

EXHIBIT B

SCOPE OF WORK PREPARED BY AMERICAN GEOSCIENCES, INC.



August 21, 2017

VIA E-MAIL

Mr. Daniel S. Deiseroth, P.E.  
Executive Vice President  
Safety Tier 4  
The Gateway Engineers, Inc.  
400 Holiday Drive, Suite 300  
Pittsburgh, Pennsylvania 15220-2727

Re: Statement-of-Work for Site Characterization  
and Budgetary Estimate for Pursuing Act 2 Liability Protection  
Former CE Cast Property  
Cecil Township, Pennsylvania  
AGI Project No. 08067-004P

Dear Mr. Deiseroth:

American Geosciences, Inc., (AGI) appreciates the opportunity to submit this statement-of-work (SOW) to conduct Site Characterization (SC) activities to further evaluate the extent of identified environmental impacts at the subject property. We have prepared our SOW to perform a subsurface investigation to further evaluate soil and groundwater impacts that were identified during prior investigations by others. In addition to the SC SOW, we are providing you with the anticipated path forward and budgetary planning cost breakdown for pursuing relief from liability for identified impacts at the above-referenced property (site) under Pennsylvania's Land Recycling and Environmental Remediation Standards Act (Act 2) program.

#### Statement-of-Work

Pennsylvania's Land Recycling and Environmental Remediation Standards Act (Act 2) requires that a site be characterized to evaluate the horizontal and vertical extent of impacts to soil and groundwater. Our proposed SOW is intended to further evaluate the identified impacts to soil and groundwater and to provide an evaluation of potential preferential migration and exposure pathways. The results of this proposed investigation activities are intended to supplement contribute toward the site characterization required by the Act 2 program and the applicable provisions of the regulations at 25 Pa. Code, Chapter 250. However, the site characterization process under the Act 2 program is often iterative, and therefore, additional investigation of the extent of the impacts in soil and groundwater at the site may require work beyond that identified within the scope of the SC herein.



This investigation is not intended to determine the location of any tanks or other subsurface items that may be present at the site. In addition, it is unlikely that this assessment would identify relatively localized impacts.

The SC activities described below include the following:

- Preparing site specific plans<sup>1</sup> that will be followed during the identified investigation activities.
- Advancing soil borings and collecting soil samples to further evaluate surface<sup>2</sup> and subsurface<sup>3</sup> soil at three of the four previously identified areas of the site; Undeveloped Area, Main Plant Area, and Coal Refuse Area.
- Installing groundwater monitoring wells to further evaluate the uppermost groundwater beneath the site.
- Collecting surface soil samples to evaluate the former Landfill area and berm.
- Collecting groundwater samples to evaluate the areal extent impacts in the uppermost groundwater at the site.
- Collecting co-located surface water and sediment samples from two unnamed tributaries to Brush Run; one to the east of the site that flows generally north to south and one to the south of the site that generally flows from northwest to southeast.
- Performing slug tests in monitoring wells to evaluate the hydraulic conductivity of the uppermost groundwater beneath the site.
- Submitting samples collected during this investigation to a Pennsylvania-registered environmental laboratory.
- Evaluating data obtained during the site characterization activities.

---

<sup>1</sup> Sampling and analysis plan and health and safety plan.

<sup>2</sup> Upper two feet of soil.

<sup>3</sup> Two to 15-foot depth interval.



## Work Plans

A brief plan will be prepared that will be used to communicate the details of locations, rationale, and analyses for the samples to be collected during the site characterization. In addition, a site-specific health and safety plan will be prepared to help ensure the safety of personnel performing the field investigation activities.

## Soil Borings and Soil Sampling

AGI will work with the drilling contractor to ensure that the required utility notification<sup>4</sup> is completed in advance of the intrusive investigation activities. In addition, AGI will require assistance from the property owner in clearing the proposed boring locations to ensure that we avoid potential on-site underground utilities during the assessment. AGI will not be responsible for personal injury or property damage that may occur if subsurface utilities, potential tanks, piping, etc., are contacted during our investigation at boring locations.

Thirty-four soil borings will be advanced to characterize the site. The boring locations are shown on Figure 1 and described as follows.

- Five borings identified as SB-UD-01 through SB-UD-05 will be advanced to evaluate the Undeveloped Area.
- Six borings identified as SB-LF-01 through SB-LF-06 will be advanced at the Land Fill Area; three of these borings will be advanced in the berm material along the southern side of the former land fill.
- Eight borings identified as SB-CR-01 through SB-CR-06, MW-504, and MW-505 will be advanced to evaluate the Coal Refuse Area.
- Thirteen borings identified as SB-MP-01 through SB-MP-12 and MW-501 will be advanced to evaluate the Main Plant Area.
- Two borings identified as MW-502 and MW-503 will be advanced off-site to evaluate groundwater down gradient of the site.

Borings MW-501 through MW-505 will be advanced using hollow-stem auger (HSA) drilling techniques or a combination of HSA and air hammer (AH) drilling techniques. The remaining borings will be advanced using direct-push soil sampling techniques (DPT).

---

<sup>4</sup> Pennsylvania's One-Call system (utility notification service) will be contacted a minimum of three days prior to commencing intrusive activities.



The geographic coordinates of the borings will be determined using a Trimble® GeoExplorer® 6000 series (GeoXH™) handheld global positioning system (GPS) receiver (Trimble), which is capable of receiving and utilizing signals from both GPS<sup>5</sup> and GLONASS<sup>6</sup> satellites. To increase the accuracy of the coordinates, the receiver will be connected to a Zepher Model 2 external antenna. The location data will be post-processed to differentially correct the location data relative to the closest available fixed base station with both GPS and GLONASS receivers.

Five borings will be advanced using either HSA or HSA/AH drilling techniques. These borings will be advanced to install monitoring wells. The borings will be advanced using 4.25-inch inside-diameter augers to approximately 3 feet below the first indication of groundwater or to auger refusal, whichever is encountered first. Soil samples will be collected continuously using split-spoon sampling devices. If auger refusal is encountered before encountering groundwater, drill will be switched to AH and the borings will be further advanced to approximately 3 feet below the first indication of groundwater. It is anticipated that the maximum depth the borings will be advanced will be 50 feet below ground surface (bgs).

Twenty-eight soil borings will be advanced using DPT. These borings will be advanced to approximately 15 feet bgs or to sample tool refusal, whichever is encountered first. Continuous samples will be collected from each of the soil borings in dedicated disposable acetate sleeves.

Regardless of the soil sampling method (i.e., HSA/split-spoon sampler or DPT/acetate sleeve), a portion of soil for potential volatile organic compound (VOCs) analyses will be collected in a manner that complies with USEPA Method 5035 sampling protocols. A separate portion of the soil sample will be placed in a resealable plastic bag, allowed time to equilibrate, and then the headspace in the bag will be field screened using a photoionization detector (PID) to qualitatively measure for the presence of VOCs.

Two soil samples will be collected from each boring for laboratory analysis; one surface soil sample and one sub-surface soil sample. The subsurface soil samples will be collected based on the results of the field screening and pertinent field observation (obvious visual or olfactory evidence of impact). If no indication of impact is observed in a boring, the deepest soil sample above groundwater will be collected for analysis. Soil samples will be collected directly into laboratory-supplied sample containers and will be placed in an ice chests containing ice. The ice chests will be delivered under chain-of-custody to a Pennsylvania-registered laboratory for analysis.

Soil cuttings generated while advancing the borings will be placed in 55-gallon drums that will be staged at a centralized location at the site. The drums will be labeled as to their contents. The estimated cost associated with this SOW does not include characterization or disposal of the soil cuttings.

---

<sup>5</sup> United States Global Positioning System.

<sup>6</sup> Russian GLObal NAVigation Satellite System.



### Monitoring Well Installation

Monitoring wells will be constructed in borings MW-501 through MW-505. The wells will be constructed using 2-inch diameter PVC screens and riser. Each well will include either a 5-foot or 10-foot long screen that will be installed to intersect the top of groundwater. Sand filter pack will be placed in the annular space between the well screen and borehole wall from the bottom to approximately 2 feet above the top of screen. A 2-foot-thick bentonite seal will be placed above the filter pack and the remaining annular space will be backfilled with bentonite or a mixture of cement and bentonite. The borings will be completed at the surface with either flush-mount manhole covers set in concrete pads or above-ground steel protective well covers set in concrete pads, depending on their locations<sup>7</sup>.

After the monitoring wells are installed and groundwater within the wells is allowed to equilibrate to static conditions, the wells will be developed using surging and pumping techniques to remove fine formation material from the well screens and filter pack. Well development water will be placed in 55-gallon drums that will be labeled and staged at a centralized location at the site. The estimated cost associated with this SOW does not include characterization or disposal of the development water.

Following installation, a professional land surveyor will establish the locations and elevations of the tops of casing of the monitoring wells relative to an arbitrary datum (i.e., one of the existing monitoring wells at the site). These data will be used to evaluate groundwater flow direction at the site.

### Groundwater Sampling

Two groundwater sampling events will be completed after monitoring wells MW-501 through MW-505 are installed and developed. During the first sampling event, groundwater samples will be collected from MW-501 through MW-505. During the second sampling event, which will be performed a minimum of 2 weeks after the first event, groundwater samples will be collected of all accessible previously installed monitoring wells<sup>8</sup> at the site in addition to MW-501 through MW505.

The groundwater samples will be collected using low-flow groundwater sampling techniques using either a peristaltic pump or a bladder bump, depending on depth to groundwater. Field parameters<sup>9</sup> will be monitored during low-flow sampling. Sample aliquots collected for dissolved metals analysis will be filtered in the field using a peristaltic pump and 45-micron in-line disposable filters.

The groundwater will be collected directly into laboratory-supplied sample containers and will be placed in ice chests containing ice. During each sampling round, a field duplicate sample will be collected and a

---

<sup>7</sup> On-site monitoring wells MW-501, MW-504, and MW-505 will likely be completed with above-ground protectors and off-site monitoring wells MW-502 and MW-503 will likely be completed with flush-mount manhole covers.

<sup>8</sup> Twenty-one wells identified as MW-1 through MW-6, MW-101 through MW-107, MW-151 through MW-153, MW-202 through MW-205, and MW-301.

<sup>9</sup> Depth to water, temperature, pH, specific conductance, and oxidation-reduction potential.



trip black will be included for analysis. The ice chests will be delivered under chain-of-custody to a Pennsylvania-registered laboratory for analysis.

### **Co-located Surface Water and Sediment Sampling**

Co-located surface water and sediment samples will be collected from the two unnamed tributaries to Brush Run located east of and south of the site. The approximate sample locations are identified as TE-01 through TE-04 and TS-01 on Figure 1.

Assuming suitable locations are identified, surface water samples will be collected directly into laboratory-supplied sample containers. Sample aliquots collected for dissolved metals analysis will be filtered in the field using a peristaltic pump and 45-micron in-line disposable filters.

At the time the samples are collected, an approximation of the percentage of silt/clay fraction will be recorded. Sediment samples will be collected at each location if sufficient fine-grained (i.e., clay and silt) sediment volume is present. Sediment samples will be collected using dedicated disposable scoops and laboratory-supplied sample containers. Depending on field conditions, composite sediment samples (vs. grab samples) may be collected (with the exception of volatiles aliquots) in order to representatively characterize conditions at a particular location. Aliquots collected for volatile organic compound analyses will be collected as grab samples in accordance with United States Environmental Protection Agency (USEPA) Method 5035.

The surface water and sediment samples will be placed in ice chests containing ice. The ice chests will be delivered under chain-of-custody to a Pennsylvania-registered laboratory for analysis.

The geographic coordinates of the co-located sample locations will be determined using a Trimble® GeoExplorer® 6000 series (GeoXH™) handheld global positioning system (GPS) receiver (Trimble), which is capable of receiving and utilizing signals from both GPS<sup>10</sup> and GLONASS<sup>11</sup> satellites. To increase the accuracy of the coordinates, the receiver will be connected to a Zepher Model 2 external antenna. The location data will be post-processed to differentially correct the location data relative to the closest available fixed base station with both GPS and GLONASS receivers.

### **Slug Testing**

Rising head slug tests will be performed in five monitoring wells at the site to evaluate hydraulic conductivity. Each test will be performed by quickly removing a known volume of water from the well and measuring the water level recovery rate with a pressure transducer.

---

<sup>10</sup> United States Global Positioning System.

<sup>11</sup> Russian GLObal NAVigation Satellite System.



### Sample Analyses

Impacts previously identified at the site include volatile organic compounds (VOCs) and 1,4-dioxane<sup>12</sup>. In addition, heavy metals may be present due to historical coal mining activities and historical industrial activities performed at the site. The presence of heavy metals at concentrations above regulatory limits may pose a threat to human health and the environment. Therefore, the soil, groundwater, surface water, and sediment samples will be submitted to a Pennsylvania-registered environmental laboratory under chain-of-custody procedures for analyses as follows:

- Surface Soil Samples. An estimated 34 surface soil samples will be submitted for laboratory analysis of:
  - Target Compound List Semi-Volatile Organic Compounds (TCL SVOCs).
  - Target Analyte List (TAL) metals.
- Subsurface Soil Samples. An estimated 68 subsurface soil samples will be submitted for laboratory analysis of:
  - Target Compound List VOCs (TCL VOCs).
  - TCL SVOCs.
  - TAL metals.
- Groundwater Samples. An estimated 35 groundwater samples, 2 field duplicates, and two trip blanks will be collected during two sampling events will be submitted for laboratory analysis of:
  - TCL VOCs.
  - 1,4-dioxane.
  - Dissolved TAL metals.
- Surface Water Samples. An estimated 10 surface water samples will be submitted for laboratory analysis of:
  - TCL VOCs.

---

<sup>12</sup>A semi-volatile organic compound.





- . 1,4-dioxane.
- . Dissolved TAL metals.
- . Total TAL metals.
- Sediment Samples. An estimated 10 sediment samples will be submitted for laboratory analysis of:
  - . TCL VOCs.
  - . TCL SVOCs.
  - . TAL metals.

#### **Evaluation of Data**

Site characterization data will be managed as it is obtained. Data, including sample location coordinates and laboratory analytical results will be imported into and maintained in a relational database. The database will be queried to generate tabulated summaries of laboratory results compared to appropriate regulatory limits. In addition, the database will interface with a geographical information system (GIS) that will allow posting of environmental data onto base maps to provide spatial representation environmental data.

Boring and well logs will be prepared using field notes recorded while advancing soil borings and installing monitoring wells. Slug test data will be analyzed using the Bouwer and Rice method to estimate hydraulic conductivity, which will be used in fate and transport modeling.

It is anticipated that potential diffuse flow of impacted groundwater to surface water (i.e., the unnamed tributaries to Brush Run) will be evaluated through fate and transport modeling. Potential models that may be used include Quick Demenico (QD), SWLoad, and PENTOXSD. QD will be used to evaluate whether a dissolved constituent plume will migrate to surface water. If the QD model indicates the plume has or will migrate to surface water, SWLoad will be used to evaluate mass loading into the surface water. Based on the SWLoad results, it may be necessary to employ the PENTOXSD model to evaluate whether the constituent mass loading represents a risk to human health and/or fish and aquatic life.

#### **Notice of Intent to Remediate**

Preparing and submitting a NIR to the PADEP enters a site into Pennsylvania's Act 2 program. A copy of the NIR is required to be forwarded to the municipality the site is located and a notice of the NIR is required to be published in a newspaper of general circulation in the area of the site.



## Remedial Investigation Report

Assuming the entire data set (i.e., the results of SC activities described above and the results of historical investigations) provides an adequate characterization of the site, a Remedial Investigation Report will be prepared for submittal to the PADEP. The report will present the data used to characterize the site, an analysis of the fate and transport of site-related constituents of concern, an ecological screening, and an evaluation of potential exposure pathways. The RIR will identify potential current and/or future exposure pathways that can be eliminated by applying institutional and/or engineering controls.

## Project Schedule

It is anticipated that the described field work will require six to eight weeks to complete. The fieldwork will be initiated within approximately one week of authorization to proceed, depending upon site accessibility and subcontractor availability. Advancing the soil borings and installing the monitoring wells will require approximately two weeks. The first round of groundwater and surface water/sediment sampling will be completed approximately three after the new monitoring wells are installed. The results of analyses performed on samples will be available within approximately 10 working days after the samples are submitted to the laboratory. The second round of groundwater and surface water/sediment samples will be collected approximately one week after we receive the results of the first round. Sample analytical results will be evaluated as it is received. We anticipate a draft of the RIR will be prepared within approximately six weeks of receiving all of the laboratory analytical results. Attached is our anticipated schedule outlining the expected time for submittal of the remedial investigation report (Attachment 1 – Anticipated Schedule). Also shown is the likely time required for the initial and “final” “go/no go” decisions based on the two rounds of surface water/sediment sampling. As discussed, concentrations of site related constituents above applicable regulatory agency criteria within these media will likely require reconsideration of the proposed property transfer. As shown on the attached figure, the first “go/no go” decision will occur at about six weeks after project implementation and the second “go/no go” decision will occur after about 10 weeks. Typically, a complete release of liability under the Act 2 program requires about 36 months.

## Project Cost

AGI will perform the above-described SC activities on a time and materials basis. The estimated cost to complete this SC, including preparation of the RIR, is about \$200,000 including a 15 percent contingency.

AGI has assumed that the site will be readily accessible for the work and that no more than Level D health and safety equipment will be required. It is also assumed that any soil boring locations can be accessed by a standard drilling rig. This proposal is valid for the next four months.



Factors that could alter the project schedule, budget and/or required activities include the following:

- Adverse weather conditions.
- Inability to gain access to the site or the identified portions of the site.
- Surface or subsurface conditions that require additional or alternative equipment.
- Discovery of unanticipated hazards/conditions, including, but not limited to, the presence of drums, USTs or other subsurface items.

#### **Additional Act 2 Path Forward**

After completing the SC activities described above, additional tasks will need to be completed to pursue liability protection under Act 2. Provided below is a summary of the path forward assuming that the site will proceed through the PADEP Land Recycling Program process. This path forward, and the budgetary estimates provided, is based upon our experience at similar sites, our current understanding of site conditions, and familiarity with the Land Recycling Program. Because we do not know the full extent of environmental impacts to be addressed, this should be considered a reasonable estimate for budgetary purposes, but the actual schedule and costs may be lower or higher based upon actual site conditions encountered.

Assuming the site is adequately characterized after completing the SC activities described above and the RIR is approved by the PADEP, the next steps to achieving cleanup under the Act 2 program, assuming either the Site-Specific Standard or a combination of the Site-Specific Standard and Statewide Health Standard is applied to the site, would generally involve the following activities:

- Perform a risk assessment. At this time, it is anticipated that “cleanup”<sup>13</sup> will be achieved solely by pathway elimination by applying activity and use limitations (AULs) to the site. If cleanup is achieved solely through AULs, a risk assessment and Risk Assessment Report (RAR) will not be necessary. However, if not all pathways can be eliminated, a risk assessment may be necessary. Estimate = \$0<sup>14</sup> to \$15,000.
- Perform quarterly monitoring to evaluate the stability of stability of the dissolved phase impact to groundwater. Depending on the extent of impact to groundwater, it may be necessary to perform quarterly groundwater monitoring to demonstrate that

---

<sup>13</sup> Under Act 2, cleanup refers to the measures used to meet and attain an Act 2 standard. This can include active remediation (i.e., physically removing contamination) or using engineering of administrative controls (e.g., restrictive covenants) to eliminate exposure pathways.

<sup>14</sup> Assumes a risk assessment will not be necessary.

the groundwater plume is stable or reducing in areal extent. Estimate = \$40,000 to \$60,000.

- Prepare and submit a combined Cleanup Plan/Final Report (CP/FR). Under Act 2, both a cleanup plan and a final report are required. When the cleanup relies solely on AULs, these reports can be combined into a single document for submittal to the PADEP. It is assumed the cleanup plan will be limited to describing AULs necessary to eliminate all current and future exposure pathways associated with the contamination, and to identify any post-remediation care necessary to maintain the Act 2 standard at the site. Estimate = \$15,000 to \$20,000.
- Develop environmental covenants required for post-remediation care. Because the cleanup will rely on AULs to maintain the Act 2 standard, an environmental covenant will need to be developed and recorded to the property deed. The environmental covenant will identify and describe the identified impacts at the site, the specific AULs need to maintain the standard, and any required reporting and post-remediation care that will be needed. Estimate = \$2,000 to \$3,000.
- Gateway Engineering will provide surveying and oversight activities required to obtain the Act 2 including completing a boundary survey (\$24,000), locating boreholes and their associated elevation (\$6,000), interfacing with Cecil Township on milestones (\$7,000) and other associated costs (\$6,000). Therefore, Gateway's estimated costs will be about \$43,000.
- Project management and support activities. Estimate = \$4,000 to \$7,000.
- Contingency of 15%. Estimate = \$16,000 to \$22,000.

Based upon our experience with the Act 2 program and the historical investigation results for the site, we anticipate that the overall process for completing the Act 2 cleanup for the property, including preparation and submittal of the required reports and the PADEP statutory review times<sup>15</sup>, would require approximately 2-½ to 3 years. This estimated schedule assumes that no active remediation of groundwater will be necessary to demonstrate attainment, and that removal of impacted soil from the site can be completed during this timeframe.

Based upon the assumptions and information detailed above, a reasonable budgetary estimate for the cleanup after submitting the RIR, assuming active remediation/removal actions or capping are not needed, is from approximately \$120,000 to \$170,000 depending upon actual conditions and PADEP requirements.

---

<sup>15</sup> Under the Site-Specific Standard, the PADEP has 90 days to review and respond to milestone report submittals (i.e., RIR, RAR, and CP/FP). Additionally, if there are questions or deficiencies identified, these review times may be extended.

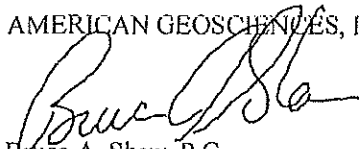


Mr. Daniel S. Deiseroth, P.E.  
August 21, 2017  
Page 12

If you have any questions on the proposed SC or the Additional Act 2 Path Forward, please contact David Perry or me at (724) 733-7000.

Respectfully submitted,

AMERICAN GEOSCIENCES, INC.



Bruce A. Shaw, P.G.  
Senior Project Manager

bas/tdw

Enclosures: Figure 1 – Site Layout and Proposed Boring Locations  
Attachment 1 – Anticipated Schedule



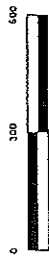
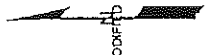
**FIGURE**



**FIGURE 1**  
**SITE LAYOUT & PROPOSED BORING LOCATIONS**  
 FORMER CE CAST PROPERTY  
 WALNUT STREET EXTENDED  
 CECIL TOWNSHIP  
 WASHINGTON COUNTY, PENNSYLVANIA

PREPARED FOR:

- LEGEND**
- APPROXIMATE PROPERTY BOUNDARY
  - ▭ SITE AREAS
  - ▭ HISTORICAL BUILDING FOOTPRINT
  - TRIBUTARY TO BRUSH RUN
  - OPEN CHANNEL
  - CULVERTED
  - ▨ SOIL REMEDIATION AREA
  - ▨ HISTORICAL MONITORING WELLS
  - ◊ ABANDONED
  - ◊ ACTIVE
- PROPOSED SAMPLE LOCATIONS**
- ◊ MONITORING WELL
  - SOIL BORING
  - ▲ STREAM LOCATION
- PROPOSED SAMPLE LOCATIONS MAY BE MODIFIED AS NECESSARY BASED ON FIELD CONDITIONS.



SCALE - 1:3,600

COORDINATE SYSTEM: NAD 1983 STATEPLANE PENNSYLVANIA SOUTH FIPS 3702 FEET

**COMMENTS & NOTES:**

STREET NAMES: TIGERLAKE SHAPEFILE, 2012 WASHINGTON COUNTY, PA, ALL LINES, U.S. DEPARTMENT OF COMMERCE, U.S. CENSUS BUREAU, GEOGRAPHIC INFORMATION SYSTEM, 2012.

SITE BOUNDARIES: DIGITIZED FROM MAP GENERATED USING WASHINGTON COUNTY PARCEL VIEWER ON OCTOBER 30, 2015.

SITE FEATURES AND SURROUNDING PROPERTY USE: BASED ON OBSERVATIONS MADE DURING SITE VISIT COMPLETED BY SITE VISIT PERSONNEL, MONTH YEAR.

PORTIONS OF THIS FIGURE ARE PRESENTED IN COLOR. THEREFORE BUILDING AND WHITE COPIES MAY NOT DEPICT ALL INFORMATION AS PRESENTED ON THE ORIGINAL DOCUMENT.

3925 REED BOULEVARD, SUITE 400  
 MURRYSVILLE, PA 15668  
 724-733-7000  
 www.amergeo.com

COPYRIGHT © 2017 American Geospatial, Inc.

AGI PROJECT NO: 16087-002 PREPARED BY: B. SHAW, OCTOBER 2016