118		%REC	187343	1	02/25/2014 17:03	YH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 4-Mar-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402G60-004

Client Sample ID: MW-204D-20140220-01
 Collection Date: 2/20/2014 4:40:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D (SW3510C)								
Surr: 2-Fluorophenol	50.4	26-120		%REC	187343	1	02/25/2014 17:03	YH
Surr: 4-Terphenyl-d14	77.4	45.2-137		%REC	187343	1	02/25/2014 17:03	YH
Surr: Nitrobenzene-d5	64.3	42-120		%REC	187343	1	02/25/2014 17:03	YH
Surr: Phenol-d5	47.8	12.3-120		%REC	187343	1	02/25/2014 17:03	YH
Mercury, Total SW7470A (SW7470A)								
Mercury	BRL	0.00020		mg/L	187503	1	02/26/2014 13:58	CG
ION SCAN SW9056A								
Nitrate	BRL	0.25		mg/L	R261921	1	02/21/2014 13:42	GR
Sulfate	BRL	1.0		mg/L	R261921	1	02/21/2014 13:42	GR
GC Analysis of Gaseous Samples SOP-RSK 175 (RSK175)								
Methane	790	40		ug/L	187547	10	02/26/2014 12:08	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	0.621	0.100		mg/L	R261914	1	02/21/2014 13:30	AB
Cyanide SW9014 (SW9010C)								
Cyanide, Total	0.029	0.010		mg/L	187412	1	02/24/2014 10:00	EH
METALS, TOTAL SW6010C (SW3010A)								
Antimony	BRL	0.0200		mg/L	187419	1	02/25/2014 22:50	JL
Arsenic	BRL	0.0500		mg/L	187419	1	02/25/2014 22:50	JL
Barium	4.01	0.0200		mg/L	187419	1	02/25/2014 22:50	JL
Beryllium	BRL	0.0100		mg/L	187419	1	02/25/2014 22:50	JL
Cadmium	BRL	0.0050		mg/L	187419	1	02/25/2014 22:50	JL
Chromium	0.0241	0.0100		mg/L	187419	1	02/25/2014 22:50	JL
Copper	BRL	0.0100		mg/L	187419	1	02/25/2014 22:50	JL
Iron	2.88	0.100		mg/L	187419	1	02/25/2014 22:50	JL
Lead	BRL	0.0100		mg/L	187419	1	02/25/2014 22:50	JL
Nickel	0.0584	0.0200		mg/L	187419	1	02/25/2014 22:50	JL
Zinc	BRL	0.0200		mg/L	187419	1	02/25/2014 22:50	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 4-Mar-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1402G60-005

Client Sample ID: MW-115D-20140220-01
Collection Date: 2/20/2014 2:55:00 PM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	187424	1	02/24/2014 18:09	NP
Carbon disulfide	BRL	5.0		ug/L	187424	1	02/24/2014 18:09	NP
Ethylbenzene	BRL	5.0		ug/L	187424	1	02/24/2014 18:09	NP
Toluene	BRL	5.0		ug/L	187424	1	02/24/2014 18:09	NP
Xylenes, Total	BRL	5.0		ug/L	187424	1	02/24/2014 18:09	NP
Surr: 4-Bromofluorobenzene	92.2	66.2-120		%REC	187424	1	02/24/2014 18:09	NP
Surr: Dibromofluoromethane	107	79.5-121		%REC	187424	1	02/24/2014 18:09	NP
Surr: Toluene-d8	102	77-117		%REC	187424	1	02/24/2014 18:09	NP
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R262006	1	02/26/2014 10:10	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	0.24	0.050		ug/L	187484	1	02/27/2014 19:53	YH
Benzo(b)fluoranthene	0.33	0.10		ug/L	187484	1	02/27/2014 19:53	YH
Benzo(a)pyrene	0.47	0.050		ug/L	187484	1	02/27/2014 19:53	YH
Indeno(1,2,3-cd)pyrene	0.53	0.050		ug/L	187484	1	02/27/2014 19:53	YH
Dibenz(a,h)anthracene	0.63	0.10		ug/L	187484	1	02/27/2014 19:53	YH
Surr: 4-Terphenyl-d14	125	53.2-145		%REC	187484	1	02/27/2014 19:53	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187343	1	02/25/2014 17:28	YH
2-Methylphenol	BRL	10		ug/L	187343	1	02/25/2014 17:28	YH
3,4-Methylphenol	BRL	10		ug/L	187343	1	02/25/2014 17:28	YH
Acenaphthene	BRL	10		ug/L	187343	1	02/25/2014 17:28	YH
Acenaphthylene	BRL	10		ug/L	187343	1	02/25/2014 17:28	YH
Anthracene	BRL	10		ug/L	187343	1	02/25/2014 17:28	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187343	1	02/25/2014 17:28	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187343	1	02/25/2014 17:28	YH
Chrysene	BRL	10		ug/L	187343	1	02/25/2014 17:28	YH
Fluoranthene	BRL	10		ug/L	187343	1	02/25/2014 17:28	YH
Fluorene	BRL	10		ug/L	187343	1	02/25/2014 17:28	YH
Naphthalene	BRL	10		ug/L	187343	1	02/25/2014 17:28	YH
Phenanthrene	BRL	10		ug/L	187343	1	02/25/2014 17:28	YH
Phenol	BRL	10		ug/L	187343	1	02/25/2014 17:28	YH
Pyrene	BRL	10		ug/L	187343	1	02/25/2014 17:28	YH
Surr: 2,4,6-Tribromophenol	83.8	51.5-124		%REC	187343	1	02/25/2014 17:28	YH
Surr: 2-Fluorobiphenyl	79.2	51.7-118		%REC	187343	1	02/25/2014 17:28	YH
Surr: 2-Fluorophenol	63.6	26-120		%REC	187343	1	02/25/2014 17:28	YH
Surr: 4-Terphenyl-d14	87.2	45.2-137		%REC	187343	1	02/25/2014 17:28	YH
Surr: Nitrobenzene-d5	73.1	42-120		%REC	187343	1	02/25/2014 17:28	YH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 4-Mar-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402G60-005

Client Sample ID: MW-115D-20140220-01
 Collection Date: 2/20/2014 2:55:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D					(SW3510C)			
Surr: Phenol-d5	55	12.3-120		%REC	187343	1	02/25/2014 17:28	YH
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	187503	1	02/26/2014 14:00	CG
ION SCAN SW9056A								
Nitrate	BRL	0.25		mg/L	R261921	1	02/21/2014 13:57	GR
Sulfate	19	1.0		mg/L	R261921	1	02/21/2014 13:57	GR
GC Analysis of Gaseous Samples SOP-RSK 175					(RSK175)			
Methane	83	4		ug/L	187547	1	02/26/2014 12:20	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	BRL	0.100		mg/L	R261914	1	02/21/2014 13:30	AB
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	187412	1	02/24/2014 10:00	EH
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	187419	1	02/25/2014 22:54	JL
Arsenic	BRL	0.0500		mg/L	187419	1	02/25/2014 22:54	JL
Barium	2.49	0.0200		mg/L	187419	1	02/25/2014 22:54	JL
Beryllium	BRL	0.0100		mg/L	187419	1	02/25/2014 22:54	JL
Cadmium	BRL	0.0050		mg/L	187419	1	02/25/2014 22:54	JL
Chromium	BRL	0.0100		mg/L	187419	1	02/25/2014 22:54	JL
Copper	BRL	0.0100		mg/L	187419	1	02/25/2014 22:54	JL
Iron	0.727	0.100		mg/L	187419	1	02/25/2014 22:54	JL
Lead	BRL	0.0100		mg/L	187419	1	02/25/2014 22:54	JL
Nickel	BRL	0.0200		mg/L	187419	1	02/25/2014 22:54	JL
Zinc	0.0362	0.0200		mg/L	187419	1	02/25/2014 22:54	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
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- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 4-Mar-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1402G60-006

Client Sample ID: MW-306D-20140220-01
Collection Date: 2/20/2014 3:30:00 PM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	1400	100		ug/L	187424	20	02/24/2014 18:37	NP
Carbon disulfide	BRL	5.0		ug/L	187424	1	02/24/2014 20:56	NP
Ethylbenzene	360	100		ug/L	187424	20	02/24/2014 18:37	NP
Toluene	96	5.0		ug/L	187424	1	02/24/2014 20:56	NP
Xylenes, Total	340	5.0		ug/L	187424	1	02/24/2014 20:56	NP
Surr: 4-Bromofluorobenzene	112	66.2-120		%REC	187424	1	02/24/2014 20:56	NP
Surr: 4-Bromofluorobenzene	97.1	66.2-120		%REC	187424	20	02/24/2014 18:37	NP
Surr: Dibromofluoromethane	99.1	79.5-121		%REC	187424	1	02/24/2014 20:56	NP
Surr: Dibromofluoromethane	100	79.5-121		%REC	187424	20	02/24/2014 18:37	NP
Surr: Toluene-d8	99.1	77-117		%REC	187424	1	02/24/2014 20:56	NP
Surr: Toluene-d8	95.6	77-117		%REC	187424	20	02/24/2014 18:37	NP
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R262006	1	02/26/2014 10:10	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	187484	1	02/27/2014 20:19	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	187484	1	02/27/2014 20:19	YH
Benzo(a)pyrene	BRL	0.050		ug/L	187484	1	02/27/2014 20:19	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	187484	1	02/27/2014 20:19	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	187484	1	02/27/2014 20:19	YH
Surr: 4-Terphenyl-d14	107	53.2-145		%REC	187484	1	02/27/2014 20:19	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187343	1	02/25/2014 17:54	YH
2-Methylphenol	11	10		ug/L	187343	1	02/25/2014 17:54	YH
3,4-Methylphenol	BRL	10		ug/L	187343	1	02/25/2014 17:54	YH
Acenaphthene	28	10		ug/L	187343	1	02/25/2014 17:54	YH
Acenaphthylene	BRL	10		ug/L	187343	1	02/25/2014 17:54	YH
Anthracene	BRL	10		ug/L	187343	1	02/25/2014 17:54	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187343	1	02/25/2014 17:54	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187343	1	02/25/2014 17:54	YH
Chrysene	BRL	10		ug/L	187343	1	02/25/2014 17:54	YH
Fluoranthene	BRL	10		ug/L	187343	1	02/25/2014 17:54	YH
Fluorene	BRL	10		ug/L	187343	1	02/25/2014 17:54	YH
Naphthalene	190	100		ug/L	187343	10	02/28/2014 12:56	YH
Phenanthrene	BRL	10		ug/L	187343	1	02/25/2014 17:54	YH
Phenol	97	10		ug/L	187343	1	02/25/2014 17:54	YH
Pyrene	BRL	10		ug/L	187343	1	02/25/2014 17:54	YH
Surr: 2,4,6-Tribromophenol	82.4	51.5-124		%REC	187343	1	02/25/2014 17:54	YH
Surr: 2-Fluorobiphenyl	74.2	51.7-118		%REC	187343	1	02/25/2014 17:54	YH

Qualifiers: * Value exceeds maximum contaminant level
 BRL Below reporting limit
 H Holding times for preparation or analysis exceeded
 N Analyte not NELAC certified
 B Analyte detected in the associated method blank
 > Greater than Result value

E Estimated (value above quantitation range)
 S Spike Recovery outside limits due to matrix
 Narr See case narrative
 NC Not confirmed
 < Less than Result value
 J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 4-Mar-14

Client: ERM-Southeast	Client Sample ID: MW-306D-20140220-01
Project Name: AGLC Macon	Collection Date: 2/20/2014 3:30:00 PM
Lab ID: 1402G60-006	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D (SW3510C)								
Surr: 2-Fluorophenol	59.1	26-120		%REC	187343	1	02/25/2014 17:54	YH
Surr: 4-Terphenyl-d14	78	45.2-137		%REC	187343	1	02/25/2014 17:54	YH
Surr: Nitrobenzene-d5	71.2	42-120		%REC	187343	1	02/25/2014 17:54	YH
Surr: Phenol-d5	53.6	12.3-120		%REC	187343	1	02/25/2014 17:54	YH
Mercury, Total SW7470A (SW7470A)								
Mercury	BRL	0.00020		mg/L	187503	1	02/26/2014 14:05	CG
ION SCAN SW9056A								
Nitrate	BRL	2.5		mg/L	R261921	10	02/21/2014 14:12	GR
Sulfate	BRL	10		mg/L	R261921	10	02/21/2014 14:12	GR
GC Analysis of Gaseous Samples SOP-RSK 175 (RSK175)								
Methane	460	20		ug/L	187547	5	02/26/2014 12:57	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	BRL	0.100		mg/L	R261914	1	02/21/2014 13:30	AB
Cyanide SW9014 (SW9010C)								
Cyanide, Total	BRL	0.010		mg/L	187412	1	02/24/2014 10:00	EH
METALS, TOTAL SW6010C (SW3010A)								
Antimony	BRL	0.0200		mg/L	187419	1	02/25/2014 22:58	JL
Arsenic	BRL	0.0500		mg/L	187419	1	02/25/2014 22:58	JL
Barium	0.271	0.0200		mg/L	187419	1	02/25/2014 22:58	JL
Beryllium	BRL	0.0100		mg/L	187419	1	02/25/2014 22:58	JL
Cadmium	BRL	0.0050		mg/L	187419	1	02/25/2014 22:58	JL
Chromium	0.0200	0.0100		mg/L	187419	1	02/25/2014 22:58	JL
Copper	BRL	0.0100		mg/L	187419	1	02/25/2014 22:58	JL
Iron	BRL	0.100		mg/L	187419	1	02/25/2014 22:58	JL
Lead	BRL	0.0100		mg/L	187419	1	02/25/2014 22:58	JL
Nickel	BRL	0.0200		mg/L	187419	1	02/25/2014 22:58	JL
Zinc	BRL	0.0200		mg/L	187419	1	02/25/2014 22:58	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 4-Mar-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402G60-007

Client Sample ID: MW-200DR-20140220-01
 Collection Date: 2/20/2014 5:05:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	7.5	5.0		ug/L	187424	1	02/24/2014 19:05	NP
Carbon disulfide	BRL	5.0		ug/L	187424	1	02/24/2014 19:05	NP
Ethylbenzene	BRL	5.0		ug/L	187424	1	02/24/2014 19:05	NP
Toluene	BRL	5.0		ug/L	187424	1	02/24/2014 19:05	NP
Xylenes, Total	BRL	5.0		ug/L	187424	1	02/24/2014 19:05	NP
Surr: 4-Bromofluorobenzene	97.4	66.2-120		%REC	187424	1	02/24/2014 19:05	NP
Surr: Dibromofluoromethane	101	79.5-121		%REC	187424	1	02/24/2014 19:05	NP
Surr: Toluene-d8	99.6	77-117		%REC	187424	1	02/24/2014 19:05	NP
Sulfide (E376.1/SM4500 S2 F)								
Sulfide	BRL	1.0		mg/L	R262006	1	02/26/2014 10:10	EH
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	0.12	0.050		ug/L	187484	1	02/27/2014 20:45	YH
Benzo(b)fluoranthene	0.11	0.10		ug/L	187484	1	02/27/2014 20:45	YH
Benzo(a)pyrene	0.12	0.050		ug/L	187484	1	02/27/2014 20:45	YH
Indeno(1,2,3-cd)pyrene	0.11	0.050		ug/L	187484	1	02/27/2014 20:45	YH
Dibenz(a,h)anthracene	0.15	0.10		ug/L	187484	1	02/27/2014 20:45	YH
Surr: 4-Terphenyl-d14	115	53.2-145		%REC	187484	1	02/27/2014 20:45	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	187343	1	02/25/2014 18:19	YH
2-Methylphenol	BRL	10		ug/L	187343	1	02/25/2014 18:19	YH
3,4-Methylphenol	BRL	10		ug/L	187343	1	02/25/2014 18:19	YH
Acenaphthene	21	10		ug/L	187343	1	02/25/2014 18:19	YH
Acenaphthylene	BRL	10		ug/L	187343	1	02/25/2014 18:19	YH
Anthracene	BRL	10		ug/L	187343	1	02/25/2014 18:19	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	187343	1	02/25/2014 18:19	YH
Benzo(k)fluoranthene	BRL	10		ug/L	187343	1	02/25/2014 18:19	YH
Chrysene	BRL	10		ug/L	187343	1	02/25/2014 18:19	YH
Fluoranthene	BRL	10		ug/L	187343	1	02/25/2014 18:19	YH
Fluorene	15	10		ug/L	187343	1	02/25/2014 18:19	YH
Naphthalene	140	10		ug/L	187343	1	02/25/2014 18:19	YH
Phenanthrene	BRL	10		ug/L	187343	1	02/25/2014 18:19	YH
Phenol	BRL	10		ug/L	187343	1	02/25/2014 18:19	YH
Pyrene	BRL	10		ug/L	187343	1	02/25/2014 18:19	YH
Surr: 2,4,6-Tribromophenol	8.17	51.5-124	S	%REC	187343	1	02/25/2014 18:19	YH
Surr: 2-Fluorobiphenyl	77.8	51.7-118		%REC	187343	1	02/25/2014 18:19	YH
Surr: 2-Fluorophenol	24.3	26-120	S	%REC	187343	1	02/25/2014 18:19	YH
Surr: 4-Terphenyl-d14	88.1	45.2-137		%REC	187343	1	02/25/2014 18:19	YH
Surr: Nitrobenzene-d5	61	42-120		%REC	187343	1	02/25/2014 18:19	YH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 4-Mar-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1402G60-007

Client Sample ID: MW-200DR-20140220-01
 Collection Date: 2/20/2014 5:05:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D					(SW3510C)			
Surr: Phenol-d5	9.98	12.3-120	S	%REC	187343	1	02/25/2014 18:19	YH
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	187503	1	02/26/2014 14:07	CG
ION SCAN SW9056A								
Nitrate	BRL	0.25		mg/L	R261921	1	02/21/2014 14:27	GR
Sulfate	BRL	1.0		mg/L	R261921	1	02/21/2014 14:27	GR
GC Analysis of Gaseous Samples SOP-RSK 175					(RSK175)			
Methane	1600	80		ug/L	187547	20	02/26/2014 13:14	SH
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	0.618	0.500		mg/L	R261914	5	02/21/2014 13:30	AB
Cyanide SW9014					(SW9010C)			
Cyanide, Total	0.054	0.010		mg/L	187412	1	02/24/2014 10:00	EH
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	187419	1	02/25/2014 23:02	JL
Arsenic	BRL	0.0500		mg/L	187419	1	02/25/2014 23:02	JL
Barium	0.948	0.0200		mg/L	187419	1	02/25/2014 23:02	JL
Beryllium	BRL	0.0100		mg/L	187419	1	02/25/2014 23:02	JL
Cadmium	BRL	0.0050		mg/L	187419	1	02/25/2014 23:02	JL
Chromium	BRL	0.0100		mg/L	187419	1	02/25/2014 23:02	JL
Copper	BRL	0.0100		mg/L	187419	1	02/25/2014 23:02	JL
Iron	4.48	0.100		mg/L	187419	1	02/25/2014 23:02	JL
Lead	BRL	0.0100		mg/L	187419	1	02/25/2014 23:02	JL
Nickel	BRL	0.0200		mg/L	187419	1	02/25/2014 23:02	JL
Zinc	BRL	0.0200		mg/L	187419	1	02/25/2014 23:02	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit



Microseeps/Pace Analytical Energy Services, LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

March 5, 2014

Mirzeta Kararic
Analytical Environmental Services, Inc.
3785 Presidential Parkway
Suite 111
Atlanta, GA 30340

RE: **1402G60**

Microseeps Workorder: 11470

Dear Mirzeta Kararic:

Enclosed are the analytical results for sample(s) received by the laboratory on Monday, February 24, 2014. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

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

Sincerely,

Robbin Robl 03/05/2014
rrobl@microseeps.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email info@microseeps.com.

Total Number of Pages 17

Report ID: 11470 - 494255

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LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories		
Accreditation ID:	02-00538		
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste		
Accreditor:	NELAP: State of Florida, Department of Health, Bureau of Laboratories		
Accreditation ID:	E87832		
Scope:	Clean Water Act (CWA)	Resource Conservation and Recovery Act (RCRA)	
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification		
Accreditation ID:	89009003		
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)		
Accreditor:	NELAP: State of Louisiana, Department of Environmental Quality		
Accreditation ID:	04104		
Scope:	Solid and Chemical Materials; Non-Potable Water		
Accreditor:	NELAP: New Jersey, Department of Environmental Protection		
Accreditation ID:	PA026		
Scope:	Non-Potable Water; Solid and Chemical Materials		
Accreditor:	NELAP: New York, Department of Health Wadsworth Center		
Accreditation ID:	11815		
Scope:	Non-Potable Water; Solid and Hazardous Waste		
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health		
Accreditation ID:	PH-0263		
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)		
Accreditor:	NELAP: Texas, Commission on Environmental Quality		
Accreditation ID:	T104704453-09-TX		
Scope:	Non-Potable Water		
Accreditor:	State of New Hampshire		
Accreditation ID:	299409		
Scope:	Non-potable water		
Accreditor:	State of Georgia		
Accreditation ID:	Chapter 391-3-26		
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, Microseeps is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).		



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Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 11470 1402G60

Lab ID	Sample ID	Matrix	Date Collected	Date Received
114700001	MW-305D-20140220-01	Water	2/20/2014 14:00	2/24/2014 10:30
114700002	MW-307D-20140220-01	Water	2/20/2014 16:05	2/24/2014 10:30
114700003	MW-204D-20140220-01	Water	2/20/2014 16:40	2/24/2014 10:30
114700004	MW-115D-20140220-01	Water	2/20/2014 14:55	2/24/2014 10:30
114700005	MW-306D-20140220-01	Water	2/20/2014 15:30	2/24/2014 10:30
114700006	MW-200DR-20140220-01	Water	2/20/2014 17:05	2/24/2014 10:30



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PROJECT SUMMARY

Workorder: 11470 1402G60

Batch Comments

Batch: DISG/3611 - AM20GAX Water QC

The percent recovery for the laboratory control sample was above laboratory control limits. Analytes Ethane and Ethene. Results associated to the analytes in samples may be bias high.

The matrix spike and/or spike duplicate, recovery or relative percent difference; accuracy influenced by the reference sample 114660004. Analyte Carbon Dioxide. Batch acceptance based on laboratory control sample recovery.



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ANALYTICAL RESULTS

Workorder: 11470 1402G60

Lab ID: 114700001
Sample ID: MW-305D-20140220-01

Date Received: 2/24/2014 10:30 Matrix: Water
Date Collected: 2/20/2014 14:00

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Carbon Dioxide	<5.0	mg/l	5.0	0.23	1			3/4/2014 11:08	GT	
Oxygen	4.1	mg/l	0.50	0.082	1			3/4/2014 11:08	GT	
Nitrogen	17	mg/l	2.0	1.8	1			3/4/2014 11:08	GT	
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			3/4/2014 11:08	GT	



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ANALYTICAL RESULTS

Workorder: 11470 1402G60

Lab ID: 114700002
Sample ID: MW-307D-20140220-01

Date Received: 2/24/2014 10:30 Matrix: Water
Date Collected: 2/20/2014 16:05

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Carbon Dioxide	<5.0	mg/l	5.0	0.23	1			3/4/2014 11:20	GT	
Oxygen	9.4	mg/l	0.50	0.082	1			3/4/2014 11:20	GT	
Nitrogen	20	mg/l	2.0	1.8	1			3/4/2014 11:20	GT	
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			3/4/2014 11:20	GT	



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ANALYTICAL RESULTS

Workorder: 11470 1402G60

Lab ID: 114700003
Sample ID: MW-204D-20140220-01

Date Received: 2/24/2014 10:30 Matrix: Water
Date Collected: 2/20/2014 16:40

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Carbon Dioxide	75	mg/l	5.0	0.23	1			3/4/2014 11:32	GT	
Oxygen	4.7	mg/l	0.50	0.082	1			3/4/2014 11:32	GT	
Nitrogen	18	mg/l	2.0	1.8	1			3/4/2014 11:32	GT	
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			3/4/2014 11:32	GT	

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ANALYTICAL RESULTS

Workorder: 11470 1402G60

Lab ID: 114700004
Sample ID: MW-115D-20140220-01

Date Received: 2/24/2014 10:30 Matrix: Water
Date Collected: 2/20/2014 14:55

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Carbon Dioxide	6.9	mg/l	5.0	0.23	1			3/4/2014 11:45	GT	
Oxygen	3.9	mg/l	0.50	0.082	1			3/4/2014 11:45	GT	
Nitrogen	18	mg/l	2.0	1.8	1			3/4/2014 11:45	GT	
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			3/4/2014 11:45	GT	



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ANALYTICAL RESULTS

Workorder: 11470 1402G60

Lab ID: 114700005

Date Received: 2/24/2014 10:30 Matrix: Water

Sample ID: MW-306D-20140220-01

Date Collected: 2/20/2014 15:30

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Carbon Dioxide	<5.0	mg/l	5.0	0.23	1			3/4/2014 11:57	GT	
Oxygen	7.6	mg/l	0.50	0.082	1			3/4/2014 11:57	GT	
Nitrogen	20	mg/l	2.0	1.8	1			3/4/2014 11:57	GT	
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			3/4/2014 11:57	GT	



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ANALYTICAL RESULTS

Workorder: 11470 1402G60

Lab ID: 114700006 Date Received: 2/24/2014 10:30 Matrix: Water
Sample ID: MW-200DR-20140220-01 Date Collected: 2/20/2014 17:05

Parameters	Results	Units	PQL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Carbon Dioxide	97	mg/l	5.0	0.23	1			3/4/2014 12:11	GT	
Oxygen	2.3	mg/l	0.50	0.082	1			3/4/2014 12:11	GT	
Nitrogen	21	mg/l	2.0	1.8	1			3/4/2014 12:11	GT	
Carbon Monoxide	<1.0	mg/l	1.0	0.14	1			3/4/2014 12:11	GT	



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ANALYTICAL RESULTS QUALIFIERS

Workorder: 11470 1402G60

DEFINITIONS/QUALIFIERS

Disclaimer : The Pennsylvania Department of Environmental Protection (PADEP) has decided to no longer recognize analyses that do not produce data for primary compliance, for NELAP accreditation. The methods affected by this decision are AM20GAX, AM21G, SW846 7199 and AM4.02. The laboratory shall continue to administer the NELAP/TNI standard requirements in the performance of these methods.

MDL Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.

PQL Practical Quantitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.

ND Not detected at or above reporting limit.

DF Dilution Factor.

S Surrogate.

RPD Relative Percent Difference.

% Rec Percent Recovery.

U Indicates the compound was analyzed for, but not detected at or above the noted concentration.

J Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).



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QUALITY CONTROL DATA

Workorder: 11470 1402G60

QC Batch: DISG/3611 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 114700001, 114700002, 114700003, 114700004, 114700005, 114700006

METHOD BLANK: 26164

Parameter	Units	Blank Result	Reporting Limit Qualifiers
RISK			
Carbon Dioxide	mg/l	<5.0	5.0
Oxygen	mg/l	<0.50	0.50
Nitrogen	mg/l	<2.0	2.0
Carbon Monoxide	mg/l	<1.0	1.0

LABORATORY CONTROL SAMPLE & LCSD: 26166 26168

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD Qualifiers
RISK									
Carbon Dioxide	mg/l	120	130	130	111	114	80-120	2.7	20
Oxygen	mg/l	11	11	12	98	104	80-120	5.9	20
Nitrogen	mg/l	140	130	140	97	98	80-120	1	20
Carbon Monoxide	mg/l	2	2.1	2.2	108	110	80-120	1.8	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 26196 26197 Original: 114660004

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	Max RPD RPD Qualifiers
RISK									
Carbon Dioxide	mg/l	0	120	73	72	63	62	70-130	
Oxygen	mg/l	3.4	11	13	14	86	93	70-130	
Nitrogen	mg/l	28	140	160	160	96	97	70-130	
Carbon Monoxide	mg/l	0	2	2.3	2.3	117	115	70-130	



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220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 11470 1402G60

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
114700001	MW-305D-20140220-01			AM20GAX	DISG/3611
114700002	MW-307D-20140220-01			AM20GAX	DISG/3611
114700003	MW-204D-20140220-01			AM20GAX	DISG/3611
114700004	MW-115D-20140220-01			AM20GAX	DISG/3611
114700005	MW-306D-20140220-01			AM20GAX	DISG/3611
114700006	MW-200DR-20140220-01			AM20GAX	DISG/3611



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ANALYTICAL ENVIRONMENTAL SERVICES, INC.
3080 Presidential Drive, Atlanta GA 30340-3704
TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: _____

DATE: _____ PAGE _____ OF _____

COMPANY: AES		ADDRESS: 11470		ANALYSIS REQUESTED		Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.		No # of Containers	
PHONE:		FAX:		SIGNATURE:		PRESERVATION (See codes)		REMARKS	
#	SAMPLE ID	SAMPLED		DATE	TIME	Grab	Composite	Matrix	
		DATE	TIME						
1	MW-305D-20140220-01	2-20-14	14:00						
2	MW-307D-20140220-01		16:05						
3	MW-204D-20140220-01		16:40						
4	MW-115D-20140220-01		14:55						
5	MW-306D-20140220-01		15:30						
6	MW-200DL-20140220-01		17:05						
7									
8									
9									
10									
11									
12									
13									
14									

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME	PROJECT INFORMATION	RECEIPT
1.		1. [Signature]	2-24-14 10:30 10C	PROJECT NAME: 1402G60	Total # of Containers
2.		2.		PROJECT #:	Turnaround Time Request
3.		3.		SITE ADDRESS:	Standard 5 Business Days
SPECIAL INSTRUCTIONS/COMMENTS:				SEND REPORT TO: mkavari@aesatlanta.com	2 Business Day Rush
				INVOICE TO:	Next Business Day Rush
				(IF DIFFERENT FROM ABOVE)	Same Day Rush (auth req.)
				Other	Other
				STATE PROGRAM (if any):	Other
				E-mail? Y / N:	Other
				Fax? Y / N:	Other
				DATA PACKAGE: I II III IV	Other
				QUOTE #:	Other
				PO#:	Other

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.
SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water
PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

NON-CONFORMANCE FORM

Microseeps Project Number: 11470

Date: 2.24.14 Time of Receipt: 10:30 Receiver: LY

Client: AES

REASON FOR NON-CONFORMANCE:

COC was not relinquished by Client

ACTION TAKEN:

Client name: AES Date: 2/25/14 Time: e-mail

Client was made aware via e-mail.

O.K. to Proceed.

Customer Service Initials: CT

Date: 2/25/14

Chris Thomas

From: Chris Thomas
Sent: Tuesday, February 25, 2014 3:08 PM
To: 'mkararic@aesatlanta.com'
Subject: PG SAMPLES
Attachments: AES ATLANTA COC_20140225152113.pdf; AES ATLANTA COC 11470_20140225152206.pdf

Hello,

We received PG samples from your lab for two projects. I have attached a copy of the COC's and log-in information. The COC was not relinquished. With your permission we will proceed with the analysis.

Thanks,
Chris

Christopher Thomas
Microseeps, a Division of Pace Analytical Energy Services, LLC
220 William Pitt Way
Pittsburgh, PA 15238

Office: 412-826-5245
Direct: 412-826-4481

Disclaimer: This message contains confidential information and is intended only for the individual(s) named. If you are not the named addressee, you should permanently delete this e-mail from your system and should not disseminate, distribute or copy this e-mail. E-mail transmission cannot be guaranteed to be secure or error-free as information delivered over the internet could be corrupted, lost, destroyed, delayed, or contain viruses

Cooler Receipt Form

Client Name: AES Project: 1402660 Lab Work Order: 11470

A. Shipping/Container Information (circle appropriate response)

Courier: FedEx UPS USPS Client Other: _____ Air bill Present: Yes No

Tracking Number: 561327014522

Custody Seal on Cooler/Box Present: Yes No Seals Intact: Yes No

Cooler/Box Packing Material: Bubble Wrap Absorbent Foam Other: _____

Type of Ice: Wet Blue None Ice Intact: Yes Melted

Cooler Temperature: 10C Radiation Screened: Yes No Chain of Custody Present: Yes No

Comments: _____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out		<input checked="" type="checkbox"/>		
Chain of Custody relinquished		<input checked="" type="checkbox"/>		
Sampler Name & Signature on COC		<input checked="" type="checkbox"/>		
Containers intact	<input checked="" type="checkbox"/>			
Were samples in separate bags	<input checked="" type="checkbox"/>			
Sample container labels match COC	<input checked="" type="checkbox"/>			
Sample name/date and time collected	<input checked="" type="checkbox"/>			
Sufficient volume provided	<input checked="" type="checkbox"/>			
Microseeps containers used	<input checked="" type="checkbox"/>			
Are containers properly preserved for the requested testing? (as labeled)	<input checked="" type="checkbox"/>			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			<input checked="" type="checkbox"/>	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			<input checked="" type="checkbox"/>	

Comments: _____

Cooler contents examined/received by: LS Date: 2.29.14

Project Manager Review: CA Date: 2/25/14

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client CRM

Work Order Number 1402660

Checklist completed by [Signature] Date 7.21.14
Signature Date

Carrier name: FedEx ☐ UPS ☐ Courier ☐ Client ☒ US Mail ☐ Other ☐

Shipping container/cooler in good condition? Yes ☒ No ☐ Not Present ☐

Custody seals intact on shipping container/cooler? Yes ☐ No ☐ Not Present ☒

Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒

Container/Temp Blank temperature in compliance? (4°C±2)* Yes ☒ No ☐

Cooler #1 3.1 Cooler #2 3.8 Cooler #3 3.9 Cooler #4 ☐ Cooler#5 ☐ Cooler #6 ☐

Chain of custody present? Yes ☒ No ☐

Chain of custody signed when relinquished and received? Yes ☒ No ☐

Chain of custody agrees with sample labels? Yes ☒ No ☐

Samples in proper container/bottle? Yes ☒ No ☐

Sample containers intact? Yes ☒ No ☐

Sufficient sample volume for indicated test? Yes ☒ No ☐

All samples received within holding time? Yes ☒ No ☐

Was TAT marked on the COC? Yes ☒ No ☐

Proceed with Standard TAT as per project history? Yes ☐ No ☐ Not Applicable ☒

Water - VOA vials have zero headspace? No VOA vials submitted ☐ Yes ☒ No ☐

Water - pH acceptable upon receipt? Yes ☒ No ☐ Not Applicable ☐

Adjusted? ☐ Checked by [Signature]

Sample Condition: Good ☒ Other(Explain) ☐

(For diffusive samples or AIHA lead) Is a known blank included? Yes ☐ No ☒

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

Client: ERM-Southeast
 Project: AGLC Macon
 Lab Order: 1402G60

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1402G60-001A	TB-05-20140220-01	2/20/2014 12:00:00AM	Aqueous	Volatile Organic Compounds by GC/MS		02/24/2014	02/24/2014
1402G60-002A	MW-305D-20140220-01	2/20/2014 2:00:00PM	Groundwater	Volatile Organic Compounds by GC/MS		02/24/2014	02/24/2014
1402G60-002B	MW-305D-20140220-01	2/20/2014 2:00:00PM	Groundwater	GC Analysis of Gaseous Samples		02/26/2014	02/26/2014
1402G60-002C	MW-305D-20140220-01	2/20/2014 2:00:00PM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/26/2014	02/27/2014
1402G60-002C	MW-305D-20140220-01	2/20/2014 2:00:00PM	Groundwater	TCL-SEMIVOLATILE ORGANICS		02/24/2014	02/25/2014
1402G60-002C	MW-305D-20140220-01	2/20/2014 2:00:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/24/2014	02/25/2014
1402G60-002C	MW-305D-20140220-01	2/20/2014 2:00:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/24/2014	02/28/2014
1402G60-002D	MW-305D-20140220-01	2/20/2014 2:00:00PM	Groundwater	TOTAL METALS BY ICP		02/24/2014	02/25/2014
1402G60-002D	MW-305D-20140220-01	2/20/2014 2:00:00PM	Groundwater	TOTAL MERCURY		02/26/2014	02/26/2014
1402G60-002E	MW-305D-20140220-01	2/20/2014 2:00:00PM	Groundwater	Cyanide		02/24/2014	02/24/2014
1402G60-002F	MW-305D-20140220-01	2/20/2014 2:00:00PM	Groundwater	Ferrous Iron			02/21/2014
1402G60-002G	MW-305D-20140220-01	2/20/2014 2:00:00PM	Groundwater	ION SCAN			02/21/2014
1402G60-002H	MW-305D-20140220-01	2/20/2014 2:00:00PM	Groundwater	Sulfide			02/26/2014
1402G60-003A	MW-307D-20140220-01	2/20/2014 4:05:00PM	Groundwater	Volatile Organic Compounds by GC/MS		02/24/2014	02/24/2014
1402G60-003B	MW-307D-20140220-01	2/20/2014 4:05:00PM	Groundwater	GC Analysis of Gaseous Samples		02/26/2014	02/26/2014
1402G60-003C	MW-307D-20140220-01	2/20/2014 4:05:00PM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/26/2014	02/27/2014
1402G60-003C	MW-307D-20140220-01	2/20/2014 4:05:00PM	Groundwater	TCL-SEMIVOLATILE ORGANICS		02/24/2014	02/25/2014
1402G60-003C	MW-307D-20140220-01	2/20/2014 4:05:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/24/2014	02/25/2014
1402G60-003D	MW-307D-20140220-01	2/20/2014 4:05:00PM	Groundwater	TOTAL METALS BY ICP		02/24/2014	02/25/2014
1402G60-003D	MW-307D-20140220-01	2/20/2014 4:05:00PM	Groundwater	TOTAL MERCURY		02/26/2014	02/26/2014
1402G60-003E	MW-307D-20140220-01	2/20/2014 4:05:00PM	Groundwater	Cyanide		02/24/2014	02/24/2014
1402G60-003F	MW-307D-20140220-01	2/20/2014 4:05:00PM	Groundwater	Ferrous Iron			02/21/2014
1402G60-003G	MW-307D-20140220-01	2/20/2014 4:05:00PM	Groundwater	ION SCAN			02/21/2014
1402G60-003H	MW-307D-20140220-01	2/20/2014 4:05:00PM	Groundwater	Sulfide			02/26/2014
1402G60-004A	MW-204D-20140220-01	2/20/2014 4:40:00PM	Groundwater	Volatile Organic Compounds by GC/MS		02/24/2014	02/24/2014
1402G60-004A	MW-204D-20140220-01	2/20/2014 4:40:00PM	Groundwater	Volatile Organic Compounds by GC/MS		02/24/2014	02/25/2014
1402G60-004B	MW-204D-20140220-01	2/20/2014 4:40:00PM	Groundwater	GC Analysis of Gaseous Samples		02/26/2014	02/26/2014
1402G60-004C	MW-204D-20140220-01	2/20/2014 4:40:00PM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/26/2014	02/27/2014
1402G60-004C	MW-204D-20140220-01	2/20/2014 4:40:00PM	Groundwater	TCL-SEMIVOLATILE ORGANICS		02/24/2014	02/25/2014

Client: ERM-Southeast
 Project: AGLC Macon
 Lab Order: 1402G60

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1402G60-004C	MW-204D-20140220-01	2/20/2014 4:40:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/24/2014	02/25/2014
1402G60-004C	MW-204D-20140220-01	2/20/2014 4:40:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/24/2014	02/28/2014
1402G60-004D	MW-204D-20140220-01	2/20/2014 4:40:00PM	Groundwater	TOTAL METALS BY ICP		02/24/2014	02/25/2014
1402G60-004D	MW-204D-20140220-01	2/20/2014 4:40:00PM	Groundwater	TOTAL MERCURY		02/26/2014	02/26/2014
1402G60-004E	MW-204D-20140220-01	2/20/2014 4:40:00PM	Groundwater	Cyanide		02/24/2014	02/24/2014
1402G60-004F	MW-204D-20140220-01	2/20/2014 4:40:00PM	Groundwater	Ferrous Iron			02/21/2014
1402G60-004G	MW-204D-20140220-01	2/20/2014 4:40:00PM	Groundwater	ION SCAN			02/21/2014
1402G60-004H	MW-204D-20140220-01	2/20/2014 4:40:00PM	Groundwater	Sulfide			02/26/2014
1402G60-005A	MW-115D-20140220-01	2/20/2014 2:55:00PM	Groundwater	Volatile Organic Compounds by GC/MS		02/24/2014	02/24/2014
1402G60-005B	MW-115D-20140220-01	2/20/2014 2:55:00PM	Groundwater	GC Analysis of Gaseous Samples		02/26/2014	02/26/2014
1402G60-005C	MW-115D-20140220-01	2/20/2014 2:55:00PM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/26/2014	02/27/2014
1402G60-005C	MW-115D-20140220-01	2/20/2014 2:55:00PM	Groundwater	TCL-SEMIVOLATILE ORGANICS		02/24/2014	02/25/2014
1402G60-005C	MW-115D-20140220-01	2/20/2014 2:55:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/24/2014	02/25/2014
1402G60-005D	MW-115D-20140220-01	2/20/2014 2:55:00PM	Groundwater	TOTAL METALS BY ICP		02/24/2014	02/25/2014
1402G60-005D	MW-115D-20140220-01	2/20/2014 2:55:00PM	Groundwater	TOTAL MERCURY		02/26/2014	02/26/2014
1402G60-005E	MW-115D-20140220-01	2/20/2014 2:55:00PM	Groundwater	Cyanide		02/24/2014	02/24/2014
1402G60-005F	MW-115D-20140220-01	2/20/2014 2:55:00PM	Groundwater	Ferrous Iron			02/21/2014
1402G60-005G	MW-115D-20140220-01	2/20/2014 2:55:00PM	Groundwater	ION SCAN			02/21/2014
1402G60-005H	MW-115D-20140220-01	2/20/2014 2:55:00PM	Groundwater	Sulfide			02/26/2014
1402G60-006A	MW-306D-20140220-01	2/20/2014 3:30:00PM	Groundwater	Volatile Organic Compounds by GC/MS		02/24/2014	02/24/2014
1402G60-006B	MW-306D-20140220-01	2/20/2014 3:30:00PM	Groundwater	GC Analysis of Gaseous Samples		02/26/2014	02/26/2014
1402G60-006C	MW-306D-20140220-01	2/20/2014 3:30:00PM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/26/2014	02/27/2014
1402G60-006C	MW-306D-20140220-01	2/20/2014 3:30:00PM	Groundwater	TCL-SEMIVOLATILE ORGANICS		02/24/2014	02/25/2014
1402G60-006C	MW-306D-20140220-01	2/20/2014 3:30:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/24/2014	02/25/2014
1402G60-006C	MW-306D-20140220-01	2/20/2014 3:30:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/24/2014	02/28/2014
1402G60-006D	MW-306D-20140220-01	2/20/2014 3:30:00PM	Groundwater	TOTAL METALS BY ICP		02/24/2014	02/25/2014
1402G60-006D	MW-306D-20140220-01	2/20/2014 3:30:00PM	Groundwater	TOTAL MERCURY		02/26/2014	02/26/2014
1402G60-006E	MW-306D-20140220-01	2/20/2014 3:30:00PM	Groundwater	Cyanide		02/24/2014	02/24/2014
1402G60-006F	MW-306D-20140220-01	2/20/2014 3:30:00PM	Groundwater	Ferrous Iron			02/21/2014

Client: ERM-Southeast
 Project: AGLC Macon
 Lab Order: 1402G60

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1402G60-006G	MW-306D-20140220-01	2/20/2014 3:30:00PM	Groundwater	ION SCAN			02/21/2014
1402G60-006H	MW-306D-20140220-01	2/20/2014 3:30:00PM	Groundwater	Sulfide			02/26/2014
1402G60-007A	MW-200DR-20140220-01	2/20/2014 5:05:00PM	Groundwater	Volatile Organic Compounds by GC/MS		02/24/2014	02/24/2014
1402G60-007B	MW-200DR-20140220-01	2/20/2014 5:05:00PM	Groundwater	GC Analysis of Gaseous Samples		02/26/2014	02/26/2014
1402G60-007C	MW-200DR-20140220-01	2/20/2014 5:05:00PM	Groundwater	Polynuclear Aromatic Hydrocarbons		02/26/2014	02/27/2014
1402G60-007C	MW-200DR-20140220-01	2/20/2014 5:05:00PM	Groundwater	TCL-SEMIVOLATILE ORGANICS		02/24/2014	02/25/2014
1402G60-007C	MW-200DR-20140220-01	2/20/2014 5:05:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		02/24/2014	02/25/2014
1402G60-007D	MW-200DR-20140220-01	2/20/2014 5:05:00PM	Groundwater	TOTAL METALS BY ICP		02/24/2014	02/25/2014
1402G60-007D	MW-200DR-20140220-01	2/20/2014 5:05:00PM	Groundwater	TOTAL MERCURY		02/26/2014	02/26/2014
1402G60-007E	MW-200DR-20140220-01	2/20/2014 5:05:00PM	Groundwater	Cyanide		02/24/2014	02/24/2014
1402G60-007F	MW-200DR-20140220-01	2/20/2014 5:05:00PM	Groundwater	Ferrous Iron			02/21/2014
1402G60-007G	MW-200DR-20140220-01	2/20/2014 5:05:00PM	Groundwater	ION SCAN			02/21/2014
1402G60-007H	MW-200DR-20140220-01	2/20/2014 5:05:00PM	Groundwater	Sulfide			02/26/2014

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402G60

ANALYTICAL QC SUMMARY REPORT

BatchID: 187343

Sample ID: MB-187343	Client ID:				Units: ug/L	Prep Date: 02/24/2014	Run No: 261956				
SampleType: MBLK	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 187343	Analysis Date: 02/25/2014	Seq No: 5507106				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

2,4-Dimethylphenol	BRL	10									
2-Methylphenol	BRL	10									
3,4-Methylphenol	BRL	10									
Acenaphthene	BRL	10									
Acenaphthylene	BRL	10									
Anthracene	BRL	10									
Benzo(g,h,i)perylene	BRL	10									
Benzo(k)fluoranthene	BRL	10									
Chrysene	BRL	10									
Fluoranthene	BRL	10									
Fluorene	BRL	10									
Naphthalene	BRL	10									
Phenanthrene	BRL	10									
Phenol	BRL	10									
Pyrene	BRL	10									
Surr: 2,4,6-Tribromophenol	95.76	0	100.0		95.8	51.5	124				
Surr: 2-Fluorobiphenyl	45.00	0	50.00		90.0	51.7	118				
Surr: 2-Fluorophenol	59.74	0	100.0		59.7	26	120				
Surr: 4-Terphenyl-d14	45.38	0	50.00		90.8	45.2	137				
Surr: Nitrobenzene-d5	43.61	0	50.00		87.2	42	120				
Surr: Phenol-d5	41.40	0	100.0		41.4	12.3	120				

Sample ID: LCS-187343	Client ID:					Units: ug/L	Prep Date: 02/24/2014	Run No: 261956			
SampleType: LCS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D					BatchID: 187343	Analysis Date: 02/25/2014	Seq No: 5507114			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	100.2	10	100.0		100	67.7	122				
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Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402G60

ANALYTICAL QC SUMMARY REPORT

BatchID: 187343

Sample ID: LCS-187343	Client ID:					Units: ug/L	Prep Date: 02/24/2014	Run No: 261956			
SampleType: LCS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D					BatchID: 187343	Analysis Date: 02/25/2014	Seq No: 5507114			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Phenol	48.47	10	100.0		48.5	24.6	120				
Pyrene	102.3	10	100.0		102	68.3	123				
Surr: 2,4,6-Tribromophenol	120.1	0	100.0		120	51.5	124				
Surr: 2-Fluorobiphenyl	55.02	0	50.00		110	51.7	118				
Surr: 2-Fluorophenol	74.55	0	100.0		74.6	26	120				
Surr: 4-Terphenyl-d14	57.48	0	50.00		115	45.2	137				
Surr: Nitrobenzene-d5	52.53	0	50.00		105	42	120				
Surr: Phenol-d5	54.38	0	100.0		54.4	12.3	120				

Sample ID: 1402G31-003BMS	Client ID:				Units: ug/L	Prep Date: 02/24/2014	Run No: 261956				
SampleType: MS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 187343	Analysis Date: 02/25/2014	Seq No: 5508303				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	78.53	10	100.0		78.5	51.9	120				
Phenol	50.83	10	100.0		50.8	30.5	120				
Pyrene	81.33	10	100.0		81.3	50.6	120				
Surr: 2,4,6-Tribromophenol	97.55	0	100.0		97.6	51.5	124				
Surr: 2-Fluorobiphenyl	43.58	0	50.00		87.2	51.7	118				
Surr: 2-Fluorophenol	64.47	0	100.0		64.5	26	120				
Surr: 4-Terphenyl-d14	44.88	0	50.00		89.8	45.2	137				
Surr: Nitrobenzene-d5	39.60	0	50.00		79.2	42	120				
Surr: Phenol-d5	60.02	0	100.0		60.0	12.3	120				

Sample ID: 1402G31-003BMSD	Client ID:				Units: ug/L	Prep Date: 02/24/2014	Run No: 262027				
SampleType: MSD	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 187343	Analysis Date: 02/26/2014	Seq No: 5509639				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	81.50	10	100.0		81.5	51.9	120	78.53	3.71	24.9	
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Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402G60

ANALYTICAL QC SUMMARY REPORT

BatchID: 187343

Sample ID: 1402G31-003BMSD	Client ID:				Units: ug/L	Prep Date: 02/24/2014	Run No: 262027				
SampleType: MSD	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 187343	Analysis Date: 02/26/2014	Seq No: 5509639				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Phenol	52.53	10	100.0		52.5	30.5	120	50.83	3.29	34.4	
Pyrene	82.96	10	100.0		83.0	50.6	120	81.33	1.98	26.7	
Surr: 2,4,6-Tribromophenol	94.63	0	100.0		94.6	51.5	124	97.55	0	0	
Surr: 2-Fluorobiphenyl	46.42	0	50.00		92.8	51.7	118	43.58	0	0	
Surr: 2-Fluorophenol	70.14	0	100.0		70.1	26	120	64.47	0	0	
Surr: 4-Terphenyl-d14	44.18	0	50.00		88.4	45.2	137	44.88	0	0	
Surr: Nitrobenzene-d5	43.53	0	50.00		87.1	42	120	39.60	0	0	
Surr: Phenol-d5	61.41	0	100.0		61.4	12.3	120	60.02	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402G60

ANALYTICAL QC SUMMARY REPORT

BatchID: 187412

Sample ID: MB-187412		Client ID:			Units: mg/L		Prep Date: 02/24/2014		Run No: 262074		
SampleType: MBLK		TestCode: Cyanide SW9014			BatchID: 187412		Analysis Date: 02/24/2014		Seq No: 5510013		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total BRL 0.010

Sample ID: LCS-187412		Client ID:		Units: mg/L		Prep Date: 02/24/2014		Run No: 262074			
SampleType: LCS		TestCode: Cyanide SW9014		BatchID: 187412		Analysis Date: 02/24/2014		Seq No: 5510014			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.2625 0.010 0.2500 105 85 115

Sample ID: 1402F86-005FMS	Client ID:				Units: mg/L	Prep Date: 02/24/2014	Run No: 262074				
SampleType: MS	TestCode: Cyanide SW9014				BatchID: 187412	Analysis Date: 02/24/2014	Seq No: 5510026				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.2499 0.010 0.2500 100.0 70 130

Sample ID: 1402F86-005FMSD					Client ID:			Units: mg/L		Prep Date: 02/24/2014		Run No: 262074														
SampleType: MSD					TestCode: Cyanide SW9014			BatchID: 187412		Analysis Date: 02/24/2014		Seq No: 5510027														
Analyte					Result		RPT Limit		SPK value		SPK Ref Val		%REC		Low Limit		High Limit		RPD Ref Val		%RPD		RPD Limit		Qual	

Cyanide, Total 0.2533 0.010 0.2500 101 70 130 0.2499 1.35 20

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402G60

ANALYTICAL QC SUMMARY REPORT

BatchID: 187419

Sample ID: MB-187419	Client ID:					Units: mg/L	Prep Date: 02/24/2014	Run No: 262015			
SampleType: MBLK	TestCode: METALS, TOTAL	SW6010C				BatchID: 187419	Analysis Date: 02/25/2014	Seq No: 5508658			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	BRL	0.0200									
Arsenic	BRL	0.0500									
Barium	BRL	0.0200									
Beryllium	BRL	0.0100									
Cadmium	BRL	0.0050									
Chromium	BRL	0.0100									
Copper	BRL	0.0100									
Iron	BRL	0.100									
Lead	BRL	0.0100									
Nickel	BRL	0.0200									
Zinc	BRL	0.0200									

Sample ID: LCS-187419		Client ID:		Units: mg/L		Prep Date: 02/24/2014		Run No: 262015			
SampleType: LCS		TestCode: METALS, TOTAL SW6010C		BatchID: 187419		Analysis Date: 02/25/2014		Seq No: 5508656			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	1.052	0.0200	1.000		105	80	120				
Arsenic	1.047	0.0500	1.000		105	80	120				
Barium	1.023	0.0200	1.000		102	80	120				
Beryllium	1.024	0.0100	1.000		102	80	120				
Cadmium	1.033	0.0050	1.000		103	80	120				
Chromium	1.033	0.0100	1.000		103	80	120				
Copper	1.007	0.0100	1.000		101	80	120				
Iron	10.22	0.100	10.00		102	80	120				
Lead	1.032	0.0100	1.000		103	80	120				
Nickel	1.032	0.0200	1.000		103	80	120				
Zinc	1.036	0.0200	1.000	0.003983	103	80	120				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402G60

ANALYTICAL QC SUMMARY REPORT

BatchID: 187419

Sample ID: 1402G34-001CMS	Client ID:					Units: mg/L	Prep Date: 02/24/2014	Run No: 262015			
SampleType: MS	TestCode: METALS, TOTAL	SW6010C	BatchID: 187419				Analysis Date: 02/25/2014	Seq No: 5508660			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	0.9979	0.0200	1.000	0.002386	99.5	75	125				
Arsenic	1.028	0.0500	1.000	0.01809	101	75	125				
Barium	1.041	0.0200	1.000	0.03954	100	75	125				
Beryllium	1.014	0.0100	1.000		101	75	125				
Cadmium	1.008	0.0050	1.000		101	75	125				
Chromium	1.015	0.0100	1.000		101	75	125				
Copper	0.9971	0.0100	1.000		99.7	75	125				
Iron	90.37	0.100	10.00	91.55	-11.8	75	125				S
Lead	0.9978	0.0100	1.000		99.8	75	125				
Nickel	1.003	0.0200	1.000		100	75	125				
Zinc	1.018	0.0200	1.000	0.01729	100	75	125				

Sample ID: 1402G34-001CMSD	Client ID:					Units: mg/L	Prep Date: 02/24/2014	Run No: 262015			
SampleType: MSD	TestCode: METALS, TOTAL	SW6010C				BatchID: 187419	Analysis Date: 02/25/2014	Seq No: 5508661			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	1.020	0.0200	1.000	0.002386	102	75	125	0.9979	2.21	20	
Arsenic	1.053	0.0500	1.000	0.01809	103	75	125	1.028	2.45	20	
Barium	1.065	0.0200	1.000	0.03954	103	75	125	1.041	2.27	20	
Beryllium	1.020	0.0100	1.000		102	75	125	1.014	0.591	20	
Cadmium	1.031	0.0050	1.000		103	75	125	1.008	2.23	20	
Chromium	1.040	0.0100	1.000		104	75	125	1.015	2.45	20	
Copper	1.023	0.0100	1.000		102	75	125	0.9971	2.52	20	
Iron	94.00	0.100	10.00	91.55	24.4	75	125	90.37	3.93	20	S
Lead	1.023	0.0100	1.000		102	75	125	0.9978	2.53	20	
Nickel	1.028	0.0200	1.000		103	75	125	1.003	2.52	20	
Zinc	1.040	0.0200	1.000	0.01729	102	75	125	1.018	2.15	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402G60

ANALYTICAL QC SUMMARY REPORT

BatchID: 187424

Sample ID: MB-187424	Client ID:					Units: ug/L	Prep Date: 02/24/2014	Run No: 261820			
SampleType: MBLK	TestCode: Volatile Organic Compounds by GC/MS SW8260B					BatchID: 187424	Analysis Date: 02/24/2014	Seq No: 5504012			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	BRL	5.0									
Carbon disulfide	BRL	5.0									
Ethylbenzene	BRL	5.0									
Toluene	BRL	5.0									
Xylenes, Total	BRL	5.0									
Surr: 4-Bromofluorobenzene	47.29	0	50.00		94.6	66.2	120				
Surr: Dibromofluoromethane	51.71	0	50.00		103	79.5	121				
Surr: Toluene-d8	50.88	0	50.00		102	77	117				

Sample ID: LCS-187424	Client ID:					Units: ug/L	Prep Date: 02/24/2014	Run No: 261820			
SampleType: LCS	TestCode: Volatile Organic Compounds by GC/MS SW8260B					BatchID: 187424	Analysis Date: 02/24/2014	Seq No: 5504010			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	50.07	5.0	50.00		100	74.2	129				
Toluene	47.72	5.0	50.00		95.4	74.2	129				
Surr: 4-Bromofluorobenzene	48.70	0	50.00		97.4	66.2	120				
Surr: Dibromofluoromethane	51.88	0	50.00		104	79.5	121				
Surr: Toluene-d8	51.16	0	50.00		102	77	117				

Sample ID: 1402F61-021AMS	Client ID:					Units: ug/L	Prep Date: 02/24/2014	Run No: 261820			
SampleType: MS	TestCode: Volatile Organic Compounds by GC/MS SW8260B					BatchID: 187424	Analysis Date: 02/24/2014	Seq No: 5505428			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	539.9	50	500.0		108	70.2	138				
Toluene	527.9	50	500.0		106	70	139				
Surr: 4-Bromofluorobenzene	496.8	0	500.0		99.4	66.2	120				
Surr: Dibromofluoromethane	522.2	0	500.0		104	79.5	121				
Surr: Toluene-d8	513.9	0	500.0		103	77	117				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402G60

ANALYTICAL QC SUMMARY REPORT

BatchID: 187424

Sample ID: 1402F61-021AMSD	Client ID:	Units: ug/L				Prep Date: 02/24/2014	Run No: 261820				
SampleType: MSD	TestCode: Volatile Organic Compounds by GC/MS SW8260B	BatchID: 187424				Analysis Date: 02/24/2014	Seq No: 5505429				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	511.6	50	500.0		102	70.2	138	539.9	5.38	20	
Toluene	507.8	50	500.0		102	70	139	527.9	3.88	20	
Surr: 4-Bromofluorobenzene	493.5	0	500.0		98.7	66.2	120	496.8	0	0	
Surr: Dibromofluoromethane	505.2	0	500.0		101	79.5	121	522.2	0	0	
Surr: Toluene-d8	510.8	0	500.0		102	77	117	513.9	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402G60

ANALYTICAL QC SUMMARY REPORT

BatchID: 187484

Sample ID: MB-187484	Client ID:					Units: ug/L	Prep Date: 02/26/2014	Run No: 262198			
SampleType: MBLK	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D					BatchID: 187484	Analysis Date: 02/27/2014	Seq No: 5513003			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	BRL	0.050									
Benzo(a)pyrene	BRL	0.050									
Benzo(b)fluoranthene	BRL	0.10									
Dibenz(a,h)anthracene	BRL	0.10									
Indeno(1,2,3-cd)pyrene	BRL	0.050									
Surr: 4-Terphenyl-d14	1.937	0	2.000		96.8	53.2	145				

Sample ID: LCS-187484	Client ID:					Units: ug/L	Prep Date: 02/26/2014	Run No: 262198			
SampleType: LCS	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D					BatchID: 187484	Analysis Date: 02/27/2014	Seq No: 5513054			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	1.997	0.050	2.000		99.8	62.8	132				
Benzo(a)pyrene	1.912	0.050	2.000		95.6	56.4	123				
Benzo(b)fluoranthene	1.706	0.10	2.000		85.3	69.2	132				
Dibenz(a,h)anthracene	1.402	0.10	2.000		70.1	49.3	134				
Indeno(1,2,3-cd)pyrene	1.670	0.050	2.000		83.5	48.3	137				
Surr: 4-Terphenyl-d14	1.757	0	2.000		87.8	53.2	145				

Sample ID: 1402I15-001AMS	Client ID:					Units: ug/L	Prep Date: 02/26/2014	Run No: 262198			
SampleType: MS	TestCode: SIM Polynuclear Aromatic Hydrocarbons	SW8270D	BatchID: 187484				Analysis Date: 02/27/2014	Seq No: 5513051			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	2.236	0.050	2.000	0.03338	110	51.4	142				
Benzo(a)pyrene	2.155	0.050	2.000		108	48.3	126				
Benzo(b)fluoranthene	1.841	0.10	2.000		92.0	49.9	134				
Dibenz(a,h)anthracene	1.828	0.10	2.000		91.4	41.8	121				
Indeno(1,2,3-cd)pyrene	1.922	0.050	2.000		96.1	42	129				
Surr: 4-Terphenyl-d14	1.982	0	2.000		99.1	53.2	145				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402G60

ANALYTICAL QC SUMMARY REPORT

BatchID: 187484

Sample ID: 1402I15-001AMSD	Client ID:					Units: ug/L	Prep Date: 02/26/2014	Run No: 262198			
SampleType: MSD	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D					BatchID: 187484	Analysis Date: 02/27/2014	Seq No: 5513052			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	2.392	0.050	2.000	0.03338	118	51.4	142	2.236	6.75	48.1	
Benzo(a)pyrene	2.281	0.050	2.000		114	48.3	126	2.155	5.65	53.5	
Benzo(b)fluoranthene	1.921	0.10	2.000		96.0	49.9	134	1.841	4.26	51.1	
Dibenz(a,h)anthracene	1.922	0.10	2.000		96.1	41.8	121	1.828	5.01	54.2	
Indeno(1,2,3-cd)pyrene	1.989	0.050	2.000		99.4	42	129	1.922	3.40	44.6	
Surr: 4-Terphenyl-d14	2.038	0	2.000		102	53.2	145	1.982	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402G60

ANALYTICAL QC SUMMARY REPORT

BatchID: 187503

Sample ID: MB-187503	Client ID:				Units: mg/L	Prep Date: 02/26/2014	Run No: 261987				
SampleType: MBLK	TestCode: Mercury, Total	SW7470A			BatchID: 187503	Analysis Date: 02/26/2014	Seq No: 5508972				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury BRL 0.00020

Sample ID: LCS-187503	Client ID:				Units: mg/L	Prep Date: 02/26/2014	Run No: 261987				
SampleType: LCS	TestCode: Mercury, Total	SW7470A			BatchID: 187503	Analysis Date: 02/26/2014	Seq No: 5508974				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.005087 0.00020 0.0050 102 85 115

Sample ID: 1402G60-002DMS	Client ID: MW-305D-20140220-01	Units: mg/L	Prep Date: 02/26/2014	Run No: 261987							
SampleType: MS	TestCode: Mercury, Total SW7470A	BatchID: 187503	Analysis Date: 02/26/2014	Seq No: 5508977							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.004021 0.00020 0.0050 80.4 70 130

Sample ID: 1402G60-002DMSD	Client ID: MW-305D-20140220-01	Units: mg/L	Prep Date: 02/26/2014	Run No: 261987							
SampleType: MSD	TestCode: Mercury, Total SW7470A	BatchID: 187503	Analysis Date: 02/26/2014	Seq No: 5508979							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.003952 0.00020 0.0050 79.0 70 130 0.004021 1.73 20

Qualifiers:	> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
	BRL Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
	J Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
	Rpt Lim Reporting Limit	S Spike Recovery outside limits due to matrix	

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402G60

ANALYTICAL QC SUMMARY REPORT

BatchID: 187547

Sample ID: MB-187547	Client ID:					Units: ug/L	Prep Date: 02/26/2014	Run No: 262034			
SampleType: MBLK	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175				BatchID: 187547	Analysis Date: 02/26/2014	Seq No: 5510061			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

BRL

4

Sample ID: LCS-187547	Client ID:					Units: ug/L	Prep Date: 02/26/2014	Run No: 262034			
SampleType: LCS	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175				BatchID: 187547	Analysis Date: 02/26/2014	Seq No: 5510062			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

109.4

4

200.0

54.7

45.2

115

Sample ID: LCSD-187547	Client ID:					Units: ug/L	Prep Date: 02/26/2014	Run No: 262034			
SampleType: LCSD	TestCode: GC Analysis of Gaseous Samples	SOP-RSK 175				BatchID: 187547	Analysis Date: 02/26/2014	Seq No: 5510063			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

116.5

4

200.0

58.2

45.2

115

109.4

6.28

20

Sample ID: 1402G60-002BMS	Client ID: MW-305D-20140220-01	Units: ug/L	Prep Date: 02/26/2014	Run No: 262034							
SampleType: MS	TestCode: GC Analysis of Gaseous Samples SOP-RSK 175	BatchID: 187547	Analysis Date: 02/26/2014	Seq No: 5510081							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

123.7

4

200.0

2.838

60.4

41.1

115

Sample ID: 1402G60-002BMSD	Client ID: MW-305D-20140220-01	Units: ug/L	Prep Date: 02/26/2014	Run No: 262034							
SampleType: MSD	TestCode: GC Analysis of Gaseous Samples SOP-RSK 175	BatchID: 187547	Analysis Date: 02/26/2014	Seq No: 5510082							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane

119.2

4

200.0

2.838

58.2

41.1

115

123.7

3.66

20

Qualifiers:

> Greater than Result value

BRL Below reporting limit

J Estimated value detected below Reporting Limit

Rpt Lim Reporting Limit

< Less than Result value

E Estimated (value above quantitation range)

N Analyte not NELAC certified

S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank

H Holding times for preparation or analysis exceeded

R RPD outside limits due to matrix

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402G60

ANALYTICAL QC SUMMARY REPORT

BatchID: R261914

Sample ID: MB-R261914	Client ID:					Units: mg/L	Prep Date:			Run No: 261914	
SampleType: MBLK	TestCode: Ferrous Iron	SM3500-Fe-B				BatchID: R261914	Analysis Date: 02/21/2014			Seq No: 5506090	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Iron, as Ferrous (Fe+2) BRL 0.100

Sample ID: LCS-R261914	Client ID:					Units: mg/L	Prep Date:			Run No: 261914	
SampleType: LCS	TestCode: Ferrous Iron	SM3500-Fe-B				BatchID: R261914	Analysis Date: 02/21/2014			Seq No: 5506091	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Iron, as Ferrous (Fe+2) 0.5263 0.100 0.5000 105 85 115

Sample ID: 1402G60-002FMS	Client ID: MW-305D-20140220-01	Units: mg/L			Prep Date:			Run No: 261914			
SampleType: MS	TestCode: Ferrous Iron	SM3500-Fe-B	BatchID: R261914			Analysis Date: 02/21/2014			Seq No: 5506100		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Iron, as Ferrous (Fe+2) 0.5321 0.100 0.5000 106 80 120

Sample ID: 1402G60-002FMSD	Client ID: MW-305D-20140220-01	Units: mg/L		Prep Date:		Run No: 261914					
SampleType: MSD	TestCode: Ferrous Iron SM3500-Fe-B	BatchID: R261914		Analysis Date: 02/21/2014		Seq No: 5506101					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Iron, as Ferrous (Fe+2) 0.5436 0.100 0.5000 109 80 120 0.5321 2.14 30

Qualifiers:	> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
BRL	Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S Spike Recovery outside limits due to matrix	

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402G60

ANALYTICAL QC SUMMARY REPORT**BatchID: R261921**

Sample ID: MB-R261921	Client ID:					Units: mg/L	Prep Date:		Run No: 261921		
SampleType: MBLK	TestCode: ION SCAN SW9056A					BatchID: R261921	Analysis Date: 02/21/2014		Seq No: 5506335		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate BRL 0.25
 Sulfate BRL 1.0

Sample ID: LCS-R261921	Client ID:					Units: mg/L	Prep Date:	Run No: 261921			
SampleType: LCS	TestCode: ION SCAN SW9056A					BatchID: R261921	Analysis Date: 02/21/2014	Seq No: 5506333			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 5.472 0.25 5.000 109 90 110
 Sulfate 25.43 1.0 25.00 102 90 110

Sample ID: 1402G34-008EMS	Client ID:				Units: mg/L	Prep Date:			Run No: 261921		
SampleType: MS	TestCode: ION SCAN SW9056A				BatchID: R261921	Analysis Date: 02/21/2014			Seq No: 5506360		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 86.60 2.5 50.00 37.43 98.3 90 110
 Sulfate 245.6 10 250.0 4.517 96.4 90 110

Sample ID: 1402G60-005GMS	Client ID: MW-115D-20140220-01	Units: mg/L	Prep Date:	Run No: 261921							
SampleType: MS	TestCode: ION SCAN SW9056A	BatchID: R261921	Analysis Date: 02/21/2014	Seq No: 5506370							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 25.38 1.2 25.00 102 90 110
 Sulfate 142.4 5.0 125.0 18.70 99.0 90 110

Sample ID: 1402G34-008EMSD	Client ID:	Units: mg/L	Prep Date:	Run No: 261921							
SampleType: MSD	TestCode: ION SCAN SW9056A	BatchID: R261921	Analysis Date: 02/21/2014	Seq No: 5506361							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Nitrate 86.69 2.5 50.00 37.43 98.5 90 110 86.60 0.105 20

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1402G60

ANALYTICAL QC SUMMARY REPORT

BatchID: R261921

Sample ID: 1402G34-008EMSD		Client ID:		Units: mg/L		Prep Date:		Run No: 261921			
SampleType: MSD		TestCode: ION SCAN SW9056A		BatchID: R261921		Analysis Date: 02/21/2014		Seq No: 5506361			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sulfate	248.2	10	250.0	4.517	97.5	90	110	245.6	1.05	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1402G60

ANALYTICAL QC SUMMARY REPORT

BatchID: R262006

Sample ID: MB-R262006	Client ID:					Units: mg/L	Prep Date:		Run No: 262006		
SampleType: MBLK	TestCode: Sulfide (E376.1/SM4500 S2 F)					BatchID: R262006	Analysis Date: 02/26/2014		Seq No: 5508411		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide BRL 1.0

Sample ID: LCS-R262006		Client ID:				Units: mg/L		Prep Date:		Run No: 262006	
SampleType: LCS		TestCode: Sulfide (E376.1/SM4500 S2 F)				BatchID: R262006		Analysis Date: 02/26/2014		Seq No: 5508412	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide 296.8 1.0 296.8 100 90 110

Sample ID: 1402G60-003HMS	Client ID: MW-307D-20140220-01	Units: mg/L	Prep Date:	Run No: 262006							
SampleType: MS	TestCode: Sulfide (E376.1/SM4500 S2 F)	BatchID: R262006	Analysis Date: 02/26/2014	Seq No: 5508416							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide 16.64 1.0 14.84 112 80 120

Sample ID: 1402G60-003HMSD	Client ID: MW-307D-20140220-01	Units: mg/L	Prep Date:	Run No: 262006							
SampleType: MSD	TestCode: Sulfide (E376.1/SM4500 S2 F)	BatchID: R262006	Analysis Date: 02/26/2014	Seq No: 5508417							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide 16.44 1.0 14.84 111 80 120 16.64 1.21 20

Qualifiers:	> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
	BRL Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
	J Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
	Rpt Lim Reporting Limit	S Spike Recovery outside limits due to matrix	



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

August 18, 2014

Nic Vrey
ERM-Southeast
3200 Windy Hill Rd
Atlanta GA 30339

TEL: (678) 486-2700
FAX: (404) 745-0103

RE: AGL Macon

Dear Nic Vrey:

Order No: 1408474

Analytical Environmental Services, Inc. received 23 samples on 8/6/2014 4:35:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.

AES' certifications are as follows:

- NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/14-06/30/15.
- AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 09/01/15.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Mirzeta Kararic
Project Manager



ANALYTICAL ENVIRONMENTAL SERVICES, INC

3080 Presidential Drive, Atlanta GA 30340-3704

AES

TEL: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1408474

Date: 8/4/14 Page 1 of 2

COMPANY: <u>ERM</u>		ADDRESS: <u>3200 Windy Hill Rd SE Atlanta, GA 30339</u>		FAX: _____		SIGNATURE: _____		SAMPLE ID		SAMPLED		DATE		TIME		Grab		Composite		Matrix (See codes)		ANALYSIS REQUESTED		PRESERVATION (See codes)		REMARKS		No # of Containers		
#																														
1	MW-230-20140804-01			8/4/14		14:30		X														82608 (VCS)	8270 (SVCS)	Metals + Mercury	Cyanide				6	
2	MW-250-20140804-01					16:00		X																					6	
3	MW-250MS-20140804-01					16:00		X																						6
4	MW-250MS-20140804-01					16:00		X																						6
5	MW-300-20140804-01					16:05		X																						6
6	MW-300MS-20140804-01					16:05		X																						6
7	MW-300MS-20140804-01					16:05		X																						6
8	MW-3040-20140804-01					18:00		X																						6
9	MW-2060-20140805-01			8/5/14		08:50		X																						6
10	MW-1130-20140805-01					09:15		X																						6
11	MW-1080-20140805-01					09:50		X																						6
12	MW-1120-20140805-01					10:15		X																						6
13	MW-1202-20140805-01					11:25		X																						6
14	MW-090-20140805-01					11:45		X																						6
RELINQUISHED BY: <u>[Signature]</u>		DATE/TIME: <u>8/6/14 16:00</u>		RECEIVED BY: <u>[Signature]</u>		DATE/TIME: <u>8/6/14 4:00</u>																								
2. <u>[Signature]</u>		<u>8/6/14 4:35</u>		<u>[Signature]</u>		<u>8/6/14 4:35</u>																								
3. <u>[Signature]</u>		<u>8/6/14 4:35</u>		<u>[Signature]</u>		<u>8/6/14 4:35</u>																								
SPECIAL INSTRUCTIONS/COMMENTS:				SHIPMENT METHOD:		OUT / / VIA:		IN / / VIA:		CLIENT FedEx UPS MAIL COURIER		GREYHOUND OTHER:																		
PROJECT NAME: <u>AGL Macon</u>		PROJECT #:		SITE ADDRESS: <u>Walnut Street Macon, GA</u>		SEND REPORT TO: <u>Nic.Vrey@erm.com</u>		INVOICE TO: (IF DIFFERENT FROM ABOVE)		QUOTE #:		PO#:																		
Turnaround Time Request: <u>Standard 5 Business Days</u>		2 Business Day Rush		Next Business Day Rush		Same Day Rush (auth req.)		Other																						
Total # of Containers: <u>84</u>																														
STATE PROGRAM (if any):		E-mail? Y/N:		Fax? Y/N:		DATA PACKAGE: I II III IV																								

VED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.

POSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water

ES: H+1 = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original, Yellow Copy - Client



ANALYTICAL ENVIRONMENTAL SERVICES, INC

3080 Presidential Drive, Atlanta GA 30340-3704

AES TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1908474

Date: 8/5/14 Page 2 of 2

COMPANY: ERM		ADDRESS: 3200 Windy Hill Rd SE Suite 1506W Atlanta, GA 30339		FAX:		SIGNATURE: J. Mulhady / A. Kelly		SAMPLE ID		SAMPLED		DATE		TIME		Grab		Composite		Matrix (See codes)		ANALYSIS REQUESTED		PRESERVATION (See codes)		REMARKS		No # of Containers				
#																																
1	DUP-02-20140805-01	8/5/14																														
2	DUP-01-20140805-01																															
3	MW-1150-20140805-01																															
4	MW-1200-20140805-01																															
5	MW-2070-20140805-01																															
6	MW-2100-20140806-01	8/6/14																														
7	MW-3080-20140806-01																															
8	MW-3030-20140806-01																															
9	TH-01-20140806-01	8/6/14																														
10	MW-1100-20140806-01																															
11	MW-2040-20140806-01																															
12	MW-3060-20140806-01																															
13																																
14																																
RELINQUISHED BY		DATE/TIME		RECEIVED BY		DATE/TIME		PROJECT INFORMATION		PROJECT NAME: AEL Macay		PROJECT #:		SITE ADDRESS: Walnut St. Macon, GA		SEND REPORT TO: Nic. Vrejoel@elm.com		INVOICE TO: (IF DIFFERENT FROM ABOVE)		QUOTE #:		PO#:		STATE PROGRAM (if any):		E-mail? Y/N:		Fax? Y/N:		DATA PACKAGE: I II III IV		
1: [Signature]		8/6/14 16:00		1: [Signature]		8/6/14 4:00		PROJECT INFORMATION		PROJECT NAME: AEL Macay		PROJECT #:		SITE ADDRESS: Walnut St. Macon, GA		SEND REPORT TO: Nic. Vrejoel@elm.com		INVOICE TO: (IF DIFFERENT FROM ABOVE)		QUOTE #:		PO#:		STATE PROGRAM (if any):		E-mail? Y/N:		Fax? Y/N:		DATA PACKAGE: I II III IV		
2: [Signature]		8/6/14 4:35		2: [Signature]		8/6/14 4:35		PROJECT INFORMATION		PROJECT NAME: AEL Macay		PROJECT #:		SITE ADDRESS: Walnut St. Macon, GA		SEND REPORT TO: Nic. Vrejoel@elm.com		INVOICE TO: (IF DIFFERENT FROM ABOVE)		QUOTE #:		PO#:		STATE PROGRAM (if any):		E-mail? Y/N:		Fax? Y/N:		DATA PACKAGE: I II III IV		
3: [Signature]				3: [Signature]				PROJECT INFORMATION		PROJECT NAME: AEL Macay		PROJECT #:		SITE ADDRESS: Walnut St. Macon, GA		SEND REPORT TO: Nic. Vrejoel@elm.com		INVOICE TO: (IF DIFFERENT FROM ABOVE)		QUOTE #:		PO#:		STATE PROGRAM (if any):		E-mail? Y/N:		Fax? Y/N:		DATA PACKAGE: I II III IV		
SPECIAL INSTRUCTIONS/COMMENTS:				SHIPMENT METHOD		OUT / / VIA:		IN / / VIA:		CLIENT FedEx UPS MAIL COURIER		GREYHOUND OTHER																				

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.

SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water

PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

Client: ERM-Southeast**Project:** AGL Macon**Lab ID:** 1408474**Case Narrative**

A second set of Trip Blanks was received but was not listed on the COC. The Trip Blanks were analysis at no cost to the client.

Analytical Environmental Services, Inc
Date: 18-Aug-14

Client: ERM-Southeast
Project Name: AGL Macon
Lab ID: 1408474-001

Client Sample ID: MW-23D-20140804-01
Collection Date: 8/4/2014 2:30:00 PM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	194591	1	08/07/2014 13:36	GK
Carbon disulfide	BRL	5.0		ug/L	194591	1	08/07/2014 13:36	GK
Ethylbenzene	BRL	5.0		ug/L	194591	1	08/07/2014 13:36	GK
Toluene	BRL	5.0		ug/L	194591	1	08/07/2014 13:36	GK
Xylenes, Total	BRL	5.0		ug/L	194591	1	08/07/2014 13:36	GK
Surr: 4-Bromofluorobenzene	90.2	66.2-120		%REC	194591	1	08/07/2014 13:36	GK
Surr: Dibromofluoromethane	100	79.5-121		%REC	194591	1	08/07/2014 13:36	GK
Surr: Toluene-d8	103	77-117		%REC	194591	1	08/07/2014 13:36	GK
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	194592	1	08/11/2014 14:19	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194592	1	08/11/2014 14:19	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194592	1	08/11/2014 14:19	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194592	1	08/11/2014 14:19	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194592	1	08/11/2014 14:19	YH
Surr: 4-Terphenyl-d14	82.4	53.2-145		%REC	194592	1	08/11/2014 14:19	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194601	1	08/12/2014 15:01	YH
2-Methylphenol	BRL	10		ug/L	194601	1	08/12/2014 15:01	YH
3,4-Methylphenol	BRL	10		ug/L	194601	1	08/12/2014 15:01	YH
Acenaphthene	BRL	10		ug/L	194601	1	08/12/2014 15:01	YH
Acenaphthylene	BRL	10		ug/L	194601	1	08/12/2014 15:01	YH
Anthracene	BRL	10		ug/L	194601	1	08/12/2014 15:01	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194601	1	08/12/2014 15:01	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194601	1	08/12/2014 15:01	YH
Chrysene	BRL	10		ug/L	194601	1	08/12/2014 15:01	YH
Fluoranthene	BRL	10		ug/L	194601	1	08/12/2014 15:01	YH
Fluorene	BRL	10		ug/L	194601	1	08/12/2014 15:01	YH
Naphthalene	BRL	10		ug/L	194601	1	08/12/2014 15:01	YH
Phenanthrene	BRL	10		ug/L	194601	1	08/12/2014 15:01	YH
Phenol	BRL	10		ug/L	194601	1	08/12/2014 15:01	YH
Pyrene	BRL	10		ug/L	194601	1	08/12/2014 15:01	YH
Surr: 2,4,6-Tribromophenol	95.2	51.5-124		%REC	194601	1	08/12/2014 15:01	YH
Surr: 2-Fluorobiphenyl	84.2	51.7-118		%REC	194601	1	08/12/2014 15:01	YH
Surr: 2-Fluorophenol	71.2	26-120		%REC	194601	1	08/12/2014 15:01	YH
Surr: 4-Terphenyl-d14	99.7	45.2-137		%REC	194601	1	08/12/2014 15:01	YH
Surr: Nitrobenzene-d5	77.8	42-120		%REC	194601	1	08/12/2014 15:01	YH
Surr: Phenol-d5	57.2	12.3-120		%REC	194601	1	08/12/2014 15:01	YH

Mercury, Total SW7470A
(SW7470A)

Qualifiers: * Value exceeds maximum contaminant level
 BRL Below reporting limit
 H Holding times for preparation or analysis exceeded
 N Analyte not NELAC certified
 B Analyte detected in the associated method blank
 > Greater than Result value

E Estimated (value above quantitation range)
 S Spike Recovery outside limits due to matrix
 Narr See case narrative
 NC Not confirmed
 < Less than Result value
 J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 18-Aug-14

Client: ERM-Southeast
 Project Name: AGL Macon
 Lab ID: 1408474-001

Client Sample ID: MW-23D-20140804-01
 Collection Date: 8/4/2014 2:30:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	194664	1	08/11/2014 13:51	CG
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	194594	1	08/07/2014 15:00	PF
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	194631	1	08/08/2014 22:35	JL
Arsenic	BRL	0.0500		mg/L	194631	1	08/08/2014 22:35	JL
Barium	0.0566	0.0200		mg/L	194631	1	08/08/2014 22:35	JL
Beryllium	BRL	0.0100		mg/L	194631	1	08/08/2014 22:35	JL
Cadmium	BRL	0.0050		mg/L	194631	1	08/08/2014 22:35	JL
Chromium	BRL	0.0100		mg/L	194631	1	08/08/2014 22:35	JL
Copper	BRL	0.0100		mg/L	194631	1	08/08/2014 22:35	JL
Lead	BRL	0.0100		mg/L	194631	1	08/08/2014 22:35	JL
Nickel	BRL	0.0200		mg/L	194631	1	08/08/2014 22:35	JL
Zinc	BRL	0.0200		mg/L	194631	1	08/08/2014 22:35	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 18-Aug-14

Client: ERM-Southeast
 Project Name: AGL Macon
 Lab ID: 1408474-002

Client Sample ID: MW-25D-20140804-01
 Collection Date: 8/4/2014 4:00:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	194591	1	08/07/2014 14:04	GK
Carbon disulfide	BRL	5.0		ug/L	194591	1	08/07/2014 14:04	GK
Ethylbenzene	BRL	5.0		ug/L	194591	1	08/07/2014 14:04	GK
Toluene	BRL	5.0		ug/L	194591	1	08/07/2014 14:04	GK
Xylenes, Total	BRL	5.0		ug/L	194591	1	08/07/2014 14:04	GK
Surr: 4-Bromofluorobenzene	89.8	66.2-120		%REC	194591	1	08/07/2014 14:04	GK
Surr: Dibromofluoromethane	99.4	79.5-121		%REC	194591	1	08/07/2014 14:04	GK
Surr: Toluene-d8	103	77-117		%REC	194591	1	08/07/2014 14:04	GK
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	194592	1	08/11/2014 14:45	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194592	1	08/11/2014 14:45	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194592	1	08/11/2014 14:45	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194592	1	08/11/2014 14:45	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194592	1	08/11/2014 14:45	YH
Surr: 4-Terphenyl-d14	79.3	53.2-145		%REC	194592	1	08/11/2014 14:45	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194690	1	08/11/2014 16:46	YH
2-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 16:46	YH
3,4-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 16:46	YH
Acenaphthene	BRL	10		ug/L	194690	1	08/11/2014 16:46	YH
Acenaphthylene	BRL	10		ug/L	194690	1	08/11/2014 16:46	YH
Anthracene	BRL	10		ug/L	194690	1	08/11/2014 16:46	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194690	1	08/11/2014 16:46	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 16:46	YH
Chrysene	BRL	10		ug/L	194690	1	08/11/2014 16:46	YH
Fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 16:46	YH
Fluorene	BRL	10		ug/L	194690	1	08/11/2014 16:46	YH
Naphthalene	BRL	10		ug/L	194690	1	08/11/2014 16:46	YH
Phenanthrene	BRL	10		ug/L	194690	1	08/11/2014 16:46	YH
Phenol	BRL	10		ug/L	194690	1	08/11/2014 16:46	YH
Pyrene	BRL	10		ug/L	194690	1	08/11/2014 16:46	YH
Surr: 2,4,6-Tribromophenol	90.9	51.5-124		%REC	194690	1	08/11/2014 16:46	YH
Surr: 2-Fluorobiphenyl	95.3	51.7-118		%REC	194690	1	08/11/2014 16:46	YH
Surr: 2-Fluorophenol	60	26-120		%REC	194690	1	08/11/2014 16:46	YH
Surr: 4-Terphenyl-d14	94.6	45.2-137		%REC	194690	1	08/11/2014 16:46	YH
Surr: Nitrobenzene-d5	81.9	42-120		%REC	194690	1	08/11/2014 16:46	YH
Surr: Phenol-d5	37.8	12.3-120		%REC	194690	1	08/11/2014 16:46	YH

Mercury, Total SW7470A

(SW7470A)

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 18-Aug-14

Client: ERM-Southeast
 Project Name: AGL Macon
 Lab ID: 1408474-002

Client Sample ID: MW-25D-20140804-01
 Collection Date: 8/4/2014 4:00:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	194664	1	08/11/2014 13:31	CG
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	194594	1	08/07/2014 15:00	PF
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	194631	1	08/08/2014 21:42	JL
Arsenic	BRL	0.0500		mg/L	194631	1	08/08/2014 21:42	JL
Barium	3.96	0.0200		mg/L	194631	1	08/08/2014 21:42	JL
Beryllium	BRL	0.0100		mg/L	194631	1	08/08/2014 21:42	JL
Cadmium	BRL	0.0050		mg/L	194631	1	08/08/2014 21:42	JL
Chromium	BRL	0.0100		mg/L	194631	1	08/08/2014 21:42	JL
Copper	BRL	0.0100		mg/L	194631	1	08/08/2014 21:42	JL
Lead	BRL	0.0100		mg/L	194631	1	08/08/2014 21:42	JL
Nickel	BRL	0.0200		mg/L	194631	1	08/08/2014 21:42	JL
Zinc	BRL	0.0200		mg/L	194631	1	08/08/2014 21:42	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 18-Aug-14

Client: ERM-Southeast
 Project Name: AGL Macon
 Lab ID: 1408474-003

Client Sample ID: MW-300D-20140804-01
 Collection Date: 8/4/2014 4:05:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	194659	1	08/08/2014 16:54	GK
Carbon disulfide	BRL	5.0		ug/L	194659	1	08/08/2014 16:54	GK
Ethylbenzene	BRL	5.0		ug/L	194659	1	08/08/2014 16:54	GK
Toluene	BRL	5.0		ug/L	194659	1	08/08/2014 16:54	GK
Xylenes, Total	BRL	5.0		ug/L	194659	1	08/08/2014 16:54	GK
Surr: 4-Bromofluorobenzene	89.7	66.2-120		%REC	194659	1	08/08/2014 16:54	GK
Surr: Dibromofluoromethane	102	79.5-121		%REC	194659	1	08/08/2014 16:54	GK
Surr: Toluene-d8	103	77-117		%REC	194659	1	08/08/2014 16:54	GK
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	194657	1	08/12/2014 18:36	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194657	1	08/12/2014 18:36	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194657	1	08/12/2014 18:36	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194657	1	08/12/2014 18:36	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194657	1	08/12/2014 18:36	YH
Surr: 4-Terphenyl-d14	68.5	53.2-145		%REC	194657	1	08/12/2014 18:36	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194601	1	08/13/2014 12:27	YH
2-Methylphenol	BRL	10		ug/L	194601	1	08/13/2014 12:27	YH
3,4-Methylphenol	BRL	10		ug/L	194601	1	08/13/2014 12:27	YH
Acenaphthene	BRL	10		ug/L	194601	1	08/13/2014 12:27	YH
Acenaphthylene	BRL	10		ug/L	194601	1	08/13/2014 12:27	YH
Anthracene	BRL	10		ug/L	194601	1	08/13/2014 12:27	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194601	1	08/13/2014 12:27	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194601	1	08/13/2014 12:27	YH
Chrysene	BRL	10		ug/L	194601	1	08/13/2014 12:27	YH
Fluoranthene	BRL	10		ug/L	194601	1	08/13/2014 12:27	YH
Fluorene	BRL	10		ug/L	194601	1	08/13/2014 12:27	YH
Naphthalene	BRL	10		ug/L	194601	1	08/13/2014 12:27	YH
Phenanthrene	BRL	10		ug/L	194601	1	08/13/2014 12:27	YH
Phenol	BRL	10		ug/L	194601	1	08/13/2014 12:27	YH
Pyrene	BRL	10		ug/L	194601	1	08/13/2014 12:27	YH
Surr: 2,4,6-Tribromophenol	90.9	51.5-124		%REC	194601	1	08/13/2014 12:27	YH
Surr: 2-Fluorobiphenyl	88.9	51.7-118		%REC	194601	1	08/13/2014 12:27	YH
Surr: 2-Fluorophenol	63.2	26-120		%REC	194601	1	08/13/2014 12:27	YH
Surr: 4-Terphenyl-d14	86.4	45.2-137		%REC	194601	1	08/13/2014 12:27	YH
Surr: Nitrobenzene-d5	84.9	42-120		%REC	194601	1	08/13/2014 12:27	YH
Surr: Phenol-d5	41.7	12.3-120		%REC	194601	1	08/13/2014 12:27	YH

Mercury, Total SW7470A**(SW7470A)**

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 18-Aug-14

Client: ERM-Southeast
 Project Name: AGL Macon
 Lab ID: 1408474-003

Client Sample ID: MW-300D-20140804-01
 Collection Date: 8/4/2014 4:05:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	194664	1	08/11/2014 13:39	CG
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	194654	1	08/08/2014 11:00	PF
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	194631	1	08/08/2014 22:06	JL
Arsenic	BRL	0.0500		mg/L	194631	1	08/08/2014 22:06	JL
Barium	1.52	0.0200		mg/L	194631	1	08/08/2014 22:06	JL
Beryllium	0.0113	0.0100		mg/L	194631	1	08/08/2014 22:06	JL
Cadmium	BRL	0.0050		mg/L	194631	1	08/08/2014 22:06	JL
Chromium	BRL	0.0100		mg/L	194631	1	08/08/2014 22:06	JL
Copper	BRL	0.0100		mg/L	194631	1	08/08/2014 22:06	JL
Lead	BRL	0.0100		mg/L	194631	1	08/08/2014 22:06	JL
Nickel	0.0251	0.0200		mg/L	194631	1	08/08/2014 22:06	JL
Zinc	0.0884	0.0200		mg/L	194631	1	08/08/2014 22:06	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 18-Aug-14

Client: ERM-Southeast
 Project Name: AGL Macon
 Lab ID: 1408474-004

Client Sample ID: MW-304D-20140804-01
 Collection Date: 8/4/2014 6:00:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	194591	1	08/07/2014 15:28	GK
Carbon disulfide	BRL	5.0		ug/L	194591	1	08/07/2014 15:28	GK
Ethylbenzene	BRL	5.0		ug/L	194591	1	08/07/2014 15:28	GK
Toluene	BRL	5.0		ug/L	194591	1	08/07/2014 15:28	GK
Xylenes, Total	BRL	5.0		ug/L	194591	1	08/07/2014 15:28	GK
Surr: 4-Bromofluorobenzene	89.2	66.2-120		%REC	194591	1	08/07/2014 15:28	GK
Surr: Dibromofluoromethane	99.8	79.5-121		%REC	194591	1	08/07/2014 15:28	GK
Surr: Toluene-d8	102	77-117		%REC	194591	1	08/07/2014 15:28	GK
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	194592	1	08/11/2014 15:11	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194592	1	08/11/2014 15:11	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194592	1	08/11/2014 15:11	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194592	1	08/11/2014 15:11	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194592	1	08/11/2014 15:11	YH
Surr: 4-Terphenyl-d14	82.4	53.2-145		%REC	194592	1	08/11/2014 15:11	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194601	1	08/12/2014 15:28	YH
2-Methylphenol	BRL	10		ug/L	194601	1	08/12/2014 15:28	YH
3,4-Methylphenol	BRL	10		ug/L	194601	1	08/12/2014 15:28	YH
Acenaphthene	BRL	10		ug/L	194601	1	08/12/2014 15:28	YH
Acenaphthylene	BRL	10		ug/L	194601	1	08/12/2014 15:28	YH
Anthracene	BRL	10		ug/L	194601	1	08/12/2014 15:28	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194601	1	08/12/2014 15:28	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194601	1	08/12/2014 15:28	YH
Chrysene	BRL	10		ug/L	194601	1	08/12/2014 15:28	YH
Fluoranthene	BRL	10		ug/L	194601	1	08/12/2014 15:28	YH
Fluorene	BRL	10		ug/L	194601	1	08/12/2014 15:28	YH
Naphthalene	BRL	10		ug/L	194601	1	08/12/2014 15:28	YH
Phenanthrene	BRL	10		ug/L	194601	1	08/12/2014 15:28	YH
Phenol	BRL	10		ug/L	194601	1	08/12/2014 15:28	YH
Pyrene	BRL	10		ug/L	194601	1	08/12/2014 15:28	YH
Surr: 2,4,6-Tribromophenol	101	51.5-124		%REC	194601	1	08/12/2014 15:28	YH
Surr: 2-Fluorobiphenyl	87.3	51.7-118		%REC	194601	1	08/12/2014 15:28	YH
Surr: 2-Fluorophenol	65.8	26-120		%REC	194601	1	08/12/2014 15:28	YH
Surr: 4-Terphenyl-d14	99.1	45.2-137		%REC	194601	1	08/12/2014 15:28	YH
Surr: Nitrobenzene-d5	73.5	42-120		%REC	194601	1	08/12/2014 15:28	YH
Surr: Phenol-d5	50.5	12.3-120		%REC	194601	1	08/12/2014 15:28	YH
Mercury, Total SW7470A				(SW7470A)				

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 18-Aug-14

Client: ERM-Southeast
 Project Name: AGL Macon
 Lab ID: 1408474-004

Client Sample ID: MW-304D-20140804-01
 Collection Date: 8/4/2014 6:00:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	194664	1	08/11/2014 13:53	CG
Cyanide SW9014					(SW9010C)			
Cyanide, Total	0.012	0.010		mg/L	194594	1	08/07/2014 15:00	PF
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	194631	1	08/08/2014 22:39	JL
Arsenic	BRL	0.0500		mg/L	194631	1	08/08/2014 22:39	JL
Barium	4.87	0.0200		mg/L	194631	1	08/08/2014 22:39	JL
Beryllium	BRL	0.0100		mg/L	194631	1	08/08/2014 22:39	JL
Cadmium	BRL	0.0050		mg/L	194631	1	08/08/2014 22:39	JL
Chromium	BRL	0.0100		mg/L	194631	1	08/08/2014 22:39	JL
Copper	BRL	0.0100		mg/L	194631	1	08/08/2014 22:39	JL
Lead	BRL	0.0100		mg/L	194631	1	08/08/2014 22:39	JL
Nickel	BRL	0.0200		mg/L	194631	1	08/08/2014 22:39	JL
Zinc	BRL	0.0200		mg/L	194631	1	08/08/2014 22:39	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 18-Aug-14

Client: ERM-Southeast
 Project Name: AGL Macon
 Lab ID: 1408474-005

Client Sample ID: MW-206D-20140805-01
 Collection Date: 8/5/2014 8:50:00 AM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	194591	1	08/07/2014 15:56	GK
Carbon disulfide	BRL	5.0		ug/L	194591	1	08/07/2014 15:56	GK
Ethylbenzene	BRL	5.0		ug/L	194591	1	08/07/2014 15:56	GK
Toluene	BRL	5.0		ug/L	194591	1	08/07/2014 15:56	GK
Xylenes, Total	BRL	5.0		ug/L	194591	1	08/07/2014 15:56	GK
Surr: 4-Bromofluorobenzene	91.4	66.2-120		%REC	194591	1	08/07/2014 15:56	GK
Surr: Dibromofluoromethane	98.7	79.5-121		%REC	194591	1	08/07/2014 15:56	GK
Surr: Toluene-d8	102	77-117		%REC	194591	1	08/07/2014 15:56	GK
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	0.14	0.050		ug/L	194592	1	08/11/2014 15:37	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194592	1	08/11/2014 15:37	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194592	1	08/11/2014 15:37	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194592	1	08/11/2014 15:37	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194592	1	08/11/2014 15:37	YH
Surr: 4-Terphenyl-d14	76.6	53.2-145		%REC	194592	1	08/11/2014 15:37	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194601	1	08/12/2014 15:54	YH
2-Methylphenol	BRL	10		ug/L	194601	1	08/12/2014 15:54	YH
3,4-Methylphenol	BRL	10		ug/L	194601	1	08/12/2014 15:54	YH
Acenaphthene	BRL	10		ug/L	194601	1	08/12/2014 15:54	YH
Acenaphthylene	BRL	10		ug/L	194601	1	08/12/2014 15:54	YH
Anthracene	BRL	10		ug/L	194601	1	08/12/2014 15:54	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194601	1	08/12/2014 15:54	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194601	1	08/12/2014 15:54	YH
Chrysene	BRL	10		ug/L	194601	1	08/12/2014 15:54	YH
Fluoranthene	BRL	10		ug/L	194601	1	08/12/2014 15:54	YH
Fluorene	BRL	10		ug/L	194601	1	08/12/2014 15:54	YH
Naphthalene	BRL	10		ug/L	194601	1	08/12/2014 15:54	YH
Phenanthrene	BRL	10		ug/L	194601	1	08/12/2014 15:54	YH
Phenol	BRL	10		ug/L	194601	1	08/12/2014 15:54	YH
Pyrene	BRL	10		ug/L	194601	1	08/12/2014 15:54	YH
Surr: 2,4,6-Tribromophenol	99.1	51.5-124		%REC	194601	1	08/12/2014 15:54	YH
Surr: 2-Fluorobiphenyl	86.1	51.7-118		%REC	194601	1	08/12/2014 15:54	YH
Surr: 2-Fluorophenol	65.9	26-120		%REC	194601	1	08/12/2014 15:54	YH
Surr: 4-Terphenyl-d14	107	45.2-137		%REC	194601	1	08/12/2014 15:54	YH
Surr: Nitrobenzene-d5	69.9	42-120		%REC	194601	1	08/12/2014 15:54	YH
Surr: Phenol-d5	55.9	12.3-120		%REC	194601	1	08/12/2014 15:54	YH
Mercury, Total SW7470A				(SW7470A)				

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 18-Aug-14

Client: ERM-Southeast
 Project Name: AGL Macon
 Lab ID: 1408474-005

Client Sample ID: MW-206D-20140805-01
 Collection Date: 8/5/2014 8:50:00 AM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	194664	1	08/11/2014 13:55	CG
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	194594	1	08/07/2014 15:00	PF
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	194631	1	08/08/2014 22:43	JL
Arsenic	BRL	0.0500		mg/L	194631	1	08/08/2014 22:43	JL
Barium	0.143	0.0200		mg/L	194631	1	08/08/2014 22:43	JL
Beryllium	BRL	0.0100		mg/L	194631	1	08/08/2014 22:43	JL
Cadmium	BRL	0.0050		mg/L	194631	1	08/08/2014 22:43	JL
Chromium	BRL	0.0100		mg/L	194631	1	08/08/2014 22:43	JL
Copper	BRL	0.0100		mg/L	194631	1	08/08/2014 22:43	JL
Lead	BRL	0.0100		mg/L	194631	1	08/08/2014 22:43	JL
Nickel	BRL	0.0200		mg/L	194631	1	08/08/2014 22:43	JL
Zinc	BRL	0.0200		mg/L	194631	1	08/08/2014 22:43	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 18-Aug-14

Client: ERM-Southeast
Project Name: AGL Macon
Lab ID: 1408474-006

Client Sample ID: MW-113D-20140805-01
Collection Date: 8/5/2014 9:15:00 AM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	194591	1	08/07/2014 16:24	GK
Carbon disulfide	BRL	5.0		ug/L	194591	1	08/07/2014 16:24	GK
Ethylbenzene	BRL	5.0		ug/L	194591	1	08/07/2014 16:24	GK
Toluene	BRL	5.0		ug/L	194591	1	08/07/2014 16:24	GK
Xylenes, Total	BRL	5.0		ug/L	194591	1	08/07/2014 16:24	GK
Surr: 4-Bromofluorobenzene	91.5	66.2-120		%REC	194591	1	08/07/2014 16:24	GK
Surr: Dibromofluoromethane	99.6	79.5-121		%REC	194591	1	08/07/2014 16:24	GK
Surr: Toluene-d8	102	77-117		%REC	194591	1	08/07/2014 16:24	GK
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	194592	1	08/11/2014 16:03	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194592	1	08/11/2014 16:03	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194592	1	08/11/2014 16:03	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194592	1	08/11/2014 16:03	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194592	1	08/11/2014 16:03	YH
Surr: 4-Terphenyl-d14	78.3	53.2-145		%REC	194592	1	08/11/2014 16:03	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194601	1	08/12/2014 16:21	YH
2-Methylphenol	BRL	10		ug/L	194601	1	08/12/2014 16:21	YH
3,4-Methylphenol	BRL	10		ug/L	194601	1	08/12/2014 16:21	YH
Acenaphthene	BRL	10		ug/L	194601	1	08/12/2014 16:21	YH
Acenaphthylene	BRL	10		ug/L	194601	1	08/12/2014 16:21	YH
Anthracene	BRL	10		ug/L	194601	1	08/12/2014 16:21	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194601	1	08/12/2014 16:21	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194601	1	08/12/2014 16:21	YH
Chrysene	BRL	10		ug/L	194601	1	08/12/2014 16:21	YH
Fluoranthene	BRL	10		ug/L	194601	1	08/12/2014 16:21	YH
Fluorene	BRL	10		ug/L	194601	1	08/12/2014 16:21	YH
Naphthalene	BRL	10		ug/L	194601	1	08/12/2014 16:21	YH
Phenanthrene	BRL	10		ug/L	194601	1	08/12/2014 16:21	YH
Phenol	BRL	10		ug/L	194601	1	08/12/2014 16:21	YH
Pyrene	BRL	10		ug/L	194601	1	08/12/2014 16:21	YH
Surr: 2,4,6-Tribromophenol	91.9	51.5-124		%REC	194601	1	08/12/2014 16:21	YH
Surr: 2-Fluorobiphenyl	80	51.7-118		%REC	194601	1	08/12/2014 16:21	YH
Surr: 2-Fluorophenol	66.7	26-120		%REC	194601	1	08/12/2014 16:21	YH
Surr: 4-Terphenyl-d14	101	45.2-137		%REC	194601	1	08/12/2014 16:21	YH
Surr: Nitrobenzene-d5	71.5	42-120		%REC	194601	1	08/12/2014 16:21	YH
Surr: Phenol-d5	53.5	12.3-120		%REC	194601	1	08/12/2014 16:21	YH
Mercury, Total SW7470A				(SW7470A)				

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 18-Aug-14

Client: ERM-Southeast	Client Sample ID: MW-113D-20140805-01
Project Name: AGL Macon	Collection Date: 8/5/2014 9:15:00 AM
Lab ID: 1408474-006	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	194664	1	08/11/2014 13:57	CG
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	194594	1	08/07/2014 15:00	PF
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	194631	1	08/08/2014 22:47	JL
Arsenic	BRL	0.0500		mg/L	194631	1	08/08/2014 22:47	JL
Barium	0.0803	0.0200		mg/L	194631	1	08/08/2014 22:47	JL
Beryllium	BRL	0.0100		mg/L	194631	1	08/08/2014 22:47	JL
Cadmium	BRL	0.0050		mg/L	194631	1	08/08/2014 22:47	JL
Chromium	BRL	0.0100		mg/L	194631	1	08/08/2014 22:47	JL
Copper	BRL	0.0100		mg/L	194631	1	08/08/2014 22:47	JL
Lead	BRL	0.0100		mg/L	194631	1	08/08/2014 22:47	JL
Nickel	BRL	0.0200		mg/L	194631	1	08/08/2014 22:47	JL
Zinc	BRL	0.0200		mg/L	194631	1	08/08/2014 22:47	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 18-Aug-14

Client: ERM-Southeast
Project Name: AGL Macon
Lab ID: 1408474-007

Client Sample ID: MW-108D-20140805-01
Collection Date: 8/5/2014 9:50:00 AM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	194591	1	08/07/2014 16:52	GK
Carbon disulfide	BRL	5.0		ug/L	194591	1	08/07/2014 16:52	GK
Ethylbenzene	BRL	5.0		ug/L	194591	1	08/07/2014 16:52	GK
Toluene	BRL	5.0		ug/L	194591	1	08/07/2014 16:52	GK
Xylenes, Total	BRL	5.0		ug/L	194591	1	08/07/2014 16:52	GK
Surr: 4-Bromofluorobenzene	89	66.2-120		%REC	194591	1	08/07/2014 16:52	GK
Surr: Dibromofluoromethane	103	79.5-121		%REC	194591	1	08/07/2014 16:52	GK
Surr: Toluene-d8	104	77-117		%REC	194591	1	08/07/2014 16:52	GK
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	194592	1	08/11/2014 16:29	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194592	1	08/11/2014 16:29	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194592	1	08/11/2014 16:29	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194592	1	08/11/2014 16:29	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194592	1	08/11/2014 16:29	YH
Surr: 4-Terphenyl-d14	76.9	53.2-145		%REC	194592	1	08/11/2014 16:29	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194601	1	08/12/2014 16:47	YH
2-Methylphenol	BRL	10		ug/L	194601	1	08/12/2014 16:47	YH
3,4-Methylphenol	BRL	10		ug/L	194601	1	08/12/2014 16:47	YH
Acenaphthene	BRL	10		ug/L	194601	1	08/12/2014 16:47	YH
Acenaphthylene	BRL	10		ug/L	194601	1	08/12/2014 16:47	YH
Anthracene	BRL	10		ug/L	194601	1	08/12/2014 16:47	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194601	1	08/12/2014 16:47	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194601	1	08/12/2014 16:47	YH
Chrysene	BRL	10		ug/L	194601	1	08/12/2014 16:47	YH
Fluoranthene	BRL	10		ug/L	194601	1	08/12/2014 16:47	YH
Fluorene	BRL	10		ug/L	194601	1	08/12/2014 16:47	YH
Naphthalene	BRL	10		ug/L	194601	1	08/12/2014 16:47	YH
Phenanthrene	BRL	10		ug/L	194601	1	08/12/2014 16:47	YH
Phenol	BRL	10		ug/L	194601	1	08/12/2014 16:47	YH
Pyrene	BRL	10		ug/L	194601	1	08/12/2014 16:47	YH
Surr: 2,4,6-Tribromophenol	87.8	51.5-124		%REC	194601	1	08/12/2014 16:47	YH
Surr: 2-Fluorobiphenyl	78.1	51.7-118		%REC	194601	1	08/12/2014 16:47	YH
Surr: 2-Fluorophenol	65.2	26-120		%REC	194601	1	08/12/2014 16:47	YH
Surr: 4-Terphenyl-d14	99.5	45.2-137		%REC	194601	1	08/12/2014 16:47	YH
Surr: Nitrobenzene-d5	68.5	42-120		%REC	194601	1	08/12/2014 16:47	YH
Surr: Phenol-d5	51.2	12.3-120		%REC	194601	1	08/12/2014 16:47	YH
Mercury, Total SW7470A				(SW7470A)				

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 18-Aug-14

Client:	ERM-Southeast	Client Sample ID:	MW-108D-20140805-01
Project Name:	AGL Macon	Collection Date:	8/5/2014 9:50:00 AM
Lab ID:	1408474-007	Matrix:	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	194664	1	08/11/2014 13:59	CG
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	194594	1	08/07/2014 15:00	PF
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	194631	1	08/08/2014 22:51	JL
Arsenic	BRL	0.0500		mg/L	194631	1	08/08/2014 22:51	JL
Barium	0.632	0.0200		mg/L	194631	1	08/08/2014 22:51	JL
Beryllium	BRL	0.0100		mg/L	194631	1	08/08/2014 22:51	JL
Cadmium	0.0131	0.0050		mg/L	194631	1	08/08/2014 22:51	JL
Chromium	BRL	0.0100		mg/L	194631	1	08/08/2014 22:51	JL
Copper	BRL	0.0100		mg/L	194631	1	08/08/2014 22:51	JL
Lead	BRL	0.0100		mg/L	194631	1	08/08/2014 22:51	JL
Nickel	BRL	0.0200		mg/L	194631	1	08/08/2014 22:51	JL
Zinc	0.0501	0.0200		mg/L	194631	1	08/08/2014 22:51	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 18-Aug-14

Client: ERM-Southeast
 Project Name: AGL Macon
 Lab ID: 1408474-008

Client Sample ID: MW-112D-20140805-01
 Collection Date: 8/5/2014 10:15:00 AM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	194591	1	08/07/2014 17:20	GK
Carbon disulfide	BRL	5.0		ug/L	194591	1	08/07/2014 17:20	GK
Ethylbenzene	BRL	5.0		ug/L	194591	1	08/07/2014 17:20	GK
Toluene	BRL	5.0		ug/L	194591	1	08/07/2014 17:20	GK
Xylenes, Total	BRL	5.0		ug/L	194591	1	08/07/2014 17:20	GK
Surr: 4-Bromofluorobenzene	89.9	66.2-120		%REC	194591	1	08/07/2014 17:20	GK
Surr: Dibromofluoromethane	102	79.5-121		%REC	194591	1	08/07/2014 17:20	GK
Surr: Toluene-d8	105	77-117		%REC	194591	1	08/07/2014 17:20	GK
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	194592	1	08/11/2014 16:55	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194592	1	08/11/2014 16:55	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194592	1	08/11/2014 16:55	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194592	1	08/11/2014 16:55	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194592	1	08/11/2014 16:55	YH
Surr: 4-Terphenyl-d14	83.8	53.2-145		%REC	194592	1	08/11/2014 16:55	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194601	1	08/12/2014 17:13	YH
2-Methylphenol	BRL	10		ug/L	194601	1	08/12/2014 17:13	YH
3,4-Methylphenol	BRL	10		ug/L	194601	1	08/12/2014 17:13	YH
Acenaphthene	BRL	10		ug/L	194601	1	08/12/2014 17:13	YH
Acenaphthylene	BRL	10		ug/L	194601	1	08/12/2014 17:13	YH
Anthracene	BRL	10		ug/L	194601	1	08/12/2014 17:13	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194601	1	08/12/2014 17:13	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194601	1	08/12/2014 17:13	YH
Chrysene	BRL	10		ug/L	194601	1	08/12/2014 17:13	YH
Fluoranthene	BRL	10		ug/L	194601	1	08/12/2014 17:13	YH
Fluorene	BRL	10		ug/L	194601	1	08/12/2014 17:13	YH
Naphthalene	BRL	10		ug/L	194601	1	08/12/2014 17:13	YH
Phenanthrene	BRL	10		ug/L	194601	1	08/12/2014 17:13	YH
Phenol	BRL	10		ug/L	194601	1	08/12/2014 17:13	YH
Pyrene	BRL	10		ug/L	194601	1	08/12/2014 17:13	YH
Surr: 2,4,6-Tribromophenol	88.5	51.5-124		%REC	194601	1	08/12/2014 17:13	YH
Surr: 2-Fluorobiphenyl	79	51.7-118		%REC	194601	1	08/12/2014 17:13	YH
Surr: 2-Fluorophenol	68.2	26-120		%REC	194601	1	08/12/2014 17:13	YH
Surr: 4-Terphenyl-d14	102	45.2-137		%REC	194601	1	08/12/2014 17:13	YH
Surr: Nitrobenzene-d5	70.1	42-120		%REC	194601	1	08/12/2014 17:13	YH
Surr: Phenol-d5	38	12.3-120		%REC	194601	1	08/12/2014 17:13	YH
Mercury, Total SW7470A				(SW7470A)				

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 18-Aug-14

Client: ERM-Southeast
 Project Name: AGL Macon
 Lab ID: 1408474-008

Client Sample ID: MW-112D-20140805-01
 Collection Date: 8/5/2014 10:15:00 AM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	194664	1	08/11/2014 14:01	CG
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	194594	1	08/07/2014 15:00	PF
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	194631	1	08/08/2014 22:55	JL
Arsenic	BRL	0.0500		mg/L	194631	1	08/08/2014 22:55	JL
Barium	0.225	0.0200		mg/L	194631	1	08/08/2014 22:55	JL
Beryllium	BRL	0.0100		mg/L	194631	1	08/08/2014 22:55	JL
Cadmium	BRL	0.0050		mg/L	194631	1	08/08/2014 22:55	JL
Chromium	BRL	0.0100		mg/L	194631	1	08/08/2014 22:55	JL
Copper	BRL	0.0100		mg/L	194631	1	08/08/2014 22:55	JL
Lead	BRL	0.0100		mg/L	194631	1	08/08/2014 22:55	JL
Nickel	BRL	0.0200		mg/L	194631	1	08/08/2014 22:55	JL
Zinc	BRL	0.0200		mg/L	194631	1	08/08/2014 22:55	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 18-Aug-14

Client: ERM-Southeast
 Project Name: AGL Macon
 Lab ID: 1408474-009

Client Sample ID: MW-12DRR-20140805-01
 Collection Date: 8/5/2014 11:25:00 AM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	340	50		ug/L	194591	10	08/07/2014 18:16	GK
Carbon disulfide	BRL	5.0		ug/L	194591	1	08/07/2014 17:48	GK
Ethylbenzene	130	5.0		ug/L	194591	1	08/07/2014 17:48	GK
Toluene	5.4	5.0		ug/L	194591	1	08/07/2014 17:48	GK
Xylenes, Total	56	5.0		ug/L	194591	1	08/07/2014 17:48	GK
Surr: 4-Bromofluorobenzene	94.5	66.2-120		%REC	194591	10	08/07/2014 18:16	GK
Surr: 4-Bromofluorobenzene	99.3	66.2-120		%REC	194591	1	08/07/2014 17:48	GK
Surr: Dibromofluoromethane	97.3	79.5-121		%REC	194591	10	08/07/2014 18:16	GK
Surr: Dibromofluoromethane	99	79.5-121		%REC	194591	1	08/07/2014 17:48	GK
Surr: Toluene-d8	102	77-117		%REC	194591	1	08/07/2014 17:48	GK
Surr: Toluene-d8	101	77-117		%REC	194591	10	08/07/2014 18:16	GK
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	0.17	0.050		ug/L	194657	1	08/12/2014 19:01	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194657	1	08/12/2014 19:01	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194657	1	08/12/2014 19:01	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194657	1	08/12/2014 19:01	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194657	1	08/12/2014 19:01	YH
Surr: 4-Terphenyl-d14	75.7	53.2-145		%REC	194657	1	08/12/2014 19:01	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194690	1	08/11/2014 17:12	YH
2-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 17:12	YH
3,4-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 17:12	YH
Acenaphthene	39	10		ug/L	194690	1	08/11/2014 17:12	YH
Acenaphthylene	16	10		ug/L	194690	1	08/11/2014 17:12	YH
Anthracene	BRL	10		ug/L	194690	1	08/11/2014 17:12	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194690	1	08/11/2014 17:12	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 17:12	YH
Chrysene	BRL	10		ug/L	194690	1	08/11/2014 17:12	YH
Fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 17:12	YH
Fluorene	48	10		ug/L	194690	1	08/11/2014 17:12	YH
Naphthalene	1000	100		ug/L	194690	10	08/13/2014 02:36	YH
Phenanthrene	25	10		ug/L	194690	1	08/11/2014 17:12	YH
Phenol	BRL	10		ug/L	194690	1	08/11/2014 17:12	YH
Pyrene	BRL	10		ug/L	194690	1	08/11/2014 17:12	YH
Surr: 2,4,6-Tribromophenol	93.7	51.5-124		%REC	194690	1	08/11/2014 17:12	YH
Surr: 2-Fluorobiphenyl	86.5	51.7-118		%REC	194690	1	08/11/2014 17:12	YH
Surr: 2-Fluorophenol	63.6	26-120		%REC	194690	1	08/11/2014 17:12	YH
Surr: 4-Terphenyl-d14	87.2	45.2-137		%REC	194690	1	08/11/2014 17:12	YH
Surr: Nitrobenzene-d5	77.7	42-120		%REC	194690	1	08/11/2014 17:12	YH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 18-Aug-14

Client: ERM-Southeast
Project Name: AGL Macon
Lab ID: 1408474-009

Client Sample ID: MW-12DRR-20140805-01
Collection Date: 8/5/2014 11:25:00 AM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS	SW8270D				(SW3510C)			
Surr: Phenol-d5	50.2	12.3-120		%REC	194690	1	08/11/2014 17:12	YH
Mercury, Total	SW7470A				(SW7470A)			
Mercury	BRL	0.00020		mg/L	194664	1	08/11/2014 14:03	CG
Cyanide	SW9014				(SW9010C)			
Cyanide, Total	0.048	0.010		mg/L	194594	1	08/07/2014 15:00	PF
METALS, TOTAL	SW6010C				(SW3010A)			
Antimony	BRL	0.0200		mg/L	194631	1	08/08/2014 22:59	JL
Arsenic	BRL	0.0500		mg/L	194631	1	08/08/2014 22:59	JL
Barium	1.61	0.0200		mg/L	194631	1	08/08/2014 22:59	JL
Beryllium	BRL	0.0100		mg/L	194631	1	08/08/2014 22:59	JL
Cadmium	BRL	0.0050		mg/L	194631	1	08/08/2014 22:59	JL
Chromium	BRL	0.0100		mg/L	194631	1	08/08/2014 22:59	JL
Copper	BRL	0.0100		mg/L	194631	1	08/08/2014 22:59	JL
Lead	BRL	0.0100		mg/L	194631	1	08/08/2014 22:59	JL
Nickel	BRL	0.0200		mg/L	194631	1	08/08/2014 22:59	JL
Zinc	BRL	0.0200		mg/L	194631	1	08/08/2014 22:59	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 18-Aug-14

Client: ERM-Southeast
 Project Name: AGL Macon
 Lab ID: 1408474-010

Client Sample ID: MW-09D-20140805-01
 Collection Date: 8/5/2014 11:45:00 AM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	77	5.0		ug/L	194591	1	08/07/2014 18:44	GK
Carbon disulfide	BRL	5.0		ug/L	194591	1	08/07/2014 18:44	GK
Ethylbenzene	BRL	5.0		ug/L	194591	1	08/07/2014 18:44	GK
Toluene	BRL	5.0		ug/L	194591	1	08/07/2014 18:44	GK
Xylenes, Total	BRL	5.0		ug/L	194591	1	08/07/2014 18:44	GK
Surr: 4-Bromofluorobenzene	93.5	66.2-120		%REC	194591	1	08/07/2014 18:44	GK
Surr: Dibromofluoromethane	96.6	79.5-121		%REC	194591	1	08/07/2014 18:44	GK
Surr: Toluene-d8	100	77-117		%REC	194591	1	08/07/2014 18:44	GK
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	194657	1	08/12/2014 19:27	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194657	1	08/12/2014 19:27	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194657	1	08/12/2014 19:27	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194657	1	08/12/2014 19:27	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194657	1	08/12/2014 19:27	YH
Surr: 4-Terphenyl-d14	57.3	53.2-145		%REC	194657	1	08/12/2014 19:27	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194690	1	08/11/2014 17:38	YH
2-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 17:38	YH
3,4-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 17:38	YH
Acenaphthene	BRL	10		ug/L	194690	1	08/11/2014 17:38	YH
Acenaphthylene	BRL	10		ug/L	194690	1	08/11/2014 17:38	YH
Anthracene	BRL	10		ug/L	194690	1	08/11/2014 17:38	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194690	1	08/11/2014 17:38	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 17:38	YH
Chrysene	BRL	10		ug/L	194690	1	08/11/2014 17:38	YH
Fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 17:38	YH
Fluorene	BRL	10		ug/L	194690	1	08/11/2014 17:38	YH
Naphthalene	130	10		ug/L	194690	1	08/11/2014 17:38	YH
Phenanthrene	BRL	10		ug/L	194690	1	08/11/2014 17:38	YH
Phenol	BRL	10		ug/L	194690	1	08/11/2014 17:38	YH
Pyrene	BRL	10		ug/L	194690	1	08/11/2014 17:38	YH
Surr: 2,4,6-Tribromophenol	90	51.5-124		%REC	194690	1	08/11/2014 17:38	YH
Surr: 2-Fluorobiphenyl	78.4	51.7-118		%REC	194690	1	08/11/2014 17:38	YH
Surr: 2-Fluorophenol	58.3	26-120		%REC	194690	1	08/11/2014 17:38	YH
Surr: 4-Terphenyl-d14	101	45.2-137		%REC	194690	1	08/11/2014 17:38	YH
Surr: Nitrobenzene-d5	62.1	42-120		%REC	194690	1	08/11/2014 17:38	YH
Surr: Phenol-d5	44.5	12.3-120		%REC	194690	1	08/11/2014 17:38	YH

Mercury, Total SW7470A**(SW7470A)**

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 18-Aug-14

Client: ERM-Southeast
 Project Name: AGL Macon
 Lab ID: 1408474-010

Client Sample ID: MW-09D-20140805-01
 Collection Date: 8/5/2014 11:45:00 AM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	194664	1	08/11/2014 14:09	CG
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	194594	1	08/07/2014 15:00	PF
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	194631	1	08/08/2014 23:10	JL
Arsenic	BRL	0.0500		mg/L	194631	1	08/08/2014 23:10	JL
Barium	3.05	0.0200		mg/L	194631	1	08/08/2014 23:10	JL
Beryllium	BRL	0.0100		mg/L	194631	1	08/08/2014 23:10	JL
Cadmium	BRL	0.0050		mg/L	194631	1	08/08/2014 23:10	JL
Chromium	BRL	0.0100		mg/L	194631	1	08/08/2014 23:10	JL
Copper	BRL	0.0100		mg/L	194631	1	08/08/2014 23:10	JL
Lead	BRL	0.0100		mg/L	194631	1	08/08/2014 23:10	JL
Nickel	BRL	0.0200		mg/L	194631	1	08/08/2014 23:10	JL
Zinc	BRL	0.0200		mg/L	194631	1	08/08/2014 23:10	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 18-Aug-14

Client: ERM-Southeast
Project Name: AGL Macon
Lab ID: 1408474-011

Client Sample ID: DUP-02-20140805-01
Collection Date: 8/5/2014
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	370	50		ug/L	194591	10	08/09/2014 15:48	GK
Carbon disulfide	BRL	5.0		ug/L	194591	1	08/07/2014 19:12	GK
Ethylbenzene	160	5.0		ug/L	194591	1	08/07/2014 19:12	GK
Toluene	5.9	5.0		ug/L	194591	1	08/07/2014 19:12	GK
Xylenes, Total	65	5.0		ug/L	194591	1	08/07/2014 19:12	GK
Surr: 4-Bromofluorobenzene	93.6	66.2-120		%REC	194591	10	08/09/2014 15:48	GK
Surr: 4-Bromofluorobenzene	97.6	66.2-120		%REC	194591	1	08/07/2014 19:12	GK
Surr: Dibromofluoromethane	99	79.5-121		%REC	194591	1	08/07/2014 19:12	GK
Surr: Dibromofluoromethane	99.5	79.5-121		%REC	194591	10	08/09/2014 15:48	GK
Surr: Toluene-d8	100	77-117		%REC	194591	1	08/07/2014 19:12	GK
Surr: Toluene-d8	102	77-117		%REC	194591	10	08/09/2014 15:48	GK
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	0.14	0.050		ug/L	194657	1	08/12/2014 19:52	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194657	1	08/12/2014 19:52	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194657	1	08/12/2014 19:52	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194657	1	08/12/2014 19:52	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194657	1	08/12/2014 19:52	YH
Surr: 4-Terphenyl-d14	61	53.2-145		%REC	194657	1	08/12/2014 19:52	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194690	1	08/11/2014 18:04	YH
2-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 18:04	YH
3,4-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 18:04	YH
Acenaphthene	33	10		ug/L	194690	1	08/11/2014 18:04	YH
Acenaphthylene	14	10		ug/L	194690	1	08/11/2014 18:04	YH
Anthracene	BRL	10		ug/L	194690	1	08/11/2014 18:04	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194690	1	08/11/2014 18:04	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 18:04	YH
Chrysene	BRL	10		ug/L	194690	1	08/11/2014 18:04	YH
Fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 18:04	YH
Fluorene	42	10		ug/L	194690	1	08/11/2014 18:04	YH
Naphthalene	870	100		ug/L	194690	10	08/13/2014 03:02	YH
Phenanthrene	23	10		ug/L	194690	1	08/11/2014 18:04	YH
Phenol	BRL	10		ug/L	194690	1	08/11/2014 18:04	YH
Pyrene	BRL	10		ug/L	194690	1	08/11/2014 18:04	YH
Surr: 2,4,6-Tribromophenol	94	51.5-124		%REC	194690	1	08/11/2014 18:04	YH
Surr: 2-Fluorobiphenyl	80.2	51.7-118		%REC	194690	1	08/11/2014 18:04	YH
Surr: 2-Fluorophenol	56.5	26-120		%REC	194690	1	08/11/2014 18:04	YH
Surr: 4-Terphenyl-d14	86.7	45.2-137		%REC	194690	1	08/11/2014 18:04	YH
Surr: Nitrobenzene-d5	68.7	42-120		%REC	194690	1	08/11/2014 18:04	YH

Qualifiers: * Value exceeds maximum contaminant level
 BRL Below reporting limit
 H Holding times for preparation or analysis exceeded
 N Analyte not NELAC certified
 B Analyte detected in the associated method blank
 > Greater than Result value

E Estimated (value above quantitation range)
 S Spike Recovery outside limits due to matrix
 Narr See case narrative
 NC Not confirmed
 < Less than Result value
 J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 18-Aug-14

Client:	ERM-Southeast	Client Sample ID:	DUP-02-20140805-01
Project Name:	AGL Macon	Collection Date:	8/5/2014
Lab ID:	1408474-011	Matrix:	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS	SW8270D				(SW3510C)			
Surr: Phenol-d5	43	12.3-120		%REC	194690	1	08/11/2014 18:04	YH
Mercury, Total	SW7470A				(SW7470A)			
Mercury	BRL	0.00020		mg/L	194664	1	08/11/2014 14:11	CG
Cyanide	SW9014				(SW9010C)			
Cyanide, Total	0.037	0.010		mg/L	194594	1	08/07/2014 15:00	PF
METALS, TOTAL	SW6010C				(SW3010A)			
Antimony	BRL	0.0200		mg/L	194631	1	08/08/2014 23:14	JL
Arsenic	BRL	0.0500		mg/L	194631	1	08/08/2014 23:14	JL
Barium	1.63	0.0200		mg/L	194631	1	08/08/2014 23:14	JL
Beryllium	BRL	0.0100		mg/L	194631	1	08/08/2014 23:14	JL
Cadmium	BRL	0.0050		mg/L	194631	1	08/08/2014 23:14	JL
Chromium	BRL	0.0100		mg/L	194631	1	08/08/2014 23:14	JL
Copper	BRL	0.0100		mg/L	194631	1	08/08/2014 23:14	JL
Lead	BRL	0.0100		mg/L	194631	1	08/08/2014 23:14	JL
Nickel	BRL	0.0200		mg/L	194631	1	08/08/2014 23:14	JL
Zinc	BRL	0.0200		mg/L	194631	1	08/08/2014 23:14	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
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- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 18-Aug-14

Client: ERM-Southeast
Project Name: AGL Macon
Lab ID: 1408474-012

Client Sample ID: DUP-01-20140805-01
Collection Date: 8/5/2014
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	86	5.0		ug/L	194591	1	08/07/2014 19:40	GK
Carbon disulfide	BRL	5.0		ug/L	194591	1	08/07/2014 19:40	GK
Ethylbenzene	BRL	5.0		ug/L	194591	1	08/07/2014 19:40	GK
Toluene	BRL	5.0		ug/L	194591	1	08/07/2014 19:40	GK
Xylenes, Total	BRL	5.0		ug/L	194591	1	08/07/2014 19:40	GK
Surr: 4-Bromofluorobenzene	91.7	66.2-120		%REC	194591	1	08/07/2014 19:40	GK
Surr: Dibromofluoromethane	98.2	79.5-121		%REC	194591	1	08/07/2014 19:40	GK
Surr: Toluene-d8	101	77-117		%REC	194591	1	08/07/2014 19:40	GK
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	194657	1	08/12/2014 20:18	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194657	1	08/12/2014 20:18	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194657	1	08/12/2014 20:18	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194657	1	08/12/2014 20:18	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194657	1	08/12/2014 20:18	YH
Surr: 4-Terphenyl-d14	84.1	53.2-145		%REC	194657	1	08/12/2014 20:18	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194690	1	08/11/2014 18:31	YH
2-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 18:31	YH
3,4-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 18:31	YH
Acenaphthene	BRL	10		ug/L	194690	1	08/11/2014 18:31	YH
Acenaphthylene	BRL	10		ug/L	194690	1	08/11/2014 18:31	YH
Anthracene	BRL	10		ug/L	194690	1	08/11/2014 18:31	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194690	1	08/11/2014 18:31	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 18:31	YH
Chrysene	BRL	10		ug/L	194690	1	08/11/2014 18:31	YH
Fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 18:31	YH
Fluorene	BRL	10		ug/L	194690	1	08/11/2014 18:31	YH
Naphthalene	120	10		ug/L	194690	1	08/11/2014 18:31	YH
Phenanthrene	BRL	10		ug/L	194690	1	08/11/2014 18:31	YH
Phenol	BRL	10		ug/L	194690	1	08/11/2014 18:31	YH
Pyrene	BRL	10		ug/L	194690	1	08/11/2014 18:31	YH
Surr: 2,4,6-Tribromophenol	87.9	51.5-124		%REC	194690	1	08/11/2014 18:31	YH
Surr: 2-Fluorobiphenyl	80.2	51.7-118		%REC	194690	1	08/11/2014 18:31	YH
Surr: 2-Fluorophenol	63.8	26-120		%REC	194690	1	08/11/2014 18:31	YH
Surr: 4-Terphenyl-d14	79.9	45.2-137		%REC	194690	1	08/11/2014 18:31	YH
Surr: Nitrobenzene-d5	65	42-120		%REC	194690	1	08/11/2014 18:31	YH
Surr: Phenol-d5	48.2	12.3-120		%REC	194690	1	08/11/2014 18:31	YH

Mercury, Total SW7470A
(SW7470A)

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 18-Aug-14

Client: ERM-Southeast
 Project Name: AGL Macon
 Lab ID: 1408474-012

Client Sample ID: DUP-01-20140805-01
 Collection Date: 8/5/2014
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	194664	1	08/11/2014 14:13	CG
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	194594	1	08/07/2014 15:00	PF
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	194631	1	08/08/2014 23:18	JL
Arsenic	BRL	0.0500		mg/L	194631	1	08/08/2014 23:18	JL
Barium	3.08	0.0200		mg/L	194631	1	08/08/2014 23:18	JL
Beryllium	BRL	0.0100		mg/L	194631	1	08/08/2014 23:18	JL
Cadmium	BRL	0.0050		mg/L	194631	1	08/08/2014 23:18	JL
Chromium	BRL	0.0100		mg/L	194631	1	08/08/2014 23:18	JL
Copper	BRL	0.0100		mg/L	194631	1	08/08/2014 23:18	JL
Lead	BRL	0.0100		mg/L	194631	1	08/08/2014 23:18	JL
Nickel	BRL	0.0200		mg/L	194631	1	08/08/2014 23:18	JL
Zinc	BRL	0.0200		mg/L	194631	1	08/08/2014 23:18	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 18-Aug-14

Client: ERM-Southeast
 Project Name: AGL Macon
 Lab ID: 1408474-013

Client Sample ID: MW-115D-20140805-01
 Collection Date: 8/5/2014 2:30:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	194591	1	08/07/2014 20:08	GK
Carbon disulfide	BRL	5.0		ug/L	194591	1	08/07/2014 20:08	GK
Ethylbenzene	BRL	5.0		ug/L	194591	1	08/07/2014 20:08	GK
Toluene	BRL	5.0		ug/L	194591	1	08/07/2014 20:08	GK
Xylenes, Total	BRL	5.0		ug/L	194591	1	08/07/2014 20:08	GK
Surr: 4-Bromofluorobenzene	91.5	66.2-120		%REC	194591	1	08/07/2014 20:08	GK
Surr: Dibromofluoromethane	101	79.5-121		%REC	194591	1	08/07/2014 20:08	GK
Surr: Toluene-d8	102	77-117		%REC	194591	1	08/07/2014 20:08	GK
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	194657	1	08/12/2014 20:43	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194657	1	08/12/2014 20:43	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194657	1	08/12/2014 20:43	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194657	1	08/12/2014 20:43	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194657	1	08/12/2014 20:43	YH
Surr: 4-Terphenyl-d14	76.9	53.2-145		%REC	194657	1	08/12/2014 20:43	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194690	1	08/11/2014 18:57	YH
2-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 18:57	YH
3,4-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 18:57	YH
Acenaphthene	BRL	10		ug/L	194690	1	08/11/2014 18:57	YH
Acenaphthylene	BRL	10		ug/L	194690	1	08/11/2014 18:57	YH
Anthracene	BRL	10		ug/L	194690	1	08/11/2014 18:57	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194690	1	08/11/2014 18:57	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 18:57	YH
Chrysene	BRL	10		ug/L	194690	1	08/11/2014 18:57	YH
Fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 18:57	YH
Fluorene	BRL	10		ug/L	194690	1	08/11/2014 18:57	YH
Naphthalene	BRL	10		ug/L	194690	1	08/11/2014 18:57	YH
Phenanthrene	BRL	10		ug/L	194690	1	08/11/2014 18:57	YH
Phenol	BRL	10		ug/L	194690	1	08/11/2014 18:57	YH
Pyrene	BRL	10		ug/L	194690	1	08/11/2014 18:57	YH
Surr: 2,4,6-Tribromophenol	85	51.5-124		%REC	194690	1	08/11/2014 18:57	YH
Surr: 2-Fluorobiphenyl	84.8	51.7-118		%REC	194690	1	08/11/2014 18:57	YH
Surr: 2-Fluorophenol	67.1	26-120		%REC	194690	1	08/11/2014 18:57	YH
Surr: 4-Terphenyl-d14	89.6	45.2-137		%REC	194690	1	08/11/2014 18:57	YH
Surr: Nitrobenzene-d5	74.1	42-120		%REC	194690	1	08/11/2014 18:57	YH
Surr: Phenol-d5	46.9	12.3-120		%REC	194690	1	08/11/2014 18:57	YH
Mercury, Total SW7470A				(SW7470A)				

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 18-Aug-14

Client: ERM-Southeast
 Project Name: AGL Macon
 Lab ID: 1408474-013

Client Sample ID: MW-115D-20140805-01
 Collection Date: 8/5/2014 2:30:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	194664	1	08/11/2014 14:15	CG
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	194594	1	08/07/2014 15:00	PF
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	194631	1	08/08/2014 23:23	JL
Arsenic	BRL	0.0500		mg/L	194631	1	08/08/2014 23:23	JL
Barium	1.80	0.0200		mg/L	194631	1	08/08/2014 23:23	JL
Beryllium	BRL	0.0100		mg/L	194631	1	08/08/2014 23:23	JL
Cadmium	BRL	0.0050		mg/L	194631	1	08/08/2014 23:23	JL
Chromium	BRL	0.0100		mg/L	194631	1	08/08/2014 23:23	JL
Copper	BRL	0.0100		mg/L	194631	1	08/08/2014 23:23	JL
Lead	BRL	0.0100		mg/L	194631	1	08/08/2014 23:23	JL
Nickel	BRL	0.0200		mg/L	194631	1	08/08/2014 23:23	JL
Zinc	0.0228	0.0200		mg/L	194631	1	08/08/2014 23:23	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 18-Aug-14

Client: ERM-Southeast
Project Name: AGL Macon
Lab ID: 1408474-014

Client Sample ID: MW-12DD-20140805-01
Collection Date: 8/5/2014 2:15:00 PM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	140	5.0		ug/L	194591	1	08/07/2014 20:36	GK
Carbon disulfide	BRL	5.0		ug/L	194591	1	08/07/2014 20:36	GK
Ethylbenzene	28	5.0		ug/L	194591	1	08/07/2014 20:36	GK
Toluene	5.8	5.0		ug/L	194591	1	08/07/2014 20:36	GK
Xylenes, Total	21	5.0		ug/L	194591	1	08/07/2014 20:36	GK
Surr: 4-Bromofluorobenzene	94.3	66.2-120		%REC	194591	1	08/07/2014 20:36	GK
Surr: Dibromofluoromethane	98.8	79.5-121		%REC	194591	1	08/07/2014 20:36	GK
Surr: Toluene-d8	102	77-117		%REC	194591	1	08/07/2014 20:36	GK
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	194657	1	08/12/2014 21:09	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194657	1	08/12/2014 21:09	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194657	1	08/12/2014 21:09	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194657	1	08/12/2014 21:09	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194657	1	08/12/2014 21:09	YH
Surr: 4-Terphenyl-d14	78.7	53.2-145		%REC	194657	1	08/12/2014 21:09	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194690	1	08/11/2014 19:24	YH
2-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 19:24	YH
3,4-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 19:24	YH
Acenaphthene	BRL	10		ug/L	194690	1	08/11/2014 19:24	YH
Acenaphthylene	BRL	10		ug/L	194690	1	08/11/2014 19:24	YH
Anthracene	BRL	10		ug/L	194690	1	08/11/2014 19:24	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194690	1	08/11/2014 19:24	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 19:24	YH
Chrysene	BRL	10		ug/L	194690	1	08/11/2014 19:24	YH
Fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 19:24	YH
Fluorene	BRL	10		ug/L	194690	1	08/11/2014 19:24	YH
Naphthalene	62	10		ug/L	194690	1	08/11/2014 19:24	YH
Phenanthrene	BRL	10		ug/L	194690	1	08/11/2014 19:24	YH
Phenol	BRL	10		ug/L	194690	1	08/11/2014 19:24	YH
Pyrene	BRL	10		ug/L	194690	1	08/11/2014 19:24	YH
Surr: 2,4,6-Tribromophenol	99.8	51.5-124		%REC	194690	1	08/11/2014 19:24	YH
Surr: 2-Fluorobiphenyl	88.5	51.7-118		%REC	194690	1	08/11/2014 19:24	YH
Surr: 2-Fluorophenol	64.5	26-120		%REC	194690	1	08/11/2014 19:24	YH
Surr: 4-Terphenyl-d14	94	45.2-137		%REC	194690	1	08/11/2014 19:24	YH
Surr: Nitrobenzene-d5	74	42-120		%REC	194690	1	08/11/2014 19:24	YH
Surr: Phenol-d5	61.2	12.3-120		%REC	194690	1	08/11/2014 19:24	YH
Mercury, Total SW7470A				(SW7470A)				

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 18-Aug-14

Client:	ERM-Southeast	Client Sample ID:	MW-12DD-20140805-01
Project Name:	AGL Macon	Collection Date:	8/5/2014 2:15:00 PM
Lab ID:	1408474-014	Matrix:	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	194664	1	08/11/2014 14:17	CG
Cyanide SW9014					(SW9010C)			
Cyanide, Total	0.012	0.010		mg/L	194594	1	08/07/2014 15:00	PF
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	194631	1	08/08/2014 23:27	JL
Arsenic	BRL	0.0500		mg/L	194631	1	08/08/2014 23:27	JL
Barium	0.0921	0.0200		mg/L	194631	1	08/08/2014 23:27	JL
Beryllium	BRL	0.0100		mg/L	194631	1	08/08/2014 23:27	JL
Cadmium	BRL	0.0050		mg/L	194631	1	08/08/2014 23:27	JL
Chromium	BRL	0.0100		mg/L	194631	1	08/08/2014 23:27	JL
Copper	BRL	0.0100		mg/L	194631	1	08/08/2014 23:27	JL
Lead	BRL	0.0100		mg/L	194631	1	08/08/2014 23:27	JL
Nickel	BRL	0.0200		mg/L	194631	1	08/08/2014 23:27	JL
Zinc	0.0627	0.0200		mg/L	194631	1	08/08/2014 23:27	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 18-Aug-14

Client: ERM-Southeast
Project Name: AGL Macon
Lab ID: 1408474-015

Client Sample ID: MW-207D-20140805-01
Collection Date: 8/5/2014
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	194591	1	08/07/2014 21:04	GK
Carbon disulfide	BRL	5.0		ug/L	194591	1	08/07/2014 21:04	GK
Ethylbenzene	BRL	5.0		ug/L	194591	1	08/07/2014 21:04	GK
Toluene	BRL	5.0		ug/L	194591	1	08/07/2014 21:04	GK
Xylenes, Total	BRL	5.0		ug/L	194591	1	08/07/2014 21:04	GK
Surr: 4-Bromofluorobenzene	90.9	66.2-120		%REC	194591	1	08/07/2014 21:04	GK
Surr: Dibromofluoromethane	101	79.5-121		%REC	194591	1	08/07/2014 21:04	GK
Surr: Toluene-d8	104	77-117		%REC	194591	1	08/07/2014 21:04	GK
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	194657	1	08/12/2014 21:34	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194657	1	08/12/2014 21:34	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194657	1	08/12/2014 21:34	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194657	1	08/12/2014 21:34	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194657	1	08/12/2014 21:34	YH
Surr: 4-Terphenyl-d14	81.8	53.2-145		%REC	194657	1	08/12/2014 21:34	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194690	1	08/11/2014 19:51	YH
2-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 19:51	YH
3,4-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 19:51	YH
Acenaphthene	BRL	10		ug/L	194690	1	08/11/2014 19:51	YH
Acenaphthylene	BRL	10		ug/L	194690	1	08/11/2014 19:51	YH
Anthracene	BRL	10		ug/L	194690	1	08/11/2014 19:51	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194690	1	08/11/2014 19:51	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 19:51	YH
Chrysene	BRL	10		ug/L	194690	1	08/11/2014 19:51	YH
Fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 19:51	YH
Fluorene	BRL	10		ug/L	194690	1	08/11/2014 19:51	YH
Naphthalene	BRL	10		ug/L	194690	1	08/11/2014 19:51	YH
Phenanthrene	BRL	10		ug/L	194690	1	08/11/2014 19:51	YH
Phenol	BRL	10		ug/L	194690	1	08/11/2014 19:51	YH
Pyrene	BRL	10		ug/L	194690	1	08/11/2014 19:51	YH
Surr: 2,4,6-Tribromophenol	93	51.5-124		%REC	194690	1	08/11/2014 19:51	YH
Surr: 2-Fluorobiphenyl	84	51.7-118		%REC	194690	1	08/11/2014 19:51	YH
Surr: 2-Fluorophenol	67.4	26-120		%REC	194690	1	08/11/2014 19:51	YH
Surr: 4-Terphenyl-d14	86.7	45.2-137		%REC	194690	1	08/11/2014 19:51	YH
Surr: Nitrobenzene-d5	74.4	42-120		%REC	194690	1	08/11/2014 19:51	YH
Surr: Phenol-d5	50.9	12.3-120		%REC	194690	1	08/11/2014 19:51	YH

Mercury, Total SW7470A
(SW7470A)

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 18-Aug-14

Client: ERM-Southeast
Project Name: AGL Macon
Lab ID: 1408474-015

Client Sample ID: MW-207D-20140805-01
Collection Date: 8/5/2014
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	194664	1	08/11/2014 14:19	CG
Cyanide SW9014					(SW9010C)			
Cyanide, Total	0.043	0.010		mg/L	194654	1	08/08/2014 11:00	PF
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	194631	1	08/08/2014 23:32	JL
Arsenic	BRL	0.0500		mg/L	194631	1	08/08/2014 23:32	JL
Barium	2.95	0.0200		mg/L	194631	1	08/08/2014 23:32	JL
Beryllium	BRL	0.0100		mg/L	194631	1	08/08/2014 23:32	JL
Cadmium	BRL	0.0050		mg/L	194631	1	08/08/2014 23:32	JL
Chromium	BRL	0.0100		mg/L	194631	1	08/08/2014 23:32	JL
Copper	BRL	0.0100		mg/L	194631	1	08/08/2014 23:32	JL
Lead	BRL	0.0100		mg/L	194631	1	08/08/2014 23:32	JL
Nickel	BRL	0.0200		mg/L	194631	1	08/08/2014 23:32	JL
Zinc	BRL	0.0200		mg/L	194631	1	08/08/2014 23:32	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 18-Aug-14

Client: ERM-Southeast
 Project Name: AGL Macon
 Lab ID: 1408474-016

Client Sample ID: MW-24D-20140806-01
 Collection Date: 8/6/2014 9:50:00 AM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	15	5.0		ug/L	194591	1	08/07/2014 21:32	GK
Carbon disulfide	BRL	5.0		ug/L	194591	1	08/07/2014 21:32	GK
Ethylbenzene	7.2	5.0		ug/L	194591	1	08/07/2014 21:32	GK
Toluene	BRL	5.0		ug/L	194591	1	08/07/2014 21:32	GK
Xylenes, Total	BRL	5.0		ug/L	194591	1	08/07/2014 21:32	GK
Surr: 4-Bromofluorobenzene	93.8	66.2-120		%REC	194591	1	08/07/2014 21:32	GK
Surr: Dibromofluoromethane	100	79.5-121		%REC	194591	1	08/07/2014 21:32	GK
Surr: Toluene-d8	103	77-117		%REC	194591	1	08/07/2014 21:32	GK
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	194657	1	08/12/2014 22:00	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194657	1	08/12/2014 22:00	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194657	1	08/12/2014 22:00	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194657	1	08/12/2014 22:00	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194657	1	08/12/2014 22:00	YH
Surr: 4-Terphenyl-d14	82.8	53.2-145		%REC	194657	1	08/12/2014 22:00	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194690	1	08/11/2014 20:17	YH
2-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 20:17	YH
3,4-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 20:17	YH
Acenaphthene	BRL	10		ug/L	194690	1	08/11/2014 20:17	YH
Acenaphthylene	BRL	10		ug/L	194690	1	08/11/2014 20:17	YH
Anthracene	BRL	10		ug/L	194690	1	08/11/2014 20:17	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194690	1	08/11/2014 20:17	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 20:17	YH
Chrysene	BRL	10		ug/L	194690	1	08/11/2014 20:17	YH
Fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 20:17	YH
Fluorene	BRL	10		ug/L	194690	1	08/11/2014 20:17	YH
Naphthalene	37	10		ug/L	194690	1	08/11/2014 20:17	YH
Phenanthrene	BRL	10		ug/L	194690	1	08/11/2014 20:17	YH
Phenol	BRL	10		ug/L	194690	1	08/11/2014 20:17	YH
Pyrene	BRL	10		ug/L	194690	1	08/11/2014 20:17	YH
Surr: 2,4,6-Tribromophenol	94.2	51.5-124		%REC	194690	1	08/11/2014 20:17	YH
Surr: 2-Fluorobiphenyl	83.8	51.7-118		%REC	194690	1	08/11/2014 20:17	YH
Surr: 2-Fluorophenol	62.4	26-120		%REC	194690	1	08/11/2014 20:17	YH
Surr: 4-Terphenyl-d14	93.9	45.2-137		%REC	194690	1	08/11/2014 20:17	YH
Surr: Nitrobenzene-d5	72	42-120		%REC	194690	1	08/11/2014 20:17	YH
Surr: Phenol-d5	46.1	12.3-120		%REC	194690	1	08/11/2014 20:17	YH

Mercury, Total SW7470A**(SW7470A)**

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 18-Aug-14

Client: ERM-Southeast
 Project Name: AGL Macon
 Lab ID: 1408474-016

Client Sample ID: MW-24D-20140806-01
 Collection Date: 8/6/2014 9:50:00 AM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	194664	1	08/11/2014 14:21	CG
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	194654	1	08/08/2014 11:00	PF
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	194631	1	08/08/2014 23:36	JL
Arsenic	BRL	0.0500		mg/L	194631	1	08/08/2014 23:36	JL
Barium	2.27	0.0200		mg/L	194631	1	08/08/2014 23:36	JL
Beryllium	BRL	0.0100		mg/L	194631	1	08/08/2014 23:36	JL
Cadmium	BRL	0.0050		mg/L	194631	1	08/08/2014 23:36	JL
Chromium	BRL	0.0100		mg/L	194631	1	08/08/2014 23:36	JL
Copper	BRL	0.0100		mg/L	194631	1	08/08/2014 23:36	JL
Lead	BRL	0.0100		mg/L	194631	1	08/08/2014 23:36	JL
Nickel	BRL	0.0200		mg/L	194631	1	08/08/2014 23:36	JL
Zinc	BRL	0.0200		mg/L	194631	1	08/08/2014 23:36	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 18-Aug-14

Client: ERM-Southeast
 Project Name: AGL Macon
 Lab ID: 1408474-017

Client Sample ID: MW-308D-20140806-01
 Collection Date: 8/6/2014 9:30:00 AM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	194591	1	08/07/2014 22:00	GK
Carbon disulfide	BRL	5.0		ug/L	194591	1	08/07/2014 22:00	GK
Ethylbenzene	BRL	5.0		ug/L	194591	1	08/07/2014 22:00	GK
Toluene	BRL	5.0		ug/L	194591	1	08/07/2014 22:00	GK
Xylenes, Total	BRL	5.0		ug/L	194591	1	08/07/2014 22:00	GK
Surr: 4-Bromofluorobenzene	92.1	66.2-120		%REC	194591	1	08/07/2014 22:00	GK
Surr: Dibromofluoromethane	100	79.5-121		%REC	194591	1	08/07/2014 22:00	GK
Surr: Toluene-d8	103	77-117		%REC	194591	1	08/07/2014 22:00	GK
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	194657	1	08/12/2014 22:24	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194657	1	08/12/2014 22:24	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194657	1	08/12/2014 22:24	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194657	1	08/12/2014 22:24	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194657	1	08/12/2014 22:24	YH
Surr: 4-Terphenyl-d14	76.7	53.2-145		%REC	194657	1	08/12/2014 22:24	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	16	10		ug/L	194690	1	08/11/2014 20:44	YH
2-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 20:44	YH
3,4-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 20:44	YH
Acenaphthene	BRL	10		ug/L	194690	1	08/11/2014 20:44	YH
Acenaphthylene	BRL	10		ug/L	194690	1	08/11/2014 20:44	YH
Anthracene	BRL	10		ug/L	194690	1	08/11/2014 20:44	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194690	1	08/11/2014 20:44	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 20:44	YH
Chrysene	BRL	10		ug/L	194690	1	08/11/2014 20:44	YH
Fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 20:44	YH
Fluorene	BRL	10		ug/L	194690	1	08/11/2014 20:44	YH
Naphthalene	BRL	10		ug/L	194690	1	08/11/2014 20:44	YH
Phenanthrene	BRL	10		ug/L	194690	1	08/11/2014 20:44	YH
Phenol	BRL	10		ug/L	194690	1	08/11/2014 20:44	YH
Pyrene	BRL	10		ug/L	194690	1	08/11/2014 20:44	YH
Surr: 2,4,6-Tribromophenol	104	51.5-124		%REC	194690	1	08/11/2014 20:44	YH
Surr: 2-Fluorobiphenyl	84.8	51.7-118		%REC	194690	1	08/11/2014 20:44	YH
Surr: 2-Fluorophenol	64.2	26-120		%REC	194690	1	08/11/2014 20:44	YH
Surr: 4-Terphenyl-d14	101	45.2-137		%REC	194690	1	08/11/2014 20:44	YH
Surr: Nitrobenzene-d5	78.3	42-120		%REC	194690	1	08/11/2014 20:44	YH
Surr: Phenol-d5	50.1	12.3-120		%REC	194690	1	08/11/2014 20:44	YH

Mercury, Total SW7470A**(SW7470A)**

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 18-Aug-14

Client: ERM-Southeast
 Project Name: AGL Macon
 Lab ID: 1408474-017

Client Sample ID: MW-308D-20140806-01
 Collection Date: 8/6/2014 9:30:00 AM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	194664	1	08/11/2014 14:22	CG
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	194654	1	08/08/2014 11:00	PF
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	194631	1	08/08/2014 23:40	JL
Arsenic	BRL	0.0500		mg/L	194631	1	08/08/2014 23:40	JL
Barium	0.0992	0.0200		mg/L	194631	1	08/08/2014 23:40	JL
Beryllium	BRL	0.0100		mg/L	194631	1	08/08/2014 23:40	JL
Cadmium	BRL	0.0050		mg/L	194631	1	08/08/2014 23:40	JL
Chromium	0.0268	0.0100		mg/L	194631	1	08/08/2014 23:40	JL
Copper	BRL	0.0100		mg/L	194631	1	08/08/2014 23:40	JL
Lead	BRL	0.0100		mg/L	194631	1	08/08/2014 23:40	JL
Nickel	BRL	0.0200		mg/L	194631	1	08/08/2014 23:40	JL
Zinc	BRL	0.0200		mg/L	194631	1	08/08/2014 23:40	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 18-Aug-14

Client: ERM-Southeast
Project Name: AGL Macon
Lab ID: 1408474-018

Client Sample ID: MW-303D-20140806-01
Collection Date: 8/6/2014 10:45:00 AM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	194591	1	08/07/2014 22:28	GK
Carbon disulfide	BRL	5.0		ug/L	194591	1	08/07/2014 22:28	GK
Ethylbenzene	BRL	5.0		ug/L	194591	1	08/07/2014 22:28	GK
Toluene	BRL	5.0		ug/L	194591	1	08/07/2014 22:28	GK
Xylenes, Total	BRL	5.0		ug/L	194591	1	08/07/2014 22:28	GK
Surr: 4-Bromofluorobenzene	93.4	66.2-120		%REC	194591	1	08/07/2014 22:28	GK
Surr: Dibromofluoromethane	101	79.5-121		%REC	194591	1	08/07/2014 22:28	GK
Surr: Toluene-d8	101	77-117		%REC	194591	1	08/07/2014 22:28	GK
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	194657	1	08/12/2014 22:50	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194657	1	08/12/2014 22:50	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194657	1	08/12/2014 22:50	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194657	1	08/12/2014 22:50	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194657	1	08/12/2014 22:50	YH
Surr: 4-Terphenyl-d14	68.1	53.2-145		%REC	194657	1	08/12/2014 22:50	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194690	1	08/11/2014 21:10	YH
2-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 21:10	YH
3,4-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 21:10	YH
Acenaphthene	BRL	10		ug/L	194690	1	08/11/2014 21:10	YH
Acenaphthylene	BRL	10		ug/L	194690	1	08/11/2014 21:10	YH
Anthracene	BRL	10		ug/L	194690	1	08/11/2014 21:10	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194690	1	08/11/2014 21:10	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 21:10	YH
Chrysene	BRL	10		ug/L	194690	1	08/11/2014 21:10	YH
Fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 21:10	YH
Fluorene	BRL	10		ug/L	194690	1	08/11/2014 21:10	YH
Naphthalene	BRL	10		ug/L	194690	1	08/11/2014 21:10	YH
Phenanthrene	BRL	10		ug/L	194690	1	08/11/2014 21:10	YH
Phenol	BRL	10		ug/L	194690	1	08/11/2014 21:10	YH
Pyrene	BRL	10		ug/L	194690	1	08/11/2014 21:10	YH
Surr: 2,4,6-Tribromophenol	96.6	51.5-124		%REC	194690	1	08/11/2014 21:10	YH
Surr: 2-Fluorobiphenyl	87	51.7-118		%REC	194690	1	08/11/2014 21:10	YH
Surr: 2-Fluorophenol	70.1	26-120		%REC	194690	1	08/11/2014 21:10	YH
Surr: 4-Terphenyl-d14	106	45.2-137		%REC	194690	1	08/11/2014 21:10	YH
Surr: Nitrobenzene-d5	74.3	42-120		%REC	194690	1	08/11/2014 21:10	YH
Surr: Phenol-d5	53.3	12.3-120		%REC	194690	1	08/11/2014 21:10	YH

Mercury, Total SW7470A
(SW7470A)

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 18-Aug-14

Client: ERM-Southeast
 Project Name: AGL Macon
 Lab ID: 1408474-018

Client Sample ID: MW-303D-20140806-01
 Collection Date: 8/6/2014 10:45:00 AM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	194664	1	08/11/2014 14:24	CG
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	194654	1	08/08/2014 11:00	PF
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	194631	1	08/09/2014 00:00	JL
Arsenic	BRL	0.0500		mg/L	194631	1	08/09/2014 00:00	JL
Barium	0.579	0.0200		mg/L	194631	1	08/09/2014 00:00	JL
Beryllium	BRL	0.0100		mg/L	194631	1	08/09/2014 00:00	JL
Cadmium	BRL	0.0050		mg/L	194631	1	08/09/2014 00:00	JL
Chromium	BRL	0.0100		mg/L	194631	1	08/09/2014 00:00	JL
Copper	BRL	0.0100		mg/L	194631	1	08/09/2014 00:00	JL
Lead	BRL	0.0100		mg/L	194631	1	08/09/2014 00:00	JL
Nickel	BRL	0.0200		mg/L	194631	1	08/09/2014 00:00	JL
Zinc	0.0839	0.0200		mg/L	194631	1	08/09/2014 00:00	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 18-Aug-14

Client:	ERM-Southeast	Client Sample ID:	TB-01-20140806-01
Project Name:	AGL Macon	Collection Date:	8/6/2014
Lab ID:	1408474-019	Matrix:	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	194659	1	08/08/2014 18:17	GK
Carbon disulfide	BRL	5.0		ug/L	194659	1	08/08/2014 18:17	GK
Ethylbenzene	BRL	5.0		ug/L	194659	1	08/08/2014 18:17	GK
Toluene	BRL	5.0		ug/L	194659	1	08/08/2014 18:17	GK
Xylenes, Total	BRL	5.0		ug/L	194659	1	08/08/2014 18:17	GK
Surr: 4-Bromofluorobenzene	89.5	66.2-120		%REC	194659	1	08/08/2014 18:17	GK
Surr: Dibromofluoromethane	102	79.5-121		%REC	194659	1	08/08/2014 18:17	GK
Surr: Toluene-d8	104	77-117		%REC	194659	1	08/08/2014 18:17	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 18-Aug-14

Client: ERM-Southeast
Project Name: AGL Macon
Lab ID: 1408474-020

Client Sample ID: MW-110D-20140806-01
Collection Date: 8/6/2014 11:10:00 AM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	480	50		ug/L	194659	10	08/09/2014 16:16	GK
Carbon disulfide	BRL	5.0		ug/L	194659	1	08/08/2014 19:13	GK
Ethylbenzene	620	50		ug/L	194659	10	08/09/2014 16:16	GK
Toluene	5.3	5.0		ug/L	194659	1	08/08/2014 19:13	GK
Xylenes, Total	60	5.0		ug/L	194659	1	08/08/2014 19:13	GK
Surr: 4-Bromofluorobenzene	97.7	66.2-120		%REC	194659	10	08/09/2014 16:16	GK
Surr: 4-Bromofluorobenzene	100	66.2-120		%REC	194659	1	08/08/2014 19:13	GK
Surr: Dibromofluoromethane	99.9	79.5-121		%REC	194659	1	08/08/2014 19:13	GK
Surr: Dibromofluoromethane	98.3	79.5-121		%REC	194659	10	08/09/2014 16:16	GK
Surr: Toluene-d8	101	77-117		%REC	194659	1	08/08/2014 19:13	GK
Surr: Toluene-d8	100	77-117		%REC	194659	10	08/09/2014 16:16	GK
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	0.40	0.050		ug/L	194657	1	08/12/2014 23:14	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194657	1	08/12/2014 23:14	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194657	1	08/12/2014 23:14	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194657	1	08/12/2014 23:14	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194657	1	08/12/2014 23:14	YH
Surr: 4-Terphenyl-d14	81.6	53.2-145		%REC	194657	1	08/12/2014 23:14	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194690	1	08/11/2014 21:38	YH
2-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 21:38	YH
3,4-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 21:38	YH
Acenaphthene	120	10		ug/L	194690	1	08/11/2014 21:38	YH
Acenaphthylene	BRL	10		ug/L	194690	1	08/11/2014 21:38	YH
Anthracene	BRL	10		ug/L	194690	1	08/11/2014 21:38	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194690	1	08/11/2014 21:38	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 21:38	YH
Chrysene	BRL	10		ug/L	194690	1	08/11/2014 21:38	YH
Fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 21:38	YH
Fluorene	40	10		ug/L	194690	1	08/11/2014 21:38	YH
Naphthalene	4400	1000		ug/L	194690	100	08/13/2014 03:52	YH
Phenanthrene	69	10		ug/L	194690	1	08/11/2014 21:38	YH
Phenol	BRL	10		ug/L	194690	1	08/11/2014 21:38	YH
Pyrene	BRL	10		ug/L	194690	1	08/11/2014 21:38	YH
Surr: 2,4,6-Tribromophenol	105	51.5-124		%REC	194690	1	08/11/2014 21:38	YH
Surr: 2-Fluorobiphenyl	93.4	51.7-118		%REC	194690	1	08/11/2014 21:38	YH
Surr: 2-Fluorophenol	72.4	26-120		%REC	194690	1	08/11/2014 21:38	YH
Surr: 4-Terphenyl-d14	107	45.2-137		%REC	194690	1	08/11/2014 21:38	YH
Surr: Nitrobenzene-d5	119	42-120		%REC	194690	1	08/11/2014 21:38	YH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 18-Aug-14

Client: ERM-Southeast
 Project Name: AGL Macon
 Lab ID: 1408474-020

Client Sample ID: MW-110D-20140806-01
 Collection Date: 8/6/2014 11:10:00 AM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D					(SW3510C)			
Surr: Phenol-d5	57.2	12.3-120		%REC	194690	1	08/11/2014 21:38	YH
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	194664	1	08/11/2014 14:26	CG
Cyanide SW9014					(SW9010C)			
Cyanide, Total	0.024	0.010		mg/L	194654	1	08/08/2014 11:00	PF
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	194631	1	08/09/2014 00:06	JL
Arsenic	BRL	0.0500		mg/L	194631	1	08/09/2014 00:06	JL
Barium	4.85	0.0200		mg/L	194631	1	08/09/2014 00:06	JL
Beryllium	BRL	0.0100		mg/L	194631	1	08/09/2014 00:06	JL
Cadmium	BRL	0.0050		mg/L	194631	1	08/09/2014 00:06	JL
Chromium	BRL	0.0100		mg/L	194631	1	08/09/2014 00:06	JL
Copper	BRL	0.0100		mg/L	194631	1	08/09/2014 00:06	JL
Lead	BRL	0.0100		mg/L	194631	1	08/09/2014 00:06	JL
Nickel	0.110	0.0200		mg/L	194631	1	08/09/2014 00:06	JL
Zinc	BRL	0.0200		mg/L	194631	1	08/09/2014 00:06	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 18-Aug-14

Client: ERM-Southeast
Project Name: AGL Macon
Lab ID: 1408474-021

Client Sample ID: MW-204D-20140806-01
Collection Date: 8/6/2014 1:10:00 PM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	310	50		ug/L	194659	10	08/09/2014 16:44	GK
Carbon disulfide	BRL	5.0		ug/L	194659	1	08/08/2014 19:41	GK
Ethylbenzene	260	50		ug/L	194659	10	08/09/2014 16:44	GK
Toluene	BRL	5.0		ug/L	194659	1	08/08/2014 19:41	GK
Xylenes, Total	30	5.0		ug/L	194659	1	08/08/2014 19:41	GK
Surr: 4-Bromofluorobenzene	93.2	66.2-120		%REC	194659	10	08/09/2014 16:44	GK
Surr: 4-Bromofluorobenzene	99.2	66.2-120		%REC	194659	1	08/08/2014 19:41	GK
Surr: Dibromofluoromethane	95.5	79.5-121		%REC	194659	10	08/09/2014 16:44	GK
Surr: Dibromofluoromethane	98.9	79.5-121		%REC	194659	1	08/08/2014 19:41	GK
Surr: Toluene-d8	100	77-117		%REC	194659	1	08/08/2014 19:41	GK
Surr: Toluene-d8	102	77-117		%REC	194659	10	08/09/2014 16:44	GK
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	0.11	0.050		ug/L	194657	1	08/12/2014 23:40	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194657	1	08/12/2014 23:40	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194657	1	08/12/2014 23:40	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194657	1	08/12/2014 23:40	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194657	1	08/12/2014 23:40	YH
Surr: 4-Terphenyl-d14	82.3	53.2-145		%REC	194657	1	08/12/2014 23:40	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194690	1	08/11/2014 22:03	YH
2-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 22:03	YH
3,4-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 22:03	YH
Acenaphthene	66	10		ug/L	194690	1	08/11/2014 22:03	YH
Acenaphthylene	BRL	10		ug/L	194690	1	08/11/2014 22:03	YH
Anthracene	BRL	10		ug/L	194690	1	08/11/2014 22:03	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194690	1	08/11/2014 22:03	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 22:03	YH
Chrysene	BRL	10		ug/L	194690	1	08/11/2014 22:03	YH
Fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 22:03	YH
Fluorene	29	10		ug/L	194690	1	08/11/2014 22:03	YH
Naphthalene	1500	100		ug/L	194690	10	08/13/2014 03:27	YH
Phenanthrene	22	10		ug/L	194690	1	08/11/2014 22:03	YH
Phenol	BRL	10		ug/L	194690	1	08/11/2014 22:03	YH
Pyrene	BRL	10		ug/L	194690	1	08/11/2014 22:03	YH
Surr: 2,4,6-Tribromophenol	101	51.5-124		%REC	194690	1	08/11/2014 22:03	YH
Surr: 2-Fluorobiphenyl	85	51.7-118		%REC	194690	1	08/11/2014 22:03	YH
Surr: 2-Fluorophenol	62.8	26-120		%REC	194690	1	08/11/2014 22:03	YH
Surr: 4-Terphenyl-d14	105	45.2-137		%REC	194690	1	08/11/2014 22:03	YH
Surr: Nitrobenzene-d5	83.4	42-120		%REC	194690	1	08/11/2014 22:03	YH

Qualifiers:

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- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 18-Aug-14

Client: ERM-Southeast	Client Sample ID: MW-204D-20140806-01
Project Name: AGL Macon	Collection Date: 8/6/2014 1:10:00 PM
Lab ID: 1408474-021	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS	SW8270D				(SW3510C)			
Surr: Phenol-d5	52.4	12.3-120		%REC	194690	1	08/11/2014 22:03	YH
Mercury, Total	SW7470A				(SW7470A)			
Mercury	BRL	0.00020		mg/L	194664	1	08/11/2014 14:32	CG
Cyanide	SW9014				(SW9010C)			
Cyanide, Total	0.032	0.010		mg/L	194654	1	08/08/2014 11:00	PF
METALS, TOTAL	SW6010C				(SW3010A)			
Antimony	BRL	0.0200		mg/L	194631	1	08/09/2014 00:11	JL
Arsenic	BRL	0.0500		mg/L	194631	1	08/09/2014 00:11	JL
Barium	4.56	0.0200		mg/L	194631	1	08/09/2014 00:11	JL
Beryllium	BRL	0.0100		mg/L	194631	1	08/09/2014 00:11	JL
Cadmium	BRL	0.0050		mg/L	194631	1	08/09/2014 00:11	JL
Chromium	BRL	0.0100		mg/L	194631	1	08/09/2014 00:11	JL
Copper	BRL	0.0100		mg/L	194631	1	08/09/2014 00:11	JL
Lead	BRL	0.0100		mg/L	194631	1	08/09/2014 00:11	JL
Nickel	0.0546	0.0200		mg/L	194631	1	08/09/2014 00:11	JL
Zinc	BRL	0.0200		mg/L	194631	1	08/09/2014 00:11	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
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- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 18-Aug-14

Client: ERM-Southeast
Project Name: AGL Macon
Lab ID: 1408474-022

Client Sample ID: MW-306D-20140806-01
Collection Date: 8/6/2014 1:30:00 PM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	1200	50		ug/L	194659	10	08/09/2014 17:12	GK
Carbon disulfide	BRL	5.0		ug/L	194659	1	08/08/2014 20:09	GK
Ethylbenzene	230	50		ug/L	194659	10	08/09/2014 17:12	GK
Toluene	60	5.0		ug/L	194659	1	08/08/2014 20:09	GK
Xylenes, Total	190	5.0		ug/L	194659	1	08/08/2014 20:09	GK
Surr: 4-Bromofluorobenzene	92.6	66.2-120		%REC	194659	10	08/09/2014 17:12	GK
Surr: 4-Bromofluorobenzene	99.5	66.2-120		%REC	194659	1	08/08/2014 20:09	GK
Surr: Dibromofluoromethane	96.2	79.5-121		%REC	194659	10	08/09/2014 17:12	GK
Surr: Dibromofluoromethane	98.3	79.5-121		%REC	194659	1	08/08/2014 20:09	GK
Surr: Toluene-d8	98.5	77-117		%REC	194659	1	08/08/2014 20:09	GK
Surr: Toluene-d8	102	77-117		%REC	194659	10	08/09/2014 17:12	GK
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	194657	1	08/13/2014 00:04	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194657	1	08/13/2014 00:04	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194657	1	08/13/2014 00:04	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194657	1	08/13/2014 00:04	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194657	1	08/13/2014 00:04	YH
Surr: 4-Terphenyl-d14	76.9	53.2-145		%REC	194657	1	08/13/2014 00:04	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194690	1	08/11/2014 22:30	YH
2-Methylphenol	14	10		ug/L	194690	1	08/11/2014 22:30	YH
3,4-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 22:30	YH
Acenaphthene	41	10		ug/L	194690	1	08/11/2014 22:30	YH
Acenaphthylene	BRL	10		ug/L	194690	1	08/11/2014 22:30	YH
Anthracene	BRL	10		ug/L	194690	1	08/11/2014 22:30	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194690	1	08/11/2014 22:30	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 22:30	YH
Chrysene	BRL	10		ug/L	194690	1	08/11/2014 22:30	YH
Fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 22:30	YH
Fluorene	10	10		ug/L	194690	1	08/11/2014 22:30	YH
Naphthalene	BRL	10		ug/L	194690	1	08/11/2014 22:30	YH
Phenanthrene	BRL	10		ug/L	194690	1	08/11/2014 22:30	YH
Phenol	BRL	10		ug/L	194690	1	08/11/2014 22:30	YH
Pyrene	BRL	10		ug/L	194690	1	08/11/2014 22:30	YH
Surr: 2,4,6-Tribromophenol	98.7	51.5-124		%REC	194690	1	08/11/2014 22:30	YH
Surr: 2-Fluorobiphenyl	81.6	51.7-118		%REC	194690	1	08/11/2014 22:30	YH
Surr: 2-Fluorophenol	60.7	26-120		%REC	194690	1	08/11/2014 22:30	YH
Surr: 4-Terphenyl-d14	99.5	45.2-137		%REC	194690	1	08/11/2014 22:30	YH
Surr: Nitrobenzene-d5	72.2	42-120		%REC	194690	1	08/11/2014 22:30	YH

Qualifiers: * Value exceeds maximum contaminant level
 BRL Below reporting limit
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 N Analyte not NELAC certified
 B Analyte detected in the associated method blank
 > Greater than Result value

E Estimated (value above quantitation range)
 S Spike Recovery outside limits due to matrix
 Narr See case narrative
 NC Not confirmed
 < Less than Result value
 J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 18-Aug-14

Client: ERM-Southeast
Project Name: AGL Macon
Lab ID: 1408474-022

Client Sample ID: MW-306D-20140806-01
Collection Date: 8/6/2014 1:30:00 PM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS	SW8270D				(SW3510C)			
Surr: Phenol-d5	51.8	12.3-120		%REC	194690	1	08/11/2014 22:30	YH
Mercury, Total	SW7470A				(SW7470A)			
Mercury	BRL	0.00020		mg/L	194741	1	08/12/2014 12:19	CG
Cyanide	SW9014				(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	194654	1	08/08/2014 11:00	PF
METALS, TOTAL	SW6010C				(SW3010A)			
Antimony	BRL	0.0200		mg/L	194585	1	08/11/2014 20:15	JL
Arsenic	BRL	0.0500		mg/L	194585	1	08/11/2014 20:15	JL
Barium	0.415	0.0200		mg/L	194585	1	08/11/2014 20:15	JL
Beryllium	BRL	0.0100		mg/L	194585	1	08/11/2014 20:15	JL
Cadmium	BRL	0.0050		mg/L	194585	1	08/11/2014 20:15	JL
Chromium	0.0264	0.0100		mg/L	194585	1	08/11/2014 20:15	JL
Copper	0.0128	0.0100		mg/L	194585	1	08/11/2014 20:15	JL
Lead	BRL	0.0100		mg/L	194585	1	08/11/2014 20:15	JL
Nickel	BRL	0.0200		mg/L	194585	1	08/11/2014 20:15	JL
Zinc	BRL	0.0200		mg/L	194585	1	08/11/2014 20:15	JL

Qualifiers: * Value exceeds maximum contaminant level
 BRL Below reporting limit
 H Holding times for preparation or analysis exceeded
 N Analyte not NELAC certified
 B Analyte detected in the associated method blank
 > Greater than Result value

E Estimated (value above quantitation range)
 S Spike Recovery outside limits due to matrix
 Narr See case narrative
 NC Not confirmed
 < Less than Result value
 J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 18-Aug-14

Client: ERM-Southeast
 Project Name: AGL Macon
 Lab ID: 1408474-023

Client Sample ID: TRIP BLANK
 Collection Date: 8/6/2014
 Matrix: Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	194659	1	08/08/2014 18:45	GK
Carbon disulfide	BRL	5.0		ug/L	194659	1	08/08/2014 18:45	GK
Ethylbenzene	BRL	5.0		ug/L	194659	1	08/08/2014 18:45	GK
Toluene	BRL	5.0		ug/L	194659	1	08/08/2014 18:45	GK
Xylenes, Total	BRL	5.0		ug/L	194659	1	08/08/2014 18:45	GK
Surr: 4-Bromofluorobenzene	90.8	66.2-120		%REC	194659	1	08/08/2014 18:45	GK
Surr: Dibromofluoromethane	99.6	79.5-121		%REC	194659	1	08/08/2014 18:45	GK
Surr: Toluene-d8	103	77-117		%REC	194659	1	08/08/2014 18:45	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
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- Narr See case narrative
- NC Not confirmed
- < Less than Result value
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Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client ERM

Work Order Number 1408474

Checklist completed by [Signature] Date 8/10/14

Carrier name: FedEx ☐ UPS ☐ Courier ☒ Client ☐ US Mail ☐ Other ☐

Shipping container/cooler in good condition? Yes ☒ No ☐ Not Present ☐

Custody seals intact on shipping container/cooler? Yes ☐ No ☐ Not Present ☒

Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒

Container/Temp Blank temperature in compliance? (4°C±2)* Yes ☒ No ☐

Cooler #1 3.1° Cooler #2 3.6° Cooler #3 3.9° Cooler #4 3.8° Cooler #5 3.4° Cooler #6 3.9°

Chain of custody present? Yes ☒ No ☐

Chain of custody signed when relinquished and received? Yes ☒ No ☐

Chain of custody agrees with sample labels? 8/18/14 Yes ☒ No ☒

Samples in proper container/bottle? Yes ☒ No ☐

Sample containers intact? Yes ☒ No ☐

Sufficient sample volume for indicated test? Yes ☒ No ☐

All samples received within holding time? Yes ☒ No ☐

Was TAT marked on the COC? Yes ☒ No ☐

Proceed with Standard TAT as per project history? Yes ☐ No ☐ Not Applicable ☒

Water - VOA vials have zero headspace? No VOA vials submitted ☐ Yes ☒ No ☐

Water - pH acceptable upon receipt? Yes ☒ No ☐ Not Applicable ☐

Adjusted? ☐ Checked by MS

Sample Condition: Good ☒ Other(Explain) ☐

(For diffusive samples or AIHA lead) Is a known blank included? Yes ☐ No ☒

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\\Quality Assurance\Checklists Procedures Sign-Off Templates\Checklists\Sample Receipt Checklists\Sample_Cooler_Receipt_Checklist

Client: ERM-Southeast
 Project: AGL Macon
 Lab Order: 1408474

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1408474-001A	MW-23D-20140804-01	8/4/2014 2:30:00PM	Groundwater	Volatile Organic Compounds by GC/MS		08/07/2014	08/07/2014
1408474-001B	MW-23D-20140804-01	8/4/2014 2:30:00PM	Groundwater	TOTAL METALS BY ICP		08/08/2014	08/08/2014
1408474-001B	MW-23D-20140804-01	8/4/2014 2:30:00PM	Groundwater	TOTAL MERCURY		08/11/2014	08/11/2014
1408474-001C	MW-23D-20140804-01	8/4/2014 2:30:00PM	Groundwater	Cyanide		08/07/2014	08/07/2014
1408474-001D	MW-23D-20140804-01	8/4/2014 2:30:00PM	Groundwater	Polynuclear Aromatic Hydrocarbons		08/07/2014	08/11/2014
1408474-001D	MW-23D-20140804-01	8/4/2014 2:30:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		08/08/2014	08/12/2014
1408474-002A	MW-25D-20140804-01	8/4/2014 4:00:00PM	Groundwater	Volatile Organic Compounds by GC/MS		08/07/2014	08/07/2014
1408474-002B	MW-25D-20140804-01	8/4/2014 4:00:00PM	Groundwater	TOTAL METALS BY ICP		08/08/2014	08/08/2014
1408474-002B	MW-25D-20140804-01	8/4/2014 4:00:00PM	Groundwater	TOTAL MERCURY		08/11/2014	08/11/2014
1408474-002C	MW-25D-20140804-01	8/4/2014 4:00:00PM	Groundwater	Cyanide		08/07/2014	08/07/2014
1408474-002D	MW-25D-20140804-01	8/4/2014 4:00:00PM	Groundwater	Polynuclear Aromatic Hydrocarbons		08/07/2014	08/11/2014
1408474-002D	MW-25D-20140804-01	8/4/2014 4:00:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		08/11/2014	08/11/2014
1408474-003A	MW-300D-20140804-01	8/4/2014 4:05:00PM	Groundwater	Volatile Organic Compounds by GC/MS		08/08/2014	08/08/2014
1408474-003B	MW-300D-20140804-01	8/4/2014 4:05:00PM	Groundwater	TOTAL METALS BY ICP		08/08/2014	08/08/2014
1408474-003B	MW-300D-20140804-01	8/4/2014 4:05:00PM	Groundwater	TOTAL MERCURY		08/11/2014	08/11/2014
1408474-003C	MW-300D-20140804-01	8/4/2014 4:05:00PM	Groundwater	Cyanide		08/08/2014	08/08/2014
1408474-003D	MW-300D-20140804-01	8/4/2014 4:05:00PM	Groundwater	Polynuclear Aromatic Hydrocarbons		08/08/2014	08/12/2014
1408474-003D	MW-300D-20140804-01	8/4/2014 4:05:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		08/08/2014	08/13/2014
1408474-004A	MW-304D-20140804-01	8/4/2014 6:00:00PM	Groundwater	Volatile Organic Compounds by GC/MS		08/07/2014	08/07/2014
1408474-004B	MW-304D-20140804-01	8/4/2014 6:00:00PM	Groundwater	TOTAL METALS BY ICP		08/08/2014	08/08/2014
1408474-004B	MW-304D-20140804-01	8/4/2014 6:00:00PM	Groundwater	TOTAL MERCURY		08/11/2014	08/11/2014
1408474-004C	MW-304D-20140804-01	8/4/2014 6:00:00PM	Groundwater	Cyanide		08/07/2014	08/07/2014
1408474-004D	MW-304D-20140804-01	8/4/2014 6:00:00PM	Groundwater	Polynuclear Aromatic Hydrocarbons		08/07/2014	08/11/2014
1408474-004D	MW-304D-20140804-01	8/4/2014 6:00:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		08/08/2014	08/12/2014
1408474-005A	MW-206D-20140805-01	8/5/2014 8:50:00AM	Groundwater	Volatile Organic Compounds by GC/MS		08/07/2014	08/07/2014
1408474-005B	MW-206D-20140805-01	8/5/2014 8:50:00AM	Groundwater	TOTAL METALS BY ICP		08/08/2014	08/08/2014
1408474-005B	MW-206D-20140805-01	8/5/2014 8:50:00AM	Groundwater	TOTAL MERCURY		08/11/2014	08/11/2014
1408474-005C	MW-206D-20140805-01	8/5/2014 8:50:00AM	Groundwater	Cyanide		08/07/2014	08/07/2014
1408474-005D	MW-206D-20140805-01	8/5/2014 8:50:00AM	Groundwater	Polynuclear Aromatic Hydrocarbons		08/07/2014	08/11/2014

Client: ERM-Southeast
 Project: AGL Macon
 Lab Order: 1408474

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1408474-005D	MW-206D-20140805-01	8/5/2014 8:50:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		08/08/2014	08/12/2014
1408474-006A	MW-113D-20140805-01	8/5/2014 9:15:00AM	Groundwater	Volatile Organic Compounds by GC/MS		08/07/2014	08/07/2014
1408474-006B	MW-113D-20140805-01	8/5/2014 9:15:00AM	Groundwater	TOTAL METALS BY ICP		08/08/2014	08/08/2014
1408474-006B	MW-113D-20140805-01	8/5/2014 9:15:00AM	Groundwater	TOTAL MERCURY		08/11/2014	08/11/2014
1408474-006C	MW-113D-20140805-01	8/5/2014 9:15:00AM	Groundwater	Cyanide		08/07/2014	08/07/2014
1408474-006D	MW-113D-20140805-01	8/5/2014 9:15:00AM	Groundwater	Polynuclear Aromatic Hydrocarbons		08/07/2014	08/11/2014
1408474-006D	MW-113D-20140805-01	8/5/2014 9:15:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		08/08/2014	08/12/2014
1408474-007A	MW-108D-20140805-01	8/5/2014 9:50:00AM	Groundwater	Volatile Organic Compounds by GC/MS		08/07/2014	08/07/2014
1408474-007B	MW-108D-20140805-01	8/5/2014 9:50:00AM	Groundwater	TOTAL METALS BY ICP		08/08/2014	08/08/2014
1408474-007B	MW-108D-20140805-01	8/5/2014 9:50:00AM	Groundwater	TOTAL MERCURY		08/11/2014	08/11/2014
1408474-007C	MW-108D-20140805-01	8/5/2014 9:50:00AM	Groundwater	Cyanide		08/07/2014	08/07/2014
1408474-007D	MW-108D-20140805-01	8/5/2014 9:50:00AM	Groundwater	Polynuclear Aromatic Hydrocarbons		08/07/2014	08/11/2014
1408474-007D	MW-108D-20140805-01	8/5/2014 9:50:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		08/08/2014	08/12/2014
1408474-008A	MW-112D-20140805-01	8/5/2014 10:15:00AM	Groundwater	Volatile Organic Compounds by GC/MS		08/07/2014	08/07/2014
1408474-008B	MW-112D-20140805-01	8/5/2014 10:15:00AM	Groundwater	TOTAL METALS BY ICP		08/08/2014	08/08/2014
1408474-008B	MW-112D-20140805-01	8/5/2014 10:15:00AM	Groundwater	TOTAL MERCURY		08/11/2014	08/11/2014
1408474-008C	MW-112D-20140805-01	8/5/2014 10:15:00AM	Groundwater	Cyanide		08/07/2014	08/07/2014
1408474-008D	MW-112D-20140805-01	8/5/2014 10:15:00AM	Groundwater	Polynuclear Aromatic Hydrocarbons		08/07/2014	08/11/2014
1408474-008D	MW-112D-20140805-01	8/5/2014 10:15:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		08/08/2014	08/12/2014
1408474-009A	MW-12DRR-20140805-01	8/5/2014 11:25:00AM	Groundwater	Volatile Organic Compounds by GC/MS		08/07/2014	08/07/2014
1408474-009B	MW-12DRR-20140805-01	8/5/2014 11:25:00AM	Groundwater	TOTAL METALS BY ICP		08/08/2014	08/08/2014
1408474-009B	MW-12DRR-20140805-01	8/5/2014 11:25:00AM	Groundwater	TOTAL MERCURY		08/11/2014	08/11/2014
1408474-009C	MW-12DRR-20140805-01	8/5/2014 11:25:00AM	Groundwater	Cyanide		08/07/2014	08/07/2014
1408474-009D	MW-12DRR-20140805-01	8/5/2014 11:25:00AM	Groundwater	Polynuclear Aromatic Hydrocarbons		08/08/2014	08/12/2014
1408474-009D	MW-12DRR-20140805-01	8/5/2014 11:25:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		08/11/2014	08/11/2014
1408474-009D	MW-12DRR-20140805-01	8/5/2014 11:25:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		08/11/2014	08/13/2014
1408474-010A	MW-09D-20140805-01	8/5/2014 11:45:00AM	Groundwater	Volatile Organic Compounds by GC/MS		08/07/2014	08/07/2014
1408474-010B	MW-09D-20140805-01	8/5/2014 11:45:00AM	Groundwater	TOTAL METALS BY ICP		08/08/2014	08/08/2014
1408474-010B	MW-09D-20140805-01	8/5/2014 11:45:00AM	Groundwater	TOTAL MERCURY		08/11/2014	08/11/2014

Client: ERM-Southeast
 Project: AGL Macon
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Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1408474-010C	MW-09D-20140805-01	8/5/2014 11:45:00AM	Groundwater	Cyanide		08/07/2014	08/07/2014
1408474-010D	MW-09D-20140805-01	8/5/2014 11:45:00AM	Groundwater	Polynuclear Aromatic Hydrocarbons		08/08/2014	08/12/2014
1408474-010D	MW-09D-20140805-01	8/5/2014 11:45:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		08/11/2014	08/11/2014
1408474-011A	DUP-02-20140805-01	8/5/2014 12:00:00AM	Groundwater	Volatile Organic Compounds by GC/MS		08/07/2014	08/07/2014
1408474-011A	DUP-02-20140805-01	8/5/2014 12:00:00AM	Groundwater	Volatile Organic Compounds by GC/MS		08/07/2014	08/09/2014
1408474-011B	DUP-02-20140805-01	8/5/2014 12:00:00AM	Groundwater	TOTAL METALS BY ICP		08/08/2014	08/08/2014
1408474-011B	DUP-02-20140805-01	8/5/2014 12:00:00AM	Groundwater	TOTAL MERCURY		08/11/2014	08/11/2014
1408474-011C	DUP-02-20140805-01	8/5/2014 12:00:00AM	Groundwater	Cyanide		08/07/2014	08/07/2014
1408474-011D	DUP-02-20140805-01	8/5/2014 12:00:00AM	Groundwater	Polynuclear Aromatic Hydrocarbons		08/08/2014	08/12/2014
1408474-011D	DUP-02-20140805-01	8/5/2014 12:00:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		08/11/2014	08/11/2014
1408474-011D	DUP-02-20140805-01	8/5/2014 12:00:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		08/11/2014	08/13/2014
1408474-012A	DUP-01-20140805-01	8/5/2014 12:00:00AM	Groundwater	Volatile Organic Compounds by GC/MS		08/07/2014	08/07/2014
1408474-012B	DUP-01-20140805-01	8/5/2014 12:00:00AM	Groundwater	TOTAL METALS BY ICP		08/08/2014	08/08/2014
1408474-012B	DUP-01-20140805-01	8/5/2014 12:00:00AM	Groundwater	TOTAL MERCURY		08/11/2014	08/11/2014
1408474-012C	DUP-01-20140805-01	8/5/2014 12:00:00AM	Groundwater	Cyanide		08/07/2014	08/07/2014
1408474-012D	DUP-01-20140805-01	8/5/2014 12:00:00AM	Groundwater	Polynuclear Aromatic Hydrocarbons		08/08/2014	08/12/2014
1408474-012D	DUP-01-20140805-01	8/5/2014 12:00:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		08/11/2014	08/11/2014
1408474-013A	MW-115D-20140805-01	8/5/2014 2:30:00PM	Groundwater	Volatile Organic Compounds by GC/MS		08/07/2014	08/07/2014
1408474-013B	MW-115D-20140805-01	8/5/2014 2:30:00PM	Groundwater	TOTAL METALS BY ICP		08/08/2014	08/08/2014
1408474-013B	MW-115D-20140805-01	8/5/2014 2:30:00PM	Groundwater	TOTAL MERCURY		08/11/2014	08/11/2014
1408474-013C	MW-115D-20140805-01	8/5/2014 2:30:00PM	Groundwater	Cyanide		08/07/2014	08/07/2014
1408474-013D	MW-115D-20140805-01	8/5/2014 2:30:00PM	Groundwater	Polynuclear Aromatic Hydrocarbons		08/08/2014	08/12/2014
1408474-013D	MW-115D-20140805-01	8/5/2014 2:30:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		08/11/2014	08/11/2014
1408474-014A	MW-12DD-20140805-01	8/5/2014 2:15:00PM	Groundwater	Volatile Organic Compounds by GC/MS		08/07/2014	08/07/2014
1408474-014B	MW-12DD-20140805-01	8/5/2014 2:15:00PM	Groundwater	TOTAL METALS BY ICP		08/08/2014	08/08/2014
1408474-014B	MW-12DD-20140805-01	8/5/2014 2:15:00PM	Groundwater	TOTAL MERCURY		08/11/2014	08/11/2014
1408474-014C	MW-12DD-20140805-01	8/5/2014 2:15:00PM	Groundwater	Cyanide		08/07/2014	08/07/2014
1408474-014D	MW-12DD-20140805-01	8/5/2014 2:15:00PM	Groundwater	Polynuclear Aromatic Hydrocarbons		08/08/2014	08/12/2014
1408474-014D	MW-12DD-20140805-01	8/5/2014 2:15:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		08/11/2014	08/11/2014

Client: ERM-Southeast
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Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1408474-015A	MW-207D-20140805-01	8/5/2014 12:00:00AM	Groundwater	Volatile Organic Compounds by GC/MS		08/07/2014	08/07/2014
1408474-015B	MW-207D-20140805-01	8/5/2014 12:00:00AM	Groundwater	TOTAL METALS BY ICP		08/08/2014	08/08/2014
1408474-015B	MW-207D-20140805-01	8/5/2014 12:00:00AM	Groundwater	TOTAL MERCURY		08/11/2014	08/11/2014
1408474-015C	MW-207D-20140805-01	8/5/2014 12:00:00AM	Groundwater	Cyanide		08/08/2014	08/08/2014
1408474-015D	MW-207D-20140805-01	8/5/2014 12:00:00AM	Groundwater	Polynuclear Aromatic Hydrocarbons		08/08/2014	08/12/2014
1408474-015D	MW-207D-20140805-01	8/5/2014 12:00:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		08/11/2014	08/11/2014
1408474-016A	MW-24D-20140806-01	8/6/2014 9:50:00AM	Groundwater	Volatile Organic Compounds by GC/MS		08/07/2014	08/07/2014
1408474-016B	MW-24D-20140806-01	8/6/2014 9:50:00AM	Groundwater	TOTAL METALS BY ICP		08/08/2014	08/08/2014
1408474-016B	MW-24D-20140806-01	8/6/2014 9:50:00AM	Groundwater	TOTAL MERCURY		08/11/2014	08/11/2014
1408474-016C	MW-24D-20140806-01	8/6/2014 9:50:00AM	Groundwater	Cyanide		08/08/2014	08/08/2014
1408474-016D	MW-24D-20140806-01	8/6/2014 9:50:00AM	Groundwater	Polynuclear Aromatic Hydrocarbons		08/08/2014	08/12/2014
1408474-016D	MW-24D-20140806-01	8/6/2014 9:50:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		08/11/2014	08/11/2014
1408474-017A	MW-308D-20140806-01	8/6/2014 9:30:00AM	Groundwater	Volatile Organic Compounds by GC/MS		08/07/2014	08/07/2014
1408474-017B	MW-308D-20140806-01	8/6/2014 9:30:00AM	Groundwater	TOTAL METALS BY ICP		08/08/2014	08/08/2014
1408474-017B	MW-308D-20140806-01	8/6/2014 9:30:00AM	Groundwater	TOTAL MERCURY		08/11/2014	08/11/2014
1408474-017C	MW-308D-20140806-01	8/6/2014 9:30:00AM	Groundwater	Cyanide		08/08/2014	08/08/2014
1408474-017D	MW-308D-20140806-01	8/6/2014 9:30:00AM	Groundwater	Polynuclear Aromatic Hydrocarbons		08/08/2014	08/12/2014
1408474-017D	MW-308D-20140806-01	8/6/2014 9:30:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		08/11/2014	08/11/2014
1408474-018A	MW-303D-20140806-01	8/6/2014 10:45:00AM	Groundwater	Volatile Organic Compounds by GC/MS		08/07/2014	08/07/2014
1408474-018B	MW-303D-20140806-01	8/6/2014 10:45:00AM	Groundwater	TOTAL METALS BY ICP		08/08/2014	08/09/2014
1408474-018B	MW-303D-20140806-01	8/6/2014 10:45:00AM	Groundwater	TOTAL MERCURY		08/11/2014	08/11/2014
1408474-018C	MW-303D-20140806-01	8/6/2014 10:45:00AM	Groundwater	Cyanide		08/08/2014	08/08/2014
1408474-018D	MW-303D-20140806-01	8/6/2014 10:45:00AM	Groundwater	Polynuclear Aromatic Hydrocarbons		08/08/2014	08/12/2014
1408474-018D	MW-303D-20140806-01	8/6/2014 10:45:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		08/11/2014	08/11/2014
1408474-019A	TB-01-20140806-01	8/6/2014 12:00:00AM	Aqueous	Volatile Organic Compounds by GC/MS		08/08/2014	08/08/2014
1408474-020A	MW-110D-20140806-01	8/6/2014 11:10:00AM	Groundwater	Volatile Organic Compounds by GC/MS		08/08/2014	08/08/2014
1408474-020A	MW-110D-20140806-01	8/6/2014 11:10:00AM	Groundwater	Volatile Organic Compounds by GC/MS		08/08/2014	08/09/2014
1408474-020B	MW-110D-20140806-01	8/6/2014 11:10:00AM	Groundwater	TOTAL METALS BY ICP		08/08/2014	08/09/2014
1408474-020B	MW-110D-20140806-01	8/6/2014 11:10:00AM	Groundwater	TOTAL MERCURY		08/11/2014	08/11/2014

Client: ERM-Southeast
 Project: AGL Macon
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Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1408474-020C	MW-110D-20140806-01	8/6/2014 11:10:00AM	Groundwater	Cyanide		08/08/2014	08/08/2014
1408474-020D	MW-110D-20140806-01	8/6/2014 11:10:00AM	Groundwater	Polynuclear Aromatic Hydrocarbons		08/08/2014	08/12/2014
1408474-020D	MW-110D-20140806-01	8/6/2014 11:10:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		08/11/2014	08/11/2014
1408474-020D	MW-110D-20140806-01	8/6/2014 11:10:00AM	Groundwater	Semivolatile Org. Comp. by GC/MS		08/11/2014	08/13/2014
1408474-021A	MW-204D-20140806-01	8/6/2014 1:10:00PM	Groundwater	Volatile Organic Compounds by GC/MS		08/08/2014	08/08/2014
1408474-021A	MW-204D-20140806-01	8/6/2014 1:10:00PM	Groundwater	Volatile Organic Compounds by GC/MS		08/08/2014	08/09/2014
1408474-021B	MW-204D-20140806-01	8/6/2014 1:10:00PM	Groundwater	TOTAL METALS BY ICP		08/08/2014	08/09/2014
1408474-021B	MW-204D-20140806-01	8/6/2014 1:10:00PM	Groundwater	TOTAL MERCURY		08/11/2014	08/11/2014
1408474-021C	MW-204D-20140806-01	8/6/2014 1:10:00PM	Groundwater	Cyanide		08/08/2014	08/08/2014
1408474-021D	MW-204D-20140806-01	8/6/2014 1:10:00PM	Groundwater	Polynuclear Aromatic Hydrocarbons		08/08/2014	08/12/2014
1408474-021D	MW-204D-20140806-01	8/6/2014 1:10:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		08/11/2014	08/11/2014
1408474-021D	MW-204D-20140806-01	8/6/2014 1:10:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		08/11/2014	08/13/2014
1408474-022A	MW-306D-20140806-01	8/6/2014 1:30:00PM	Groundwater	Volatile Organic Compounds by GC/MS		08/08/2014	08/08/2014
1408474-022A	MW-306D-20140806-01	8/6/2014 1:30:00PM	Groundwater	Volatile Organic Compounds by GC/MS		08/08/2014	08/09/2014
1408474-022B	MW-306D-20140806-01	8/6/2014 1:30:00PM	Groundwater	TOTAL METALS BY ICP		08/08/2014	08/11/2014
1408474-022B	MW-306D-20140806-01	8/6/2014 1:30:00PM	Groundwater	TOTAL MERCURY		08/12/2014	08/12/2014
1408474-022C	MW-306D-20140806-01	8/6/2014 1:30:00PM	Groundwater	Cyanide		08/08/2014	08/08/2014
1408474-022D	MW-306D-20140806-01	8/6/2014 1:30:00PM	Groundwater	Polynuclear Aromatic Hydrocarbons		08/08/2014	08/13/2014
1408474-022D	MW-306D-20140806-01	8/6/2014 1:30:00PM	Groundwater	Semivolatile Org. Comp. by GC/MS		08/11/2014	08/11/2014
1408474-023A	TRIP BLANK	8/6/2014 12:00:00AM	Aqueous	Volatile Organic Compounds by GC/MS		08/08/2014	08/08/2014

Client: ERM-Southeast
Project Name: AGL Macon
Workorder: 1408474

ANALYTICAL QC SUMMARY REPORT

BatchID: 194585

Sample ID: MB-194585	Client ID:					Units: mg/L	Prep Date: 08/07/2014	Run No: 273400			
SampleType: MBLK	TestCode: METALS, TOTAL	SW6010C				BatchID: 194585	Analysis Date: 08/08/2014	Seq No: 5769232			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	BRL	0.0200
Arsenic	BRL	0.0500
Barium	BRL	0.0200
Beryllium	BRL	0.0100
Cadmium	BRL	0.0050
Chromium	BRL	0.0100
Copper	BRL	0.0100
Lead	BRL	0.0100
Nickel	BRL	0.0200
Zinc	BRL	0.0200

Sample ID: LCS-194585	Client ID:					Units: mg/L	Prep Date: 08/07/2014	Run No: 273400			
SampleType: LCS	TestCode: METALS, TOTAL	SW6010C				BatchID: 194585	Analysis Date: 08/08/2014	Seq No: 5769229			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	1.066	0.0200	1.000	107	80	120
Arsenic	1.036	0.0500	1.000	104	80	120
Barium	1.052	0.0200	1.000	105	80	120
Beryllium	1.033	0.0100	1.000	103	80	120
Cadmium	1.042	0.0050	1.000	104	80	120
Chromium	1.041	0.0100	1.000	104	80	120
Copper	1.040	0.0100	1.000	104	80	120
Lead	1.038	0.0100	1.000	104	80	120
Nickel	1.036	0.0200	1.000	104	80	120
Zinc	1.032	0.0200	1.000	103	80	120

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGL Macon
 Workorder: 1408474

ANALYTICAL QC SUMMARY REPORT

BatchID: 194585

Sample ID: 1408386-001AMS	Client ID:					Units: mg/L	Prep Date: 08/07/2014	Run No: 273400			
SampleType: MS	TestCode: METALS, TOTAL	SW6010C	BatchID: 194585				Analysis Date: 08/08/2014	Seq No: 5769248			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	1.033	0.0200	1.000		103	75	125				
Arsenic	1.011	0.0500	1.000		101	75	125				
Barium	2.690	0.0200	1.000	1.698	99.2	75	125				
Beryllium	1.002	0.0100	1.000	0.004025	99.8	75	125				
Cadmium	1.010	0.0050	1.000	0.001412	101	75	125				
Chromium	0.9931	0.0100	1.000		99.3	75	125				
Copper	1.047	0.0100	1.000	0.04229	100	75	125				
Lead	0.9865	0.0100	1.000	0.001457	98.5	75	125				
Nickel	1.042	0.0200	1.000	0.06531	97.6	75	125				
Zinc	48.16	0.0200	1.000	48.09	7.58	75	125				S

Sample ID: 1408386-001AMSD	Client ID:					Units: mg/L	Prep Date: 08/07/2014	Run No: 273400			
SampleType: MSD	TestCode: METALS, TOTAL	SW6010C				BatchID: 194585	Analysis Date: 08/08/2014	Seq No: 5769252			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	1.027	0.0200	1.000		103	75	125	1.033	0.657	20	
Arsenic	1.003	0.0500	1.000		100	75	125	1.011	0.780	20	
Barium	2.686	0.0200	1.000	1.698	98.8	75	125	2.690	0.140	20	
Beryllium	0.9948	0.0100	1.000	0.004025	99.1	75	125	1.002	0.751	20	
Cadmium	1.004	0.0050	1.000	0.001412	100	75	125	1.010	0.559	20	
Chromium	0.9865	0.0100	1.000		98.6	75	125	0.9931	0.666	20	
Copper	1.044	0.0100	1.000	0.04229	100	75	125	1.047	0.260	20	
Lead	0.9806	0.0100	1.000	0.001457	97.9	75	125	0.9865	0.601	20	
Nickel	1.033	0.0200	1.000	0.06531	96.8	75	125	1.042	0.811	20	
Zinc	48.14	0.0200	1.000	48.09	5.18	75	125	48.16	0.050	20	S

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGL Macon
 Workorder: 1408474

ANALYTICAL QC SUMMARY REPORT

BatchID: 194591

Sample ID: MB-194591	Client ID:					Units: ug/L	Prep Date: 08/07/2014	Run No: 273219			
SampleType: MBLK	TestCode: Volatile Organic Compounds by GC/MS SW8260B					BatchID: 194591	Analysis Date: 08/07/2014	Seq No: 5765271			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	BRL	5.0									
Carbon disulfide	BRL	5.0									
Ethylbenzene	BRL	5.0									
Toluene	BRL	5.0									
Xylenes, Total	BRL	5.0									
Surr: 4-Bromofluorobenzene	45.70	0	50.00		91.4	66.2	120				
Surr: Dibromofluoromethane	49.24	0	50.00		98.5	79.5	121				
Surr: Toluene-d8	51.00	0	50.00		102	77	117				

Sample ID: LCS-194591	Client ID:					Units: ug/L	Prep Date: 08/07/2014	Run No: 273219			
SampleType: LCS	TestCode: Volatile Organic Compounds by GC/MS SW8260B					BatchID: 194591	Analysis Date: 08/07/2014	Seq No: 5765715			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	47.69	5.0	50.00		95.4	74.2	129				
Toluene	51.18	5.0	50.00		102	74.2	129				
Surr: 4-Bromofluorobenzene	45.83	0	50.00		91.7	66.2	120				
Surr: Dibromofluoromethane	49.31	0	50.00		98.6	79.5	121				
Surr: Toluene-d8	51.09	0	50.00		102	77	117				

Sample ID: 1408474-002AMS	Client ID: MW-25D-20140804-01	Units: ug/L	Prep Date: 08/07/2014	Run No: 273219							
SampleType: MS	TestCode: Volatile Organic Compounds by GC/MS SW8260B	BatchID: 194591	Analysis Date: 08/07/2014	Seq No: 5766693							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	48.29	5.0	50.00		96.6	70.2	138				
Toluene	52.71	5.0	50.00		105	70	139				
Surr: 4-Bromofluorobenzene	44.65	0	50.00		89.3	66.2	120				
Surr: Dibromofluoromethane	51.14	0	50.00		102	79.5	121				
Surr: Toluene-d8	51.63	0	50.00		103	77	117				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGL Macon
Workorder: 1408474

ANALYTICAL QC SUMMARY REPORT

BatchID: 194591

Sample ID: 1408474-002AMSD		Client ID: MW-25D-20140804-01				Units: ug/L		Prep Date: 08/07/2014		Run No: 273219	
SampleType: MSD		TestCode: Volatile Organic Compounds by GC/MS SW8260B				BatchID: 194591		Analysis Date: 08/07/2014		Seq No: 5766694	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	45.88	5.0	50.00		91.8	70.2	138	48.29	5.12	20	
Toluene	50.08	5.0	50.00		100	70	139	52.71	5.12	20	
Surr: 4-Bromofluorobenzene	45.85	0	50.00		91.7	66.2	120	44.65	0	0	
Surr: Dibromofluoromethane	49.34	0	50.00		98.7	79.5	121	51.14	0	0	
Surr: Toluene-d8	51.14	0	50.00		102	77	117	51.63	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGL Macon
 Workorder: 1408474

ANALYTICAL QC SUMMARY REPORT

BatchID: 194592

Sample ID: MB-194592	Client ID:					Units: ug/L	Prep Date: 08/07/2014	Run No: 273462			
SampleType: MBLK	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D					BatchID: 194592	Analysis Date: 08/11/2014	Seq No: 5770898			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	BRL	0.050									
Benzo(a)pyrene	BRL	0.050									
Benzo(b)fluoranthene	BRL	0.10									
Dibenz(a,h)anthracene	BRL	0.10									
Indeno(1,2,3-cd)pyrene	BRL	0.050									
Surr: 4-Terphenyl-d14	1.696	0	2.000		84.8	53.2	145				

Sample ID: LCS-194592	Client ID:					Units: ug/L	Prep Date: 08/07/2014	Run No: 273462			
SampleType: LCS	TestCode: SIM Polynuclear Aromatic Hydrocarbons	SW8270D	BatchID: 194592				Analysis Date: 08/11/2014	Seq No: 5770903			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	1.890	0.050	2.000		94.5	62.8	132				
Benzo(a)pyrene	1.779	0.050	2.000		88.9	56.4	123				
Benzo(b)fluoranthene	1.821	0.10	2.000		91.0	69.2	132				
Dibenz(a,h)anthracene	2.032	0.10	2.000		102	49.3	134				
Indeno(1,2,3-cd)pyrene	2.055	0.050	2.000		103	48.3	137				
Surr: 4-Terphenyl-d14	1.515	0	2.000		75.8	53.2	145				

Sample ID: 1408474-002DMS	Client ID: MW-25D-20140804-01	Units: ug/L			Prep Date: 08/07/2014	Run No: 273602					
SampleType: MS	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D	BatchID: 194592			Analysis Date: 08/13/2014	Seq No: 5773910					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	2.181	0.050	2.000		109	51.4	142				
Benzo(a)pyrene	1.841	0.050	2.000		92.0	48.3	126				
Benzo(b)fluoranthene	1.878	0.10	2.000		93.9	49.9	134				
Dibenz(a,h)anthracene	2.295	0.10	2.000		115	41.8	121				
Indeno(1,2,3-cd)pyrene	2.249	0.050	2.000		112	42	129				
Surr: 4-Terphenyl-d14	1.557	0	2.000		77.9	53.2	145				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGL Macon
Workorder: 1408474

ANALYTICAL QC SUMMARY REPORT

BatchID: 194592

Sample ID: 1408474-002DMSD	Client ID: MW-25D-20140804-01	Units: ug/L	Prep Date: 08/07/2014	Run No: 273602							
SampleType: MSD	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D	BatchID: 194592	Analysis Date: 08/13/2014	Seq No: 5773912							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	2.127	0.050	2.000		106	51.4	142	2.181	2.51	48.1	
Benzo(a)pyrene	1.810	0.050	2.000		90.5	48.3	126	1.841	1.69	53.5	
Benzo(b)fluoranthene	1.850	0.10	2.000		92.5	49.9	134	1.878	1.51	51.1	
Dibenz(a,h)anthracene	2.230	0.10	2.000		111	41.8	121	2.295	2.90	54.2	
Indeno(1,2,3-cd)pyrene	1.787	0.050	2.000		89.4	42	129	2.249	22.9	44.6	
Surr: 4-Terphenyl-d14	1.653	0	2.000		82.7	53.2	145	1.557	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGL Macon
Workorder: 1408474

ANALYTICAL QC SUMMARY REPORT

BatchID: 194594

Sample ID: MB-194594		Client ID:			Units: mg/L		Prep Date: 08/07/2014		Run No: 273268		
SampleType: MBLK		TestCode: Cyanide SW9014			BatchID: 194594		Analysis Date: 08/07/2014		Seq No: 5766459		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total BRL 0.010

Sample ID: LCS-194594		Client ID:		Units: mg/L		Prep Date: 08/07/2014		Run No: 273268			
SampleType: LCS		TestCode: Cyanide SW9014		BatchID: 194594		Analysis Date: 08/07/2014		Seq No: 5766489			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.2299 0.010 0.2500 92.0 85 115

Sample ID: 1408474-002CMS	Client ID: MW-25D-20140804-01	Units: mg/L	Prep Date: 08/07/2014	Run No: 273268							
SampleType: MS	TestCode: Cyanide SW9014	BatchID: 194594	Analysis Date: 08/07/2014	Seq No: 5766462							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.1613 0.010 0.2500 64.5 70 130 S

Sample ID: 1408474-002CMSD	Client ID: MW-25D-20140804-01	Units: mg/L	Prep Date: 08/07/2014	Run No: 273268							
SampleType: MSD	TestCode: Cyanide SW9014	BatchID: 194594	Analysis Date: 08/07/2014	Seq No: 5766501							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.1566 0.010 0.2500 62.6 70 130 0.1613 2.96 20 S

Qualifiers:	> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
	BRL Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
	J Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
	Rpt Lim Reporting Limit	S Spike Recovery outside limits due to matrix	

Client: ERM-Southeast
 Project Name: AGL Macon
 Workorder: 1408474

ANALYTICAL QC SUMMARY REPORT

BatchID: 194601

Sample ID: MB-194601	Client ID:					Units: ug/L	Prep Date: 08/08/2014	Run No: 273564			
SampleType: MBLK	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D					BatchID: 194601	Analysis Date: 08/12/2014	Seq No: 5773147			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

2,4-Dimethylphenol	BRL	10									
2-Methylphenol	BRL	10									
3,4-Methylphenol	BRL	10									
Acenaphthene	BRL	10									
Acenaphthylene	BRL	10									
Anthracene	BRL	10									
Benzo(g,h,i)perylene	BRL	10									
Benzo(k)fluoranthene	BRL	10									
Chrysene	BRL	10									
Fluoranthene	BRL	10									
Fluorene	BRL	10									
Naphthalene	BRL	10									
Phenanthrene	BRL	10									
Phenol	BRL	10									
Pyrene	BRL	10									
Surr: 2,4,6-Tribromophenol	88.10	0	100.0		88.1	51.5	124				
Surr: 2-Fluorobiphenyl	42.34	0	50.00		84.7	51.7	118				
Surr: 2-Fluorophenol	63.38	0	100.0		63.4	26	120				
Surr: 4-Terphenyl-d14	48.04	0	50.00		96.1	45.2	137				
Surr: Nitrobenzene-d5	42.05	0	50.00		84.1	42	120				
Surr: Phenol-d5	41.35	0	100.0		41.4	12.3	120				

Sample ID: LCS-194601	Client ID:				Units: ug/L	Prep Date: 08/08/2014	Run No: 273564				
SampleType: LCS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 194601	Analysis Date: 08/12/2014	Seq No: 5773156				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	111.0	10	100.0		111	67.7	122				
Phenol	42.95	10	100.0		43.0	24.6	120				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGL Macon
 Workorder: 1408474

ANALYTICAL QC SUMMARY REPORT

BatchID: 194601

Sample ID: LCS-194601	Client ID:					Units: ug/L	Prep Date: 08/08/2014	Run No: 273564			
SampleType: LCS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D					BatchID: 194601	Analysis Date: 08/12/2014	Seq No: 5773156			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Pyrene	105.0	10	100.0		105	68.3	123				
Surr: 2,4,6-Tribromophenol	111.7	0	100.0		112	51.5	124				
Surr: 2-Fluorobiphenyl	56.67	0	50.00		113	51.7	118				
Surr: 2-Fluorophenol	70.33	0	100.0		70.3	26	120				
Surr: 4-Terphenyl-d14	59.43	0	50.00		119	45.2	137				
Surr: Nitrobenzene-d5	50.03	0	50.00		100	42	120				
Surr: Phenol-d5	47.28	0	100.0		47.3	12.3	120				

Sample ID: 1408474-003DMS	Client ID: MW-300D-20140804-01	Units: ug/L			Prep Date: 08/08/2014	Run No: 273651					
SampleType: MS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D	BatchID: 194601			Analysis Date: 08/13/2014	Seq No: 5775219					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	84.62	10	100.0		84.6	51.9	120				
Phenol	54.54	10	100.0		54.5	30.5	120				
Pyrene	77.18	10	100.0		77.2	50.6	120				
Surr: 2,4,6-Tribromophenol	83.30	0	100.0		83.3	51.5	124				
Surr: 2-Fluorobiphenyl	38.79	0	50.00		77.6	51.7	118				
Surr: 2-Fluorophenol	66.42	0	100.0		66.4	26	120				
Surr: 4-Terphenyl-d14	40.21	0	50.00		80.4	45.2	137				
Surr: Nitrobenzene-d5	37.56	0	50.00		75.1	42	120				
Surr: Phenol-d5	53.50	0	100.0		53.5	12.3	120				

Sample ID: 1408474-003DMSD	Client ID: MW-300D-20140804-01	Units: ug/L	Prep Date: 08/08/2014	Run No: 273651							
SampleType: MSD	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D	BatchID: 194601	Analysis Date: 08/13/2014	Seq No: 5775227							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	79.61	10	100.0		79.6	51.9	120	84.62	6.10	24.9	
Phenol	48.88	10	100.0		48.9	30.5	120	54.54	10.9	34.4	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGL Macon
Workorder: 1408474

ANALYTICAL QC SUMMARY REPORT

BatchID: 194601

Sample ID: 1408474-003DMSD	Client ID: MW-300D-20140804-01	Units: ug/L	Prep Date: 08/08/2014	Run No: 273651							
SampleType: MSD	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D	BatchID: 194601	Analysis Date: 08/13/2014	Seq No: 5775227							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Pyrene	75.02	10	100.0		75.0	50.6	120	77.18	2.84	26.7	
Surr: 2,4,6-Tribromophenol	76.41	0	100.0		76.4	51.5	124	83.30	0	0	
Surr: 2-Fluorobiphenyl	36.85	0	50.00		73.7	51.7	118	38.79	0	0	
Surr: 2-Fluorophenol	58.39	0	100.0		58.4	26	120	66.42	0	0	
Surr: 4-Terphenyl-d14	40.09	0	50.00		80.2	45.2	137	40.21	0	0	
Surr: Nitrobenzene-d5	34.70	0	50.00		69.4	42	120	37.56	0	0	
Surr: Phenol-d5	49.19	0	100.0		49.2	12.3	120	53.50	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGL Macon
 Workorder: 1408474

ANALYTICAL QC SUMMARY REPORT

BatchID: 194631

Sample ID: MB-194631	Client ID:					Units: mg/L	Prep Date: 08/08/2014	Run No: 273426			
SampleType: MBLK	TestCode: METALS, TOTAL	SW6010C				BatchID: 194631	Analysis Date: 08/08/2014	Seq No: 5769819			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	BRL	0.0200
Arsenic	BRL	0.0500
Barium	BRL	0.0200
Beryllium	BRL	0.0100
Cadmium	BRL	0.0050
Chromium	BRL	0.0100
Copper	BRL	0.0100
Lead	BRL	0.0100
Nickel	BRL	0.0200
Zinc	BRL	0.0200

Sample ID: LCS-194631	Client ID:					Units: mg/L	Prep Date: 08/08/2014	Run No: 273426			
SampleType: LCS	TestCode: METALS, TOTAL	SW6010C				BatchID: 194631	Analysis Date: 08/08/2014	Seq No: 5769818			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	1.042	0.0200	1.000	104	80	120
Arsenic	1.029	0.0500	1.000	103	80	120
Barium	1.043	0.0200	1.000	104	80	120
Beryllium	1.028	0.0100	1.000	103	80	120
Cadmium	1.033	0.0050	1.000	103	80	120
Chromium	1.034	0.0100	1.000	103	80	120
Copper	1.044	0.0100	1.000	104	80	120
Lead	1.030	0.0100	1.000	103	80	120
Nickel	1.028	0.0200	1.000	103	80	120
Zinc	1.023	0.0200	1.000	102	80	120

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGL Macon
 Workorder: 1408474

ANALYTICAL QC SUMMARY REPORT

BatchID: 194631

Sample ID: 1408474-002BMS	Client ID: MW-25D-20140804-01	Units: mg/L	Prep Date: 08/08/2014	Run No: 273426							
SampleType: MS	TestCode: METALS, TOTAL SW6010C	BatchID: 194631	Analysis Date: 08/08/2014	Seq No: 5769822							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	1.039	0.0200	1.000		104	75	125				
Arsenic	1.016	0.0500	1.000		102	75	125				
Barium	4.901	0.0200	1.000	3.961	94.1	75	125				
Beryllium	1.013	0.0100	1.000	0.003208	101	75	125				
Cadmium	1.016	0.0050	1.000	0.0003026	102	75	125				
Chromium	1.008	0.0100	1.000		101	75	125				
Copper	1.021	0.0100	1.000	0.002293	102	75	125				
Lead	0.9887	0.0100	1.000		98.9	75	125				
Nickel	0.9641	0.0200	1.000	0.008029	95.6	75	125				
Zinc	1.007	0.0200	1.000	0.01984	98.7	75	125				

Sample ID: 1408474-003BMS	Client ID: MW-300D-20140804-01	Units: mg/L	Prep Date: 08/08/2014	Run No: 273426							
SampleType: MS	TestCode: METALS, TOTAL SW6010C	BatchID: 194631	Analysis Date: 08/08/2014	Seq No: 5769827							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	1.014	0.0200	1.000		101	75	125				
Arsenic	1.000	0.0500	1.000		100	75	125				
Barium	2.490	0.0200	1.000	1.518	97.2	75	125				
Beryllium	1.010	0.0100	1.000	0.01130	99.8	75	125				
Cadmium	1.006	0.0050	1.000	0.0005722	101	75	125				
Chromium	1.004	0.0100	1.000		100	75	125				
Copper	1.003	0.0100	1.000		100	75	125				
Lead	0.9831	0.0100	1.000		98.3	75	125				
Nickel	0.9762	0.0200	1.000	0.02505	95.1	75	125				
Zinc	1.065	0.0200	1.000	0.08835	97.7	75	125				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGL Macon
 Workorder: 1408474

ANALYTICAL QC SUMMARY REPORT

BatchID: 194631

Sample ID: 1408474-002BMSD	Client ID: MW-25D-20140804-01	Units: mg/L	Prep Date: 08/08/2014	Run No: 273426							
SampleType: MSD	TestCode: METALS, TOTAL SW6010C	BatchID: 194631	Analysis Date: 08/08/2014	Seq No: 5769823							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	1.026	0.0200	1.000		103	75	125	1.039	1.28	20	
Arsenic	0.9918	0.0500	1.000		99.2	75	125	1.016	2.42	20	
Barium	4.770	0.0200	1.000	3.961	81.0	75	125	4.901	2.71	20	
Beryllium	0.9865	0.0100	1.000	0.003208	98.3	75	125	1.013	2.64	20	
Cadmium	0.9909	0.0050	1.000	0.0003026	99.1	75	125	1.016	2.54	20	
Chromium	0.9886	0.0100	1.000		98.9	75	125	1.008	1.97	20	
Copper	0.9969	0.0100	1.000	0.002293	99.5	75	125	1.021	2.38	20	
Lead	0.9658	0.0100	1.000		96.6	75	125	0.9887	2.35	20	
Nickel	0.9428	0.0200	1.000	0.008029	93.5	75	125	0.9641	2.23	20	
Zinc	0.9785	0.0200	1.000	0.01984	95.9	75	125	1.007	2.87	20	

Sample ID: 1408474-003BMSD	Client ID: MW-300D-20140804-01	Units: mg/L	Prep Date: 08/08/2014	Run No: 273426							
SampleType: MSD	TestCode: METALS, TOTAL SW6010C	BatchID: 194631	Analysis Date: 08/08/2014	Seq No: 5769830							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	1.037	0.0200	1.000		104	75	125	1.014	2.25	20	
Arsenic	1.011	0.0500	1.000		101	75	125	1.000	1.06	20	
Barium	2.527	0.0200	1.000	1.518	101	75	125	2.490	1.46	20	
Beryllium	1.021	0.0100	1.000	0.01130	101	75	125	1.010	1.11	20	
Cadmium	1.014	0.0050	1.000	0.0005722	101	75	125	1.006	0.835	20	
Chromium	1.015	0.0100	1.000		101	75	125	1.004	1.13	20	
Copper	1.018	0.0100	1.000		102	75	125	1.003	1.45	20	
Lead	0.9928	0.0100	1.000		99.3	75	125	0.9831	0.975	20	
Nickel	0.9793	0.0200	1.000	0.02505	95.4	75	125	0.9762	0.320	20	
Zinc	1.077	0.0200	1.000	0.08835	98.8	75	125	1.065	1.05	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGL Macon
Workorder: 1408474

ANALYTICAL QC SUMMARY REPORT

BatchID: 194654

Sample ID: MB-194654		Client ID:			Units: mg/L		Prep Date: 08/08/2014		Run No: 273316		
SampleType: MBLK		TestCode: Cyanide SW9014			BatchID: 194654		Analysis Date: 08/08/2014		Seq No: 5767533		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total BRL 0.010

Sample ID: LCS-194654		Client ID:		Units: mg/L		Prep Date: 08/08/2014		Run No: 273316			
SampleType: LCS		TestCode: Cyanide SW9014		BatchID: 194654		Analysis Date: 08/08/2014		Seq No: 5767534			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.2299 0.010 0.2500 92.0 85 115

Sample ID: 1408474-003CMS	Client ID: MW-300D-20140804-01	Units: mg/L	Prep Date: 08/08/2014	Run No: 273316							
SampleType: MS	TestCode: Cyanide SW9014	BatchID: 194654	Analysis Date: 08/08/2014	Seq No: 5767545							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.2036 0.010 0.2500 81.4 70 130

Sample ID: 1408474-003CMSD	Client ID: MW-300D-20140804-01	Units: mg/L	Prep Date: 08/08/2014	Run No: 273316							
SampleType: MSD	TestCode: Cyanide SW9014	BatchID: 194654	Analysis Date: 08/08/2014	Seq No: 5767547							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.2036 0.010 0.2500 81.4 70 130 0.2036 0 20

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGL Macon
 Workorder: 1408474

ANALYTICAL QC SUMMARY REPORT

BatchID: 194657

Sample ID: MB-194657	Client ID:					Units: ug/L	Prep Date: 08/08/2014	Run No: 273602			
SampleType: MBLK	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D					BatchID: 194657	Analysis Date: 08/12/2014	Seq No: 5773870			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	BRL	0.050									
Benzo(a)pyrene	BRL	0.050									
Benzo(b)fluoranthene	BRL	0.10									
Dibenz(a,h)anthracene	BRL	0.10									
Indeno(1,2,3-cd)pyrene	BRL	0.050									
Surr: 4-Terphenyl-d14	1.617	0	2.000		80.8	53.2	145				

Sample ID: LCS-194657	Client ID:					Units: ug/L	Prep Date: 08/08/2014	Run No: 273602			
SampleType: LCS	TestCode: SIM Polynuclear Aromatic Hydrocarbons	SW8270D	BatchID: 194657				Analysis Date: 08/12/2014	Seq No: 5773871			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	2.271	0.050	2.000		114	62.8	132				
Benzo(a)pyrene	1.898	0.050	2.000		94.9	56.4	123				
Benzo(b)fluoranthene	1.942	0.10	2.000		97.1	69.2	132				
Dibenz(a,h)anthracene	2.180	0.10	2.000		109	49.3	134				
Indeno(1,2,3-cd)pyrene	1.733	0.050	2.000		86.6	48.3	137				
Surr: 4-Terphenyl-d14	1.499	0	2.000		74.9	53.2	145				

Sample ID: 1408474-003DMS	Client ID: MW-300D-20140804-01	Units: ug/L			Prep Date: 08/08/2014	Run No: 273602					
SampleType: MS	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D	BatchID: 194657			Analysis Date: 08/13/2014	Seq No: 5773907					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	2.138	0.050	2.000	0.007990	106	51.4	142				
Benzo(a)pyrene	1.841	0.050	2.000	0.01293	91.4	48.3	126				
Benzo(b)fluoranthene	1.862	0.10	2.000		93.1	49.9	134				
Dibenz(a,h)anthracene	2.328	0.10	2.000	0.02601	115	41.8	121				
Indeno(1,2,3-cd)pyrene	1.813	0.050	2.000	0.02320	89.5	42	129				
Surr: 4-Terphenyl-d14	1.522	0	2.000		76.1	53.2	145				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGL Macon
Workorder: 1408474

ANALYTICAL QC SUMMARY REPORT

BatchID: 194657

Sample ID: 1408474-003DMSD	Client ID: MW-300D-20140804-01	Units: ug/L	Prep Date: 08/08/2014	Run No: 273602							
SampleType: MSD	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D	BatchID: 194657	Analysis Date: 08/13/2014	Seq No: 5773909							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	1.993	0.050	2.000	0.007990	99.3	51.4	142	2.138	6.99	48.1	
Benzo(a)pyrene	1.702	0.050	2.000	0.01293	84.4	48.3	126	1.841	7.86	53.5	
Benzo(b)fluoranthene	1.720	0.10	2.000		86.0	49.9	134	1.862	7.96	51.1	
Dibenz(a,h)anthracene	2.142	0.10	2.000	0.02601	106	41.8	121	2.328	8.32	54.2	
Indeno(1,2,3-cd)pyrene	2.070	0.050	2.000	0.02320	102	42	129	1.813	13.2	44.6	
Surr: 4-Terphenyl-d14	1.401	0	2.000		70.0	53.2	145	1.522	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGL Macon
 Workorder: 1408474

ANALYTICAL QC SUMMARY REPORT

BatchID: 194659

Sample ID: MB-194659	Client ID:					Units: ug/L	Prep Date: 08/08/2014	Run No: 273307			
SampleType: MBLK	TestCode: Volatile Organic Compounds by GC/MS SW8260B					BatchID: 194659	Analysis Date: 08/08/2014	Seq No: 5768300			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	BRL	5.0									
Carbon disulfide	BRL	5.0									
Ethylbenzene	BRL	5.0									
Toluene	BRL	5.0									
Xylenes, Total	BRL	5.0									
Surr: 4-Bromofluorobenzene	45.49	0	50.00		91.0	66.2	120				
Surr: Dibromofluoromethane	51.00	0	50.00		102	79.5	121				
Surr: Toluene-d8	51.21	0	50.00		102	77	117				

Sample ID: LCS-194659	Client ID:					Units: ug/L	Prep Date: 08/08/2014	Run No: 273307			
SampleType: LCS	TestCode: Volatile Organic Compounds by GC/MS SW8260B					BatchID: 194659	Analysis Date: 08/08/2014	Seq No: 5768341			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	50.02	5.0	50.00		100	74.2	129				
Toluene	52.58	5.0	50.00		105	74.2	129				
Surr: 4-Bromofluorobenzene	45.77	0	50.00		91.5	66.2	120				
Surr: Dibromofluoromethane	48.71	0	50.00		97.4	79.5	121				
Surr: Toluene-d8	50.29	0	50.00		101	77	117				

Sample ID: 1408474-003AMS	Client ID: MW-300D-20140804-01	Units: ug/L	Prep Date: 08/08/2014	Run No: 273307							
SampleType: MS	TestCode: Volatile Organic Compounds by GC/MS SW8260B	BatchID: 194659	Analysis Date: 08/08/2014	Seq No: 5768647							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	49.93	5.0	50.00		99.9	70.2	138				
Toluene	52.33	5.0	50.00		105	70	139				
Surr: 4-Bromofluorobenzene	44.92	0	50.00		89.8	66.2	120				
Surr: Dibromofluoromethane	49.39	0	50.00		98.8	79.5	121				
Surr: Toluene-d8	52.07	0	50.00		104	77	117				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGL Macon
Workorder: 1408474

ANALYTICAL QC SUMMARY REPORT

BatchID: 194659

Sample ID: 1408474-003AMSD	Client ID: MW-300D-20140804-01	Units: ug/L	Prep Date: 08/08/2014	Run No: 273307							
SampleType: MSD	TestCode: Volatile Organic Compounds by GC/MS SW8260B	BatchID: 194659	Analysis Date: 08/08/2014	Seq No: 5768660							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	48.60	5.0	50.00		97.2	70.2	138	49.93	2.70	20	
Toluene	51.38	5.0	50.00		103	70	139	52.33	1.83	20	
Surr: 4-Bromofluorobenzene	44.99	0	50.00		90.0	66.2	120	44.92	0	0	
Surr: Dibromofluoromethane	49.97	0	50.00		99.9	79.5	121	49.39	0	0	
Surr: Toluene-d8	50.71	0	50.00		101	77	117	52.07	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGL Macon
 Workorder: 1408474

ANALYTICAL QC SUMMARY REPORT

BatchID: 194664

Sample ID: MB-194664	Client ID:					Units: mg/L	Prep Date: 08/11/2014	Run No: 273382			
SampleType: MBLK	TestCode: Mercury, Total	SW7470A				BatchID: 194664	Analysis Date: 08/11/2014	Seq No: 5769876			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury BRL 0.00020

Sample ID: LCS-194664	Client ID:	Units: mg/L	Prep Date: 08/11/2014	Run No: 273382							
SampleType: LCS	TestCode: Mercury, Total SW7470A	BatchID: 194664	Analysis Date: 08/11/2014	Seq No: 5769879							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.004759 0.00020 0.0050 95.2 80 120

Sample ID: 1408474-002BMS	Client ID: MW-25D-20140804-01	Units: mg/L	Prep Date: 08/11/2014	Run No: 273382							
SampleType: MS	TestCode: Mercury, Total SW7470A	BatchID: 194664	Analysis Date: 08/11/2014	Seq No: 5769883							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.005025 0.00020 0.0050 101 70 130

Sample ID: 1408474-003BMS	Client ID: MW-300D-20140804-01	Units: mg/L	Prep Date: 08/11/2014	Run No: 273382							
SampleType: MS	TestCode: Mercury, Total SW7470A	BatchID: 194664	Analysis Date: 08/11/2014	Seq No: 5769900							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.004845 0.00020 0.0050 96.9 70 130

Sample ID: 1408474-002BMSD	Client ID: MW-25D-20140804-01	Units: mg/L	Prep Date: 08/11/2014	Run No: 273382							
SampleType: MSD	TestCode: Mercury, Total SW7470A	BatchID: 194664	Analysis Date: 08/11/2014	Seq No: 5769886							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.005117 0.00020 0.0050 102 70 130 0.005025 1.80 20

Qualifiers:	> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
	BRL Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
	J Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
	Rpt Lim Reporting Limit	S Spike Recovery outside limits due to matrix	

Client: ERM-Southeast
Project Name: AGL Macon
Workorder: 1408474

ANALYTICAL QC SUMMARY REPORT

BatchID: 194664

Sample ID: 1408474-003BMSD		Client ID: MW-300D-20140804-01				Units: mg/L		Prep Date: 08/11/2014		Run No: 273382	
SampleType: MSD		TestCode: Mercury, Total SW7470A				BatchID: 194664		Analysis Date: 08/11/2014		Seq No: 5769905	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.004874	0.00020	0.0050		97.5	70	130	0.004845	0.584	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGL Macon
 Workorder: 1408474

ANALYTICAL QC SUMMARY REPORT

BatchID: 194690

Sample ID: MB-194690	Client ID:					Units: ug/L	Prep Date: 08/11/2014	Run No: 273501			
SampleType: MBLK	TestCode: Semivolatile Org. Comp. by GC/MS	SW8270D				BatchID: 194690	Analysis Date: 08/11/2014	Seq No: 5771508			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

2,4-Dimethylphenol	BRL	10									
2-Methylphenol	BRL	10									
3,4-Methylphenol	BRL	10									
Acenaphthene	BRL	10									
Acenaphthylene	BRL	10									
Anthracene	BRL	10									
Benzo(g,h,i)perylene	BRL	10									
Benzo(k)fluoranthene	BRL	10									
Chrysene	BRL	10									
Fluoranthene	BRL	10									
Fluorene	BRL	10									
Naphthalene	BRL	10									
Phenanthrene	BRL	10									
Phenol	BRL	10									
Pyrene	BRL	10									
Surr: 2,4,6-Tribromophenol	95.03	0	100.0		95.0	51.5	124				
Surr: 2-Fluorobiphenyl	48.47	0	50.00		96.9	51.7	118				
Surr: 2-Fluorophenol	63.60	0	100.0		63.6	26	120				
Surr: 4-Terphenyl-d14	58.17	0	50.00		116	45.2	137				
Surr: Nitrobenzene-d5	40.23	0	50.00		80.5	42	120				
Surr: Phenol-d5	41.48	0	100.0		41.5	12.3	120				

Sample ID: LCS-194690	Client ID:				Units: ug/L	Prep Date: 08/11/2014	Run No: 273501				
SampleType: LCS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 194690	Analysis Date: 08/11/2014	Seq No: 5771509				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	110.5	10	100.0		111	67.7	122				
Phenol	49.79	10	100.0		49.8	24.6	120				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGL Macon
 Workorder: 1408474

ANALYTICAL QC SUMMARY REPORT

BatchID: 194690

Sample ID: LCS-194690	Client ID:				Units: ug/L	Prep Date: 08/11/2014	Run No: 273501				
SampleType: LCS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 194690	Analysis Date: 08/11/2014	Seq No: 5771509				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Pyrene	118.4	10	100.0		118	68.3	123				
Surr: 2,4,6-Tribromophenol	116.2	0	100.0		116	51.5	124				
Surr: 2-Fluorobiphenyl	56.88	0	50.00		114	51.7	118				
Surr: 2-Fluorophenol	74.91	0	100.0		74.9	26	120				
Surr: 4-Terphenyl-d14	62.60	0	50.00		125	45.2	137				
Surr: Nitrobenzene-d5	50.44	0	50.00		101	42	120				
Surr: Phenol-d5	50.49	0	100.0		50.5	12.3	120				

Sample ID: 1408474-002DMS	Client ID: MW-25D-20140804-01	Units: ug/L			Prep Date: 08/11/2014	Run No: 273501					
SampleType: MS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D	BatchID: 194690			Analysis Date: 08/12/2014	Seq No: 5771821					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	88.84	10	100.0		88.8	51.9	120				
Phenol	57.06	10	100.0		57.1	30.5	120				
Pyrene	94.54	10	100.0		94.5	50.6	120				
Surr: 2,4,6-Tribromophenol	98.09	0	100.0		98.1	51.5	124				
Surr: 2-Fluorobiphenyl	42.03	0	50.00		84.1	51.7	118				
Surr: 2-Fluorophenol	67.62	0	100.0		67.6	26	120				
Surr: 4-Terphenyl-d14	49.32	0	50.00		98.6	45.2	137				
Surr: Nitrobenzene-d5	39.89	0	50.00		79.8	42	120				
Surr: Phenol-d5	56.73	0	100.0		56.7	12.3	120				

Sample ID: 1408474-002DMSD	Client ID: MW-25D-20140804-01	Units: ug/L	Prep Date: 08/11/2014	Run No: 274032							
SampleType: MSD	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D	BatchID: 194690	Analysis Date: 08/19/2014	Seq No: 5782809							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	89.67	10	100.0		89.7	51.9	120	88.84	0.930	24.9	
Phenol	51.69	10	100.0		51.7	30.5	120	57.06	9.88	34.4	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGL Macon
Workorder: 1408474

ANALYTICAL QC SUMMARY REPORT

BatchID: 194690

Sample ID: 1408474-002DMSD	Client ID: MW-25D-20140804-01	Units: ug/L	Prep Date: 08/11/2014	Run No: 274032							
SampleType: MSD	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D	BatchID: 194690	Analysis Date: 08/19/2014	Seq No: 5782809							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Pyrene	86.92	10	100.0		86.9	50.6	120	94.54	8.40	26.7	
Surr: 2,4,6-Tribromophenol	105.3	0	100.0		105	51.5	124	98.09	0	0	
Surr: 2-Fluorobiphenyl	43.29	0	50.00		86.6	51.7	118	42.03	0	0	
Surr: 2-Fluorophenol	67.62	0	100.0		67.6	26	120	67.62	0	0	
Surr: 4-Terphenyl-d14	49.03	0	50.00		98.1	45.2	137	49.32	0	0	
Surr: Nitrobenzene-d5	39.24	0	50.00		78.5	42	120	39.89	0	0	
Surr: Phenol-d5	51.16	0	100.0		51.2	12.3	120	56.73	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGL Macon
 Workorder: 1408474

ANALYTICAL QC SUMMARY REPORT

BatchID: 194741

Sample ID: MB-194741	Client ID:				Units: mg/L	Prep Date: 08/12/2014	Run No: 273507				
SampleType: MBLK	TestCode: Mercury, Total	SW7470A	BatchID: 194741			Analysis Date: 08/12/2014	Seq No: 5772276				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury BRL 0.00020

Sample ID: LCS-194741	Client ID:	Units: mg/L	Prep Date: 08/12/2014	Run No: 273507							
SampleType: LCS	TestCode: Mercury, Total SW7470A	BatchID: 194741	Analysis Date: 08/12/2014	Seq No: 5772279							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.005049 0.00020 0.0050 101 80 120

Sample ID: 1408481-001BMS	Client ID:					Units: mg/L	Prep Date: 08/12/2014	Run No: 273507			
SampleType: MS	TestCode: Mercury, Total	SW7470A				BatchID: 194741	Analysis Date: 08/12/2014	Seq No: 5772285			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.005067 0.00020 0.0050 101 70 130

Sample ID: 1408481-001BMSD	Client ID:				Units: mg/L	Prep Date: 08/12/2014	Run No: 273507				
SampleType: MSD	TestCode: Mercury, Total	SW7470A	BatchID: 194741			Analysis Date: 08/12/2014	Seq No: 5772288				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.005166 0.00020 0.0050 103 70 130 0.005067 1.93 20

Qualifiers:	> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
	BRL Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
	J Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
	Rpt Lim Reporting Limit	S Spike Recovery outside limits due to matrix	



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

August 18, 2014

Nic Vrey
ERM-Southeast
3200 Windy Hill Rd
Atlanta GA 30339

TEL: (678) 486-2700
FAX: (404) 745-0103

RE: AGL Macon

Dear Nic Vrey:

Order No: 1408481

Analytical Environmental Services, Inc. received 1 samples on 8/6/2014 4:35:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.

AES' certifications are as follows:

- NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/14-06/30/15.
- AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 09/01/15.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Mirzeta Kararic
Project Manager



ANALYTICAL ENVIRONMENTAL SERVICES, INC

3080 Presidential Drive, Atlanta GA 30340-3704

TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1408461

Date: 8/16/14 Page 1 of 1

COMPANY: <u>AES</u>		ADDRESS: <u>3200 Windy Hill Rd SE</u> <u>Suite 17000</u> <u>Atlanta, GA 30339</u>		PHONE: <u>(678) 486 2700</u>		FAX: <u></u>		SIGNATURE: <u>J. Mullooly</u>		SAMPLE ID: <u>NW-080-20140806-01</u>		SAMPLED BY: <u>J. Mullooly</u>		DATE: <u>8/16/14</u> TIME: <u>08:50</u>		COMPOSITE: <u>X</u>		MATRIX: <u>GW</u>		PRESERVATION (See codes): <u>8270</u> <u>8260</u> <u>Mutli-Mercury</u> <u>Lyanda</u>		ANALYSIS REQUESTED		REMARKS		No # of Containers	
RELINQUISHED BY		DATE/TIME		RECEIVED BY		DATE/TIME		PROJECT INFORMATION		RECEIPT		TURNAROUND TIME REQUEST		STATE PROGRAM (if any):		E-mail? Y/N; Fax? Y/N		DATA PACKAGE: I II III IV									
1: <u>[Signature]</u>		8/16/14 4:00		1: <u>U.A.</u>		8/16/14 4:00		PROJECT NAME: <u>AIL Macon</u>		Total # of Containers		<input checked="" type="radio"/> Turnaround Time Request		Standard 5 Business Days		E-mail? Y/N; Fax? Y/N		DATA PACKAGE: I II III IV									
2: <u>U.A.</u>		8/16/14 4:35		2: <u>[Signature]</u>		8/16/14 4:35		PROJECT #: <u>0230715</u>				<input type="radio"/> Standard 5 Business Days		2 Business Day Rush		Next Business Day Rush		Same Day Rush (auth req.)									
3: <u>U.A.</u>		8/16/14 4:35		3: <u>[Signature]</u>		8/16/14 4:35		SITE ADDRESS: <u>Walnut St.</u> <u>Macon, GA</u>				<input type="radio"/> Other		STATE PROGRAM (if any):		E-mail? Y/N; Fax? Y/N		DATA PACKAGE: I II III IV									
SPECIAL INSTRUCTIONS/COMMENTS:				SHIPMENT METHOD				INVOICE TO: <u>NIC.VREG@EYM-COM</u>				<input type="radio"/> Turnaround Time Request		Standard 5 Business Days		E-mail? Y/N; Fax? Y/N		DATA PACKAGE: I II III IV									
OUT		/ /		VIA:				(IF DIFFERENT FROM ABOVE)				<input type="radio"/> Standard 5 Business Days		2 Business Day Rush		Next Business Day Rush		Same Day Rush (auth req.)									
IN		/ /		VIA:				QUOTE #:				<input type="radio"/> Other		STATE PROGRAM (if any):		E-mail? Y/N; Fax? Y/N		DATA PACKAGE: I II III IV									
CLIENT FedEx UPS MAIL				GREYHOUND OTHER				INVOICE TO: <u>NIC.VREG@EYM-COM</u>				<input type="radio"/> Turnaround Time Request		Standard 5 Business Days		E-mail? Y/N; Fax? Y/N		DATA PACKAGE: I II III IV									
SPECIAL INSTRUCTIONS/COMMENTS:				SHIPMENT METHOD				INVOICE TO: <u>NIC.VREG@EYM-COM</u>				<input type="radio"/> Turnaround Time Request		Standard 5 Business Days		E-mail? Y/N; Fax? Y/N		DATA PACKAGE: I II III IV									
OUT		/ /		VIA:				QUOTE #:				<input type="radio"/> Other		STATE PROGRAM (if any):		E-mail? Y/N; Fax? Y/N		DATA PACKAGE: I II III IV									
IN		/ /		VIA:				INVOICE TO: <u>NIC.VREG@EYM-COM</u>				<input type="radio"/> Turnaround Time Request		Standard 5 Business Days		E-mail? Y/N; Fax? Y/N		DATA PACKAGE: I II III IV									
CLIENT FedEx UPS MAIL				GREYHOUND OTHER				INVOICE TO: <u>NIC.VREG@EYM-COM</u>				<input type="radio"/> Turnaround Time Request		Standard 5 Business Days		E-mail? Y/N; Fax? Y/N		DATA PACKAGE: I II III IV									
SPECIAL INSTRUCTIONS/COMMENTS:				SHIPMENT METHOD				INVOICE TO: <u>NIC.VREG@EYM-COM</u>				<input type="radio"/> Other		STATE PROGRAM (if any):		E-mail? Y/N; Fax? Y/N		DATA PACKAGE: I II III IV									
OUT		/ /		VIA:				INVOICE TO: <u>NIC.VREG@EYM-COM</u>				<input type="radio"/> Turnaround Time Request		Standard 5 Business Days		E-mail? Y/N; Fax? Y/N		DATA PACKAGE: I II III IV									
IN		/ /		VIA:				INVOICE TO: <u>NIC.VREG@EYM-COM</u>				<input type="radio"/> Other		STATE PROGRAM (if any):		E-mail? Y/N; Fax? Y/N		DATA PACKAGE: I II III IV									
CLIENT FedEx UPS MAIL				GREYHOUND OTHER				INVOICE TO: <u>NIC.VREG@EYM-COM</u>				<input type="radio"/> Turnaround Time Request		Standard 5 Business Days		E-mail? Y/N; Fax? Y/N		DATA PACKAGE: I II III IV									

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.

SAFETY: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) O = Other (specify) WW = Waste Water

TYPE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice NA = None

White Copy - Original; Yellow Copy - Client

Analytical Environmental Services, Inc
Date: 18-Aug-14

Client: ERM-Southeast
Project Name: AGL Macon
Lab ID: 1408481-001

Client Sample ID: MW-08D-20140806-01
Collection Date: 8/6/2014 8:50:00 AM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	194659	1	08/09/2014 15:20	GK
Carbon disulfide	BRL	5.0		ug/L	194659	1	08/09/2014 15:20	GK
Ethylbenzene	BRL	5.0		ug/L	194659	1	08/09/2014 15:20	GK
Toluene	BRL	5.0		ug/L	194659	1	08/09/2014 15:20	GK
Xylenes, Total	BRL	5.0		ug/L	194659	1	08/09/2014 15:20	GK
Surr: 4-Bromofluorobenzene	91.2	66.2-120		%REC	194659	1	08/09/2014 15:20	GK
Surr: Dibromofluoromethane	100	79.5-121		%REC	194659	1	08/09/2014 15:20	GK
Surr: Toluene-d8	104	77-117		%REC	194659	1	08/09/2014 15:20	GK
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	194657	1	08/13/2014 00:30	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194657	1	08/13/2014 00:30	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194657	1	08/13/2014 00:30	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194657	1	08/13/2014 00:30	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194657	1	08/13/2014 00:30	YH
Surr: 4-Terphenyl-d14	73.4	53.2-145		%REC	194657	1	08/13/2014 00:30	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194690	1	08/11/2014 22:56	YH
2-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 22:56	YH
3,4-Methylphenol	BRL	10		ug/L	194690	1	08/11/2014 22:56	YH
Acenaphthene	BRL	10		ug/L	194690	1	08/11/2014 22:56	YH
Acenaphthylene	BRL	10		ug/L	194690	1	08/11/2014 22:56	YH
Anthracene	BRL	10		ug/L	194690	1	08/11/2014 22:56	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194690	1	08/11/2014 22:56	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 22:56	YH
Chrysene	BRL	10		ug/L	194690	1	08/11/2014 22:56	YH
Fluoranthene	BRL	10		ug/L	194690	1	08/11/2014 22:56	YH
Fluorene	BRL	10		ug/L	194690	1	08/11/2014 22:56	YH
Naphthalene	BRL	10		ug/L	194690	1	08/11/2014 22:56	YH
Phenanthrene	BRL	10		ug/L	194690	1	08/11/2014 22:56	YH
Phenol	BRL	10		ug/L	194690	1	08/11/2014 22:56	YH
Pyrene	BRL	10		ug/L	194690	1	08/11/2014 22:56	YH
Surr: 2,4,6-Tribromophenol	91.6	51.5-124		%REC	194690	1	08/11/2014 22:56	YH
Surr: 2-Fluorobiphenyl	82.5	51.7-118		%REC	194690	1	08/11/2014 22:56	YH
Surr: 2-Fluorophenol	64.6	26-120		%REC	194690	1	08/11/2014 22:56	YH
Surr: 4-Terphenyl-d14	89.7	45.2-137		%REC	194690	1	08/11/2014 22:56	YH
Surr: Nitrobenzene-d5	72	42-120		%REC	194690	1	08/11/2014 22:56	YH
Surr: Phenol-d5	49.8	12.3-120		%REC	194690	1	08/11/2014 22:56	YH
Mercury, Total SW7470A				(SW7470A)				

Qualifiers: * Value exceeds maximum contaminant level
 BRL Below reporting limit
 H Holding times for preparation or analysis exceeded
 N Analyte not NELAC certified
 B Analyte detected in the associated method blank
 > Greater than Result value

E Estimated (value above quantitation range)
 S Spike Recovery outside limits due to matrix
 Narr See case narrative
 NC Not confirmed
 < Less than Result value
 J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 18-Aug-14

Client: ERM-Southeast
 Project Name: AGL Macon
 Lab ID: 1408481-001

Client Sample ID: MW-08D-20140806-01
 Collection Date: 8/6/2014 8:50:00 AM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	194741	1	08/12/2014 12:11	CG
Cyanide SW9014					(SW9010C)			
Cyanide, Total	0.012	0.010		mg/L	194654	1	08/08/2014 11:00	PF
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	194585	1	08/11/2014 20:23	JL
Arsenic	BRL	0.0500		mg/L	194585	1	08/11/2014 20:23	JL
Barium	0.979	0.0200		mg/L	194585	1	08/11/2014 20:23	JL
Beryllium	BRL	0.0100		mg/L	194585	1	08/11/2014 20:23	JL
Cadmium	BRL	0.0050		mg/L	194585	1	08/11/2014 20:23	JL
Chromium	BRL	0.0100		mg/L	194585	1	08/11/2014 20:23	JL
Copper	BRL	0.0100		mg/L	194585	1	08/11/2014 20:23	JL
Lead	BRL	0.0100		mg/L	194585	1	08/11/2014 20:23	JL
Nickel	BRL	0.0200		mg/L	194585	1	08/11/2014 20:23	JL
Zinc	BRL	0.0200		mg/L	194585	1	08/11/2014 20:23	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Enr

Work Order Number 1408481

Checklist completed by [Signature] Date 8/6/19

Carrier name: FedEx ☐ UPS ☐ Courier ☐ Client ☐ US Mail ☐ Other ☐

Shipping container/cooler in good condition? Yes ☒ No ☐ Not Present ☐

Custody seals intact on shipping container/cooler? Yes ☐ No ☐ Not Present ☒

Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒

Container/Temp Blank temperature in compliance? (4°C±2)* Yes ☒ No ☐

Cooler #1 39 Cooler #2 ☐ Cooler #3 ☐ Cooler #4 ☐ Cooler #5 ☐ Cooler #6 ☐

Chain of custody present? Yes ☒ No ☐

Chain of custody signed when relinquished and received? Yes ☒ No ☐

Chain of custody agrees with sample labels? Yes ☒ No ☐

Samples in proper container/bottle? Yes ☒ No ☐

Sample containers intact? Yes ☒ No ☐

Sufficient sample volume for indicated test? Yes ☒ No ☐

All samples received within holding time? Yes ☒ No ☐

Was TAT marked on the COC? Yes ☒ No ☐

Proceed with Standard TAT as per project history? Yes ☐ No ☐ Not Applicable ☒

Water - VOA vials have zero headspace? No VOA vials submitted ☐ Yes ☒ No ☐

Water - pH acceptable upon receipt? Yes ☒ No ☐ Not Applicable ☐

Adjusted? ☐ Checked by ☐

Sample Condition: Good ☒ Other(Explain) ☐

(For diffusive samples or AIHA lead) Is a known blank included? Yes ☐ No ☒

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\\Quality Assurance\Checklists Procedures Sign-Off Templates\Checklists\Sample Receipt Checklists\Sample_Cooler_Receipt_Checklist

Client: ERM-Southeast
 Project Name: AGL Macon
 Workorder: 1408481

ANALYTICAL QC SUMMARY REPORT

BatchID: 194585

Sample ID: MB-194585	Client ID:					Units: mg/L	Prep Date: 08/07/2014	Run No: 273400			
SampleType: MBLK	TestCode: METALS, TOTAL	SW6010C				BatchID: 194585	Analysis Date: 08/08/2014	Seq No: 5769232			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	BRL	0.0200
Arsenic	BRL	0.0500
Barium	BRL	0.0200
Beryllium	BRL	0.0100
Cadmium	BRL	0.0050
Chromium	BRL	0.0100
Copper	BRL	0.0100
Lead	BRL	0.0100
Nickel	BRL	0.0200
Zinc	BRL	0.0200

Sample ID: LCS-194585	Client ID:					Units: mg/L	Prep Date: 08/07/2014	Run No: 273400			
SampleType: LCS	TestCode: METALS, TOTAL	SW6010C				BatchID: 194585	Analysis Date: 08/08/2014	Seq No: 5769229			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	1.066	0.0200	1.000	107	80	120
Arsenic	1.036	0.0500	1.000	104	80	120
Barium	1.052	0.0200	1.000	105	80	120
Beryllium	1.033	0.0100	1.000	103	80	120
Cadmium	1.042	0.0050	1.000	104	80	120
Chromium	1.041	0.0100	1.000	104	80	120
Copper	1.040	0.0100	1.000	104	80	120
Lead	1.038	0.0100	1.000	104	80	120
Nickel	1.036	0.0200	1.000	104	80	120
Zinc	1.032	0.0200	1.000	103	80	120

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGL Macon
 Workorder: 1408481

ANALYTICAL QC SUMMARY REPORT

BatchID: 194585

Sample ID: 1408386-001AMS	Client ID:					Units: mg/L	Prep Date: 08/07/2014	Run No: 273400			
SampleType: MS	TestCode: METALS, TOTAL	SW6010C	BatchID: 194585				Analysis Date: 08/08/2014	Seq No: 5769248			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	1.033	0.0200	1.000		103	75	125				
Arsenic	1.011	0.0500	1.000		101	75	125				
Barium	2.690	0.0200	1.000	1.698	99.2	75	125				
Beryllium	1.002	0.0100	1.000	0.004025	99.8	75	125				
Cadmium	1.010	0.0050	1.000	0.001412	101	75	125				
Chromium	0.9931	0.0100	1.000		99.3	75	125				
Copper	1.047	0.0100	1.000	0.04229	100	75	125				
Lead	0.9865	0.0100	1.000	0.001457	98.5	75	125				
Nickel	1.042	0.0200	1.000	0.06531	97.6	75	125				
Zinc	48.16	0.0200	1.000	48.09	7.58	75	125				S

Sample ID: 1408386-001AMSD	Client ID:					Units: mg/L	Prep Date: 08/07/2014	Run No: 273400			
SampleType: MSD	TestCode: METALS, TOTAL	SW6010C				BatchID: 194585	Analysis Date: 08/08/2014	Seq No: 5769252			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	1.027	0.0200	1.000		103	75	125	1.033	0.657	20	
Arsenic	1.003	0.0500	1.000		100	75	125	1.011	0.780	20	
Barium	2.686	0.0200	1.000	1.698	98.8	75	125	2.690	0.140	20	
Beryllium	0.9948	0.0100	1.000	0.004025	99.1	75	125	1.002	0.751	20	
Cadmium	1.004	0.0050	1.000	0.001412	100	75	125	1.010	0.559	20	
Chromium	0.9865	0.0100	1.000		98.6	75	125	0.9931	0.666	20	
Copper	1.044	0.0100	1.000	0.04229	100	75	125	1.047	0.260	20	
Lead	0.9806	0.0100	1.000	0.001457	97.9	75	125	0.9865	0.601	20	
Nickel	1.033	0.0200	1.000	0.06531	96.8	75	125	1.042	0.811	20	
Zinc	48.14	0.0200	1.000	48.09	5.18	75	125	48.16	0.050	20	S

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGL Macon
Workorder: 1408481

ANALYTICAL QC SUMMARY REPORT

BatchID: 194654

Sample ID: MB-194654	Client ID:				Units: mg/L	Prep Date: 08/08/2014	Run No: 273316				
SampleType: MBLK	TestCode: Cyanide SW9014				BatchID: 194654	Analysis Date: 08/08/2014	Seq No: 5767533				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total BRL 0.010

Sample ID: LCS-194654		Client ID:		Units: mg/L		Prep Date: 08/08/2014		Run No: 273316			
SampleType: LCS		TestCode: Cyanide SW9014		BatchID: 194654		Analysis Date: 08/08/2014		Seq No: 5767534			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.2299 0.010 0.2500 92.0 85 115

Sample ID: 1408474-003CMS	Client ID:				Units: mg/L	Prep Date: 08/08/2014	Run No: 273316				
SampleType: MS	TestCode: Cyanide SW9014				BatchID: 194654	Analysis Date: 08/08/2014	Seq No: 5767545				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.2036 0.010 0.2500 81.4 70 130

Sample ID: 1408474-003CMSD	Client ID:				Units: mg/L	Prep Date: 08/08/2014	Run No: 273316				
SampleType: MSD	TestCode: Cyanide SW9014				BatchID: 194654	Analysis Date: 08/08/2014	Seq No: 5767547				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.2036 0.010 0.2500 81.4 70 130 0.2036 0 20

Qualifiers:	> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
	BRL Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
	J Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
	Rpt Lim Reporting Limit	S Spike Recovery outside limits due to matrix	

Client: ERM-Southeast
 Project Name: AGL Macon
 Workorder: 1408481

ANALYTICAL QC SUMMARY REPORT

BatchID: 194657

Sample ID: MB-194657	Client ID:					Units: ug/L	Prep Date: 08/08/2014	Run No: 273602			
SampleType: MBLK	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D					BatchID: 194657	Analysis Date: 08/12/2014	Seq No: 5773870			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	BRL	0.050									
Benzo(a)pyrene	BRL	0.050									
Benzo(b)fluoranthene	BRL	0.10									
Dibenz(a,h)anthracene	BRL	0.10									
Indeno(1,2,3-cd)pyrene	BRL	0.050									
Surr: 4-Terphenyl-d14	1.617	0	2.000		80.8	53.2	145				

Sample ID: LCS-194657	Client ID:					Units: ug/L	Prep Date: 08/08/2014	Run No: 273602			
SampleType: LCS	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D					BatchID: 194657	Analysis Date: 08/12/2014	Seq No: 5773871			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	2.271	0.050	2.000		114	62.8	132				
Benzo(a)pyrene	1.898	0.050	2.000		94.9	56.4	123				
Benzo(b)fluoranthene	1.942	0.10	2.000		97.1	69.2	132				
Dibenz(a,h)anthracene	2.180	0.10	2.000		109	49.3	134				
Indeno(1,2,3-cd)pyrene	1.733	0.050	2.000		86.6	48.3	137				
Surr: 4-Terphenyl-d14	1.499	0	2.000		74.9	53.2	145				

Sample ID: 1408474-003DMS	Client ID:				Units: ug/L			Prep Date: 08/08/2014	Run No: 273602		
SampleType: MS	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D				BatchID: 194657			Analysis Date: 08/13/2014	Seq No: 5773907		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	2.138	0.050	2.000	0.007990	106	51.4	142				
Benzo(a)pyrene	1.841	0.050	2.000	0.01293	91.4	48.3	126				
Benzo(b)fluoranthene	1.862	0.10	2.000		93.1	49.9	134				
Dibenz(a,h)anthracene	2.328	0.10	2.000	0.02601	115	41.8	121				
Indeno(1,2,3-cd)pyrene	1.813	0.050	2.000	0.02320	89.5	42	129				
Surr: 4-Terphenyl-d14	1.522	0	2.000		76.1	53.2	145				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGL Macon
Workorder: 1408481

ANALYTICAL QC SUMMARY REPORT

BatchID: 194657

Sample ID: 1408474-003DMSD	Client ID:					Units: ug/L	Prep Date: 08/08/2014	Run No: 273602			
SampleType: MSD	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D					BatchID: 194657	Analysis Date: 08/13/2014	Seq No: 5773909			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	1.993	0.050	2.000	0.007990	99.3	51.4	142	2.138	6.99	48.1	
Benzo(a)pyrene	1.702	0.050	2.000	0.01293	84.4	48.3	126	1.841	7.86	53.5	
Benzo(b)fluoranthene	1.720	0.10	2.000		86.0	49.9	134	1.862	7.96	51.1	
Dibenz(a,h)anthracene	2.142	0.10	2.000	0.02601	106	41.8	121	2.328	8.32	54.2	
Indeno(1,2,3-cd)pyrene	2.070	0.050	2.000	0.02320	102	42	129	1.813	13.2	44.6	
Surr: 4-Terphenyl-d14	1.401	0	2.000		70.0	53.2	145	1.522	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGL Macon
 Workorder: 1408481

ANALYTICAL QC SUMMARY REPORT

BatchID: 194659

Sample ID: MB-194659	Client ID:					Units: ug/L	Prep Date: 08/08/2014	Run No: 273307			
SampleType: MBLK	TestCode: Volatile Organic Compounds by GC/MS SW8260B					BatchID: 194659	Analysis Date: 08/08/2014	Seq No: 5768300			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	BRL	5.0									
Carbon disulfide	BRL	5.0									
Ethylbenzene	BRL	5.0									
Toluene	BRL	5.0									
Xylenes, Total	BRL	5.0									
Surr: 4-Bromofluorobenzene	45.49	0	50.00		91.0	66.2	120				
Surr: Dibromofluoromethane	51.00	0	50.00		102	79.5	121				
Surr: Toluene-d8	51.21	0	50.00		102	77	117				

Sample ID: LCS-194659	Client ID:					Units: ug/L	Prep Date: 08/08/2014	Run No: 273307			
SampleType: LCS	TestCode: Volatile Organic Compounds by GC/MS SW8260B					BatchID: 194659	Analysis Date: 08/08/2014	Seq No: 5768341			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	50.02	5.0	50.00		100	74.2	129				
Toluene	52.58	5.0	50.00		105	74.2	129				
Surr: 4-Bromofluorobenzene	45.77	0	50.00		91.5	66.2	120				
Surr: Dibromofluoromethane	48.71	0	50.00		97.4	79.5	121				
Surr: Toluene-d8	50.29	0	50.00		101	77	117				

Sample ID: 1408474-003AMS	Client ID:					Units: ug/L	Prep Date: 08/08/2014	Run No: 273307			
SampleType: MS	TestCode: Volatile Organic Compounds by GC/MS SW8260B					BatchID: 194659	Analysis Date: 08/08/2014	Seq No: 5768647			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	49.93	5.0	50.00		99.9	70.2	138				
Toluene	52.33	5.0	50.00		105	70	139				
Surr: 4-Bromofluorobenzene	44.92	0	50.00		89.8	66.2	120				
Surr: Dibromofluoromethane	49.39	0	50.00		98.8	79.5	121				
Surr: Toluene-d8	52.07	0	50.00		104	77	117				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGL Macon
Workorder: 1408481

ANALYTICAL QC SUMMARY REPORT

BatchID: 194659

Sample ID: 1408474-003AMSD		Client ID:				Units: ug/L		Prep Date: 08/08/2014		Run No: 273307	
SampleType: MSD		TestCode: Volatile Organic Compounds by GC/MS SW8260B				BatchID: 194659		Analysis Date: 08/08/2014		Seq No: 5768660	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	48.60	5.0	50.00		97.2	70.2	138	49.93	2.70	20	
Toluene	51.38	5.0	50.00		103	70	139	52.33	1.83	20	
Surr: 4-Bromofluorobenzene	44.99	0	50.00		90.0	66.2	120	44.92	0	0	
Surr: Dibromofluoromethane	49.97	0	50.00		99.9	79.5	121	49.39	0	0	
Surr: Toluene-d8	50.71	0	50.00		101	77	117	52.07	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGL Macon
 Workorder: 1408481

ANALYTICAL QC SUMMARY REPORT

BatchID: 194690

Sample ID: MB-194690	Client ID:					Units: ug/L	Prep Date: 08/11/2014	Run No: 273501			
SampleType: MBLK	TestCode: Semivolatile Org. Comp. by GC/MS	SW8270D				BatchID: 194690	Analysis Date: 08/11/2014	Seq No: 5771508			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

2,4-Dimethylphenol	BRL	10									
2-Methylphenol	BRL	10									
3,4-Methylphenol	BRL	10									
Acenaphthene	BRL	10									
Acenaphthylene	BRL	10									
Anthracene	BRL	10									
Benzo(g,h,i)perylene	BRL	10									
Benzo(k)fluoranthene	BRL	10									
Chrysene	BRL	10									
Fluoranthene	BRL	10									
Fluorene	BRL	10									
Naphthalene	BRL	10									
Phenanthrene	BRL	10									
Phenol	BRL	10									
Pyrene	BRL	10									
Surr: 2,4,6-Tribromophenol	95.03	0	100.0		95.0	51.5	124				
Surr: 2-Fluorobiphenyl	48.47	0	50.00		96.9	51.7	118				
Surr: 2-Fluorophenol	63.60	0	100.0		63.6	26	120				
Surr: 4-Terphenyl-d14	58.17	0	50.00		116	45.2	137				
Surr: Nitrobenzene-d5	40.23	0	50.00		80.5	42	120				
Surr: Phenol-d5	41.48	0	100.0		41.5	12.3	120				

Sample ID: LCS-194690	Client ID:				Units: ug/L	Prep Date: 08/11/2014	Run No: 273501				
SampleType: LCS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 194690	Analysis Date: 08/11/2014	Seq No: 5771509				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	110.5	10	100.0		111	67.7	122				
Phenol	49.79	10	100.0		49.8	24.6	120				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGL Macon
 Workorder: 1408481

ANALYTICAL QC SUMMARY REPORT

BatchID: 194690

Sample ID: LCS-194690	Client ID:				Units: ug/L	Prep Date: 08/11/2014	Run No: 273501				
SampleType: LCS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 194690	Analysis Date: 08/11/2014	Seq No: 5771509				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Pyrene	118.4	10	100.0		118	68.3	123				
Surr: 2,4,6-Tribromophenol	116.2	0	100.0		116	51.5	124				
Surr: 2-Fluorobiphenyl	56.88	0	50.00		114	51.7	118				
Surr: 2-Fluorophenol	74.91	0	100.0		74.9	26	120				
Surr: 4-Terphenyl-d14	62.60	0	50.00		125	45.2	137				
Surr: Nitrobenzene-d5	50.44	0	50.00		101	42	120				
Surr: Phenol-d5	50.49	0	100.0		50.5	12.3	120				

Sample ID: 1408474-002DMS	Client ID:				Units: ug/L	Prep Date: 08/11/2014	Run No: 273501				
SampleType: MS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 194690	Analysis Date: 08/12/2014	Seq No: 5771821				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	88.84	10	100.0		88.8	51.9	120				
Phenol	57.06	10	100.0		57.1	30.5	120				
Pyrene	94.54	10	100.0		94.5	50.6	120				
Surr: 2,4,6-Tribromophenol	98.09	0	100.0		98.1	51.5	124				
Surr: 2-Fluorobiphenyl	42.03	0	50.00		84.1	51.7	118				
Surr: 2-Fluorophenol	67.62	0	100.0		67.6	26	120				
Surr: 4-Terphenyl-d14	49.32	0	50.00		98.6	45.2	137				
Surr: Nitrobenzene-d5	39.89	0	50.00		79.8	42	120				
Surr: Phenol-d5	56.73	0	100.0		56.7	12.3	120				

Sample ID: 1408474-002DMSD	Client ID:				Units: ug/L	Prep Date: 08/11/2014	Run No: 274032				
SampleType: MSD	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 194690	Analysis Date: 08/19/2014	Seq No: 5782809				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	89.67	10	100.0		89.7	51.9	120	88.84	0.930	24.9	
Phenol	51.69	10	100.0		51.7	30.5	120	57.06	9.88	34.4	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGL Macon
Workorder: 1408481

ANALYTICAL QC SUMMARY REPORT

BatchID: 194690

Sample ID: 1408474-002DMSD	Client ID:				Units: ug/L	Prep Date: 08/11/2014	Run No: 274032				
SampleType: MSD	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 194690	Analysis Date: 08/19/2014	Seq No: 5782809				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Pyrene	86.92	10	100.0		86.9	50.6	120	94.54	8.40	26.7	
Surr: 2,4,6-Tribromophenol	105.3	0	100.0		105	51.5	124	98.09	0	0	
Surr: 2-Fluorobiphenyl	43.29	0	50.00		86.6	51.7	118	42.03	0	0	
Surr: 2-Fluorophenol	67.62	0	100.0		67.6	26	120	67.62	0	0	
Surr: 4-Terphenyl-d14	49.03	0	50.00		98.1	45.2	137	49.32	0	0	
Surr: Nitrobenzene-d5	39.24	0	50.00		78.5	42	120	39.89	0	0	
Surr: Phenol-d5	51.16	0	100.0		51.2	12.3	120	56.73	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGL Macon
 Workorder: 1408481

ANALYTICAL QC SUMMARY REPORT

BatchID: 194741

Sample ID: MB-194741	Client ID:	Units: mg/L	Prep Date: 08/12/2014	Run No: 273507							
SampleType: MBLK	TestCode: Mercury, Total SW7470A	BatchID: 194741	Analysis Date: 08/12/2014	Seq No: 5772276							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury BRL 0.00020

Sample ID: LCS-194741	Client ID:	Units: mg/L	Prep Date: 08/12/2014	Run No: 273507							
SampleType: LCS	TestCode: Mercury, Total SW7470A	BatchID: 194741	Analysis Date: 08/12/2014	Seq No: 5772279							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.005049 0.00020 0.0050 101 80 120

Sample ID: 1408481-001BMS	Client ID: MW-08D-20140806-01	Units: mg/L	Prep Date: 08/12/2014	Run No: 273507							
SampleType: MS	TestCode: Mercury, Total SW7470A	BatchID: 194741	Analysis Date: 08/12/2014	Seq No: 5772285							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.005067 0.00020 0.0050 101 70 130

Sample ID: 1408481-001BMSD		Client ID: MW-08D-20140806-01			Units: mg/L		Prep Date: 08/12/2014		Run No: 273507			
SampleType: MSD		TestCode: Mercury, Total SW7470A			BatchID: 194741		Analysis Date: 08/12/2014		Seq No: 5772288			
Analyte		Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.005166 0.00020 0.0050 103 70 130 0.005067 1.93 20

Qualifiers:	> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
	BRL Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
	J Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
	Rpt Lim Reporting Limit	S Spike Recovery outside limits due to matrix	



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

August 19, 2014

Nic Verv
ERM-Southeast
3200 Windy Hill Rd
Atlanta GA 30339

TEL: (678) 486-2700
FAX: (404) 745-0103

RE: AGLC Macon

Dear Nic Verv:

Order No: 1408489

Analytical Environmental Services, Inc. received 11 samples on 8/8/2014 9:05:00 AM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.

AES' certifications are as follows:

- NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/14-06/30/15.
- AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 09/01/15.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Mirzeta Kararic
Project Manager



ANALYTICAL ENVIRONMENTAL SERVICES, INC

3080 Presidential Drive, Atlanta GA 30340-3704

TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1408489

Date: 8/7/14 Page 1 of 1

COMPANY: ERM		ADDRESS: 3200 Windy Hill Road Suite 1500W Atlanta, GA 30339		PHONE: 678-486-2700		FAX: 678-486-2700		SAMPLED BY: A Kelly		SIGNATURE: <i>[Signature]</i>		DATE: 8/6/14		TIME: 1445		COMPOSITE: <input checked="" type="checkbox"/>		MATRIX: <input checked="" type="checkbox"/>		ANALYSIS REQUESTED: Cyanide		PRESERVATION (See codes): Metals & Mercury		REMARKS: Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.		No. of Containers: 6	
#	SAMPLE ID	DATE	TIME	Grab	Composite	MATRIX (See codes)	ANALYSIS REQUESTED	PRESERVATION (See codes)	REMARKS	No. of Containers																	
1	MW-307D-20140806-01	8/6/14	1445	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	GW				6																	
2	MW-205D-20140806-01	"	1600	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	GW				6																	
3	MW-205D-20140806-01	"	1740	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	GW				6																	
4	DUP-03-20140806-01	"	—	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	GW				6																	
5	MW-305D-20140807-01	8/7/14	1045	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	GW				6																	
6	MW-200DR-20140807-01	"	1200	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	GW				6																	
7	MW-301D-20140807-01	"	1315	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	GW				6																	
8	MW-302D-20140807-01	"	1100	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	GW				6																	
9	MW-302D-20140807-01	"	1245	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	GW				6																	
10	MW-111D-20140807-01	"	1415	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	GW				6																	
11	TB-01	"	—	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	W				2																	
12	Temp Blanks	"	—	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	W				3																	
13																											
14																											

RELINQUISHED BY: <i>[Signature]</i>		DATE/TIME: 8/8/14 09:05		RECEIVED BY: <i>[Signature]</i>		DATE/TIME: 8/8/14 9:05	
PROJECT NAME: AGLC mason		PROJECT # 0230715		SITE ADDRESS: Walnut St. Macon, GA		SEND REPORT TO: Nic.Vey @ em.com	
INVOICE TO: (IF DIFFERENT FROM ABOVE)		QUOTE # PO#:		STATE PROGRAM (if any):		E-mail? Y/N; Fax? Y/N	
TURNAROUND TIME REQUEST		Standard 5 Business Days		2 Business Day Rush		Next Business Day Rush	
Same Day Rush (auth req.)		Other		DATA PACKAGE: I II III IV			
Total # of Containers		6		Turnaround Time Request		Standard 5 Business Days	
						2 Business Day Rush	
						Next Business Day Rush	
						Same Day Rush (auth req.)	
						Other	

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water

PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

SHIPMENT METHOD: OUT / / VIA: CLIENT FedEx UPS MAIL COURIER GREYHOUND OTHER: VIA: PO#:

SPECIAL INSTRUCTIONS/COMMENTS: **Latoya Reece 8/8/14 09:05**

Page 2 of 39

Client: ERM-Southeast
Project: AGLC Macon
Lab ID: 1408489

Case Narrative

Volatiles Organic Compounds Analysis by Method 8260B:

Due to sample matrix, samples 1408489-002A, & -005A required dilution during preparation and/or analysis resulting in elevated reporting limits.

Semi-Volatile Organics Analysis by Method 8270D:

Percent recovery for the surrogate spiking compound 2,4,6 Tribromophenol on QC sample LCS-194871 was outside control limits biased high. All other surrogate recoveries were within control limits.

PAH Analysis by Method 8270D SIM:

Due to sample matrix, sample 1408489-005D required dilution during preparation and/or analysis resulting in elevated reporting limits.

Analytical Environmental Services, Inc
Date: 20-Aug-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1408489-001

Client Sample ID: MW-307D-20140806-01
Collection Date: 8/6/2014 2:45:00 PM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	194895	1	08/14/2014 04:10	NP
Carbon disulfide	BRL	5.0		ug/L	194895	1	08/14/2014 04:10	NP
Ethylbenzene	BRL	5.0		ug/L	194895	1	08/14/2014 04:10	NP
Toluene	BRL	5.0		ug/L	194895	1	08/14/2014 04:10	NP
Xylenes, Total	BRL	5.0		ug/L	194895	1	08/14/2014 04:10	NP
Surr: 4-Bromofluorobenzene	86.1	66.2-120		%REC	194895	1	08/14/2014 04:10	NP
Surr: Dibromofluoromethane	104	79.5-121		%REC	194895	1	08/14/2014 04:10	NP
Surr: Toluene-d8	102	77-117		%REC	194895	1	08/14/2014 04:10	NP
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	194761	1	08/15/2014 11:44	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194761	1	08/15/2014 11:44	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194761	1	08/15/2014 11:44	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194761	1	08/15/2014 11:44	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194761	1	08/15/2014 11:44	YH
Surr: 4-Terphenyl-d14	98.9	53.2-145		%REC	194761	1	08/15/2014 11:44	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194690	1	08/12/2014 09:44	YH
2-Methylphenol	BRL	10		ug/L	194690	1	08/12/2014 09:44	YH
3,4-Methylphenol	BRL	10		ug/L	194690	1	08/12/2014 09:44	YH
Acenaphthene	BRL	10		ug/L	194690	1	08/12/2014 09:44	YH
Acenaphthylene	BRL	10		ug/L	194690	1	08/12/2014 09:44	YH
Anthracene	BRL	10		ug/L	194690	1	08/12/2014 09:44	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194690	1	08/12/2014 09:44	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194690	1	08/12/2014 09:44	YH
Chrysene	BRL	10		ug/L	194690	1	08/12/2014 09:44	YH
Fluoranthene	BRL	10		ug/L	194690	1	08/12/2014 09:44	YH
Fluorene	BRL	10		ug/L	194690	1	08/12/2014 09:44	YH
Naphthalene	11	10		ug/L	194690	1	08/12/2014 09:44	YH
Phenanthrene	BRL	10		ug/L	194690	1	08/12/2014 09:44	YH
Phenol	BRL	10		ug/L	194690	1	08/12/2014 09:44	YH
Pyrene	BRL	10		ug/L	194690	1	08/12/2014 09:44	YH
Surr: 2,4,6-Tribromophenol	101	51.5-124		%REC	194690	1	08/12/2014 09:44	YH
Surr: 2-Fluorobiphenyl	89.1	51.7-118		%REC	194690	1	08/12/2014 09:44	YH
Surr: 2-Fluorophenol	71.1	26-120		%REC	194690	1	08/12/2014 09:44	YH
Surr: 4-Terphenyl-d14	88.8	45.2-137		%REC	194690	1	08/12/2014 09:44	YH
Surr: Nitrobenzene-d5	78.3	42-120		%REC	194690	1	08/12/2014 09:44	YH
Surr: Phenol-d5	54	12.3-120		%REC	194690	1	08/12/2014 09:44	YH
Mercury, Total SW7470A				(SW7470A)				

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 20-Aug-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1408489-001

Client Sample ID: MW-307D-20140806-01
 Collection Date: 8/6/2014 2:45:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	194855	1	08/14/2014 14:37	CG
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	194739	1	08/13/2014 11:17	PF
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	194825	1	08/13/2014 23:48	JL
Arsenic	BRL	0.0500		mg/L	194825	1	08/13/2014 23:48	JL
Barium	1.55	0.0200		mg/L	194825	1	08/13/2014 23:48	JL
Beryllium	BRL	0.0100		mg/L	194825	1	08/13/2014 23:48	JL
Cadmium	BRL	0.0050		mg/L	194825	1	08/13/2014 23:48	JL
Chromium	0.0783	0.0100		mg/L	194825	1	08/13/2014 23:48	JL
Copper	BRL	0.0100		mg/L	194825	1	08/13/2014 23:48	JL
Lead	BRL	0.0100		mg/L	194825	1	08/13/2014 23:48	JL
Nickel	BRL	0.0200		mg/L	194825	1	08/13/2014 23:48	JL
Zinc	BRL	0.0200		mg/L	194825	1	08/13/2014 23:48	JL

Qualifiers:

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- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 20-Aug-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1408489-002

Client Sample ID: MW-205D-20140806-01
Collection Date: 8/6/2014 4:00:00 PM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	6700	250		ug/L	194895	50	08/14/2014 14:00	NP
Carbon disulfide	BRL	50		ug/L	194895	10	08/14/2014 02:56	NP
Ethylbenzene	1200	50		ug/L	194895	10	08/14/2014 02:56	NP
Toluene	BRL	50		ug/L	194895	10	08/14/2014 02:56	NP
Xylenes, Total	720	50		ug/L	194895	10	08/14/2014 02:56	NP
Surr: 4-Bromofluorobenzene	87.7	66.2-120		%REC	194895	50	08/14/2014 14:00	NP
Surr: 4-Bromofluorobenzene	90	66.2-120		%REC	194895	10	08/14/2014 02:56	NP
Surr: Dibromofluoromethane	98.9	79.5-121		%REC	194895	50	08/14/2014 14:00	NP
Surr: Dibromofluoromethane	97.2	79.5-121		%REC	194895	10	08/14/2014 02:56	NP
Surr: Toluene-d8	98.7	77-117		%REC	194895	50	08/14/2014 14:00	NP
Surr: Toluene-d8	98.9	77-117		%REC	194895	10	08/14/2014 02:56	NP
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	194761	1	08/15/2014 12:09	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194761	1	08/15/2014 12:09	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194761	1	08/15/2014 12:09	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194761	1	08/15/2014 12:09	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194761	1	08/15/2014 12:09	YH
Surr: 4-Terphenyl-d14	82.9	53.2-145		%REC	194761	1	08/15/2014 12:09	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194690	1	08/12/2014 17:39	YH
2-Methylphenol	BRL	10		ug/L	194690	1	08/12/2014 17:39	YH
3,4-Methylphenol	BRL	10		ug/L	194690	1	08/12/2014 17:39	YH
Acenaphthene	200	100		ug/L	194690	10	08/14/2014 22:48	YH
Acenaphthylene	BRL	10		ug/L	194690	1	08/12/2014 17:39	YH
Anthracene	BRL	10		ug/L	194690	1	08/12/2014 17:39	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194690	1	08/12/2014 17:39	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194690	1	08/12/2014 17:39	YH
Chrysene	BRL	10		ug/L	194690	1	08/12/2014 17:39	YH
Fluoranthene	BRL	10		ug/L	194690	1	08/12/2014 17:39	YH
Fluorene	47	10		ug/L	194690	1	08/12/2014 17:39	YH
Naphthalene	6000	1000		ug/L	194690	100	08/14/2014 22:22	YH
Phenanthrene	44	10		ug/L	194690	1	08/12/2014 17:39	YH
Phenol	18	10		ug/L	194690	1	08/12/2014 17:39	YH
Pyrene	BRL	10		ug/L	194690	1	08/12/2014 17:39	YH
Surr: 2,4,6-Tribromophenol	104	51.5-124		%REC	194690	1	08/12/2014 17:39	YH
Surr: 2-Fluorobiphenyl	90.8	51.7-118		%REC	194690	1	08/12/2014 17:39	YH
Surr: 2-Fluorophenol	71.4	26-120		%REC	194690	1	08/12/2014 17:39	YH
Surr: 4-Terphenyl-d14	102	45.2-137		%REC	194690	1	08/12/2014 17:39	YH
Surr: Nitrobenzene-d5	132	42-120	S	%REC	194690	1	08/12/2014 17:39	YH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 20-Aug-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1408489-002

Client Sample ID: MW-205D-20140806-01
 Collection Date: 8/6/2014 4:00:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS SW8270D					(SW3510C)			
Surr: Phenol-d5	58.2	12.3-120		%REC	194690	1	08/12/2014 17:39	YH
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	194855	1	08/14/2014 14:21	CG
Cyanide SW9014					(SW9010C)			
Cyanide, Total	0.020	0.010		mg/L	194739	1	08/13/2014 11:17	PF
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	194825	1	08/14/2014 00:08	JL
Arsenic	BRL	0.0500		mg/L	194825	1	08/14/2014 00:08	JL
Barium	3.02	0.0200		mg/L	194825	1	08/14/2014 00:08	JL
Beryllium	BRL	0.0100		mg/L	194825	1	08/14/2014 00:08	JL
Cadmium	BRL	0.0050		mg/L	194825	1	08/14/2014 00:08	JL
Chromium	BRL	0.0100		mg/L	194825	1	08/14/2014 00:08	JL
Copper	BRL	0.0100		mg/L	194825	1	08/14/2014 00:08	JL
Lead	BRL	0.0100		mg/L	194825	1	08/14/2014 00:08	JL
Nickel	BRL	0.0200		mg/L	194825	1	08/14/2014 00:08	JL
Zinc	BRL	0.0200		mg/L	194825	1	08/14/2014 00:08	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 20-Aug-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1408489-003

Client Sample ID: MW-205DD-20140806-01
Collection Date: 8/6/2014 5:40:00 PM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	194895	1	08/14/2014 04:35	NP
Carbon disulfide	BRL	5.0		ug/L	194895	1	08/14/2014 04:35	NP
Ethylbenzene	BRL	5.0		ug/L	194895	1	08/14/2014 04:35	NP
Toluene	BRL	5.0		ug/L	194895	1	08/14/2014 04:35	NP
Xylenes, Total	BRL	5.0		ug/L	194895	1	08/14/2014 04:35	NP
Surr: 4-Bromofluorobenzene	83.3	66.2-120		%REC	194895	1	08/14/2014 04:35	NP
Surr: Dibromofluoromethane	102	79.5-121		%REC	194895	1	08/14/2014 04:35	NP
Surr: Toluene-d8	100	77-117		%REC	194895	1	08/14/2014 04:35	NP
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	194761	1	08/15/2014 12:34	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194761	1	08/15/2014 12:34	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194761	1	08/15/2014 12:34	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194761	1	08/15/2014 12:34	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194761	1	08/15/2014 12:34	YH
Surr: 4-Terphenyl-d14	72.3	53.2-145		%REC	194761	1	08/15/2014 12:34	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194690	1	08/12/2014 18:06	YH
2-Methylphenol	BRL	10		ug/L	194690	1	08/12/2014 18:06	YH
3,4-Methylphenol	BRL	10		ug/L	194690	1	08/12/2014 18:06	YH
Acenaphthene	BRL	10		ug/L	194690	1	08/12/2014 18:06	YH
Acenaphthylene	BRL	10		ug/L	194690	1	08/12/2014 18:06	YH
Anthracene	BRL	10		ug/L	194690	1	08/12/2014 18:06	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194690	1	08/12/2014 18:06	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194690	1	08/12/2014 18:06	YH
Chrysene	BRL	10		ug/L	194690	1	08/12/2014 18:06	YH
Fluoranthene	BRL	10		ug/L	194690	1	08/12/2014 18:06	YH
Fluorene	BRL	10		ug/L	194690	1	08/12/2014 18:06	YH
Naphthalene	BRL	10		ug/L	194690	1	08/12/2014 18:06	YH
Phenanthrene	BRL	10		ug/L	194690	1	08/12/2014 18:06	YH
Phenol	BRL	10		ug/L	194690	1	08/12/2014 18:06	YH
Pyrene	BRL	10		ug/L	194690	1	08/12/2014 18:06	YH
Surr: 2,4,6-Tribromophenol	93.8	51.5-124		%REC	194690	1	08/12/2014 18:06	YH
Surr: 2-Fluorobiphenyl	81	51.7-118		%REC	194690	1	08/12/2014 18:06	YH
Surr: 2-Fluorophenol	66.6	26-120		%REC	194690	1	08/12/2014 18:06	YH
Surr: 4-Terphenyl-d14	97.9	45.2-137		%REC	194690	1	08/12/2014 18:06	YH
Surr: Nitrobenzene-d5	72.8	42-120		%REC	194690	1	08/12/2014 18:06	YH
Surr: Phenol-d5	53.9	12.3-120		%REC	194690	1	08/12/2014 18:06	YH

Mercury, Total SW7470A
(SW7470A)

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 20-Aug-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1408489-003

Client Sample ID: MW-205DD-20140806-01
Collection Date: 8/6/2014 5:40:00 PM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	194855	1	08/14/2014 14:39	CG
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	194739	1	08/13/2014 11:17	PF
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	194825	1	08/14/2014 00:12	JL
Arsenic	BRL	0.0500		mg/L	194825	1	08/14/2014 00:12	JL
Barium	0.0229	0.0200		mg/L	194825	1	08/14/2014 00:12	JL
Beryllium	BRL	0.0100		mg/L	194825	1	08/14/2014 00:12	JL
Cadmium	BRL	0.0050		mg/L	194825	1	08/14/2014 00:12	JL
Chromium	BRL	0.0100		mg/L	194825	1	08/14/2014 00:12	JL
Copper	BRL	0.0100		mg/L	194825	1	08/14/2014 00:12	JL
Lead	BRL	0.0100		mg/L	194825	1	08/14/2014 00:12	JL
Nickel	BRL	0.0200		mg/L	194825	1	08/14/2014 00:12	JL
Zinc	0.0238	0.0200		mg/L	194825	1	08/14/2014 00:12	JL

Qualifiers: * Value exceeds maximum contaminant level
 BRL Below reporting limit
 H Holding times for preparation or analysis exceeded
 N Analyte not NELAC certified
 B Analyte detected in the associated method blank
 > Greater than Result value

E Estimated (value above quantitation range)
 S Spike Recovery outside limits due to matrix
 Narr See case narrative
 NC Not confirmed
 < Less than Result value
 J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 20-Aug-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1408489-004

Client Sample ID: DUP-03-20140806-01
 Collection Date: 8/6/2014
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	194895	1	08/14/2014 06:13	NP
Carbon disulfide	BRL	5.0		ug/L	194895	1	08/14/2014 06:13	NP
Ethylbenzene	BRL	5.0		ug/L	194895	1	08/14/2014 06:13	NP
Toluene	BRL	5.0		ug/L	194895	1	08/14/2014 06:13	NP
Xylenes, Total	BRL	5.0		ug/L	194895	1	08/14/2014 06:13	NP
Surr: 4-Bromofluorobenzene	86	66.2-120		%REC	194895	1	08/14/2014 06:13	NP
Surr: Dibromofluoromethane	102	79.5-121		%REC	194895	1	08/14/2014 06:13	NP
Surr: Toluene-d8	100	77-117		%REC	194895	1	08/14/2014 06:13	NP
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	194761	1	08/15/2014 12:59	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194761	1	08/15/2014 12:59	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194761	1	08/15/2014 12:59	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194761	1	08/15/2014 12:59	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194761	1	08/15/2014 12:59	YH
Surr: 4-Terphenyl-d14	73.2	53.2-145		%REC	194761	1	08/15/2014 12:59	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194690	1	08/12/2014 00:42	YH
2-Methylphenol	BRL	10		ug/L	194690	1	08/12/2014 00:42	YH
3,4-Methylphenol	BRL	10		ug/L	194690	1	08/12/2014 00:42	YH
Acenaphthene	BRL	10		ug/L	194690	1	08/12/2014 00:42	YH
Acenaphthylene	BRL	10		ug/L	194690	1	08/12/2014 00:42	YH
Anthracene	BRL	10		ug/L	194690	1	08/12/2014 00:42	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194690	1	08/12/2014 00:42	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194690	1	08/12/2014 00:42	YH
Chrysene	BRL	10		ug/L	194690	1	08/12/2014 00:42	YH
Fluoranthene	BRL	10		ug/L	194690	1	08/12/2014 00:42	YH
Fluorene	BRL	10		ug/L	194690	1	08/12/2014 00:42	YH
Naphthalene	BRL	10		ug/L	194690	1	08/12/2014 00:42	YH
Phenanthrene	BRL	10		ug/L	194690	1	08/12/2014 00:42	YH
Phenol	BRL	10		ug/L	194690	1	08/12/2014 00:42	YH
Pyrene	BRL	10		ug/L	194690	1	08/12/2014 00:42	YH
Surr: 2,4,6-Tribromophenol	94.8	51.5-124		%REC	194690	1	08/12/2014 00:42	YH
Surr: 2-Fluorobiphenyl	82.9	51.7-118		%REC	194690	1	08/12/2014 00:42	YH
Surr: 2-Fluorophenol	65.1	26-120		%REC	194690	1	08/12/2014 00:42	YH
Surr: 4-Terphenyl-d14	104	45.2-137		%REC	194690	1	08/12/2014 00:42	YH
Surr: Nitrobenzene-d5	76.9	42-120		%REC	194690	1	08/12/2014 00:42	YH
Surr: Phenol-d5	50.7	12.3-120		%REC	194690	1	08/12/2014 00:42	YH

Mercury, Total SW7470A**(SW7470A)**

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 20-Aug-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1408489-004

Client Sample ID: DUP-03-20140806-01
Collection Date: 8/6/2014
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	194855	1	08/14/2014 14:41	CG
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	194739	1	08/13/2014 11:17	PF
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	194825	1	08/14/2014 00:15	JL
Arsenic	BRL	0.0500		mg/L	194825	1	08/14/2014 00:15	JL
Barium	0.0212	0.0200		mg/L	194825	1	08/14/2014 00:15	JL
Beryllium	BRL	0.0100		mg/L	194825	1	08/14/2014 00:15	JL
Cadmium	BRL	0.0050		mg/L	194825	1	08/14/2014 00:15	JL
Chromium	BRL	0.0100		mg/L	194825	1	08/14/2014 00:15	JL
Copper	BRL	0.0100		mg/L	194825	1	08/14/2014 00:15	JL
Lead	BRL	0.0100		mg/L	194825	1	08/14/2014 00:15	JL
Nickel	BRL	0.0200		mg/L	194825	1	08/14/2014 00:15	JL
Zinc	0.0228	0.0200		mg/L	194825	1	08/14/2014 00:15	JL

Qualifiers: * Value exceeds maximum contaminant level
 BRL Below reporting limit
 H Holding times for preparation or analysis exceeded
 N Analyte not NELAC certified
 B Analyte detected in the associated method blank
 > Greater than Result value

E Estimated (value above quantitation range)
 S Spike Recovery outside limits due to matrix
 Narr See case narrative
 NC Not confirmed
 < Less than Result value
 J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 20-Aug-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1408489-005

Client Sample ID: MW-305D-20140807-01
 Collection Date: 8/7/2014 10:45:00 AM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	9300	500		ug/L	194895	100	08/14/2014 02:08	NP
Carbon disulfide	BRL	500		ug/L	194895	100	08/14/2014 02:08	NP
Ethylbenzene	BRL	500		ug/L	194895	100	08/14/2014 02:08	NP
Toluene	3900	500		ug/L	194895	100	08/14/2014 02:08	NP
Xylenes, Total	BRL	500		ug/L	194895	100	08/14/2014 02:08	NP
Surr: 4-Bromofluorobenzene	86.4	66.2-120		%REC	194895	100	08/14/2014 02:08	NP
Surr: Dibromofluoromethane	101	79.5-121		%REC	194895	100	08/14/2014 02:08	NP
Surr: Toluene-d8	99.4	77-117		%REC	194895	100	08/14/2014 02:08	NP
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	2.6	0.10		ug/L	194761	1	08/15/2014 13:25	YH
Benzo(b)fluoranthene	1.6	0.20		ug/L	194761	1	08/15/2014 13:25	YH
Benzo(a)pyrene	1.9	0.10		ug/L	194761	1	08/15/2014 13:25	YH
Indeno(1,2,3-cd)pyrene	0.56	0.10		ug/L	194761	1	08/15/2014 13:25	YH
Dibenz(a,h)anthracene	BRL	0.20		ug/L	194761	1	08/15/2014 13:25	YH
Surr: 4-Terphenyl-d14	160	53.2-145	S	%REC	194761	1	08/15/2014 13:25	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194690	1	08/12/2014 01:08	YH
2-Methylphenol	BRL	10		ug/L	194690	1	08/12/2014 01:08	YH
3,4-Methylphenol	BRL	10		ug/L	194690	1	08/12/2014 01:08	YH
Acenaphthene	BRL	10		ug/L	194690	1	08/12/2014 01:08	YH
Acenaphthylene	79	10		ug/L	194690	1	08/12/2014 01:08	YH
Anthracene	BRL	10		ug/L	194690	1	08/12/2014 01:08	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194690	1	08/12/2014 01:08	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194690	1	08/12/2014 01:08	YH
Chrysene	BRL	10		ug/L	194690	1	08/12/2014 01:08	YH
Fluoranthene	BRL	10		ug/L	194690	1	08/12/2014 01:08	YH
Fluorene	24	10		ug/L	194690	1	08/12/2014 01:08	YH
Naphthalene	1100	100		ug/L	194690	10	08/13/2014 04:18	YH
Phenanthrene	39	10		ug/L	194690	1	08/12/2014 01:08	YH
Phenol	BRL	10		ug/L	194690	1	08/12/2014 01:08	YH
Pyrene	BRL	10		ug/L	194690	1	08/12/2014 01:08	YH
Surr: 2,4,6-Tribromophenol	114	51.5-124		%REC	194690	1	08/12/2014 01:08	YH
Surr: 2-Fluorobiphenyl	89.2	51.7-118		%REC	194690	1	08/12/2014 01:08	YH
Surr: 2-Fluorophenol	69.9	26-120		%REC	194690	1	08/12/2014 01:08	YH
Surr: 4-Terphenyl-d14	98.4	45.2-137		%REC	194690	1	08/12/2014 01:08	YH
Surr: Nitrobenzene-d5	90.6	42-120		%REC	194690	1	08/12/2014 01:08	YH
Surr: Phenol-d5	58.6	12.3-120		%REC	194690	1	08/12/2014 01:08	YH
Mercury, Total SW7470A				(SW7470A)				

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 20-Aug-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1408489-005

Client Sample ID: MW-305D-20140807-01
 Collection Date: 8/7/2014 10:45:00 AM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	194855	1	08/14/2014 14:43	CG
Cyanide SW9014					(SW9010C)			
Cyanide, Total	BRL	0.010		mg/L	194739	1	08/13/2014 11:17	PF
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	194825	1	08/14/2014 00:19	JL
Arsenic	BRL	0.0500		mg/L	194825	1	08/14/2014 00:19	JL
Barium	0.136	0.0200		mg/L	194825	1	08/14/2014 00:19	JL
Beryllium	BRL	0.0100		mg/L	194825	1	08/14/2014 00:19	JL
Cadmium	BRL	0.0050		mg/L	194825	1	08/14/2014 00:19	JL
Chromium	0.0112	0.0100		mg/L	194825	1	08/14/2014 00:19	JL
Copper	BRL	0.0100		mg/L	194825	1	08/14/2014 00:19	JL
Lead	BRL	0.0100		mg/L	194825	1	08/14/2014 00:19	JL
Nickel	BRL	0.0200		mg/L	194825	1	08/14/2014 00:19	JL
Zinc	BRL	0.0200		mg/L	194825	1	08/14/2014 00:19	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 20-Aug-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1408489-006

Client Sample ID: MW-200DR-20140807-01
Collection Date: 8/7/2014 12:00:00 PM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	19	5.0		ug/L	194895	1	08/14/2014 05:00	NP
Carbon disulfide	BRL	5.0		ug/L	194895	1	08/14/2014 05:00	NP
Ethylbenzene	8.1	5.0		ug/L	194895	1	08/14/2014 05:00	NP
Toluene	16	5.0		ug/L	194895	1	08/14/2014 05:00	NP
Xylenes, Total	7.2	5.0		ug/L	194895	1	08/14/2014 05:00	NP
Surr: 4-Bromofluorobenzene	87.1	66.2-120		%REC	194895	1	08/14/2014 05:00	NP
Surr: Dibromofluoromethane	98.8	79.5-121		%REC	194895	1	08/14/2014 05:00	NP
Surr: Toluene-d8	99.5	77-117		%REC	194895	1	08/14/2014 05:00	NP
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	0.052	0.050		ug/L	194761	1	08/15/2014 13:50	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194761	1	08/15/2014 13:50	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194761	1	08/15/2014 13:50	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194761	1	08/15/2014 13:50	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194761	1	08/15/2014 13:50	YH
Surr: 4-Terphenyl-d14	81.3	53.2-145		%REC	194761	1	08/15/2014 13:50	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194871	1	08/14/2014 16:13	YH
2-Methylphenol	BRL	10		ug/L	194871	1	08/14/2014 16:13	YH
3,4-Methylphenol	BRL	10		ug/L	194871	1	08/14/2014 16:13	YH
Acenaphthene	14	10		ug/L	194871	1	08/14/2014 16:13	YH
Acenaphthylene	BRL	10		ug/L	194871	1	08/14/2014 16:13	YH
Anthracene	BRL	10		ug/L	194871	1	08/14/2014 16:13	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194871	1	08/14/2014 16:13	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194871	1	08/14/2014 16:13	YH
Chrysene	BRL	10		ug/L	194871	1	08/14/2014 16:13	YH
Fluoranthene	BRL	10		ug/L	194871	1	08/14/2014 16:13	YH
Fluorene	10	10		ug/L	194871	1	08/14/2014 16:13	YH
Naphthalene	BRL	10		ug/L	194871	1	08/14/2014 16:13	YH
Phenanthrene	BRL	10		ug/L	194871	1	08/14/2014 16:13	YH
Phenol	BRL	10		ug/L	194871	1	08/14/2014 16:13	YH
Pyrene	BRL	10		ug/L	194871	1	08/14/2014 16:13	YH
Surr: 2,4,6-Tribromophenol	109	51.5-124		%REC	194871	1	08/14/2014 16:13	YH
Surr: 2-Fluorobiphenyl	90.1	51.7-118		%REC	194871	1	08/14/2014 16:13	YH
Surr: 2-Fluorophenol	75.1	26-120		%REC	194871	1	08/14/2014 16:13	YH
Surr: 4-Terphenyl-d14	113	45.2-137		%REC	194871	1	08/14/2014 16:13	YH
Surr: Nitrobenzene-d5	82.3	42-120		%REC	194871	1	08/14/2014 16:13	YH
Surr: Phenol-d5	59.2	12.3-120		%REC	194871	1	08/14/2014 16:13	YH

Mercury, Total SW7470A
(SW7470A)

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 20-Aug-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1408489-006

Client Sample ID: MW-200DR-20140807-01
 Collection Date: 8/7/2014 12:00:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	194855	1	08/14/2014 14:45	CG
Cyanide SW9014					(SW9010C)			
Cyanide, Total	0.021	0.010		mg/L	194739	1	08/13/2014 11:17	PF
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	194825	1	08/14/2014 00:23	JL
Arsenic	BRL	0.0500		mg/L	194825	1	08/14/2014 00:23	JL
Barium	0.938	0.0200		mg/L	194825	1	08/14/2014 00:23	JL
Beryllium	BRL	0.0100		mg/L	194825	1	08/14/2014 00:23	JL
Cadmium	BRL	0.0050		mg/L	194825	1	08/14/2014 00:23	JL
Chromium	BRL	0.0100		mg/L	194825	1	08/14/2014 00:23	JL
Copper	BRL	0.0100		mg/L	194825	1	08/14/2014 00:23	JL
Lead	BRL	0.0100		mg/L	194825	1	08/14/2014 00:23	JL
Nickel	BRL	0.0200		mg/L	194825	1	08/14/2014 00:23	JL
Zinc	BRL	0.0200		mg/L	194825	1	08/14/2014 00:23	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 20-Aug-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1408489-007

Client Sample ID: MW-301D-20140807-01
Collection Date: 8/7/2014 1:15:00 PM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	6.0	5.0		ug/L	194895	1	08/14/2014 05:24	NP
Carbon disulfide	BRL	5.0		ug/L	194895	1	08/14/2014 05:24	NP
Ethylbenzene	BRL	5.0		ug/L	194895	1	08/14/2014 05:24	NP
Toluene	BRL	5.0		ug/L	194895	1	08/14/2014 05:24	NP
Xylenes, Total	BRL	5.0		ug/L	194895	1	08/14/2014 05:24	NP
Surr: 4-Bromofluorobenzene	85.6	66.2-120		%REC	194895	1	08/14/2014 05:24	NP
Surr: Dibromofluoromethane	102	79.5-121		%REC	194895	1	08/14/2014 05:24	NP
Surr: Toluene-d8	99.3	77-117		%REC	194895	1	08/14/2014 05:24	NP
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	194761	1	08/15/2014 14:14	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194761	1	08/15/2014 14:14	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194761	1	08/15/2014 14:14	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194761	1	08/15/2014 14:14	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194761	1	08/15/2014 14:14	YH
Surr: 4-Terphenyl-d14	80	53.2-145		%REC	194761	1	08/15/2014 14:14	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194871	1	08/14/2014 14:54	YH
2-Methylphenol	BRL	10		ug/L	194871	1	08/14/2014 14:54	YH
3,4-Methylphenol	BRL	10		ug/L	194871	1	08/14/2014 14:54	YH
Acenaphthene	BRL	10		ug/L	194871	1	08/14/2014 14:54	YH
Acenaphthylene	BRL	10		ug/L	194871	1	08/14/2014 14:54	YH
Anthracene	BRL	10		ug/L	194871	1	08/14/2014 14:54	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194871	1	08/14/2014 14:54	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194871	1	08/14/2014 14:54	YH
Chrysene	BRL	10		ug/L	194871	1	08/14/2014 14:54	YH
Fluoranthene	BRL	10		ug/L	194871	1	08/14/2014 14:54	YH
Fluorene	BRL	10		ug/L	194871	1	08/14/2014 14:54	YH
Naphthalene	120	10		ug/L	194871	1	08/14/2014 14:54	YH
Phenanthrene	BRL	10		ug/L	194871	1	08/14/2014 14:54	YH
Phenol	BRL	10		ug/L	194871	1	08/14/2014 14:54	YH
Pyrene	BRL	10		ug/L	194871	1	08/14/2014 14:54	YH
Surr: 2,4,6-Tribromophenol	102	51.5-124		%REC	194871	1	08/14/2014 14:54	YH
Surr: 2-Fluorobiphenyl	85.7	51.7-118		%REC	194871	1	08/14/2014 14:54	YH
Surr: 2-Fluorophenol	71	26-120		%REC	194871	1	08/14/2014 14:54	YH
Surr: 4-Terphenyl-d14	96.6	45.2-137		%REC	194871	1	08/14/2014 14:54	YH
Surr: Nitrobenzene-d5	75	42-120		%REC	194871	1	08/14/2014 14:54	YH
Surr: Phenol-d5	55.5	12.3-120		%REC	194871	1	08/14/2014 14:54	YH

Mercury, Total SW7470A
(SW7470A)

Qualifiers: * Value exceeds maximum contaminant level
 BRL Below reporting limit
 H Holding times for preparation or analysis exceeded
 N Analyte not NELAC certified
 B Analyte detected in the associated method blank
 > Greater than Result value

E Estimated (value above quantitation range)
 S Spike Recovery outside limits due to matrix
 Narr See case narrative
 NC Not confirmed
 < Less than Result value
 J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 20-Aug-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1408489-007

Client Sample ID: MW-301D-20140807-01
 Collection Date: 8/7/2014 1:15:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	194855	1	08/14/2014 14:47	CG
Cyanide SW9014					(SW9010C)			
Cyanide, Total	0.106	0.010		mg/L	194739	1	08/13/2014 11:17	PF
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	194825	1	08/14/2014 00:34	JL
Arsenic	BRL	0.0500		mg/L	194825	1	08/14/2014 00:34	JL
Barium	0.851	0.0200		mg/L	194825	1	08/14/2014 00:34	JL
Beryllium	BRL	0.0100		mg/L	194825	1	08/14/2014 00:34	JL
Cadmium	BRL	0.0050		mg/L	194825	1	08/14/2014 00:34	JL
Chromium	BRL	0.0100		mg/L	194825	1	08/14/2014 00:34	JL
Copper	BRL	0.0100		mg/L	194825	1	08/14/2014 00:34	JL
Lead	BRL	0.0100		mg/L	194825	1	08/14/2014 00:34	JL
Nickel	BRL	0.0200		mg/L	194825	1	08/14/2014 00:34	JL
Zinc	BRL	0.0200		mg/L	194825	1	08/14/2014 00:34	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 20-Aug-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1408489-008

Client Sample ID: MW-302DD-20140807-01
 Collection Date: 8/7/2014 11:00:00 AM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	7.6	5.0		ug/L	194895	1	08/14/2014 05:49	NP
Carbon disulfide	BRL	5.0		ug/L	194895	1	08/14/2014 05:49	NP
Ethylbenzene	BRL	5.0		ug/L	194895	1	08/14/2014 05:49	NP
Toluene	BRL	5.0		ug/L	194895	1	08/14/2014 05:49	NP
Xylenes, Total	7.2	5.0		ug/L	194895	1	08/14/2014 05:49	NP
Surr: 4-Bromofluorobenzene	87	66.2-120		%REC	194895	1	08/14/2014 05:49	NP
Surr: Dibromofluoromethane	101	79.5-121		%REC	194895	1	08/14/2014 05:49	NP
Surr: Toluene-d8	98.7	77-117		%REC	194895	1	08/14/2014 05:49	NP
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	BRL	0.050		ug/L	194761	1	08/15/2014 14:40	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194761	1	08/15/2014 14:40	YH
Benzo(a)pyrene	BRL	0.050		ug/L	194761	1	08/15/2014 14:40	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194761	1	08/15/2014 14:40	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194761	1	08/15/2014 14:40	YH
Surr: 4-Terphenyl-d14	72.9	53.2-145		%REC	194761	1	08/15/2014 14:40	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194871	1	08/14/2014 15:21	YH
2-Methylphenol	BRL	10		ug/L	194871	1	08/14/2014 15:21	YH
3,4-Methylphenol	BRL	10		ug/L	194871	1	08/14/2014 15:21	YH
Acenaphthene	BRL	10		ug/L	194871	1	08/14/2014 15:21	YH
Acenaphthylene	BRL	10		ug/L	194871	1	08/14/2014 15:21	YH
Anthracene	BRL	10		ug/L	194871	1	08/14/2014 15:21	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194871	1	08/14/2014 15:21	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194871	1	08/14/2014 15:21	YH
Chrysene	BRL	10		ug/L	194871	1	08/14/2014 15:21	YH
Fluoranthene	BRL	10		ug/L	194871	1	08/14/2014 15:21	YH
Fluorene	BRL	10		ug/L	194871	1	08/14/2014 15:21	YH
Naphthalene	BRL	10		ug/L	194871	1	08/14/2014 15:21	YH
Phenanthrene	BRL	10		ug/L	194871	1	08/14/2014 15:21	YH
Phenol	BRL	10		ug/L	194871	1	08/14/2014 15:21	YH
Pyrene	BRL	10		ug/L	194871	1	08/14/2014 15:21	YH
Surr: 2,4,6-Tribromophenol	103	51.5-124		%REC	194871	1	08/14/2014 15:21	YH
Surr: 2-Fluorobiphenyl	83.9	51.7-118		%REC	194871	1	08/14/2014 15:21	YH
Surr: 2-Fluorophenol	57.8	26-120		%REC	194871	1	08/14/2014 15:21	YH
Surr: 4-Terphenyl-d14	101	45.2-137		%REC	194871	1	08/14/2014 15:21	YH
Surr: Nitrobenzene-d5	70.4	42-120		%REC	194871	1	08/14/2014 15:21	YH
Surr: Phenol-d5	48.5	12.3-120		%REC	194871	1	08/14/2014 15:21	YH

Mercury, Total SW7470A**(SW7470A)**

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 20-Aug-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1408489-008

Client Sample ID: MW-302DD-20140807-01
Collection Date: 8/7/2014 11:00:00 AM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	194855	1	08/14/2014 14:49	CG
Cyanide SW9014					(SW9010C)			
Cyanide, Total	0.069	0.010		mg/L	194739	1	08/13/2014 11:17	PF
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	194825	1	08/14/2014 00:38	JL
Arsenic	BRL	0.0500		mg/L	194825	1	08/14/2014 00:38	JL
Barium	0.654	0.0200		mg/L	194825	1	08/14/2014 00:38	JL
Beryllium	BRL	0.0100		mg/L	194825	1	08/14/2014 00:38	JL
Cadmium	BRL	0.0050		mg/L	194825	1	08/14/2014 00:38	JL
Chromium	BRL	0.0100		mg/L	194825	1	08/14/2014 00:38	JL
Copper	BRL	0.0100		mg/L	194825	1	08/14/2014 00:38	JL
Lead	BRL	0.0100		mg/L	194825	1	08/14/2014 00:38	JL
Nickel	BRL	0.0200		mg/L	194825	1	08/14/2014 00:38	JL
Zinc	BRL	0.0200		mg/L	194825	1	08/14/2014 00:38	JL

Qualifiers: * Value exceeds maximum contaminant level
 BRL Below reporting limit
 H Holding times for preparation or analysis exceeded
 N Analyte not NELAC certified
 B Analyte detected in the associated method blank
 > Greater than Result value

E Estimated (value above quantitation range)
 S Spike Recovery outside limits due to matrix
 Narr See case narrative
 NC Not confirmed
 < Less than Result value
 J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 20-Aug-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1408489-009

Client Sample ID: MW-302D-20140807-01
Collection Date: 8/7/2014 12:45:00 PM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	194895	1	08/14/2014 16:58	NP
Carbon disulfide	BRL	5.0		ug/L	194895	1	08/14/2014 16:58	NP
Ethylbenzene	32	5.0		ug/L	194895	1	08/14/2014 16:58	NP
Toluene	BRL	5.0		ug/L	194895	1	08/14/2014 16:58	NP
Xylenes, Total	BRL	5.0		ug/L	194895	1	08/14/2014 16:58	NP
Surr: 4-Bromofluorobenzene	87.7	66.2-120		%REC	194895	1	08/14/2014 16:58	NP
Surr: Dibromofluoromethane	103	79.5-121		%REC	194895	1	08/14/2014 16:58	NP
Surr: Toluene-d8	99.5	77-117		%REC	194895	1	08/14/2014 16:58	NP
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	0.069	0.050		ug/L	194761	1	08/15/2014 15:05	YH
Benzo(b)fluoranthene	BRL	0.10		ug/L	194761	1	08/15/2014 15:05	YH
Benzo(a)pyrene	0.053	0.050		ug/L	194761	1	08/15/2014 15:05	YH
Indeno(1,2,3-cd)pyrene	BRL	0.050		ug/L	194761	1	08/15/2014 15:05	YH
Dibenz(a,h)anthracene	BRL	0.10		ug/L	194761	1	08/15/2014 15:05	YH
Surr: 4-Terphenyl-d14	72.4	53.2-145		%REC	194761	1	08/15/2014 15:05	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194871	1	08/14/2014 16:40	YH
2-Methylphenol	BRL	10		ug/L	194871	1	08/14/2014 16:40	YH
3,4-Methylphenol	BRL	10		ug/L	194871	1	08/14/2014 16:40	YH
Acenaphthene	BRL	10		ug/L	194871	1	08/14/2014 16:40	YH
Acenaphthylene	BRL	10		ug/L	194871	1	08/14/2014 16:40	YH
Anthracene	BRL	10		ug/L	194871	1	08/14/2014 16:40	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194871	1	08/14/2014 16:40	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194871	1	08/14/2014 16:40	YH
Chrysene	BRL	10		ug/L	194871	1	08/14/2014 16:40	YH
Fluoranthene	BRL	10		ug/L	194871	1	08/14/2014 16:40	YH
Fluorene	BRL	10		ug/L	194871	1	08/14/2014 16:40	YH
Naphthalene	130	10		ug/L	194871	1	08/14/2014 16:40	YH
Phenanthrene	BRL	10		ug/L	194871	1	08/14/2014 16:40	YH
Phenol	BRL	10		ug/L	194871	1	08/14/2014 16:40	YH
Pyrene	BRL	10		ug/L	194871	1	08/14/2014 16:40	YH
Surr: 2,4,6-Tribromophenol	101	51.5-124		%REC	194871	1	08/14/2014 16:40	YH
Surr: 2-Fluorobiphenyl	85.9	51.7-118		%REC	194871	1	08/14/2014 16:40	YH
Surr: 2-Fluorophenol	71.1	26-120		%REC	194871	1	08/14/2014 16:40	YH
Surr: 4-Terphenyl-d14	109	45.2-137		%REC	194871	1	08/14/2014 16:40	YH
Surr: Nitrobenzene-d5	76.7	42-120		%REC	194871	1	08/14/2014 16:40	YH
Surr: Phenol-d5	54.4	12.3-120		%REC	194871	1	08/14/2014 16:40	YH
Mercury, Total SW7470A				(SW7470A)				

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 20-Aug-14

Client: ERM-Southeast
 Project Name: AGLC Macon
 Lab ID: 1408489-009

Client Sample ID: MW-302D-20140807-01
 Collection Date: 8/7/2014 12:45:00 PM
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Mercury, Total SW7470A					(SW7470A)			
Mercury	BRL	0.00020		mg/L	194855	1	08/14/2014 14:51	CG
Cyanide SW9014					(SW9010C)			
Cyanide, Total	0.189	0.010		mg/L	194739	1	08/13/2014 11:17	PF
METALS, TOTAL SW6010C					(SW3010A)			
Antimony	BRL	0.0200		mg/L	194825	1	08/14/2014 00:42	JL
Arsenic	BRL	0.0500		mg/L	194825	1	08/14/2014 00:42	JL
Barium	0.0715	0.0200		mg/L	194825	1	08/14/2014 00:42	JL
Beryllium	BRL	0.0100		mg/L	194825	1	08/14/2014 00:42	JL
Cadmium	BRL	0.0050		mg/L	194825	1	08/14/2014 00:42	JL
Chromium	BRL	0.0100		mg/L	194825	1	08/14/2014 00:42	JL
Copper	BRL	0.0100		mg/L	194825	1	08/14/2014 00:42	JL
Lead	BRL	0.0100		mg/L	194825	1	08/14/2014 00:42	JL
Nickel	BRL	0.0200		mg/L	194825	1	08/14/2014 00:42	JL
Zinc	BRL	0.0200		mg/L	194825	1	08/14/2014 00:42	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 20-Aug-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1408489-010

Client Sample ID: MW-111D-20140807-01
Collection Date: 8/7/2014 2:15:00 PM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	2700	100		ug/L	194895	20	08/14/2014 15:37	NP
Carbon disulfide	BRL	5.0		ug/L	194895	1	08/14/2014 14:24	NP
Ethylbenzene	930	100		ug/L	194895	20	08/14/2014 15:37	NP
Toluene	1200	100		ug/L	194895	20	08/14/2014 15:37	NP
Xylenes, Total	670	100		ug/L	194895	20	08/14/2014 15:37	NP
Surr: 4-Bromofluorobenzene	95.6	66.2-120		%REC	194895	1	08/14/2014 14:24	NP
Surr: 4-Bromofluorobenzene	90	66.2-120		%REC	194895	20	08/14/2014 15:37	NP
Surr: Dibromofluoromethane	95.9	79.5-121		%REC	194895	1	08/14/2014 14:24	NP
Surr: Dibromofluoromethane	99.4	79.5-121		%REC	194895	20	08/14/2014 15:37	NP
Surr: Toluene-d8	99.1	77-117		%REC	194895	20	08/14/2014 15:37	NP
Surr: Toluene-d8	98.3	77-117		%REC	194895	1	08/14/2014 14:24	NP
SIM Polynuclear Aromatic Hydrocarbons SW8270D				(SW3510C)				
Benz(a)anthracene	2.0	0.050		ug/L	194761	1	08/15/2014 15:31	YH
Benzo(b)fluoranthene	1.2	0.10		ug/L	194761	1	08/15/2014 15:31	YH
Benzo(a)pyrene	1.4	0.050		ug/L	194761	1	08/15/2014 15:31	YH
Indeno(1,2,3-cd)pyrene	0.62	0.050		ug/L	194761	1	08/15/2014 15:31	YH
Dibenz(a,h)anthracene	0.13	0.10		ug/L	194761	1	08/15/2014 15:31	YH
Surr: 4-Terphenyl-d14	76.1	53.2-145		%REC	194761	1	08/15/2014 15:31	YH
Semivolatile Org. Comp. by GC/MS SW8270D				(SW3510C)				
2,4-Dimethylphenol	BRL	10		ug/L	194871	1	08/14/2014 17:06	YH
2-Methylphenol	BRL	10		ug/L	194871	1	08/14/2014 17:06	YH
3,4-Methylphenol	BRL	10		ug/L	194871	1	08/14/2014 17:06	YH
Acenaphthene	59	10		ug/L	194871	1	08/14/2014 17:06	YH
Acenaphthylene	70	10		ug/L	194871	1	08/14/2014 17:06	YH
Anthracene	14	10		ug/L	194871	1	08/14/2014 17:06	YH
Benzo(g,h,i)perylene	BRL	10		ug/L	194871	1	08/14/2014 17:06	YH
Benzo(k)fluoranthene	BRL	10		ug/L	194871	1	08/14/2014 17:06	YH
Chrysene	BRL	10		ug/L	194871	1	08/14/2014 17:06	YH
Fluoranthene	16	10		ug/L	194871	1	08/14/2014 17:06	YH
Fluorene	64	10		ug/L	194871	1	08/14/2014 17:06	YH
Naphthalene	3000	1000		ug/L	194871	100	08/15/2014 15:28	YH
Phenanthrene	92	10		ug/L	194871	1	08/14/2014 17:06	YH
Phenol	11	10		ug/L	194871	1	08/14/2014 17:06	YH
Pyrene	20	10		ug/L	194871	1	08/14/2014 17:06	YH
Surr: 2,4,6-Tribromophenol	107	51.5-124		%REC	194871	1	08/14/2014 17:06	YH
Surr: 2-Fluorobiphenyl	89.8	51.7-118		%REC	194871	1	08/14/2014 17:06	YH
Surr: 2-Fluorophenol	68.5	26-120		%REC	194871	1	08/14/2014 17:06	YH
Surr: 4-Terphenyl-d14	99.6	45.2-137		%REC	194871	1	08/14/2014 17:06	YH
Surr: Nitrobenzene-d5	108	42-120		%REC	194871	1	08/14/2014 17:06	YH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 20-Aug-14

Client: ERM-Southeast
Project Name: AGLC Macon
Lab ID: 1408489-010

Client Sample ID: MW-111D-20140807-01
Collection Date: 8/7/2014 2:15:00 PM
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Semivolatile Org. Comp. by GC/MS	SW8270D				(SW3510C)			
Surr: Phenol-d5	58.8	12.3-120		%REC	194871	1	08/14/2014 17:06	YH
Mercury, Total	SW7470A				(SW7470A)			
Mercury	BRL	0.00020		mg/L	194855	1	08/14/2014 14:53	CG
Cyanide	SW9014				(SW9010C)			
Cyanide, Total	0.010	0.010		mg/L	194739	1	08/13/2014 11:17	PF
METALS, TOTAL	SW6010C				(SW3010A)			
Antimony	BRL	0.0200		mg/L	194825	1	08/14/2014 00:46	JL
Arsenic	BRL	0.0500		mg/L	194825	1	08/14/2014 00:46	JL
Barium	0.910	0.0200		mg/L	194825	1	08/14/2014 00:46	JL
Beryllium	BRL	0.0100		mg/L	194825	1	08/14/2014 00:46	JL
Cadmium	BRL	0.0050		mg/L	194825	1	08/14/2014 00:46	JL
Chromium	BRL	0.0100		mg/L	194825	1	08/14/2014 00:46	JL
Copper	0.0110	0.0100		mg/L	194825	1	08/14/2014 00:46	JL
Lead	BRL	0.0100		mg/L	194825	1	08/14/2014 00:46	JL
Nickel	0.0267	0.0200		mg/L	194825	1	08/14/2014 00:46	JL
Zinc	0.0258	0.0200		mg/L	194825	1	08/14/2014 00:46	JL

Qualifiers: * Value exceeds maximum contaminant level
 BRL Below reporting limit
 H Holding times for preparation or analysis exceeded
 N Analyte not NELAC certified
 B Analyte detected in the associated method blank
 > Greater than Result value

E Estimated (value above quantitation range)
 S Spike Recovery outside limits due to matrix
 Narr See case narrative
 NC Not confirmed
 < Less than Result value
 J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc
Date: 20-Aug-14

Client:	ERM-Southeast	Client Sample ID:	TB-01
Project Name:	AGLC Macon	Collection Date:	8/8/2014
Lab ID:	1408489-011	Matrix:	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Volatile Organic Compounds by GC/MS SW8260B				(SW5030B)				
Benzene	BRL	5.0		ug/L	194895	1	08/14/2014 03:45	NP
Carbon disulfide	BRL	5.0		ug/L	194895	1	08/14/2014 03:45	NP
Ethylbenzene	BRL	5.0		ug/L	194895	1	08/14/2014 03:45	NP
Toluene	BRL	5.0		ug/L	194895	1	08/14/2014 03:45	NP
Xylenes, Total	BRL	5.0		ug/L	194895	1	08/14/2014 03:45	NP
Surr: 4-Bromofluorobenzene	84	66.2-120		%REC	194895	1	08/14/2014 03:45	NP
Surr: Dibromofluoromethane	102	79.5-121		%REC	194895	1	08/14/2014 03:45	NP
Surr: Toluene-d8	99.9	77-117		%REC	194895	1	08/14/2014 03:45	NP

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client ERM

Work Order Number 1408889

Checklist completed by [Signature] 8/8/14
Signature Date

Carrier name: FedEx ☐ UPS ☐ Courier ☐ Client ☒ US Mail ☐ Other ☐

Shipping container/cooler in good condition? Yes ☒ No ☐ Not Present ☐

Custody seals intact on shipping container/cooler? Yes ☒ No ☐ Not Present ☐

Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒

Container/Temp Blank temperature in compliance? ($4^{\circ}\text{C} \pm 2$) * Yes ☒ No ☐

Cooler #1 31.0 Cooler #2 3.9 Cooler #3 3.8 Cooler #4 ☐ Cooler #5 ☐ Cooler #6 ☐

Chain of custody present? Yes ☒ No ☐

Chain of custody signed when relinquished and received? Yes ☒ No ☐

Chain of custody agrees with sample labels? Yes ☒ No ☐

Samples in proper container/bottle? Yes ☒ No ☐

Sample containers intact? Yes ☒ No ☐

Sufficient sample volume for indicated test? Yes ☒ No ☐

All samples received within holding time? Yes ☒ No ☐

Was TAT marked on the COC? Yes ☒ No ☐

Proceed with Standard TAT as per project history? Yes ☐ No ☐ Not Applicable ☒

Water - VOA vials have zero headspace? No VOA vials submitted ☐ Yes ☒ No ☐

Water - pH acceptable upon receipt? Yes ☒ No ☐ Not Applicable ☐

Adjusted? ☐ Checked by MJ
Sample Condition: Good ☒ Other(Explain) ☐

(For diffusive samples or AIHA lead) Is a known blank included? Yes ☐ No ☒

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1408489

ANALYTICAL QC SUMMARY REPORT

BatchID: 194690

Sample ID: MB-194690	Client ID:				Units: ug/L	Prep Date: 08/11/2014	Run No: 273501				
SampleType: MBLK	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 194690	Analysis Date: 08/11/2014	Seq No: 5771508				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

2,4-Dimethylphenol	BRL	10									
2-Methylphenol	BRL	10									
3,4-Methylphenol	BRL	10									
Acenaphthene	BRL	10									
Acenaphthylene	BRL	10									
Anthracene	BRL	10									
Benzo(g,h,i)perylene	BRL	10									
Benzo(k)fluoranthene	BRL	10									
Chrysene	BRL	10									
Fluoranthene	BRL	10									
Fluorene	BRL	10									
Naphthalene	BRL	10									
Phenanthrene	BRL	10									
Phenol	BRL	10									
Pyrene	BRL	10									
Surr: 2,4,6-Tribromophenol	95.03	0	100.0		95.0	51.5	124				
Surr: 2-Fluorobiphenyl	48.47	0	50.00		96.9	51.7	118				
Surr: 2-Fluorophenol	63.60	0	100.0		63.6	26	120				
Surr: 4-Terphenyl-d14	58.17	0	50.00		116	45.2	137				
Surr: Nitrobenzene-d5	40.23	0	50.00		80.5	42	120				
Surr: Phenol-d5	41.48	0	100.0		41.5	12.3	120				

Sample ID: LCS-194690	Client ID:	Units: ug/L				Prep Date: 08/11/2014	Run No: 273501				
SampleType: LCS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D	BatchID: 194690				Analysis Date: 08/11/2014	Seq No: 5771509				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	110.5	10	100.0		111	67.7	122				
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Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1408489

ANALYTICAL QC SUMMARY REPORT

BatchID: 194690

Sample ID: LCS-194690	Client ID:					Units: ug/L	Prep Date: 08/11/2014	Run No: 273501			
SampleType: LCS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D					BatchID: 194690	Analysis Date: 08/11/2014	Seq No: 5771509			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Phenol	49.79	10	100.0		49.8	24.6	120				
Pyrene	118.4	10	100.0		118	68.3	123				
Surr: 2,4,6-Tribromophenol	116.2	0	100.0		116	51.5	124				
Surr: 2-Fluorobiphenyl	56.88	0	50.00		114	51.7	118				
Surr: 2-Fluorophenol	74.91	0	100.0		74.9	26	120				
Surr: 4-Terphenyl-d14	62.60	0	50.00		125	45.2	137				
Surr: Nitrobenzene-d5	50.44	0	50.00		101	42	120				
Surr: Phenol-d5	50.49	0	100.0		50.5	12.3	120				

Sample ID: 1408474-002DMS	Client ID:					Units: ug/L	Prep Date: 08/11/2014	Run No: 273501			
SampleType: MS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D					BatchID: 194690	Analysis Date: 08/12/2014	Seq No: 5771821			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	88.84	10	100.0		88.8	51.9	120				
Phenol	57.06	10	100.0		57.1	30.5	120				
Pyrene	94.54	10	100.0		94.5	50.6	120				
Surr: 2,4,6-Tribromophenol	98.09	0	100.0		98.1	51.5	124				
Surr: 2-Fluorobiphenyl	42.03	0	50.00		84.1	51.7	118				
Surr: 2-Fluorophenol	67.62	0	100.0		67.6	26	120				
Surr: 4-Terphenyl-d14	49.32	0	50.00		98.6	45.2	137				
Surr: Nitrobenzene-d5	39.89	0	50.00		79.8	42	120				
Surr: Phenol-d5	56.73	0	100.0		56.7	12.3	120				

Sample ID: 1408474-002DMSD	Client ID:				Units: ug/L	Prep Date: 08/11/2014	Run No: 274032				
SampleType: MSD	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 194690	Analysis Date: 08/19/2014	Seq No: 5782809				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	89.67	10	100.0		89.7	51.9	120	88.84	0.930	24.9	
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Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1408489

ANALYTICAL QC SUMMARY REPORT

BatchID: 194690

Sample ID: 1408474-002DMSD	Client ID:				Units: ug/L	Prep Date: 08/11/2014	Run No: 274032				
SampleType: MSD	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 194690	Analysis Date: 08/19/2014	Seq No: 5782809				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Phenol	51.69	10	100.0		51.7	30.5	120	57.06	9.88	34.4	
Pyrene	86.92	10	100.0		86.9	50.6	120	94.54	8.40	26.7	
Surr: 2,4,6-Tribromophenol	105.3	0	100.0		105	51.5	124	98.09	0	0	
Surr: 2-Fluorobiphenyl	43.29	0	50.00		86.6	51.7	118	42.03	0	0	
Surr: 2-Fluorophenol	67.62	0	100.0		67.6	26	120	67.62	0	0	
Surr: 4-Terphenyl-d14	49.03	0	50.00		98.1	45.2	137	49.32	0	0	
Surr: Nitrobenzene-d5	39.24	0	50.00		78.5	42	120	39.89	0	0	
Surr: Phenol-d5	51.16	0	100.0		51.2	12.3	120	56.73	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1408489

ANALYTICAL QC SUMMARY REPORT

BatchID: 194739

Sample ID: MB-194739	Client ID:					Units: mg/L	Prep Date: 08/11/2014	Run No: 273638			
SampleType: MBLK	TestCode: Cyanide	SW9014					BatchID: 194739	Analysis Date: 08/13/2014	Seq No: 5774776		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total BRL 0.010

Sample ID: LCS-194739	Client ID:	Units: mg/L	Prep Date: 08/11/2014	Run No: 273638							
SampleType: LCS	TestCode: Cyanide SW9014	BatchID: 194739	Analysis Date: 08/13/2014	Seq No: 5774777							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.2496 0.010 0.2500 99.8 85 115

Sample ID: 1408489-001CMS	Client ID: MW-307D-20140806-01	Units: mg/L	Prep Date: 08/11/2014	Run No: 273638							
SampleType: MS	TestCode: Cyanide SW9014	BatchID: 194739	Analysis Date: 08/13/2014	Seq No: 5774794							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.1679 0.010 0.2500 0.003300 65.8 70 130 S

Sample ID: 1408489-001CMSD	Client ID: MW-307D-20140806-01	Units: mg/L	Prep Date: 08/11/2014	Run No: 273638							
SampleType: MSD	TestCode: Cyanide SW9014	BatchID: 194739	Analysis Date: 08/13/2014	Seq No: 5774796							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Cyanide, Total 0.2008 0.010 0.2500 0.003300 79.0 70 130 0.1679 17.8 20

Qualifiers:	> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
	BRL Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
	J Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
	Rpt Lim Reporting Limit	S Spike Recovery outside limits due to matrix	

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1408489

ANALYTICAL QC SUMMARY REPORT

BatchID: 194761

Sample ID: MB-194761	Client ID:					Units: ug/L	Prep Date: 08/12/2014	Run No: 273859			
SampleType: MBLK	TestCode: SIM Polynuclear Aromatic Hydrocarbons	SW8270D	BatchID: 194761				Analysis Date: 08/15/2014	Seq No: 5779640			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	BRL	0.025									
Benzo(a)pyrene	BRL	0.025									
Benzo(b)fluoranthene	BRL	0.050									
Dibenz(a,h)anthracene	BRL	0.050									
Indeno(1,2,3-cd)pyrene	BRL	0.025									
Surr: 4-Terphenyl-d14	0.7853	0	1.000		78.5	53.2	145				

Sample ID: LCS-194761	Client ID:					Units: ug/L	Prep Date: 08/12/2014	Run No: 273859			
SampleType: LCS	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D					BatchID: 194761	Analysis Date: 08/15/2014	Seq No: 5779918			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	1.124	0.025	1.000	0.01873	111	62.8	132				
Benzo(a)pyrene	1.001	0.025	1.000	0.02246	97.8	56.4	123				
Benzo(b)fluoranthene	0.9804	0.050	1.000	0.02356	95.7	69.2	132				
Dibenz(a,h)anthracene	1.139	0.050	1.000	0.04634	109	49.3	134				
Indeno(1,2,3-cd)pyrene	1.130	0.025	1.000	0.02348	111	48.3	137				
Surr: 4-Terphenyl-d14	0.8161	0	1.000		81.6	53.2	145				

Sample ID: 1408489-010DMS	Client ID: MW-111D-20140807-01	Units: ug/L			Prep Date: 08/12/2014	Run No: 273859					
SampleType: MS	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D	BatchID: 194761			Analysis Date: 08/15/2014	Seq No: 5784257					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	4.739	0.050	2.000	1.968	139	51.4	142				
Benzo(a)pyrene	3.814	0.050	2.000	1.445	118	48.3	126				
Benzo(b)fluoranthene	3.422	0.10	2.000	1.242	109	49.9	134				
Dibenz(a,h)anthracene	2.344	0.10	2.000	0.1320	111	41.8	121				
Indeno(1,2,3-cd)pyrene	3.010	0.050	2.000	0.6202	119	42	129				
Surr: 4-Terphenyl-d14	1.532	0	2.000		76.6	53.2	145				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1408489

ANALYTICAL QC SUMMARY REPORT

BatchID: 194761

Sample ID: 1408489-010DMSD	Client ID: MW-111D-20140807-01	Units: ug/L	Prep Date: 08/12/2014	Run No: 273859							
SampleType: MSD	TestCode: SIM Polynuclear Aromatic Hydrocarbons SW8270D	BatchID: 194761	Analysis Date: 08/15/2014	Seq No: 5784259							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benz(a)anthracene	3.997	0.050	2.000	1.968	101	51.4	142	4.739	17.0	48.1	
Benzo(a)pyrene	3.072	0.050	2.000	1.445	81.3	48.3	126	3.814	21.5	53.5	
Benzo(b)fluoranthene	2.978	0.10	2.000	1.242	86.8	49.9	134	3.422	13.9	51.1	
Dibenz(a,h)anthracene	1.982	0.10	2.000	0.1320	92.5	41.8	121	2.344	16.8	54.2	
Indeno(1,2,3-cd)pyrene	2.501	0.050	2.000	0.6202	94.0	42	129	3.010	18.5	44.6	
Surr: 4-Terphenyl-d14	1.394	0	2.000		69.7	53.2	145	1.532	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1408489

ANALYTICAL QC SUMMARY REPORT

BatchID: 194825

Sample ID: MB-194825	Client ID:					Units: mg/L	Prep Date: 08/13/2014	Run No: 273729			
SampleType: MBLK	TestCode: METALS, TOTAL	SW6010C				BatchID: 194825	Analysis Date: 08/13/2014	Seq No: 5776739			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	BRL	0.0200									
Arsenic	BRL	0.0500									
Barium	BRL	0.0200									
Beryllium	BRL	0.0100									
Cadmium	BRL	0.0050									
Chromium	BRL	0.0100									
Copper	BRL	0.0100									
Lead	BRL	0.0100									
Nickel	BRL	0.0200									
Zinc	BRL	0.0200									

Sample ID: LCS-194825	Client ID:					Units: mg/L	Prep Date: 08/13/2014	Run No: 273729			
SampleType: LCS	TestCode: METALS, TOTAL	SW6010C				BatchID: 194825	Analysis Date: 08/13/2014	Seq No: 5776738			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	0.9976	0.0200	1.000		99.8	80	120				
Arsenic	0.9780	0.0500	1.000		97.8	80	120				
Barium	0.9894	0.0200	1.000		98.9	80	120				
Beryllium	0.9933	0.0100	1.000		99.3	80	120				
Cadmium	0.9961	0.0050	1.000		99.6	80	120				
Chromium	0.9828	0.0100	1.000		98.3	80	120				
Copper	1.007	0.0100	1.000		101	80	120				
Lead	0.9652	0.0100	1.000		96.5	80	120				
Nickel	0.9753	0.0200	1.000		97.5	80	120				
Zinc	0.9516	0.0200	1.000		95.2	80	120				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1408489

ANALYTICAL QC SUMMARY REPORT

BatchID: 194825

Sample ID: 1408489-001BMS	Client ID: MW-307D-20140806-01	Units: mg/L	Prep Date: 08/13/2014	Run No: 273729							
SampleType: MS	TestCode: METALS, TOTAL SW6010C	BatchID: 194825	Analysis Date: 08/13/2014	Seq No: 5776744							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	0.9629	0.0200	1.000		96.3	75	125				
Arsenic	0.9567	0.0500	1.000		95.7	75	125				
Barium	2.447	0.0200	1.000	1.552	89.5	75	125				
Beryllium	0.9009	0.0100	1.000		90.1	75	125				
Cadmium	0.9465	0.0050	1.000		94.7	75	125				
Chromium	0.9539	0.0100	1.000	0.07833	87.6	75	125				
Copper	0.9606	0.0100	1.000	0.006891	95.4	75	125				
Lead	0.8292	0.0100	1.000	0.001848	82.7	75	125				
Nickel	0.8553	0.0200	1.000	0.003948	85.1	75	125				
Zinc	0.8414	0.0200	1.000		84.1	75	125				

Sample ID: 1408489-001BMSD	Client ID: MW-307D-20140806-01	Units: mg/L	Prep Date: 08/13/2014	Run No: 273729							
SampleType: MSD	TestCode: METALS, TOTAL SW6010C	BatchID: 194825	Analysis Date: 08/13/2014	Seq No: 5776747							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Antimony	0.9309	0.0200	1.000		93.1	75	125	0.9629	3.38	20	
Arsenic	0.9293	0.0500	1.000		92.9	75	125	0.9567	2.91	20	
Barium	2.331	0.0200	1.000	1.552	77.8	75	125	2.447	4.88	20	
Beryllium	0.8758	0.0100	1.000		87.6	75	125	0.9009	2.83	20	
Cadmium	0.9165	0.0050	1.000		91.6	75	125	0.9465	3.23	20	
Chromium	0.9255	0.0100	1.000	0.07833	84.7	75	125	0.9539	3.01	20	
Copper	0.9292	0.0100	1.000	0.006891	92.2	75	125	0.9606	3.32	20	
Lead	0.8045	0.0100	1.000	0.001848	80.3	75	125	0.8292	3.03	20	
Nickel	0.8297	0.0200	1.000	0.003948	82.6	75	125	0.8553	3.04	20	
Zinc	0.8194	0.0200	1.000		81.9	75	125	0.8414	2.66	20	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1408489

ANALYTICAL QC SUMMARY REPORT

BatchID: 194855

Sample ID: MB-194855	Client ID:	Units: mg/L	Prep Date: 08/14/2014	Run No: 273698							
SampleType: MBLK	TestCode: Mercury, Total SW7470A	BatchID: 194855	Analysis Date: 08/14/2014	Seq No: 5777169							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury BRL 0.00020

Sample ID: LCS-194855	Client ID:				Units: mg/L	Prep Date: 08/14/2014	Run No: 273698				
SampleType: LCS	TestCode: Mercury, Total	SW7470A	BatchID: 194855			Analysis Date: 08/14/2014	Seq No: 5777170				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.005481 0.00020 0.0050 110 80 120

Sample ID: 1408489-002BMS	Client ID: MW-205D-20140806-01	Units: mg/L	Prep Date: 08/14/2014	Run No: 273698							
SampleType: MS	TestCode: Mercury, Total SW7470A	BatchID: 194855	Analysis Date: 08/14/2014	Seq No: 5777175							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.003642 0.00020 0.0050 72.8 70 130

Sample ID: 1408489-002BMSD	Client ID: MW-205D-20140806-01	Units: mg/L	Prep Date: 08/14/2014	Run No: 273698							
SampleType: MSD	TestCode: Mercury, Total SW7470A	BatchID: 194855	Analysis Date: 08/14/2014	Seq No: 5777178							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.003647 0.00020 0.0050 72.9 70 130 0.003642 0.133 20

Qualifiers:	> Greater than Result value	< Less than Result value	B Analyte detected in the associated method blank
	BRL Below reporting limit	E Estimated (value above quantitation range)	H Holding times for preparation or analysis exceeded
	J Estimated value detected below Reporting Limit	N Analyte not NELAC certified	R RPD outside limits due to matrix
	Rpt Lim Reporting Limit	S Spike Recovery outside limits due to matrix	

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1408489

ANALYTICAL QC SUMMARY REPORT

BatchID: 194871

Sample ID: MB-194871	Client ID:					Units: ug/L	Prep Date: 08/14/2014	Run No: 273761			
SampleType: MBLK	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D					BatchID: 194871	Analysis Date: 08/14/2014	Seq No: 5777236			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

2,4-Dimethylphenol	BRL	10									
2-Methylphenol	BRL	10									
3,4-Methylphenol	BRL	10									
Acenaphthene	BRL	10									
Acenaphthylene	BRL	10									
Anthracene	BRL	10									
Benzo(g,h,i)perylene	BRL	10									
Benzo(k)fluoranthene	BRL	10									
Chrysene	BRL	10									
Fluoranthene	BRL	10									
Fluorene	BRL	10									
Naphthalene	BRL	10									
Phenanthrene	BRL	10									
Phenol	BRL	10									
Pyrene	BRL	10									
Surr: 2,4,6-Tribromophenol	100.8	0	100.0		101	51.5	124				
Surr: 2-Fluorobiphenyl	45.33	0	50.00		90.7	51.7	118				
Surr: 2-Fluorophenol	53.67	0	100.0		53.7	26	120				
Surr: 4-Terphenyl-d14	52.92	0	50.00		106	45.2	137				
Surr: Nitrobenzene-d5	40.56	0	50.00		81.1	42	120				
Surr: Phenol-d5	33.58	0	100.0		33.6	12.3	120				

Sample ID: LCS-194871	Client ID:					Units: ug/L	Prep Date: 08/14/2014	Run No: 273761			
SampleType: LCS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D					BatchID: 194871	Analysis Date: 08/14/2014	Seq No: 5777241			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	114.1	10	100.0		114	67.7	122				
Phenol	51.12	10	100.0		51.1	24.6	120				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1408489

ANALYTICAL QC SUMMARY REPORT

BatchID: 194871

Sample ID: LCS-194871	Client ID:					Units: ug/L	Prep Date: 08/14/2014	Run No: 273761			
SampleType: LCS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D					BatchID: 194871	Analysis Date: 08/14/2014	Seq No: 5777241			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Pyrene	119.6	10	100.0		120	68.3	123				
Surr: 2,4,6-Tribromophenol	131.1	0	100.0		131	51.5	124				S
Surr: 2-Fluorobiphenyl	58.89	0	50.00		118	51.7	118				
Surr: 2-Fluorophenol	78.14	0	100.0		78.1	26	120				
Surr: 4-Terphenyl-d14	64.82	0	50.00		130	45.2	137				
Surr: Nitrobenzene-d5	53.00	0	50.00		106	42	120				
Surr: Phenol-d5	51.52	0	100.0		51.5	12.3	120				

Sample ID: 1408935-002BMS	Client ID:				Units: ug/L	Prep Date: 08/14/2014	Run No: 273761				
SampleType: MS	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 194871	Analysis Date: 08/15/2014	Seq No: 5779223				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	88.50	10	100.0		88.5	51.9	120				
Phenol	53.05	10	100.0		53.0	30.5	120				
Pyrene	89.35	10	100.0		89.4	50.6	120				
Surr: 2,4,6-Tribromophenol	109.0	0	100.0		109	51.5	124				
Surr: 2-Fluorobiphenyl	45.79	0	50.00		91.6	51.7	118				
Surr: 2-Fluorophenol	74.22	0	100.0		74.2	26	120				
Surr: 4-Terphenyl-d14	49.56	0	50.00		99.1	45.2	137				
Surr: Nitrobenzene-d5	42.59	0	50.00		85.2	42	120				
Surr: Phenol-d5	55.61	0	100.0		55.6	12.3	120				

Sample ID: 1408935-002BMSD	Client ID:				Units: ug/L	Prep Date: 08/14/2014	Run No: 273761				
SampleType: MSD	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D				BatchID: 194871	Analysis Date: 08/15/2014	Seq No: 5779224				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	94.91	10	100.0		94.9	51.9	120	88.50	6.99	24.9	
Phenol	57.53	10	100.0		57.5	30.5	120	53.05	8.10	34.4	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1408489

ANALYTICAL QC SUMMARY REPORT

BatchID: 194871

Sample ID: 1408935-002BMSD	Client ID:	Units: ug/L	Prep Date: 08/14/2014	Run No: 273761							
SampleType: MSD	TestCode: Semivolatile Org. Comp. by GC/MS SW8270D	BatchID: 194871	Analysis Date: 08/15/2014	Seq No: 5779224							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Pyrene	94.28	10	100.0		94.3	50.6	120	89.35	5.37	26.7	
Surr: 2,4,6-Tribromophenol	112.4	0	100.0		112	51.5	124	109.0	0	0	
Surr: 2-Fluorobiphenyl	47.29	0	50.00		94.6	51.7	118	45.79	0	0	
Surr: 2-Fluorophenol	76.29	0	100.0		76.3	26	120	74.22	0	0	
Surr: 4-Terphenyl-d14	50.01	0	50.00		100	45.2	137	49.56	0	0	
Surr: Nitrobenzene-d5	42.15	0	50.00		84.3	42	120	42.59	0	0	
Surr: Phenol-d5	60.38	0	100.0		60.4	12.3	120	55.61	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
 Project Name: AGLC Macon
 Workorder: 1408489

ANALYTICAL QC SUMMARY REPORT

BatchID: 194895

Sample ID: MB-194895	Client ID:					Units: ug/L	Prep Date: 08/13/2014	Run No: 273690			
SampleType: MBLK	TestCode: Volatile Organic Compounds by GC/MS SW8260B					BatchID: 194895	Analysis Date: 08/13/2014	Seq No: 5776324			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	BRL	5.0									
Carbon disulfide	BRL	5.0									
Ethylbenzene	BRL	5.0									
Toluene	BRL	5.0									
Xylenes, Total	BRL	5.0									
Surr: 4-Bromofluorobenzene	42.58	0	50.00		85.2	66.2	120				
Surr: Dibromofluoromethane	50.20	0	50.00		100	79.5	121				
Surr: Toluene-d8	49.60	0	50.00		99.2	77	117				

Sample ID: LCS-194895	Client ID:					Units: ug/L	Prep Date: 08/13/2014	Run No: 273690			
SampleType: LCS	TestCode: Volatile Organic Compounds by GC/MS SW8260B					BatchID: 194895	Analysis Date: 08/13/2014	Seq No: 5776323			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	49.60	5.0	50.00		99.2	74.2	129				
Toluene	47.92	5.0	50.00		95.8	74.2	129				
Surr: 4-Bromofluorobenzene	43.08	0	50.00		86.2	66.2	120				
Surr: Dibromofluoromethane	49.65	0	50.00		99.3	79.5	121				
Surr: Toluene-d8	49.42	0	50.00		98.8	77	117				

Sample ID: 1408875-004AMS	Client ID:					Units: ug/L	Prep Date: 08/13/2014	Run No: 273690			
SampleType: MS	TestCode: Volatile Organic Compounds by GC/MS SW8260B					BatchID: 194895	Analysis Date: 08/14/2014	Seq No: 5776326			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzene	55.54	5.0	50.00		111	70.2	138				
Toluene	55.43	5.0	50.00		111	70	139				
Surr: 4-Bromofluorobenzene	42.26	0	50.00		84.5	66.2	120				
Surr: Dibromofluoromethane	50.96	0	50.00		102	79.5	121				
Surr: Toluene-d8	50.59	0	50.00		101	77	117				

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: ERM-Southeast
Project Name: AGLC Macon
Workorder: 1408489

ANALYTICAL QC SUMMARY REPORT

BatchID: 194895

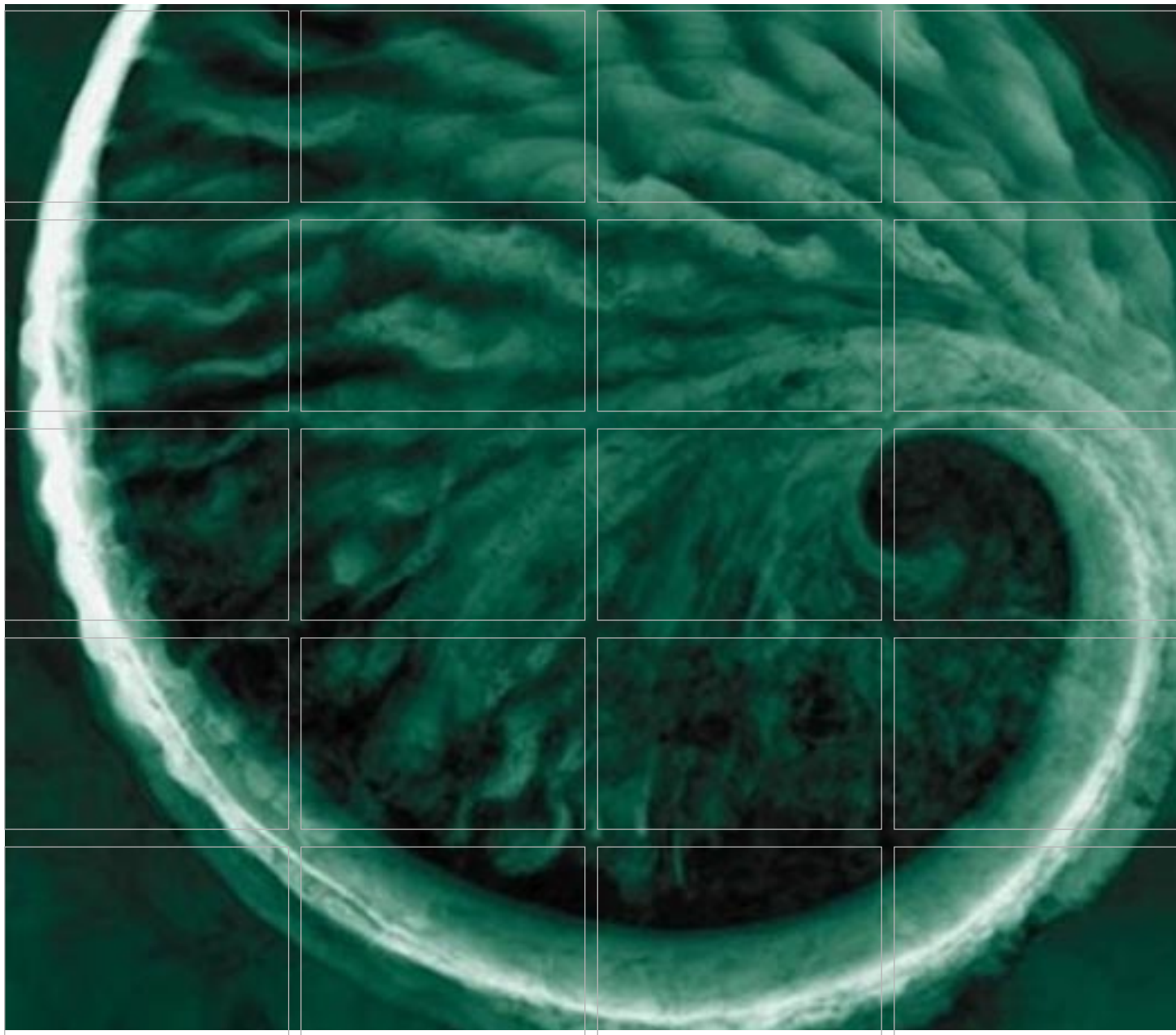
Sample ID: 1408875-004AMSD	Client ID:					Units: ug/L	Prep Date: 08/13/2014	Run No: 273690			
SampleType: MSD	TestCode: Volatile Organic Compounds by GC/MS SW8260B					BatchID: 194895	Analysis Date: 08/14/2014	Seq No: 5776327			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	53.78	5.0	50.00		108	70.2	138	55.54	3.22	20	
Toluene	52.85	5.0	50.00		106	70	139	55.43	4.77	20	
Surr: 4-Bromofluorobenzene	42.55	0	50.00		85.1	66.2	120	42.26	0	0	
Surr: Dibromofluoromethane	49.61	0	50.00		99.2	79.5	121	50.96	0	0	
Surr: Toluene-d8	49.46	0	50.00		98.9	77	117	50.59	0	0	

Qualifiers:	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

DNAPL Investigation Work Plan
Appendix G

Project No. 0176740
Atlanta Gas Light Company

Environmental Resources Management
3200 Windy Hill Road SE, Suite 1500W
Atlanta, Georgia 30339
(678) 486-2700



DNAPL Investigation Work Plan

Atlanta Gas Light Company
Former Manufactured Gas Plant Site
Macon, Georgia HSI #10511

October 2014

www.erm.com

Atlanta Gas Light Company

DNAPL Investigation Work Plan

Former Manufactured Gas
Plant Site
Macon, Georgia HSI #10511

October 2014

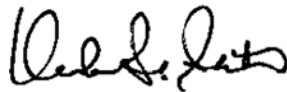
ERM Project No. 0176740



Nic Vrey
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- 1 TOPOGRAPHIC SITE LOCATION MAP
- 2 PROPOSED DNAP INVESTIGATION BORING LOCATIONS

APPENDICES

- A PRE-CONSTRUCTION SITE MAP
- B PROPOSED SUMP WELL CONSTRUCTION DIAGRAM

Environmental Resources Management (ERM) has prepared this Work Plan for on-site investigation activities at the former Manufactured Gas Plant (MGP) site in Macon, Georgia (Site) (see [Figure 1](#)). Investigation procedures are presented in this Work Plan and to be included as part of the Voluntary Remediation and Investigation Plan.

During Phase II bedrock well installations, tar-like material in the form of dense non aqueous phase liquid (DNAPL) was observed in the partially weathered rock (PWR) at the interface with competent rock at MW-305D, located in the western right-of-way (ROW) of Seventh Street (see [Figure 2](#)). The purpose of this investigation is to delineate the extent of DNAPL in the area and, where applicable, install sump wells to recover DNAPL.

The Site is located at 137 Mulberry Street in Macon, Bibb County, Georgia. Historically, the Macon facility operated as a MGP. The Site has been the subject of numerous investigation and corrective actions since the 1980's and will be referred to as the Mulberry Street MGP in this document (this area has also been referred to as the Eastern Portion in previous correspondence).

Investigation activities associated with the Mulberry Street MGP began in 1986. Remediation and corrective action activities have primarily focused on addressing impacted soil and source material in the alluvium via excavation and in-situ stabilization. Historically, source material has intermittently been observed in groundwater monitoring wells installed in the bedrock aquifer. DNAPL has been measured in MW-111D at thicknesses exceeding 0.01 feet during recent semiannual groundwater monitoring events. DNAPL had been observed in MW-111D in 2010 and 2011, and vacuum enhanced fluid recovery (VEFR) event was conducted in this well in February 2011. In September 2013 a VEFR event was also completed to remove DNAPL from MW-111D. VEFR was also used at MW-302D as a trace amount of DNAPL was detected in the well during the August 2013 semiannual event.

Several planning and communication steps will be taken prior to beginning field activities presented in this Work Plan. A Site-Specific *Health and Safety Plan*



SEVENTH ST WESTERN ROW

(HASP) will be prepared to identify the site-specific hazards and the steps that will be taken to mitigate those hazards. The legally-required notice will be given to utility operators via GA 811 and a private utility locator (GPRS) will be contracted to complete a scan of the work areas for buried utilities. GPRS will use a combination of ground penetrating radar (GPR) and radio frequency electromagnetic (EM) utility locating equipment to identify underground utility locations. GPR is an electromagnetic method that detects interfaces between subsurface materials with differing dielectric constants. The EM system is operated by either inducting or conducting

a signal into the underground utility to be traced. A transmitter is placed over and in line with a suspected buried utility, inducing a signal, which propagates along the buried utility and can then be detected.

The boring locations in the western ROW of Seventh Street are located near overhead power lines. The lower elevation power lines are lower voltage lines that provide power to the Smith Door Finishing Business ([Appendix A](#)); whereas, the higher elevation power lines are high powered lines that provide power to a large portion of Macon. Negotiations will need to be made with Brian Smith to temporarily turn off power at the lower lines while drilling the borings in the western ROW. The upper lines will need to be blanketed by Georgia Power. AGLC will be responsible for negotiations with Brian Smith and ERM will arrange to have the upper lines blanketed.

Access to DIB-5 and the nearby contingency boring located west of the Smith Door Finishing Business (see [Figure 2](#)) will need arranged prior to subsurface clearance activities. The property owner is not known at this time and is not listed on the city's GIS database; however, historical figures indicate that the property may belong to Norfolk Southern. A surveyor has been contracted by AGLC to determine property ownership prior to access negotiations.

3.1

AIR KNIFING

The boring locations are proposed in areas where there is limited space to move borings away from marked utilities due to building location, overhead power lines, and a street with high traffic. In order to mitigate concerns of potentially drilling into a mismarked utility, the drilling location will be pre-cleared using air knife vacuum truck service by Cascade Drilling, L.P (Cascade). Vacuum excavation-air knifing equipment consists of an air compressor to dislodge the material and a vacuum unit to remove and store the material for later containerization if needed. The process will not harm underground utilities, and is a safer alternative when working near utilities.

3.2

VEGETATION CLEARANCE

The property west of the Smith Door Finishing Business is heavily vegetated and some vegetation clearance will be needed to allow drilling equipment access to the proposed drilling locations (see figure below). Due to potential inconveniences associated with clearing (e.g. noise), adjacent stakeholders will be notified in advance of clearing schedules.



As described in Section 1.0, soil investigation activities are being performed for the purpose of detecting the extent of DNAPL remaining in PWR at the interface with rock in the vicinity of MW-305D. A minimum of five soil borings will be advanced down to competent bedrock (Figure 2). An additional four contingency boring may be required as triggered by DNAPL findings described in Figure 2. The locations shown on Figure 2 are approximate, and they may be modified in the field based upon utility locations and/or if physical challenges are encountered. Using sonic technology, the soil borings will be advanced one foot into bedrock, approximately 30 feet bgs. A mini sonic rig will be used to maintain a safe distance from the high powered power lines overhead. Cores will be continuously collected and inspected for evidence of DNAPL.

Sonic Drilling uses both the rotational and downforce of the drill casing to advance the borehole. Sonic uses both an inner core barrel and an outer drill casing to penetrate the substrate. The first step is to advance the inner core barrel 10 feet to 20 feet in front of the drill casing taking the first section of the continuous sample. No fluid, air or mud is used during this coring process allowing the most undisturbed sample possible. Step two is to advance the overriding outer casing over the inner core barrel. Depending on the sub surface conditions, small quantities of potable water may be used to lubricate the outer casing.

In the third step, the inner core barrel, with the continuous sample inside is extracted while the outer drill casing remains allowing the sample to be brought to the surface and extruded into a bag or core box. The remaining casing keeps the bore hole open and minimizes water intrusion into the borehole. Note that the only drill "cuttings" created is the core sample itself. This greatly decreases the amount of Investigation Derived Waste (IDW) created during the drilling process. The process is repeated to the desired depth.

The Sonic advantage is its ability to constantly case the borehole as it advances to the next sample interval. The core barrel advances within the casing thereby obtaining a continuous core sample. The sample is extruded into a liner. The use of sonic technology will greatly reduce the time needed to perform the soil borings and the continuous sample collection will provide greater accuracy in DNAPL detection and characterization.

At a minimum, one sump will be installed adjacent to MW-305D ([Figure 2](#)). In addition, any drilling locations where DNAPL is detected with a quantity that appears to be recoverable will be converted into sump well. Blebs and stringers are not considered to be recoverable. Sump wells will be constructed of 4 inch Sch. 40 PVC surface casing with a five foot screen terminating at the competent bedrock surface. A three foot sump will be installed below the screen into competent bedrock to allow DNAPL to accumulate in the well without introducing the DNAPL into fractures in the competent rock. A proposed sump well construction diagram is included in [Appendix B](#).

EQUIPMENT DECONTAMINATION AND INVESTIGATION DERIVED WASTE

In order to prevent cross-contamination, drilling and sampling equipment will be decontaminated by steam pressure washing or by hand cleaning using a detergent and water mixture, followed by a final distilled water rinse between each borehole/well location. The decontamination pad will be built in a secure area.

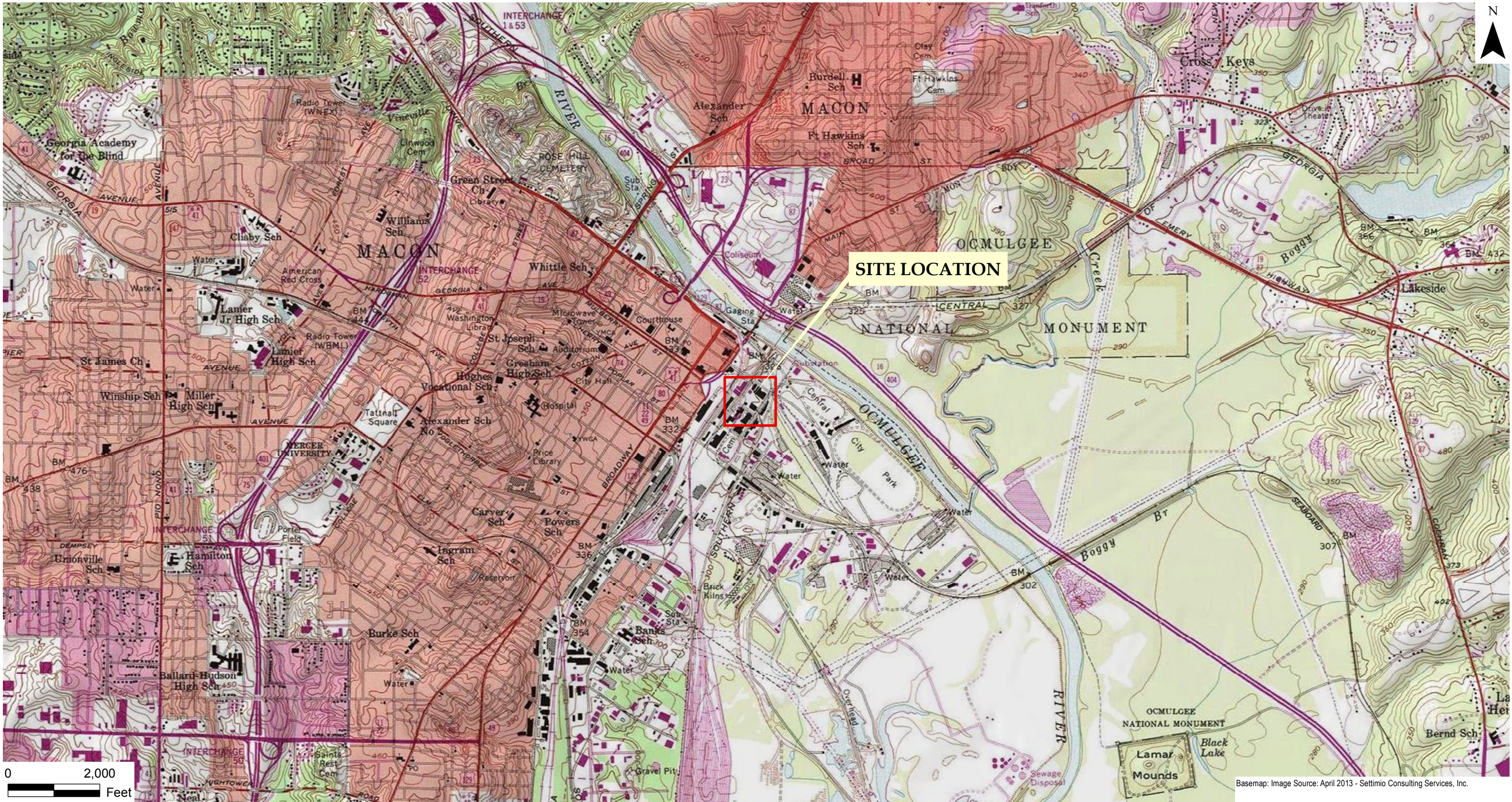
The use of sonic technology to investigate for DNAPL should result in low generation of waste. IDW generated during the investigation (e.g., soil cuttings and decontamination fluids) will be placed into the appropriately sized container (e.g., 55-gallon steel drums) and labeled with generator name, description of the contents, and date(s) of generation. Drums will be placed on pallets in an acceptable storage area pending receipt of analytical results and coordination of transportation and off-site disposal at a licensed disposal facility. Personal protective equipment and disposable sampling equipment (e.g., nitrile gloves and acetate liners) will be taken off site daily for disposal.

The work is expected to last two weeks. The work day will be 7 AM until 6 PM. Once profiling and manifesting have been completed, IDW will be removed from the Site.

Figures

October 14, 2014
Project No. 0176740
Atlanta Gas Light Company

Environmental Resources Management
3200 Windy Hill Rd. Suite 1500W
Atlanta, GA 30339
(678) 486-2700



Basemap: Image Source: April 2013 - Settimio Consulting Services, Inc.



Environmental Resources Management

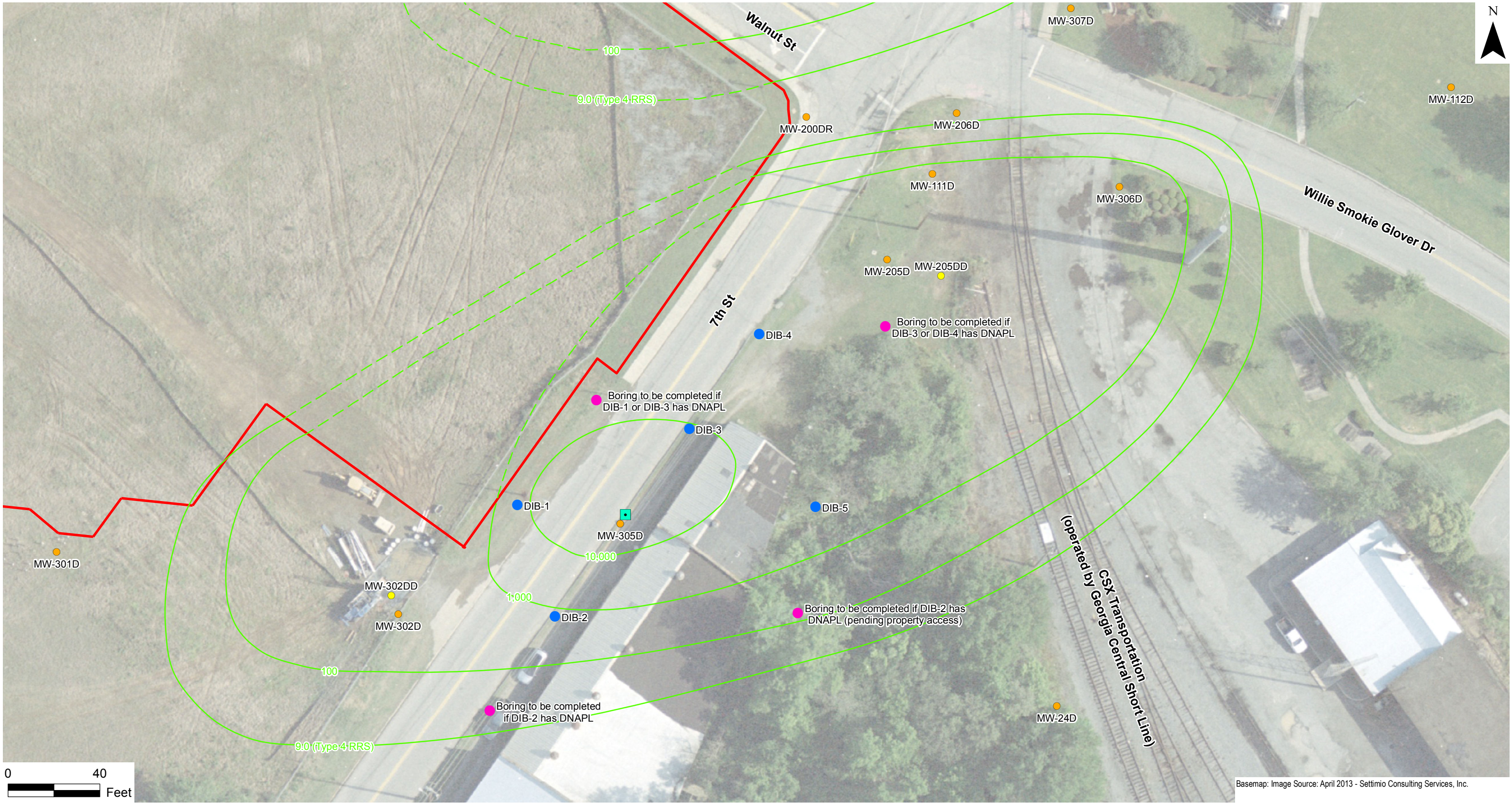
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CONTOUR INTERVAL 10 FEET
DOTTED LINES REPRESENT 5-FOOT CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929



FIGURE 1 - TOPOGRAPHIC SITE LOCATION MAP

Atlanta Gas Light Company
Former Manufactured Gas Plant
Macon, Bibb County, Georgia



Basemap: Image Source: April 2013 - Settimio Consulting Services, Inc.



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- Proposed DNAPL Recovery Sump
- Proposed DNAPL Investigation Boring
- Proposed Contingency DNAPL Investigation Boring
- Deep Bedrock Well
- Shallow Bedrock Well
- Benzene Isoconcentration Contour (Dashed where inferred - Under the ISS mass)
- Existing ISS Area

NOTE:
BTEX = Benzene, Toluene, EthylBenzene, Xylenes

Deep bedrock wells not included in contouring.

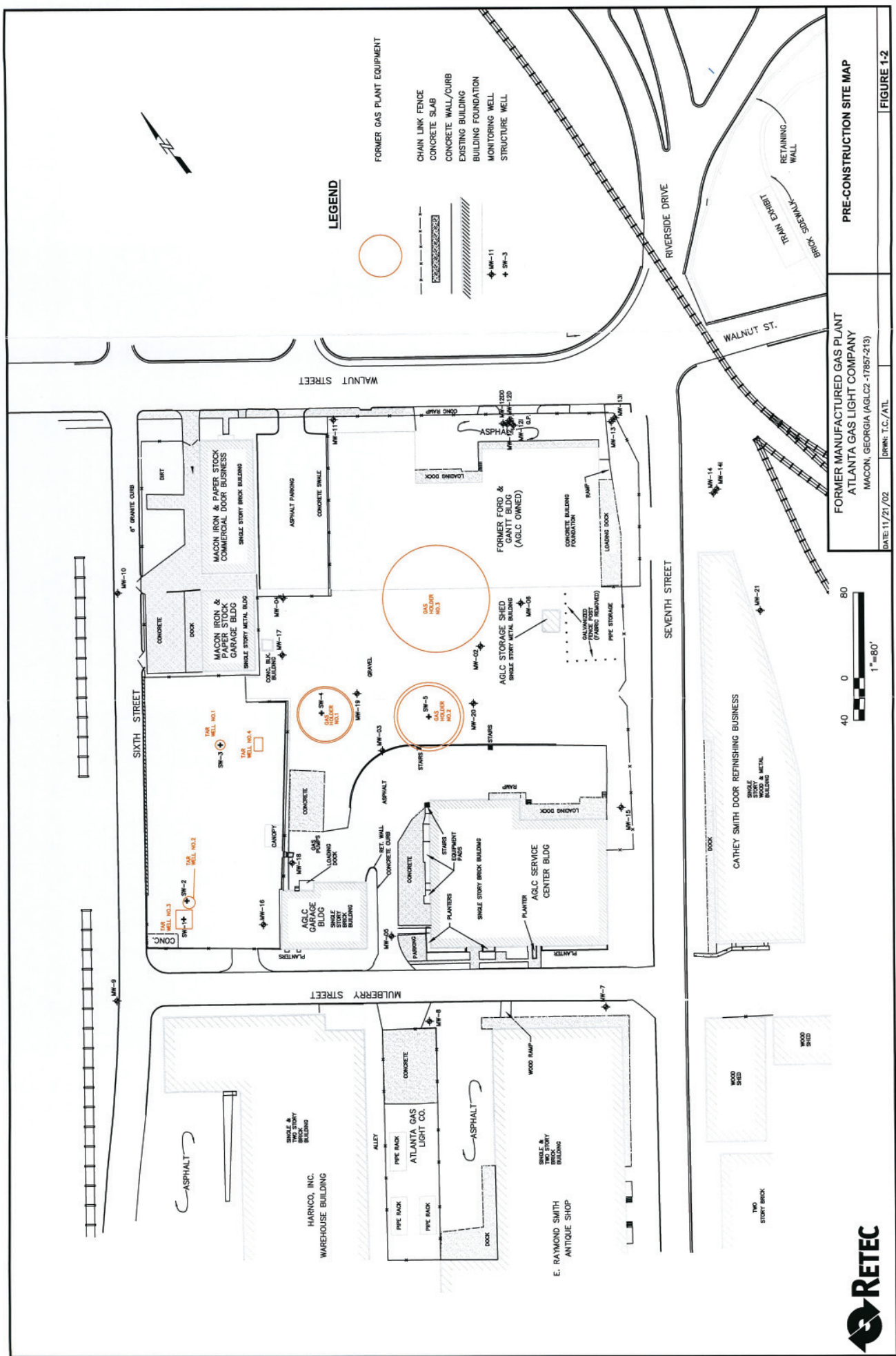
All proposed locations approximate and may be moved upon site conditions.

FIGURE 2 - PROPOSED DNAPL INVESTIGATION BORING LOCATIONS

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Macon, Bibb County, Georgia

Pre-Construction Site Map
Appendix A

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Atlanta Gas Light Company



FORMER MANUFACTURED GAS PLANT
ATLANTA GAS LIGHT COMPANY
MACON, GEORGIA (AGLC2-17857-213)

PRE-CONSTRUCTION SITE MAP

FIGURE 1-2

DATE: 11/21/02 DRWN: T.C./ATL

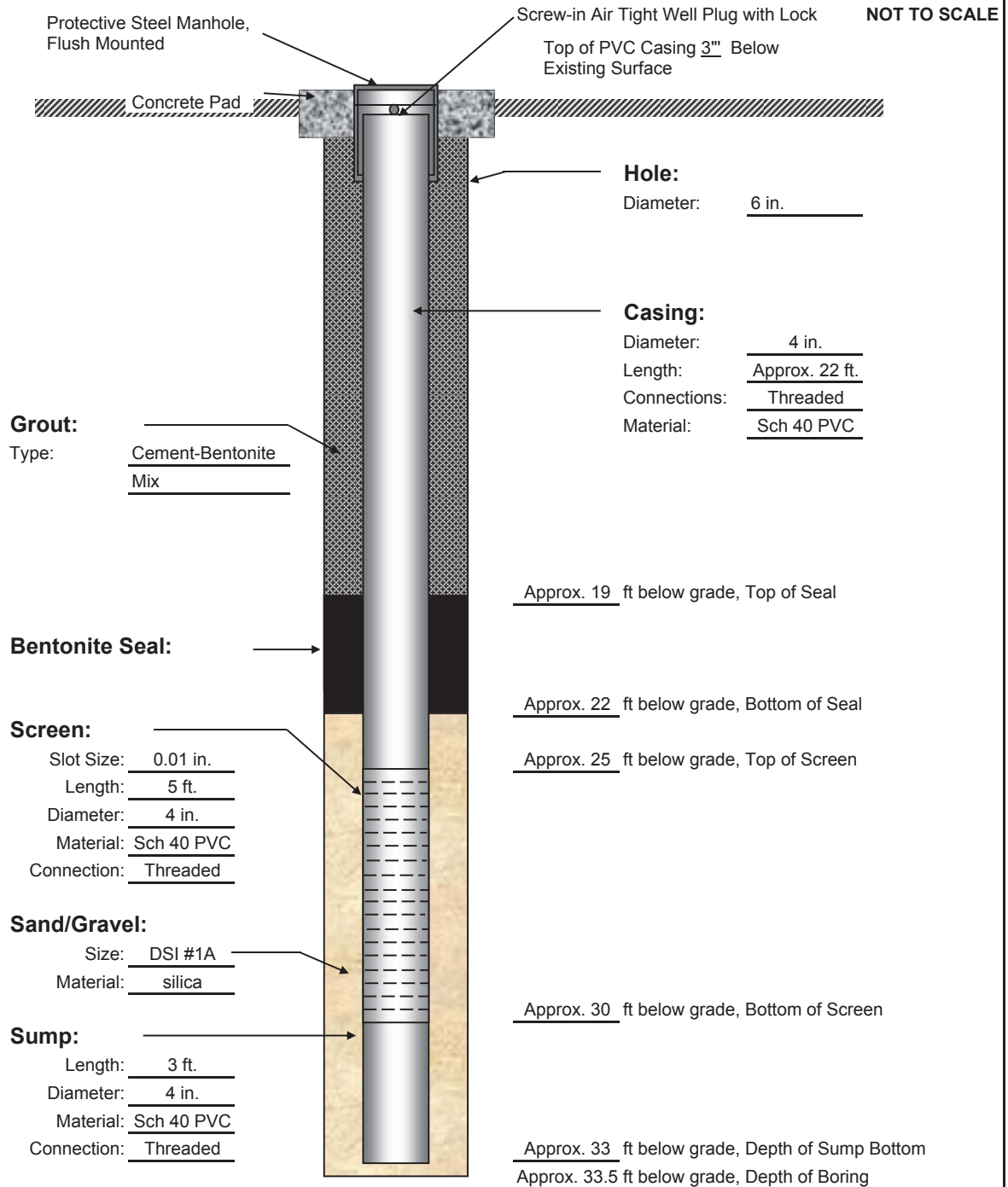
Proposed Sump Well Construction Diagram
Appendix B

October 14, 2014
Project No. 0176740
Atlanta Gas Light Company

ERM**Proposed Sump Well Schematic**

Project: AGL-Macon
Project No.: _____
Project Location: Macon, GA
Drilling Method: Sonic Rotary

Well/Boring No.: TBD
ERM Field Supervisor: _____
Date(s): _____
Drilling Contractor: _____

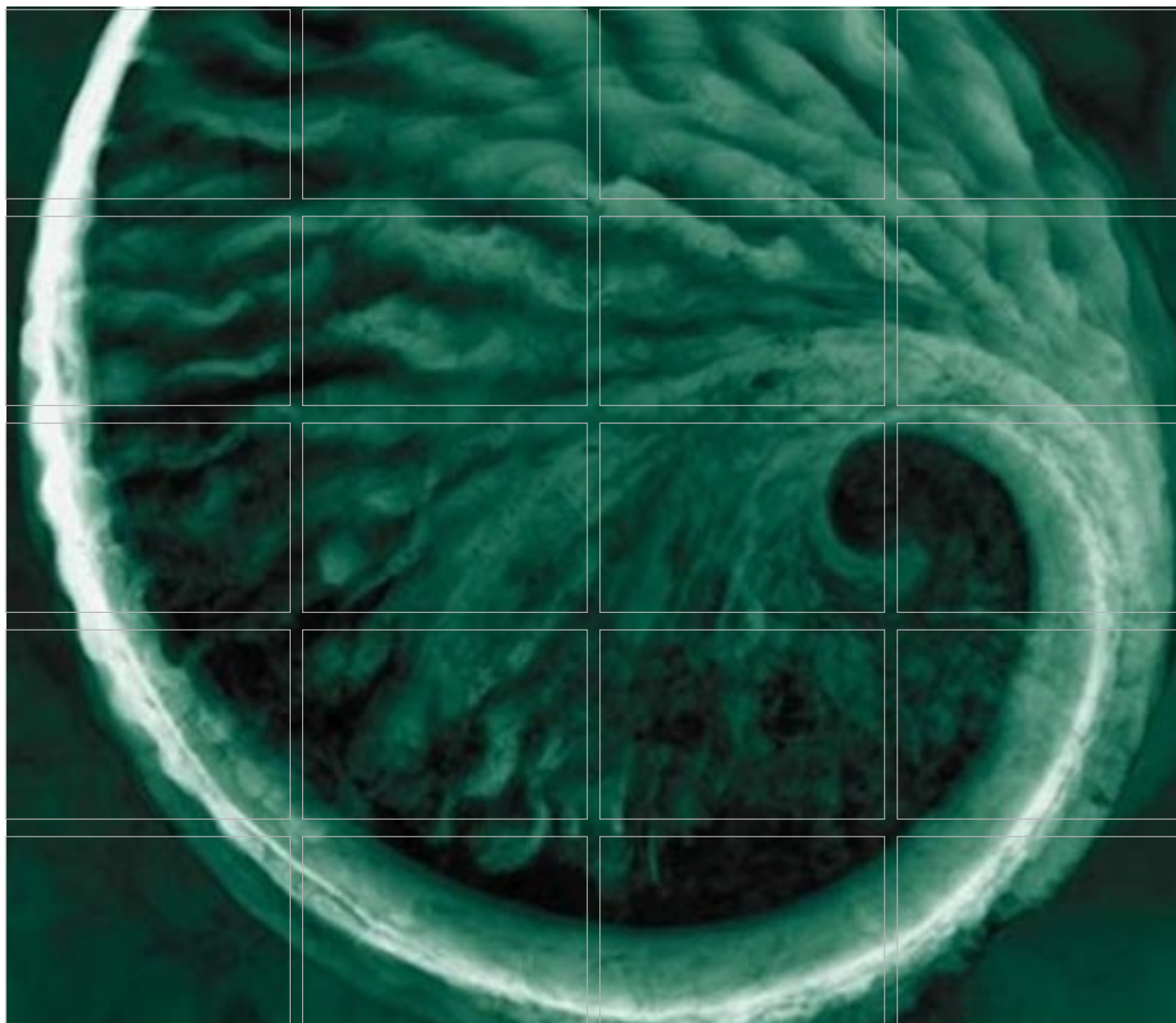


Comments: Boring will be advanced through the upper fractured rock zone to an anticipated depth of approximately 25 - 30 ft below grade. If DNAPL is encountered within the fractured rock zone the borehole will be extended into competent rock so that the screen interval straddles the zone where DNAPL was encountered. Appropriate screen length and total depth will be determined during drilling activities based on field observations. If DNAPL is not encountered during drilling the borehole will be abandoned in place with grout using tremie methods.

Bedrock Groundwater Investigation Plan
Appendix H

Project No. 0176740
Atlanta Gas Light Company

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Bedrock Groundwater Investigation Work Plan

Atlanta Gas Light Company
Former Manufactured Gas Plant Site
Macon, Georgia
HSI #10511

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Bedrock Groundwater Investigation Work Plan

Former Manufactured Gas
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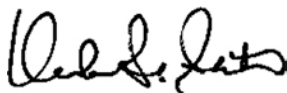
ERM Project No. 0176740



Nic Very
Project Geologist



Mark Fleri, P.E.
Project Manager



Hunter S. Sartain, P.E.
Principal

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FIGURE

1 TOPOGRAPHIC SITE LOCATION MAP

APPENDICES

A GROUNDWATER SAMPLING LOG SHEET

Environmental Resources Management (ERM) has prepared this Work Plan for on-site investigation activities at the former Manufactured Gas Plant (MGP) site in Macon, Georgia (Site) (see [Figure 1](#)). The planned activities described in this Work Plan will support investigations of Site constituents of interest (COI) and groundwater monitoring requirements in accordance with guidelines set forth in the Georgia Voluntary Remediation Program Act (VRPA). This Work Plan is designed to provide additional details of groundwater monitoring well installation and sampling activities as described in the Voluntary Investigation and Remediation Plan (VIRP) for the Macon Site.

As part of the obligations for entry to the VRP, delineation of releases of COI onto properties shall be completed within 12 months (for properties where access is available at time of enrollment) or 24 months (for properties without access). Numerous parcels may or may not be affected by dissolved phase bedrock groundwater contamination in and around the intersection of 7th Street and Walnut Street. As noted in Section 4.1 of the VIRP, complex property ownership issues (and legal boundaries) exist. AGLC intends to resolve ownership issues prior to contacting potentially-affected property owners. Exact bedrock monitoring well locations will be determined once property ownership has been ascertained. Installation and groundwater monitoring of a total of four bedrock wells is anticipated at this time. The need for installation of additional wells will be evaluated throughout the investigation process and additional wells will be installed as needed to fulfill VRP requirements. The following sections detail the installation and construction of the anticipated bedrock monitoring wells.

Activities proposed include the following:

- Pre-mobilization activities including development of a *Health and Safety Plan* (HASP) and completion of subsurface clearance tasks;
- Installation of bedrock wells to further refine extent of dissolved phase impacts;
- Data collection; and
- Investigation derived waste (IDW) management and disposal.

The following sections of this Work Plan discuss procedures to be employed during the field activities.

Several planning and communication steps will be taken prior to the beginning of the field activities proposed in this Work Plan. A SSHSP will be prepared to identify the site-specific hazards and the steps that will be taken to mitigate those hazards. The legally required notice will be given to the utility operators via GA 811 and a private utility locator will be contracted to complete a scan of the work areas for buried utilities. The private utility locator will use a combination of ground penetrating radar (GPR) and radio frequency electromagnetic (EM) utility locating equipment to identify underground utility locations. GPR is an electromagnetic method that detects interfaces between subsurface materials with differing dielectric constants. The EM system is operated by either inducting or conducting a signal into the underground utility to be traced. A transmitter is placed over and in line with a suspected buried utility, inducing a signal, which propagates along the buried utility and can then be detected.

Affected property owners will be notified of the intent to access their property for well installation activities a minimum of one week prior to the desired access date. Clearance of vegetation may also be required to access some locations.

3.0 *BEDROCK GROUNDWATER INVESTIGATION*

3.1 *MONITOR WELL INSTALLATION LOCATIONS AND RATIONALE*

The locations of bedrock wells will be selected for the intended purpose of including or excluding properties from the VRP as qualifying properties. The locations and number of wells currently anticipated is tentative, and well locations may be modified or removed based on data collection and access issues following implementation of the VIRP.

3.2 *BEDROCK MONITOR WELL INSTALLATIONS*

The bedrock monitor wells will be installed using vibratory drilling (Sonic) techniques and will be completed as cased monitoring wells to avoid cross-contamination (i.e., contamination drag-down) and to effectively seal the alluvial aquifer and partially weathered rock (PWR) zone from the underlying competent bedrock.

Particular attention will be made to identify the top of the PWR and the top of competent bedrock. Rock is anticipated to be encountered at an approximate depth of between 30 and 50 feet below ground surface (ft bgs). Upon encountering rock, the borehole will be advanced below the PWR zone approximately 5 feet into rock, and a steel or PVC casing will be grouted in place. Following installation of the casing, below the interface between PWR and competent rock, the corehole will be advanced to an estimated total depth of 20 feet into competent bedrock and completed using a 10- or 20-foot section of 2-inch inner diameter (i.d.) Schedule 40 PVC well screen (0.010-inch slot size) attached to an appropriate length section of 2-inch i.d. Schedule 40 PVC riser pipe. PVC pipe connections will be flush-threaded and centralizers will be used to keep the well screen and riser plumb. The annular space around the screen will be filled with tremmied in-place sand to a minimum of 2 feet above the top of the screen. An approximate 4-foot thick bentonite seal will be placed above the sand and the remaining annular space will be filled with a Portland cement/bentonite grout slurry. Each well will have a flush-mount completion or stick-up monument (approximately about 2.5 to 3 feet above ground surface) depending on the surface conditions at the selected locations.

3.3 *MONITOR WELL DEVELOPMENT*

Following installation, the monitoring wells will be developed by pumping and surging until fine grained particles have been removed to the satisfaction of the

site Geologist (i.e., clear to the un-aided eye) or turbidity measurements indicate a value of less than 10 nephelometric turbidity units (NTUs). The well location, top of casing elevation and ground surface elevation will be surveyed by a Georgia-registered surveyor.

After installation and development, the wells will be purged and sampled in accordance with U.S. Environmental Protection Agency (EPA) Region 4, Science and Ecosystem Support Division groundwater sampling procedures (SESD; October 28, 2011). Low flow/volume purging and sampling techniques will incorporate a peristaltic pump, bladder pump, or submersible pump. Tubing and/or the pump intake will be placed in the middle of the screen interval. Measurements of pH, temperature, specific conductance, dissolved oxygen, oxidation reduction potential, and turbidity will be collected during purging and logged on a groundwater sampling log sheet ([Appendix A](#)). Each well will be sampled upon stabilization of field parameters. If more than 0.3 feet of drawdown of the water column occurs prior to stabilization then the well purging method will be switched to a minimum of three well volumes if stable or to a maximum of five well volumes. In this instance, tubing and/or the pump intake will be placed at the top of the well column and lowered as necessary to chase the water column down if the three well volume methods are used. Groundwater samples will be placed into appropriate, laboratory-supplied sample bottle, placed on ice, and submitted to certified laboratory under proper chain-of-custody for analysis of site-specific COI (see Table 2-1 of VIRP). Additional groundwater sampling methodology details are provided in the Bedrock Groundwater Monitoring Work Plan included as Appendix I of the VIRP.

EQUIPMENT DECONTAMINATION AND INVESTIGATION DERIVED WASTE

In order to prevent cross-contamination, all drilling and sampling equipment will be decontaminated between each drilling location by steam pressure washing or by hand cleaning using a detergent and water mixture, followed by a final distilled water rinse.

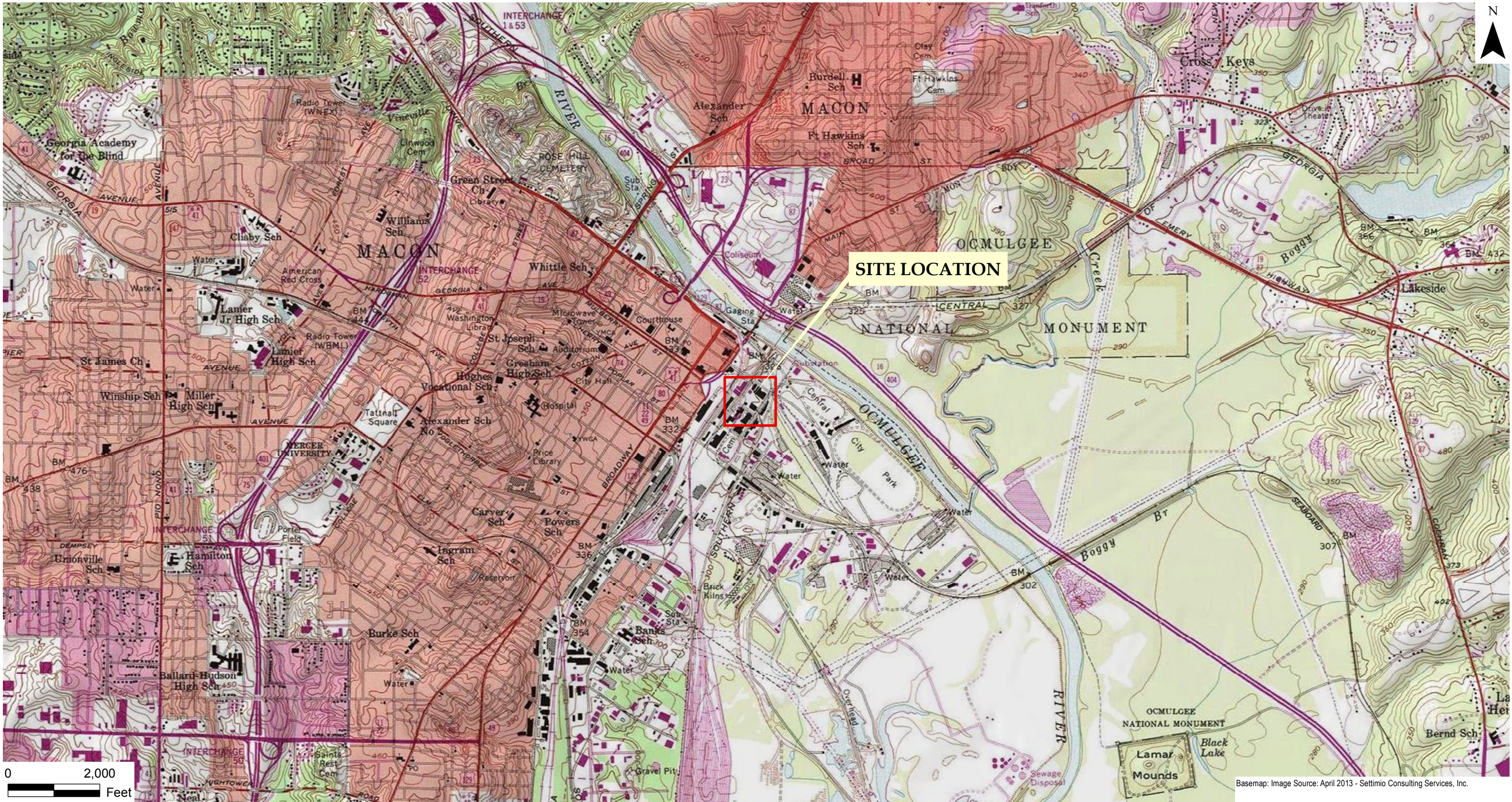
IDW generated during the well installation (e.g., soil cuttings, developed/purged groundwater, and decontamination fluids) will be placed into the appropriately sized container (e.g., 55-gallon steel drums or a roll-off box temporarily staged on-site) and labeled with generator name, description of the contents, and date(s) of generation. Drums will be placed on pallets in an acceptable storage area pending receipt of analytical results and coordination of transportation and off-site disposal at a licensed disposal facility. Personal protective equipment and disposable sampling equipment (e.g., tubing and acetate liners) will be taken off-site daily for disposal.

Waste characterization and removal will be expedited to limit time on site. While onsite, all IDW storage containers will be covered with a tarp.

Once property access is granted, ERM will mobilize to the Site to conduct drilling activities described in this Work Plan. Bedrock monitoring wells will be sampled over a period of one week, no sooner than 2 weeks following well development. Once profiling and manifesting have been completed, IDW will be removed from the Site.

Figure

October 13, 2014
Project No. 0176740
Atlanta Gas Light Company



Basemap: Image Source: April 2013 - Settimio Consulting Services, Inc.



Environmental Resources Management

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DATE:	10/13/2014	SCALE:	AS SHOWN	REVISION:	0
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CONTOUR INTERVAL 10 FEET
DOTTED LINES REPRESENT 5-FOOT CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929

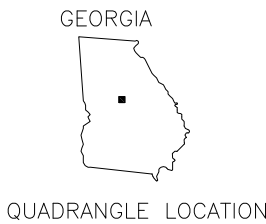


FIGURE 1 - TOPOGRAPHIC SITE LOCATION MAP

Atlanta Gas Light Company
Former Manufactured Gas Plant
Macon, Bibb County, Georgia

Groundwater Sampling Log Sheet
Appendix A

October 13, 2014
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Atlanta, GA 30339
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Sampling Date: _____

Sampler's Name: _____

Sample Collection Time: _____

Sample Purge Rate (L/min)³: _____

Sample ID: _____

QA/QC Collected?

QA/QC I.D.

Laboratory Analyses:

Sampling Method (check all that apply): ☐ soda straw (VOCs) ☐ vacuum jug (SVOCs) ☐ pump head discharge (Inorganics including cyanide)

☐ Bladder pump = pump discharge (all analytes)

☐ Bailer (only used if necessary)

(1) - Do not measure depth to bottom of well until after purging and sampling to reduce resuspending fines that may be resting on the well bottom.

(2) - Purge rate to be 0.5 lpm or less.

(3) - Sampling rate to be 0.25 lpm or less.

(4) - Field parameter measurements to be recorded every 3 to 5 minutes.

(5) - Stabilization criteria based on three most recent consecutive measurements.

(6) - Monitor DTW every 5 min. Well drawdown to be 0.3 ft or less. Purge/sampling rate to be lowered as necessary to keep drawdown below 0.3 ft.

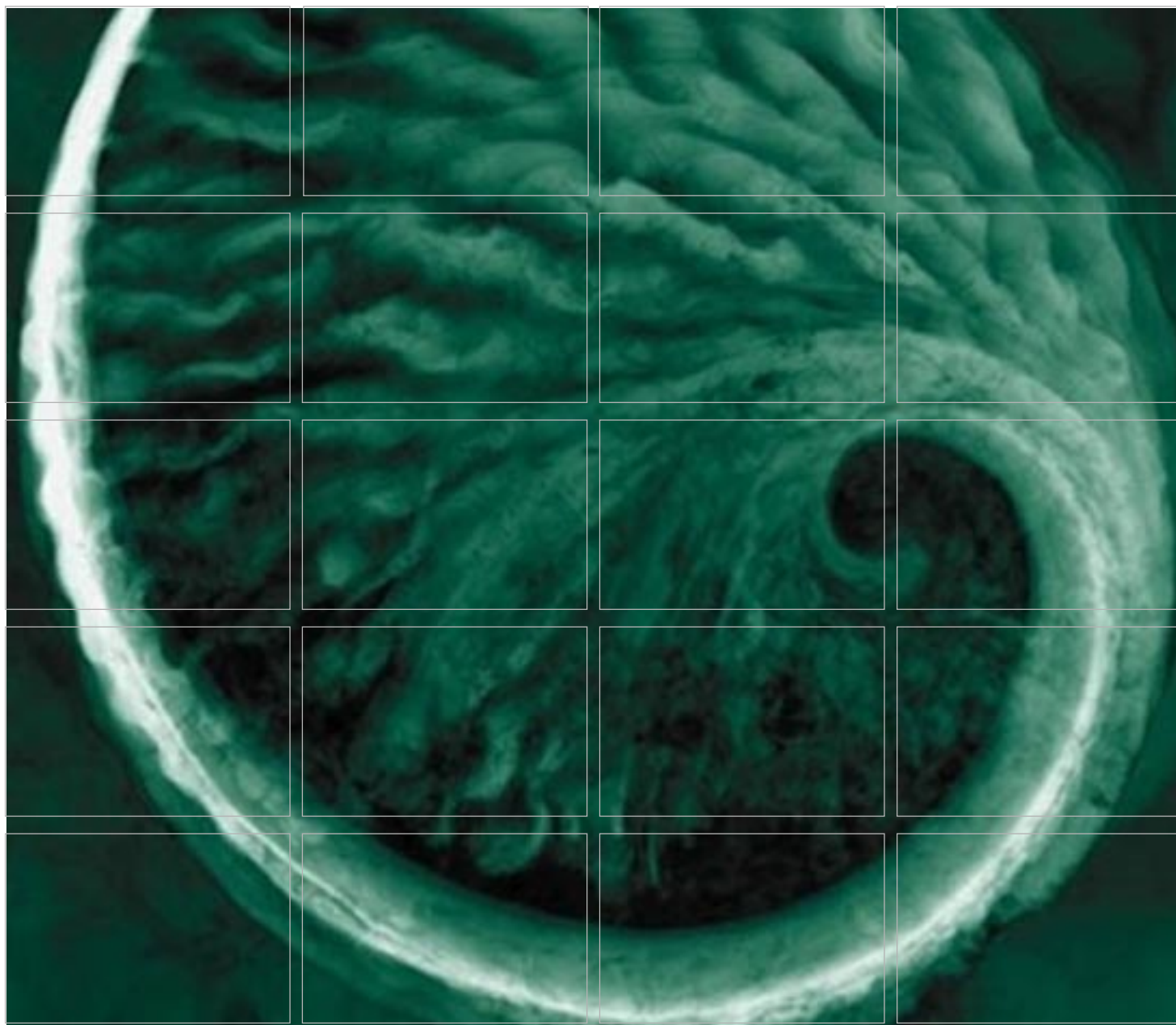
(7) - DO is not a stabilization criterion for the "Groundwater sampling" SESD Standard Operating Procedure.

(8) - ORP is not a stabilization criterion for the "Groundwater sampling" SESD Standard Operating Procedure.

Bedrock Groundwater Monitoring Plan
Appendix I

Project No. 0176740
Atlanta Gas Light Company

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Bedrock Groundwater Monitoring Work Plan

Atlanta Gas Light Company
Former Manufactured Gas Plant Site
Macon, Georgia
HSI #10511

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Bedrock Groundwater Monitoring Work Plan

Former Manufactured Gas
Plant Site
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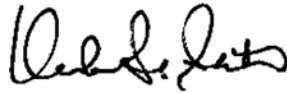
ERM Project No. 0176740



Nic Very
Project Geologist



Mark Fleri, P.E.
Project Manager



Hunter S. Sartain, P.E.
Principal

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- 4 BENZENE IN BEDROCK GROUNDWATER – AUGUST 2014
- 5 NAPHTHALENE IN BEDROCK GROUNDWATER – AUGUST 2014

APPENDICES

- A STANDARD OPERATING PROCEDURES

Environmental Resources Management (ERM) has prepared this Work Plan for bedrock groundwater monitoring at the former Manufactured Gas Plant (MGP) site in Macon, Georgia (Site) (see [Figure 1](#)). Bedrock groundwater monitoring procedures are presented in this Work Plan to be included as part of the Voluntary Remediation and Investigation Plan (VIRP) submitted to support enrollment of the site into the Voluntary Remediation Program (VRP). The Mulberry Street MGP is located at 137 Mulberry Street and the Western Portion MGP is located to the west between Terminal Avenue and 6th Street in Macon, Bibb County, Georgia, in an older urban area with a mix of commercial, rail and light industrial land uses. The Site (Mulberry Street MGP and Western Portion MGP) includes property formerly owned by AGLC and formerly used for MGP operations; property formerly owned by AGLC not used for MGP operations; surrounding and nearby parcels not owned by AGLC; and city right-of-ways (ROW). The Site location and current bedrock groundwater monitoring well network maps ([Figure 1](#) and [Figure 2](#), respectively) show the setting of the AGLC property.

The planned activities described in this Work Plan will address bedrock groundwater monitoring requirements in accordance with guidelines set forth in the Georgia Voluntary Remediation Program Act (VRPA). As required by the VRP, delineation of releases of constituents of interest (COI) onto properties shall be completed within 12 months (for properties where access is available at time of enrollment) or 24 months (for properties without access). Numerous parcels may or may not be affected by dissolved phase bedrock groundwater contamination in and around the intersection of 7th Street and Walnut Street.

As recommended by EPD in the July 2013 meeting, AGLC reviewed the current OM&M program which was originally designed to assess the effectiveness of monitored natural attenuation (MNA) following implementation of previous corrective action. Due to the ongoing evaluation of impacts in the bedrock aquifer and the additional corrective actions planned in the Western Portion MGP (as described in the VIRP), in correspondence to EPD dated August 12, 2013, AGLC proposed to revise the current OM&M program to better meet the existing and future data needs. This Work Plan addresses the proposed revisions to the Bedrock OM&M program, and is included as Appendix I in the VIRP. An overview of proposed changes to the bedrock groundwater monitoring program is set forth in [Table 1](#). This Work Plan addresses bedrock groundwater monitoring only. An Alluvial Groundwater Monitoring Work Plan with proposed changes to the alluvial OM&M program was included as Appendix H in the February 2014 Western Portion and MW 101 Area Groundwater CAP-A. Bedrock groundwater monitoring is proceeding in accordance with AGLC's August 13, 2013 correspondence to the EPD.

SUMMARY OF SITE GEOLOGY AND HYDROGEOLOGY

The geology encountered during previous investigations and described in historic reports consists of fill material; unconsolidated alluvial sands, gravels, and clays; sandy clays of the Cretaceous-age Tuscaloosa Formation; saprolite (clayey silt to clay); and a granitic gneiss bedrock. Alluvial deposits are described as unsorted sand, gravel, and clay. Below the alluvial deposits, the Late Eocene upper sand member of the Barnwell Formation, if present, lies unconformably above the Cretaceous-age Tuscaloosa Formation. The upper sand of the Barnwell Formation is described as deep red clayey sand. The Tuscaloosa Formation consists of fine to coarse, subangular, micaceous, arkosic sands that are interbedded with gray to green, locally iron-stained kaolinitic, micaceous sandy clays. The base of the Tuscaloosa in this area dips slightly to the southeast at approximately 30 feet per mile and lies unconformably above much older crystalline rocks. The Paleozoic-aged and older igneous and metamorphic rock lie at a depth of approximately 50 feet below ground surface (ft bgs).

Bedrock hydrogeology at the Site was evaluated through the installation and monitoring of 35 bedrock monitoring wells installed at the Site and nearby areas. The hydrogeologic characteristics are now well enough defined to make future predictions about transport. Groundwater impacts within the bedrock extend no more than a few hundred feet downgradient of the shallow source area that was treated using ISS in 1999 and 2009. The bedrock groundwater plume is stable, is defined spatially, and has an extremely low transport rate; therefore, there is no current or reasonable anticipated exposure to downgradient receptors from this shallow bedrock. The fractured bedrock is a low yield source of water.

As described in previous reports, the hydraulic potential measured in bedrock wells decreases toward the east and southeast. Geophysical investigations have demonstrated primary fractures in bedrock orientated to the east and southeast. Based on the measured hydraulic potential, groundwater flow lines in bedrock are generally parallel to the fracture orientations. Accessible groundwater in bedrock is limited to fractures, and groundwater flow and dissolved constituent transport is likely dominated by the orientation of the primary fracture system. The groundwater elevation data is presented in [Table 2](#) and the inferred bedrock groundwater flow direction is presented in [Figure 3](#) for data collected in August 2014.

This section summarizes long-term groundwater monitoring and sampling objectives, and describes observations that would trigger further evaluation or revision of the bedrock groundwater sampling plan.

3.1

MONITORING OBJECTIVES

Based upon the above discussion, the existing groundwater monitoring well network requires adjustment to better meet current and future data needs following remediation activities at the site. The following approach for groundwater monitoring has been developed to be consistent with applicable concepts articulated within *Use of Monitored Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites* (USEPA, 1999) and *VOC MNA document Performance Monitoring of MNA for VOCs in Ground Water* (USEPA, April 2004a). The groundwater monitoring program has been developed to address the following program objectives:

Objective 1 – Verify that the plume is not expanding (laterally and vertically);

Objective 2 – Monitor for DNAPL accumulation;

Objective 3 – Detect changes in environmental conditions;

Objective 4 – Detect new releases (or other sources) of contaminants to the environment that could impact the effectiveness of the natural attenuation remedy;

Objective 5 – Demonstrate the effectiveness of institutional controls/remedy; and,

Objective 6 – Verify attainment of remediation objectives.

The following sections provide details of the groundwater monitoring requirements necessary to achieve each of these objectives, and includes proposed changes to the groundwater monitoring schedule.

3.2

BEDROCK GROUNDWATER MONITORING WELL NETWORK

The existing bedrock groundwater monitoring well network (including wells planned for abandonment during remediation activities), the bedrock dissolved benzene/naphthalene plume, the dimensions of the existing ISS mass, and the proposed dimensions of the Western Portion ISS mass are illustrated in [Figures 4](#)

and 5. Locations of the additional bedrock groundwater investigation wells proposed in the VIRP have not been determined at the time of this submittal; new wells will be incorporated into the groundwater monitoring program following installation. The current status of each monitoring well (existing and proposed for the bedrock aquifer) and, where appropriate, the rationale for including or excluding each well in future groundwater monitoring, is summarized in [Table 1](#).

Depth to groundwater measurements will be collected at each monitoring well during semiannual events to determine groundwater elevations for the creation of potentiometric surface maps. Semiannual groundwater monitoring will include collection of field-measured groundwater quality parameters (pH, conductivity, turbidity, temperature, dissolved oxygen (DO), and oxidation reduction potential (ORP), collection of samples for laboratory analysis for appropriate COI ([Table 3](#)). Continued laboratory analysis of natural attenuation (NA) parameters will be completed on an annual basis from monitoring wells MW-12DRR, MW-110D, MW-112D, MW-205D, MW-306D, MW-307D, and MW-308D, as well as new bedrock monitoring wells installed in accordance with the VIRP, as documented in Appendix H of the VIRP document.

An evaluation of Site data will be performed following each groundwater monitoring event to identify the concentration and extent of appropriate COIs; to identify if new releases of contaminants have occurred; to determine if any DNAPL accumulation has occurred greater than 0.5 ft of thickness; to determine changes in environmental conditions; and to determine whether the monitoring well network, relevant COIs and NA parameter lists, and monitoring schedule need to be revised (supports Objectives 1, 2, 3, 4, and 6). In the event that COI concentrations or NA parameters show significant deviation from historical or baseline data, a resampling event will be conducted within 4 weeks of receiving validated laboratory data to confirm the analytical results.

Additionally, if anomalous NA parameter values are confirmed at any location, additional sampling of neighboring wells will be performed. Details of the scope of additional sampling or other corrective action will be developed on an incident-specific basis and communicated with EPD prior to implementation. Criteria for these evaluations are listed in the tables below:

Objective	Applicable Shallow Bedrock Wells	Trigger for Contingent Action	Contingent Action
1 - Verify that the plume is not expanding (Point of Demonstration Wells)	MW-22D, MW-23D, MW-25D, MW-26D, and MW-27D	Concentration trends result in values that exceed groundwater RRS in previously unimpacted wells	Re-evaluate the existing CSM and the potential need for enhanced NA.

Objective	Applicable Shallow Bedrock Wells	Trigger for Contingent Action	Contingent Action
2 – Monitor for DNAPL accumulation	MW-111D, MW-302D, MW-305D	Accumulation of greater than 0.5 ft of DNAPL	Vacuum Enhanced Fluid Recovery (VEFR) event
3 – Detect changes in environmental conditions (groundwater flow)	All gauged bedrock wells (see Table 1)	Groundwater elevation data suggest that groundwater flow rate and/or direction is changing enough to create concern.	Explore localized hydrogeologic changes that could cause the observed changes.
3 – Detect changes in environmental conditions (groundwater COI and/or NA parameters)	COI – All sampled wells; MNA – MW-12DRR, MW-110D, MW-112D, MW-205D, MW-306D, MW-307D, and MW-308D	Groundwater COI analyses detect constituents not previously observed at this Site; field and/or NA parameters indicate groundwater geochemistry is changing in ways that might inhibit intrinsic biodegradation.	Explore localized conditions that could cause the observed changes.
3 - Detect changes in environmental conditions; Use background wells for COIs and NA parameters.	COI – MW-22D, MW-25D and MW-308D; MNA – MW-308D	Background well(s) contain detectable COI or exhibit NA values, which, when compared with MW-12DRR, MW-110D, and MW-205D, suggests impacts	Consider modifying wells used to monitor background COI and NA parameters.

Objective	Applicable Shallow Bedrock Wells	Trigger for Contingent Action	Contingent Action
4 - Detect new releases of contaminants to the environment that could impact the effectiveness of the NA remedy	MW-23D, MW-24D, MW-305D, and MW-308D	Groundwater analyses detect constituents not previously observed at this Site; field and/or NA parameters indicate groundwater geochemistry is changing in ways that might inhibit intrinsic biodegradation.	Explore local conditions that could cause the observed changes.
6 - Verify attainment of remediation objectives	All sampled wells (see Table 1)	Data trends suggest that COI concentrations are not decreasing and plume is not expanding.	Re-evaluate the existing CSM and the potential need for additional activities

Analysis of observed concentration trends and NA parameters will be used to determine whether the concentrations are stable or declining and to what extent NA is occurring (addresses Objectives 1 and 6).

Historically, NA parameters at this Site have been very consistent. Field-measured NA parameters will be documented during each sampling event and laboratory-measured NA parameters will be analyzed annually, unless field parameters indicate that geochemical conditions have changed. Collectively the COI, field parameters, and NA data will be used to detect any changes in groundwater geochemical conditions, and to determine whether new releases to the environment have occurred (addresses Objectives 3 and 4).

A visual inspection of adjacent properties will be completed during each annual sampling event to determine compliance with applicable institutional and engineering controls (to be identified in Semiannual Status Reports to be submitted following entry into the VRP. Documentation of inspection activities will be provided to EPD in the semiannual progress reports.

In order to address Objective 2 (monitor for DNAPL accumulation), an interface probe will be used during gauging events to determine if greater than 0.5 ft of DNAPL has accumulated in a monitoring well, which would trigger a vacuum enhanced fluid recovery event to recover DNAPL from the well.

SOURCES OF UNCERTAINTY AND IMPLICATIONS ON DECISION-MAKING

Given the nature of the objectives and “Triggers for Contingent Action” (which can also be considered the performance criteria), two types of errors are of particular concern for this program:

- An error that incorrectly suggests an organic constituent is present in a previously-unimpacted well (either upgradient or downgradient of the actual plumes); or,
- Higher than anticipated variability in either organic constituents analyses or geochemical parameter/constituent measurements, resulting in suggestions of an erroneous trend.

Several components of the program have been designed to minimize the probability that these types of data gathering errors will result in erroneous decisions:

- Each new set of data will be compared against previous Site data soon after collection and wells will be resampled if values appear anomalous, based upon scientific judgment; and
- Decisions that trigger contingent action will be based upon data trends, rather than upon a single data point (including data-verified data points which suggest a change in Site conditions or a shift in a trend).

As appropriate, resampling events will include wells that are near the well that generated potentially anomalous data, to further evaluate the likelihood of a change in Site conditions.

Data that is rejected during the validation process will not be posted in data tables or used in trend analysis. An evaluation will be performed regarding the appropriate use of data that are flagged during the validation process or questioned for any other reason, based upon the specifics of that data quality concern.

4.0 *DETAILS OF THE PROPOSED GROUNDWATER MONITORING PROGRAM*

The sections below describe in detail the procedures to follow as part of the proposed groundwater monitoring program for well installation, abandonment, groundwater sampling, laboratory analysis, and schedule.

4.1 *GROUNDWATER MONITORING WELL INSTALLATION*

Bedrock groundwater monitoring wells may need to be installed if wells near the remediation boundary are destroyed or damaged during implementation of corrective actions described in the 2014 CAP-A (ERM, 2014). Monitoring wells will be installed in accordance with the Region 4 EPA Science and Ecosystem Support Division (SESD) guidance document SESDGUID-101-R1, *Design and Installation of Monitoring Wells* (USEPA, 2013b) and the Bedrock Groundwater Investigation Work Plan (Appendix H of the VIRP). If replacement wells are necessary, the wells will be constructed to match the original well construction.

4.2 *GROUNDWATER MONITORING WELL ABANDONMENT*

Three bedrock wells (MW-09D, MW-115D, and MW-303D) are located within the Western Portion MGP planned ISS remediation footprint and will be abandoned as part of remediation activities. The bedrock monitoring wells will be tremmie grouted in place prior to corrective action activities, and subsequently removed during excavation activities. Any remaining materials will be solidified during ISS activities.

4.3 *GROUNDWATER SAMPLING*

Groundwater monitoring events will be performed consistent with previous sampling events and in accordance with the Region 4 EPA SESD Field Branches Quality System and Technical Procedures (as referenced below), which replaces EPA Region 4 Environmental Investigations Standard Operating Procedures and Quality Assurance Manual (USEPA, 2001b).

Prior to sampling each well, field equipment will be cleaned and decontaminated and any investigative-derived waste will be contained using the following SESD procedures:

SESDPROC-205-R2 *Field Equipment Cleaning and Decontamination*, December 20, 2011 (USEPA, 2011)

SESDPROC-202-R1 *Management of Investigation Derived Waste*, November 1, 2007 (USEPA, 2007b)

Field measurements, which include field-measured natural attenuation parameters and groundwater elevation, will be collected using a multi parameter water-quality meter, turbidity meter, and electric water-level meter. Field measurements will be collected using the following SESD procedures:

SESDPROC-106-R2 *Field DO Measurement*, February 12, 2010 (USEPA, 2010)
SESDPROC-113-R0 *Field Measurement of Oxidation-Reduction Potential*, August 7, 2009 (USEPA, 2009)
SESDPROC-100-R2 *Field pH Measurement*, June 13, 2008 (USEPA, 2008b)
SESDPROC-101-R2 *Field Specific Conductance*, June 13, 2008 (USEPA, 2008c)
SESDPROC-102-R2 *Field Temperature Measurement*, June 13, 2008 (USEPA, 2008d)
SESDPROC-103-R2 *Field Turbidity Measurement*, June 13, 2008 (USEPA, 2008e)
SESDPROC-105-R2 *Groundwater Level and Well Depth Measurement*, January 29, 2013 (USEPA, 2013a)

Groundwater will be collected in accordance with SESD groundwater sampling procedures (referenced below) using low-flow (micro-purging) techniques.

SESDPROC-301-R3 *Groundwater Sampling*, March 6, 2013 (SESD, 2013c)

A peristaltic pump and new tubing will be used to purge each well. The pump intake tubing will be lowered to the middle of the screened water column. The well will be purged at a rate that minimizes drawdown to avoid disturbing the fine-grained soil in the well casing, sandpack (if existing), or surrounding formation. During purging, the maximum-pumping rate will be the rate that does not lower the water level in the well by more than 0.3 feet. If the monitoring well has insufficient recharge and the water levels drops by more than 0.3 feet the purging method will be switched to a minimum of three well volumes to a maximum of five well volumes and the pump intake tubing will be raised to the top of the water column, unless the purge volume makes switching to three well volumes infeasible.

Groundwater will be pumped from the well into a sealed, flow-through chamber containing probes to measure the water temperature, acidity or alkalinity (pH), specific conductance, ORP, and DO. At regular intervals, grab samples will be obtained from the outlet of the chamber for turbidity measurements. After passing through the flow-through chamber, the water will be discharged to a 5-gallon bucket. When this bucket is full, the water will be transferred to a 55-gallon drum, or an on-site tank. Storage drums or a poly tank will store the purge water at the Site for future disposal. The purge water will be considered representative of the surrounding aquifer after three consecutive readings of pH, specific conductance, and temperature are within 10 percent of the previous reading and the turbidity is reduced to 10 nephelometric turbidity units or less. Field parameter values of pH, specific conductance, temperature, DO, ORP, turbidity, and the corresponding purge volume will be recorded on the

groundwater sampling form for each well. After the above parameters have stabilized, groundwater samples will be collected for laboratory analyses.

It should be noted that VOCs cannot be collected directly from the pump head; rather, samples should be collected by withdrawing the tubing from the well (while taking care that tubing does not touch any surface or any point of possible contamination) and then reversing the pump flow direction and allowing the water to be pumped into the proper sample containers.

Samples will be collected in appropriate sampling containers, packed on ice, and shipped to the laboratory via overnight courier. Field quality control samples (i.e., field duplicates, field blanks, and equipment rinsate blanks) and laboratory quality control as well as sample custody, decontamination and calibration procedures, documentation, and data reporting will all be performed in accordance with attached SOPs.

4.4 *LABORATORY ANALYSIS*

Groundwater samples will be analyzed semiannually for select VOCs, select semi-volatile organic compounds (SVOCs), and select inorganics, and a sublist of samples will be analyzed annually for select NA parameters. The COI list was updated based on correspondence received from the EPD dated January 17, 2012 to the list of constituents listed in Table 2-1 of the January 2004 Compliance Status Report (CSR), and included herein as [Table 3](#).

Laboratory data will be validated, using methods described in the *EPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (USEPA, 2008f) and the *EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (USEPA, 2004b) modified for method-specific requirements. At a minimum, a field duplicate will be collected at one for every 10 samples collected, and matrix spike (MS) / matrix spike duplicate (MSD) at one for every 20 samples collected.

4.5 *SCHEDULE AND REPORTING*

Bedrock groundwater monitoring is scheduled to occur on a semiannual basis. The semi-annual monitoring events will be completed and reported during the VIRP SemiAnnual Status Reports. The reports will include sampling methodology, tabulated groundwater elevation and analytical data, groundwater contour map(s), groundwater quality map(s), sampling forms, and a brief summary of results with recommendations for modifications to the sampling regime, if necessary. The groundwater monitoring program may be revisited after corrective action is complete and effectiveness is evaluated. In accordance with the VRPA, upon determination of remedy effectiveness, AGLC will submit a Compliance Status Report (CSR) for the Site.

ERM, 2014. *Western Portion and MW-101 Area Groundwater Corrective Action Plan Addendum*. Prepared for Atlanta Gas Light Company, Atlanta, GA. Prepared by ERM, Atlanta, GA. February 18, 2014.

USEPA, 1999. *Use of Monitored Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites*. OSWER directive 9200.4-17P. April 21, 1999.

USEPA, 2001b. *Environmental Investigations Standard Operating Procedures and Quality Assurance Manual*. United States Environmental Protection Agency. May 1996, Revised November 2001.

USEPA, 2004a. *VOC MNA document Performance Monitoring of MNA for VOCs in Ground Water*. EPA/600/R-04/027. April 2004.

USEPA, 2004b. *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*. U.S. Environmental Protection Agency. EPA-540-R-04-004. October 2004.

USEPA, 2007b. *SESD Operating Procedure - Management of Investigative Derived Waste*. Region 4 U.S. Environmental Protection Agency, Science and Ecosystem Support Division. Effective November 1, 2007.

USEPA, 2008b. *SESD Operating Procedure - Field pH Measurement*. SEDSPROC-100-R2. Region 4 U.S. Environmental Protection Agency, Science and Ecosystem Support Division. Effective June 13, 2008.

USEPA, 2008c. *SESD Operating Procedure - Field Specific Conductance*. SEDSPROC-101-R2. Region 4 U.S. Environmental Protection Agency, Science and Ecosystem Support Division. Effective June 13, 2008.

USEPA, 2008d. *SESD Operating Procedure - Field Temperature Measurement*. SEDSPROC-102-R2. Region 4 U.S. Environmental Protection Agency, Science and Ecosystem Support Division. Effective June 13, 2008.

USEPA, 2008e. *SESD Operating Procedure - Field Turbidity Measurement*. SEDSPROC-102-R2. Region 4 U.S. Environmental Protection Agency, Science and Ecosystem Support Division. Effective June 13, 2008.

USEPA, 2008f. *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review*. U.S. Environmental Protection Agency. EPA-540-R-08-01. June 2008.

USEPA, 2009. *SESD Operating Procedure - Field Measurement of Oxidation Reduction Potential*. SEDSPROC-113-R0. Region 4 U.S. Environmental Protection Agency, Science and Ecosystem Support Division. Effective August 7, 2009.

USEPA, 2010. *SESD Operating Procedure - Field DO Measurement*. SESDPROC-106-R2. Region 4 U.S. Environmental Protection Agency, Science and Ecosystem Support Division. Effective February 12, 2010.

USEPA, 2011. *SESD Operating Procedure - Field Equipment Cleaning and Decontamination*. Region 4 U.S. Environmental Protection Agency, Science and Ecosystem Support Division. Effective December 20, 2011.

USEPA, 2013a. *SESD Operating Procedure - Groundwater Level and Well Depth Measurement*. SESDPROC-105-R2. Region 4 U.S. Environmental Protection Agency, Science and Ecosystem Support Division. Effective January 29, 2013.

USEPA, 2013b. *SESD Operating Procedure - Design and Installation of Monitoring Wells*. SESDGUID-101-R1. Region 4 U.S. Environmental Protection Agency, Science and Ecosystem Support Division. Effective January 29, 2013.

USEPA, 2013c. *SESD Operating Procedure - Groundwater Sampling*. SESDPROC-301-R1. Region 4 U.S. Environmental Protection Agency, Science and Ecosystem Support Division. Effective March 6, 2013.

Tables

October 13, 2014
Project No. 0230715
Atlanta Gas Light Company

Environmental Resources Management
3200 Windy Hill Rd. Suite 1500W
Atlanta, GA 30339
(678) 486-2700

Table 1
Optimization of Bedrock Groundwater Monitoring Network
Atlanta Gas Light Company
Former Manufactured Gas Plant Site
Macon, Georgia

Monitoring Well I.D.	Hydrogeologic Unit	Screened Interval ft bgs	Existing Program	Proposed Schedule	Rationale
MW-08D	Shallow Bedrock	38 - 53.5	Gauge Only	Gauge only	
MW-09D	Shallow Bedrock	46.5 - 56.5	Semiannual	Abandon	Well to be abandoned during ISS activities in 2015
MW-12DRR	Shallow Bedrock	37 - 52	Semiannual	Semiannual	
MW-12DD	Deep Bedrock	87 - 97	Semiannual	Annual	
MW-22D	Shallow Bedrock	44 - 66	Gauge Only	Semiannual	POD well
MW-23D	Shallow Bedrock	23 - 36	Semiannual	Semiannual	POD well
MW-24D	Shallow Bedrock	30.5 - 40.5	Annual	Semiannual	
MW-25D	Shallow Bedrock	50 - 57.5	Semiannual	Semiannual	POD well
MW-26D	Shallow Bedrock	31 - 42	Gauge Only	Semiannual	POD well
MW-27D	Shallow Bedrock	43.5 - 48.5	Gauge Only	Semiannual	POD well
MW-27DD	Deep Bedrock	105 - 115	Gauge Only	Gauge only	
MW-108D	Shallow Bedrock	48.5 - 58.5	Annual	Annual	
MW-110D	Shallow Bedrock	28 - 43	Semiannual	Semiannual	
MW-111(D)	Shallow Bedrock	33 - 46.5	Semiannual	Semiannual	
MW-112D	Shallow Bedrock	26 - 36	Semiannual	Annual	
MW-113D	Shallow Bedrock	29.5 - 39.5	Semiannual	Annual	
MW-114D	Shallow Bedrock	45 - 55	Gauge Only	Gauge only	
MW-115D	Shallow Bedrock	45.5 - 55.5	Semiannual	Abandon	Well to be abandoned during ISS activities in 2015
MW-200DR	Shallow Bedrock	29.5 - 39.5	Semiannual	Semiannual	
MW-204D	Shallow Bedrock	30.5 - 45.5	Gauge Only	Semiannual	
MW-205D	Shallow Bedrock	28 - 43	Semiannual	Semiannual	
MW-205DD	Deep Bedrock	90 - 100	Semiannual	Semiannual	
MW-206D	Shallow Bedrock	31 - 46	Semiannual	Annual	
MW-207D	Shallow Bedrock	34 - 46.5	Semiannual	Annual	
MW-300D	Shallow Bedrock	33 - 43	Annual	Annual	
MW-301D	Shallow Bedrock	36 - 46	Semiannual	Semiannual	
MW-302D	Shallow Bedrock	35 - 45	Semiannual	Semiannual	
MW-302DD	Deep Bedrock	70 - 100	Semiannual	Semiannual	
MW-303D	Shallow Bedrock	50 - 60	Semiannual	Abandon	Well to be abandoned during ISS activities in 2015
MW-304D	Shallow Bedrock	41 - 61	New	Annual	
MW-305D	Shallow Bedrock	34.5 - 41.5	New	Semiannual	
MW-306D	Shallow Bedrock	32.5 - 51	New	Semiannual	
MW-307D	Shallow Bedrock	34 - 58	New	Semiannual	
MW-308D	Shallow Bedrock	72 - 110	New	Semiannual	

Table 2
Depths to Water and Groundwater Elevations
Bedrock Monitoring Wells
August 5, 2014
Atlanta Gas Light Company
Former Manufactured Gas Plant Site
Macon, Georgia

Monitoring Well	Top of Casing Elevation (ft AMSL)	Depth to Water August 4, 2014 (ft BTOC)	Groundwater Elevation August 4, 2014 (ft AMSL)	NAPL Thickness (Description) (ft)
MW-08D	307.52	12.27	295.25	--
MW-09D	312.94	8.17	304.77	--
MW-12DRR	299.71	10.73	288.98	--
MW-12DD	297.02	15.75	281.27	--
MW-22D	296.74	12.93	283.81	--
MW-23D	292.13	11.07	281.06	--
MW-24D*	292.30	5.61	286.69	--
MW-25D	320.07	11.95	308.12	--
MW-26D	287.57	Not Measured	Could not locate	--
MW-27D	288.48	10.12	278.36	--
MW-27DD	288.65	10.31	278.34	--
MW-108D	318.30	13.04	305.26	--
MW-110D	295.97	8.11	287.86	--
MW-111(D)	295.78	7.80	287.98	--
MW-112D	289.70	6.16	283.54	--
MW-113D	293.80	9.14	284.66	--
MW-114D	298.10	8.90	289.20	--
MW-115D	314.00	8.49	305.51	--
MW-200DR	295.27	6.72	288.55	--
MW-204D	296.30	8.35	287.95	--
MW-205D	295.40	7.52	287.88	--
MW-205DD	294.58	15.99	278.59	--
MW-206D	295.70	7.35	288.35	--
MW-207D	296.10	7.52	288.58	--
MW-300D	301.02	5.41	295.61	--
MW-301D	305.76	14.85	290.91	--
MW-302D	301.93	14.15	287.78	--
MW-302DD	301.79	23.92	277.87	--
MW-303D	326.13	19.03	307.10	--
MW-304D	303.55	16.93	286.62	--
MW-305D	297.22	17.38	279.84	--
MW-306D	293.93	7.05	286.88	--
MW-307D	295.15	9.25	285.90	--
MW-308D	324.70	19.33	305.37	--

Created By: H. Beaugh

Checked By: A. Shoredits

Notes:

AMSL - Above Mean Sea Level

BTOC - Below Top of Casing

All depths to water are listed in feet below top of casing (BTOC).

All casing and groundwater elevations are listed in feet above mean sea level (AMSL).

* MW-24D was gauged on August 6, 2014 due to railroad flagman availability

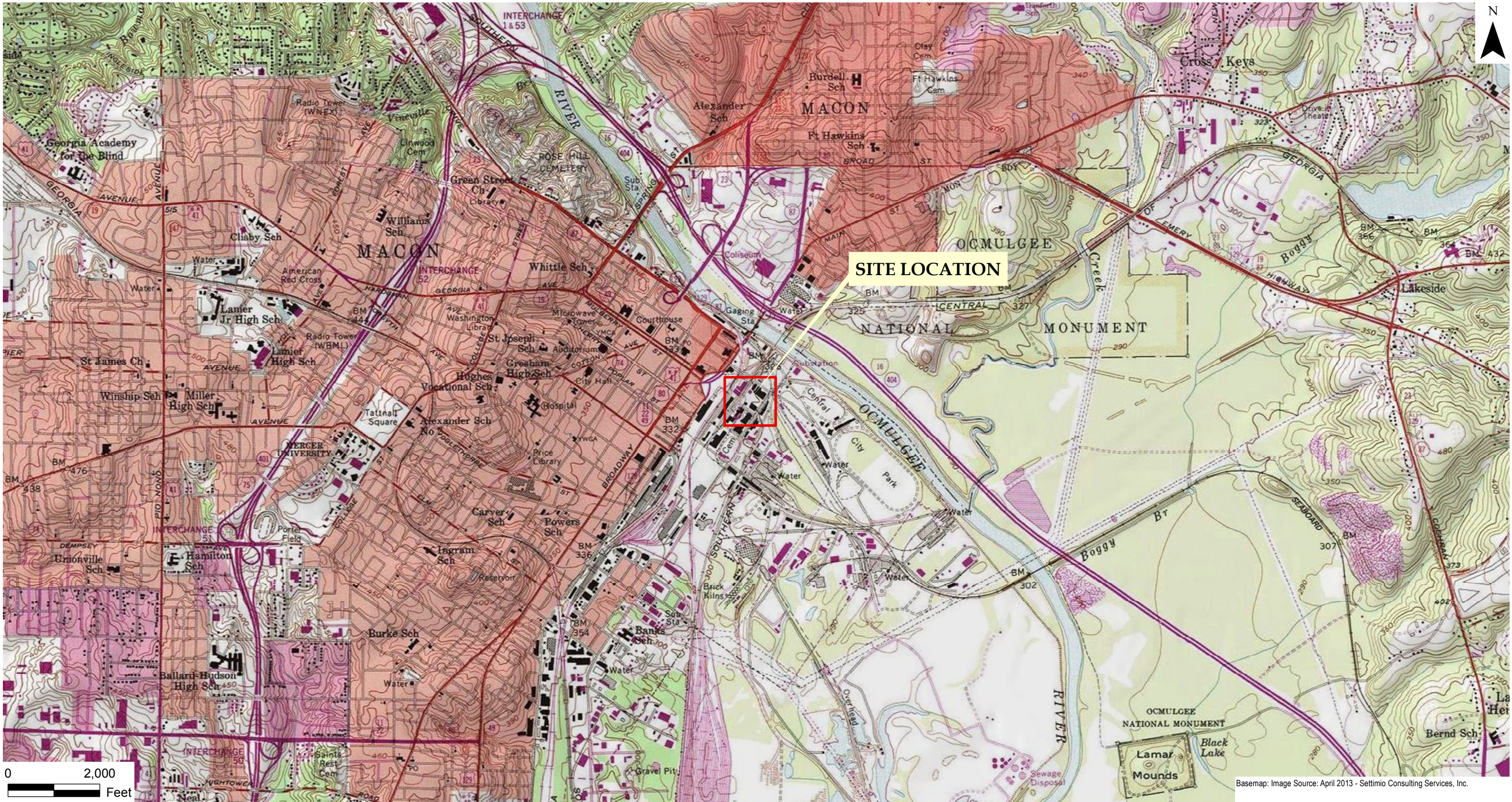
Table 3
Site-Specific COI and Monitored Natural Attenuation Parameters
Atlanta Gas Light Company
Former Manufactured Gas Plant Site
Macon, Georgia

Volatile Organic Compounds	Semivolatile Organic Compounds	Inorganic Compounds	Monitored Natural Attenuation Parameters
<u>EPA-8260B</u> Benzene Ethylbenzene Toluene Total Xylenes Carbon Disulfide	<u>EPA-8270C</u> Acenaphthene Acenaphthylene Anthracene Benzo[a]anthracene Benzo[a]pyrene Benzo[b]fluoranthene Benzo[g,h,i]perylene Benzo[k]fluoranthene Chrysene Dibenz(a,h)anthracene 2,4-Dimethylphenol Fluoranthene Fluorene Indeno[1,2,3-cd]pyrene 2-Methylphenol 3 & 4 Methylphenol Naphthalene Phenanthrene Phenol Pyrene	<u>EPA-6010B</u> Antimony Arsenic Barium Beryllium Cadmium Chromium Copper Lead Nickel Zinc <u>EPA-9012A</u> Cyanide (Total) <u>EPA-7470A</u> Mercury	<u>RSK-175</u> Dissolved Gases (O ₂ , N ₂ , CO, CO ₂ , Methane) <u>SM-3500</u> Ferrous Iron <u>EPA-353.2</u> Nitrate <u>EPA 375.4</u> Sulfate <u>EPA 376.1</u> Sulfide <u>EPA-6010B</u> Iron

Figures

October 13, 2014
Project No. 0230715
Atlanta Gas Light Company

Environmental Resources Management
3200 Windy Hill Rd. Suite 1500W
Atlanta, GA 30339
(678) 486-2700



Basemap: Image Source: April 2013 - Settimio Consulting Services, Inc.



Environmental Resources Management

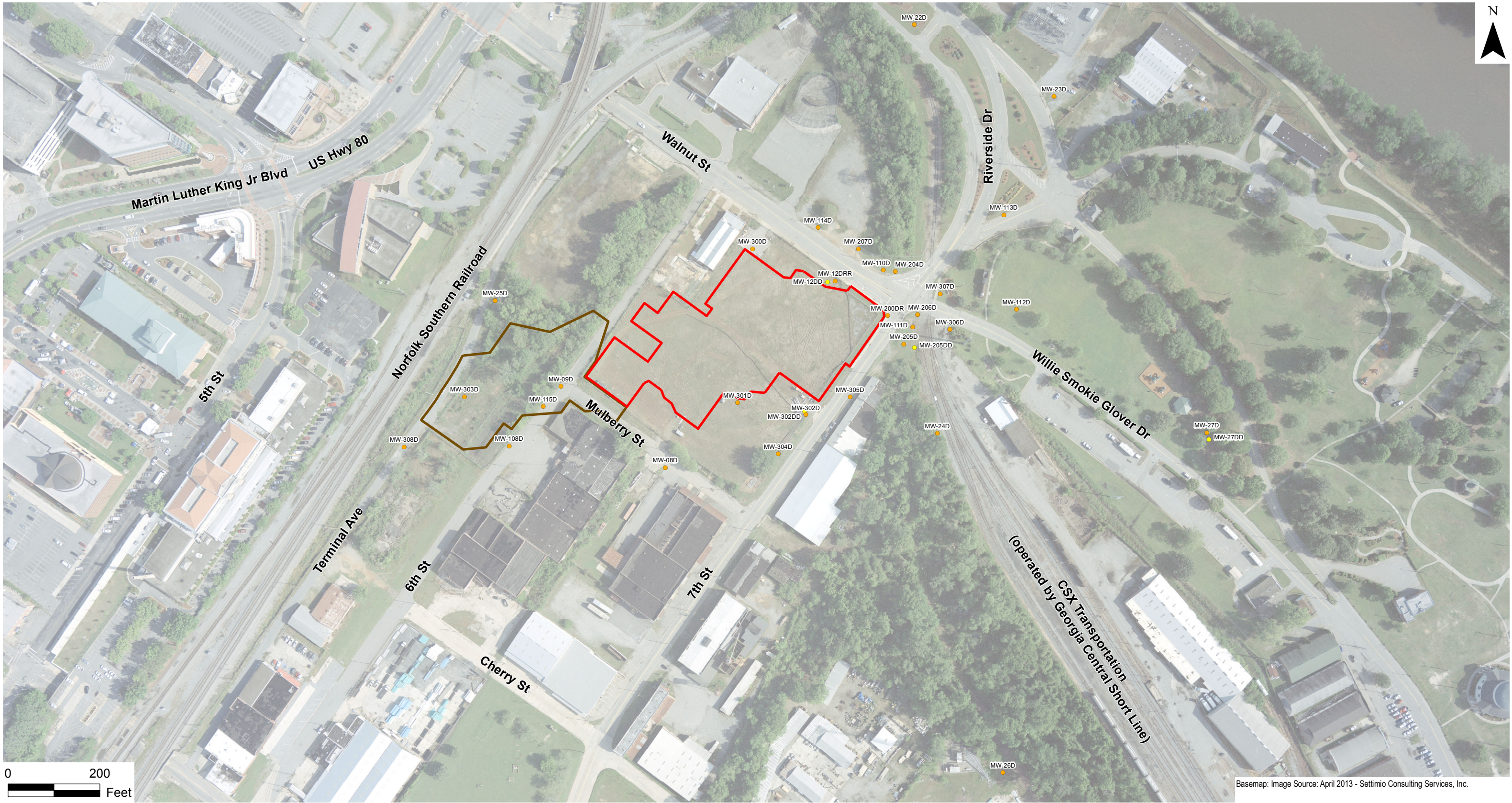
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CONTOUR INTERVAL 10 FEET
DOTTED LINES REPRESENT 5-FOOT CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929



FIGURE 1 - TOPOGRAPHIC SITE LOCATION MAP

Atlanta Gas Light Company
Former Manufactured Gas Plant
Macon, Bibb County, Georgia



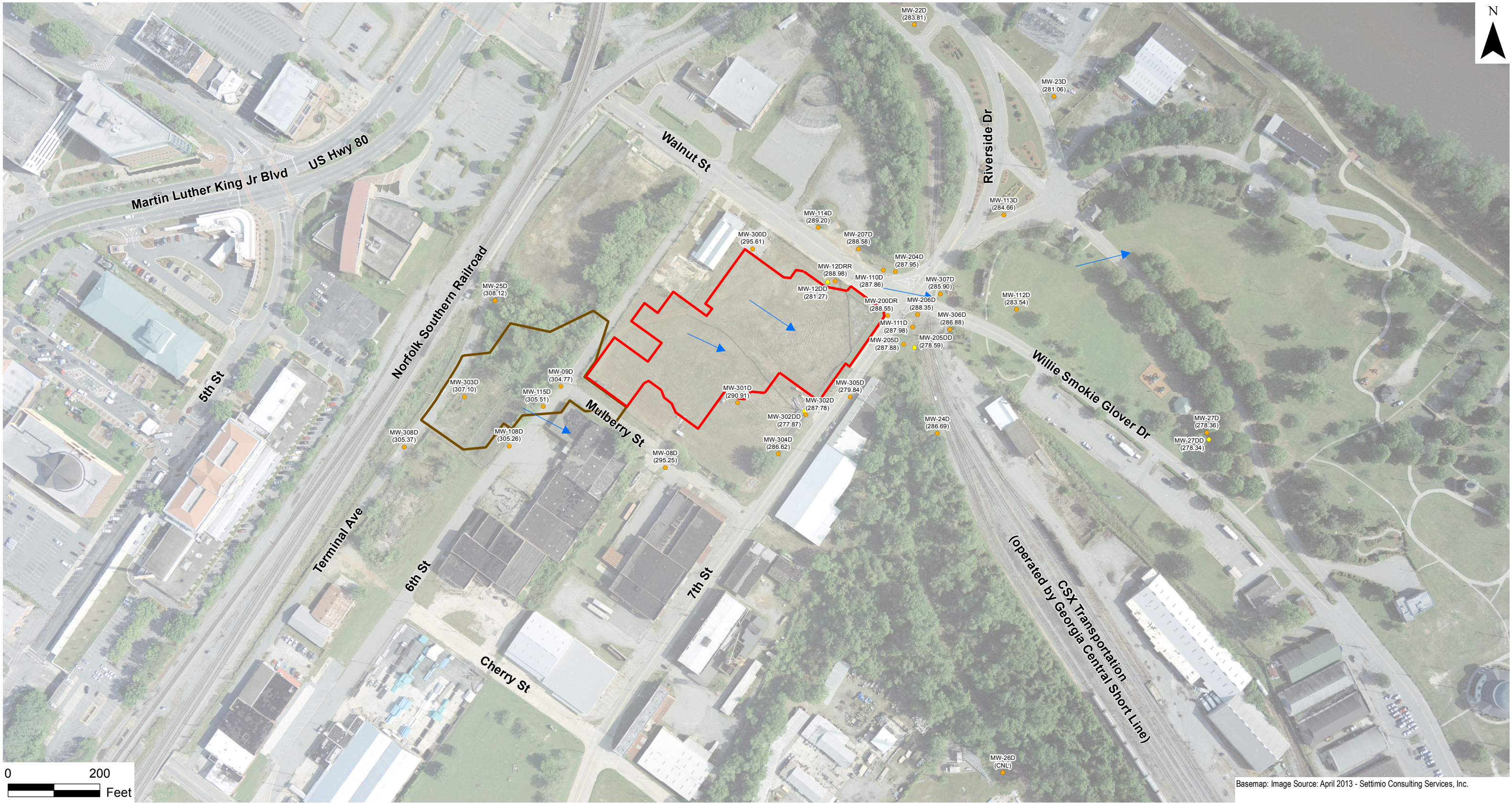
Environmental Resources Management

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- Shallow Bedrock Well
- Deep Bedrock Well
- Existing ISS Area
- Proposed ISS Area

FIGURE 2 - BEDROCK GROUNDWATER MONITORING WELL NETWORK

Atlanta Gas Light Company
Former Manufactured Gas Plant
Macon, Bibb County, Georgia



Environmental Resources Management

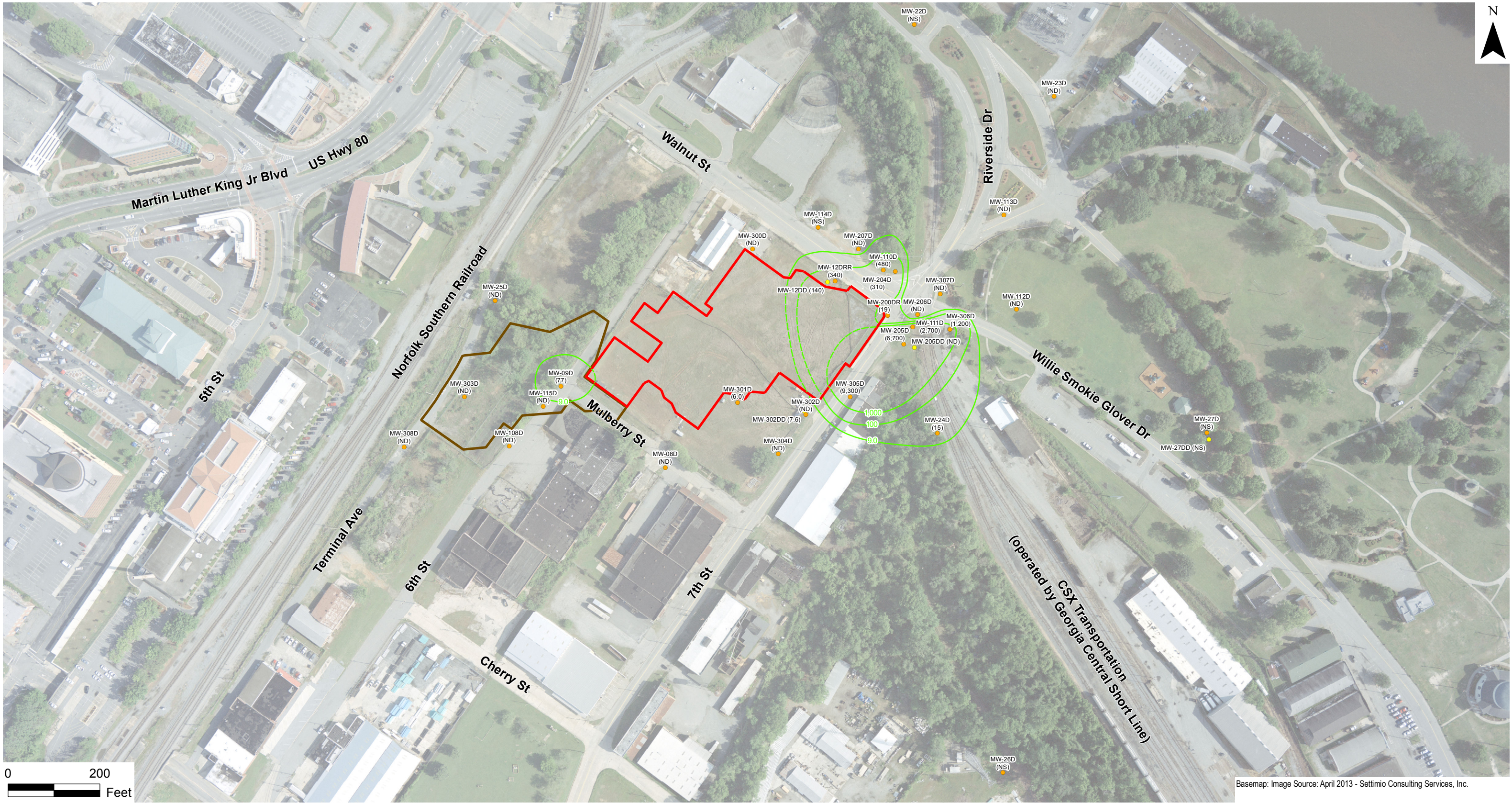
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- Shallow Bedrock Well
- Deep Bedrock Well
- Direction of Groundwater Flow
- Existing ISS Area
- Proposed ISS Area
- () Groundwater Elevation 8/4/14 (Feet AMSL)

NOTE:
Although groundwater flow direction is drawn through ISS mass, actual groundwater flows around the mass.

FIGURE 3 - BEDROCK GROUNDWATER ELEVATION MAP - AUGUST 2014

Atlanta Gas Light Company
Former Manufactured Gas Plant
Macon, Bibb County, Georgia



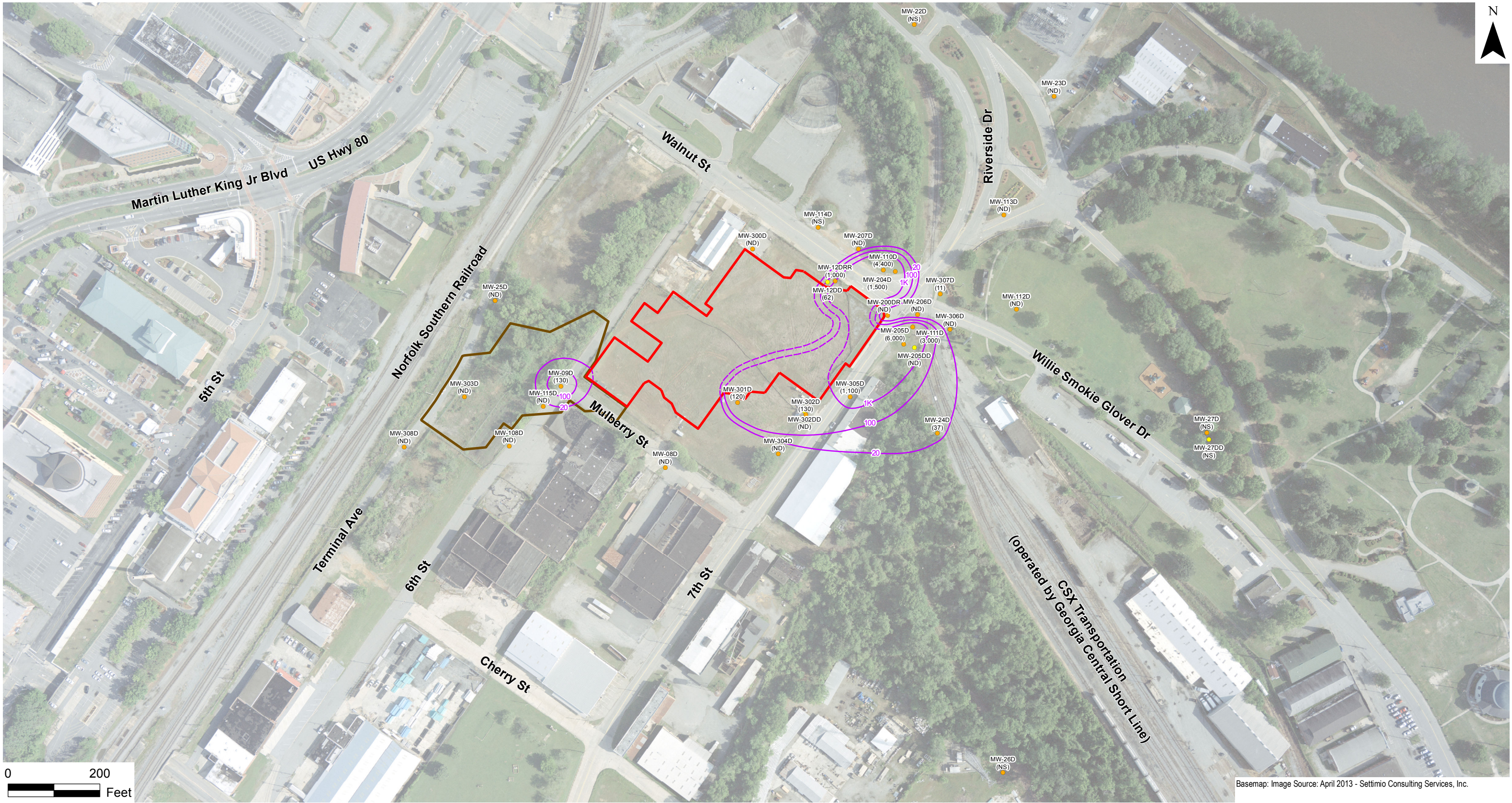
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- Shallow Bedrock Well
- Deep Bedrock Well
- Benzene Isoconcentration Contour (Dashed where inferred - Under the ISS mass)
- Existing ISS Area
- Proposed ISS Area
- () Benzene Concentration (ug/L)

NOTE:
Deep bedrock wells not included in contouring.
NS = Not Sampled
ND = Not Detected

FIGURE 4 - BENZENE IN
BEDROCK GROUNDWATER
AUGUST 2014
Atlanta Gas Light Company
Former Manufactured Gas Plant
Macon, Bibb County, Georgia



Environmental Resources Management

DESIGN:	H Sartain	DRAWN:	S Vizuite	CHKD.:	N Vrey
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- Shallow Bedrock Well
- Deep Bedrock Well
- Naphthalene Isoconcentration Contour (ug/L) (Dashed where inferred - Under the ISS mass)
- Existing ISS Area
- Proposed ISS Area
- () Naphthalene Concentration (ug/L)

Note:
Deep bedrock wells not included in contouring.

NS = Not Sampled

ND = Not Detected

FIGURE 5 - NAPHTHALENE IN BEDROCK GROUNDWATER AUGUST 2014

Atlanta Gas Light Company

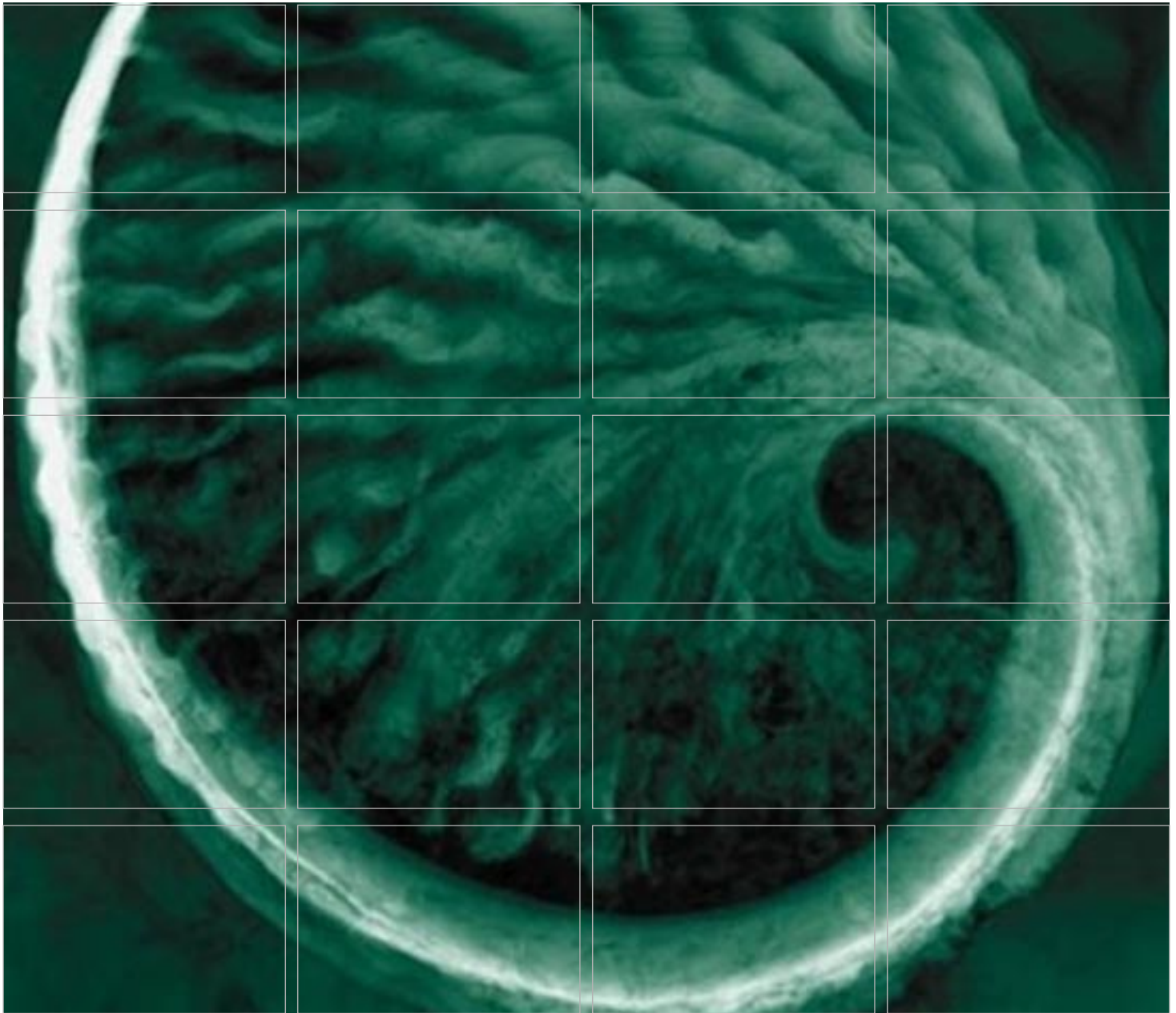
Former Manufactured Gas Plant

Macon, Bibb County, Georgia

Standard Operating Procedures
Appendix A

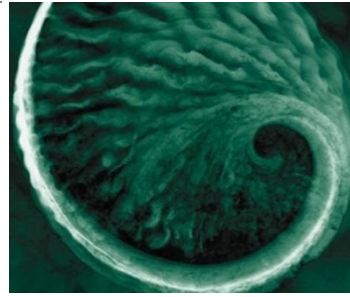
October 13, 2014
Project No. 0230715
Atlanta Gas Light Company

Environmental Resources Management
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CSM SOP 02
Drilling, Installation
and Development of
Groundwater Wells
Version 1.0
1 October 2013

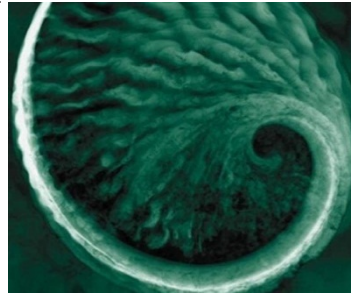
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1 General Information



1.1 PURPOSE AND OBJECTIVES

The purpose of monitoring well installation is to enable gauging and groundwater sample collection for the purpose of measuring fluid levels and characterizing aquifer chemistry. The advancement of the monitoring well borehole enables observation of geological conditions and soil sample collection, both of which are covered under separate Standard Operating Procedures (SOPs).

The objective of the SOP is to provide procedures, methods and considerations to be used and observed by field personnel when designing and installing permanent and temporary groundwater monitoring wells to be used for collection of fluid level data and groundwater samples. This SOP is issued for global use; however, industry standards, equipment availability and regulatory requirements may vary regionally.

This series of SOPs was developed by senior CSM practitioners across ERM to provide our staff with a means of applying “best practice” to completion of tasks commonly performed during site investigation and other site management activities. Although referred to as “operating procedures,” the procedures may not be implementable in their entirety on every project or every location. All CSM practitioners are, therefore, responsible for identifying instances where region-specific or client-specific procedures, guidance and/or regulations may supersede ERM’s internal SOPs and complying with the local requirements.

Should field conditions be encountered or project requirements make a procedure(s) described in this SOP inappropriate, inadequate or impractical then an alternative procedure(s) will be agreed upon by the project team and the client as appropriate. The agreed-upon procedure should be documented for project files (e.g., within the field logbook), along with a description of the circumstances requiring its use.

1.2 HEALTH AND SAFETY

Standard operating procedures are designed to provide technical guidance for conducting work associated with Contaminated Site Management (CSM) and do not provide detailed or comprehensive guidance related to health and safety nor do they represent guidance on safe work procedures for the tasks described. Where considered,

appropriate tips related to health and safety issues associated with specific tasks may be included within technical descriptions for information's sake only.

Health and safety aspects of all projects and project tasks should be assessed and planned using ERM's established Health and Safety planning procedures, including the WARN system. Drilling and other subsurface intrusive work presents specific hazards and proper safety precautions must be observed performing any subsurface work. These hazards, as well as those associated with constructing and installing monitoring wells, should be addressed by a site-specific Health and Safety Plan (HASP). The safety guidelines within the HASP should be used to complement the judgment of an experienced professional.

Safe Work Practices for subsurface obstruction and utility clearance (collectively, Subsurface Clearance Procedure or SSC for short) requirements must be used to prevent injury and avoid contact with subsurface structures prior to or during project-related ground disturbance activities. The SSC process has been developed to be broadly applicable across the jurisdictions in which ERM operates. However, it may sometimes be necessary to augment portions of this process by taking into account applicable legislative, regulatory or client-specific requirements which may augment ERM protocol. Compliance with such requirements is not optional. For additional ERM SSC documents, training, and related references, go to:

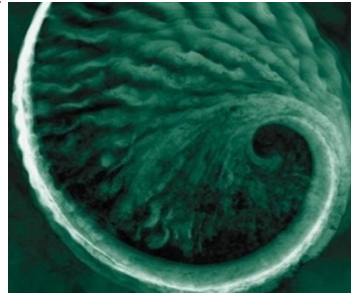
<http://minerva.erm.com/Support/HS>.

1.3 ABBREVIATIONS

ASTM	American Society for Testing and Materials
CSM	Contaminated Site Management
DNAPL	Dense Non-Aqueous Phase Liquid
DTH	Down the Hole
H&S	Health and Safety
HASP	Health and Safety Plan
HAS	Hollow Stem Auger
HDPE	High Density Polyethylene
ID	Inside diameter
NAPL	Non-Aqueous Phase Liquid

OSHA	Occupational Safety and Health Association
ORP	Oxidation Reduction Potential
PVC	Polyvinyl Chloride
QA/QC	Quality Assurance/Quality Control
SOP	Standard Operating Procedure
SSC	Subsurface Clearance
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
WARN	Work Activity Risk Assessment

2 Monitoring Well Design Considerations



2.1 GENERAL

The design and installation of permanent monitoring wells involves drilling into various types of geologic formations that exhibit varying subsurface conditions. Designing and installing permanent monitoring wells in these geologic environments may require several different drilling methods and installation procedures. The selection of drilling methods and installation procedures should be based on field data collected during a hydrogeologic site investigation and/or a search of existing data. Each permanent monitoring well should be designed and installed to function properly throughout the duration of the monitoring program. When designing monitoring wells, the following should be considered:

- Short-and long-term objectives;
- Purpose of the well(s);
- Probable duration of the monitoring program;
- Contaminants likely to be monitored;
- Presence of shallow affected groundwater zone(s) which may impact a deeper unaffected groundwater zone;
- Surface and subsurface geologic conditions;
- Properties of the aquifer(s) to be monitored;
- Well screen placement;
- General site conditions; and
- Potential site health and safety hazards.

In designing permanent monitoring wells, the most reliable, obtainable data should be utilized. Once the data have been assembled and the well design(s) completed, a drilling method(s) must be selected.

The preferred drilling methods for installing monitoring wells are those that temporarily case the borehole during drilling and the construction of the well, e.g., hollow-stem augers (HSA) and sonic methods. However, site conditions or project criteria may not allow using these methods. When this occurs, alternate methods should be selected that will achieve the project objectives.

The following discussion of methods and procedures for designing and installing monitoring wells will cover the different aspects of selecting materials and methods, drilling boreholes, and installing monitoring devices.

2.1.1 Procedural Precautions

The following precautions should be considered when constructing and installing groundwater monitoring wells:

- Special care should be taken to prevent or limit to the degree practicable inadvertent cross-contamination between borehole locations. Equipment, tools and well materials should also be cleaned and/or decontaminated;
- In order to prevent inadvertent cross-contamination within a borehole the design of the monitoring well has to be defined based on the encountered geological profile and in accordance with the objectives of the investigation; and
- All field activities are documented in a bound logbook.

2.2 DRILLING METHODS

The following drilling methods may be used to install environmental monitoring wells or collect soil cores for logging or laboratory analysis under various subsurface conditions. While consideration will need to be given to the depth and nature of materials to be drilled through in order to install the monitoring well, the preferred drilling methods are generally those that case the hole during drilling (e.g., HSA or sonic drilling). However, other methods may be used where specific subsurface or project criteria dictate. The following sections describe common drilling techniques used for monitoring well installation.

2.2.1 Sonic Drilling

Sonic drilling is a combination of both rotary and percussion of a core barrel, with the added effect of high frequency vibration applied to the rod/barrel assembly. The vibration is in the audible frequency range, hence the term sonic. A telescopic casing system can be used up to a maximum depth of approximately 200 feet (61m). Performance is generally good except in very hard rock, where going can be slow. Provides good performance in nearly all other strata with very rapid advancement

(probably the fastest technique available), and it is possible to get undisturbed core samples to allow for field screening and geological logging.

2.2.2 Hollow Stem Auger (HSA)

There are two auger drilling methods which can be used in unconsolidated soils and semi-consolidated (weathered rock) soils (hollow-stem augers described here, and solid stem augers described in the following section). These auger drilling methods are not applicable to drilling in competent rock.

Auger drilling methods can be employed without introducing foreign materials into the borehole such as water or drilling fluids, which helps to limit the potential for cross contamination. Reducing the risk of cross contamination is one of the most important factors to consider when selecting the appropriate drilling method(s) for a project.

This type of auger consists of a hollow, steel stem or shaft with a continuous, spiraled steel flight, welded onto the exterior. A hollow auger bit, generally with carbide teeth, disturbs soil material when rotated, whereupon the spiral flights transport the cuttings to the surface.

The hollow auger and bit facilitate collection of soil core using Shelby tubes, split spoons, or split-barrel samplers that can be driven ahead of the bit. These cores provide lithologic data that allow the geoscientist to assess top and bottom of water-bearing units and interval(s) to set the well screen.

This method is best suited in soils that have a tendency to collapse when disturbed. A monitoring well can be installed inside of hollow-stem augers with little or no concern for the caving potential of the soils. If heaving (flowing) sands are present during monitoring well installations, a drilling rig must be used that has enough power to extract the augers from the borehole without having to rotate them.

If heaving sands are known to be present prior to drilling, a bottom plug, trap door, or pilot bit assembly can be used at the bottom of the augers to keep out most of the soils and/or water that have a tendency to enter the bottom of the augers during drilling. Potable water (analyzed for contaminants of concern) may be poured into the augers during drilling to equalize pressure to limit inflow of formation materials.

If continuously collecting soil core while drilling with hollow stem augers, a sampling tool (e.g., split spoon, Shelby tube or similar) is used to collect undisturbed soil cores in advance of the auger. Following sample collection the auger is advanced and the process repeated. Where refusal of the sampling tool (or flowing sand conditions) is encountered, the drilling can continue using an internal (or reverse) auger within the auger stem, or by inserting a bottom plug in the auger string.

Alternatively, when soil sampling or logging is not required during the drilling process, a bottom plug can be used to keep soil from entering the auger string. The bottom plug is wedged into the bottom of the auger bit and is knocked out at depth with drill pipe or the weight of the casing and screen assembly. The plug material should be compatible with the screen and casing materials. The use of chemically-treated wood bottom plugs is not acceptable. The type of bottom plug, trap door, or pilot bit assembly proposed for the drilling activity should be approved by a senior field geologist and project manager prior to drilling operations.

Boreholes can be augered to depths of 150 feet (45m) or more (depending on the auger size, lithology and size of the drill rig), but generally boreholes are augered to depths less than 100 feet (30m). Note: for wells deeper than 100 feet (30m), it is important to consider whether the driller's equipment is adequate in the event flowing sands or gravel/cobbles are encountered. Augers may become permanently trapped and the boring may need to be abandoned.

2.2.3 Solid Stem Auger

This type of auger consists of a sealed hollow or solid stem or shaft with a continuous spiraled steel flight welded on the outside of the stem. An auger bit connected to the bottom disturbs soil material when rotated and the helical flights transport cuttings to the surface. This method is less desirable than HSA in that collection of undisturbed soil core samples requires removal of the entire auger string. Lithologic logging generally involves describing cuttings that travel up the auger flights making accurate depiction of lithology difficult at best. To collect a soil core, the boring is advanced to the desired depth; the entire auger string is then removed to gain access to the bottom of the borehole. The core is then collected using a Shelby tube or split spoon. Note, if drilling through a shallow contaminated zone to a deeper unaffected zone, consideration should be made to setting surface or isolation casing to reduce the potential to carry affected materials downward (which may result from repeated trips of the augers into/out of the borehole).

This auger method is used in cohesive and semi-cohesive soils that do not have a tendency to collapse when disturbed. Caution should be taken when examining core samples to assess whether the upper portions may be slough from shallower portions of the borehole. Boreholes can be augered to depths of 200 feet (60m) or more (depending on the auger size, lithology, and size of the drill rig), but generally boreholes are augered to depths less than 100 feet (30 m).

2.2.4 Rotary Methods

These methods consist of a drill pipe or drill stem coupled to a drilling bit that rotates and cuts through the soils. The cuttings produced from the rotation of the drilling bit are

transported to the surface by drilling fluids, which generally consist of water, drilling mud, or air. The water, drilling mud, or air are forced down through the drill pipe, and out through the bottom of the drilling bit. The cuttings are then lifted to the surface between the borehole wall and the drill pipe, (or within a concentric drill stem in reverse rotary). With the exception of air rotary, the drilling fluid provides a hydrostatic pressure that reduces or prevents borehole collapse. When considering any rotary drilling method, there are several points that must be considered:

- Will the drilling fluid potentially cause cross-contamination of units if a shallow affected zone is encountered?
- Will the drilling fluid introduce contaminants to the subsurface (e.g., trace amounts of halogenated compounds in municipal water used as the drilling fluid or to mix the drilling mud)?
- Will soil samples be collected? Air rotary methods often heat rock to more than 100 degrees Fahrenheit (38 degrees Celsius) and may result in loss of volatile and semi-volatile constituents.

If shallow contaminated intervals are known to be present and the target water-bearing unit is not impacted or is not known to be affected, installation of surface casing across the contaminated interval should be considered. In any of the rotary methods, care must be exercised in the selection and use of compounds to prevent galling of drill stem threads.

Air Rotary

Air rotary drilling uses compressed air as a “drilling fluid” to entrain cuttings and carry them to the surface. High air velocities, and consequently large air volumes and compressor horsepower are required. “Down-the-hole” (DTH) percussion hammers driven by the air stream can be used with this method to penetrate bedrock materials. Where a casing through unconsolidated material is required to prevent borehole collapse, it can be driven in conjunction with advancement of the drill stem.

When using air rotary drilling in any zone of potential contamination, the cuttings exiting the borehole must be controlled. This can be done using the dual-tube reverse circulation method where cuttings are carried to the surface inside dual-wall drill pipe and separated with a cyclone separator. An air diverter with hose or pipe carrying cuttings to a waste container is also an acceptable alternative. Allowing cuttings to blow uncontrolled from the borehole is not acceptable. Another consideration when selecting air rotary methods is that when drilling through strata with organic contamination displacement of vapors can occur and cause build up at the surface resulting in aesthetic issues, potential exceedance of health screening levels in the work zone, or potential

explosive environments. These possibilities should be considered as part of the health and safety planning for a project.

When using air rotary, the issue of contaminants being introduced into the borehole by the air stream must be addressed. Screw compressor systems should have a coalescing filter system in good working order to capture excess entrained compressor oils. The lubricant to be used with DTH hammers as well as thread lubricants to be used on drill stem should be evaluated for their potential impact on analytical samples.

Mud Rotary

Mud rotary utilizes a drilling fluid consisting of water mixed with bentonite mud. The mud serves to circulate soil cuttings to the surface and cool the drill bit. The bentonite mud also coats shallow permeable zones that would otherwise allow infiltration of drilling fluids.

Mud rotary is sometimes considered a less desirable drilling method because contamination can be introduced into the borehole from the constituents in the drilling mud, cross-contamination can occur along the borehole column, and it is difficult to remove the drilling mud from the borehole after drilling and during well development. The drilling mud can also circulate affected material from a shallow contaminated zone to an uncontaminated zones. Note: if drilling through a shallow contaminated zone to a deeper unaffected zone, consideration should be made to setting surface or isolation casing to reduce the potential to carry affected materials downward. If isolation casing is used, the drilling mud should be flushed from the borehole and replaced with fresh mud before advancing the borehole deeper.

If mud rotary is selected, only potable water and pure (no additives) bentonite drilling mud should be used. Additional time for well development should be budgeted relative to other drilling methods. All materials used should have adequate documentation as to manufacturer's recommendations and product constituents. QA/QC samples of drilling mud and potable water should be sampled at a point of discharge from the circulation system to assure that pumps and piping systems are not contributing cross-contamination from previous use.

2.2.5 Other Methods

Less common methods are available for well installation including the cable-tool method, jetting method, and boring (bucket auger) method; and in some countries, may be the only technology available. Prior to using these methods, consult with a senior geologist regarding the considerations for use of these drilling methods and whether they can be used to safely meet a project's data quality objectives.

2.3 BOREHOLE AND WELL CONSTRUCTION

2.3.1 Annular Space

The borehole or hollow stem auger should be of sufficient diameter so that well construction can proceed without major difficulties. For open boreholes, the annular space should be at least 2 inches (5 cm) to allow the uniform deposition of well materials around the screen and riser, and to allow the passage of tremie pipes and well materials without unduly disturbing the borehole wall. For example, a 2 inch (5 cm) nominal diameter casing would typically require a 6 inch (15 cm) diameter (ID) borehole. However, local requirements governing the diameter of boreholes relative to a well's casing should be considered when preparing a work scope.

When drilling with HSA, the ID of the augers should be of sufficient size to allow the passage of a tremie pipe used for well grout placement, as well as free passage of filter sands or bentonite pellets dropped through the auger or casing. While there may be local regulation governing the diameters of boreholes relative to a well's casing, in general, using hollow stem augers with an internal diameter which is 2 to 4-inches (5 to 10 cm) larger than the nominal well casing diameter (e.g., using 4-1/4" (11 cm) ID augers for placement of 2" (5 cm) diameter wells) is recommended. Larger augers should be used where installation difficulties due to geologic conditions or greater depths are anticipated, e.g., larger augers might be required to place a bentonite pellet seal through a long water column.

If annular space is limited due to available equipment, pre-pack well screen may be utilized to assure an adequate filter pack around the well screen.

2.3.2 Over-drilling the Borehole

Sometimes it is necessary to over-drill the borehole in anticipation of material entering the augers during center bit removal or knocking out of the bottom plug. Normally, 3 to 5 feet (1 to 1.5m) is sufficient for over-drilling. The borehole can also be over-drilled to allow for an extra space or a "sump" area below the well screen. This "sump" area provides a space to attach a 2 to 3-foot (nominally 50-100 cm) section of well casing to the bottom of the well screen. The extra space or "sump" below the well screen serves as a catch basin or storage area for sediment that flows into the well and drops out of suspension. These "sumps" are added to the well screens when the wells are screened in aquifers that are naturally turbid and will not yield clear formation water (free of visible sediment) even after extensive development. The sediment can then be periodically pumped out of the "sump" preventing the well screen from clogging or "silting up."

If the borehole is inadvertently drilled deeper than desired, it can be backfilled to the design depth with bentonite pellets/chips, or the filter sand that is to be used for the filter pack. If using filter sand, however, care must be taken to consider whether installation of the well may create a potential for cross contamination to deeper water bearing units. If a potential exists, then bentonite should be used to backfill the borehole or the borehole should be abandoned and a new borehole advanced to the target depth for monitoring well installation.

Caution: over-drilling should not be done in areas where dense non-aqueous phase liquids (DNAPL) are anticipated.

Over-drilling can open a pathway for vertical migration of DNAPL.

2.3.3 Well Installation

The bore hole should be bored, drilled, or augered as close to vertical as possible.

Slanted boreholes are less desirable and should be noted in the boring logs and final construction logs and are generally only constructed to access strata beneath structures where vertical wells cannot be constructed. The depth and volume of the borehole, including the over-drilling if applicable, should have been calculated and the appropriate materials procured prior to initiating drilling activities.

The well casings should be secured to the well screen by flush-jointed threads, placed into the borehole, and plumbed by the use of centralizers and/or a plumb bob and level. If threaded well casings are not available then couplings can be used to secure the joints of well pipe, however, the use of chemical solvents or glues to join the pipe joints is prohibited. To secure the casing sections together, stainless steel screws may be used at the couplings.

Centralizers are highly recommended for wells deeper than 50 feet (approximately 15 meters) spaced approximately one per 20 feet (7 meters) above the well screen (not within the well screen interval however) to help maintain a straight well.

Another method of placing the well screen and casings into the borehole and plumbing them at the same time is to suspend the string of well screen and casings in the borehole by means of a hoist on the drill rig. This wireline method is especially useful if the borehole is deep and a long string of well screen and casings have to be set and plumbed and centralizers are not available.

No lubricating oils or grease should be used on casing threads. No glue of any type should be used to secure casing joints. Teflon "O" rings can also be used to help provide a tight fit and reduce the potential for leakage; however, "O" rings made of other

materials are not acceptable if the well is going to be sampled for organic compound analyses.

As mentioned, it is industry practice in some regions to place filter pack material under the bottom of the well to provide a firm base (nominally up to 6 inches (15 cm)) depending upon the geology and the nature of the contaminants (e.g., may not be applicable if a DNAPL is suspected). This should be discussed and agreed among the project team as part of the work scope development.

When installing the well screen and casings through hollow-stem augers, the augers should be slowly extracted as the filter pack, bentonite pellet seal, and grout are tremied and/or poured into place. The gradual extraction of the augers will allow the materials being placed in the augers to flow out of the bottom of the augers into the borehole. If the augers are not gradually extracted, the materials (sand, pellets, etc.) will accumulate at the bottom of the augers causing potential bridging problems.

The filter pack material should be placed around the well screen to the designated depth. With cased drilling methods, the sand should be poured into the casing or augers until the lower portion is filled. The casing or augers are then withdrawn, allowing the sand to flow into the evacuated space. With hollow stem augers, sand should always fill the augers 6-12 inches (15-30 cm), maintained by pouring the sand while checking the level with a weighted tag line. The filter pack sand in open boreholes should be installed by tremie methods, using water to wash the sand through the pipe to the point of placement.

After the filter pack has been installed, the bentonite seal (if used) should be placed directly on top of the filter pack. After the bentonite seal has hydrated for the time specified by the manufacturer, the grout should then be pumped by the tremie method (preferably using side vents or side discharge) into the annular space around the casings.

After the surface pad and protective casing are installed, bumper guards should be installed (if needed) as described above. For above-grade well completions, consider painting the outer protective casing with a highly visible paint. The wells (either above-grade or those completed at grade level) should be permanently marked with the well number and other information as needed or required by the client (e.g., date installed, site name, elevation, etc.) either on the cover or an appropriate place that will not be easily damaged and/or vandalized. The well casing should be topped with a well plug and the protective casing surrounding the well secured. For wells completed at ground level, expandable well plugs should be used to cap the well riser to prevent infiltration of rainwater that might enter the flush-mount cover and accumulate within the annular space adjacent to the top of the well.

2.3.4 Double-Cased Wells

Double-cased wells should be constructed when there is reason to believe that interconnection of two aquifers by well construction may cause cross-contamination or when flowing sands make it difficult to install monitoring wells using conventional methods. A contaminated shallow groundwater zone may also be cased off so that drilling may continue below the casing with reduced risk of cross contamination. A pilot borehole should be bored through the overburden and/or the contaminated zone into the clay confining layer or bedrock. An outer casing (sometimes called surface or pilot casings) should then be placed into the borehole and sealed with grout. The borehole and outer casing should extend into an unconsolidated confining unit (e.g., a clay soil horizon) a minimum of two feet (nominally 50 cm); however, if drilling into a consolidated confining unit (e.g., competent bedrock) greater depths may be required. The final depths should be approved by the Project Manager in consultation with a senior project geologist. The size of the outer casing should be of sufficient inside diameter to contain the inner casing, and the 2-inch (5 cm) minimum annular space. In addition, the borehole should be of sufficient size to contain the outer casing and the 2-inch (5 cm) minimum outer annular space, if applicable.

The outer casing should be sealed in place by introducing grout into the annular space between the outer casing and the borehole wall, ideally using a tremie pipe to fill from the bottom of the annular space up, or by pressure grouting methods (i.e., placing the grout within the casing and displacing it through the bottom of the casing and up through the adjacent annular space). A minimum of 24 hours should be allowed for the grout plug (seal) to cure before attempting to drill through it. The grout mixture should either be neat Type I Portland cement or a cement/bentonite grout mixture. Other grout mixtures may be allowable or recommended under local regulation.

The use of a pure bentonite grout for a bottom plug or seal is not acceptable, because the bentonite grout cures to a gel-like consistency, and is not rigid enough to withstand the stresses of drilling.

When drilling through the seal, care should be taken to avoid cracking, shattering, or washing out the seal. If caving conditions exist so that the outer casing cannot be sufficiently sealed by grouting, the outer casing should be driven into place and a grout seal placed in the bottom of the casing.

2.3.5 Bedrock Wells

The installation of monitoring wells into bedrock can be accomplished in two ways:

- The first method is to drill or bore a pilot borehole through the soil overburden into the bedrock. An outer casing is then installed into the borehole by setting it into the bedrock, and grouting it into place as described in the previous section. After the grout has set, the borehole can then be advanced through the grout seal into the bedrock. Roller cone bits are used in soft bedrock, but extreme caution should be taken when using a roller cone bit to advance through the grout seal in the bottom of the borehole because excessive water and "down" pressure can cause cracking, eroding (washing), and/or shattering of the seal. Low volume air hammers may be used to advance the borehole, but they have a tendency to shatter the seal because of the hammering action. If the structural integrity of the grout seal is in question, a pressure test can be utilized to check for leaks. If the seal leaks (detected by pressure testing) and/ or the core is cracked or shattered, or if no core is recovered because of washing, excessive down pressure, etc., the seal is not acceptable. The concern over the structural integrity of the grout seal applies to all double cased wells.
- Any proposed method of double casing and/or seal testing will be evaluated on its own merits, and will have to be approved by a senior field geologist before and during drilling activities, if applicable.
- Another limitation to the open rock well is that the entire bedrock interval serves as the monitoring zone. In this situation, it is very difficult or even impossible to monitor a specific zone, because the contaminants being monitored could be diluted to the extent of being non- detectable. However, some site conditions might exist, especially in cavernous limestone areas (karst topography) or in areas of highly fractured bedrock, where the installation of the filter pack and its structural integrity are questionable. Under these conditions, the design of open bedrock wells may be warranted.
- The second method of installing a monitoring well into bedrock is to install the outer surface casing and drill the borehole (by an approved method) into bedrock, and then install an inner casing and well screen with the filter pack, bentonite seal, and annular grout. The well is completed with a surface protective casing and concrete pad. This well installation method gives the flexibility of isolating the monitoring zone(s) and reducing the potential for inter-aquifer flow. In addition, it gives structural integrity to the well, especially in unstable areas (steeply dipping shale, etc.) where the bedrock has a tendency to shift or move when disturbed. Omitting the filter pack around the well screen is a general practice in some open rock borehole installations, especially in drinking water and irrigation wells. However, without the filter pack to protect the screened interval, sediment particles

from the well installation and/or from the monitoring zone could clog the well screen and/or fill the screened portion of the well rendering it inoperable. In addition, the filter pack serves as a barrier between the bentonite seal and the screened interval. The use of a pre-packed screen (if available locally) could be considered in these instances where installation of a filter pack by traditional means is not practicable. Rubber inflatable packers have been used to place the bentonite seal when the filter pack is omitted, but the packers have to remain in the well permanently and, over a period, will decompose and possibly could result in a preferential pathway for groundwater migration along the borehole.

2.4 WELL CONSTRUCTION MATERIALS AND TECHNIQUES

Well construction materials are chosen based on the goals and objectives of the proposed monitoring program and the geologic conditions at the site(s). In this section, the different types of available materials will be discussed.

2.4.1 Well Screen and Casing Materials

When selecting the materials for well construction, the prime concern should be to select materials that will not contribute foreign constituents, or remove contaminants of concern from the ground water. PVC materials are acceptable for monitoring identified organic compounds in a soluble aqueous phase where no incompatibilities are present. EPA document EPA/540/S-95/503, Nonaqueous Phase Liquids Compatibility with Materials Used in Well Construction, Sampling, and Remediation (<http://www.epa.gov/ada/download/issue/napl.pdf>) should be used for guidance in this area and in the use of PVC with non-aqueous phase liquids (NAPLs). Well screen and casing materials generally used in monitoring well construction include:

- Rigid PVC (e.g., meeting a locally recognized standard such as NSF Standard 14 (type WC));
- Stainless Steel (e.g., Grade 304 or 316); or
- Other materials (e.g., fiberglass or HDPE where applicable and based on local regulation and industry practice).

The diameter of well casings for groundwater monitoring may be regulated. The diameter is often dictated by the intended current or anticipated future use of the well (e.g., if it is anticipated that a monitor well may be converted to a recovery well, larger diameter casing and screen may be selected to facilitate installation of pumps and other ancillary equipment). However, in the absence of local regulation, the general nominal casing size for most permanent monitoring wells will be 2-inch (5 cm).

The length of well screens in permanent monitoring wells should be long enough to effectively monitor the interval or zone of interest but is generally limited to 10 feet (3m). Well screens designed for long term monitoring purposes should normally not be less than 5 feet (1.5m) in length. Well screens less than 5 feet (1.5m) long are generally only used in temporary monitoring wells where groundwater samples are collected for screening purposes.

2.4.2 Well Screen Design

The majority of monitoring wells are to be installed in the water table aquifer that consists of silts, clays, and sands in various combinations. These shallow aquifers are not generally characteristic of aquifers used for drinking water.

In formations consisting primarily of fines (silts and clays), the procedures for water well screen design may result in requirements for filter packs and screen slot sizes that are not available. In most of these cases, the use of 0.010-inch (0.3 mm) screen slots will be acceptable practice. For formations comprised mainly of coarse-grained materials, 0.020-inch (0.6 mm) screen slots can be utilized. The grain size of the filter pack media needs to be selected based on the well screen slot size.

The local geology can dictate the need for different screen and filter pack design. Please consult with the project management team prior to implementation in the field.

2.4.3 Filter Pack Placement

The filter pack materials should consist of clean, rounded to well-rounded, hard, insoluble particles of siliceous composition. Filter pack materials should be new material from a commercial supplier material and of a known composition and grain-size. However, all data and design proposals will be evaluated and approved by a senior staff geologist before field activities begin. It is not considered best practice to use cuttings from the borehole as filter pack materials or for backfilling the annular space above the screened interval.

The filter pack material should be paced around the well's screened interval and sump (if included in the well design). In some regions, it is industry practice to place filter pack material under the bottom of the well to provide a firm base (nominally up to 6-inches (15 cm)) depending upon the geology and the nature of the contaminants (e.g., may not be applicable if a DNAPL is suspected). This should be discussed and agreed among the project team as part of the work scope development.

In addition, the filter pack should extend a minimum of 2 feet (nominally 50 cm) above the top of the well screen to allow for settling and to isolate the screened interval from the grouting material (actual thickness may need adjustment depending on the depth to the top of the well screen).

In open boreholes, the filter pack should be placed by the tremie or positive displacement method. Placing the filter pack by pouring the sand into an open drill stem is acceptable with the use hollow stem augers, and other methods where the borehole is temporarily cased down to the filter pack.

The volume of filter pack needed to fill the annulus should be calculated prior to installation. This will help the field personnel determine if bridging has occurred if significantly less sand is needed than estimated. If more sand is needed than anticipated, it suggests significant washouts have occurred during drilling.

Size of filter pack material should also be considered. If the water-bearing unit is silt, a coarse-grained sand pack may be ineffective at keeping the formation from silting up the well. Placement of a finer-grained filter pack material (e.g., finer-grained sand) is also recommended for use in the top portion of the filter pack. This will help prevent infiltration of the overlying bentonite plug into the filter pack.

2.4.4 Filter Pack Seal – Bentonite Pellet Seal (Plug)

Bentonite pellets consist of ground, dried bentonite compacted into pellets or chips available in several sizes. Bentonite pellets/chips are compressed to a bulk density of 70-80 lbs/ft³ (860 kg/m³) and hydrate to a 30 percent min. solids material.

The purpose of placing a bentonite seal is to isolate the underlying filter pack from shallower groundwater bearing zones and from the overlying grout seal placed in the borehole. Based on local availability, this bentonite seal can consist of pellets, chips, or of a bentonite slurry prepared using bentonite powder and potable water.

Since bentonite pellets/chips begin hydrating rapidly, they can be very difficult to place properly. They are generally placed by pouring slowly into open boreholes, hollow stem augers or sonic drill pipe. In some cases, pellets are placed by tremie pipe and flushed into place with potable water. A tamper can be used to ensure that the material is being placed properly and to break up any pellet bridging that occurs. Bentonite slurry can be applied via tremie pipe, however, care must be taken to avoid slurry intrusion into the underlying filter pack (i.e., use a side-discharge and/or pump at low flow rates).

Bentonite seals should be designed for a minimum of 6-inch (15 cm) thickness of dry pellets above the filter pack, and generally an overall bentonite seal (i.e., combination of bentonite pellets, chips or grout) of 2-feet (nominally 50 cm) is desirable. Hydration may extend the height of the seal. Where neat cement grout is to be used above the bentonite seal, the pellets should be hydrated for eight hours, or the manufacturers' recommended hydration time, whichever is greater.

Where the water table is temporarily below the pellet seal, potable (or higher quality) water should be added repeatedly to hydrate the pellets prior to grouting.

2.4.5 Grouting the Annular Space

The annular space between the casing and the borehole wall should be filled with either a 30% solids bentonite grout, a neat cement grout, or a cement/bentonite grout. Each type of grout selected should be evaluated as to its intended use and integrity. Bentonite grouts are preferred unless the application dictates the use of another material.

Bentonite grout shall be a 30 percent solids pure bentonite grout. Drilling mud is not acceptable for grouting. The grout should be placed into the borehole, by the tremie method, from the top of the bentonite seal to within 2 feet (nominally 50 cm) of the ground surface or below the frost line, whichever is the greater depth. The bentonite pellet seal or filter pack should not be disturbed during grout placement, preferably by using a side discharge port on the tremie tube, or by maintaining clearance between the bottom of the tremie tube and the bentonite seal or filter pack. It is considered best practice to allow the grout to set for a minimum of 24 hours before the concrete surface pad is installed and this may be considered during the field program design.

The preferred method of achieving proper solids content is by measurement of ingredients per the manufacturer's specifications during mixing. However, some jurisdictions may require that the solids content be measured by using a grout balance after mixing. Bentonite grouts generally should have a minimum density of 10 lbs/gal (approximately 1 kg/L) to ensure proper gelling and low permeability. Evidence that the grout was mixed per the manufacturer's specifications should be documented in the field notes.

Cement grouts are generally dictated where a high level of dissolved solids or a particular dissolved constituent would prevent proper gelling of a bentonite grout or in the event that the grout is incompatible with shallow (free-phase) contaminants. Neat cement grouts (cement without additives) should be mixed using 6 gallons (23L) of water per 94-lb (43 kg) bag of Type 1 Portland cement to a density of 15 lbs/gal (approximately 2 kg/L). The addition of bentonite (5 to 10 percent) to the cement grout can be used to delay the "setting" time and reduce shrinkage. However, this may not be needed in all applications. The specific mixtures and other types of cement and/or grout

proposed should be evaluated on a case-by-case basis by a senior field geologist and someone experienced in well grouting procedures.

Note: curing cement grout generates heat that (if sufficient) may damage PVC well casing and/or affect the concentration of VOCs in groundwater adjacent to the well. For wells with grout sections greater than 30 feet (10 meters) and water levels that are below the level of the grout seal, consider installing grout in lifts of approximately 20 feet (7 meters) and allowing time between the lifts for heat to dissipate. Alternatively, stainless steel well casing could be considered over PVC.

2.4.6 Above Ground Riser Pipe and Outer Casing

Outer protective casing is installed to protect the well from damage but also to reduce the potential for tampering. The well casing, when installed and grouted, should extend above the ground surface a minimum of 2.5 feet (75 cm), or to a sufficient height based on client or site requirements. A vent hole should be drilled into the top of the well casing cap to permit pressure equalization, if applicable. Generally, outer protective casings used over 2-inch (5 cm) well casings are at least 4 inches by 4 inches (10 cm by 10 cm) by 5 feet (1.5 m) long. Similarly, protective casings used over 4-inch (10 cm) well casings are 6 inches by 6 inches (15 cm by 15 cm) and 5 feet (1.5 m) long. Other types of protective casing including those constructed of pipe are also acceptable.

All protective casings should have sufficient clearance around the inner well casings, so that the outer protective casings will not encounter the inner well casings after installation. The protective casings should have a weep hole to allow drainage of accumulated rain or spilled purge water. The weep hole should be approximately 1/4-inch (0.5 cm) in diameter and drilled into the protective casings just above the top of the concrete surface pad to prevent water from standing inside of the protective casings. Protective casings made of aluminum or other soft metals are less desirable than steel casings because they generally are not strong enough to resist tampering.

Aluminum protective casing may be used in very corrosive environments such as coastal areas.

Prior to installing the protective casing, the bentonite grout in the borehole annulus is excavated to a depth of approximately two feet (nominally 50 cm). The protective casing is installed by pouring concrete into the borehole on top of the grout. The protective casing is then pushed into the wet concrete and borehole a minimum of 2 feet (nominally 50cm). Extra concrete may be needed to fill the inside of the protective casing so that the level of the concrete inside of the protective casing is at or above the level of the surface pad. In areas where frost heave of the surface pad is possible, the protective casing should first be pressed into the top surface of the bentonite grout seal and concrete poured around the protective casing.

A granular material such as sand or gravel can then be used to fill the space between the riser and protective casing. The use of granular material instead of concrete between the protective casing and riser will also facilitate the future conversion of the well to a flush-mount completion, if required.

The protective casing should extend above the ground surface to a height so that the top of the inner well casing is exposed when the protective casing is opened. At each site, all locks on the outer protective casings should preferably be keyed alike.

2.4.7 Concrete Surface Pad

A concrete surface pad should be installed around each well at the same time as the outer protective casing is being installed. The surface pad should be formed around the well casing. Concrete should be placed into the pad forms and into the borehole (on top of the grout) in one operation making a contiguous unit.

The size of the concrete pad is sometimes dictated by local regulations. These regulations should be reviewed prior to mobilization in order to have adequate materials onsite. The size of the concrete surface pad is generally dependent on the well casing size. In the absence of specific regulation regarding well pads dimensions, a minimum pad dimension extending 2 feet (nominally 50 cm) in all directions from the outside of the well casing should be considered. The concrete surface pad can be either square or round. The finished pad should be slightly sloped so that drainage will flow away from the protective casing and off the pad (without creating a nuisance condition or trip hazard). When setting a well at grade in a concrete or other paved area, care must be taken to match the concrete surface pad to surrounding ground level. In unpaved areas, the ground surface should be made suitable for the placing of concrete. Rebar or mesh can be used within the concrete pad to help prevent them from failing, for instance, under the weight of mowing equipment or vehicle traffic.

If the monitoring wells are installed in a high traffic area such as a parking lot, in a residential yard, or along the side of a road it may be desirable to finish the wells at ground surface and install watertight flush-mounted traffic and/or manhole covers. Flush mounted traffic and manhole covers are designed to extend from the ground surface down into the concrete plug around the well casing. Although flush mounted covers may vary in design, they should have seals that make the unit watertight when closed and secured. The flush-mounted covers should be installed slightly above grade to reduce the potential for standing water over the well and promote runoff. Locking expandable well plugs should be used to cap the well riser to prevent infiltration of rainwater or other fluids that might enter the flush-mount cover and accumulate within the annular space adjacent to the top of the well.

2.4.8 Surface Protection – Bumper Guards (Bollards)

If monitoring wells with above-grade completions require protection from traffic of other hazards, the installation of bollards or bumper guards consisting of partially-buried steel pipes should be considered. The dimensions of such protective posts can be sized to meet site-specific conditions, however, these generally consist of steel pipes approximately 3 to 4 inches (8 to 10 cm) in diameter and buried approximately 40 percent of their total length (e.g., assuming a total length of 5 feet (1.5 m), the protective posts would nominally be installed to a depth of 2 feet (nominally 50 cm) below the ground surface and set in a concrete footing). Concrete may also be placed into the steel pipe to provide additional strength. Substantial steel rails and/or other steel materials can be used in place of steel pipe. Welding bars between the bumper guards can provide additional strength and protection in high traffic areas, however, keep in mind the need to access the well for sampling. It is also recommended that the bumper guards are painted yellow to increase visibility to traffic. Note: the size and length of bumper guards and even what color they should be painted may be dictated by the facility within which the wells are installed. It is prudent to check with a knowledgeable site contact prior to mobilization to determine the specific facility requirements.

2.5 SAFETY PROCEDURES FOR DRILLING ACTIVITIES

A site health and safety plan should be developed for approval by the Partner and other locally-required signatories (e.g., division H&S officer, client H&S officer) prior to any drilling activities, and should be followed during all drilling activities.

The driller or designated safety person should be responsible for the safety of the drilling team performing the drilling activities. All personnel conducting drilling activities should be qualified in proper drilling and safety procedures. Before any drilling activity is initiated, utilities should be marked or cleared by the appropriate state or municipal utility protection organization.

Although not all-encompassing the following minimum safety requirements should be adhered to while performing drilling activities:

- All drilling personnel should wear safety hats, safety glasses, and steel toed boots. Earplugs or other adequate hearing protection (e.g., ear muffs) are required.
- Appropriate work gloves (cotton, leather, etc.) should be worn when working around or while handling drilling equipment.
- The drill rig should be equipped with a kill switch that will immediately shut down the rig when activated. All personnel should know where the kill switch(s) is located in case of emergency.

- All personnel should stay clear of the drill rods or augers while in motion, and should not grab or attempt to attach a tool to the drill rods or augers until they have completely stopped rotating. Rod wipers, rather than gloves or bare hands should be used to remove mud, or other material, from drill stem as it is withdrawn from the borehole.
- Do not hold drill rods or any part of the safety hammer assembly while taking standard penetration tests or while the hammer is being operated.
- Do not lean against the drill rig or place hands on or near moving parts while it is operating.
- Keep the drilling area clear of any excess debris, tools, or drilling equipment.
- The driller will direct all drilling activities. No work on the rig or work on the drill site will be conducted outside of the driller's direction. Overall drill site activities will be in consultation with the site geologist.
- Each drill rig will have a first-aid kit and a fire extinguisher located on the rig in a location quickly accessible for emergencies. All drilling personnel will be familiarized with their location.
- Work clothes will be firm fitting, but comfortable and free of straps, loose ends, strings etc., that might catch on some moving part of the drill rig.
- Rings, watches, or other jewelry will not be worn while working around the drill rig.
- Drilling locations should be assessed for the presence of underground or overhead utilities in accordance with ERM's SSC procedures.
- The drill rig should not be operated within the minimum distance of overhead electrical power lines and/or buried utilities that might cause a safety hazard (ERM's minimum setback distances are defined in the subsurface clearance procedure, however, client or local regulatory requirements should also be applied). In addition, the drill rig should not be operated while there is lightening in the area of the drilling site. If an electrical storm moves in during drilling activities, if possible, the derrick will be lowered and the area will be vacated until it is safe to return; otherwise vacate the area immediately.

2.6 WELL DEVELOPMENT

The main purpose of developing new monitoring wells is to remove the fine-grained materials or drilling fluids introduced into the well during installation, and to improve hydraulic connectivity between the immediate vicinity of the well and the surrounding formation (Striggow, 2013). Well development methods vary with the physical characteristics of the geologic formation in which the monitoring well is screened, the construction details of the well, the drilling method used during the construction of the borehole in which the well is installed and the quality of the water (ASTM D5521-05).

A new monitoring well should ideally be developed until the column of water in the well is free of visible sediment, or at a minimum until further improvement in water clarity is not observed with continued groundwater removal. Development of a well should occur as soon as it is practical after installation, allowing for sufficient time for the annular materials and the surface completion to cure. Depending on the materials used this may require up to 48 hours. Note that wells screened in fine grained formations or installed using wet rotary methods may require higher volumes of water to be removed (say up to 10 well volumes or more) for groundwater clarity to improve. Ultimately, the level of development should be decided by the project team in consideration of local regulation and industry practice, client technical specifications (if applicable) and/or project-specific data quality objectives.

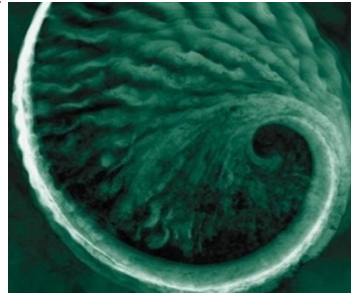
Well development generally involves surging using a purpose-built surge block or (if a surge block is not available) a bailer rapidly raised and lowered to induce water flow into and out of the well screen (to flush fine particles/mud from the filter pack and screen and into suspension where they can be removed from the well). Groundwater is then removed (ideally via pumping) at a rate which will remove the suspended fine-grained material and draw water through the screen flushing additional fine-grained material into the well. Peristaltic pumps or other low-flow sampling pumps are not appropriate for well development because they do not induce sufficient flow to flush out the fine material from the filter pack and adjacent formation and pull it into the well. It may be necessary to complete multiple sequences of surging followed by pumping in order to improve water clarity.

It is considered best practice to monitor groundwater quality parameters (e.g., temperature, conductivity, ORP and pH, if available) and to make an assessment of water clarity (either visually or using a turbidity meter where available) during purging activities. The development process should continue until groundwater quality parameters and groundwater clarity (turbidity) stabilizes to a point consistent with local regulation or best practice, or until a project-specific endpoint is reached. All field measurements, observations and decisions regarding the cessation of well development should be documented in the field logbook.

Note that volume based endpoints (e.g., removal of 10 well volumes) may not lead to improved hydraulic connection with the surrounding formation or improvement in the clarity of groundwater extracted from the well. The quality of development is generally a function of the effectiveness of the surging action and purging to draw fine materials into the well and remove them along with the extracted groundwater.

It is considered best practice that monitoring wells are not sampled on the same day as they are developed. This allows the well to re-equilibrate with the surrounding formation and for the collection of a groundwater sample which is more representative of conditions within the surrounding formation. Well equilibration is generally a function of the hydraulic conductivity of the formation; i.e., coarse sand aquifers will equilibrate faster than silt. A minimum equilibration period of 24-hours following well development, or where possible one week, should be taken before the well is sampled.

3 References



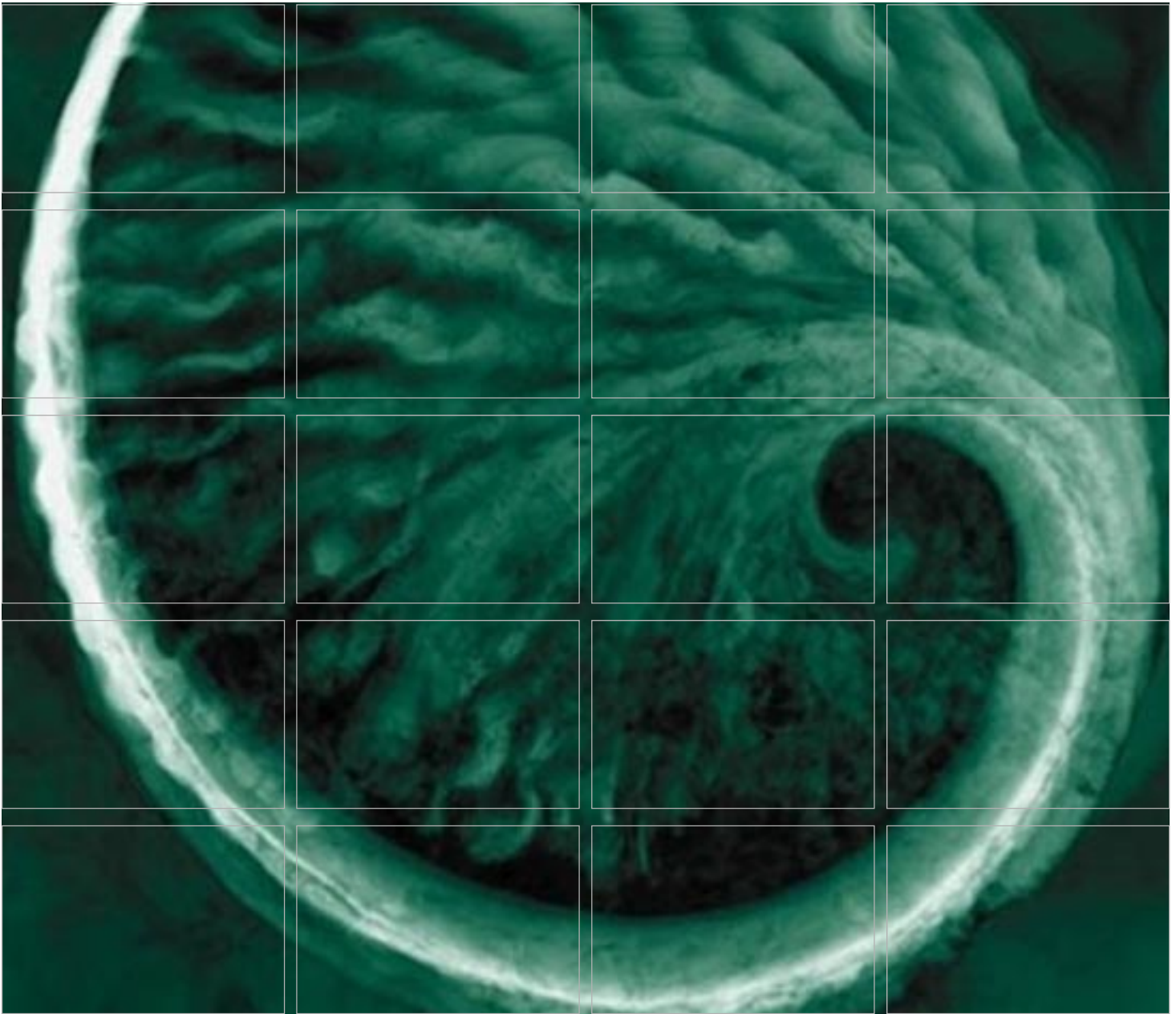
The following references provide guidance for the development of operating procedures for the drilling, installation and development of groundwater monitoring wells undertaken by ERM personnel. ERM personnel are responsible for determining if additional region-specific or client-specific standards or guidance are available.

American Society for Testing and Materials (ASTM). 2010. Standard Practice for Design and Installation of Groundwater Monitoring Wells. D5092 – 04(2010)e1.

American Society for Testing and Materials (ASTM). 2005. Standard Guide for Development of Groundwater Monitoring Wells in Granular Aquifers. D5521 – 05.

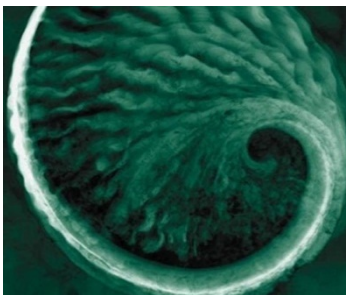
American Society for Testing and Materials (ASTM). 2010. Standard Guide for Installation of Direct Push Groundwater Monitoring Wells. D6724 – 04(2010).

Striggow, Brian. 2013. Design and Installation of Monitoring Wells, Guidance. United States Environmental Protection Agency, Science and Ecosystem Support Division (SESD). Athens, Georgia; SESDGUID-101-R1; January 22; document available at: <http://www.epa.gov/region4/sesd/fbqstp/Design-and-Installation-of-Monitoring-Wells.pdf> (last accessed 21 Jun 2013).



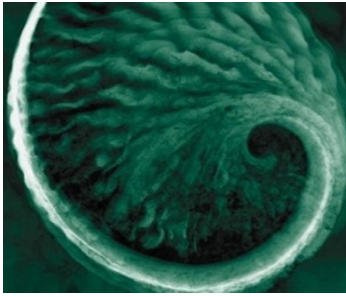
CSM SOP 04
Fluid Level Gauging
Version 1.0
1 October 2013

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1 Introduction



1.1 PURPOSE AND OBJECTIVES

The purpose of groundwater gauging is to collect data to support construction of groundwater table or potentiometric surface maps for the site under investigation. The fluid level data are also used to calculate hydraulic gradient(s) and the horizontal groundwater flow direction(s) across the site.

The objective of fluid gauging is to accurately measure depth to water and separate phase product¹, if present, relative to a surveyed data point in monitoring wells to determine:

- ground water elevation; and
- thickness of phase separated product.

This SOP is issued for global use; however, industry standards, equipment availability and regulatory requirements may vary regionally.

This series of SOPs was developed by senior CSM practitioners across ERM to provide our staff with a means of applying “best practice” to completion of tasks commonly performed during site investigation and other site management activities. Although referred to as “operating procedures,” the procedures may not be implementable in their entirety on every project or every location. All CSM practitioners are, therefore, responsible for identifying instances where region-specific or client-specific procedures, guidance and/or regulations may supersede ERM’s internal SOPs and complying with the local requirements.

1.2 HEALTH AND SAFETY

Standard operating procedures (SOPs) are designed to provide technical guidance for conducting work associated with Contaminated Site Management (CSM) and do not

¹ Phase separated product may either be light non-aqueous phase liquid (LNAPL) or dense non-aqueous phase liquid (DNAPL), though DNAPL detection is often not possible to measure with standard equipment.

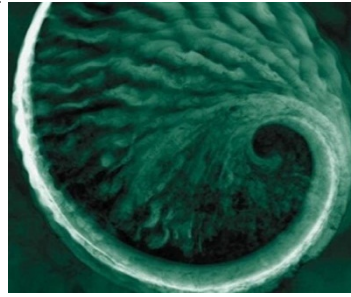
provide detailed or comprehensive guidance related to health and safety nor do they represent guidance on safe work procedures for the tasks described. Where considered, appropriate tips related to health and safety issues associated with specific tasks may be included within technical descriptions for information's sake only.

Health and safety aspects of all projects and project tasks should be assessed and planned using ERM's established Health and Safety planning procedures, including the WARN system.

1.3 ABBREVIATIONS

ASTM	American Society of Testing and Materials
COPCs	Constituents of Potential Concern
CDTW	Corrected Depth to Water
CWE	Corrected Water Elevation
CSM	Contaminated Site Management
DTP	Depth to Product
DTW	Depth to Water
DNAPL	Dense Non-aqueous Phase Liquid
HASP	Health and Safety Plan
LNAPL	Light Non-aqueous Phase Liquid
PID	Photoionization Detector
PPE	Personal Protective Equipment
PT	Product Thickness
SG	Specific Gravity
SOP	Standard Operating Procedure
TOC	Top of Casing
USEPA	United States Environmental Protection Agency
WARN	Work Activity Risk Assessment

2 Materials

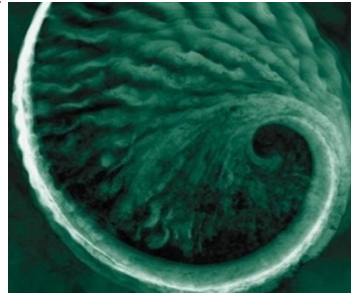


The following materials are typically required for fluid level gauging activities:

1. WARN Form/Health and Safety Plan.
2. Traffic protection equipment (e.g. traffic cones, barriers, high visibility vest).
3. Personal protective equipment (PPE) for splash protection (e.g. gloves, safety glasses).
4. Tools for removing the bolt down cover or manway, well cap, and keys for lock on well cap.
5. Small manually operated hand pump, or small cup for evacuating standing water from around the well casing, if water is above top of well casing within manway or well cover.
6. Decontamination solution, buckets, rinsate water (distilled or deionised water should be used (where available) rather than potable or tap water), clean rags and paper towels.
7. Interface meter for sites where phase separated product (LNAPL or DNAPL) is known or suspected to be present. If unknown, use an interface meter until the site is better understood. Water level meter for sites where phase separated product (LNAPL or DNAPL) is not anticipated.
8. Weighted cotton string – for sites with anticipated DNAPL, used as a backup for interface probe when thickness of DNAPL is too thin to register on the interface probe. String is lowered to the base of well suspected to have DNAPL to assess the presence of DNAPL by staining of the string.
9. Disposable bailers (if available) and string – to observe/measure very thin occurrences of LNAPL below the resolution of the interface probe.
10. Watch, field log book and/or gauging forms. It is also helpful to have a summary of well construction for the site, if available.

11. Boring logs or completion diagrams that describe the well diameter, well depth, stickup and screen interval.
12. Extra batteries for the water level meter and/or interface probe.

3 Methodology



The following methodology should be followed for fluid level gauging activities:

1. During the initial phase of monitoring, a calibrated photoionization detector (PID) could be used to gauge the air at the top of each well prior to conducting gauging activities if volatile organic contaminants are considered to be present. These data provide information as to whether additional PPE (e.g., respirators) may be needed during gauging. The calibration and voltage of bulb used in the PID should be selected based on the constituents of potential concern (COPCs) for the site.

PID screening is not required during every site visit, provided that previous screening has indicated conditions consistently below COPC action levels defined in the site Health and Safety Plan (HASP). If conditions have not been monitored previously, or if PID screening results have indicated encroachment on the action level for the COPCs at the site, a PID should be taken to the site.

2. Prior to visiting the site, check that the Interface/Water Level meter is functioning properly by inserting the probe into a container of water and noting that the presence of water is signaled. Usually an intermittent flashing light on the unit and/or an audible signal sounds for the presence of water and a constant light and audible signal for the presence of product.
3. Develop a gauging plan. Measurements should be taken within a 24-hour period or less. The gauging plan should also consider:
 - a) known information about the wells and historical water levels from previous field events. Field notes should be reviewed if available.
 - b) other relevant activities to be undertaken at the same time and specific requirements relating to these, including the sequencing of events (eg, undertaking gas measurements).
 - c) potential for tidal influences on fluid levels and the timing for collection of fluid levels. If the site is located in an area where groundwater elevations may be tidally influenced, considerations should be given to using data loggers or performing rapid measurement of water levels over a slack tide (ie, an hour

either side of either a high or low tide) to evaluate tidal effects on groundwater elevations.

d) potential difficulties in accessing the wells; such as:

- i. Are any of the wells located within process areas requiring permits from the facility?
- ii. Well cover bolts or well cap locks rusted?
- iii. Are there restrictions to access such as stream crossings or heavy brush with associated physical and biological hazards?
- iv. Are wells located in or near roadways requiring a traffic management plan and/or appropriate PPE (e.g., reflective vests)?

e) presence of non-aqueous phase liquids (NAPL) and/or high concentrations of dissolved-phase constituents in each well. Despite the use of decontamination techniques, it is prudent to proceed in gauging and sampling from least-impacted wells to the most-impacted wells, if known. If unknown, the suspected source area wells should be gauged last.

4. Remove the well cap as soon as possible to allow the water level to reach equilibrium before measurements are taken because pressure inside the well may have changed since the last measurement was taken due to rising or falling water levels. Pressure can also naturally build within a monitor well between measurement and sampling potentially making a loosened well cap a projectile. Therefore, caution should be taken when opening the wells to avoid potential sudden discharge of air pressure. Technicians should not look directly over the well when opening / removing the well cap. Also it is not uncommon in some domains to encounter poisonous insects/spiders or snakes in well boxes, thus care should be taken when opening well boxes, vault lids, or manways.
5. Allow sufficient time for vapors that may have accumulated within the bore to dissipate.
6. If bailers have been left in the wells from previous sampling events and are completely submerged, measure the water level before removing the bailer as the static water level will be in equilibrium with the submerged bailer. However, if the bailer is partially submerged, do not collect a water level from within the bailer as it may not be representative of the water level in the well. If necessary, remove the bailer and allow the water level to equilibrate before measuring the water level.
7. Decontaminate the interface/water meter and the portion of the tape that is likely to contact the water.

8. If the interface probe has a grounding wire, attach it to the manway (gatic) cover, the well box, or to a metal rod driven into the ground prior to gauging. In the absence of a grounding wire, the technician should touch a grounded metal object to discharge built up static electricity.
9. The depth to water/product should be measured relative to an established surveyed reference point on the top of the well casing. The reference point on the well casing should be marked; as a default, if not marked, the top of casing (TOC) is presumed to be the **north** side of the casing and should be noted in the field forms or log book.
10. Begin with a decontaminated water level meter or interface probe. To measure the depth to water (no LNAPL), slowly lower the probe into the well until a signal (intermittent or constant beep) is heard. Repeat the recording three times by raising and then lowering the probe again across the water table (does not measure while raising the probe, as surface tension may result in aberrant readings). Record the depth to water in feet to two decimal places or meters to three decimal places (i.e., to the millimeter level).
11. To measure the depth of LNAPL, slowly lower the probe into the well until a signal (usually a solid beep) is heard, then record this number as the top of LNAPL. Next, lower the probe through the layer of LNAPL until the tone changes (usually an intermittent beep), this is the LNAPL/water interface. To facilitate accuracy, lower the probe below this interface three times and average the reading. As above, record the depth to water/LNAPL in feet to two decimal places or meters to three decimal places (i.e., to the millimeter level). If measurements are unusual or not historically supported, note in the field forms or logbook.
12. LNAPL presence should be confirmed by use of a disposable bailer lowered into the LNAPL layer and retrieved for viewing. Once color and/or other LNAPL characteristics have been recorded, LNAPL may be poured back into the well bore, unless there are regulatory restrictions to doing so or site and scope-specific procedures for storage/disposal of LNAPL waste. Testing with a disposable bailer should also be conducted in wells with suspected LNAPL but the thickness may be too thin to register on the interface probe.
13. The total depth of the well should be measured to determine if the well is silting or damaged. This is done by lowering the probe into the well until the tape just becomes slack and recording the depth from the top of casing. If the well is to be sampled for metals, gauging of total depth should not be conducted until sampling has been completed due to potential to create turbid conditions within the well.
14. If gauging for the presence of DNAPL, the interface probe must be lowered carefully to the bottom of the well because DNAPL will collect at the bottom if the well has been appropriately designed (eg, screened at the base of the water bearing zone and

constructed with a sump below the screened interval). However, note that DNAPL gauging is typically used to evaluate the presence or absence of product and measurements may not be reliable. Alternatively, a weighted string (preferably cotton or a natural fiber where available) compatible with the contaminant may be carefully lowered to the bottom of the well and retrieve. DNAPL may appear as staining on the string when retrieved. The string should be properly disposed of when the measurement is complete. This method should not be used where LNAPL is present.

15. At the completion of the gauging (or total depth sounding), the Interface/Water Level meter tape should be retrieved carefully, wiping excess moisture, and/or LNAPL from the tape

4 Fluid Gauging Calculations

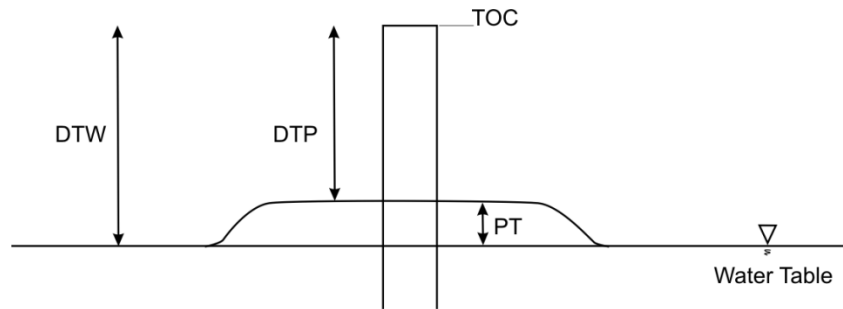
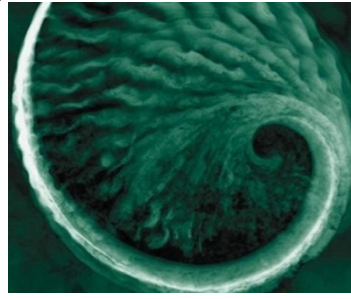


Figure 4.1 Subsurface Cross-section

where:

DTW = Measured Depth to Water

DPT = Depth to Product

TOC = Top of Casing Elevation

PT = Product Thickness

Note = The above is a schematic only and NAPL will actually displace water.

4.1 WATER TABLE ELEVATION (NO LNAPL)

Groundwater Elevation = TOC - DTW

where:

TOC = Top of Casing Elevation

DTW = Measured Depth to Water

4.2 CORRECTED DEPTH TO WATER (LNAPL PRESENT)

This calculation is performed to remove the effect of LNAPL on the measured depth to water because LNAPL will depress the water table beneath it.

$$\text{CDTW} = \text{DTW} - (\text{PT} \times \text{SG})$$

$$\text{PT} = \text{DTW} - \text{DTP}$$

where:

CDTW = Corrected Depth to Water

DTW = Measured Depth to Water

DTP = Measured Depth to Product (LNAPL)

PT = Product Thickness (Depth to Water (-) Depth to Product)

SG = The Product's Specific Gravity

(LNAPL present)

This calculation is performed to convert the water level in each well to an elevation that is relative to a common datum (see Figure 4.1 above). Therefore a groundwater elevation contour gradient map for the site can be prepared.

$$\text{CWE} = \text{TOC} - \text{CDTW}$$

where:

CWE = Corrected Water Elevation

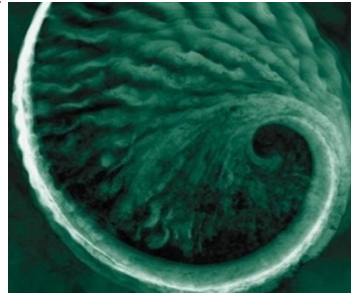
TOC = Top of Casing Elevation (Determined by a Survey)

CDTW = Corrected Depth to Water

Table 4.1 *Example Specific Gravities*

Compound		Approximate Specific Gravity
BTEX		
Benzene		0.88
Toluene		0.87
m-xylene		0.88
p-xylene		0.86
o-xylene		0.88
Common Petroleum Products		
Gasoline		0.73
Kerosene		0.80
Diesel		0.83
1.	Source: Total Petroleum Hydrocarbon Criteria Working Group Series.	
2.	http://www.simetric.co.uk/si_liquids.htm	
3.	http://www.csgnetwork.com/specificgravliqtable.html	

5 References

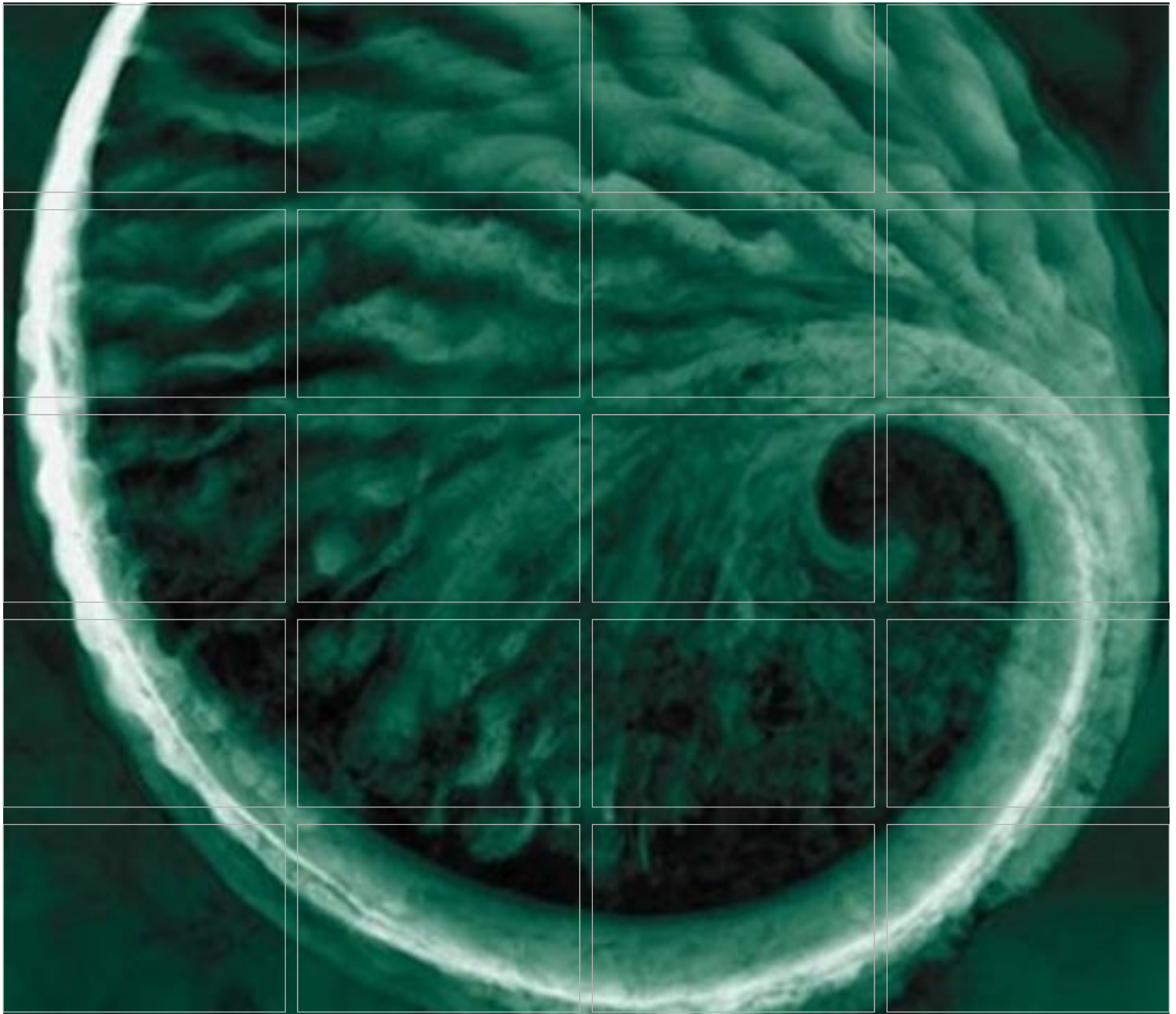


The following references provide guidance for the development of operating procedures for fluid level gauging undertaken by ERM personnel. ERM personnel are responsible for determining if additional region-specific or client-specific standards or guidance are available.

American Society of Testing and Materials (ASTM) D4448 - 01(2013) Guide for Sampling Ground-water Monitoring Wells.

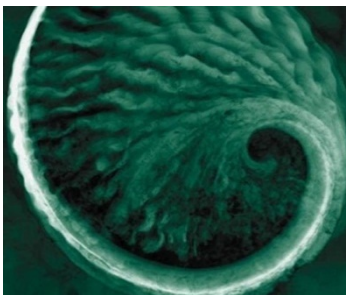
United States Environmental Protection Agency (USEPA). 2013. Groundwater Level and Depth Measurement Operating Procedure. SESDPROC-105-R2. Region 4, Science and Ecosystem Support Division, January.

<http://www.epa.gov/region4/sesd/fbqstp/Groundwater-Level-Measurement.pdf> (accessed 24 Jun 2013).



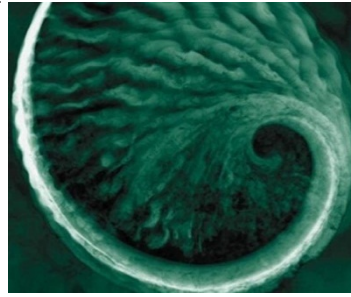
**CSM SOP 05
Groundwater Sample
Collection
Version 1.0
1 October 2013**

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1 Introduction



1.1 PURPOSE AND OBJECTIVES

The purpose of groundwater sample collection is to obtain representative data and samples that meet project data quality objectives and industry acceptable standards of accuracy, precision, comparability, and completeness. Data collected during the purging and sampling process (e.g., measurement of fluid level depths or of groundwater field parameters like pH, electrical conductivity or temperature) can also be used to infer conditions within the aquifer or groundwater-bearing zone useful in interpreting laboratory analytical results and developing a conceptual site model.

The objective of this document is to describe field procedures for collecting groundwater samples from monitor wells. The field procedures described herein present the general methodology for sample collection, but formal field training by personnel experienced in groundwater sampling is required to supplement the procedures described.

This SOP is issued for global use; however, industry standards, equipment availability and regulatory requirements may vary regionally. This series of SOPs was developed by senior CSM practitioners across ERM to provide our staff with a means of applying “best practice” to completion of tasks commonly performed during site investigation and other site management activities. Although referred to as “operating procedures”, the procedures may not be implementable in their entirety on every project or every location. All CSM practitioners are, therefore, responsible for identifying instances where region-specific or client-specific procedures, guidance and/or regulations may supersede ERM’s internal SOPs and complying with the local requirements.

In the United States and some other countries, the preferred method for collection of samples is using low-flow (minimal drawdown) procedures as described in Puls and Barcelona, 2006 or other applicable local guidance. However, site-specific sampling and analysis plans, local regulatory agencies, or available equipment may dictate the sampling method to be used.

1.2 HEALTH AND SAFETY

Standard operating procedures (SOPs) are designed to provide technical guidance for conducting work associated with Contaminated Site Management (CSM) and do not provide detailed or comprehensive guidance related to health and safety nor do they

represent guidance on safe work procedures for the tasks described. Where considered, appropriate tips related to health and safety issues associated with specific tasks may be included within technical descriptions for information's sake only.

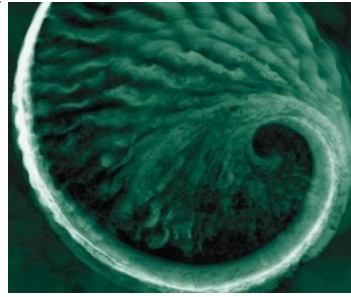
Health and safety aspects of all projects and project tasks should be assessed and planned using ERM's established Health and Safety planning procedures, including the WARN system.

1.3 ABBREVIATIONS

ASTM	American Society of Testing and Materials
COCs	Constituents of Concern
CSM	Contaminated Site Management
DQO	Data Quality Objective
DO	Dissolved oxygen
EC	Electrical Conductivity
FRC	Flame-resistant clothing
H&S	Health and Safety
HASP	Health and Safety Plan
ISO	International Organization for Standardization
LNAPL	Light Non-Aqueous Phase Liquid
mS/cm	millisiemens/centimeter
mV	millivolts
NTU	Nephelometric Turbidity Units
NAPL	Non-aqueous Phase Liquid
ORP	Oxidation-Reduction Potential
PAH	Polycyclic Aromatic Hydrocarbon
PIC	Partner in Charge
PM	Project Manager

PPE	Personal Protective Equipment
QA/QC	Quality Assurance / Quality Control
SAP	Sampling and Analysis Plan
SOP	Standard Operating Procedure
SC	Specific conductance
SVOC	Semivolatile Organic Compound
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
WARN	Work Activity Risk Assessment

2 Materials



The below items are typically required for collection of groundwater samples from monitor wells (depending upon the methodology adopted):

- Sampling and Analysis Plan (SAP) or local equivalent and previous monitoring results for reference;
- WARN Form/Health and Safety Plan (HASP);
- Field forms or field log book;
- A table with monitoring well completion information; alternatively borehole logs and/or well completion diagrams;

Equipment

- Pens;
- Keys for any locks on well boxes or well caps;
- Hand tools, such as:
 - o wrench to open bolt-down well covers;
 - o Large wrench (or spanner) to open drum lids;
 - o Pry bar or screwdriver to lift manway (well) covers; and
 - o Bolt cutters to cut locks from wells without keys or locks that are inoperable.
- Water level meter or, if product is present or suspected, an oil-water interface probe;
- Bailers and string or rope if needed;
- Purging/sampling pump, examples include:
 - o peristaltic,

- o submersible bladder pump,
- o submersible centrifugal pump.

Note that pump type will be contingent on well diameter, depth-to-water, permeability of formation, and purging/sampling methodology;

- Power source for pump (e.g., battery, generator, air compressor) and extra batteries for instruments;
- Tubing – inert tubing compatible with constituents of concern in the ground water (commonly polyethylene, nylon, or Teflon®). If using a peristaltic pump, silicon or other manufacturer's recommended compatible tubing is required to pass through the pump head. Check to ensure tubing diameter(s) are of proper size;
- Flow measuring equipment (e.g., measuring container and watch);
- Flow-through cell (if available, closed cell with probe ports preferred);
- Note that combination (multi-parameter) meters are preferred if using a flow-through cell; individual meters may be used in a container if flow-through cells/multi-parameter meters are not available (See water quality meters section below).
- Water quality measuring instruments:

Minimum requirement:

- o Temperature,
- o pH

Recommended additional (as available/required):

- o Specific Conductance (SC) or Electrical Conductivity [EC],
- o Oxidation-Reduction Potential [ORP],
- o Dissolved Oxygen [DO],
- o Turbidity.

- Field filtration equipment if required. Several options are available including in-line disposable filter units, air-pressurized filter units, reusable filter holder cartridges for use with disposable filter papers and syringes. Consult local regulations for which type and size of filtration is acceptable;
- Container to collect purge water at well head (such as a 5-gallon (20 liter) plastic bucket);
- Large volume vessel(s) (such as 55-gallon drums (~200 liter) or plastic totes) to store purge water pending characterization and disposal; and
- Decontamination supplies.

PPE - See HASP, but may include:

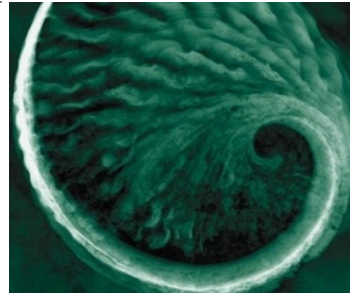
- Surgical gloves, powder-free Nitrile, (8 mil thickness preferred);
- Cut-resistant or other sturdy gloves for use when opening drums and well covers;
- Flame-resistant clothing (FRC) – if required by the site;
- Chemical resistant coveralls (tyvek, for example)– if required by the HASP;
- Safety glasses or goggles (see HASP); and
- Respirator (half-faced or full-faced) and appropriate cartridges (if required by the HASP).

Sample bottles and supplies:

- Sample bottles, to be requested from laboratory or other source:
 - o sufficient number of bottles for all wells to be sampled plus 10 percent extra for potential breakage;
 - o bottles for QA/QC samples as required:
 - Blind duplicates;
 - Matrix spike/Matrix spike duplicates;
 - Field blanks (if required, generally one per field day);
 - Rinsate blanks (if required);

- Equipment blanks (if required); and
- Trip Blanks – one for each cooler that will hold samples for volatile organic compound analyses.
- o Chain-of-custody forms;
- o Sufficient number of ice chests (coolers) to hold samples and sufficient ice to maintain temperature at 4 degrees Celsius; and
- o Distilled (or VOC-free) water for field, rinsate and equipment blanks. Deionized water (if available) is preferred for field, rinsate and equipment blanks if samples will be analysed for metals (see SAP).

3 Methodology



3.1 PREPARATION FOR GROUNDWATER SAMPLING EVENT

The following tasks should be completed prior to undertaking a groundwater sampling event:

Develop SAP, with Data Quality Objectives (DQOs) clearly defined to ensure that the required groundwater data are collected and that the laboratory detection limits are suitable for the adopted site assessment criteria.

Contact facility site manager or property owner to confirm date of sampling event and arrange for clear access to wells and work permits (if required). Confirm any site-specific health and safety training or PPE requirements (e.g., FRC) or other facility requirements (e.g., inspection of equipment).

Perform all necessary health and safety pre-planning as dictated by ERM and client-specific requirements. Pre-planning should include a review of the project HASP by all field team members.

Check availability of equipment and supplies either from in-house or outside sources and place order for rental and purchased equipment/supplies at least one week in advance of the sampling event to allow for shipping/stock delays. Longer lead time may be needed.

Ensure that you have keys for any locks on well boxes or well caps. If the condition of the locks is not known, bolt cutters and replacement locks may be required.

Upon receipt of equipment and supplies, check for proper operation, calibration of equipment, and quantities and sizes of supplies.

Place bottle order with laboratory at least one week in advance of field work – include enough bottle sets to cover all wells in the sampling program, all QA/QC samples, and a few ‘contingency’ bottles. If shipping bottles or samples via air freight, check with laboratory regarding special handling and shipping requirements.

Prepare paperwork for the field event, including HASP, field forms or field log books, site plan showing all sample locations, and previous monitoring data (if available), and any other required permits, forms, etc.

If shipping samples to another country for analysis, completion of customs forms may be required. Custom delays may result in exceeding holding times or temperature requirements. If available, select qualified local laboratories for time critical or temperature critical analyses (e.g., volatile organics). Provide ample packing material to make it easy for customs officials to adequately repack samples after inspection.

In order to reduce potential for cross-contamination, review previous groundwater monitoring results (if available), and if feasible, plan to sample wells in order of lowest to highest concentrations. *Note that samples for water analysis are not typically collected from wells with measurable Non-Aqueous Phase Liquids (NAPL), unless a sample of the NAPL is being collected for fingerprinting.*

3.2 PRE-SAMPLING ACTIVITIES

The following tasks should be completed prior to commencement of well purging or sampling:

1. Establish work area at each well upon arrival – ensure safety precautions are considered pursuant to HASP (e.g., traffic cones, barricades, positioning of vehicle);
2. Check the condition of the well(s) upon arrival, and make a note on the field form or in the field log book of any observed damage, water in flush (grade) mounted well enclosure (box or manway), or potential surface contamination. If there is water in the well box, remove all water to below the top of well casing before removing the well cap to avoid allowing potentially contaminated surface water from entering the well (safety note: it is not uncommon to encounter spiders or other harmful insects in well boxes; use caution when removing lids and perform an inspection prior to beginning activities);
3. Measure the depth-to-water (and light non-aqueous product [LNAPL], if present) and total depth of all wells before undertaking purging or sampling. Note: If sampling for metals, gauge total depth of well after sampling has been completed, so as to not disturb sediment that may have accumulated in the bottom of the well;
4. If bailers have been left in the wells from previous sampling events, measure the water level before removing a submerged bailer as the static water level will be in equilibrium with the submerged bailer. Remove the bailers and discard unless they are dedicated for permanent use; and
5. Verify calibration of water quality instruments and recalibrate if necessary using standard solutions in accordance with manufacturer's protocols.

3.3 PURGING AND SAMPLING ACTIVITIES

Field procedures for both low flow and volume-based purging are described in this section. The method of sampling to be adopted will depend upon a range of factors (including the DQOs) and these should be determined in consultation with the project manager (PM) and partner-in-charge (PIC). Low flow (micropurge) sampling is increasingly becoming the preferred method for the collection of high quality groundwater samples under most circumstances and use of this method is encouraged.

Note: "No purge" sampling techniques which are gaining acceptance in some regions (including passive diffusion samples and sleeve samplers, etc.) are not covered by this SOP. Procedures for sampling using these techniques are described by the equipment manufacturer. Prior to using one of these techniques, verification of data acceptance should be obtained from local regulatory agencies.

Low Flow Methodology

1. Once the well cap is removed and the depth-to-water has been recorded, lower the pump (if using submersible pump) and tubing into the well. The pump intake (or end of tubing if using a peristaltic pump) should be placed in the middle of the submerged portion of the well screen. If the well screen is greater than 10 feet (3 meters) in length and spans multiple permeable units, the project manager should be consulted regarding preferred depth of pump or tubing intake (Note: A table that includes water levels, intake depths, purge rates, etc. from previous sampling events is beneficial to maintain consistency between sampling events);
2. Measure the depth-to-water again with the pump/tubing in place, and use this measurement as your drawdown reference during purging. Leave the water level meter probe in the well to facilitate collecting water level measurements during purging;
3. Connect the discharge tube from the pump to the inlet of the flow through cell (if using a closed cell), or place the outlet of the discharge tube in the bottom of a container with the water quality probes. If using a container with probes placed within, care must be taken to limit turbulence (which may affect DO and, to some extent, ORP values). Ensure that the purge water ultimately discharges into a bucket or other collection vessel;
4. Start the pump (noting the time on the field forms or field log book) and measure and record the flow rate using a measuring container and stop watch (or similar). The ideal flow rate is less than 500 ml/min, and should be adjusted lower if excessive drawdown of the water level occurs (the US EPA guidelines indicate a maximum drawdown target of 10 cm, (approximately 0.33 feet). Note that one of the authors of the USEPA guidelines recently revised this guidance stating that the total

drawdown isn't as critical as ensuring that the water level eventually stabilizes above the top of the well screen;

5. Begin recording water quality parameters on the groundwater monitoring field form as soon as the probes are submerged. Each record should include: time of measurement, cumulative purge volume, depth-to-water and water quality parameters (note: record units for the parameters and whether the ORP reading is positive or negative). Also, it is important to note any changes to the visual clarity of the water during purging, as well as any unusual properties or odors. Plan to record this information every three to five minutes during purging, possibly more frequently at the beginning to record the larger changes that occur when purging is commenced.

If erroneous measurements are noted (e.g., negative DO readings or high DO along with negative ORP) check calibration of the instruments. If erroneous measurements continue, contact project manager to discuss whether the sampling should be discontinued until replacement meters are available; and

6. Continue purging until the water quality parameters stabilize over three consecutive readings. The stabilization criteria are as follows:

Table 3.1 *USEPA Recommended Water quality parameter stabilization criteria*

Parameter	Stabilization criteria
pH	± 0.1 pH units
SC/EC	± 3% (µS/cm or mS/cm)
Temperature	± 0.5°C
ORP	± 10 mV
DO	± 0.3 mg/L
Turbidity	± 10% NTUs (if measured)

Note that a well should not be considered stable after the first three or four readings. The well should be pumped at the highest sustained rate that does not induce drawdown that exceeds the criteria (with the exception of low-permeability wells). Generally, changes in water quality parameters are observed during initial pumping of the well. After a time, the parameters will begin to stabilize. This change is generally observed after 5 to 10 readings and represents equilibration with the formation water. If no changes are observed, this may indicate only casing water is being purged.

Also note that both ORP and DO are typically slower to stabilize than the other parameters, and may be particularly unstable when not using a closed flow-through cell. In this case, greater weight may be given to pH and EC as the 'stabilizing' parameters.

These criteria should be considered as a guide and failure to strictly adhere to the stabilization criteria for one or more parameters does not imply that a representative sample cannot be collected. The field personnel and project manager may use their professional judgment on a weight of evidence basis, in conjunction with the stabilization criteria to determine when a representative sample can be collected.

Guidance for low flow sampling indicates that the water level should never drop below the top of the well screen for wells with completely submerged screened intervals. In extremely low permeability formations this may be impossible, and in these cases the well can be purged dry and a sample collected once the well has recovered. Note the degree of recovery that is acceptable is generally dictated by the local regulatory agency. If no policy exists, sampling of water from the well within 24 hours of purging should be conducted. Also note that the integrity of the sample may be affected as air is allowed to enter the well screen and filter pack. Every attempt to collect a sample using a very low flow rate (<100 ml/min) should be made before resorting to this technique.

Once the parameters have stabilized, the sample(s) can be collected. Maintain or slightly reduce the pumping rate to minimize disturbance to the water column, put on fresh disposable gloves, and fill sample bottles directly from the discharge tube (Note: if using a closed flow through cell, disconnect the pump discharge tube from the flow through cell to ensure that water samples are collected before water passes through the cell), if using probes placed in a container, a short section of tubing should be removed prior to filling sample bottles as to avoid cross-contamination of the sample. The probes are often difficult to thoroughly decontaminate.

In general, samples should be collected in order of decreasing volatility. Vials for volatile organic compound (VOC) analysis should be collected first, followed by bottles for dissolved gases, semivolatile organic compounds (SVOCs), polycyclic aromatic hydrocarbons (PAHs), pesticides and herbicides and finally inorganics (metals) and monitored natural attenuation samples (e.g., nitrate/nitrite, sulphates, alkalinity, etc.). If Quality Control/Quality Assurance (QA/QC) samples (blind duplicates and matrix spike/matrix spike duplicates) are to be collected from that well, samples should be collected in conjunction with the base sample (i.e., collect all VOC samples first, then all the SVOCs, etc.).

The pumping rate should be adjusted to provide a laminar (non-turbulent) flow into the sample bottles to reduce aeration of the sample, and the water should be allowed to run smoothly down the inside of the bottle. Additional tips for sample collection are provided below:

VOC vials must be filled with a positive meniscus (i.e., above the rim of the vial) to eliminate the formation of bubbles and headspace before capping (once the cap is screwed on, turn the vial upside down and gently tap the side of the bottle to see if any air bubbles are present. If there are bubbles, remove the cap, top off the vial and attempt

again). Use appropriate care while screwing on the cap, in tapping the vial, and in general handling of the glassware. Do not over tighten sample bottle lids as the bottles may shatter and become a cut hazard.

Care should be taken during sampling to prevent overflow of water in sample bottles containing acid preservative as the acid preservative may be washed out. If preserved sample bottles overflow, that bottle should be discarded, and replaced with a new bottle.

Note that in some areas, ground water may carry carbonate (limestone or dolomite) silt that will react with the acid preservative in VOC vials causing effervescence. If this occurs, empty the VOC vials and rinse with sample water. Fill the VOC vial as described above to create zero headspace. Submit to laboratory noting on the chain of custody that the sample is unpreserved. Be aware this significantly reduces the holding time for these samples and sample shipping schedules may need to be adjusted.

If the SAP specifies that the samples for inorganics are to be filtered, an in-line filter can be placed on the discharge tube and the sample can be pumped directly into the preserved sample bottles. Alternatively, the sample can be collected in “neat” bottles containing no preservative and later filtered into the preserved sample bottles.

Once all sample bottles have been filled, switch off the pump and remove the pump and tubing from the well. Take a final water level measurement (and total depth if required) once the pump has been removed.

The collected samples should be labeled with the appropriate information, and placed immediately in an ice-filled cooler pending shipment or delivery to the laboratory. Bottles should be wrapped in bubble pack or other comparable packing material to reduce the potential for breakage. Also, be careful not to overfill coolers with sample bottles as there is greater risk of breaking during transport and will have less room for ice to maintain temperature at 4 degrees Celsius. Be aware that coolers full of water samples and ice can be very heavy. Bring enough coolers to spread the load into manageable portions, and always use proper manual handling techniques when lifting or moving coolers.

Shipping samples (including shipping unfilled sample bottles containing preservative) requires the consideration of local regulations. Shipping samples internationally may add additional requirements. Determine requirements with the project PM/PIC prior to mobilization for the sampling event.

Any non-disposable equipment should be decontaminated between each well.

The purge water from each well should be stored in an appropriate container on site pending characterization and disposal. Ensure that the container is properly sealed before leaving site, and is labeled to identify its contents and provide contact details of

the client contact or PM in the event that site employees are unsure of the contents. Containers will become impossible to safely move without mechanical aid once full. Be sure to locate containers in a safe and accessible location on site that is suitable for short-term storage pending characterization and disposal of the waste water.

Volumetric Purging Methodology

The volumetric method of purging wells was used primarily prior to 2000 and prescribed removal of three casing (only the water inside the well casing) or borehole volumes (which includes casing volume plus the saturated portion of the filter pack) of water prior to sample collection. The rationale was to ensure that all the potentially stagnant water in the well was removed and replaced with fresh formation water. There is a range of conflicting and ambiguous guidance available in terms of how and why volumetric sampling should be undertaken. Generally, this method is dictated in older SAPs and may have been incorporated into older regulatory permits.

The method described below represents reasonable guidance. However, when adopting this methodology considerations include whether information is available regarding well diameter, screened interval, whether water is standing above the screened interval, whether it is appropriate to purge the casing volume or the casing volume plus the saturated volume of the annulus, and the potential to 'over-purge' the well which may result in heightened dilution or unnecessary alteration of the sample.

1. Before purging, the purge volume is either calculated as three times the volume of standing water in the well casing or the volume of the standing water in the well casing and pore space of the filter pack, according to the following equation:

Metric Units

$$V_{tot} = V_{well} \{casing\ volume\ only\}$$

$$V_{tot} = V_{well} + V_{filter} \{casing\ volume\ and\ saturated\ volume\ of\ the\ annulus\}$$

$$V_{well} = \pi r_1^2 h_1; \text{ and}$$

$$V_{filter} = \pi (r_2^2 - r_1^2) h_2 n$$

Where:

V_{tot} = Total Borehole volume (L);

V_{well} = Volume of water in well casing (L);

V_{filter} = Volume of water in filter pack (L);

r_1 = Inner radius (half the casing diameter) of well casing and screen (m);

r_2 = Radius of borehole (m);

h_1 = Height of water column in well casing (calculated as the difference between the total well depth and the water level depth) (m);
 h_2 = Length of filter pack or height of water column in well (whichever is shorter) (m); and
 n = porosity (use 0.30)

U.S./English Units

$$V_{tot} = V_{well} \text{ {casing volume only}}$$

$$V_{tot} = V_{well} + V_{filter} \text{ {casing volume and saturated volume of the annulus}}$$

$$V_{well} = 7.48 \pi r_1^2 h_1; \text{ and}$$

$$V_{filter} = 7.48\pi (r_2^2 - r_1^2) h_2 n$$

Where:

V_{tot} = Total borehole volume (G);
 V_{well} = Casing volume of water in well casing (G);
 V_{filter} = Volume of water in filter pack (G);
 r_1 = Inner radius of well casing and screen (ft);
 r_2 = Radius of borehole(ft);
 h_1 = Height of water column in well casing (calculated as the difference between the total well depth and the water level depth) (ft);
 h_2 = Length of filter pack or height of water column in well (whichever is shorter) (ft); and
 n = porosity (use 0.30)

Table 3.2 *Approximate water volume per meter of well casing and filter pack*

Metric Units		
Casing diameter	Water volume in well per meter (L) ^a	Water volume in filter pack per meter (L) ^a
50 mm ^b	2	1.5
100 mm ^c	8	6
150 mm ^d	18	13

- a. Volumes rounded to nearest whole number
- b. Assumes 100 mm borehole diameter
- c. Assumes 200 mm borehole diameter
- d. Assumes 300 mm borehole diameter

U.S./English Units

Casing diameter	Water volume in well per foot (G)	Water volume in filter pack per foot (G) ^a
2-inch ^e	0.16	0.94
4-inch ^f	0.7	1.6
6-inch ^f	1.5	1.3

e. Assumes 8-inch borehole diameter

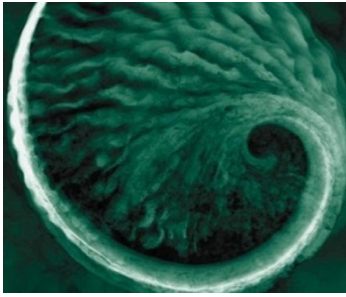
f. Assumes 12-inch borehole diameter

2. Proceed with set up and purging as per the low flow procedures described above, with the following exceptions:
 - For wells with a completely submerged screen, the pump intake should be set just below the water level so that the entire stagnant water column is purged and replaced with formation water drawn from the screened interval below (*Note: to avoid damaging the pump, the pump intake must remain underwater. As such, the pump may have to be lowered during purging to compensate for drawdown in the well*);
 - For wells where the water level is below the top of the well screen, set the pump intake half-way through the submerged portion of the screen and begin purging (*Note: to avoid damaging the pump, the pump intake must remain underwater. As such, the pump may have to be lowered during purging to compensate for drawdown in the well*);
 - The pumping rate can be increased to whatever the formation can support, although care should be taken to avoid drawing down the water level above the top of the well screen (for wells with fully submerged screens); and
 - Alternatively, bailers can also be used for this method of purging by carefully lowering the bailer repeatedly below the water level (just until it is submerged) and withdrawing water until the total volume is removed. Care should be taken to minimize disturbance of water in the well during the lowering and removal of the bailer.
3. While purging the well, record water quality parameters after each casing or borehole volume recovered. Regardless of the volume extracted, purging should continue until water quality parameters stabilize (pH and EC as a minimum). Dissolved oxygen (DO) measurements should not be taken (or should be treated with considerable caution) because they may be affected by aeration caused by the

purging method. It may be necessary to purge more than three casing volumes if water quality parameters have not stabilized.

4. Following purging, samples are collected in the same manner previously described (if using bailers, special care must be taken when decanting water into the samples bottles to minimize aeration of the sample during collection).
5. The volume-based method of purging has the following disadvantages over other methods that should be taken into account when planning a groundwater sampling event:
 - it generates a large volume of purge water that must be managed;
 - the higher pumping rates typically result in greater mobilization of suspended fines in the water, which can increase the potential for an analytical bias;
 - the higher pumping rate may result in a greater disturbance of the water column, and promote loss of VOCs or dissolved gases and changes in water quality; and
 - the greater purge volume results in water being drawn to the well from further out in the formation, and may result in dilution of the specific analytes being targeted by the well.

4 References



The following references provide guidance for the operating procedures for the collection of groundwater samples undertaken by ERM personnel. ERM personnel are responsible for determining if additional region-specific or client-specific standards or guidance are available.

American Society of Testing and Materials (ASTM). 2012. Standard Guide for Planning and Preparing for a Groundwater Sampling Event. D5903-96 (2012).

International Organization for Standardization (ISO). 2009. Water quality – Sampling – Part 18: Guidance on sampling of groundwater at contaminated sites. ISO 5667-11:2009

United States Environmental Protection Agency (USEPA). 2006. Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures. (EPA/540/s-95/504). (Puls and Barcelona).

United States Environmental Protection Agency (USEPA). 2010. Low Stress (low flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells. EQASOP-GW-001. Region 1. Revision No. 3.

<http://www.epa.gov/region1/lab/qa/pdfs/EQASOP-GW001.pdf> (accessed 24 Jun 2013).