Atlanta Gas Light®
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Atlanta, GA 30309

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August 14, 2014

Mr. Charles D. Williams
Program Manager
Response and Remediation Program
Environmental Protection Division
2 Martin Luther King Jr. Drive,
Suite 1054, East Tower
Atlanta, GA 30334

Subject: **Voluntary Remediation Program Compliance Status Report Addendum**
Atlanta Gas Light Company
Former Manufactured Gas Plant Site
Rome, Georgia
HSI #10109

Dear Mr. Williams,

On April 30, 2014, the Georgia Environmental Protection Division (GA EPD) provided comments on the Atlanta Gas Light Company (AGLC) Voluntary Remediation Program (VRP) Compliance Status Report (CSR) prepared for the Rome former manufactured gas plant (MGP) site (Site). The comments were received by AGLC on April 30th. The responses below reflect AGLC's actions to address the comments. Your comments have been italicized for clarity.

1. *According to the VRP CSR, the site has relied solely on the results of the Johnson and Ettinger Model (JEM) application in drawing conclusions regarding the vapor intrusion (VI) pathway for the nearby non-residential structures. Based on the available file information for the subject site, previous comments associated with the subject site have required additional supporting documentation, beyond that of the JEM, to justify that the vapor intrusion pathway for the nearby commercial businesses (Parcels J14D 045-J14D 50) would not be at risk of exposure from the contaminants from the site. The U.S. EPA and EPD both recommend that VI evaluations should be based on multiple lines of evidence with the results weighed together to achieve a concordance based on all the available information. Therefore, based on the recommendations from EPD's Risk Assessment Unit, EPD continues to request*

that additional documentation in support of the VI pathway evaluation be provided, including but not limited to an evaluation of the VI pathway through the use of U.S. EPA's risk-based Vapor Intrusion Screening Levels (VISLs) and sub-slab soil gas data in lieu of bulk soil data and/or indoor air sampling, as it is EPD's policy to not utilize bulk soil data in VI risk assessments (GAEPD, http://gaepd.org/Documents/vaporintrusion.html). Please revise the site-specific subsurface soil risk based cleanup goals (RBCGs) protective of the indoor air VI pathway, if necessary, based on the results of the additional supporting documentation.

During the meeting held on March 18, 2013, AGLC understood that EPD would not require any additional field data in the form of vapor intrusion (VI) samples to support the Johnson & Ettinger (J&E) VI model. Notwithstanding that agreement, EPD is now requesting additional documentation in support of the VI pathway evaluation. As stated in your letter dated April 30, 2014, EPD recommends and is now asking for multiple lines of evidence to support the VI pathway evaluation conclusion.

Based on risk assessment guidance and a conversation with Kevin Collins of GA EPD on April 29th, AGLC is implementing a phased approach to the VI sampling. The first phase was to collect three (3) soil gas samples in the sidewalk adjacent to the buildings on the east side of West 1st Street (Parcels J14D 46-50). The samples were collected as indicated in Attachment A, (Soil Vapor Intrusion and Soil Screening Level Calculations and Evaluation and Comparison to Sampling Results) and as shown on Figure A1. The second phase was to calculate soil gas screening levels by adding an attenuation factor to the USEPA indoor air screening values and comparing the results to the soil gas concentrations detected. The method of calculation for the soil gas screening values and the results are summarized in Attachment A. The sampling locations, parameters, and methods, soil gas modeling inputs, and results are also summarized in Attachment A.

All of the samples met the calculated residential soil gas screening criteria; therefore, there is no current, unacceptable risk from the Site soil or groundwater. Based on the results from the initial soil gas samples and comparison to the soil gas screening criteria, subsequent phases are not warranted. AGLC proposes that no further sampling or action is required.

The soil gas sampling provides the requested additional lines of evidence to support the VI study presented in the VRP Application and CSR. By collecting soil vapor intrusion data (soil gas data), we were able to satisfy both of your requests: 1) we were able to evaluate the VI pathway by calculating a soil gas screening level (see attached) and 2) we were able to compare the soil gas screening levels to the soil gas data gathered. The soil gas sample results confirm that the calculated risk-based clean-up goals (RBCGs) to be used as site specific subsurface soil clean-up goals (i.e. RBCGs) are acceptable for

the Site. Therefore, there is no revision necessary to the calculations or proposed RBCGs for subsurface soil submitted in the VRP CSR for the Site.

The parcel J14D-45 included in the comment letter is a parking lot, which was certified to Type 1 risk reduction standards with the submittal of the 2004 CSR under the Hazardous Site Response Act Program. Therefore, this parcel was not included in the Application into the VRP as part of the Site. AGLC is not planning to collect soil gas samples in this location.

2. *The following non-residential Type 4 groundwater risk reduction standards proposed for benzene and naphthalene (23.9 mg/L)/(23.3 mg/L) were obtained from the J&E model. EPD does not believe that these values are acceptable Type 4 RRS values for groundwater, as they are typically calculated using RAGS2 equations (1, 2, 6 or 7) and leachability models. However, EPD will consider this an acceptable methodology, with the incorporation of any revision to the resulting values based on the above Comment (1), for the determination of a non-residential site specific Type 5 RRS for groundwater contingent upon the long term implementation and maintenance of institutional controls at the site.*

As summarized in Attachment A and as mentioned in the response to Comment No. 1, soil gas screening levels were calculated for the Site. Based on the fact that none of the soil gas concentrations detected in the three soil gas samples collected at the Site on June 23rd exceed the residential calculated screening concentrations, there is no current, unacceptable risk from remaining groundwater or soil impacts at the Site. Based on the results from the initial soil gas samples and comparison to the soil gas screening criteria, AGLC proposes that no further sampling or action is required.

The soil gas sample results confirm that these calculated concentrations to be used as site specific Type 5 RRS, or RBCGs for groundwater are acceptable for the Site. These values are not considered or labeled as "Type 4 RRS" values. Therefore, there is no revision necessary to the calculations or proposed RBCGs for groundwater submitted in the VRP CSR for the Site. These RBCGs values for groundwater are contingent upon the long-term implementation and maintenance of institutional controls at the Site.

3. *EPD requests that a table be included in the VRP CSR to document the established delineation criteria in accordance with Section 12-8-108(1) for each of the contaminants of concern (COCs).*

AGLC has included the table from the VRP Application (Table 2-5) that shows the established delineation criteria for soil and groundwater as requested above (see Attachment B, [Table 1]).

4. *As part of the EC Reporting and Annual Certification requirements, please include property use and EC compliance certifications for all surrounding*

properties that have been incorporated into risk based exposure determinations associated with the VRP CSR. In particular, the adjacent non-residential/commercial tax parcels J14D 043-J14D 50, located along the south side of the West 1st Street ROW, should include an additional reporting/certification requirement in support of the vapor intrusion (VI) pathway analysis to document that the conditions of these property and associated structure parameters have not been modified from those used during the VI evaluation.

The VI sampling results were compared to both residential and commercial standards. The sampling results met residential standards and based on this result, long-term monitoring for these parcels is not required.

5. *Please include the Site Continued Action Monitoring Plan/Operations, Monitoring, and Maintenance Plan as part of the CSR Addendum submittal.*

AGLC has included a draft of the Site CAMP as part of the VRP CSR Addendum submittal (Attachment C).

In conclusion, the VI field work was implemented in late June once the method of sampling was finalized and access to all properties was obtained. A subsequent mobilization was performed on July 31st to collect fixed gas samples from the soil gas monitoring points to validate calculated soil gas screening levels. The VRP CSR Addendum is attached and includes the following:

Attachment A - Vapor Intrusion and Soil Screening Level Calculations and Evaluation and Comparison to Sampling Results
Attachment B - Table 1 – VRP CSR Delineation Concentrations
Attachment C – CAMP (includes River Long-Term Operations, Maintenance, and Monitoring Plan)

Please review the responses and contact me with any questions at (404) 584-3719.

Sincerely,

Greg Corbett, P.E.
AGL Resources

Cc: Kevin Collins – Georgia EPD Response and Remediation Program
Christie J. Battenhouse, P.G. - Burns & McDonnell
Carol Geiger - KMCL

Attachments

ATTACHMENTS

ATTACHMENT A

Vapor Intrusion and Soil Screening Level Calculations and Evaluation and Comparison to Sampling Results

MEMORANDUM

To: Greg Corbett, P.E., AGL Resources

Date: August 14, 2014

c/o:

Project: Atlanta Gas Light Company
Former Manufactured Gas Plant Site
Rome, Georgia
HSI #: 10109

From: Christie J. Battenhouse, P.G. and Diana Marquez

Via:

Subject: VRP CSR Addendum - Attachment A
Vapor Intrusion Sampling and Evaluation

Based on risk assessment guidance and a conversation with Kevin Collins of Georgia Environmental Protection Division (EPD) on April 29th, Atlanta Gas Light Company (AGLC) implemented a phased approach to the vapor intrusion (VI) sampling in June 2014. The first phase was to collect three (3) soil gas samples in the sidewalk adjacent to the buildings on the east side of West 1st Street (Parcels J14D 46-50). Based on the results from the initial soil gas samples and comparison to the soil gas screening criteria, subsequent phases are not warranted. Soil gas sample SG-01 was collected south of MW-507, SG-02 was collected near and to the north of MW-507, and SG-03 was collected northeast of SG-02 and MW-507. Figure A-1 (attached) shows the approximate sample locations.

SOIL VAPOR SAMPLING PROCEDURES

Initially, the borings for the soil vapor point installation were to be advanced using direct-push technology. However, due to the presence of numerous utilities closely spaced in and under the sidewalk behind the buildings, the drilling company was not comfortable with advancing the probes through the sidewalk, at any location. Therefore, all borings were advanced using a hand auger. Final soil gas sample point locations were based on utility locations, access, or Site conditions. Permanent soil gas sample points were installed due to the expected presence of a clay unit at approximately 5 - 6 feet below ground surface (ft bgs) and the potential difficulty of collecting enough volume of sample to analyze in that type of soil.

The soil type and presence of any odors or visual impacts were logged from soil recovered from the hand auger bucket during advancement. Sampling procedures were consistent with the United States Environmental Protection Agency (USEPA) Guidance (USEPA, 2002) and ASTM

D5314-92(2006), as referenced in the EPA Guidance, Appendix E. Lithologic logs were prepared for each boring. Soil vapor samples were targeted at a depth that is assumed to be at or near the bottom of the original first floor of the buildings (9-10 ft bgs). However, refusal was met with the hand auger prior to that depth due to the presence of the clay unit encountered at approximately 6.5 ft bgs. The stainless steel screens were installed at depths of 7.5 – 8.0 ft bgs in SG-02 and SG-03 and 8.5 – 9.0 ft bgs in SG-01. The well construction is also shown on the attached soil gas boring logs.

The soil gas samples were collected from the sample points at depths described above. Samples collected at or below 5 feet should minimize interference atmospheric air at the surface (see USEPA Guidance, Appendix E, Section V). Additionally, the minimum depth to groundwater was last measured at 25.83 ft bgs in MW-507 in October 2012, so moist soils due to shallow groundwater was not a concern at this site. Sample locations were set as far from the building as possible, but due to the presence of the many utilities, locations were very limited.

Clean, dry, 1/8-inch diameter disposable nylon sampling tubes were inserted through the casing to the screen depths to collect the sample. The sampling point was sealed at the top with bentonite chips to prevent infiltration of outside air into the sample.

During soil gas sample point installation, subsurface conditions are disturbed. To allow for subsurface conditions to equilibrate prior to sampling, an attempt to collect soil gas samples was not initiated until at least 24-hours after installation. After equilibration, a five gas meter was used to pull residual air out of tubing and measure whether ambient subsurface condition existed with stabilized dissolved oxygen and carbon dioxide. Then, water was added into casing to evaluate whether the bentonite seal was component or leaking, and a shut in test was performed to evaluate whether leaks were present in the sampling train between the sampling port and the sampling canister. The shut-in test was performed by generating a vacuum inside the sample tubing while the sampling port and canister were kept closed. A vacuum of approximately 100 inches of water was generated using a plastic syringe and the vacuum is monitored for 1 minute. The vacuum was maintained for the observed period and the sampling train was deemed adequate prior to sampling. The soil gas samples were analyzed for benzene and naphthalene using USEPA method TO-15. Samples were also collected and analyzed for fixed gases (oxygen, carbon dioxide, and methane) using USEPA method 3C Modified.

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SOIL SCREENING LEVELS

The USEPA presently has no screening values in place for soil vapor analyses. The USEPA does have indoor air screening values as provided on the Regional Screening Level (RSL) Summary Table (USEPA, 2014). Screening values for exterior soil gas analyses can be developed by applying a medium-specific (i.e. soil gas, subslab, etc.) attenuation factor to the indoor air screening value. An exterior soil gas attenuation factor is an assumed ratio of chemical concentrations in exterior soil gas to concentrations that are present in indoor air via the vapor intrusion pathway.

Compared to chlorinated solvents, which have formed the basis for most vapor intrusion guidance to date, petroleum hydrocarbon vapors bioattenuate to much lower concentrations in soil gas (U.S. EPA, 2012) since petroleum hydrocarbon vapors can rapidly biodegrade in the presence of oxygen. Therefore, screening for petroleum compounds using the same methodology as chlorinated hydrocarbons is overly conservative. In January of 2013, the USEPA's Office of Underground Storage Tanks (OUST) published *Evaluation of Empirical Data to Support Soil Vapor Intrusion Screening Criteria for Petroleum Hydrocarbon Compounds* (USEPA, 2013) (Petroleum Database Document). This document presents an evaluation of empirical data and select modeling studies of the behavior of petroleum hydrocarbon vapors in subsurface soils at petroleum release sites and the associated potential for vapor intrusion. While the Petroleum Database Document focuses on fairly well-defined sources areas such as from an underground storage tank and the source from an MGP site might be larger and less well defined, it is directly applicable to this Site since the "source area" has been removed. The only area of remaining impacts on this Site are in soil located within the western Right-of-Way (ROW) of West 1st Street , under or directly adjacent to the gas main where excavation was not feasible during the 1999 and 2000 soil remediation activities. The approximate limits for the area that comprise the Type 5 area are 23 feet wide by 68 feet long. In addition, the remaining impacts from the former MGP site are very limited in nature and occur discontinuously within the soil as bleb and stringers. It should also be noted that usability of the Petroleum Database Document depends on whether it can be reasonably concluded that Site conditions are suitable for biodegradation to occur. In general, oxygen concentrations higher than 1-4 percent indicate that the subsurface environment is suitable for aerobic biodegradation to occur. As shown on Table A2, the measured oxygen concentrations at the site are well above 1-4 percent. Therefore, this guidance is directly applicable to this Site.

The Petroleum Database Document identifies 0.01 as a reasonably conservative attenuation factor for chemical migration from shallow soil gas to indoor air. It should be noted that the data and modeling efforts used to derive this attenuation included both petroleum hydrocarbon and chlorinated solvent sites, which likely skews the resulting attenuation factor in an overly conservative direction.

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The attenuation factor of 0.01 was applied to the USEPA Resident Air and Industrial Air Regional Screening Levels (USEPA, 2014). Table A-1 lists the resulting soil vapor screening values that were used for comparison of the results. For example, the USEPA Resident Air value for benzene is 0.36 micrograms per cubic meter (ug/m3), which divided by 0.01 yields a soil gas screening level of 36.0 ug/m3.

Table A-2 shows positively detected constituents, qualifiers, and screening results. The VI sampling results were compared to both residential and commercial/industrial screening levels. Analytical data from all three samples were below both the residential and commercial/industrial screening levels.

RECOMMENDATIONS

Since all detected concentrations met both the residential and the non-residential (or industrial) soil gas screening criteria described above, there is no current, unacceptable risk from vapor intrusion at the Site. AGLC proposes that no further sampling or action is required.

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TABLES

Table A-1
Screening Levels for Vapor Intrusion
Atlanta Gas Light Company
Former Manufactured Gas Plant Site
Rome, Georgia

Equation:

$C_{SG\text{-}Res} = C_{IA\text{-}Res} / AF_{SG}$

$C_{SG\text{-}Ind} = C_{IA\text{-}Ind} / AF_{SG}$

Where:

$C_{SG\text{-}Res}$ = Calculated residential screening level in soil gas ($\mu g/m^3$)

$C_{SG\text{-}Ind}$ = Calculated industrial screening level in soil gas ($\mu g/m^3$)

$C_{IA\text{-}Res}$ = Published residential screening level in indoor air ($\mu g/m^3$)

$C_{IA\text{-}Ind}$ = Published industrial screening level in indoor air ($\mu g/m^3$)

AF_{SG} = Soil gas to indoor air attenuation factor (unitless)

Variable Values:

$C_{SG\text{-}Res}$ = Calculated

$C_{SG\text{-}Ind}$ = Calculated

$C_{IA\text{-}Res}$ = Chemical-specific (USEPA, 2014)[1]

$C_{IA\text{-}Ind}$ = Chemical-specific (USEPA, 2014)[1]

AF_{SG} = Chemical-specific (USEPA, 2013)[2]

Chemical	AF_{SG} (unitless)	$C_{IA\text{-}Res}$ ($\mu g/m^3$)	$C_{SG\text{-}Res}$ ($\mu g/m3$)	$C_{IA\text{-}Ind}$ ($\mu g/m^3$)	$C_{SG\text{-}Ind}$ ($\mu g/m3$)
Volatile Organic Compounds					
Benzene	0.01	0.36	36.0	1.6	160
Naphthalene	0.01	0.083	8.30	0.36	36

Notes:

[1] - Values represent USEPA's Regional Screening Levels for industrial indoor air (USEPA, May, 2014).

[2] - Value obtained from the *USEPA's Evaluation of Empirical Data to Support Soil Vapor Intrusion Screening Criteria for Petroleum Hydrocarbon Compounds* (USEPA, 2013)

$\mu g/m^3$ - micrograms per cubic meter

Table A-2
Soil Gas Laboratory Analytical Results Based Upon Vapor Intrusion
Atlanta Gas Light Company
Former Manufactured Gas Plant Site
Rome, Georgia

			Probe ID:	SG-01-20140623-01	SG-02-20140623-01	SG-03-20140623-01
			Sampling Date:	6/27/2014	6/27/2014	6/27/2014
			Units:			
Analyte	C_{SG-Res}	C_{SG-Ind}				
Constituent of Interest						
Benzene	36.0	160.0	(µg/m3)	1.25	25.9	20.3
Naphthalene	8.30	36.0	(µg/m3)	1.05 U	1.05 U	5.24 U
Fixed Gases						
			Sampling Date:	7/31/2014	7/31/2014	7/31/2014
Oxygen/argon	--	--	% v/v	15.6	21.0	19.0
Carbon dioxide	--	--	% v/v	1.79	0.305	0.221

Notes:

-- - there are no soil screening levels for fixed gases

C_{SG-Res} = calculated residential screening level in soil gas (µg/m3)

C_{SG-Ind} = calculated industrial screening level in soil gas (µg/m3)

µg/m^3 - micrograms per cubic meter

U - analyte analyzed for, but not detected

v/v - volume analyte per volume of air

Result exceeds calculated residential screening level (C_{SG-Res}).

Result exceeds calculated industrial screening level (C_{SG-Ind}).

FIGURES

FLOW

OOSTANAULA RIVER

MW-14A

J14D 025
PARCEL 6
(City of Rome)

J14D 019
(City of Rome)

This applies to Former Parcel 2

MW-406A
MW-406C
MW-406B

J14D 024
PARCEL 8
(Battey Downtown, LLC)

WOOD BUILDING

PARCEL 3A

PARCEL 2

Formerly Central of GA Railroad

MW-405

MW-401B

MW-401AR

2ND AVENUE

J14D 023
PARCEL 5
(Battey Downtown, LLC)

3 STORY BRICK BUILDING

J14D 022
PARCEL 4
(Battey Downtown, LLC)

MW-403A
MW-403B

J14D 021
PARCEL 3
(Battey Downtown, LLC)

PARKING LOT

J14D 020
PARCEL 7
(Battey Downtown, LLC)

PARKING LOT

J14D 020A
(City of Rome/Floyd County)
Driveway Easement

J14D 018
PARCEL 1
(Floyd County)

PARKING GARAGE

COMMERCIAL

MW-503

MW-404R
MW-404B

MW-501

MW-505R

MW-402B
MW-402A

MW-504

Transformer Easement

WEST FIRST STREET ROW
(City of Rome)

WEST 1ST STREET

SG-01
MW-507
SG-02
SG-03

MW-09A
MW-09B

ASPHALT PARKING LOT

J14D 045
PARCEL 10
(Larry Martin)

J14D 044
PARCEL 9
(Larry Martin)

J14D 046
PARCEL 11
(Larry Martin)

J14D 047
PARCEL 12

J14D 048

J14D 049

J14D 050
(Larry Martin)

COMMERCIAL

MW-508

MW-506

MW-502

LEGEND

- VRP SITE BOUNDARY
- EXISTING BUILDING
- PARCEL 10 — HISTORIC PARCEL BOUNDARY/ PARCEL NUMBER
- J14D 045 — CURRENT PARCEL BOUNDARY/ TAX ID NUMBER
- EXISTING EASEMENT
- MW-403A — SEMIANNUAL MONITORING WELL
- MW-508 — ANNUAL MONITORING WELL
- MW-502 — MONITORING WELL TO BE GAUGED ONLY
- SG-01 — APPROXIMATE SOIL GAS SAMPLING LOCATION

NOTES:

1. MW-506 Monitoring well paved over by City of Rome
2. Wells designed without the letters “B” or “C” or with an “A” are Shallow Monitoring Wells (e.g. MW-406A, MW-404R, MW-503)
3. Wells designed with the letter “B” are Intermediate Monitoring Wells (e.g. MW-406B)
4. Wells designed with the letter “C” are Deep Monitoring Wells (e.g. MW-406C)

N

0 60' 120'

SCALE IN FEET

Burns & McDonnell SINCE 1898

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FIGURE A-1
APPROXIMATE SOIL GAS SAMPLE LOCATIONS
ROME FORMER MGP SITE
WEST 1ST STREET
ROME, GEORGIA

I:\NE OFFICE\CAD\AGL\FIG_A-1_APPROXIMATE SOIL GAS SAMPLE LOCATIONS

APPENDIX A1

SOIL GAS MONITORING POINT BORING LOGS

Environmental Resources Management	**SOIL BORING # SG-1**
	PROJECT NAME: AGLC **PROJECT NUMBER:** 0230716 **LOCATION:** Rome
DATE DRILLED: 6/20/2014 **START TIME:** 12:15 **STOP TIME:** 13:00 **COMPLETION DEPTH (ft):** 9 **GROUNDWATER LEVEL (ft)** NA **BORING DIAMETER (in):** **NORTHING:** **EASTING:** **GROUND SURFACE ELEVATION (ft):**	**DRILLING COMPANY: EM Services** **DRILLERS NAME(S):** Jason + Rex **DRILL RIG/METHOD:** Hand Auger **SAMPLING METHOD: NA** **FIELD SCREENING EQUIPMENT:** **LOGGED BY:** Nic Vrey **Page** 1 **of** 1

Sample Interval	Depth (ft)	Recovery (ft)	Blow Counts	PID (ppm)	USCS	DESCRIPTION/ SOIL CLASSIFICATION
0 - 0.5						Concrete
0.5-6.5	1 2 3 4 5 6					FILL: some coal cinders
6.5-9	7 8 9					CLAY: light red, trace Silt
	10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31					Well Screen 8.5 - 9 Sand to 3" above screen Glass to 3" above Sand Sand to 3" above glass Bentonite to 4" from surface 6" Stainless steel screen Nylon Tubing

Samples:

Environmental Resources Management	**SOIL BORING # SG-2**
	PROJECT NAME: AGLC **PROJECT NUMBER:** 0230716 **LOCATION:** Rome
DATE DRILLED: 6/20/2014 **START TIME:** 11:25 **STOP TIME:** 12:10 **COMPLETION DEPTH (ft):** 8 **GROUNDWATER LEVEL (ft)** NA **BORING DIAMETER (in):** **NORTHING:** **EASTING:** **GROUND SURFACE ELEVATION (ft):**	**DRILLING COMPANY: EM Services** **DRILLERS NAME(S):** Jason + Rex **DRILL RIG/METHOD:** Hand Auger **SAMPLING METHOD: NA** **FIELD SCREENING EQUIPMENT:** **LOGGED BY:** Nic Vrey **Page** 1 **of** 1

Sample Interval	Depth (ft)	Recovery (ft)	Blow Counts	PID (ppm)	USCS	DESCRIPTION/ SOIL CLASSIFICATION
0 - 0.5						Concrete
0.5-6	1 2 3 4 5 6					FILL
6-8	7 8					CLAY: trace Silt, dark red, some dark staining, trace coal cinders
	9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31					Well Screen 7.5 - 8 Sand to 3" above screen Glass to 3" above Sand Sand to 3" above glass Bentonite to 4" from surface 6" Stainless steel screen Nylon Tubing

Samples:

Environmental Resources Management	**SOIL BORING # SG-3**
	PROJECT NAME: AGLC **PROJECT NUMBER:** 0230716 **LOCATION:** Rome
DATE DRILLED: 6/20/2014 **START TIME:** 8:45 **STOP TIME:** 11:00 **COMPLETION DEPTH (ft):** 8 **GROUNDWATER LEVEL (ft)** NA **BORING DIAMETER (in):** **NORTHING:** **EASTING:** **GROUND SURFACE ELEVATION (ft):**	**DRILLING COMPANY: EM Services** **DRILLERS NAME(S):** Jason + Rex **DRILL RIG/METHOD:** Hand Auger **SAMPLING METHOD: NA** **FIELD SCREENING EQUIPMENT:** **LOGGED BY:** Nic Vrey **Page** 1 **of** 1

Sample Interval	Depth (ft)	Recovery (ft)	Blow Counts	PID (ppm)	USCS	DESCRIPTION/ SOIL CLASSIFICATION
0 - 0.5						Concrete
0.5-5.5	1 2 3 4 5					FILL
5.5-8	6 7 8					CLAY: some Silt, red and yellowish tan, mottled
	9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31					Well Screen 7.5 - 8 Sand to 3" above screen Glass to 3" above Sand Sand to 3" above glass Bentonite to 4" from surface 6" Stainless steel screen Nylon Tubing

Samples:

APPENDIX A2

SOIL GAS SAMPLING LABORATORY ANALYTICAL RESULTS

ANALYTICAL REPORT

Lab Number:	L1413991
Client:	ERM, Inc. 3200 Windy Hill Road, SE Suite 1500W Atlanta, GA 30339
ATTN:	Nicolas Vrey
Phone:	(678) 486-2762
Project Name:	AGLC
Project Number:	0230716
Report Date:	06/27/14

Certifications & Approvals: NY (11627), CT (PH-0141), NH (2206), NJ NELAP (MA015), RI (LAO00299), PA (68-02089), LA NELAP (03090), FL (E87814), TX (T104704419), WA (C954), DOD (L2217.01), USDA (Permit #P330-11-00109), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: AGLC
Project Number: 0230716

Lab Number: L1413991
Report Date: 06/27/14

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1413991-01	SG-01-20140623-01	ROME	06/23/14 15:00
L1413991-02	SG-02-20140623-01	ROME	06/23/14 15:15
L1413991-03	SG-03-20140623-01	ROME	06/23/14 15:30

Project Name: AGLC
Project Number: 0230716

Lab Number: L1413991
Report Date: 06/27/14

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name:	AGLC	**Lab Number:**	L1413991
Project Number:	0230716	**Report Date:**	06/27/14

Case Narrative (continued)

Volatile Organics in Air

Canisters were released from the laboratory on June 17, 2014. The canister certification results are provided as an addendum.

Sample L1413991-03 has elevated detection limits due to the dilution required by the elevated concentrations of non-target compounds in the sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Christopher J. Anderson

Title: Technical Director/Representative Date: 06/27/14

AIR

Project Name: AGLC
Project Number: 0230716
Lab Number: L1413991
Report Date: 06/27/14

SAMPLE RESULTS

Lab ID: L1413991-01
Client ID: SG-01-20140623-01
Sample Location: ROME
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 06/27/14 00:46
Analyst: MB

Date Collected: 06/23/14 15:00
Date Received: 06/24/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Benzene	0.391	0.200	--	1.25	0.639	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	92		60-140
Bromochloromethane	91		60-140
chlorobenzene-d5	92		60-140

Project Name: AGLC
Project Number: 0230716
Lab Number: L1413991
Report Date: 06/27/14

SAMPLE RESULTS

Lab ID: L1413991-02
Client ID: SG-02-20140623-01
Sample Location: ROME
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 06/27/14 01:50
Analyst: MB

Date Collected: 06/23/14 15:15
Date Received: 06/24/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Benzene	8.12	0.200	--	25.9	0.639	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	94		60-140
Bromochloromethane	92		60-140
chlorobenzene-d5	92		60-140

Project Name: AGLC
Project Number: 0230716
Lab Number: L1413991
Report Date: 06/27/14

SAMPLE RESULTS

Lab ID: L1413991-03 D
Client ID: SG-03-20140623-01
Sample Location: ROME
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 06/27/14 02:22
Analyst: MB

Date Collected: 06/23/14 15:30
Date Received: 06/24/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Benzene	6.35	1.00	--	20.3	3.19	--		5
Naphthalene	ND	1.00	--	ND	5.24	--		5

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	101		60-140
Bromochloromethane	92		60-140
chlorobenzene-d5	92		60-140

Project Name: AGLC
Project Number: 0230716

Lab Number: L1413991
Report Date: 06/27/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 06/26/14 16:08

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-03 Batch: WG701223-4								
Benzene	ND	0.200	--	ND	0.639	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1

Lab Control Sample Analysis

Batch Quality Control

Project Name: AGLC

Project Number: 0230716

Lab Number: L1413991

Report Date: 06/27/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-03 Batch: WG701223-3								
Benzene	95		-		70-130	-		
Toluene	117		-		70-130	-		
Ethylbenzene	117		-		70-130	-		
p/m-Xylene	117		-		70-130	-		
o-Xylene	119		-		70-130	-		
Naphthalene	129		-		70-130	-		

Lab Duplicate Analysis
Batch Quality Control

Project Name: AGLC
Project Number: 0230716

Lab Number: L1413991
Report Date: 06/27/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG701223-5 QC Sample: L1413991-01 Client ID: SG-01-20140623-01						
Benzene	0.391	0.393	ppbV	1		25
Naphthalene	ND	ND	ppbV	NC		25

Project Name: AGLC

Project Number: 0230716

Lab Number: L1413991

Report Date: 06/27/14

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controler Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L1413991-01	SG-01-20140623-01	0150	#30 SV	06/17/14	104100		-	-	-	Pass	17.5	17.7	1
L1413991-01	SG-01-20140623-01	114	2.7L Can	06/17/14	104100	L1412672-01	Pass	-29.8	-7.6	-	-	-	-
L1413991-02	SG-02-20140623-01	0119	#20 SV	06/17/14	104100		-	-	-	Pass	18.0	18.7	4
L1413991-02	SG-02-20140623-01	176	2.7L Can	06/17/14	104100	L1412672-01	Pass	-29.8	-6.0	-	-	-	-
L1413991-03	SG-03-20140623-01	0068	#20 AMB	06/17/14	104100		-	-	-	Pass	18.0	19.1	6
L1413991-03	SG-03-20140623-01	505	2.7L Can	06/17/14	104100	L1412672-01	Pass	-29.8	-5.6	-	-	-	-

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1412672
Report Date: 06/27/14

Air Canister Certification Results

Lab ID: L1412672-01
Client ID: CAN 365 SHELF 8
Sample Location:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 06/11/14 18:41
Analyst: RY

Date Collected: 06/10/14 18:07
Date Received: 06/11/14
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	2.50	--	ND	4.71	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.200	--	ND	0.434	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1412672
Report Date: 06/27/14

Air Canister Certification Results

Lab ID: L1412672-01
Client ID: CAN 365 SHELF 8
Sample Location:
Date Collected: 06/10/14 18:07
Date Received: 06/11/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Methylene chloride	ND	1.00	--	ND	3.47	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	0.200	--	ND	0.704	--		1
2-Butanone	ND	0.200	--	ND	0.590	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.200	--	ND	0.590	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1412672
Report Date: 06/27/14

Air Canister Certification Results

Lab ID: L1412672-01
Client ID: CAN 365 SHELF 8
Sample Location:
Date Collected: 06/10/14 18:07
Date Received: 06/11/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.200	--	ND	0.820	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1412672
Report Date: 06/27/14

Air Canister Certification Results

Lab ID: L1412672-01
Client ID: CAN 365 SHELF 8
Sample Location:
Date Collected: 06/10/14 18:07
Date Received: 06/11/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

	Results	**Qualifier**	**Units**	**RDL**	**Dilution Factor**
Tentatively Identified Compounds					
unknown alkane	2.9	J	ppbV		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1412672
Report Date: 06/27/14

Air Canister Certification Results

Lab ID: L1412672-01
Client ID: CAN 365 SHELF 8
Sample Location:
Date Collected: 06/10/14 18:07
Date Received: 06/11/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	82		60-140
Bromochloromethane	82		60-140
chlorobenzene-d5	91		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1412672
Report Date: 06/27/14

Air Canister Certification Results

Lab ID: L1412672-01
Client ID: CAN 365 SHELF 8
Sample Location:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 06/11/14 18:41
Analyst: MB

Date Collected: 06/10/14 18:07
Date Received: 06/11/14
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.050	--	ND	0.247	--		1
Chloromethane	ND	0.500	--	ND	1.03	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.020	--	ND	0.053	--		1
Acetone	ND	2.00	--	ND	4.75	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	1.00	--	ND	3.47	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
Halothane	ND	0.050	--	ND	0.404	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.020	--	ND	0.072	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1412672
Report Date: 06/27/14

Air Canister Certification Results

Lab ID: L1412672-01
Client ID: CAN 365 SHELF 8
Sample Location:
Date Collected: 06/10/14 18:07
Date Received: 06/11/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	0.053	0.020	--	0.285	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.020	--	ND	0.092	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.500	--	ND	2.46	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.500	--	ND	2.74	--		1
p-Isopropyltoluene	ND	0.500	--	ND	2.74	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1412672
Report Date: 06/27/14

Air Canister Certification Results

Lab ID: L1412672-01
Client ID: CAN 365 SHELF 8
Sample Location:
Date Collected: 06/10/14 18:07
Date Received: 06/11/14
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
n-Butylbenzene	ND	0.500	--	ND	2.74	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-difluorobenzene	83		60-140
bromochloromethane	85		60-140
chlorobenzene-d5	92		60-140

Project Name: AGLC
Project Number: 0230716

Lab Number: L1413991
Report Date: 06/27/14

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

Cooler Information **Custody Seal**
Cooler
N/A Present/Intact

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1413991-01A	Canister - 2.7 Liter	N/A	NA		Y	Present/Intact	TO15-LL(30)
L1413991-02A	Canister - 2.7 Liter	N/A	NA		Y	Present/Intact	TO15-LL(30)
L1413991-03A	Canister - 2.7 Liter	N/A	NA		Y	Present/Intact	TO15-LL(30)

*Values in parentheses indicate holding time in days

Project Name:	AGLC	**Lab Number:**	L1413991
Project Number:	0230716	**Report Date:**	06/27/14

GLOSSARY

Acronyms

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NI - Not Ignitable.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit.

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

Report Format: Data Usability Report

Project Name:	AGLC	**Lab Number:**	L1413991
Project Number:	0230716	**Report Date:**	06/27/14

Data Qualifiers

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name:	AGLC	**Lab Number:**	L1413991
Project Number:	0230716	**Report Date:**	06/27/14

REFERENCES

48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

Last revised April 15, 2014

The following analytes are not included in our NELAP Scope of Accreditation:

Westborough Facility
EPA 524.2: Acetone, 2-Butanone (Methyl ethyl ketone (MEK)), Tert-butyl alcohol, 2-Hexanone, Tetrahydrofuran, 1,3,5-Trichlorobenzene, 4-Methyl-2-pentanone (MIBK), Carbon disulfide, Diethyl ether.
EPA 8260C: 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene, Iodomethane (methyl iodide), Methyl methacrylate, Azobenzene.
EPA 8330A/B: PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT.
EPA 8270D: 1-Methylnaphthalene, Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 625: 4-Chloroaniline, 4-Methylphenol.
SM4500: Soil: Total Phosphorus, TKN, NO2, NO3.
EPA 9071: Total Petroleum Hydrocarbons, Oil & Grease.

Mansfield Facility
EPA 8270D: Biphenyl.
EPA 2540D: TSS
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

The following analytes are included in our Massachusetts DEP Scope of Accreditation, Westborough Facility:

Drinking Water
EPA 200.8: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl; **EPA 200.7**: Ba,Be,Ca,Cd,Cr,Cu,Na; **EPA 245.1:** Mercury;
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, Enterolert-QT.**

Non-Potable Water
EPA 200.8: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn;
EPA 200.7: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn;
EPA 245.1, SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2340B, SM2320B, SM4500CL-E, SM4500F-BC, SM426C, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF**.

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

AIR ANALYSIS

PAGE 1 OF 1

CHAIN OF CUSTODY

320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1413991

Client Information

Client: ERM
Address: 3200 Windy Hill Rd Ste 1500W
Atlanta GA 30318
Phone: 678 · 486 · 2700
Fax:
Email: Nic.Vrey@ERM.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: AGLC
Project Location: Rome
Project #: 0230716
Project Manager: Nic Vrey
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH *(only confirmed if pre-approved!)*
Date Due: **Time:**

Report Information - Data Deliverables

☐ FAX
☐ ADEx
Criteria Checker:
(Default based on Regulatory Criteria Indicated)
Other Formats:
☑ EMAIL (standard pdf report)
☐ Additional Deliverables:
Report to: (if different than Project Manager)

Billing Information

☑ Same as Client info PO #: 0230716

Regulatory Requirements/Report Limits

State/Fed	Program	Criteria
	x See Email	

Other Project Specific Requirements/Comments:

All Columns Below Must Be Filled Out

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Start Time	End Time	Initial Vacuum	Final Vacuum	Sample Matrix*	Sampler's Initials	Can Size	I D Can	I D - Flow Controller	ANALYSIS TO-14A by TO-15	TO-15	TO-15 SIM	APH	FIXED GASES	TO-13A	TO-4 / TO-10	Sample Comments (i.e. PID)
13991.01	SG-01-20140623-01	6/23	1300	1500	30.51	6.86	SV	NV	2.7	114	0150		X						Benzene/Naphthalene
02	SG-02-20140623-01	6/23	1315	1515	30.18	5.12	SV	NV	2.7	176	0119		X						↓
03	SG-3-20140623-01	6/23	1330	1530	30.65	4.45	SV	NV	2.7	505	0068		X						

*SAMPLE MATRIX CODES
AA = Ambient Air (Indoor/Outdoor)
SV = Soil Vapor/Landfill Gas/SVE
Other = Please Specify

Container Type

Relinquished By:	Date/Time	Received By:	Date/Time:
			6/24/14 10:18

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 101-02 (19-Jun-09)

From: (678) 486-2700
Nic Vrey
ERM SOUTHEAST,INC
3200 Windy Hill Rd SE
Suite 1500West
Atlanta, GA 30339

Origin ID: TMAA

FedEx Express

J14101402070326

Ship Date: 23JUN14
ActWgt: 25.0 LB
CAD: 3295991/INET3490

Delivery Address Bar Code

Ref # 0230716
Invoice #
PO #
Dept #

SHIP TO: (678) 486-2700 **BILL SENDER**

Sample Receiving
Alpha Analytical
320 Forbes Blvd

MANSFIELD, MA 02048

TUE - 24 JUN 10:30A
PRIORITY OVERNIGHT

TRK# 0201 **7703 9079 4494**

NB PYMA

02048
MA-US
BOS

522G5/9BC4/F220

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

LABORATORY REPORT

August 12, 2014

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

RE: Atlanta Gas Light Company Rome, GA / 0230716 ph051

Dear Nicolas:

Enclosed are the results of the samples submitted to our laboratory on August 1, 2014. For your reference, these analyses have been assigned our service request number P1403096.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

Kate Aguilera

By Kate Aguilera at 11:42 am, Aug 13, 2014

Kate Aguilera
Project Manager

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

Client: ERM Service Request No: P1403096
Project: Atlanta Gas Light Company Rome, GA / 0230716 ph051

CASE NARRATIVE

The samples were received intact under chain of custody on August 1, 2014 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Fixed Gases Analysis

The samples were analyzed for fixed gases (oxygen/argon, methane and carbon dioxide) according to modified EPA Method 3C (single injection) using a gas chromatograph equipped with a thermal conductivity detector (TCD). This procedure is described in laboratory SOP VOA-EPA3C. This method is not included on the laboratory's NELAP or AIHA-LAP scope of accreditation.

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www.alsglobal.com

ALS Environmental – Simi Valley

Certifications, Accreditations, and Registrations

Agency	Web Site	Number
AIHA	http://www.aihaaccreditedlabs.org	101661
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0694
DoD ELAP	http://www.pjlabs.com/search-accredited-labs	L14-2
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2012039
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	643428
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	CA200007
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-14-5
Utah DOH (NELAP)	http://www.health.utah.gov/lab/labimp/certification/index.html	CA016272013-3
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: ERM Service Request: P1403096

Project ID: Atlanta Gas Light Company Rome, GA / 0230716 ph051

Date Received: 8/1/2014

Time Received: 09:30

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	3C Modified - Fxd Gases Can
Soil Gas 1	P1403096-001	Air	7/31/2014	13:43	1SC00172	-0.24	5.50	X
Soil Gas 2	P1403096-002	Air	7/31/2014	13:51	1SC00366	-0.20	5.39	X
Soil Gas 3	P1403096-003	Air	7/31/2014	13:59	1SC00348	-1.27	6.18	X

Air - Chain of Custody Record & Analytical Service Request

Page 1 of 1

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10-Day-Standard

ALS Project No: P1403096

Company Name & Address (Reporting Information)
ERM
3200 Windy Hill Rd SE Ste 1500W
Atlanta, GA 30339

Project Name: Atlanta Gas Light Company Rome, GA

Project Number: 0230716 ph051

Project Manager: Nic Vrey

P.O. # / Billing Information

Phone | Fax

Email Address for Result Reporting: nic.vrey@erm.com

Sampler (Print & Sign): Donald Downing

ALS Contact:

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	Analysis Method	psig	Comments e.g. Actual Preservative or specific instructions
Soil gas 1	1	7-31-14	1343	1SC00172	1min grab	-26.50	-0.47	1L	TO-15	-0.07	pressure gauge
Soil gas 2	2	7-31-14	1351	1SC00366	1min grab	-15.36	-0.64	1L	TO-15	-0.03	DV600494
Soil gas 3	3	7-31-14	1359	1SC00348	1min grab	-36.58	-2.41	1L	TO-15	-1.47	
							-				

5 of 11

Report Tier Levels - please select
Tier I - Results (Default in not specified) _____ Tier III (Results + QC & Calibration Summaries) _____
Tier II (Results + QC Summaries _____ Tier IV (Date Validation Package) 10% Surcharge _____

EDD required YES / No
Type: _____ Units: _____

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Donald Downing	7-31-14	1745	FEDEX		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
FedEx			Lee Anderson	8/1/14	0930

Cooler / Blank Temperature _____ °C

ALS Environmental
Sample Acceptance Check Form

Client: ERM Work order: P1403096

Project: Atlanta Gas Light Company Rome, GA / 0230716 ph051

Sample(s) received on: 8/1/14 Date opened: 8/1/14 by: SANDERSON

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	✂	✂	✂
2	Container(s) **supplied by ALS**?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
9	Was a **trip blank** received?	☐	☒	☐
10	Were **custody seals** on outside of cooler/Box?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
11	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
12	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
13	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1403096-001.01	1.0 L Source Can					
P1403096-002.01	1.0 L Source Can					
P1403096-003.01	1.0 L Source Can					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ERM**
Client Sample ID: **Soil Gas 1** ALS Project ID: P1403096
Client Project ID: **Atlanta Gas Light Company Rome, GA / 0230716 ph051** ALS Sample ID: P1403096-001

Test Code: EPA Method 3C Modified Date Collected: 7/31/14
Instrument ID: HP5890 II/GC1/TCD Date Received: 8/1/14
Analyst: Nalini Lall Date Analyzed: 8/7/14
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.10 ml(s)
Test Notes:
Container ID: 1SC00172

Initial Pressure (psig): -0.24 Final Pressure (psig): 5.50

Canister Dilution Factor: 1.40

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
7782-44-7	**Oxygen +**			
7440-37-1	**Argon**	**15.6**	0.14	
74-82-8	Methane	ND	0.14	
124-38-9	**Carbon Dioxide**	**1.79**	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ERM**
Client Sample ID: **Soil Gas 2** ALS Project ID: P1403096
Client Project ID: **Atlanta Gas Light Company Rome, GA / 0230716 ph051** ALS Sample ID: P1403096-002

Test Code: EPA Method 3C Modified Date Collected: 7/31/14
Instrument ID: HP5890 II/GC1/TCD Date Received: 8/1/14
Analyst: Nalini Lall Date Analyzed: 8/7/14
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.10 ml(s)
Test Notes:
Container ID: 1SC00366

Initial Pressure (psig): -0.20 Final Pressure (psig): 5.39

Canister Dilution Factor: 1.39

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
7782-44-7	**Oxygen +**			
7440-37-1	**Argon**	**21.0**	0.14	
74-82-8	Methane	ND	0.14	
124-38-9	**Carbon Dioxide**	**0.305**	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ERM**
Client Sample ID: **Soil Gas 3** ALS Project ID: P1403096
Client Project ID: **Atlanta Gas Light Company Rome, GA / 0230716 ph051** ALS Sample ID: P1403096-003

Test Code: EPA Method 3C Modified Date Collected: 7/31/14
Instrument ID: HP5890 II/GC1/TCD Date Received: 8/1/14
Analyst: Nalini Lall Date Analyzed: 8/7/14
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.10 ml(s)
Test Notes:
Container ID: 1SC00348

Initial Pressure (psig): -1.27 Final Pressure (psig): 6.18

Canister Dilution Factor: 1.55

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
7782-44-7	**Oxygen +**			
7440-37-1	**Argon**	**19.0**	0.16	
74-82-8	Methane	ND	0.16	
124-38-9	**Carbon Dioxide**	**0.221**	0.16	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ERM**
Client Sample ID: **Method Blank** ALS Project ID: P1403096
Client Project ID: **Atlanta Gas Light Company Rome, GA / 0230716 ph051** ALS Sample ID: P140807-MB

Test Code: EPA Method 3C Modified Date Collected: NA
Instrument ID: HP5890 II/GC1/TCD Date Received: NA
Analyst: Nalini Lall Date Analyzed: 8/07/14
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
7782-44-7	Oxygen +			
7440-37-1	Argon	ND	0.10	
74-82-8	Methane	ND	0.10	
124-38-9	Carbon Dioxide	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **ERM**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1403096
Client Project ID: **Atlanta Gas Light Company Rome, GA / 0230716 ph051** ALS Sample ID: P140807-LCS

Test Code: EPA Method 3C Modified Date Collected: NA
Instrument ID: HP5890 II/GC1/TCD Date Received: NA
Analyst: Nalini Lall Date Analyzed: 8/07/14
Sample Type: 1.0 L Summa Canister Volume(s) Analyzed: NA ml(s)
Test Notes:

CAS #	Compound	Spike Amount ppmV	Result ppmV	% Recovery	ALS Acceptance Limits	Data Qualifier
7782-44-7	Oxygen +					
7440-37-1	Argon	50,000	**51,200**	**102**	88-114	
74-82-8	Methane	40,000	**39,300**	**98**	87-110	
124-38-9	Carbon Dioxide	50,000	**49,800**	**100**	84-109	

ATTACHMENT B

Table 1 – VRP CSR Delineation Concentrations

Table 1
Delineation Concentrations
Atlanta Gas Light Company
Former Manufactured Gas Plant Site
Rome, Georgia

Site Constituents[1]	12-8-108(B) Notification Concentration Soil[2] mg/kg	12-8-108(C) 2 x LDL GW[3] ug/L	12-8-108(C) 2 x LDL Soil[3] mg/kg	12-8-108(D) Reported Background Soil[4] mg/kg	12-8-108(E) Type 1 RRS[5] GW ug/L	12-8-108(E) Type 1 RRS[5] Soil[6] mg/kg	Delineation Concentrations for Site COI: Groundwater, ug/L Standard	Groundwater, ug/L Reference	Soil, mg/kg Standard	Soil, mg/kg Reference
Volatile Organic Compounds										
2-Butanone (MEK)	0.79	NC	NC	not listed	2000	0.79	NC	Not	NC	
Acetone	2.74	NC	NC	not listed	4000	400	NC		NC	
Benzene*	0.02	0.5	0.005	not listed	5	0.5	5	Type 1 RRS	0.5	Type 1 RRS
Carbon Disulfide	DL[7]	NC	NC	not listed	4000	400	NC		NC	
Chlorobenzene	4.18	NC	NC	not listed	100	10	NC		NC	
Chloroform	0.68	NC	NC	not listed	80	8	NC		NC	
Ethylbenzene	20	0.22	0.005	not listed	700	70	700	Type 1 RRS	70	Type 1 RRS
Isopropylbenzene	21.88	NA	NC	not listed	5(a)	21.88	5	Type 1 RRS	NC	
Methylene Chloride	0.08	NC	NC	not listed	5	0.5	NC		NC	
Styrene	14	NA	0.005	not listed	100	14	100	Type 1 RRS	14	Type 1 RRS
Toluene*	14.40	0.66	0.005	not listed	1000	100	1000	Type 1 RRS	100	Type 1 RRS
Xylenes, total*	20	0.4	0.0076	not listed	10000	1000	10000	Type 1 RRS	1000	Type 1 RRS
Semivolatile Organic Compounds										
2,4-Dimethylphenol	1.51	7.6	NC	not listed	700	70	700	Type 1 RRS	NC	N/A
2-Methylnaphthalene	--	NC	NC	not listed	10(a)	1	NC	N/A	NC	N/A
2-Methylphenol	3.8	1.68	NC	not listed	10(a)	3.8	10	Type 1 RRS	NC	N/A
3&4-Methylphenol (M&P-Cresol)	3.8	NC	NC	not listed	10(a)	3.8	NC	N/A	NC	N/A
4-Methylphenol*	3.80	2.4	0.68	not listed	10(a)	3.8	10	Type 1 RRS	3.8	Type 1 RRS
Acenaphthene	300	NA	0.68	not listed	2000	300	2000	Type 1 RRS	300	Type 1 RRS
Acenaphthylene	130	1.6	0.68	not listed	10(a)	130	10	Type 1 RRS	130	Type 1 RRS
Anthracene	500	NC	0.68	not listed	10(a)	500	NC	N/A	500	Type 1 RRS
Benzo(a)anthracene*	5	NC	0.68	not listed	0.1	5	NC	N/A	5	Type 1 RRS
Benzo(b)fluoranthene*	5	NC	0.68	not listed	0.2	5	NC	N/A	5	Type 1 RRS
Benzo(k)fluoranthene*	5	NC	0.68	not listed	10(a)	5	NC	N/A	5	Type 1 RRS
Benzo(g,h,i)perylene	500	NC	0.68	not listed	10(a)	500	NC	N/A	500	Type 1 RRS
Benzo(a)pyrene*	1.64	NC	0.68	not listed	0.2	1.64	NC	N/A	1.64	Type 1 RRS
Benzoic acid	1000	NC	NC	not listed	10(a)	1000	NC	N/A	NC	N/A
Bis(2-ethylhexyl)phthalate	50	NC	NC	not listed	10(a)	50	NC	N/A	NC	N/A
Chrysene*	5	NC	0.68	not listed	0.2(b)	5	NC	N/A	5	Type 1 RRS
Carbazole	--	NA	NC	not listed	10(a)	1	10	Type 1 RRS	NC	N/A
Dibenzo(a,h)anthracene*	5	NC	0.68	not listed	0.3	2	NC	N/A	5	Notification Conc
Dibenzofuran	--	NA	NC	not listed	10(a)	0.1	10	Type 1 RRS	NC	N/A
Diethyl phthalate	0.74	NA	NC	not listed	5000	500	5000	Type 1 RRS	NC	N/A
Di-n-octyl phthalate	50	NC	NC	not listed	700	70	NC	N/A	NC	N/A
Fluoranthene	500	NC	0.68	not listed	1000	500	NC	N/A	500	Type 1 RRS
Fluorene	360	NA	0.68	not listed	1000	360	1000	Type 1 RRS	360	Type 1 RRS
Indeno(1,2,3-cd)pyrene*	5	NC	0.68	not listed	0.4	5	NC	N/A	5	Type 1 RRS
Naphthalene*	100	1.32	0.68	not listed	20	100	20	Type 1 RRS	100	Type 1 RRS
Phenanthrene*	110	1.46	0.68	not listed	10(a)	110	10	Type 1 RRS	110	Type 1 RRS
Phenol	50	NA	NC	not listed	4000	400	4000	Type 1 RRS	NC	N/A
Pyrene	500	NC	NC	not listed	1000	500	NC	N/A	NC	N/A
Metals										
Antimony*	10	NC	0.0042	7.8	6(b)	4	NC		10	Notification Conc
Arsenic*	41	NA	1.44	15	10	20	10	Type 1 RRS	41	Notification Conc
Barium*	500	NC	NA	234	2000	1000	NC		1000	Type 1 RRS
Beryllium	3	NA	0.3	1.5	4	2	4	Type 1 RRS	3	Notification Conc
Cadmium	39	NC	0.0011	1.6	5	2	NC		39	Notification Conc
Chromium	1200	NA	NA	47	100	100	100	Type 1 RRS	1200	Notification Conc
Cobalt*	25NR	NC		not listed	NR	20	NC		25	Notification Conc
Copper*	1500	NC	NA	24	1300	100	NC		1500	Notification Conc
Cyanide*	10	10	0.0024	<0.67	200	20	200	Type 1 RRS	20	Type 1 RRS
Lead*	400	NA	NA	70	15	75	15	Type 1 RRS	400	Notification Conc
Mercury	17	NC	0.024	0.46	2	0.5	NC		17	Notification Conc
Nickel	420	NA	20.6	18	100	50	100	Type 1 RRS	420	Notification Conc
Selenium*	36	NC	NC	2.3	50	2	NC		36	Notification Conc
Silver	10	NC	0.0022	0.59	100	2	NC		10	Notification Conc
Thallium	10	NC	0.0022	0.80	2(b)	2	NC		10	Notification Conc
Vanadium*	100NR	NC	NA	52	200	100	NC		100	Type 1 RRS
Zinc	2800	NC	NA	169	2000	100	NC		2800	Notification Conc

Notes:

12-8-108 is the rule from Part 3 of the Voluntary Remediation Program Act and describes the following standards and policies may be considered and used in connection with the investigation and remediation of a voluntary remediation property.

[1] Site Constituents listed include all constituents detected in existing soil at the site (post-remediation). Constituent concentrations may or may not exceed Notification Conce

[2] Values obtained from table of Regulated Substances and Soil Concentrations that trigger Notification, Rule 391-3-19-APPENDIX I.

[3] Value is equal to twice the LDL, where the LDL is equal to the PQL for methods SW8260B & SW6010B.

[4] Background concentrations obtained from the 2004 Compliance Status Report, Table 4-1.

[5] Values are equal to the Residential Cleanup Standards (Type 1 RRS) - Rule 391-3-19, Appendix III - Media Target Concentrations and Standard Exposure Assumptions.

[6] If no Type 1 RRS exists for soil, the higher value of (1) the Notification Concentration or (2) the groundwater Type 1 RRS (mg/L) x 100 will be used.

*Existing constituent concentrations in soil exceed the Notification Concentration based on maximum concentration detected in soil.

Bold chemicals are considered current groundwater constituents of interest (COI) under the October 2010 HSRA groundwater monitoring report.

-- No Notification Concentration listed in Rule 391-3-19, Appendix I - Regulated Substances and Soil Concentrations that Trigger Notification.

"NA" is not analyzed.

"NC" not considered a COI for this medium based on the original GW COI list from the 2004 Compliance Status Report or the Soil COI list from the 1999 Soil Removal Completion Report - OU1.

"Not listed" indicates a background value is not listed for the constituent in the given source.

"NR" value is for reference only; not a regulated substance.

"LDL" is the lower detection limit.

(a) No Type 1 RRS is listed; therefore, the Type 1 RRS equals the Detection Limit (DL).

(b) Health-based drinking criterion for this substance/analyte is lower than the currently achievable DL. The DL or background will be the Type 1 RRS.

ATTACHMENT C

Continuing Action Monitoring Plan

Continuing Action Monitoring Plan

AGL Resources, Inc.

Rome Former Manufactured Gas Plant Site
Project No. 74962

August 2014

Continuing Action Monitoring Plan

prepared for

AGL Resources, Inc.
Atlanta, Georgia

Project No. 74962

August 2014

prepared by

Burns & McDonnell Engineering Company, Inc.
108 Leigus Road, Building A, Suite 1100
Wallingford, Connecticut 06492

Prepared by: _____
Christie Battenhouse, P.G.
Senior Project Manager

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LIST OF ATTACHMENTS

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1.0 INTRODUCTION

Burns & McDonnell has prepared the Continuing Action Monitoring Plan (CAMP) on behalf of the Atlanta Gas Light Company (AGLC) to address conformance with the institutional controls set forth for the former manufactured gas plant (MGP) in Rome, Georgia. The Voluntary Remediation Program (VRP) Standards and Type 5 Properties are included in this CAMP and are listed in Section 2.0 and shown on Figure 1. The "VRP Standards" properties refers to those properties that are in compliance with the risk-based clean-up goals developed under the VRP under the Georgia Voluntary Remediation Program Act, 12-8-108(5),(6).

The corrective action activities for unsaturated zone soils and groundwater have been successfully completed in compliance with the requirements of the Consent Order (EPD-HSR-091), and the approved application into the VRP. This CAMP includes all ongoing monitoring activities for the identified parcels and properties for unsaturated soils, groundwater, and sediments.

2.0 SUMMARY OF SITE CONDITIONS

2.1 Type 5 Properties

The Type 5 property included in this CAMP is: Portions of West 1st Street and its Right-of-Way (ROW). Note that the approximate limits are 23 feet wide by 68 feet long and the coordinates are listed below (see Figure 1 for location). The primary area of remaining impacts within the soil is located within the western ROW of West 1st Street, under the gas main where excavation was not feasible during the 1999 and 2000 soil remediation activities. However, the top two feet above and surrounding the gas main were excavated and have no residual MGP impacts or were considered in compliance with VRP Standards RRS and not included in the soil remediation.

The approximate coordinates of the Type 5 area in State Plane NAD 83, Georgia West: Northing, Easting:

1548847.9084,1992075.8286,0.0000,NW
1548829.8416,1992089.9681,0.0000,SW
1548890.1712,1992129.1020,0.0000,NE
1548872.0587,1992143.2772,0.0000,SE

Compliance with the Type 5 RRS requires engineering and institutional controls to maintain the integrity of the corrective action and to monitor compliance with the restrictive covenants: 1) comply with the requirements for Type 5 Parcels/Property; and 2) provide long-term protection of human health and the environment.

2.1.1 Institutional Controls

The Universal Environmental Covenants (UECs) will be filed with the deeds for the Type 5 Property.

For West 1st Street and the affected right-of-way, the following institutional controls are included in the Declaration of Restrictive Covenants and Notices:

- Prohibits the use or extraction of groundwater beneath the Property as a source of drinking water or for any other purpose that could result in human contact with the groundwater;
- Prohibits excavation, construction, and similar activities in soil at or below two feet below land surface outside of the utility corridor that was constructed to house all utilities except for gas and water on the eastern side of West 1st Street, except in accordance with an appropriate health and safety plan sufficient to protect the health and safety of persons who may contact the soil and sufficient to assure that all excavated soil is handled in accordance with applicable laws and regulations, and requires 30-day notice to EPD and AGLC prior to on any activity in the Type 5 area;
- Restricts the use of the Parcel/Property to non-residential uses as defined in HSRA in effect at the time of the declaration; and

- Requires installation and maintenance of permanent marker to delineate the Type 5 areas and prohibits the disturbance or removal of such marker. A permanent marker will be installed with the language attached hereto as Exhibit 1.

The foregoing restrictions and covenants were made 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.

2.2 VRP Standards Properties

The VRP Standards parcels/properties included in this CAMP are as follows (see Figure 1, attached):

Parcels 1, 2, 3, 3A, and 4-8
ROW under 2nd Avenue Bridge, and
Portions of West 1st Street and its ROW

2.2.1 Institutional Controls

The institutional controls associated with the present corrective action comply with the requirements for VRP Standards Properties to assure long-term protection of human health and the environment. The UECs will be filed in accordance with Section 391-3-19.08(1)(a) for Parcels 1, 2, 3, 3A, 4, 5, 6, 7, 8, ROW under 2nd Avenue Bridge, and portions of West 1st Street and its ROW. The UECs impose the following institutional controls on the VRP Standards Properties:

- Prohibits the extraction and use of groundwater beneath the VRP Standards areas as a source of drinking water or for any other purpose that could result in human contact or human ingestion as defined by the rules; and
- Restricts the use of the Parcel to non-residential uses as defined in HSRA in effect at the time of the declaration; and,
- Annually monitor the use of the parcels to document the non-residential use, as defined by Section 391-3-19.02(2)(i) in effect as of the date of this CAMP.

3.0 MONITORING PLAN

3.1 Visual Reconnaissance

AGLC will perform, or cause to be performed, an annual visual inspection of the Type 5 and VRP Standards Properties to monitor the use and to record deviations from the institutional controls described herein. The results will be documented on the "Annual Monitoring Forms" (Tables 3-1 and 3-2) and will be submitted to the EPD. The annual visual inspection will be conducted in January of each year and the Annual Monitoring Forms will be submitted within 30 days of the inspection date. Annual visual inspections will continue until the Type 5 and VRP Standards properties meet Type 1 and Type 2 RRS or until the EPD approves of an alternate monitoring schedule.

Visual inspections of the Type 5 areas will include a reconnaissance that includes a site walk to monitor for groundwater prohibition, land disturbing activities, residential use requirements and/or barriers, permanent markers. The deficiencies will be noted on the appropriate Annual Monitoring Form along with any corrective action taken. Since AGLC does not have control of the Property/Properties, AGLC will coordinate with the land owner(s) to resolve any deficiencies noted.

Visual inspections of the VRP Standards areas will include a reconnaissance of each area to monitor for groundwater prohibition and residential use requirements. The deficiencies will be noted on the appropriate Annual Monitoring Form along with any corrective action taken. To the extent AGLC has control of the Property, AGLC will coordinate with the land owner to resolve any deficiencies noted.

3.2 River Long-Term Monitoring

As part of AGLC's agreement in the March 18th meeting with the EPD, AGLC will include the long-term monitoring requirements for the river survey monitoring with the VRP Operations, Maintenance, and Monitoring (OM&M) Plan for the Site. This CAMP, along with the associated institutional controls, is part of that VRP OM&M Plan. The Long-Term OM&M Plan for Sediments in the Oostanaula River is attached as Exhibit 2.

TABLES

TABLE 3-1

Annual Monitoring Form Type 5 Property (Portions of West 1st Street and its ROW) Institutional and Engineering Controls
Atlanta Gas Light Company
Former Manufactured Gas Plant Site
Rome, Georgia

MONITORING ITEM	CONDITION[1]			COMMENTS
	NA	MN	IA	
TYPE 5 INSTITUTIONAL CONTROLS				
Groundwater Restriction				
Land Disturbing Activities				
New Utility Installations				
Non-Residential Restrictions				
Permanent Marker(s)				
Other				
TYPE 5 ENGINEERING CONTROLS				
Asphalt Cover (Condition, Disturbed)				
Functionally Equivalent Controls In-Place				
Other				
Monitoring Performed By:			Date:	

Condition[1]: NA, no action needed; MN, maintenance needed; IA, immediate action needed

TABLE 3-2
Annual Monitoring Form
VRP Standards Properties (Parcels 1, 2, 3, 3A, 4, 5, 6, 7, 8, Right-of-Way under 2nd Avenue Bridge, and West 1st Street and its Right-of-Way) Institutional Controls
Atlanta Gas Light Company
Former Manufactured Gas Plant Site
Rome, Georgia

MONITORING ITEM	CONDITION[1]			COMMENTS
	NA	MN	IA	
VRP STANDARDS INSTITUTIONAL CONTROLS				
Groundwater Restriction				
Residential Use Requirements/Barriers				
Erosion				
Other				
Monitoring Performed By:			Date:	

Notes: 1) Circle location in heading (requires an inspection report for each location)
2) Condition1: NA, no action needed; MN, maintenance needed; IA, immediate action needed

FIGURES

FLOW

OOSTANAULA RIVER

MW-14A

J14D 025
PARCEL 6
(City of Rome)

J14D 019
(City of Rome)
This applies to Former Parcel 2

MW-406A
MW-406C
MW-406B

J14D 024
PARCEL 8
(Battey Downtown, LLC)
WOOD BUILDING

PARCEL 3A
PARCEL 2
Formerly Central of GA Railroad

MW-405
MW-401B
MW-401AR

J14D 023
PARCEL 5
(Battey Downtown, LLC)
3 STORY BRICK BUILDING

J14D 022
PARCEL 4
(Battey Downtown, LLC)

MW-403A
MW-403B

J14D 021
PARCEL 3
(Battey Downtown, LLC)
PARKING LOT

J14D 020
PARCEL 7
(Battey Downtown, LLC)
PARKING LOT

J14D 020A
(City of Rome/Floyd County)
Driveway Easement

J14D 018
PARCEL 1
(Floyd County)
PARKING GARAGE

2ND AVENUE

COMMERCIAL

MW-503

MW-404R
MW-404B

MW-501

MW-505R

MW-402B
MW-402A

MW-504

Transformer Easement

WEST FIRST STREET ROW
(City of Rome)

MW-507

MW-09A
MW-09B

ASPHALT PARKING LOT

J14D 045
PARCEL 10
(Larry Martin)

J14D 044
PARCEL 9
(Larry Martin)

J14D 046
PARCEL 11
(Larry Martin)

MW-508

J14D 047
PARCEL 12

J14D 048

J14D 049

J14D 050
(Larry Martin)

COMMERCIAL

MW-506

N

0 60' 120'
SCALE IN FEET

LEGEND

- VRP SITE BOUNDARY
- EXISTING BUILDING
- PARCEL 10 — HISTORIC PARCEL BOUNDARY/ PARCEL NUMBER
- J14D 045 — CURRENT PARCEL BOUNDARY/ TAX ID NUMBER
- EXISTING EASEMENT
- MW-403A — SEMIANNUAL MONITORING WELL
- MW-508 — ANNUAL MONITORING WELL
- MW-502 — MONITORING WELL TO BE GAUGED ONLY
- APPROXIMATE VRP STANDARDS AREA
- APPROXIMATE TYPE 5 AREA

NOTES:

1. MW-506 Monitoring well paved over by City of Rome
2. Wells designed without the letters “B” or “C” or with an “A” are Shallow Monitoring Wells (e.g. MW-406A, MW-404R, MW-503)
3. Wells designed with the letter “B” are Intermediate Monitoring Wells (e.g. MW-406B)
4. Wells designed with the letter “C” are Deep Monitoring Wells (e.g. MW-406C)
5. "Voluntary Remediation Program (VRP) Standards" refers to those properties that are in compliance with risk-based clean-up goals developed as part of the VRP remediation plan.

Burns & McDonnell SINCE 1898

Atlanta Gas Light®
*An **AGL Resources** Company*

FIGURE 1
VRP STANDARDS AND TYPE 5 AREAS
ROME FORMER MGP SITE
WEST 1ST STREET
ROME, GEORGIA

I:\NE OFFICE\CAD\AGL\FIG_1_APPROXIMATE VRP STANDARDS AND 5 AREAS

EXHIBITS

Exhibit 1

Language for Type 5 Marker

EXHIBIT 1

The site is listed on the Georgia Environmental Protection Division's Inventory EPD HSI NO. 10109. The remaining zone of materials is below West 1st Street and the ROW, shallower on the western side adjacent to an underground gas line [approximately 8 feet (ft) to 15 ft below ground surface (bgs)]. The remaining impacts were observed deeper on the eastern side with the uppermost impacts at approximately 13.75 ft bgs to 15.75 ft bgs. EPD has determined that the remaining materials do not pose a threat to human health and environment. Contact the Environmental Services Department at Atlanta Gas Light Company (404) 584-3000 or Georgia Environmental Protection Division (404-656-7802) prior to conducting land disturbing activities (below 2 ft bgs) in the restricted area.

Exhibit 2

Long-Term River Monitoring Operations, Maintenance, and Monitoring Plan

Long-Term Operations Maintenance & Monitoring Plan for Sediments in the Oostanaula River

AGL Resources, Inc.

Rome Former Manufactured Gas Plant Site
Project No. 74962

August 2014

Long-Term Operations Maintenance & Monitoring Plan for Sediments in the Oostanaula River

prepared for

AGL Resources, Inc.
Atlanta, Georgia

Project No. 74962

August 2014

prepared by

Burns & McDonnell Engineering Company, Inc.
108 Leigus Road, Building A, Suite 1100
Wallingford, Connecticut 06492

Prepared by: _____
Christie Battenhouse, P.G.
Senior Project Manager

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1.0 INTRODUCTION

On behalf of Atlanta Gas Light Company (AGLC), Burns & McDonnell has prepared this Operations, Maintenance, and Monitoring (OM&M) Plan for the long-term river survey monitoring required for the former manufactured gas plant (MGP) site (Site) located in Rome, Floyd County, Georgia. Over the past thirteen years, AGLC has been monitoring monthly rainfall data and conducting river bottom elevation surveys (as required) for an armored portion of the Oostanaula River adjacent to the Site. This OM&M plan is required by the Georgia Environmental Protection Division (EPD) as part of the remediation plan for the sediments included in the Voluntary Remediation Plan (VRP) Compliance Status Report (CSR). With this document, the river sediment monitoring is part of the VRP OM&M plan and will continue until its conclusion after the VRP CSR is approved and the Site is delisted.

2.0 SUMMARY OF SITE CONDITIONS

In 2001, remedial activities were conducted in accordance with the approved *Revised Corrective Action Plan for Sediments in the Oostanaula River* (Sediment CAP) prepared by ThermoRetec Consulting Corporation (dated September 2001) to remove impacted sediments identified in the Oostanaula River adjacent to the site. Using a clam-shell bucket excavator to load 1-ton super sacks and a crane to lift sacks to the storage area, a minimum of 6 inches of impacted sediments were removed and disposed of from the river bed over an area measuring 140 feet by 25 feet. In some areas, up to a foot or more of sediment was removed. The approved remedial objective in the Sediment CAP allowed minor impacts buried deeper within the sediment to remain in place. Figure 1 (attached) shows the areal extent of the sediment removal and original survey point locations and elevations. At the completion of excavation, a minimum of 6 inches of sand and armor stone were placed over the impacted area.

Results of the *5-Year Post-Remediation River Survey* prepared by ENSR Corporation (ENSR) in 2008 indicated that scouring occurred at three of the 20 monitored points. AECOM (previously ENSR), completed placement of scour protection stone over areas in the Oostanaula River to comply with the requirements of the approved Sediment CAP between July 28, 2008 and August 8, 2008. During that time, AECOM coordinated and managed the placement of approximately 115 tons of armoring stone in the affected and surrounding areas of the Oostanaula River. Additional stone was placed to deter future scouring in the monitored area. The work was performed per the *River Sediments Corrective Measures Work Plan – Oostanaula River* prepared by ENSR, dated May 19, 2008. The first post-construction survey of the river sediments following the river re-armoring completed in August 2008 was conducted in September 2009. A summary of the monitoring data was submitted in the *Results of 2009 Post Remediation River Survey of the Oostanaula River* as a letter report prepared by ENSR, dated November 18, 2009. Figure 2 (attached) shows the survey points and elevations after the re-armoring in 2009.

In accordance with the River CAP and the EPD letter dated April 17, 2008, in the absence of a significant rainfall event (i.e. 10-year rainfall event), AGLC was to perform the next river survey following the re-armoring in 2012 at the10-year mark from completion of the original sediment remediation. However, due to the observance of a significant rainfall event (i.e. 10-year event) on September 5, 2011 (a total of 5.72 inches fell over a 24-hr period), a survey of the river bottom event was conducted by a licensed surveyor on September 26, 2011. The results were submitted to the EPD in a letter dated March 25, 2013. Since the 2011 survey data confirmed that the scour protection criteria were being met and the armoring material was above the baseline elevation, there was no need for further action at that time; thus, the 2012 event was deemed not necessary.

3.0 MONITORING PLAN

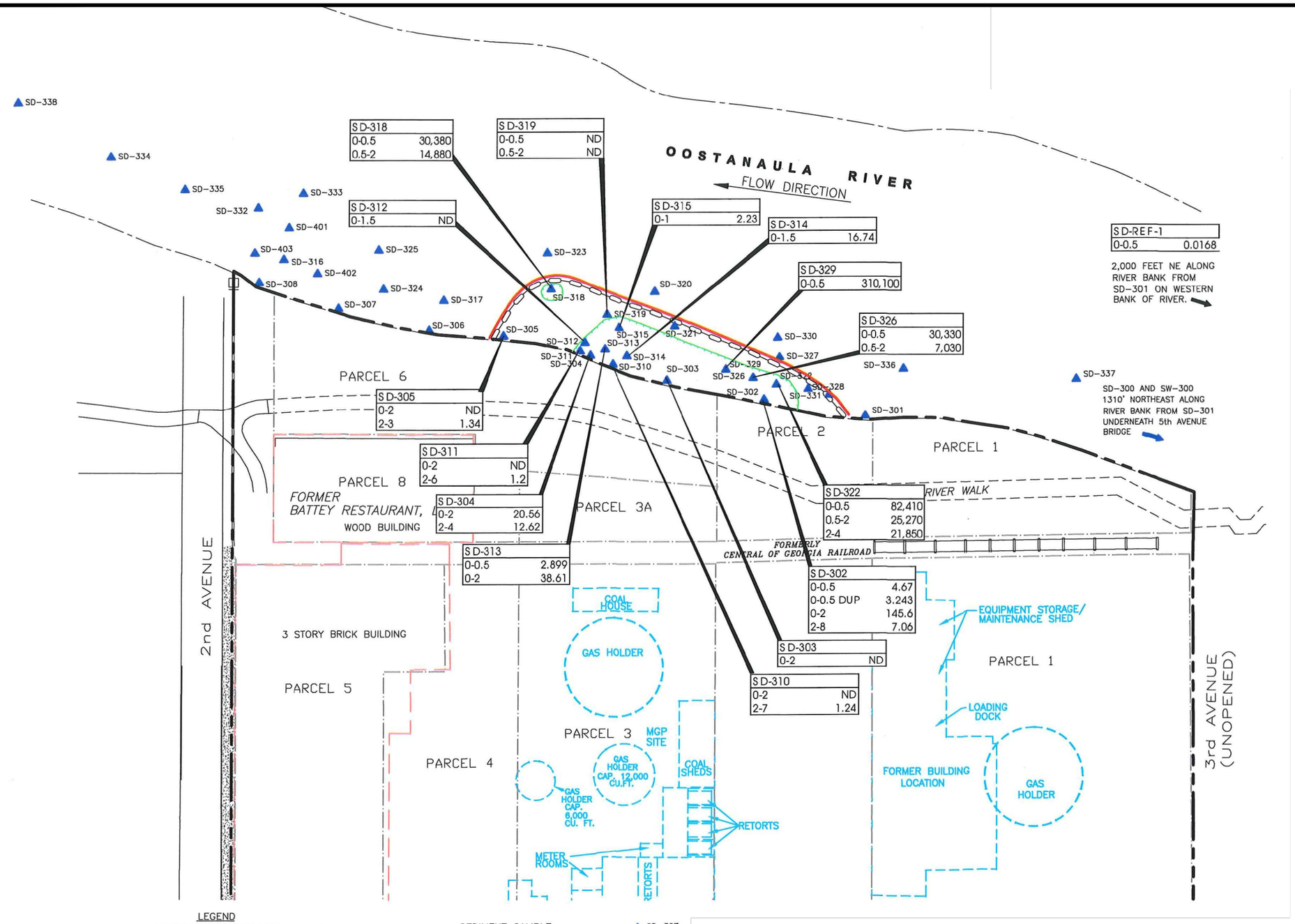
As per the River CAP requirements, if a significant rainfall event occurs (i.e. 10-year event) a survey monitoring event will be performed. Table A-11 of the *Georgia Stormwater Management Manual, Volume 2 (Technical Handbook),* defines a 10-year rainfall event as a total of 5.52 inches over a 24-hour period (a rainfall intensity of 0.23 inches of rainfall per hour over 24-hour period). Rainfall data collected at the Station number 097600 in Rome, Georgia by the National Oceanic and Atmospheric Administration (NOAA) Satellite and Information Service, National Environmental Satellite, Data, and Information Service, will continue to be reviewed monthly from July 2014 to September 2021. Future surveys will also be performed in compliance with the River CAP and the *Oostanaula River Scour Protection Placement Completion Report - Revised* (prepared by ENSR, dated November 2008). The rainfall data collected by NESDIS will be included in future monitoring reports, as applicable.

The sediment elevation survey data will confirm if the scour protection criteria are being met, the armoring material is above the baseline elevation, and there is a need for further remedial action for river sediments at the Site. As proposed in the July 2012 *First Semiannual Progress Report* and at the March 2013 meeting, in the absence of a 10-year rainfall event, the next river survey is proposed to be performed in September 2016 and the final one will be conducted in September 2021, at 5-year intervals, for a maximum duration of 10 years. This schedule was based on the fact that the 2011 survey event did not indicate scouring of the armoring stone (i.e. greater than 6-inch decrease in elevation compared to the November 2001 baseline) and assumes the absence of a significant rainfall event prior to 2016. In the instance of a rainfall event within a year of the required survey dates, the need for the scheduled survey will be evaluated following the survey event at that time.

Immediately following the September 2021 survey event and barring any indications of scouring in future survey results, as part of the monitoring plan proposed in the *Response to Comments on the Application for the Voluntary Remediation Program and First Semiannual Progress Report of the VRP Program* letter dated July 19, 2012, AGLC will request no further action in regards to river survey monitoring.

FIGURES

I:\NE OFFICE\CAD\AGL\CSR ADDENDUM\FIG_1_SILT CURTAIN LAYOUT AND SEDIMENT REMOVAL AREA



LEGEND

- APPROX. SITE BOUNDARY
- APPROX. PROPERTY LINE
- EXISTING BUILDING
- FORMER STRUCTURE
- CONCRETE
- ANALYTICAL DATA BOX (TOTAL SVOCs) — SAMPLE ug/Kg / DEPTH VALUE
- SEDIMENT SAMPLE — SD-307
- TARGET EXCAVATION AREA
- SILT CURTAIN
- ABSORBENT BOOM

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FIGURE 1
SILT CURTAIN LAYOUT AND SEDIMENT REMOVAL AREA
ROME FORMER MGP SITE
WEST 1ST STREET
ROME, GEORGIA

LEGEND:

- 5001 — SURVEY POINT LOCATION
- 564.37 — ELEVATION IN ft. AMSL
- EXCAVATION
- TREE LINE
- TURBIDITY BARRIER
- ⊗ — REAL–TIME MONITORING AND LABORATORY SAMPLE COLLECTION LOCATIONS
- AREA OF STONE PLACEMENT (APPOXIMATELY 1600 SF – PLACE 1.5' OF D_{50} RIPRAP)

OOSTANUALA RIVER

FLOW

APPROXIMATE EDGE OF WATER

TREE LINE

TREE LINE

RIVERWALK

3648 558.15
3649 557.62
3650 558.13
3627 559.61
3625 559.48
3623 559.77
3621 559.18
3619 560.12
3617 562.68
3629 559.24
5008 560.27
5007 561.18
5005 561.43
5003 563.11
5009 562.52
5006 563.89
5004 564.55
5001 564.37
5000 564.18
5002 564.93
3601
3602
3603
3605
3607
3609
3611
3613

N

0 10' 20' 40'

SCALE IN FEET

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FIGURE 2
POST-CONSTRUCTION ARMORING DETAIL-2008
ROME FORMER MGP SITE
WEST 1ST STREET
ROME, GEORGIA

I:\NE OFFICE\CAD\AGL\CSR ADDENDUM\FIG_2_POST-CONSTRUCTION ARMORING DETAIL-2008

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